

Psychometric Properties of the Parenting Sense of Competence Scale in Treatment-Seeking Post-9/11 Veterans

Eric Bui^{1,2} · Rebecca J. Zakarian¹ · Lauren M. Laifer¹ · Julia C. Sager¹ · Yang Chen¹ · Shiri Cohen^{1,2} · Naomi M. Simon^{1,2} · Bonnie Ohye^{1,2}

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Abstract Although evidence suggests deployment-related stress impacts parenting, few measures of parenting competency have been validated in returning post-9/11 veterans. As part of clinical care in a multidisciplinary clinic serving veterans and military families, 178 treatment-seeking OEF/OIF/OND veterans completed measures including the 16-item Parenting Sense of Competence Scale (PSOC), a widely-used measure of parental efficacy and satisfaction; the Family Assessment Device—general functioning subscale; and the depression, anxiety, and stress scale. Utilizing data from an IRB-approved de-identified data repository, we examined the psychometrics and factor structure of the PSOC. According to a proposed clinical cut-off, 10 % of our clinical sample of veterans exhibited low self-confidence in parenting. A confirmatory factor analysis of the 2-factor structure introducing correlated error terms between items 3 and 9, and between items 10 and 11, revealed to be a satisfactory fit to the data ($X^2/df = 1.57$, RMSEA = 0.056 [90 % CI 0.039–0.073]; CFI = 0.928; TLI = 0.914; SRMR = 0.055). In addition, the PSOC exhibited good convergent validity with measures of parental distress ($r = -.22$, $p < 0.01$ with anxiety symptoms, and $r = -.33$, $p < .001$ with depressive symptoms) and family functioning ($r = -.53$, $p < .0001$), very good temporal stability ($r = .81$, $p < .00001$), and excellent internal consistency ($\alpha = .85$). The PSOC exhibited satisfactory psychometric properties in treatment-seeking

veterans and may be used by clinicians and researchers to assess parenting sense of competence, including satisfaction and sense of efficacy, in this population.

Keywords Military · Veteran · Parenting · Validation · Assessment

Introduction

Since September 11th 2001, over 2 million U.S. service members have been deployed to Iraq or Afghanistan in support of Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF), and Operation New Dawn (OND). In 2011, approximately 35 % of officers and 72 % of enlisted service members were under the age of 30 (Department of Defense 2011), and it is estimated that over 700,000 children have experienced at least one parental deployment in support of these operations (Johnson et al. 2007).

Recent data suggest that a third of post-9/11 service members who return from combat suffer from at least one mental health condition including posttraumatic stress disorder (PTSD), depression, and anxiety disorders (Tanielian and Jaycox 2008). In addition, it is estimated that 20 % of these service members have experienced a traumatic brain injury (Tanielian and Jaycox 2008; Terrio et al. 2009). Symptoms of these deployment-related conditions (e.g., emotional numbing, behavioral avoidance, withdrawal, and anger) impose enormous strain upon familial relationships. Results from a prior study revealed that over three quarters of 199 post-9/11 Iraq and Afghanistan veterans who screened positive for a mental health problem reported

✉ Eric Bui
tebui@mgh.harvard.edu

¹ Home Base, A Red Sox Foundation & Massachusetts General Hospital Program, Boston, MA, USA

² Harvard Medical School, Boston, MA, USA

difficulties with partners and/or children; for example, 25 % of them reported experiencing their children as “not warm/afraid” (Sayers et al. 2009). Similarly, a recent study found that PTSD symptoms had a direct and negative effect on post-deployment family functioning among female veteran’s (Creech et al. 2016).

Unsurprisingly, a few studies have found deployment-related PTSD symptoms to be associated with diminished self-reported parenting efficacy and emotional involvement with one’s children (Allen et al. 2010; Cozza et al. 2010; Gewirtz et al. 2010; Sherman et al. 2016). For example, Gewirtz et al. (2010) reported that among 468 Army National Guard fathers, PTSD symptoms significantly predicted poorer couple adjustment and greater perceived parenting difficulties one year later. However, to date, no measures of parenting skills have been psychometrically validated among post-9/11 veterans (Tables 1 and 2).

