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Development and Validation of a Measure of PTSD-Related Psychosocial Functional Impairment: The Inventory of Psychosocial Functioning

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This study describes the three-phase development and validation of the Inventory of Psychosocial Functioning (IPF), an 80-item, self-report measure of posttraumatic stress disorder (PTSD)-related psychosocial functional impairment. In Phase I, we conducted 12 focus groups with male and female veterans ($n = 53$) to identify and operationalize the domains of psychosocial impairment associated with PTSD. This information was used to develop the IPF. We subsequently evaluated the psychometric properties of the newly developed inventory in Phases II ($n = 276$) and III ($n = 368$) using two independent samples of veterans. We found that the overall IPF score demonstrated stronger correlations with measures of mental health-related impairment (all $r_s > .139$; all $p_s < .05$) and weaker correlations with measures of physical health-related impairment (all $r_s < .129$; all $p_s < .05$). Overall IPF scores were most strongly associated with PTSD and other disorders associated with the anxious-misery factor of the three-factor model of psychiatric comorbidity (all $r_s > .56$; all $p_s < .05$) and less strongly associated with disorders associated with the fear factor (all $r_s < .48$; all $p_s < .05$) and the externalizing factor ($r = .16$; $p < .05$). The IPF demonstrated strong test–retest reliability ($r = .77$; $p < .05$). Our results suggest that the IPF is a valid and reliable measure of PTSD-related psychosocial functional impairment.

Keywords: psychosocial functioning, impairment, PTSD, psychometric evaluation, measure development

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The study represents collaboration between investigators at the National Center for PTSD, Boston VA Healthcare System, VA Pacific Islands Healthcare System and Walter Reed Army Institute for Research. Key personnel include PI Brian P. Marx and coinvestigators Paula P. Schnurr, James Spira, Terence M. Keane, and Carole A. Lunney (consultant) from the National Center for PTSD, and Frank W. Weathers (consultant) from Auburn University. Charles Hoge and Paul D. Bliese, from the Walter Reed Army Institute of Research, collaborated on this project by including a brief version of the IPF in an ongoing study with active duty military personnel.

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Posttraumatic stress disorder (PTSD) is associated with a range of deleterious outcomes. In addition to the direct negative emotional and cognitive symptoms of PTSD, individuals with PTSD often experience clinically significant psychosocial functional impairment across a range of domains. For example, prior research has shown that individuals with PTSD are more likely to report poorer work performance (due to factors including reduced time-management ability) and higher levels of absenteeism than those without PTSD (e.g., Belleville, Marchand, St-Hilaire, Martin, & Silva, 2012; Matthews, 2005). Other research has demonstrated that veterans with PTSD report engaging in romantic relationships characterized by high levels of verbal and physical abuse and violence, and many with PTSD report that their partners and/or children are afraid of them (e.g., Kuhn, Blanchard, & Hickling, 2003; Sayers, Farrow, Ross, & Oslin, 2009). Given the cascading impact of PTSD on these and other areas of psychosocial functioning, as well as the additional distress they cause people with PTSD, it is imperative to have a sound measure of these effects.

Studies examining PTSD functional outcomes have used a wide variety of instruments to assess impairment. Commonly used measures of functioning include the World Health Organization Disability Assessment Scale 2.0 (WHODAS 2.0; Üstün, Kostanjsek, Chatterji, & Rehm, 2010), the Medical Outcomes Study Short Form 36- item (SF- 36; McHorney, Ware, & Raczek, 1993; Ware, 1999), the Sheehan Disability Scale (SDS; Leon, Shear, Portera, & Klerman, 1992; Sheehan, 1983), and the Global Assessment of Functioning (GAF; Endicott, Spitzer, Fleiss, & Cohen, 1976). Although each of these measure has its merits, they are also limited in their ability to measure PTSD-related psychosocial impairment due to conflation of psychiatric symptoms with functioning or disability (e.g., the GAF, the SF-36, and the WHODAS 2.0; Bacon, Collins, & Plake, 2002; Ro & Clark, 2009); a focus on impairment associated with physical, rather than psychiatric, symptoms (e.g., the SF- 36 and the WHODAS 2.0; Simon, Revicki, Grothaus, & Vonkorff, 1998); and/or a requirement on the part of the respondent to make an attribution about the source of his or her impairment, even though research suggests that such attributions are vulnerable to error and bias (e.g., Anderson, Krull, & Weiner, 1996; McNally, 2007; see Rodriguez, Holowka, & Marx, 2012, for a detailed overview of these measures and their limitations in evaluating PTSD-related psychosocial impairment).

The impact of PTSD on a range of psychosocial outcomes, in combination with the limitations of the existing measures, highlights the need for a PTSD-specific measure of psychosocial functional impairment. To our knowledge, there is currently only one measure that was explicitly designed to capture psychosocial impairment among individuals with PTSD. This instrument, the Posttraumatic Stress Related Functioning Inventory (PRFI; McCaslin et al., 2016), is a 27-item self-report measure which assesses three domains of psychosocial functioning (work and school; relationships; and lifestyle). The PRFI contributes to the literature by providing a PTSD-specific measure of psychosocial functional impairment. Notably, the PRFI was developed through an iterative process involving clinicians and subject matter experts. The developers did not solicit direct feedback or input from individuals with PTSD. Given the importance of consultation with the target population to ensure the content validity of an instrument (Vogt, King, & King, 2004), it is possible that this method of development did not capture all of the relevant domains of impairment for

individuals with PTSD. Further, the PRFI asks participants to make direct causal attributions between PTSD symptoms and impairment in functioning, a requirement which, as previously mentioned, is associated with error and response bias (e.g., Anderson et al., 1996; McNally, 2007). Therefore, the field still needs a measure of PTSD-related psychosocial impairment developed with input from the target population which assesses impairment without requiring the respondent to make attributions about the causes of impairment.

The primary purpose of this study was to develop a measure of PTSD-related psychosocial impairment that addresses the aforementioned limitations. The Inventory of Psychosocial Functioning (IPF) was designed to improve upon current measures by including content relevant to PTSD while not confounding symptoms and impairment, and without requiring attributions regarding the cause of the impairment. The instrument was developed and evaluated using a three-phase procedure. Phase I focused on the identification and operationalization of variables representing all relevant domains of PTSD-related psychosocial functional impairment; this information was used to develop the measure. The psychometric properties of the instrument were then evaluated in Phases II and III of the study. We chose to develop the IPF using three veteran samples given the high rates of both PTSD (Tanielian & Jaycox, 2008; Wisco et al., 2014) and PTSD-related impairment (Schnurr, Lunney, Bovin, & Marx, 2009) among veterans.

Phase I

Our aim in Phase I was the development of the IPF. Consistent with recommendations for measure development (Haynes, Nelson, & Blaine, 1999; Switzer, Wisniewski, Belle, Dew, & Schultz, 1999; Vogt et al., 2004), we focused on content validation in this phase. The content validation process involves four key parts: a review of the literature, the definition and refinement of key constructs, the deployment of focus groups, and the development and refinement of test items (Vogt et al., 2004). In the current study, each of these components of content validation was conducted in a simultaneous and iterative manner.

Method

Participants. Male and female veterans using health care services at a Department of Veterans Affairs (VA) hospital ($n = 53$) participated in the focus groups. The sample was recruited via fliers and from a large database of veterans who had previously consented to be contacted regarding research participation. Potential participants were screened by telephone for inclusion in the study. Veterans were deemed eligible for focus group participation if they were (a) 18 years or older, (b) able to read, and (c) had both a trauma history and scored a 45 or above on the PTSD checklist-civilian version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993) in response to a military-related trauma. Participants were mostly male ($n = 43$; 81%) and in their 50s ($M = 56$ years, $SD = 13.48$). The majority of participants were White ($n = 35$; 66%) and non-Hispanic ($n = 47$; 89%). Participants were consented and compensated for their participation. IRB approval for the focus groups was secured prior to data collection.

Procedure. The procedures for all three phases of the study are described in detail in a publically available final report (Marx,

2013) which was submitted at the conclusion of the project per the requirements of the funding agency. For the purpose of this manuscript and for ease of readership, we provide a brief summary of the all of the procedures here.

