Published in final edited form as:

Mil Behav Health. 2016 ; 4(3): 205–219. doi:10.1080/21635781.2016.1153530.

Validation of a Measure of Family Resilience among Iraq and Afghanistan Veterans

Erin P. Finley, PhD, MPH,

South Texas Veterans Health Care System, The University of Texas Health Science Center at San Antonio, San Antonio, Texas

Mary Jo Pugh, PhD, RN, and

South Texas Veterans Health Care System, The University of Texas Health Science Center at San Antonio, San Antonio, Texas

Raymond F. Palmer, PhD

Department of Family and Community Medicine, The University of Texas Health Science Center at San Antonio, San Antonio, Texas

Abstract

Although interactions within veterans' families may support or inhibit resilient coping to stress and trauma across the deployment cycle, research on family resilience has been hampered by the lack of a brief assessment. Using a three-stage mixed-method study, we developed and conducted preliminary validation of a measure of family resilience tailored for Iraq and Afghanistan veterans (IAV), the *Family Resilience Scale for Veterans (FRS-V)*, which was field-tested using a survey of 151 IAV. Our findings indicate the resulting 6-item measure shows strong initial reliability and validity and support the application of existing models of family resilience in this population.

Keywords

family resilience; veterans; posttraumatic stress; deployment; family functioning; social support; reintegration; stress; adaptation; coping

Family resilience in veterans has until recently remained poorly understood. Although individual resilience is known to play a key role in protecting against posttraumatic stress disorder (PTSD) among veterans (Bartone, 1999; D. W. King, King, Foy, Keane, & Fairbank, 1999; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009; Taft, Stern, King, & King, 1999), the study of resilience has often been fragmented, accumulating a series of related constructs (e.g., hardiness, sense of coherence), critiques (Almedom & Glandon,

Correspondence concerning this article should be addressed to Erin P. Finley, Audie L. Murphy Memorial Veterans Hospital Division (11C6), 7400 Merton Minter Blvd., San Antonio, Texas 78229-4404. finleye@uthscsa.edu.

Erin P. Finley, South Texas Veterans Health Care System, and Division of Hospital Medicine, Department of Medicine, and Department of Psychiatry, The University of Texas Health Science Center at San Antonio; Mary Jo Pugh, South Texas Veterans Health Care System, and Department of Epidemiology and Biostatistics, The University of Texas Health Science Center at San Antonio; Raymond F. Palmer, Department of Epidemiology and Biostatistics, The University of Texas Health Science Center at San Antonio.

The views expressed in this article are solely those of the authors and do not represent the views of or an endorsement by the Department of Veterans Affairs or the U.S. Government.

2007; Lemay 2005; Luthar, Cicchetti, & Becker, 2000; Norris, Tracy, & Galea, 2009), and definitions over time (Eriksson & Lindstrom, 2005; Garmezy, 1971; Luthar et al., 2000; Richardson, 2002)

Perhaps in part as a result of this conceptual muddiness around resilience more generally, researchers have often failed to account for the role of the family in shaping veterans' well-being, even though the construct of family resilience has great salience for understanding the well-being of current and former service members and their families. There is clear evidence that social processes affect Veterans' psychological health post-deployment. Family problems have been identified as a concern for some 75% of Iraq and Afghanistan veterans (IAV) seeking mental health care (Sayers, Farrow, Ross, & Oslin, 2009), and evidence increasingly suggests this relationship may be bidirectional (Monson, Taft, & Fredman, 2009). A lack of social support is a major risk factor for developing PTSD in the wake of trauma exposure (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003), and Evans and colleagues (2009) have demonstrated that family functioning is a significant predictor of PTSD treatment outcomes for Australian veterans. The stresses of multiple combat deployments have been associated with problems in mental health and psychosocial functioning for not only service members and veterans but also their spouses (Eaton et al., 2008; Friedman, 2010; Matsakis, 1988; Renshaw, Rodrigues, & Jones, 2008; SteelFisher, Zaslavsky, & Blendon, 2008) and children (Chandra et al., 2010; Cozza, Chun, & Polo, 2005; Dekel & Goldblatt, 2008; Lincoln, Swift, & Shorteno-Fraser, 2008). Family resilience, moreover, has become a cornerstone of the most promising military resilience programs yet studied, the Families OverComing Under Stress (FOCUS) Family Resilience Training program (P. Lester et al., 2013; P. E. Lester, 2012; Saltzman et al., 2011)

The classic model of family resilience - the Resiliency Model of Family Stress, Adjustment, and Adaptation - was put forward by McCubbin, Thompson, and McCubbin (1996) and takes into account stressors and resources at the individual, family, and community levels, also considering how family adjustment and adaptation may shift over time. More recent work by Walsh (2006) has approached family resilience as an outcome of a series of adaptive processes, and emphasizes modifiable strategies for supporting family resilience, which she defines as "coping and adaptational processes in the family as a functional unit." Drawing upon the empirical literature, Walsh theorized that family-level resilience involves nine processes reflecting belief systems, organizational patterns, and communication processes (see Figure 1). Walsh suggested family belief systems include how a family *makes meaning of adversity*, maintains a *positive outlook*, and draws upon *transcendence and spirituality* in responding to difficult times. Walsh hypothesized that organizational patterns require family *connectedness*, *flexibility* to respond effectively to new challenges, and the ability to access *social and economic networks* to maintain stability and mobilize resources when necessary. Finally, Walsh argued that family communication processes require *clarity*, *open emotional expression*, and *collaborative problem-solving*.

Although Walsh's model is central to current understandings of family resilience (Becvar, 2013), little research to date has empirically examined this model or its components. In addition, given the unique individual and family stressors associated with combat deployments, particularly when recurrent over a period of years as has been the case for IAV

(Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; P. Lester et al., 2013), there is reason to believe the essential components of resilience may be distinct for veterans and their families. Moreover, research conducted among veterans of the current conflicts demonstrates broad variation in the structure of day-to-day family life, whose participants may include parents, spouses or domestic/romantic partners, children, or close friends, particularly those with whom they have shared military service (Finley 2011). Prior scales typically rely on a model of nuclear family and may fail to adequately capture the experience of family for recent veterans (Finley 2011). In the current study, we therefore built upon the existing literature to carry out a mixed-method study of family resilience among veterans of Iraq and Afghanistan and to develop a measure of family resilience tailored for this population, the *Family Resilience Scale for Veterans* (FRS-V). We then conducted a preliminary validation of the FRS-V with two primary goals: 1) to assess the scale's potential value as a functional psychosocial assessment for use in this population; and 2) to inform the research literature on critical components of military/veteran family resilience more broadly.

Method

This study was performed in three stages. Stage 1 focused on development, content validation (including review by expert panel), and iterative refinement of the FRS-V item pool. Stage 2 comprised of cognitive testing of items among IAV and their spouses and significant others. In Stage 3, the initial FRS-V was then field-tested using an online survey among IAV participants. All study procedures were approved by the institutional review boards of the South Texas Veterans Health Care System and The University of Texas Health Science Center at San Antonio. All study participants provided informed consent and received \$15 for their participation. Study activities were completed in 2012–2013.