Among the measures available to assess an individual’s self-competence as a parent, the parenting sense of competence scale (PSOC; Johnston and Mash 1989) is the most widely used. The PSOC was introduced by Gibaud-Wallston and Wandersman as a measure of parenting that includes two dimensions: skill-knowledge (or efficacy) and value-comforting (or satisfaction) (Gibaud-Wallston and Wandersman 1978). The PSOC has been validated in different populations including Chinese mothers (Ngai et al. 2007), Portuguese mothers (Nunes et al. 2014), Australian parents (Rogers and Matthews 2004), and Canadian parents (Ohan et al. 2000). Each time, it has demonstrated good psychometric properties including satisfactory internal consistency (Cronbach’s α between 0.65–0.80 for both subscales), very good temporal stability (Ngai et al. 2007), and satisfactory convergent validity with measures of child behavior, parent wellbeing, couple satisfaction, family cohesion, and parenting alliance and style (Ngai et al. 2007; Nunes et al. 2014; Ohan et al. 2000). Although factorial explorations consistently reported the *efficacy* and *satisfaction* factors, some studies found other factors including *interest in the parenting role* (Gilmore and Cuskelly 2009) and *controllability* (Nunes et al. 2014). In line with the pressing need to appropriately assess parenting among returning veterans, the present study aims to examine the psychometric properties and the factor structure of the PSOC among treatment-seeking post-9/11 veterans.

Method

Participants

Participants were $n = 178$ treatment-seeking OEF/OIF/OND veterans (92.7 % ($n = 165$) males; mean age = 37.1, $SD = 8.3$) who were evaluated at Home Base, a Red Sox

Table 1 Socio-demographic and clinical characteristics of $n = 178$ treatment seeking veterans who reported having a child

Age, years, mean (SD)	37.1 (8.3)
Gender (male), % (n)	92.7 % (165)
Employed, % (n) [$n=166$]	34.9 % (58)
In a relationship, % (n) [$n=166$]	59.0 % (98)
Component, % (n) [$N = 147$]	
National Guard	29.1 % (43)
Regular	58.8 % (87)
Reserves	12.2 % (18)
Rank, % (n) [$N = 142$]	
Enlisted	31.5 % (45)
NCO	53.9 % (77)
Officer	14.7 % (21)
Current Military status, % (n) [$N = 169$]	
Active Duty	22.9 % (39)
Discharged	48.2 % (82)
Drilling Service Member	18.8 % (32)
Retired	10.0 % (17)
Branch of service, % (n) [$N = 169$]	
Air Force	2.9 % (5)
Army	70.0 % (119)
Coast Guard	1.2 % (2)
Marines	18.8 % (32)
Navy	5.9 % (10)
Multiple	1.2 % (2)
DASS Depression score, range 0–42, mean (SD) [$n=172$]	15.6 (11.5)
DASS Anxiety score, range 0–42, mean (SD) [$n=172$]	14.5 (11.2)
DASS Stress score, range 0–42, mean (SD) [$n=174$]	22.1 (11.1)
FAD-GF score, range 1–4, mean (SD) [$n=153$]	2.19 (0.63)
PSOC total score, range 16–96, mean (SD)	66.8 (12.3)

Note: PSOC Parenting Sense of Competence, DASS Depression, Anxiety, and Stress Scale, FAD-GF Family Assessment Device — General Functioning

Foundation and Massachusetts General Hospital Program, in a philanthropically supported outpatient clinic that serves post-9/11 veterans with PTSD, traumatic brain injury (TBI), and other mental health conditions, and their families.

