Psychometric Properties of the Secondary Traumatic Stress–Informed Organizational Assessment

Ginny Sprang
University of Kentucky

Leslie Ross
Children’s Institute, Inc., Los Angeles, California

Brian C. Miller
Primary Children’s Hospital, Salt Lake City, Utah

Kimberly Blackshear
Duke University

Sarah Ascienzo
University of Kentucky

This article describes the development and psychometric properties of the Secondary Traumatic Stress Informed Organizational Assessment (STSI-OA), a 40-item instrument designed to evaluate the degree to which an organization is STS-informed and able to respond to the impact of secondary traumatic stress in the workplace. A sample of 629 respondents representing multiple systems of care, job roles, and functions completed the STSI-OA. Analyses revealed a 5 factor structure that explained a large proportion of variance, excellent internal consistency, good test–retest reliability, and concurrent criterion validity with the Trauma System Readiness Tool Vicarious Trauma domain. Quartile scores and means were calculated to allow for comparisons. Based on the results of this analysis, it appears the STSI-OA total and domain scores can be used to create a blueprint for organizational learning, and to reliably track progress toward desired change over time.

Keywords: organizational assessment, secondary traumatic stress, secondary traumatic stress–informed organizational assessment, STSI-OA

Organizations as varied as hospitals, child welfare agencies, community mental health centers, domestic violence shelters, or refugee centers ask their clinical providers to work with persons who have experienced trauma. For many workers employed by these organizations it is a routine part of their daily duties to bear witness to recounted stories of tragedy, abuse, and even torture (Lambert, Engh, Hasbun, & Holzer, 2012). There is ample empirical evidence that employees who provide services to traumatized populations are at increased risk of experiencing symptoms of secondary trauma stress (Brady, Guy, Poelstra, & Brokaw, 1999; Bride, 2007; Cieslak et al., 2014; Follette, Polusny, & Milbeck, 1994; Ghahramanlou & Brodbeck, 2000).

Secondary Traumatic Stress includes symptoms that are similar to posttraumatic stress symptoms (intrusive symptoms, avoidance, reexperiencing, alternations in cognitions and mood), and is caused by indirect (vs. direct) exposure to the traumatic experiences of another person (Figley, 1995). The prevalence of secondary traumatic stress in clinicians ranges from 15% to over 50%, depending on setting, amount of trauma exposure, and a variety of personal and occupational factors (Adams & Riggs, 2008; Bride, 2007; Bride, Hatcher, & Humble, 2009; Bride, Jones, & MacMaster, 2007; Dominguez-Gomez & Rutledge, 2009; Quinal, Harford, & Rutledge, 2009; Smith Hatcher, Bride, OH, Moultrie King, & Franklin Catrett, 2011). At the very heart of secondary traumatic stress is psychological distress, which can range from a reduced sense of well-being to Posttraumatic Stress Disorder (American Psychiatric Association, 2013).

It is proposed that the effects of secondary traumatic stress can be mediated (Miller & Sprang, 2016), although the best approach to reduce these effects has yet to be demonstrated. Self-care approaches (e.g., healthy eating, work-life balance, meditation) have typically been promoted as possible remedies to the impact of indirect trauma exposure (Stamm, 1995). Yet self-care approaches have yet to be validated as effective in reducing secondary traumatic stress (Bober & Regehr, 2006). Additionally, there is a growing recognition that the emphasis on self-care places all of the responsibility upon the professional, and not upon the organization or work that placed them in ‘harm’s way.’
Organizations have a duty—some would argue that it is an ethical mandate—to support their employees who are exposed to trauma as part of their assigned duties (Munroe, 1995). Irrespective of how responsibility for mitigating the effects of secondary traumatic stress is assigned, organizations have ample pragmatic concerns about how to address this occupational hazard. Staff turnover, productivity levels, absenteeism, job satisfaction, and organizational commitment are all negatively affected when workers experience secondary traumatic stress (Adams, Figley, & Boscarino, 2008; Boyle, 2011; Bride & Kintzle, 2011; Graef & Hill, 2000; Newell & MacNeil, 2010; Pfifferling & Gilley, 2000; Showalter, 2010).