Stage 1: Item Development and Content Validation

After extensive literature review, we determined that Walsh's (2006) model of family resilience was the most empirically-based available (see also McCubbin and Patterson, 1983; McCubbin, Thompson and McCubbin, 2001; Hawley and DeHaan, 1996) and was thus most appropriate for informing an investigation of family resilience within a new population (i.e., IAV). Recognizing overlap between Walsh's model and elements of prior scales developed by McCubbin, Thompson, and McCubbin (2001), we created an initial item pool by compiling 60 items from the *Family Hardiness Index (FHI)*, *Family Attachment and Changeability Index (FACI)*, and the *Family Coping Index (FAMCI)*. These items were rigorously developed, have been widely used (e.g., Benzies, Trute, Worthington, Reddon, Keown & Moore, 2011; Fleming, Jory & Burton, 2002; Schmid, Allen, Haley & DeCoster, 2010) and have good psychometric properties (Cronbach's alphas of 0.82, 0.80, and .85, respectively; McCubbin, Thompson and McCubbin 2001).

This initial item pool was reviewed by an expert panel composed of six military mental health providers and researchers representing the Department of Defense (DoD), Department of Veterans Affairs (VA), and private partners in academic and community settings. Members of the expert panel assessed the face validity of the items in capturing

Walsh's nine dimensions of family resilience (e.g., making meaning of adversity, connectedness, etc.). Items were deleted or edited and new items generated where necessary in order to ensure accurate representation of Walsh's constructs. Response options were based on a 4-point Likert-type scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). The resulting pool of 40 items was then submitted for review by an additional expert consultant (a clinical psychologist and post-deployment health researcher) before undergoing additional revision and final review by the expert panel. See Table 1 for mapping of items to Walsh's constructs.

Stage 2: Cognitive Interviewing

Cognitive interviewing is a methodology for identifying potential sources of response error related to respondents' cognitive processes in answering survey questions (Willis, 1999). We conducted cognitive interviewing in group and individual formats with IAV and significant others/spouses of IAV (hereafter "partners"). Veterans and partners were recruited using fliers posted in VA and non-VA sites (e.g., local colleges, libraries, and veterans service organizations) and using announcements made via the VA facility's media feeds on Facebook and Twitter. Interviews were conducted in focus group format with one group of IAV (two female and one male) and one group of partners (four female), as well as in an individual format with two female and seven male veterans. All participants (total $N = 16$) were asked to first discuss their experiences of stresses and coping across the deployment cycle in order to identify perceived components of family resilience. We then defined each of Walsh's nine constructs for participants, who were asked to discuss whether they felt the construct was an essential part of family resilience. Each item of the FRS-V was read aloud by the interviewer and scripted verbal probes (Willis, 1999) were given to assess whether the item: 1) was comprehensible and acceptable; 2) accurately reflected the intended construct; and 3) was related to family resilience. Scripted probes were occasionally followed by unscripted questions to allow for clarification as necessary. Interviews lasted between 60–90 minutes, and were conducted by the primary author (a PhD-level anthropologist) or a master's-level research staff member with experience in cognitive interviewing.

Participants consistently reported that constructs and items were appropriate and relevant to family resilience during and after deployment, and advised only minor edits to item wording to improve clarity. All items were therefore retained for the field survey.

Importantly, participants offered critique of the introductory language for the FRS-V, which was intended to help readers complete the scale with a clear notion of family in mind. Consistent with prior research (Finley 2011), study participants expressed concern about creating a definition that was sufficiently broad to allow for the multi-dimensional families of contemporary society, as well as to include non-kin – such as fellow service members – who may be a critical source of support and stability. After multiple rounds of refinement, the following definition of family was determined by participants to be appropriate and accessible: "By 'family,' we mean those people who are most important in your daily life, not necessarily your kin or blood relatives. They may include your spouse or partner, children, parents, siblings, close friends, or people you served with. Family members do not

have to be people who live with you, but they should be people you see or talk to frequently.”

Stage 3: Field-testing

Procedure—A random sample of one thousand IAV (500 male/500 female) served by the South Texas Veterans Health Care System were identified from VISN warehouse data by the Office of Information Technology (OIT) and provided in the form of a patient list to the PI. Female veterans were oversampled in order to ensure equal representation. All IAV between the ages of 18–65 who were not current inpatients, had no diagnosis of schizophrenia or other psychosis, and who had not been inpatients for any mental health concern within the prior 60 days were eligible; the initial list was reviewed to ensure that no IAV who had participated in cognitive interviews were included in the survey sample. Remaining members of the identified cohort were sent a brief letter by the research team describing the online survey and providing a link to its location. Those interested in participating had the option of visiting the online link, where they entered a unique access code provided in the initial recruitment letter. Non-respondents received a reminder letter approximately one week later, followed several weeks later by a third letter that included a hardcopy of the survey and information sheet, accompanied by a self-addressed stamped return envelope.

Survey invitations were sent to 977 non-duplicate records in the dataset provided; addresses for 161 individuals proved to be undeliverable, and one individual was deceased. We received 110 surveys through REDCap and 69 through the mail for a total of 179 survey respondents, resulting in a response rate of 22.0%. Of the surveys received, 28 respondents completed few items on the survey and were excluded from analysis. Inspection of those responding and those not responding showed no significant demographic differences.

The online survey was developed using REDCap software (www.projectred-cap.org) and hosted on a FISMA-compliant server belonging to our academic affiliate. In order to obtain a preliminary assessment of the FRS-V's reliability and validity in the IAV population, we included the full 40-item FRS-V, as refined during the process described above, as well as items assessing basic demographic information (e.g., age, sex, employment status, service branch and component), and scales posited to be related to family resilience, as described below.

Measures

Individual resilience: Two measures were used to assess individual resilience. The **Response to Stressful Experiences Scale (RSES)** is a *process*-focused measure of individual resilience developed by the National Center for PTSD (Johnson et al., 2008). It assesses respondents' use of specific processes to manage stressful events (e.g., prayer or meditation, looking for “creative solutions,” etc.), rating each of 22 statements on a five-point Likert scale (0–4). Items address constructs of optimism, personality, religion & spirituality, emotion regulation, social modeling, fear-condition, cognitive flexibility, and coping. The scale has a Cronbach's alpha of 0.92 and correlates moderately well with a Hardiness scale ($r > .30$). We calculated a scale score for this measure by summing all item responses (range 0–88).

The 2-item **Connor-Davidson Resilience Scale (CD-RISC2)** is a single-scale measure of individual resilience as a personal *trait* (Vaishnavi, Connor, & Davidson, 2007). Items assess ability to adapt to change and tendency to bounce back after illness or hardship, and are scaled from 0–4, where 0= ‘rarely true’ and 4= ‘true nearly all the time’. Responses are added to yield a numeric score from 0–8. The 2-item scale has been shown to have good test-retest reliability and both convergent and divergent validity when compared with measures of hardiness and perceived stress (Vaishnavi et al., 2007). Including the RSES and this measure enabled us to assess correlations between the FRS-V and both trait and process measures of individual resilience.