Procedures

As part of their initial clinical evaluation, patients who reported having at least one child under 18 completed self-report screening measures including the PSOC, assessments of depressive, anxiety, and stress symptoms, and overall family functioning. Demographic and diagnostic data have

Table 2 Item statistics for the parenting sense of competence (PSOC)

Factor	Item	% (n) Endorsement	Mean	SD	Item-Total Correlation
Satisfaction	2. Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	38.20 % (68)	4.14	1.65	0.62
	3. I go to bed the same way I wake up in the morning—feeling I have not accomplished a whole lot.	49.44 % (88)	3.64	1.60	0.6
	4. I do not know what it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	42.70 % (76)	4.00	1.43	0.58
	5. My mother/father was better prepared to be a good mother/father than I am.	17.42 % (31)	4.90	1.38	0.43
	8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	69.10 % (123)	3.12	1.42	0.32
	9. Sometimes I feel like I'm not getting anything done.	65.73 % (117)	3.24	1.42	0.65
	12. My talents and interests are in other areas, not in being a parent.	12.36 % (22)	4.96	1.16	0.55
	14. If being a mother/father of a child were only more interesting, I would be motivated to do a better job as a parent.	6.74 % (12)	5.30	0.93	0.43
	16. Being a parent makes me tense and anxious.	40.45 % (72)	4.06	1.52	0.58
	*1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	89.33 % (159)	2.22	1.18	0.41
	*6. I would make a fine model for a new mother/father to follow in order to learn s/he would need to know in order to be a good parent.	73.03 % (130)	2.93	1.30	0.77
	*7. Being a parent is manageable, and any problems are easily solved.	68.54 % (122)	3.11	1.34	0.63
	*10. I meet my own personal expectations for expertise in caring for my child.	69.66 % (124)	3.05	1.35	0.83
	*11. If anyone can find the answer to what is troubling my child, I am the one.	62.36 % (111)	3.19	1.37	0.59
	*13. Considering how long I've been a mother/father, I feel thoroughly familiar with this role.	75.28 % (134)	2.74	1.44	0.62
*15. I honestly believe I have all the skills necessary to be a good mother/father to my child.	82.58 % (147)	2.34	1.30	0.54	
Efficacy					

Note: Items 1, 6, 7, 10, 11, 13, and 15 (marked with *) are reverse scored such that *Strongly Agree* corresponds to a score of 6 and *Strongly Disagree* corresponds to a score of 1. Items 2, 3, 4, 5, 8, 9, 12, 14, and 16 are scored such that *Strongly Agree* corresponds to a score of 1, and *Strongly Disagree* corresponds to a score of 6

been routinely collected as part of the baseline clinical assessment of each patient. A subset of patients ($n = 42$) were re-assessed within 2 months as part of their clinical care (mean time between assessments = 39.5 days, $SD = 9.2$). There were no significant differences in gender, age, or on any of the measures between those who were re-assessed and those who were not reassessed (all p 's > 0.05). De-identified data were maintained in a database repository approved by the Massachusetts General Hospital (Partners Healthcare) Institutional Review Board.

Measures

Parenting sense of competence was assessed with the 16-item PSOC (Johnston and Mash 1989). Each item was rated on a scale of 1–6, with higher scores indicating higher level of parental confidence. Items 1, 6, 7, 10, 11, 13, and 15 reflect positive attitudes toward parenting (i.e., “I honestly believe I have all the skills necessary to be a good mother to my child”) and are scored such that “Strongly Agree” corresponds to a score of 6, and “Strongly Disagree” corresponds to a score of 1. Items 2, 3, 4, 5, 8, 9, 12, 14, and 16 reflect negative attitudes towards parenting (i.e., “My talents and interests are in other areas, not in being a parent”) and are scored such that “Strongly Agree” corresponds to a score of 1, and “Strongly Disagree” corresponds to a score of 6. Total scores thus range from 16 to 96, with higher scores indicating increased sense of competence in parenting. Although there are no validated clinical cut-offs, a score of 50 or lower has been proposed as indicating low parenting self-confidence (Excellence 2010).