Development of the IPF began with a literature review which identified 12 relevant dimensions of PTSD-related psychosocial impairment. These dimensions included: parenting, intimate relationships, family, social life, work and career, finances, education, spirituality, community life, health, self-esteem, and goals and values. Given the importance of consultation with the target population (Vogt et al., 2004), we then conducted 12 focus group sessions during which participants were asked to engage in discussion based on a set of structured questions (for additional details about the structure of the focus groups, see Marx, 2013).

Focus group data were coded, analyzed, and compared with the dimensions of impairment initially identified in the literature. All sessions were audiotaped and reviewed and coded by study staff. Coders transcribed any sentences in which participants mentioned preidentified or novel PTSD-related impairment dimensions (see Marx, 2013 for additional information about the coding procedure). Next, the coders and the Principal Investigator (PI) met to review the coded transcriptions. Through an iterative process, the review of the coded focus group data by the PI and coders resulted in the identification by the team of seven unique psychosocial impairment dimensions (which later became the seven domain scales of the IPF): romantic relationship with a spouse or partner, family relationships, work, friendships and socializing, parenting, education, and self-care (see Marx, 2013 for additional details regarding the identification of the dimensions).

Following completion of the focus groups, a table of specifications (Aiken, 1994) was employed by the team for item construction across content areas. Next, a panel of doctoral-level clinicians with expertise in stress research was convened to review the item pool to confirm item quality (see Marx, 2013 for additional details about how the panel evaluated the items). The research team also consulted with a VA Council for Diversity, Equity and Inclusion, which was established to identify and address barriers related to promoting diversity. The council provided open-ended feedback and recommendations regarding the item phrasing to ensure that it was free of bias. Items for which format style and content were not consensually endorsed by both the expert panel and the diversity committee were eliminated (see Marx, 2013). Finally, to ensure that both the language and comprehension level of the items was appropriate for our intended population, we calculated the Flesch-Kincaid grade level (Flesch, 1949). According to the Flesch-Kincaid computation, the grade level for the final version of each of the seven IPF scales ranged from 5.0 to 7.6, which is within recommended levels for the general population (Flesch, 1949).

Results and Discussion

Results of this phase yielded the IPF, an 80-item self-report measure that was designed to capture PTSD-related psychosocial functional impairment over the past 30 days (see Appendix). The IPF includes seven domain scales: romantic relationship with a spouse or partner, family relationships, work, friendships and socializing, parenting, education, and self-care. Items are scored on a 7-point Likert scale ranging from 0 (*never*) to 6 (*always*).

Because the IPF assesses psychosocial functioning over the past 30 days, respondents are asked to skip domain scales that do not apply to them currently. For example, if they have not been in contact with family during the past 30 days, they are asked to not complete the scale on family relationships and proceed to the next section. Respondents may skip out of all scales except the one assessing self-care.

Each scale is scored independently by summing all scored items (correcting for reverse coded items), dividing the total by the maximum possible domain scale score for the items scored, and multiplying by 100. Each domain scale yields a score ranging from 0–100, with higher scores indicating greater impairment. As participants do not complete the domain scales that do not apply to them, to calculate the overall IPF score, the sum of all the completed IPF scale scores is divided by the number of scales completed by the participant.

Phase II

The primary objective of Phase II was to conduct preliminary psychometric analyses of the IPF scales. In particular, the construct validity of the IPF was evaluated by examining how the new measure correlated with other measures of impairment, and criterion-related validity was examined by assessing the association between the IPF and PTSD. We expected the IPF to demonstrate excellent convergent validity, as evidenced by strong associations with other measures of mental health-related impairment. We also expected to observe weaker correlations between the IPF and measures of physical health-related impairment, as evidence of discriminant validity. Because the IPF was developed to assess PTSD-specific impairment, we expected that the IPF would be associated with PTSD diagnostic status and symptom severity.

Method

Participants and procedure. After securing IRB approval for the Phase II protocol, the sample for Phase II was recruited via fliers and from a large database of veterans who had previously consented to be contacted regarding research participation through the VA hospital. Potential participants were screened by telephone for inclusion in the study. Veterans who were 18 years or older and able to read ($n = 285$) completed diagnostic interviews and a battery of self-report questionnaires for approximately two hours. All participants were consented prior to participation, and received compensation for their time. None of the veterans who participated in Phase II had participated in Phase I. From the initial dataset of 285 veterans, a validity screen indicated that 9 participants answered all 0s or all 6s on at least one of the IPF domain scales. Because the measure has reverse coded items, this pattern of responding is indicative of an invalid IPF profile. Participants who were excluded did not differ from those who were included on any demographic variables (age, gender, race, ethnicity, or education, PTSD symptom severity, or diagnostic status; all $ps > .05$). See Table 1 for characteristics of the final sample.

Measures. The following battery of assessment tools was administered in Phase II:

Inventory of Psychosocial Impairment (IPF). As described in Phase I and the final study report (Marx, 2013), the newly developed IPF is an 80-item self-report measure designed to mea-

sure PTSD-related psychosocial functional impairment. The IPF yields one overall score and seven scale scores, one for each impairment domain. Higher scores on both the overall IPF and each of its domain scales indicates greater impairment. The IPF was designed to allow for some missing data; domain scales with 80% or more completed data are included in calculations. The IPF was also designed so that respondents only complete scales that have been relevant for them in the past 30 days. We would expect very few participants to complete all seven domain scales; this was true in the current study ($n = 8$). On average, participants completed 3.97 ($SD = 1.47$) domain scales. Therefore, we report Cronbach's α s for the domain scales (rather than the overall scale). In this study, Cronbach's α s for the seven IPF domain scales ranged from .74 (self-care) to .90 (education; see Table 2). Completion of the entire measure generally takes 9–16 min, with each domain scale requiring approximately two minutes to complete.

Global Assessment of Functioning (GAF). The GAF, based on the Global Assessment Scale (Endicott et al., 1976), is a

Table 1

Descriptive Characteristics of Phase II and Phase III Samples

| Characteristic | Phase II sample ($n = 276$) | Phase III sample ($n = 368$) |
|----------------------------------|----------------------------------|-----------------------------------|
| Age, M (SD) | 51.8 (11.8) | 51.6 (11.2) |
| Gender (% female) | 12.0 | 14.2 |
| Race (%) | | |
| White | 69.1 | 58.5 |
| Black | 25.4 | 24.6 |
| Hispanic/Latino | 2.9 | 7.6 |
| Native American | 2.2 | 3.1 |
| Asian/Pacific Islander | .4 | 6.2 |
| Married (%) | 21.6 | 18.6 |
| Years of education, M (SD) | 13.6 (2.4) | 13.5 (2.6) |
| Combat exposure (%) | 31.1 | 31.9 |
| Military conflict (%) | | |
| Vietnam | 32.3 | 22.5 |
| Iraq/Afghanistan | 18.1 | 15.1 |
| First Gulf War | 14.5 | 11.7 |
| Korea | 2.4 | 3.4 |
| Bosnia | .8 | 1.4 |
| World War II | 2.0 | .6 |
| Other | 14.1 | 16.9 |
| Did not deploy | 16.5 | 31.1 |
| Trauma exposure (%) | | |
| Natural disaster | 43.3 | 46.0 |
| Fire or explosion | 45.7 | 36.5 |
| Transportation accident | 67.6 | 61.0 |
| Another serious accident | 41.0 | 37.7 |
| Exposure to toxic substance | 36.1 | 29.2 |
| Physical assault | 71.0 | 63.0 |
| Assault with a weapon | 63.0 | 50.3 |
| Sexual assault | 27.3 | 24.3 |
| Other unwanted sexual event | 31.2 | 36.5 |
| Combat/war-zone exposure | 47.2 | 36.3 |
| Captivity | 6.7 | 7.8 |
| Illness/injury | 44.2 | 44.6 |
| Human suffering | 25.2 | 19.3 |
| Violent death of other | 19.0 | 16.4 |
| Sudden death of close other | 62.9 | 54.0 |
| Serious harm you caused | 26.7 | 20.3 |
| Any other stressful event | 55.8 | 55.1 |

Note. Rates for combat exposure and combat/war-zone exposure differ because the former captures only participants who were deployed for the purposes of combat while in the military, whereas the latter also includes exposure to a war-zone as a civilian.