Family Coping and Functioning: The **Family Coping Coherence Index (FCCI)** and the **Family Distress Index (FDI)** were included as measures of family coping and functioning to assess construct validity (H.I. McCubbin et al., 2001). The FCCI was developed to measure Antonovsky’s (1993) *sense of coherence* as it occurs at the family level during periods of stress and change, and includes 4 items scored on a 5-point Likert scale with responses from “strongly disagree” to “strongly agree” (H.I. McCubbin et al., 2001). Internal reliability is approximately 0.71, test-retest reliability is 0.83, and the measure is scored by summing item responses.

Conversely, the FDI was developed to assess family maladaptation, disharmony, and intolerance -- in other words, the absence of flexible, cohesive and harmonious traits thought to contribute to family resilience (H.I. McCubbin et al., 2001). The FDI has 8 items scored on a 4-point Likert scale, with responses ranging from “not a problem” to “large problem”, and an internal reliability of 0.87. It is scored by summing responses for all 8 items, with a higher score indicating greater family distress.

Social Support: The **Post-Deployment Support Subscale (PDSS)** of the Deployment Risk and Resilience Inventory (D. W. King, King, & Vogt, 2003) was used to assess emotional and instrumental social support from family, friends, coworkers, and community members. The Post-Deployment Support Subscale is composed of 15 items rated on a 5-point Likert scale (1= “strongly disagree” to 5= “strongly agree”). It has previously been used among Gulf War (L. A. King, King, Vogt, Knight, & Samper, 2006) and IAV (Vogt, Proctor, King, King, & Vasterling, 2008), and found to have good internal ($\alpha = 0.88$) and criterion validity. Two items with negative wording were reverse coded; all items were added to create a scale score (range 15–75).

Reintegration: We further sought to evaluate whether the FRS-V was associated with veterans’ experiences of post-service reintegration challenges. To this end, the survey included the **Military to Civilian Questionnaire (M2C-Q)**, a 16-item scale assessing community reintegration problems among IAV (Sayer et al., 2011), with a Cronbach’s alpha of .95. Response options range from “no difficulty” to “extreme difficulty”, with a “does not apply” option for 4 items that may not be relevant to all respondents (e.g., getting along with children). The M2C-Q is scored by summing item responses and dividing by the number of items completed with a response other than “does not apply,” providing a possible range of 0–4. Higher scores indicate more significant difficulty with reintegration.

We included the **Self-Efficacy for Life Tasks (SELT)** scale, which was developed and validated among IAV and describes perceived self-efficacy for completing normative tasks such as finding a job, making a romantic partner happy, and so forth (Finley, Pugh, Garcia, Wang, & Noel, 2013; Finley, Pugh, Noel, & Brown, 2012). Respondents rate their self-efficacy to complete each priority task using a 5-point Likert-type scale (1= “lowest confidence” to 5= “highest confidence”), and SELT Scale scores are calculated using a simple mean strategy. The SELT has previously been shown to predict PTSD, depression, and anxiety scores among recent veterans (Finley et al., 2013) and shows good internal consistency ($\alpha = 0.87$).

Symptom Burden: Because measures of individual resilience are consistently correlated with symptoms of PTSD and depression among IAV (Elliott et al., 2015; Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012), we hypothesized as a final measure of convergent validity that the FRS-V would be negatively associated with symptoms of PTSD and depression, as measured by the **PTSD Checklist - Civilian Version (PCL-C)** (Weathers, Litz, Huska, & Keane, 1994) and **Center for Epidemiological Studies Short Depression Scale (CES-D 10)** (Radloff, 1977), respectively. The PCL-C is a 17-item self-report measure utilizing a 5-point Likert scale response format to assess symptoms in the past month, with a possible range of 17–85, and is frequently used in research studies to assess current PTSD severity (Weathers et al., 1994). The CES-D 10 has been demonstrated to be a valid and reliable measure for assessing depression in both VA (Kilbourne et al., 2002) and non-VA settings (Darnall et al., 2005). There are 10 items rated from 0 (“rarely or none of the time”) to 3 (“all of the time”). Items are summed and scores of 10 or higher signify possible depression (Andresen, Malmgren, Carter, & Patrick, 1994).

The full survey, including the aforementioned measures, took 20–30 minutes and was piloted with a convenience sample of IAV to ensure clarity and comprehensibility prior to release.

Data Analysis—Confirmatory factor analysis (CFA) was used to test the adequacy of the nine constructs within three major domains (Communication Process, Organizational Patterns, Belief Systems) proposed by Walsh (2006) (see Figure 1). The models test for three vs two vs one construct within each major domain separately using the chi-square difference test (Bollen and Long, 1993). Table 1 shows the items used for each construct within the three domains. The choice to test the factors within each domain was driven by our relatively small N, which did not allow for estimating all nine factors simultaneously. The CFA model constrained the means and variances of each factor to zero and one respectively so that each loading could be estimated. Inter-factor correlations were estimated. Factor loadings for each item were significant with reasonable standard errors and no negative variance components.

Figure 2 contrasts the one factor, two factor and three factor CFA models for Communication Process. Standardized loadings and factor correlations are shown along with the fit indices. The chi-square difference between the one and three-factor model is 7.5. At three degrees of freedom, this is not significantly different and we therefore reject a three-factor solution. Because of the high correlation between Communication Clarity and Open Emotional Expression (0.95), a two-factor model was tested against the one-factor model

combining the items from Communication Clarity and Open Emotional Expression into a single factor. The chi-square difference between these two models was 7.2. With 1 degree of freedom, this is a significant difference ($p = .03$). Therefore a two-factor model was accepted within the Communication Process domain.

Following the same logic described above for Communication Process, Figures 3 and 4 depict the factor structures tested for Organizational Patterns and Belief System domains respectively. For each, chi-square difference testing yielded a two-factor solution.

In a final step, we dropped all items from each model with reliability coefficients (standardized factor loadings) less than .7. Modification indices guided the estimation of specific residual co-variances between items. Figure 5 depicts these final models, which demonstrate excellent fit.

Table 2 depicts the sample characteristics and descriptive statistics of the scales, including means and standard deviations for each of the six final factor constructs. Table 3 shows the inter-correlation between all six Walsh constructs. Table 4 shows the Pearson inter-correlations between the six factors derived from the Walsh constructs and the other scales used in the study. The average positive correlation between scales is .47 and the average negative correlation is $-.41$.

We examined four versions of the scale as composite variables based upon CFA analysis results. First, all items with factor loadings greater or equal to .70 were weighted by their standardized factor loadings then summed (FRS24). Second, up to three items with the highest loading per factor were similarly weighted and summed (FRS17). Third, only the two items with the highest loadings were chosen (FRS12). Last, only the item with the highest factor loading per construct was chosen (FRS6). Table 5 depicts the correlations of these 4 composites with the other scales in the study. Each has virtually the same magnitude of association with the other scales; in the interest of brevity and clinical utility, therefore, we selected the six-item FRS-V for additional examination.