Psychological distress was assessed using the 21-item depression, anxiety, and stress scale (DASS; Lovibond and Lovibond 1995). Each of the three symptoms has 7 corresponding items, each of which is rated on a 4-point scale with responses ranging from 0 to 3. All scores are multiplied by 2 to yield sub-scale scores for each domain (depression, anxiety, and stress), with higher scores indicating greater symptom severity. In our sample, Cronbach's α s for the depression, anxiety, and stress subscales were 0.92, 0.88, and 0.87, respectively.

The overall level of the veteran's family functioning was assessed using the General Functioning subscale of the Family Assessment Device (FAD; Epstein et al. 1983). This subscale of the FAD includes 12 items, each rated on a scale of 1 to 4 (from strongly agree to strongly disagree). Items 1, 3, 5, 7, 9, and 11 describe unhealthy functioning (i.e., “We don't get along well together”) such that “strongly agree” corresponds to a score of 4; whereas items 2, 4, 6, 8, 10, and 12 describe healthy functioning (i.e., “In times of crisis we can turn to each other for support”) such that “strongly agree” corresponds to a score of 1. A total score is generated by averaging all 12 item scores; higher total scores indicate

worse family functioning. In our sample, Cronbach's α was 0.93.

Data Analyses

For the PSOC, we examined the mean and SD of the item score as well as the rate of endorsement of each symptom item (strongly agree, agree, mildly agree). Internal consistency was calculated using Cronbach's α coefficient, while convergent validity and test-retest reliability were evaluated using Pearson's correlation coefficients.

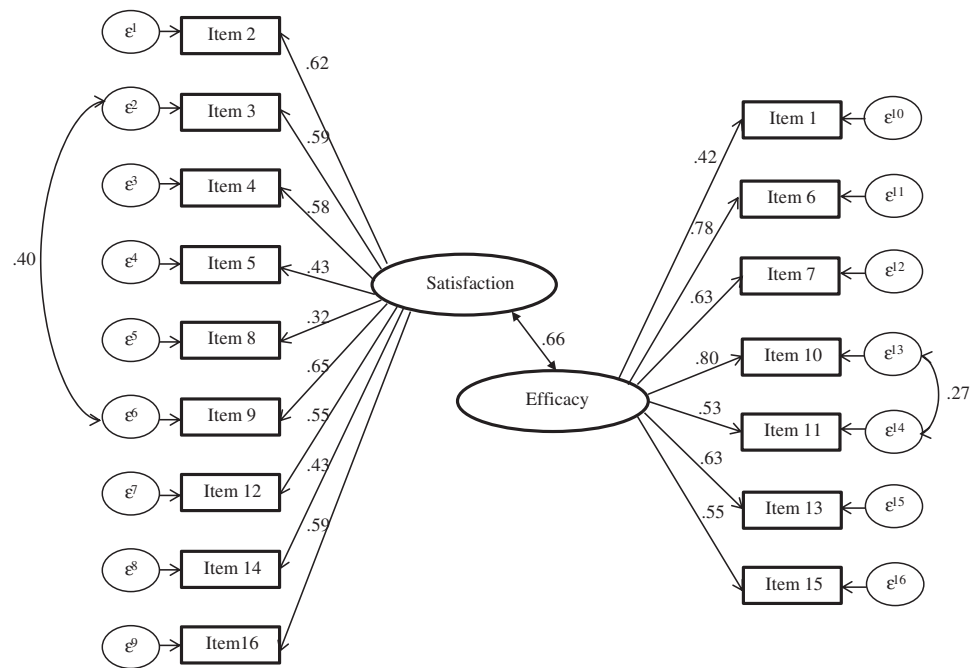
Given the existence of prior data on the factor structure of the PSOC, a Confirmatory Factor Analysis (CFA) was conducted. Maximum likelihood estimation was used given that the distributions did not substantially deviate from normality, with indices well below the thresholds proposed for this type of estimation (West et al. 1995). To determine model fit, relative X^2 , root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean squared residual (SRMR) were assessed. A X^2/df below 3.0, an RMSEA below 0.06, a SRMR below 0.08, and a CFI and a TLI above 0.9, were considered to denote adequately-fitting models (Browne et al. 1993; Hu and Bentler 1999; Kline 2015). In addition, we calculated the 90 % confidence interval (CI) for the RMSEA, and the p -value for test of close fit $RMSEA \leq 0.05$. All data analyses were performed using Stata version 12.1 (Stata Corporation, College Station, TX) and the level of statistical significant was set to 0.05 (two-tailed).