Table 2

Descriptive Characteristics of the IPF in Phase II

| IPF scale | No. of items | M | SD | Range | No. of cases ^b | α |
|-------------|-----------------|-------|-------|-------|---------------------------|----------|
| Overall IPF | 80 ^a | 38.25 | 15.79 | 0–95 | 276 | — |
| Romantic | 11 | 36.94 | 16.21 | 0–74 | 139 | .78 |
| Family | 7 | 44.47 | 22.34 | 0–100 | 215 | .83 |
| Parenting | 10 | 28.13 | 18.41 | 0–90 | 116 | .84 |
| Friendship | 8 | 36.44 | 20.14 | 0–98 | 224 | .81 |
| Work | 21 | 21.09 | 13.18 | 0–69 | 94 | .88 |
| Education | 15 | 31.36 | 17.71 | 3–71 | 38 | .90 |
| Self-Care | 8 | 41.08 | 18.08 | 0–94 | 270 | .74 |

Note. IPF = Inventory of Psychosocial Functioning. A dash indicates Cronbach's alpha not calculated for overall IPF (score) due to small number of participants who completed all seven domain scales ($n = 8$).

^a Number of items for overall IPF (score) includes up to 80 items but varies based on number of domain scales completed by each participant. ^b n s reflect all analyses except Cronbach's α which are calculated only on individuals without any missing items within the given domain scale.

clinician-rated scale of an individual's overall level of psychosocial functioning. It was originally included as Axis V in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association [APA], 1987)*. The GAF consists of three clinician-rated scales of an individual's current psychological, social, and occupational functioning, each of which is scored on a scale ranging from 1 to 100 (*DSM-IV-TR; APA, 2000*). Higher scores indicate better functioning. The GAF has demonstrated good interrater reliability and utility in measuring treatment outcome (Ramirez, Ekselius, & Ramklint, 2008).

Sheehan Disability Scale (SDS). The SDS (Sheehan, 1983) is a three-item self-report measure of disability in work/school, family life, and social life. Individual items are rated on a 10-point visual analog scale and can be summed to provide an overall measure of functional impairment, ranging from 0 (*unimpaired*) to 30 (*highly impaired; Sayer, Carlson, & Schnurr, 2011*). The SDS has demonstrated acceptable internal consistency and satisfactory construct and criterion-related validity (Leon et al., 1992). In this study, Cronbach's alpha for the SDS was .90.

World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0). The WHODAS 2.0 (Üstün et al., 2010) is a 36-item self-report measure of disability due to health-related problems. It yields six domain scores as well as an overall disability score. Items are scored on a scale from (*none*) to (*extreme/cannot do*). WHODAS 2.0 scores have demonstrated high test-retest reliability and convergent validity (Üstün et al., 2010). In this study, Cronbach's alpha for the overall score of global functional disability was .96 and for the domain scales ranged from .81 (getting along with people) to .91 (life activities).

Medical Outcomes Study Veterans RAND 36-Item Health Survey (VR-36). The VR-36 (Kazis et al., 2004) is a measure of patient-perceived mental and physical health that is scored to represent eight domains: physical functioning, role limitations due to physical problems (physical role), bodily pain, general health, vitality, social functioning, role limitations due to emotional problems (emotional role), and mental health. The VR-36 also allows for the use of the eight domain scores to compute summary physical and mental health scores. Higher scores on the VR-36

indicate better health. Number of response options and response anchors vary across items. The reliability and validity of the VR-36 are well documented (e.g., McHorney et al., 1993). In this study, Cronbach's α s for the eight VR-36 scales ranged from .84 (social functioning) to .94 (physical functioning).

Life Events Checklist (LEC). The LEC (Gray, Litz, Hsu, & Lombardo, 2004) is a 17-item self-report measure of exposure to potentially traumatic events (PTEs). Participants are asked about exposure to 16 specific PTEs, as well as "any other very stressful event or experience". For each PTE, they are asked whether it happened to them, they witnessed it, they learned about, they are not sure, and/or if it does not apply. The LEC has demonstrated adequate to good psychometric properties as a stand-alone measure, and has demonstrated strong associations with PTSD (Gray et al., 2004). In this study, we used the LEC to assess trauma exposure as well as to identify a PTE to focus on for the CAPS-IV.

Clinician Administered PTSD Scale for DSM-IV (CAPS-IV). The CAPS-IV (Blake et al., 1995) is the most widely used structured interview for PTSD. The CAPS-IV provides dichotomous and continuous scores for individual symptoms, symptom clusters, and for the full PTSD diagnosis. The CAPS-IV has been investigated extensively and has consistently demonstrated excellent psychometric properties (see Weathers, Keane, & Davidson, 2001 for a review). In this study, the CAPS-IV was administered by doctoral-level clinicians who were trained by one of the developers of the instrument and who participated in regular reliability meetings. Interrater reliability was calculated for 10% of the sample ($n = 28$) and was excellent ($\kappa = .78$).

In this study, we used the CAPS-IV to calculate both PTSD diagnostic status (using the F1/I2 rule; Weathers, Ruscio, & Keane, 1999) and PTSD symptom severity (the total score for the 17 core PTSD symptoms [frequency + intensity], ranging from 0 to 136). In addition, we summed the two items that measure social impairment (item 21) and occupational impairment (item 22) to create an index of interviewer-rated PTSD-related psychosocial impairment. Scores on this scale ranged from 0 (*no impairment*) to 8 (*extreme impairment*). In this study, Cronbach's alpha for the 17 core PTSD symptoms was .92 and for the impairment index was .72. According to the CAPS-IV, 32.4% of Phase II participants met diagnostic criteria for PTSD.

Demographics. Participants provided information on their age, sex, education, ethnicity, race, and marital status via self-

report. We also collected self-report data about participants' military history, including their exposure to combat.

Results

Associations with other measures of impairment. Associations between IPF overall scores and scores on other measures are reported in Table 3. Consistent with hypotheses, the IPF overall score was strongly correlated with other measures of mental health impairment, and demonstrated weaker associations with measures of physical health impairment. IPF domain scores demonstrated the same high level of construct validity. The four IPF interpersonal domain scales (romantic, family, friendship, and parenting) were all significantly correlated with the WHODAS 2.0 getting along scale, the VR-36 social functioning and role emotional scales, the SDS social life and family life scales, and the CAPS-IV social impairment item (all r s > .129; all p s < .02). Similarly, the two IPF occupational scales (work and education) were significantly correlated with the VR-36 role emotional scale, the SDS work/school scale, the WHODAS 2.0 life activities scale, and the CAPS-IV occupational impairment item (all r s > .141; all p s < .01). Finally, the IPF self-care scale was significantly correlated with the WHODAS 2.0 self-care and life activities scales, and the VR-36 role emotional scale (all r s > .153; all p s < .01).

Associations with PTSD. In line with expectations, participants with PTSD reported significantly higher levels of impairment on the IPF overall score and on six of the seven IPF domain scales than those without PTSD (see Table 4). The seventh domain, romantic relationships, trended toward significance in the expected direction ($t = -1.92$; $p = .057$). The IPF overall score was significantly positively associated with PTSD symptom severity ($r = .46$; $p < .01$), as were all seven of the IPF domain scale scores (all r s > .29; all p s < .05).

Discussion

The results of Phase II suggest that the IPF is a sound measure of psychosocial functional impairment, demonstrating significant correlations with established measures of impairment and disability. Furthermore, initial results suggest that the inventory differentiates impairment experienced by those with and without PTSD.

Table 3
Overall IPF Scores Convergent and Discriminant Validity Correlations in Phase II

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------------|-------|-------|-------|-------|-------|-----|---|
| 1. Overall IPF score | — | | | | | | |
| 2. CAPS-IV Impairment Index | .55* | — | | | | | |
| 3. GAF | -.39* | -.48* | — | | | | |
| 4. SDS total score | .58* | .51* | -.49* | — | | | |
| 5. WHODAS 2.0 total score | .72* | .60* | -.41* | .73* | — | | |
| 6. VR-36 MCS | -.68* | -.59* | .50* | -.73* | -.70* | — | |
| 7. VR-36 PCS | -.16* | -.09 | .19* | -.40 | -.45* | .04 | — |

Note. IPF = Inventory of Psychosocial Functioning; CAPS-IV = Clinician Administered PTSD Scale for DSM-IV; GAF = Global Assessment of Functioning; SDS = Sheehan Disability Scale; WHODAS 2.0 = World Health Organization Disability Assessment Schedule, Version 2.0; VR-36 MCS = Medical Outcomes Study Veterans RAND 36-item Health Survey, Mental Component Scale; VR-36 PCS = Medical Outcomes Study Veterans RAND 36-item Health Survey, Physical Component Scale.