Once the final scale was determined, we examined the construct validity of the FRS-V using multiple assessments of convergent and discriminant validity. Bivariate analyses were conducted using Pearson's correlations and means testing. All statistical analyses were performed in SAS (Version 9.3; SAS Institute, Cary, NC).

We first examined whether the FRS-V was associated with existing measures of individual resilience, the RSES and CD-RISC. We hypothesized the FRS-V would be significantly associated with the RSES and CD-RISC, while varying sufficiently (defined as $r < 0.85$) (Kline, 1998) to indicate a distinct construct related to family-rather than individual-level resilience. Second, we hypothesized that the FCCI would be positively and the FDI negatively correlated with FRS-V scores, in both cases providing a measure of convergent validity. As an additional measure of convergent validity, we examined the association between the FRS-V and veterans' perceptions of social support, as assessed using the DRRI PDSS. Because we expected family resilience would support positive reintegration and self-efficacy for life tasks following deployment, we hypothesized that the FRS-V would be negatively associated with M2C-Q scores and positively associated with SELT scores. As a

final measure of convergent validity, we hypothesized that the FRS-V would be negatively associated with symptoms of PTSD (PCL-C) and depression (CES-D).

To evaluate discriminant validity, which assesses whether a measure is associated with constructs with which it should theoretically have no relationship (Campbell and Fiske 1959), we examined whether mean FRS-V scores varied between groups based on current employment status (employed vs. not employed) or service component (active duty vs. National Guard/Reserve). Given that lack of current employment may reflect either positive or negative functioning (e.g., pursuing education or parenting at home vs. chronic disability), we hypothesized that there would be no significant difference in family resilience between those who are and are not currently employed. Studies have demonstrated significant psychosocial distress and problems of family functioning among both active duty (Marshall, Panuzio, & Taft, 2005; SteelFisher et al., 2008) and National Guard/Reserve (Faber, Willerton, Clymer, MacDermid, & Weiss, 2008) service members; we therefore hypothesized that family resilience would not differ significantly by service component.

Results

Participants

Participants were 151 IAV who responded to a mailed survey invitation. Seventy (45.5%) were male and 84 (54.6%) were female; mean age was 38.25 years. Participants self-identified as African-American (10.6%), Hispanic (32.5%), non-Hispanic White (38.4%), and Other (18.5%). Nearly two-thirds (64.2%) reported active duty service, with all others having served in the National Guard or Reserves. Branch of service was most commonly the Army (54.9%) or Air Force (22.9%), and the mean number of deployments to combat theater was 2.7. Fifty-three percent of participants had at least a college degree, and 62.1% were currently employed. Most participants (128, 83.12%) reported living with at least one other person. Of those living with others, 95 (61.7%) lived with a spouse/domestic partner, 79 (51.3%) with a child or children, and 25 (16.6%) with parents or siblings.

Factor Analysis

CFA revealed excellent fit between Walsh's hypothesized family resilience constructs and initial FRS-V factors. High correlations indicating overlap between some of the original nine constructs allowed for collapsing flexibility and connectedness (.93), open emotional expression and clarity of communication (1.01), and making meaning of adversity and positive outlook (1.03). This resulted in a three-factor model containing six constructs with immediate parallels to Walsh's nine constructs, in the context of a brief scale with internal consistency and conceptual validity. The six-item FRS-V was scored by summing all items and dividing by the number of responses, resulting in a possible range of 1–4.

Internal Consistency

Items included in the final FRS-V are indicated in Table 1. Cronbach's alpha for the scale was 0.90, indicating high internal consistency. FRS-V scores ranged from 1–4 with a mean of 2.80 ($SD = 0.50$).

Convergent Validity

Correlation coefficients (Table 3) generally support the construct validity of the FRS-V. We found a moderate-to-strong positive association between FRS-V and the two measures of individual resilience, the RSES ($r = 0.67, p < .01$) and the CD-RISC-2 ($r = 0.49, p < .01$), consistent with the expectation that the two scales would assess a similar-yet-distinct resilience construct, with the FRS-V describing family- as opposed to individual-level resilience. The FRS-V was moderately positively associated with the FCCI ($r = 0.64, p < .01$) and negatively associated with the FDI ($r = -0.45, p < .01$), suggesting good convergent validity. Although positively associated with the PDSS ($r = 0.51, p < .01$), as predicted, the relationship was only moderately strong, consistent with the hypothesis that family resilience and social support are conceptually distinct.

The FRS-V was correlated with scales assessing post-deployment reintegration, self-efficacy for normative life tasks, and symptoms of PTSD and depression as predicted. The FRS-V was moderately negatively correlated with the M2C-Q ($r = -0.58, p < .01$) and moderately positively associated with the SELT ($r = 0.62, p < .01$). Survey data revealed moderate negative associations between the FRS-V and symptoms of PTSD as measured by the PCL-C ($r = -0.50, p < .01$), and with symptoms of depression as measured by the CES-D ($r = -0.55, p < .01$).

Discriminant Validity

As predicted, there were no significant differences in mean FRS-V scores between groups based on employment or service component (Table 4).

Discussion

Despite the rapidly growing literature on family resilience (Becvar, 2013; Ungar, 2012), few tools exist to assess this construct and, prior to the current study, no known measures of family resilience had been specifically tailored for use among service members and veterans. The results of this preliminary validation suggest the FRS-V has excellent reliability and strong construct validity as a measure of family resilience among IAV. The FRS-V was associated as predicted with well-accepted measures of individual resilience, family coping and distress, social support, post-deployment reintegration and self-efficacy, and symptoms of PTSD and depression, all of which suggest it is line with the theorized role played by family resilience in the post-deployment period. Moreover, correlations were generally moderate in effect size, suggesting the FRS-V captures a distinctive construct that may be useful in both research and clinical practice. It was noteworthy that the final FRS-V was associated with both the RSES (.67) and CD-RISC 2 (.49) at a level indicating moderate-to-strong relationship, but well below the level considered indicative of conceptual overlap (.85) (Kline, 1998); this suggests that, as hypothesized, the FRS-V describes a form of family-level resilience that is distinct from individual resilience. We also found that FRS-V scores did not differ significantly across groups defined by current employment or primary service component, indicating the FRS-V was not related to factors we would expect to be unrelated. These findings, when taken in conjunction with a rigorous development process that included an item pool grounded in prior studies of family resilience, feedback from an

expert panel, and cognitive interviewing with IAV and partners in both individual and focus group formats, appear to indicate that the FRS-V shows robust content and construct validity.

We also examined the factor structure of the FRS-V in this sample to assess overlap with the nine coping and communication processes outlined by Walsh (2006) in her model of family resilience. The emergence in the factor analysis of six factors rather than nine does suggest there is overlap between some of Walsh's nine processes, allowing us to propose that a more parsimonious model may be adequate in considering how constructs dynamically support family resilience. For example, near-perfect correspondence between positive outlook and making meaning of adversity suggest that perhaps both these processes generally reflect responding to challenges with optimism and some amount of what Bandura et. al (2012) have called family efficacy, defined as a family's "personal or collective efficacy to manage their affairs." Clarity of communication and open emotional expression also proved to have considerable overlap, suggesting that resilient families likely communicate with both clarity and openness. We also identified correspondence between the constructs of flexibility and connectedness, which the factor analysis indicates go hand-in-hand. Taken in sum, these results suggest that Walsh's theoretically derived model is comprehensive in capturing the central components of family resilience, and that these components, although originally identified in studies among civilian samples, remain relevant for recent veterans and their family members.