One barrier that inhibits organizations from addressing secondary traumatic stress is the absence of well-recognized guidelines or manuals for defining the most appropriate response. In short, organizational leaders may not know how to intervene, or how to prioritize possible remedies. The Secondary Traumatic Stress–Informed Organizational Assessment (STSI-OA) was conceptualized as an instrument that can be used by organizations to evaluate the supports that an organization has in place for workers, and can also be used to define a map for defining areas of deficiencies, strengths, and prioritizing interventions.

Several tools have been developed to assist organizations in becoming trauma-informed. A few have items or sub-scales that relate to secondary traumatic stress to varying degrees. Instruments such as the Trauma System Readiness Tool (Chadwick Center for Children & Families, 2013), Trauma–Responsive Systems Implementation Advisor (Epower & Associates, 2011), and the Trauma Informed Care Organizational Self-Assessment for Consumer-Run Recovery Organizations (Guarino, Soares, Konnath, Clervil, & Bassuk, 2009) have sub-scales that focus on staff supervision, support and/or self-care, but do not provide a comprehensive assessment of organizational strategies aimed at preventing or reducing the impact of STS. The Creating Cultures of Trauma-Informed Care (CCTIC; Fallot & Harris, 2009) includes a subset of questions to guide the assessment of staff perceptions of the safety, choice, collaboration, trustworthiness, and empowerment but is designed as a qualitative evaluation based on an interview and/or observation. Other tools such as the Trauma-Informed Organizational Self-Assessment for Child Abuse Prevention Agencies (Guarino et al., 2009) are focused on a particular population or were developed for organizations serving a particular trauma type (e.g., homelessness or domestic violence). A review of these existing organizational evaluation instruments reveals 20 assessment domains, seven that are common in over half of the tools: (a) Trauma-Informed Policies and Procedures; (b) Trauma-Informed Programming, Staff Education, and/or Training; (c) Trauma Screening and Identification; (d) Psychological Safety; (e) Physical Safety; (f) Assessment/Identification; and (g) Management of STS. The STSI-OA was created to address employee and organizational issues related to secondary traumatic stress in each of these domains. No published organizational tools identified had STS as a primary target of assessment. The STSI-OA expands the operational definition of what it means to be trauma informed (i.e., a framework for understanding, recognizing, responding to all forms of trauma) by elaborating on the activities necessary to address STS in the domains included above, as well as items assessing supervision, staff hiring process/orientation, evaluation and building resilience—all essential elements in creating a trauma-informed system.

Scale Construction

The development of the STSI-OA followed a four-stage process: (a) item generation, (b) expert review, (c) preliminary field testing, and (d) psychometric analysis. An eight-member group of experts in the area of secondary traumatic stress was convened in August of 2013 with the purpose of developing a tool that could be used to determine the degree to which an organization was STS-informed. Prior to the inaugural meeting, a reading list was generated of literature and existing tools in this area to facilitate the generation of primary domains of interest to drive item development. A modified Delphi approach was used to facilitate the generation of overarching domains, and items within each category; these were reviewed and modified until consensus within the group was reached. The preliminary item set was then sent to five national experts on secondary traumatic stress that were not members of the group, with a detailed review guide to facilitate feedback on each item. These experts were identified by the development group as leaders in the field representing research, training, and organizational psychology related to secondary traumatic stress. Following this expert review, modifications were made to the panel of items, and the revised set was presented to the National Child Traumatic Stress Network’s Secondary Traumatic Stress Committee for review. This committee examined the structure and construction of the measure and provided feedback to the developers via a scoring template. These members of the collaborative group also recommended community reviewers from across the country, representing specified systems of care: child welfare, juvenile justice, health care, community mental health, education, and the social service sector. These community-based reviewers were selected so that each system of care was represented, and each region of the country, so that geographic and systemic idiosyncrasies could be addressed. Field testing began when the penultimate version the tool was sent to these system representatives, with a scoring template that asked reviewers to rate the STSI-OA on cultural sensitivity, readability, and utility. Based on this feedback, final revisions were made by the lead developer, and the tool was released publically for use in the Fall of 2014.