* $p < .05$.

Table 4
Comparisons of IPF Scores Between Veterans in Phase II With and Without PTSD Based on the CAPS-IV

| IPF Scale | PTSD | | | No PTSD | | | <i>t</i> | <i>df</i> |
|-------------|----------|----------|-----------|----------|----------|-----------|----------|-----------|
| | <i>n</i> | <i>M</i> | <i>SD</i> | <i>n</i> | <i>M</i> | <i>SD</i> | | |
| Overall IPF | 72 | 48.23 | 16.45 | 150 | 35.69 | 13.91 | -5.92* | 220 |
| Romantic | 32 | 42.83 | 17.49 | 78 | 36.52 | 14.82 | -1.92 | 108 |
| Family | 59 | 56.26 | 22.56 | 113 | 39.74 | 20.32 | -4.87* | 170 |
| Work | 24 | 28.32 | 14.63 | 51 | 18.04 | 11.00 | -3.39* | 73 |
| Friendships | 54 | 46.31 | 20.72 | 128 | 35.01 | 18.39 | -3.65* | 180 |
| Parenting | 31 | 35.20 | 20.51 | 65 | 25.28 | 17.16 | -2.49* | 94 |
| Education | 9 | 43.08 | 21.85 | 19 | 28.00 | 15.83 | -2.08* | 26 |
| Self-Care | 70 | 53.29 | 17.87 | 149 | 38.31 | 16.29 | -6.15* | 217 |

Note. CAPS-IV = Clinician Administered PTSD Scale for DSM-IV; IPF = Inventory of Psychosocial Functioning; PTSD = Posttraumatic Stress Disorder.

* $p < .05$.

Phase III

Phase III of the study involved data collection from a larger, more diverse sample. The aims of this phase were fourfold: 1) to cross-validate the IPF, 2) to examine the test-retest reliability of the measure, 3) to further examine the criterion-related validity of the IPF, and 4) to develop cutoff scores for the IPF to ease interpretation. We expected that, similar to the results observed in Phase II, the IPF would demonstrate high levels of construct validity. In addition, we expected that the IPF would demonstrate good test-retest reliability across both the overall score and the domain scale scores. Finally, we expected that Phase III would provide additional evidence of the strong criterion-related validity of the IPF. In particular, we expected that associations between IPF scores and scores on measures of psychopathology would be consistent with Miller, Fogler, Wolf, Kaloupek, and Keane's (2008) three-factor model of psychiatric comorbidity, which includes two internalizing factors (anxious-misery and fear), and one externalizing factor. Miller et al. found that in this model, PTSD loaded on the anxious-misery factor. Further, the authors found that the anxious-misery factor was significantly correlated with the fear factor, but not the externalizing factor. Therefore, because the IPF was designed to capture impairment associated with PTSD, we expected that IPF scores would show the strongest correlations with measures of PTSD and other diagnoses on the anxious-misery factor (e.g., depression, generalized anxiety disorder [GAD]). We expected that IPF scores would show strong positive associations with scores on measures assessing diagnoses on the fear factor (e.g., panic disorder) and with other internalizing disorders (e.g., bulimia; Forbush et al., 2010; somatization; Ask, Waaktaar, Seglem, & Torgersen, 2016). We expected weaker correlations with scores assessing conditions on the externalizing factor (e.g., alcohol abuse).

Method

Participants and procedure. After securing IRB approval for the Phase III protocol, the Phase III sample was recruited via fliers and from a large database of veterans who had previously consented to be contacted regarding research participation through the VA hospitals. Consenting veterans at two VA hospitals ($n = 394$)

completed a battery of self-report questionnaires for approximately two hours during this phase of the project. None of the veterans who participated in this phase of the study had participated in either Phase I or Phase II. To examine test-retest reliability, a subset of participants ($n = 101$) was invited to return to the testing site four weeks after their initial visit to complete the entire survey packet a second time. All participants were consented prior to participation, and received compensation for their time. Although 394 veterans participated in the study, 26 participants were excluded due to having an invalid IPF profile (i.e., responses of all 0s or all 6s on at least one of the IPF domain scales). Participants who were excluded did not differ from those who were included on any demographic variables (age, gender, race, ethnicity, or education) or on PTSD symptom severity (all $ps > .10$). See Table 1 for characteristics of the final sample.

Measures. In addition to the IPF, the LEC, and the demographic questionnaire, three additional measures that were used in Phase II were also administered in Phase III (i.e., the WHODAS 2.0, the VR-36, and the SDS). Consistent with the reliabilities reported in Phase II, Cronbach's α s were strong for all three measures. For the WHODAS 2.0, Cronbach's alpha for the total score was .97, and the domain scores ranged from .84 (self-care) to .95 (life activities). Similarly, Cronbach's α s for the eight VR-36 scales ranged from .84 (social functioning) to .94 (physical functioning). Cronbach's alpha for the SDS was .92. Five additional measures were administered in Phase III and are described here.

Quality of Life Inventory (QOLI). The QOLI (Frisch, Cornell, Villanueva, & Retzlaff, 1992) is a 32-item measure of general life satisfaction that was designed for treatment planning and outcome assessment purposes. The 16 domains are rated for both importance on a 3-point scale ranging from 0 (*not at all important*) to 2 (*extremely important*), and satisfaction on a 7-point scale ranging from -3 (*very dissatisfied*) to +3 (*very satisfied*). These domains are then combined to create one total index of quality of life (QOL). The QOLI has demonstrated good convergent validity, test-retest reliability, and internal consistency (Holowka & Marx, 2012). Cronbach's alpha for the QOLI was .91. In this phase of the study, we used the QOLI, along with the WHODAS 2.0 and the VR-36, to examine the construct validity of the IPF.

Patient Health Questionnaire (PHQ). The PHQ (Spitzer, Kroenke, & Williams, 1999) is a self-report version of the Primary Care Evaluation of Mental Disorders (PRIME-MD). It is a 58-item questionnaire designed to assess eight somatic diagnoses. The PHQ can be used to determine probable diagnostic status and symptom severity scores for each of these diagnoses. Number of response options, response anchors, and time frame vary within and across disorders. PHQ scores have demonstrated good psychometric properties (Spitzer et al., 1999). In this study, we examined symptom severity scores for six of the diagnoses assessed by the PHQ: panic, GAD, depression, somatoform disorder, bulimia, and alcohol abuse. We used scores on the panic, GAD, depression, bulimia, and somatoform disorder scales to examine convergent validity and used scores on the alcohol abuse scale to examine discriminant validity. Cronbach's alpha for these six scale scores was .83, .92, .82, .85, .69, and .86, respectively.

PTSD Checklist-DSM-5 (PCL-5). The PCL-5 (Weathers et al., 2013) is a 20-item self-report measure designed to assess PTSD symptoms according to the fifth edition of the *DSM-5* (APA, 2013). For each symptom, respondents provide a severity rating on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The PCL-5 has demonstrated excellent psychometric properties (Bovin et al., 2016). Cronbach's alpha for the PCL-5 was .97. We used the PCL-5 to examine the criterion-related validity of the IPF.

PTSD Checklist-Civilian (PCL-C). The PCL-C (Weathers et al., 1993) is a 17-item self-report measure that assesses *DSM-IV* PTSD symptoms. For each symptom, respondents provide a severity rating on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). PCL-C scores have demonstrated good psychometric properties (e.g., Gore et al., 2013). Cronbach's alpha for PCL-C scores was .96. In this study, we used the PCL-C to examine criterion-related validity.

Results

Similar to Phase II, the IPF demonstrated high levels of reliability on all seven domain scales; Cronbach's α s ranged from .79 (self-care) to .92 (work). On average, participants completed 3.65 ($SD = 1.50$) domain scales. See Table 5 for descriptive data for each IPF domain scale.