Results

Mean PSOC scores were 66.8, $SD = 12.3$, and did not differ by gender ($t(176) = -1.20$, $p = 0.23$), age ($r = -0.01$, $p = 0.90$), romantic relationship status ($t(164) = -0.11$, $p = 0.92$), or military status ($F(3, 166) = 1.29$, $p = 0.28$). Ten percent ($n = 18$) of participants scored below the proposed cut-off for low self-confidence in parenting.

The rate of positive endorsement (i.e., strongly agree, agree, mildly agree; scores of 4–6) of items reflecting positive attitudes toward parenting ranged from 62.4 % (item 11; “If anyone can find the answer to what is troubling my child, I am the one”) to 89.3 % (item 1; “The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired”), with a mean positive endorsement rate of 74.4 %. The rate of positive endorsement (i.e., strongly agree, agree, mildly agree; scores of 1–3) of items reflecting negative attitudes toward parenting ranged from 6.7 % (item 14; “If being a mother/father of a child were only more interesting, I would be motivated to do a better job as a

Fig. 1 Confirmatory factor analysis of the parenting sense of competence scale (PSOC; $X^2/df = 1.57$, RMSEA = 0.056 [90 % CI 0.039–0.073]; CFI = 0.928; TLI = 0.914; SRMR = 0.055)



parent”) to 69.1 % (item 8; “A difficult problem in being a parent is not knowing whether you’re doing a good job or a bad one”), with a mean positive endorsement rate of 38.0 %.

Fit for this model reflecting two correlated latent constructs (i.e., efficacy and satisfaction), as proposed by Johnston and Mash (1989), was not quite satisfactory (RMSEA = 0.067; CFI = 0.898). However, the modification indices suggested that introducing correlated error terms between items 3 (“I go to bed the same way I wake up in the morning -- feeling I have not accomplished a whole lot”) and 9 (“Sometimes I feel like I’m not getting anything done”), and between items 10 (“I meet my own personal expectations for expertise in caring for my child”) and 11 (“If anyone can find the answer to what is troubling my child, I am the one”) within the efficacy construct would lead to significant model improvement. This resulted in fit indices that were satisfactory ($X^2/df = 1.57$, RMSEA = 0.056 [90 % CI 0.039–0.073]; p -value for test of close fit RMSEA $\leq 0.05 = 0.28$; CFI = 0.928; TLI = 0.914; SRMR = 0.055; CFI = 0.937; TLI = 0.925; SRMR = 0.054). The final CFA model and factor loadings are reported in Fig. 1. Of note, all factor loadings were higher than .31. Both factors were significantly correlated with one another ($r = 0.66$, $p < 0.0001$).

PSOC scores were strongly correlated with family dysfunction ($r = -0.53$, $p < 0.0001$), and moderately correlated with depressive symptoms ($r = -0.33$, $p < 0.001$) and anxiety symptoms ($r = -0.22$, $p < 0.01$). Association between the Efficacy and Satisfaction subscale scores with convergent measures are reported in Table 3. Cronbach’s α coefficient was 0.85 for the total score, and 0.82 and 0.78 for

Table 3 Correlations between the parenting sense of competence scale and convergent and divergent measures of depression, anxiety, stress, and general family functioning

	Depression	Anxiety	Stress	Family Functioning
Efficacy	-.251***	-.163*	-.073	-.529***
Satisfaction	-.323***	-.224**	-.127	-.410***
Total PSOC	-.333***	-.223**	-.118	-.535***

* $p < .05$, ** $p < .01$, *** $p < .001$

the efficacy and satisfaction subscales, respectively. Temporal stability was very good, with a correlation of $r = 0.81$ ($p < 0.0001$) between the first and the second assessments.