This article presents findings from the fourth stage of the project, the psychometric analysis of the tool following 18 months of data collection at training events across the country. Specifically, this article describes measures of dispersion and the factor structure, as well as the reliability and validity analysis of the STSI-OA, and identifies ways it can be utilized in organizational practice.

Method

Procedures

Participants in this psychometric study were attendees at training events conducted by the developers across the United States during 2014 and 2015. These attendees were given two options for responding to the STSI-OA item set: a link to a cloud-based version of the measure through SurveyMonkey, or the completion of a paper version. Participation in the study was voluntary, and
trainees could receive and use the measure regardless of whether they shared their data with the researchers. A waiver of signed informed consent was obtained for online respondents. Respondents were not asked to provide identifying information about themselves, only general descriptive demographic data (gender, years of experience, role), and basic organizational information (size of company, service system represented). This protocol was approved by the university’s Institutional Review Board.

**Sample Characteristics**

The 629 respondents to the STSI-OA represent every region of the United States: Northwest (8.1%), Southwest (20%), Midwest (17.6%), Northeast (3.8%), Hawaiian Islands/Pacific Islands (4.7%), and South/Southeast (45.6%). Consistent with the demographic profile of workers serving trauma exposed populations (U.S. Department of Health & Human Services, 2013), 69.7% of the sample was female, and almost 60% of respondents were less than 45 years old (2% were 65 or older). Approximately 65% reported six or more years as a professional helper, with the largest percentage of respondents (26.2%) indicating they have worked as a professional helper for 11 to 20 years. Just over 25% identify themselves as front line workers or case managers, whereas 24.6% were clinicians, 22.9% supervisors or managers, 11.4% teachers or school personnel, 12.4% senior managers or C-level professionals, and the remaining were interns or volunteers (1.9% missing data).

Just under 30% of respondents work for an organization with fewer than 50 employees and almost a 28.5% reported their agency has over 500 employees. The STSI-OA sample represents multiple service systems including child welfare (14%), community mental health (30%), juvenile justice (21%), educational settings (13.8%), health care (5.8%), first responder groups (3.2%), and tribal settings (3%).

**Measure**

The STSI-OA is a 40-item measure that assesses an organization’s approach to STS prevention and intervention. These items are organized into domains of activity related to organizational promotion of resilience building activities (7 items); the degree to which an organization promotes physical and psychological safety (7 items); the degree to which the organization has STS relevant policies (6 items); how STS informed leadership practices (9 items) and routine organizational practices (7 items) are; and how well the organization evaluates and monitors STS policies and practices in the workplace (4 items). Employees respond to each item based on the degree to which they perceive their organization is addressing the specified practice or protocol. These response categories include 1 = not at all, 2 = rarely, 3 = somewhat, 4 = mostly, and 5 = completely. A not applicable response is provided and is coded “0.” Total scores range from 0 to 200, with higher scores indicating a higher level of competency in each area of activity. For purposes of this organizational assessment, STS was defined for respondents as the trauma symptoms caused by indirect exposure to traumatic material, transmitted during the process of helping or wanting to help a traumatized person. Resilience was defined as an individual’s ability to adapt to stress and adversity in a healthy manner, and organization, as used in this context, refers to the workplace setting that was the target of the STSI-OA assessment.