Associations with other measures of impairment and quality of life. To examine whether the high level of construct validity observed in Phase II was also present in Phase III, we conducted Pearson's correlations of the overall IPF scores, and domain scale scores, with other measures of both impairment and QOL. Consistent with both hypotheses and Phase II findings, the overall IPF score was strongly correlated with other measures of mental health impairment and QOL (all r s > 1.61; all p s < .001), and demonstrated weaker associations with measures of physical health impairment (i.e., the PCS; $r = -.28$; $p < .001$). IPF scale scores also demonstrated the same high level of construct validity as they did in Phase II. The four IPF interpersonal scales (romantic, family, friendship, and parenting) were all significantly correlated with the WHODAS 2.0 getting along scale, the VR-36 social functioning and role emotional scales, and the SDS social life and family life scales (all r s > 1.39; all p s < .001). Similarly, the two IPF occupational scales (work and education) were significantly correlated with the VR-36 role emotional scale, the WHODAS 2.0 life

Table 5
Descriptive Characteristics of IPF Scores in Phase III

| IPF scale | No. of items | <i>M</i> | <i>SD</i> | Range | No. of cases ^b | Alpha |
|-------------|-----------------|----------|-----------|-------|---------------------------|-------|
| Overall IPF | 80 ^a | 38.44 | 17.01 | 0–100 | 360 | — |
| Romantic | 11 | 38.81 | 20.09 | 0–85 | 145 | .86 |
| Family | 7 | 44.85 | 21.83 | 0–100 | 251 | .81 |
| Parenting | 10 | 30.86 | 18.86 | 0–72 | 128 | .85 |
| Friendship | 8 | 37.85 | 20.75 | 0–96 | 293 | .84 |
| Work | 21 | 22.46 | 15.10 | 0–75 | 122 | .92 |
| Education | 15 | 30.18 | 15.53 | 0–86 | 63 | .86 |
| Self-Care | 8 | 40.23 | 19.69 | 0–96 | 340 | .79 |

Note. IPF = Inventory of Psychosocial Functioning. A dash indicates that Cronbach's alpha not calculated for overall IPF (score) due to small number of participants who completed all seven scales ($n = 6$).

^a Number of items for overall IPF (score) includes up to 80 items but varies based on number of domain scales completed by each participant. ^b *n*s reflect all analyses except Cronbach's α which are calculated only on individuals without any missing items within the given domain scale.

activities scale, and the SDS work/school scale (all r s > 1.44; all p s < .001). Finally, the IPF self-care scale was significantly correlated with the WHODAS 2.0 self-care and life activities scales, and the VR-36 role emotional scale (all r s > 1.47; all p s < .001).

Test-retest reliability. Test-retest analyses were conducted on a subsample of Phase III sample ($n = 101$). Participants who returned to the clinic did not differ from those who did not return on any demographic variables (age, gender, race, ethnicity, or education), overall IPF scores, or scores on six of the seven IPF scale scores (all p s > .05). However, participants who returned to the clinic for a second visit did tend to have less impairment on the IPF self-care scale ($t = 2.35$; $p < .05$), and somewhat lower PTSD symptom severity scores (for both the PCL-5 and the PCL-C, t s > 1.96; p s < .05) than participants who did not return. Participants who returned to the clinic did so an average of 31.13 days after their first visit ($SD = 4.19$ days; range: 22–48 days). Of the 101 participants who returned, six participants' data was dropped from analyses due to invalid reporting patterns (i.e., responding with all 0s or all 6s on at least one of the IPF domain scales). For the remaining 95 participants, the test-retest correlation for the IPF overall score was $r = .77$ ($p < .001$). IPF domain scale score test-retest correlations were all significant (all p s < .05) and ranged from .55 (romantic) to .82 (work).

Associations with relevant diagnoses. In an effort to explore the criterion-related validity of the IPF, we examined the association between the IPF overall score and several indices of psychopathology. These included PTSD symptom severity according to both *DSM-IV* and *DSM-5*, as well as six diagnostic dimensions of the PHQ (somatization, depression, GAD, panic, bulimia, and alcohol abuse). As predicted, the overall IPF score demonstrated the strongest correlations with scores of measures designed to assess PTSD (for PCL-C and PCL-5, r s > .66, p s < .001) and with scores of diagnoses associated with the anxious-misery factor of psychopathology (depression: $r = .69$, $p < .001$; GAD: $r = .56$, $p < .001$). Also in line with hypotheses, overall IPF scores demonstrated strong positive correlations with scores of diagnoses which load on the fear factor and other internalizing disorders (i.e., panic: $r = .42$, $p < .001$; bulimia: $r = .33$, $p < .001$; somatization:

$r = .47, p < .001$), and demonstrated weaker correlations with scores of alcohol abuse, which loads on the externalizing factor ($r = .16; p < .05$). IPF domain scale scores demonstrated a similar pattern of results (see Table 6).

Determining cut-off scores for the IPF. We followed a rationally derived approach to select cutoff scores to indicate severity of psychosocial functional impairment on the full-scale version of the IPF. Based on examination of frequency distributions of the IPF overall score, we tested the validity of the following range: IPF overall scores in the 0–10 range, no impairment; 11–30, mild impairment; 31–50, moderate impairment; 51–80, severe impairment; 81–100, extreme impairment. We then calculated the mean PTSD severity scores within each category of impairment. Results indicated that PTSD symptom severity scores corresponded to impairment category (see Table 7).

Discussion

Phase III served to further validate the IPF by examining associations with theoretically similar measures and relevant diagnoses, assessing test–retest reliability, and determining cut-off scores for use in research and clinical settings. Results of these analyses indicated that the IPF is a sound measure of psychosocial impairment in PTSD, both as an overall measure of impairment as well as in terms of its individual domain scales.

General Discussion

Our findings indicate that the IPF is a reliable and valid measure of PTSD-related psychosocial functional impairment. In both Phase II and Phase III, overall IPF scores demonstrated high levels of construct validity; they were highly correlated with other measures of mental health-related impairment and more weakly correlated with measures of physical health-related impairment. Similarly, the IPF domain scores demonstrated strong associations with scale scores from other measures designed to capture similar constructs. Across phases, the overall IPF scores demonstrated criterion-related validity in line with Miller et al. (2008)'s three-factor model of comorbidity. Further, IPF overall scores demon-

strated strong stability across time, and IPF domain scores exhibited moderate to strong stability over time.

The IPF domain scales were specifically created to stand alone, allowing for a nuanced assessment of an individual's psychosocial impairment. In designing the scoring for the IPF, the decision was made to leave all the scores unweighted, such that the overall IPF score is an unweighted average of all calculated domain scores, scaled to a range of 0–100. One implication of this decision is that an individual who does not endorse a specific domain (e.g., due to absence of spouse or partner) will not be penalized for it, even if the reason for the lack of endorsement is tied to problems in psychosocial functioning. This scoring procedure was chosen to ensure that the measure would assess impairment only in the domains that are currently relevant for respondents. Because there are many reasons why an individual might not be engaged in one or more domain(s), many of which may not be related to psychosocial functioning or may represent improved psychosocial functioning (e.g., termination of an abusive relationship), this approach ensures that the individual is not penalized for not completing a domain, which avoids inflated impairment scores. Further, the design allows for a more flexible examination of psychosocial functioning, specifically in the domains in which individuals are engaged. In this way, utilization of the IPF domain scale scores provides a measure of how an individual is functioning in the areas in which they are engaged at the time of assessment. This approach is not without precedent; the complex scoring approach for the WHODAS 2.0 instructs participants who are not working or going to school to skip the 4 items in the WHODAS 2.0 work/school section. Respondents are not penalized (i.e., given a lower impairment score) for skipping these items (Üstün et al., 2010).

Deciding how to assess and score potential impairment in life domains within which the respondent has had little or no recent engagement is a challenge for every measure of impairment. Every choice made by instrument developers will be accompanied by corresponding tradeoffs. On one hand, the method of scoring selected for the IPF may reduce the likelihood of overpathologizing individuals who have chosen for sound, healthy reasons or have legitimate preferences to not participate in a particular domain (e.g., those who have chosen to not have children, not be in

Table 6
Correlations Between IPF Domain Scale Scores and Diagnostic Symptom Severity Scores in Phase III

| Diagnosis | IPF domain scale | | | | | | |
|-------------------|------------------|--------|------|-------------|-----------|-----------|-----------|
| | Romantic | Family | Work | Friendships | Parenting | Education | Self-Care |
| PTSD (PCL–C) | .50* | .58* | .56* | .60* | .49* | .48* | .64* |
| PTSD (PCL–5) | .49* | .57* | .57* | .59* | .49* | .48* | .62* |
| PHQ Somatization | .40* | .33* | .55* | .39* | .37* | .44* | .50* |
| PHQ Depression | .62* | .52* | .61* | .58* | .57* | .63* | .69* |
| PHQ Panic | .27* | .37* | .24* | .37* | .24* | .46* | .36* |
| PHQ GAD | .33* | .45* | .47* | .49* | .39* | .43* | .53* |
| PHQ Bulimia | .21* | .27* | .36* | .29* | .22* | .28* | .26* |
| PHQ Alcohol Abuse | .10 | .10 | .14 | .12 | .05 | .43* | .09 |

Note. GAD = Generalized Anxiety Disorder; IPF = Inventory of Psychosocial Functioning; PCL–C = PTSD Checklist—Civilian for *DSM-IV*; PCL–5 = PTSD Checklist for *DSM-5*; PHQ = Patient Health Questionnaire; PTSD = Posttraumatic Stress Disorder.