This study was limited by several concerns, of which one was the modest size of our survey sample. Our 22% survey response rate was also modest, although comparable with other studies among this population (Coughlin et al., 2011). Our sample may not generalize to all populations, as it included a high proportion of Latino veterans (reflecting our local population), and respondents reported higher levels of education than would be expected among the general cohort of IAV; we also oversampled female veterans to ensure equal representation by gender. As the scale was completed only by veterans, we cannot speak to its appropriateness for use among currently serving military personnel, nor to its potential concordance when also completed by spouses or other family members. Analyses were conducted based on data collected using the 40-item version of the FRS-V, and findings may not generalize to those that would be attained using the final, 6-item version. In addition, because there is no existing measure of family resilience that accounts for all of the elements hypothesized in Walsh's model with which to compare our findings, it was difficult to establish an appropriate comparison scale for the FRS-V and thus to ensure concurrent validity. However, our results indicated that the FRS-V was associated as hypothesized with a wide variety of theoretically related scales, including measures assessing social support, individual resilience, post-deployment reintegration and self-efficacy, and symptoms of PTSD and depression. Viewing these quantitative findings in combination with results from expert panel review and cognitive interviews with IAV and their partners, who confirmed both the relevance of Walsh's constructs and the appropriateness of items intended to measure them, we are confident that the FRS-V has good construct and scale validity. Additional research will be required to establish the FRS-V's concordance among family members and its discriminant and incremental validity, particularly whether it can account for additional variance in behavioral health and functional outcomes above that provided by

related constructs such as social support and family functioning. Future research should also examine performance of the FRS-V in a larger sample using confirmatory factor analysis to ensure that factor structure, reliability, and validity remain stable, and using a longitudinal study design, in order to develop a more nuanced understanding of family resilience as a dynamic process occurring over time.

The past decade has seen tremendous strides in building a system of clinical and preventive care services attentive to the complex needs and resources of military/veteran families (P. E. Lester, 2012). Both DoD and VA have implemented programs to increase the availability of care services and support to military/veteran spouses and other family members (P. Lester et al., 2012; McCutcheon & Glynn, 2011), and new recommendations urge further expanding family-focused services in these settings (MacDermid-Wadsworth, Lester, Marini, & al., 2013). One of the most exciting of these developments, the FOCUS program of family resilience training, incorporates several of the key elements of family resilience also identified here, e.g., building family communication skills and making use of family strengths and resources (P. Lester et al., 2013).

Future research is needed to further assess the reliability and validity of the FRS-V among military and veterans' populations and to illuminate whether it is appropriate for use among family members of service members and veterans as well. If future validation studies continue to support its utility, the FRS-V may be appropriate for use in clinical settings as a concise tool for identifying areas of family vulnerability and targeting education/skills-training for improved family coping and communication. The FRS-V may also have value in research evaluating the distinct role of family resilience in military/veteran health and well-being after deployment and the relative success of resilience training programs (e.g., Foran, Adler, McGurk, & Bliese, 2012). It is our hope that the FRS-V can be used to support both clinical and preventive health services for military and veteran families, many of whom will continue to face the psychosocial consequences of the current wars for years to come.

Acknowledgments

This research was supported by a New Investigator's Award from the VISN 17 VA Heart of Texas Health Care Network. Dr. Finley is an Investigator with the Implementation Research Institute (IRI), at the George Warren Brown School of Social Work, Washington University in St. Louis; through an award from the National Institute of Mental Health (R25 MH080916-01A2) and the Department of Veterans Affairs, Health Services Research & Development Services, Quality Enhancement Research Initiative (QUERI).

References

- Almedom AM, Glandon D. Resilience is not the absence of PTSD any more than health is the absence of disease. *Journal of Loss and Trauma*. 2007; 12:127–143.
- Andresen E, Malmgren J, Carter W, Patrick D. Screening for depression in well older adults: evaluation of a short form of the CES-D. *American Journal of Preventive Medicine*. 1994; 10:77–84. [PubMed: 8037935]
- Antonovsky A. The structure and properties of the sense of coherence scale. *Social Science & Medicine*. 1993; 36:725–733. [PubMed: 8480217]
- Bandura A, Caprara GV, Barbaranelli C, Regalia C, Scabini E. Impact of family efficacy beliefs on quality of family functioning and satisfaction in family life. *Applied Psychology: An International Review*. 2011; 60(3):421–448.