A subset of respondent completed the Trauma System Readiness Tool (TSRT; Chadwick Center for Children & Families, 2013) at the beginning of a learning collaborative that had secondary traumatic stress prevention and intervention as a goal. These baseline scores were used to calculate criterion validity. The TSRT was developed to identify system readiness in the child welfare system, but was chosen for the criterion validity analysis because it had the most developed STS subscale available, and was available in the public domain. The TSRT is a self-report measure designed for multiple professionals across child welfare systems to assess the trauma-informed nature of their own systems. The TSRT aligns with the Essential Elements of a Trauma-Informed Child Welfare System developed by the Child Welfare Committee of the National Child Traumatic Stress Network (NCTSN). Participants respond on a 6-point Likert scale that ranges from strongly disagree to strongly agree. The TSRT evaluates five domains: an agency’s understanding of the impact of traumatic stress on children being served; a child welfare agency’s understanding of parent/adult trauma history and its impact on parenting and parents’ response to services; a child welfare system’s understanding of its role in mitigating the impact of trauma; an agency’s system integration and service coordination with other child-serving entities; and an agency’s understanding of the impact of vicarious trauma on professionals in child welfare. A subscale score can be generated for each domain assessed, and the vicarious trauma subscale score is based on six items that measure an agency’s understanding of the impact of vicarious trauma on professionals in child welfare as well as an agency’s efforts to reduce the impact of vicarious trauma in workers. The Vicarious Trauma Subscale was utilized to measure the concurrent validity of the STSI-OA.

**Results**

Examination of individual item statistics reveals that respondents were most likely to endorse the presence of activities related to promoting positive peer support (X̄ = 2.70, SD 1.7), protecting the physical safety of staff (X̄ = 2.74, SD 1.6), and encouraging self-care (X̄ = 2.83, SD = 1.7). The lowest item mean scores were recorded for monitoring items related to the presence of defined activities (other than training) for addressing resilience building in staff (X̄ = 1.77, SD 2.1), monitoring STS in the workplace (X̄ = 1.68, SD 2.3), and the assessment of worker perceptions of psychological safety (X̄ = 1.63, SD 2.4).

**Internal Consistency**

The Cronbach’s alpha, or lower bound estimate of reliability for the STSI-OA, is very good (.977) for the combined set of items, indicating that calculating a total score by summing the items is appropriate and reliable. Domain scores are also in the excellent range: Resilience Building (.94), Promoting Safety (.89), Organizational Policies (.90), Leader Practices (.94), Routine Organizational Practices (.96). See Table 2 for item statistics by domain including confidence interval scores.

**Test–Retest Reliability**

A test–retest analysis was performed on a subset of respondents who completed the STSI-OA at baseline and approximately 90
days after the first administration of the measure. These analyses showed total scores were stable across time with intraclass correlation coefficients estimated at .813 [95% CI: (0.772 to 9.54), \( n = 111 \)].

**Concurrent Criterion Validity**

The STSI-OA has a significant, good and positive relationship \( r = .826, p < .001 \) with 95% bootstrap CI [25.54 to 31.34] with the Vicarious Trauma domain of the TSRT. This indicates good agreement between the STSI-OA and the specific domains of the TRST that measure the agency’s understanding of the impact of vicarious trauma on professionals, and the agency’s efforts to reduce the impact of vicarious trauma in workers.

**Factor Analysis**

Upon examination, the Kaiser-Meyer-Olkin statistic of .960 indicates the proportion of variance in this variable set was likely caused by an underlying factor structure, supporting the use of exploratory factor analysis. Principal axis factor extraction using Promax rotation was used to uncover the latent factors that represent the relationships between items on the STSI-OA. Extraction communalities were all above .5 indicating the variables fit well with a five factor solution. These five factors had eigenvalues of 1 or greater: factor 1 = 21.53; factor 2 = 2.37; factor 3 = 2.24; factor 4 = 1.25; and factor 5 = 1.21. The five factor solution explained 71.56% of the variance. Five factors representing organizational practices, resilience building activities, safety measures, leadership practices, and organizational policies were uncovered. Table 1 presents the mean composite scores for each of five factors, with standard deviations for all respondents in each area, and as a total score with lower and upper quartile cutoffs. The mean total score for all respondents was 125.82 (SD = 57.5).