* $p < .05$.

Table 7
Suggested Cutoff Scores for the Overall IPF Score and Correspondence With PTSD Symptom Severity Scores

| Overall IPF score | Level of impairment | % of Phase III participants | PCL-C score, <i>M</i> (<i>SD</i>) | PCL-5 score, <i>M</i> (<i>SD</i>) |
|-------------------|---------------------|-----------------------------|-------------------------------------|-------------------------------------|
| 0–10 | No impairment | 4.7% | 21.33 (3.92) | 6.14 (8.31) |
| 11–30 | Mild impairment | 28.1% | 35.51 (15.09) | 21.05 (16.67) |
| 31–50 | Moderate impairment | 44.1% | 50.36 (14.54) | 38.80 (18.79) |
| 51–80 | Severe impairment | 22.5% | 65.87 (11.51) | 54.37 (14.80) |
| 81–100 | Extreme impairment | .6% | 55.00 (36.77) | 80 ^a |

Note. IPF = Inventory of Psychosocial Functioning; PCL-C = PTSD Checklist for *DSM-IV*; PCL-5 = PTSD Checklist for *DSM-5*; PTSD = Posttraumatic Stress Disorder.

^a Only one participant was in this category; therefore, no standard deviation was calculated.

a current romantic relationship, or who are taking time off from work or school). On the other hand, the chosen scoring method may decrease the likelihood of accurately identifying individuals who are not engaged in certain domains because of their PTSD symptoms and, as a result, may appear to be higher functioning than they actually are. This potential for underestimation of overall impairment may be particularly problematic for individuals who are not engaging in certain domains due to PTSD-related avoidance behaviors. For example, an individual who has avoided his or her friends in the past 30 days because they remind him/her of the trauma may not complete the IPF section on Friendships and Socializing for that very reason. In this instance, the IPF would underestimate overall psychosocial impairment, in that the impairment associated with having no contact with friends over that period of time would not be captured. This possibility does not appear to have systematically affected our results, as evidenced by the high levels of convergent validity achieved with other measures of impairment. Nevertheless, it is a possibility to be mindful of when interpreting the IPF overall score. It is important to note that taking the opposite scoring approach in which lack of involvement in a given life domain is automatically assumed to indicate psychopathology has similar strengths and limitations.

If an individual does produce a low IPF overall score (indicating low impairment), the design of the IPF allows the clinician/researcher to examine the individual's psychosocial functioning in a manner that might be more reflective of his or her actual impairment. The IPF has been specifically designed such that by focusing on the domain scale scores only (which the current study demonstrates have excellent psychometric properties), rather than the IPF overall score, the clinician/researcher has the ability to capture a more nuanced understanding of that individual's psychosocial functioning. Similarly, the clinician/researcher can easily determine which domains, as well as how many domains, were completed versus skipped. These features of the IPF avoid overpathologizing individuals, while still producing a pure measure of impairment. However, future research is needed to determine whether modifications of this design (e.g., allowing respondents to report how they have functioned in each domain throughout the course of their lives; requiring respondents to explain why they haven't been active in any given domain) might result in measures with the same, if not stronger, psychometric properties. If so, other versions of the IPF might be employed by clinicians and researchers interested in these questions.

Improved measurement of PTSD-related psychosocial functioning has the potential to directly impact clinical interventions. There has been a recent shift in clinical practice from an emphasis on symptom reduction to a focus on improved QOL and functioning (e.g., Walser & Westrup, 2007). Understanding in what areas, and to what extent, an individual's functioning is compromised by his or her symptoms could be used as a clinical target, a measure of improvement, and/or a motivation for change. Motivated engagement in change may follow when individuals become aware of the ways in which their symptoms, and more specifically their methods of coping with those symptoms, interfere with their life functioning. An instrument like the IPF, which allows clinicians to conceptualize both relevant and impaired areas of psychosocial functioning in their patients, is ideal for this purpose.

The study should be interpreted in light of several considerations. First, the IPF was developed and tested among veterans, who tended to be male, White, and in their 50's. Therefore, it is unclear whether our results generalize to other populations. Additional research is needed to determine the specific psychometric properties of the IPF with females, nonveterans, ethnic or racial minority groups, and other age groups. Furthermore, differences between our sample and the VA user population may limit generalizability to other veteran samples. Relatedly, because this was a veteran sample, it is unclear whether the findings generalize to other trauma-exposed samples. It is worth noting that both samples examined in this manuscript were highly traumatized (see Table 1), which increases our confidence in the generalizability of the instrument. Regardless, cross-validation of our findings in a range of samples would be beneficial. Second, the IPF is a self-report measure, and, as such, may be a better reflection of the participant's perception of his or her psychosocial functioning rather than a more objective expression of impairment. However, because the IPF was designed such that individuals do not have to make attributions about the source of their impairment, individuals completing the IPF may be less vulnerable to error and bias than when using other self-report measures. Empirical research is needed to examine this possibility.

Third, the full IPF may be prohibitively long in certain settings. It is worth noting that most participants in the current study only completed 3–4 domains, which significantly reduces the time required to complete the instrument. Despite this, the full IPF may still be too lengthy in certain situations. In these cases, a shorter measure may be more appropriate. One such measure is the Brief

IPF (B-IPF; Erb et al., 2015). The B-IPF is a seven-item measure designed to assess PTSD-related psychosocial functional impairment. Initial validation work suggests that the B-IPF is a reliable and valid tool for assessing impairment (Erb et al., 2015). Fourth, although our findings were in line with predictions and with the literature (see Miller et al., 2008), it is still interesting to note that, despite high levels of comorbidity between PTSD and alcohol abuse, the IPF overall score was only weakly correlated with alcohol abuse in the current study ($r = .16$). The weak association here, and indeed, in Miller et al.'s investigation, may be a product of the samples (i.e., both studies examined veterans), or an indication of the complex association between PTSD and the substance abuse disorders. Future research is needed to identify the mechanism driving the weak association between the IPF and alcohol abuse.

In summary, our results support the strong psychometric properties of a newly developed measure of PTSD-related psychosocial functional impairment: the IPF. Our results suggest that the IPF represents an improvement from other measures of psychosocial functioning which assess physical symptoms rather than psychosocial impairment, confound psychiatric symptoms with psychosocial impairment, or require patients to make a functional attribution about their impairment. These improvements, in addition to the fact that the IPF was specifically designed to assess psychosocial functioning associated with PTSD, make the IPF a useful tool for evaluating PTSD-related psychosocial functional impairment among veterans.