- Bartone PT. Hardiness protects against war-related stress in Army Reserve forces. *Consulting Psychology Journal*. 1999; 51:72–82.
- Becvar, DS., editor. *Handbook of Family Resilience*. New York: Springer; 2013.
- Benzies KM, Trute B, Worthington C, Reddon J, Keown LA, Moore M. Assessing psychological well-being in mothers of children with disability: Evaluation of the Parenting Morale Index and Family Impact of Childhood Disability Scale. *Journal of Pediatric Psychology*. 2011; 36(5):506–516. [PubMed: 20843877]
- Bollen, KA., Long, JS., editors. *Testing Structural Equation Models*. Newbury Park, CA: Sage; 1993. p. 320
- Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for post-traumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*. 2000; 68(5):748–766. [PubMed: 11068961]
- Campbell DT, Fiske DW. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*. 1959; 56(2):81–105. [PubMed: 13634291]
- Chandra A, Lara-Cinisomo S, Jaycox L, Tanielian T, Burns R, Ruder T, et al. Children on the Homefront: The Experience of Children from Military Families. *Pediatrics*. 2010;125. [PubMed: 20672932]
- Coughlin SS, Aliaga P, Barth S, Eber S, Maillard J, Mahan C, et al. The effectiveness of a monetary incentive on response rates in a survey of recent U.S. veterans. *Survey Practice*. 2011; 4(1)
- Cozza SJ, Chun RS, Polo JA. Military families and children during Operation Iraqi Freedom. *Psychiatric Quarterly*. 2005; 76(4):371–378. [PubMed: 16217632]
- Darnall BD, Ephraim P, Wegener ST, Dillingham T, Pezzin L, Rossbach P, et al. Depressive symptoms and mental health service utilization among persons with limb loss: results of a national survey. *Archives of Physical Medicine and Rehabilitation*. 2005; 86(4):650–658. [PubMed: 15827913]
- Dekel R, Goldblatt H. Is there intergenerational transmission of trauma? The case of combat veterans' children. *American Journal of Orthopsychiatry*. 2008; 78(3):281–289. [PubMed: 19123747]
- Eaton KM, Hoge CW, Messer SC, Whitt AA, Cabrera OA, McGurk D, et al. Prevalence of Mental Health Problems, Treatment Need, and Barriers to Care among Primary Care-Seeking Spouses of Military Service Members Involved in Iraq and Afghanistan Deployments. *Military Medicine*. 2008; 173(11):1051. [PubMed: 19055177]
- Eriksson M, Lindstrom B. Validity of Antonovsky's sense of coherence scale: a systematic review. *Journal of Epidemiology and Community Health*. 2005; 59:460–466. [PubMed: 15911640]
- Evans L, Cowlshaw S, Hopwood M. Family Functioning Predicts Outcomes for Veterans in Treatment for Chronic Posttraumatic Stress Disorder. *Journal of Family Psychology*. 2009; 23(4):531–539. [PubMed: 19685988]
- Faber AJ, Willerton E, Clymer SR, MacDermid SM, Weiss HM. Ambiguous Absence, Ambiguous Presence: A Qualitative Study of Military Reserve Families in Wartime. *Journal of Family Psychology*. 2008; 22(2):222–230. [PubMed: 18410209]
- Finley, EP. *Fields of Combat: Understanding PTSD among Veterans of Iraq and Afghanistan*. Ithaca, NY: Cornell University Press; 2011.
- Finley EP, Pugh MJV, Garcia HA, Wang CP, Noel PH. Self-efficacy for life tasks in OEF/OIF Veterans: assessing functional concerns in the clinic. *Military Behavioral Health*. 2013
- Finley EP, Pugh MJV, Noel PH, Brown PJ. Validating a Measure of Self-Efficacy for Life Tasks in Male OEF/OIF Veterans. *Psychology of Men & Masculinity*. 2012; 13(2):143–157.
- Fleming WM, Jury B, Burton DL. Characteristics of juvenile offenders admitting to sexual activity with nonhuman animals. *Society & Animals*. 2002; 10(1):31–45.
- Foran HM, Adler AB, McGurk D, Bliese PD. Soldiers' perceptions of resilience training and postdeployment adjustment: validation of a measure of resilience training content and training process. *Psychological Services*. 2012; 9(4):390–403. [PubMed: 22545823]
- Friedman MJ. Prevention of Psychiatric Problems among Military Personnel and Their Spouses. *New England Journal of Medicine*. 2010; 362(2):168–170. [PubMed: 20071707]
- Garmezy N. Vulnerability research and the issue of primary prevention. *American Journal of Orthopsychiatry*. 1971; 41:101–116. [PubMed: 5539483]

- Hawley DR, DeHaan L. Toward a definition of family resilience: Integration life-span and family perspectives. *Family Process*. 1996; 35(3):283–298. [PubMed: 9111710]
- Johnson, DC., Polusny, MA., Erbes, CR., King, D., King, L., Litz, BT., et al. Resilience and Response to Stress: Development and Initial Validation of the Response to Stressful Experience Scale (RSES). 2nd Annual Marine Corps Combat and Operational Stress Control (MCCOSC) Conference; San Diego, California. 2008.
- Kilbourne AM, Justice AC, Rollman BL, McGinnis KA, Rabeneck L, Weissman S, et al. Clinical importance of HIV and depressive symptoms among veterans with HIV infection. *Journal of General Internal Medicine*. 2002; 17(7):512–520. [PubMed: 12133141]
- King DW, King LA, Foy DW, Keane TM, Fairbank JA. Posttraumatic Stress Disorder in a National Sample of Female and Male Vietnam Veterans: Risk Factors, War-Zone Stressors, and Resilience-Recovery Variables. 1999; 108(1):164–170.
- King, DW., King, LA., Vogt, DS. Manual for the Deployment Risk and Resilience Inventory (DRRI): a collection of measures for studying deployment-related experiences of Military Veterans. Boston, MA: National Center for PTSD; 2003.
- King LA, King DW, Vogt DS, Knight J, Samper RE. Deployment Risk and Resilience Inventory: A Collection of Measures for Studying Deployment-Related Experiences of Military Personnel and Veterans. *Military Psychology*. 2006; 18(2):89–120.
- Kline, RB. Principles and Practice of Structural Equation Modeling. New York: Guilford Press; 1998.
- Lemay R. Resilience versus coping. *Child & Family Journal*. 2005; 8(2):11–15.
- Lester P, Saltzman W, Woodward K, Glover D, Leskin GA, Bursch B, et al. Evaluation of a family-centered prevention intervention for military children and families facing wartime deployments. *American Journal of Public Health*. 2012; 102:S48–S54. [PubMed: 22033756]
- Lester P, Stein JA, Saltzman W, Woodward K, Macdermid SW, Milburn N, et al. Psychological health of military children: longitudinal evaluation of a family-centered prevention program to enhance family resilience. *Military Medicine*. 2013; 178(8):838–845. [PubMed: 23929043]
- Lester PE. War and military children and families: translating prevention science into practice. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2012; 51(1):3–5. [PubMed: 22176933]
- Lincoln A, Swift E, Shorteno-Fraser M. Psychological Adjustment and Treatment of Children and Families with Parents Deployed in Military Combat. *Journal of Clinical Psychology*. In Session. 2008; 64:984–992. [PubMed: 18612969]
- Luthar SS, Cicchetti D, Becker B. The Construct of Resilience: A Critical Evaluation and Guidelines for Future Work. *Child Development*. 2000; 71(3):543–562. [PubMed: 10953923]
- MacDermid-Wadsworth S, Lester P, Marini C, et al. Approaching family-focused systems of care for military and veteran families. *Military Behavioral Health*. 2013; 1:1–10.
- Marshall AD, Panuzio J, Taft CT. Intimate Partner Violence among Military Veterans and Active Duty Servicemen. *Clinical Psychology Review*. 2005; 25:862–876. [PubMed: 16006025]
- Matsakis, A. Vietnam Wives: Women and Children Surviving Life with Veterans Suffering Post-Traumatic Stress Disorder. Woodbine House; 1988.
- McCubbin HI, Patterson JM. The family stress process: The Double ABCX model of adjustment and adaptation. *Marriage and Family Resilience*. 1996; 6(1–2):7–37.
- McCubbin, HI., Thompson, AI., McCubbin, MA. Resiliency in families: A conceptual model of family adjustment and adaptation in response to stress and crises. In: McCubbin, HI. Thompson, AI., Mccubbin, MA., editors. Family assessment: Resiliency, coping and adaptation - Inventories for research and practice. Madison: University of Wisconsin System; 1996. p. 1-64.
- McCubbin, HI., Thompson, AI., McCubbin, MA. Family measures: Stress, coping, and resiliency inventories for research and practice [CD-ROM]. Honolulu, HI: Kamehameha Schools; 2001.
- McCutcheon, S., Glynn, S. The evolving Veterans Affairs (VA) continuum of family services to meet the needs of Veterans and their families. 14th Annual VA Psychology Leadership Conference; San Antonio, Texas. 2011.
- Monson C, Taft CT, Fredman SJ. Military-related PTSD and intimate relationships: From description to theory-driven research and intervention development. *Clinical Psychology Review*. 2009; 29:707–714. [PubMed: 19781836]