Discussion

This study examined the psychometric properties of a measure assessing parenting sense of competence in treatment-seeking post-9/11 veterans. According to our results, the PSOC demonstrates satisfactory psychometric properties in post-9/11 veterans, with an internal consistency and temporal stability over an average of 39 days falling within the range of those reported in other populations for similar timeframes (Ngai et al. 2007; Ohan et al. 2000; Rogers and Matthews 2004). This study also assessed the factor structure of the PSOC using CFA. Our analyses based on a model including two correlated factors (satisfaction and efficacy) identified by prior exploratory factor analyses provided a satisfactory fit to the data (Johnston and

Mash 1989; Ohan et al. 2000). Our results were very similar to those of Ngai et al. (2007) and of Suwansujarid et al. (2013) who found an acceptable fit of a two-factor structure in a sample of Chinese parents and Thai fathers, respectively.

Though approximately one in ten individuals scored under the threshold for low self-confidence in parenting, on average, the current sample of veteran parents exhibited parenting sense of competence scores similar to the general population as reported previously (Johnston and Mash 1989). Interestingly, the current sample of post-9/11 treatment-seeking veterans reported largely positive parenting attitudes. However, a few items reflecting negative attitudes toward parenting were also relatively highly endorsed; for example, half of the participants reported not feeling that “they have accomplished a whole lot” at the end of the day (item 3), and two thirds of them reported difficulty “knowing whether [they]’re doing a good job or a bad one” as a parent (item 8). This low self-efficacy in parenting attitudes might actually reflect a decrease in self-efficacy in general (not restricted to parenting practices), as previous research has reported a negative relationship between coping self-efficacy and posttraumatic stress and depression in the post-9/11 veteran population (Smith et al. 2013).

Finally, in line with reports of other populations, we found that parenting sense of competence was strongly associated with family dysfunction in our sample of predominantly male treatment-seeking veterans (e.g., Ohan et al. 2000). As suggested by others, this finding emphasizes the need to target parenting practices as a means of improving family functioning in this underserved population (Gewirtz et al. 2011).

Limitations include the lack of assessments of other convergent validity measures, such as children’s functioning, and the relatively modest sample size. Although the small proportion of mothers prevented us from conducting analyses separately by gender, it is worth noting that fathers are generally a difficult group to recruit (Gilmore and Cuskelly 2009). Further, given that the PSOC is a self-report measure of the parent’s own perception of their parenting, our results are limited by the lack of an objective measure of parenting skills or success.

In conclusion, the PSOC exhibits good psychometric properties among treatment-seeking post-9/11 veterans with a replicated factor structure that includes the two dimensions of efficacy and satisfaction. The PSOC can be used to assess parenting sense of competence in research and clinical care among post-9/11 veterans.

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Compliance with Ethical Standards

Conflict of Interest Naomi Simon: Has received research grants: the American Foundation for Suicide Prevention, Department of Defense, Highland Street Foundation, NIH, and Janssen. Speaking/CME/Consulting: MGH Psychiatry Academy. Equity: spouse: G1 Therapeutics, Gatekeeper. The remaining authors declare that they have no competing interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Statement of the Welfare of Animals This article does not contain any studies with animals performed by any of the authors.

Informed Consent Patients completed measures as part of their clinical evaluation and care in an outpatient clinic. De-identified data were maintained in a database repository approved by the Massachusetts General Hospital (Partners Healthcare) Institutional Review Board. All data collection procedures have been approved by the Massachusetts General Hospital (Partners Healthcare) Institutional Review Board and informed consent was not required.

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