References

- Aiken, A. (1994). Set constraints: Results, applications and future directions. In *Principles and Practice of Constraint Programming* (pp. 326–335). Berlin, Germany: Springer. http://dx.doi.org/10.1007/3-540-58601-6_110
- American Psychiatric Association (APA). (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- American Psychiatric Association (APA). (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Anderson, C. A., Krull, D. S., & Weiner, B. (1996). Explanations: Processes and consequences. In E. T. Higgins, A. W. Kruglanski, E. T. Higgins, & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 271–296). New York, NY: Guilford Press.
- Ask, H., Waaktaar, T., Seglem, K. B., & Torgersen, S. (2016). Common etiological sources of anxiety, depression, and somatic complaints in adolescents: A multiple rater twin study. *Journal of Abnormal Child Psychology*, *44*, 101–114. <http://dx.doi.org/10.1007/s10802-015-9977-y>
- Bacon, S. F., Collins, M. J., & Plake, E. V. (2002). Does the Global Assessment of Functioning assess functioning? *Journal of Mental Health Counseling*, *24*, 202–213.
- Belleville, G., Marchand, A., St-Hilaire, M. H., Martin, M., & Silva, C. (2012). PTSD and depression following armed robbery: Patterns of appearance and impact on absenteeism and use of health care services. *Journal of Traumatic Stress*, *25*, 465–468. <http://dx.doi.org/10.1002/jts.21726>
- Blake, D. D., Weathers, F. W., Nagy, L. M., Kaloupek, D. G., Gusman, F. D., Charney, D. S., & Keane, T. M. (1995). The development of a clinician-administered PTSD scale. *Journal of Traumatic Stress*, *8*, 75–90. <http://dx.doi.org/10.1002/jts.2490080106>
- Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (PCL-5) in veterans. *Psychological Assessment*, *28*, 1379–1391. <http://dx.doi.org/10.1037/pas0000254>
- Endicott, J., Spitzer, R. L., Fleiss, J. L., & Cohen, J. (1976). The Global Assessment Scale: A procedure for measuring overall severity of psychiatric disturbance. *Archives of General Psychiatry*, *33*, 766771. <http://dx.doi.org/10.1001/archpsyc.1976.01770060086012>
- Erb, S. E., Kearns, J., Bovin, M. J., Black, S., Annunziata, A., Marx, B. P., & Keane, T. M. (2015, November). *Psychometric properties of the Brief Inventory of Psychosocial Functioning*. Poster presented at the 31st annual meeting of the International Society for Traumatic Stress Studies, New Orleans, LA.
- Flesch, R. (1949). *The art of readable writing*. New York, NY: Harper & Brothers.
- Forbush, K. T., South, S. C., Krueger, R. F., Iacono, W. G., Clark, L. A., Keel, P. K., . . . Watson, D. (2010). Locating eating pathology within an empirical diagnostic taxonomy: Evidence from a community-based sample. *Journal of Abnormal Psychology*, *119*, 282–292. <http://dx.doi.org/10.1037/a0019189>
- Frisch, M. B., Cornell, J., Villanueva, M., & Retzlaff, P. J. (1992). Clinical validation of the Quality of Life Inventory: A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychological Assessment*, *4*, 92–101. <http://dx.doi.org/10.1037/1040-3590.4.1.92>
- Gore, K. L., McCutchan, P. K., Prins, A., Freed, M. C., Liu, X., Weil, J. M., & Engel, C. C. (2013). Operating characteristics of the PTSD checklist in a military primary care setting. *Psychological Assessment*, *25*, 1032–1036. <http://dx.doi.org/10.1037/a0033325>
- Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. (2004). Psychometric properties of the life events checklist. *Assessment*, *11*, 330–341. <http://dx.doi.org/10.1177/1073191104269954>
- Haynes, S. N., Nelson, K., & Blaine, D. D. (1999). Psychometric issues in assessment research. In P. C. Kendall, J. N. Butcher, G. N. Holmbeck, P. C. Kendall, J. N. Butcher, & G. N. Holmbeck (Eds.), *Handbook of research methods in clinical psychology* (2nd ed., pp. 125–154). Hoboken, NJ: Wiley.
- Holowka, D. W., & Marx, B. P. (2012). Assessing PTSD-related functional impairment and quality of life. In J. Beck & D. M. Sloan (Eds.), *The Oxford handbook of traumatic stress disorders* (pp. 315–330). New York, NY: Oxford University Press. <http://dx.doi.org/10.1093/oxfordhb/9780195399066.013.0021>
- Kazis, L. E., Miller, D. R., Clark, J. A., Skinner, K. M., Lee, A., Ren, X. S., . . . Ware, J. E., Jr. (2004). Improving the response choices on the veterans SF-36 health survey role functioning scales: Results from the Veterans Health Study. *The Journal of Ambulatory Care Management*, *27*, 263–280. <http://dx.doi.org/10.1097/00004479-200407000-00010>
- Kuhn, E., Blanchard, E. B., & Hickling, E. J. (2003). Posttraumatic stress disorder and psychosocial functioning within two samples of MVA survivors. *Behaviour Research and Therapy*, *41*, 1105–1112. [http://dx.doi.org/10.1016/S0005-7967\(03\)00071-8](http://dx.doi.org/10.1016/S0005-7967(03)00071-8)
- Leon, A. C., Shear, M. K., Portera, L., & Klerman, G. L. (1992). Assessing impairment in patients with panic disorder: The Sheehan Disability Scale. *Social Psychiatry and Psychiatric Epidemiology*, *27*, 78–82. <http://dx.doi.org/10.1007/BF00788510>
- Marx, B. P. (2013). *Development & validation of a PTSD-related impairment scale*. Boston VA Research Institute (Final Report 1 Jun 2008–31, May 2013; U.S. Army Medical Research and Materiel Comment; Award No. W81XWH-08–2-0028). Retrieved from <http://www.dtic.mil/get-tr-doc/pdf?AD=ADA585414>
- Matthews, L. R. (2005). Work potential of road accident survivors with post-traumatic stress disorder. *Behaviour Research and Therapy*, *43*, 475–483. <http://dx.doi.org/10.1016/j.brat.2004.03.008>

- McCaslin, S. E., Maguen, S., Metzler, T., Bosch, J., Neylan, T. C., & Marmar, C. R. (2016). Assessing posttraumatic stress related impairment and well-being: The Posttraumatic Stress Related Functioning Inventory (PRFI). *Journal of Psychiatric Research*, *72*, 104–111. <http://dx.doi.org/10.1016/j.jpsychires.2015.10.016>
- McHorney, C. A., Ware, J. E., Jr., & Raczek, A. E. (1993). The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Medical Care*, *31*, 247–263. <http://dx.doi.org/10.1097/00005650-199303000-00006>
- McNally, R. J. (2007). Revisiting Dohrenwend et al.'s revisit of the National Vietnam Veterans Readjustment Study. *Journal of Traumatic Stress*, *20*, 481–486. <http://dx.doi.org/10.1002/jts.20257>
- Miller, M. W., Fogler, J. M., Wolf, E. J., Kaloupek, D. G., & Keane, T. M. (2008). The internalizing and externalizing structure of psychiatric comorbidity in combat veterans. *Journal of Traumatic Stress*, *21*, 58–65. <http://dx.doi.org/10.1002/jts.20303>
- Ramirez, A., Ekselius, L., & Ramklint, M. (2008). Axis V - Global Assessment of Functioning scale (GAF), further evaluation of the self-report version. *European Psychiatry*, *23*, 575–579. <http://dx.doi.org/10.1016/j.eurpsy.2008.05.001>
- Ro, E., & Clark, L. A. (2009). Psychosocial functioning in the context of diagnosis: Assessment and theoretical issues. *Psychological Assessment*, *21*, 313–324. <http://dx.doi.org/10.1037/a0016611>
- Rodriguez, P., Holowka, D. W., & Marx, B. P. (2012). Assessment of posttraumatic stress disorder-related functional impairment: A review. *Journal of Rehabilitation Research and Development*, *49*, 649–665. <http://dx.doi.org/10.1682/JRRD.2011.09.0162>
- Sayer, N., Carlson, K., & Schnurr, P. (2011). Assessment of functioning and disability. In D. M. Benedek & G. H. Wynn Long (Eds.), *Clinical manual for management of PTSD* (pp. 255–287). Arlington, VA: American Psychiatric Publishing.
- Sayers, S. L., Farrow, V. A., Ross, J., & Oslin, D. W. (2009). Family problems among recently returned military veterans referred for a mental health evaluation. *The Journal of Clinical Psychiatry*, *70*, 163–170. <http://dx.doi.org/10.4088/JCP.07m03863>
- Schnurr, P. P., Lunney, C. A., Bovin, M. J., & Marx, B. P. (2009). Posttraumatic stress disorder and quality of life: Extension of findings to veterans of the wars in Iraq and Afghanistan. *Clinical Psychology Review*, *29*, 727–735. <http://dx.doi.org/10.1016/j.cpr.2009.08.006>
- Sheehan, D. V. (1983). *The anxiety disease*. New York, NY: Charles Scribner and Sons.
- Simon, G. E., Revicki, D. A., Grothaus, L., & Vonkorff, M. (1998). SF-36 summary scores: Are physical and mental health truly distinct? *Medical Care*, *36*, 567–572. <http://dx.doi.org/10.1097/00005650-199804000-00012>
- Spitzer, R. L., Kroenke, K., & Williams, J. B. (1999). Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. *Journal of the American Medical Association*, *282*, 1737–1744. <http://dx.doi.org/10.1001/jama.282.18.1737>
- Switzer, G. E., Wisniewski, S. R., Belle, S. H., Dew, M. A., & Schultz, R. (1999). Selecting, developing, and evaluating research instruments. *Social Psychiatry and Psychiatric Epidemiology*, *34*, 399–409. <http://dx.doi.org/10.1007/s001270050161>
- Tanielian, T. L., & Jaycox, L. (Eds.). (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery* (Vol. 1). California, CA: Rand Corporation.
- Üstün, T. B., Kostanjsek, N., Chatterji, S., & Rehm, J. (Eds.). (2010). *Measuring health and disability: Manual for WHO Disability Assessment Schedule (WHODAS 2.0)*. Geneva, Switzerland: World Health Organization.
- Vogt, D. S., King, D. W., & King, L. A. (2004). Focus groups in psychological assessment: Enhancing content validity by consulting members of the target population. *Psychological Assessment*, *16*, 231–243. <http://dx.doi.org/10.1037/1040-3590.16.3.231>
- Walser, R. D., & Westrup, D. (2007). *Acceptance and commitment therapy for the treatment of post-traumatic stress disorder and trauma-related problems: A practitioner's guide to using mindfulness and acceptance strategies*. Oakland, CA: New Harbinger.
- Ware, J. E., Jr. (1999). SF-36 health survey. In M. E. Maruish & M. E. Maruish (Eds.), *The use of psychological testing for treatment planning and outcomes assessment* (2nd ed., pp. 1227–1246). Mahwah, NJ: Erlbaum.
- Weathers, F. W., Keane, T. M., & Davidson, J. R. (2001). Clinician-administered PTSD scale: A review of the first ten years of research. *Depression and Anxiety*, *13*, 132–156. <http://dx.doi.org/10.1002/da.1029>
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist: Reliability, validity, and diagnostic utility*. Paper presented at the annual meeting of ISTSS, San Antonio, TX.
- Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Boston, MA: National Center for PTSD.
- Weathers, F. W., Ruscio, A. M., & Keane, T. M. (1999). Psychometric properties of nine scoring rules for the Clinician-Administered Posttraumatic Stress Disorder Scale. *Psychological Assessment*, *11*, 124–133. <http://dx.doi.org/10.1037/1040-3590.11.2.124>
- Wisco, B. E., Marx, B. P., Wolf, E. J., Miller, M. W., Southwick, S. M., & Pietrzak, R. H. (2014). Posttraumatic stress disorder in the US veteran population: Results from the National Health and Resilience in Veterans Study. *The Journal of Clinical Psychiatry*, *75*, 1338–1346. <http://dx.doi.org/10.4088/JCP.14m09328>