- Mulrow CD, Williams JWJ, Gerety MB, Ramirez G, Montiel OM, Kerber C. Case-finding instruments for depression in primary care settings. *Annals of Internal Medicine*. 1995; 122:913–921. [PubMed: 7755226]
- Norris FH, Tracy M, Galea S. Looking for resilience: Understanding the longitudinal trajectories of responses to stress. *Social Science & Medicine*. 2009;1–9.
- Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of Post-Traumatic Stress Disorder and Symptoms in Adults: A Meta-Analysis. *Psychological Bulletin*. 2003; 129(1):52–73. [PubMed: 12555794]
- Pietrzak RH, Johnson DC, Goldstein MB, Malley JC, Southwick SM. Psychological resilience and post-deployment social support protect against traumatic stress and depressive symptoms in soldiers returning from Operations Enduring Freedom and Iraqi Freedom. *Depression & Anxiety*. 2009; 26(8):745–751. [PubMed: 19306303]
- Pincus SH, House R, Christensen J, Adler LE. The Emotional Cycle of Deployment: A Military Family Perspective. *Journal of the Army Medical Department*. 2004 Apr-Jun;:615–623.
- Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Renshaw KD, Rodrigues CS, Jones DH. Psychological symptoms and marital satisfaction in spouses of Operation Iraqi Freedom Veterans: relationships with spouses' perceptions of Veterans' experiences and symptoms. *Journal of Family Psychology*. 2008; 22(3):586–594. [PubMed: 18729672]
- Richardson GE. The metatheory of resilience and resiliency. *Journal of Clinical Psychology*. 2002; 58(3):307–321. [PubMed: 11836712]
- Saltzman W, Lester P, Beardslee W, Layne CM, Woodhead K, Nash WP. Mechanisms of risk and resilience in military families: theoretical and empirical basis of a family-focused resilience enhancement program. *Clinical Child and Family Psychology Review*. 2011; 14(3):213–230. [PubMed: 21655938]
- Sayer N, Frazier P, Orazem RJ, Murdoch M, Gravely A, Carlson KF, et al. Military to Civilian Questionnaire: a measure of postdeployment community reintegration difficulty among veterans using Department of Veterans Affairs medical care. *Journal of Traumatic Stress*. 2011; 24(6):660–670. [PubMed: 22162082]
- Sayers SL, Farrow VA, Ross J, Oslin DW. Family problems among recently returned Military Veterans referred for a mental health evaluation. *Journal of Clinical Psychiatry*. 2009; 70(2):163–170. [PubMed: 19210950]
- Schmid B, Allen RS, Haley PP, DeCoster J. Family matters: Dyadic agreement in end-of-life medical decision making. *The Gerontologist*. 2010; 50(2):226–237. [PubMed: 20038541]
- SteelFisher GK, Zaslavsky AM, Blendon RJ. Health-related impact of deployment extensions on spouses of active duty Army personnel. *Military Medicine*. 2008; 173(3):221–229. [PubMed: 18419022]
- Taft CT, Stern AS, King LA, King DW. Modeling physical health and functional health status: the role of combat exposure, posttraumatic stress disorder, and personal resource attributes. *Journal of Traumatic Stress*. 1999; 12(1):3–23. [PubMed: 10027139]
- Ungar, M., editor. *The Social Ecology of Resilience: A Handbook of Theory and Practice*. New York: Springer; 2012.
- Vaishnavi S, Connor K, Davidson JRT. An abbreviated version of the Connor-Davidson Resilience Scale (CD-RISC), the CD-RISC2: Psychometric properties and applications in psychopharmacological trials. *Psychiatry Research*. 2007; 152:293–297. [PubMed: 17459488]
- Vogt DS, Proctor SP, King DW, King LA, Vasterling JJ. Validation of Scales from the Deployment Risk and Resilience Inventory in a Sample of Operation Iraqi Freedom Veterans. *Assessment*. 2008; 15(4):391–403. [PubMed: 18436857]
- Walsh, F. *Strengthening Family Resilience*. 2. New York: Guilford Press; 2006.
- Weathers, FW., Litz, B., Huska, Keane, TM. *The Posttraumatic Stress Disorder Checklist - Civilian Version*. National Center for PTSD -- Behavioral Science Division; 1994.
- Willis, GB. *Cognitive Interviewing - A How To Guide*. Research Triangle Institute; 1999.

<i>Belief Systems</i>
<ul style="list-style-type: none">• Making meaning of adversity• Positive outlook• Transcendence and spirituality
<i>Organizational Patterns</i>
<ul style="list-style-type: none">• Flexibility• Connectedness• Social and economic resources
<i>Communication Processes</i>
<ul style="list-style-type: none">• Clarity of communication• Open emotional expression• Collaborative problem solving

Figure 1.
Walsh's (2006) Processes of Family Resilience

Figure 2.
Confirmatory Factor Analysis for Family Resilience Scale – Veterans (FRS-V) Items
Corresponding to the Communication Process Domain

Figure 3.
Confirmatory Factor Analysis for Family Resilience Scale – Veterans (FRS-V) Items
Corresponding to the Organizational Patterns Domain

Figure 4.
Confirmatory Factor Analysis for Family Resilience Scale – Veterans (FRS-V) Items
Corresponding to the Belief Systems Domain

Figure 5.
Final Confirmatory Factor Analysis Models for All Family Resilience Scale – Veterans
(FRS-V) Domains

Table 1
Field-Tested Family Resilience Scale Item Pool Listed by Corresponding Walsh (2006) Domain and Construct

Domain	Item	Item Content	Constructs
Belief Systems	1	We define problems or difficulties in a more positive way so that we do not become too discouraged.	Making meaning of adversity
	2	We understand that hard times are part of everyday life.	
	3	We feel able to manage whatever comes our way, even when times get hard.*	
	4	We take pride in overcoming adversity.	
	5	We believe the bad things that happen to us are balanced out by the good things that happen.	Positive outlook
	6	We do not feel we can survive if another problem hits us. ‡	
	7	We know we have the ability to solve major problems.	
	9	We rely on prayer or meditation to see our way through hard times.*	Transcendence and spirituality
	10	We respond to problems or difficulties by drawing on our religious or spiritual tradition.	
	11	We respond to problems or difficulties by reaching out to our religious or spiritual community.	
	12	We believe that how we respond to difficulty reflects our values and purpose in life.	
	13	We see crisis as an opportunity for personal growth.	
Organizational Patterns	14	We try new ways of dealing with problems.	Flexibility
	15	The chaos in our lives often feels overwhelming. ‡	
	16	We are able to depend on one another to get the important things done.	
	17	When bad things happen, we regroup and “bounce back”.*	
	18	We have family roles and routines that provide stability even in tough times.	
	19	While we don’t always agree, we stand by each other in times of need.	Connectedness
	20	Each member brings something special to our family.	
	21	When we face tough times, we face them together.	
	22	We find it difficult to put aside our differences. ‡	
	8	We take pride in each other’s accomplishments.	
	23	We respond to problems or difficulties by seeking support from friends.	Social resources
	24	We respond to problems or difficulties by seeking information and advice from others who have faced similar challenges.*	
	25	We respond to problems or difficulties by seeking advice from relatives (grandparents, etc.).	

Domain	Item	Item Content	Constructs
Communication Processes	26	We respond to problems or difficulties by seeking assistance from community agencies and programs designed to help those in our situation.	
	27	We are hesitant to seek counseling or other help for problems we encounter.	
	28	It is easier to discuss problems with people outside the family than with other family members. ‡	Clarity of communication
	29	We have clear expectations for one another.	
	30	We talk openly about the challenges we face.	
	31	We feel comfortable being honest with one another.	
	32	We share our joy, our worries, and our hopes. *	Open Emotional
	33	We laugh together.	
	34	We consider how our actions affect one another.	Expression
	35	We blame each other when things go wrong. ‡	
	36	Each family member feels valued.	
	37	Each family member has input in major family decisions. *	
	38	We come up with creative solutions to problems.	Collaborative problem-solving
	39	We learn from our setbacks how to prepare for future challenges.	
	40	When we have conflict, we work together to find a compromise.	

* Indicates item included in final scale.

‡ Indicates item was reverse-coded.

Table 2

Survey Sample Characteristics

<i>Demographics</i>		<i>Frequency Number (Percent)</i>	<i>Mean (SD)</i>	<i>Range</i>
Highest level of Education				
High-School Graduate or GED		7 (4.6)		
Vocational/Technical School		8 (5.2)		
Some College		57 (37.0)		
College Degree		27 (17.5)		
Some Graduate School		18 (11.7)		
Graduate Degree		37 (24.0)		
Marital Status				
Married/Living with partner		88 (57.5)		
Divorced/Separated		29 (19.0)		
Single		20 (13.1)		
In a relationship		16 (10.5)		
Number living in the household			2.4 (1.4)	0–8
Current Employment Status				
Employed, not looking for a different job		65 (42.5)		
Employed, but looking for a different job		30 (19.6)		
Not working, but looking for work		26 (17.0)		
Not working, and not looking for work		32 (20.9)		
Primary Service Component				
Active Duty		97 (64.2)		
Reserve		32 (21.2)		
National Guard		22 (14.6)		
Service Branch while deployed				
Army		84 (54.9)		
Navy		26 (17.0)		

	<i>Frequency Number (Percent)</i>	<i>Mean (SD)</i>	<i>Range</i>
Air Force	35 (22.9)		
Marines	7 (4.6)		
Coast Guard	1 (0.7)		
Total time deployed to combat theater			
Less than 6 months	31 (20.5)		
7–12 months	59 (39.1)		
13–24 months	43 (28.5)		
2–3 years	13 (8.6)		
3+ years	5 (3.3)		
Highest rank			
E1–E3	6 (3.9)		
E4–E6	101 (66.0)		
E7–E9	31 (20.3)		
O1–O3	6 (3.9)		
O4–O6	9 (5.9)		
<i>FRS- V Scale</i>		2.4 (.5)	
Organizational Patterns			
• Flexibility/Connectedness	151	2.8 (0.5)	
• Social resources		2.7 (0.6)	
Communication Processes			
• Open Emotional Expression/ Communication Clarity	151	3.0 (.6)	
• Collaborative problem-solving		2.8 (.5)	
Belief Systems			
• Transcendence and Spirituality	151		
• Making meaning of Adversity/ Positive Outlook		2.7 (.9)	
		3.0 (.5)	
<i>Other Survey Scales</i>			

	<i>Frequency Number (Percent)</i>	<i>Mean (SD)</i>	<i>Range</i>
Response to Stressful Experiences Scale (RSES)	143	62.2 (18.5)	
Connor-Davidson Resilience Scale - 2 item (CD-RISC2)	145	5.9 (2.2)	
Family Coping Coherence Index (FCCI)	151	14.6 (3.3)	
Family Distress Index (FDI)	151	13.3 (7.2)	
Post-Deployment Social Support (PDSS)	145	52.7 (11.7)	
Military to Civilian Questionnaire (M2C-Q)	151	2.4 (1.03)	
Self-Efficacy for Life Tasks (SELT)	151	3.6 (1.0)	

Table 3

Inter-Factor Correlations in the Family Resilience Scale – Veterans (FRS-V)

	Belief Systems		Communication Processes		Organizational Patterns	
	Make Meaning of Adversity/Positive Outlook	Transcendence & Spirituality	Open Emotional Expression/Communication Clarity	Collaborative Problem Solving	Flexibility/Connectedness	Social Resources
Make Meaning of Adversity/Positive Outlook	1.0	-	-	-	-	-
Transcendence/Spirituality	.33**	1.0	-	-	-	-
Open Emotional	.66***	.38***	1.0	-	-	-
Expression/Communication Clarity						
Collaborative Problem Solving	.69***	.36***	.95***	1.0	-	-
Flexibility/Connectedness	.82***	.39***	.84***	.85***	1.0	-
Social Resources	.39***	.39***	.38***	.49***	.44***	1.0

Table 4

Correlations between Family Resilience Scale for Veterans (FRS-V) and Related Scales

	Family Resilience Scale for Veterans -- Version			
	24-item ^a	17-item ^b	12-item ^c	6-item ^d
Response to Stressful Experiences Scale (RSES)	.69**	.68**	.68**	.67**
Connor-Davidson Resilience Scale - 2 item (CD-RISC2)	.50**	.50**	.49**	.49**
Family Coping Coherence Index (FCCI)	.64**	.65**	.64**	.64**
Family Distress Index (FDI)	-.46**	-.44**	-.43**	-.45**
Post-Deployment Social Support (PDSS)	.49**	.49**	.48**	.51**
Military to Civilian Questionnaire (M2C-Q)	-.57**	-.57**	-.57**	-.58**
Self-Efficacy for Life Tasks (SELT)	.60**	.60**	.58**	.62**
PTSD Checklist - Civilian Version (PCL-C)	-.48**	-.48**	-.49**	-.50**
Center for Epidemiologic Studies - Short Depression Scale (CES-D 10)	-.54**	-.54**	-.54**	-.55**

**
p<.001

^a = mean all FDS items with factor loadings .70 or greater. Each score weighted by factor loading then averaged.

^b = mean up to 3 FDS items with highest factor loadings per each construct. Each score weighted by factor loading then averaged.

^c = mean 2 FDS items with highest factor loadings per construct. Each score weighted by factor loading then averaged.

^d = mean 1 FDS item with highest factor loadings per construct. Each score weighted by factor loading then averaged. Note: Results were also examined using unweighted scores and no differences emerged.

Table 5

Mean Family Resilience Scale for Veterans (FRS-V) Scores by Current Employment Status and Primary Service Component

	<i>N</i>	FRS-V 6 <i>M</i> (<i>SD</i>)	<i>p</i> - value
Current Employment Status			
Employed	92	2.4 (0.5)	0.2
Not Employed	58	2.5 (0.4)	
Primary Service Component			
Active Duty	95	2.5 (0.4)	0.6
National Guard/Reserve	53	2.4 (0.4)	