Appendix

The Inventory of Psychosocial Functioning (IPF)

IPF

INSTRUCTIONS: Answer the Questions at the Beginning of Each Section to Determine Which Sections Apply to You. Then, within the Sections That Apply to you, Read Each Statement and Rate How Often you Have Acted Like That over the Past 30 Days. Circle Only One Number for Each statement.

Romantic Relationship with Spouse or Partner

Have you been in a romantic relationship with a spouse or partner in the past 30 days? Yes No

If you have not been in a romantic relationship with a spouse or partner during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 1. When necessary, I cooperated on tasks with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. I shared household chores or duties with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I had trouble sharing thoughts or feelings with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. I showed interest in my spouse or partner's activities. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I had trouble settling arguments or disagreements with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I was patient with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. I had trouble giving emotional support to my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I was affectionate with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. My partner or spouse and I did activities that brought us closer together. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. I was interested in sexual activity with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I had trouble becoming sexually aroused with my spouse or partner. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Family

In this section, family refers to all relatives other than your spouse/partner or children (for example, parents, brothers, sisters, grandparents, etc). Do not answer these questions in reference to your spouse/partner or children.

Have you been in contact with family members (parents, brothers, sisters, grandparents, etc.) in the past 30 days? Yes No

If you have not been in contact with family during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 12. I stayed in touch with family members (e.g. phone calls, e-mails, texts). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. My family and I did activities that brought us closer together. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. I was affectionate with my family members. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. I had trouble being patient with family members. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. I had trouble communicating thoughts or feelings to family members. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. I had trouble giving emotional support to family members. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. I had trouble settling arguments or disagreements with family members. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Work (including home-based work)

Have you worked (either for pay or as a volunteer) in the past 30 days?

Yes No

If you have not worked either for pay or as a volunteer during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 19. I had trouble showing up on time for work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. I reported for work when I was supposed to. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. I got along well with others at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

(Appendix continues)

Appendix (continued)

| | Never | | Sometimes | | | Always | |
|--|-------|---|-----------|---|---|--------|---|
| 22. I stayed interested in my work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. I had trouble being patient with others at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. I performed my job to the best of my ability. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. I completed my work on time. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. I had trouble settling arguments or disagreements with others at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. I solved problems or challenges at work without much difficulty. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. I maintained a reasonable balance between work and home. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. I was able to perform my work duties without needing any extra help. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. When necessary, I cooperated on work-related tasks with others. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 31. I showed my skills and knowledge of the job. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 32. I showed others at work that they could depend on me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 33. I came up with ideas and put them into action at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 34. I took responsibility for my work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 35. I prioritized work-related tasks appropriately. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 36. I worked hard every day. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 37. I made sure that the work environment was pleasant for others. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 38. I had trouble expressing my ideas, thoughts or feelings to others at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 39. I had trouble being supportive of others at work. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Friendships and Socializing

Have you been in contact with friends in the past 30 days? Yes No

If you have not been in contact with friends during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 40. I was willing to meet new people. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 41. I stayed in touch with friends (returning phone calls, emails, visiting). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 42. My friends and I did activities that brought us closer together. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 43. I had trouble being patient with my friends. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 44. I had trouble settling arguments or disagreements with my friends. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 45. I had trouble sharing my thoughts or feelings with my friends. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 46. I had trouble giving emotional support to my friends. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 47. I showed affection for my friends. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Parenting

In this section, children refers to anyone for whom you had parenting responsibilities.

Do you have children with whom you lived or had regular contact during the past 30 days?

Yes No

If you do not have children with whom you lived or had regular contact during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 48. My children were able to depend on me for whatever they needed. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 49. I was interested in my children's activities. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 50. I had trouble communicating with my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 51. I was affectionate with my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 52. I appropriately shared thoughts or feelings with my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 53. My children and I did activities that brought us closer together. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 54. I talked with, or taught, my children about important life issues. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 55. I was a good role model for my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 56. I had trouble giving emotional support to my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 57. I had trouble settling conflicts or disagreements with my children. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

(Appendix continues)

Education (including distance learning)

Have you been involved in a formal educational experience, either in or outside of the school setting, during the past 30 days?

Yes No

If you have not been involved in an educational experience during the past 30 days skip this section and continue with the next section. Otherwise, please answer the following questions.

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|---|-------|---|-----------|---|---|--------|---|
| 58. I attended classes regularly. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 59. I stayed interested in my classes and schoolwork. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 60. I arrived on time for my classes. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 61. I had trouble being supportive of my classmates' achievements. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 62. I turned in assignments late. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 63. I solved problems and challenges in class without much difficulty. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 64. I took responsibility for my schoolwork. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 65. I was patient with my classmates and/or instructors. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 66. I had trouble settling disagreements or arguments with instructors and/or classmates. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 67. I had trouble remembering what the instructor said. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 68. I could easily remember what I read. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 69. I understood course material. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 70. When necessary, I cooperated with classmates. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 71. I got along with classmates and/or instructors. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 72. I completed my schoolwork to the best of my ability. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Self Care

Over the past 30 days . . .

| | Never | | Sometimes | | | Always | |
|--|-------|---|-----------|---|---|--------|---|
| 73. I had trouble keeping up with household chores (for example, cleaning, cooking, yard work, etc). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 74. I maintained good personal hygiene and grooming (for example, showering, brushing teeth, etc). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 75. I had trouble managing my medical care (for example, medications, doctors' appointments, physical therapy, etc). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 76. I ate healthy and nutritious meals. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 77. I had trouble keeping up with chores outside the house (shopping, appointments, other errands). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 78. I had trouble managing my finances. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 79. I was physically active (for example, walking, exercising, playing sports, gardening, etc). | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 80. I spent time doing activities or hobbies that were fun or relaxing. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

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