Composite scores were created for each of the proposed domains. Table 2 provides the statistics for final domains of the STSI-OA. Four items originally conceptualized as the evaluation and monitoring domain loaded strongly onto the routine organizational practices factor (range of loading from .699 to .931). Three items cross-loaded on the Routine Organizational Practice and the Organizational Policy factor (organizational practices to enhance psychological safety, policies regarding interventions to address those with STS, and organizational policy regarding training to enhance physical safety).

**Discussion**

This study provided the first psychometric analysis of the STSI-OA, a measure that assesses the degree to which a workplace has developed and enacts policies and practices consistent with a secondary traumatic stress informed organization. The tool adds to the current literature by solidifying an organization’s role in addressing secondary traumatic stress and operationalizing what an STS informed organization would look like, if all the activities represented by the item set were executed fully. The development and validation of this measure extends the work of researchers who have created other trauma informed care organizational tools to address secondary traumatic stress (or related concepts) as a subordinate set of items in a broader measurement system (Baker, Brown, Wilcox, Overstreet, & Arora, 2016; Brown, Harris, & Fallot, 2013; Chadwick Center for Children & Families, 2013; Hummer & Dollard, 2010). The elaboration of the concept, the specificity of the items, and the utility of the STSI-OA across systems of care has created a way to monitor, address and measure this important workplace phenomenon in a comprehensive, yet nuanced way.

The analyses conducted provided strong evidence for the psychometric soundness of the STSI-OA in terms of concurrent validity with the Vicarious Trauma Subscale of the Trauma System Readiness Tool, and as a reliable measure used singularly, or repeatedly to measure change over time. The STSI-OA domains of activity that emerged during instrument development were mostly supported by the principal components factor analysis that revealed a five factor solution to explain the pattern of relationships among the items. These factors mapped onto the conceptual domains of activity related to resilience-building, promotion of safety, organizational practices, leadership practices and organizational policies. The sixth set of items that described evaluation and monitoring activities was subsumed into organizational practices, a factor that explained almost 54% of the variance. This is conceptually consistent because monitoring and evaluation activities are indeed a form of organizational practice. Delineation of these items into a separate domain was meant to underscore the importance of surveillance of the phenomenon in the workplace so that STS prevention and intervention responses could be tailored and responsive to the unique needs of the organization. Each of these five factors was well-defined by the corresponding items, and internally consistent, thereby establishing the appropriateness of summing the items into a total score. Although three items cross loaded on more than one factor, omission of these activities was

---

**Table 1**

*General Description of the Scores by Final Domain and Total on the STSI-OA, With Quartile Cutoffs*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Number of items</th>
<th>Mean (SD)</th>
<th>Median (lower quantile, upper quantile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resiliency building activities</td>
<td>7</td>
<td>17.04 (10.7)</td>
<td>16 (12.20)</td>
</tr>
<tr>
<td>Promoting safety</td>
<td>7</td>
<td>16.28 (10.9)</td>
<td>14 (9.20)</td>
</tr>
<tr>
<td>STS informed policies</td>
<td>6</td>
<td>10.65 (8.1)</td>
<td>9 (6.14)</td>
</tr>
<tr>
<td>STS informed leadership practices</td>
<td>9</td>
<td>19.78 (15.3)</td>
<td>17 (10.26)</td>
</tr>
<tr>
<td>STS informed routine practices</td>
<td>11</td>
<td>23.19 (22.88)</td>
<td>17 (8.30)</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>86.97 (59.78)</td>
<td>73 (50.107)</td>
</tr>
</tbody>
</table>
not necessary to achieve high reliability. In fact, deleting these items provided negligible improvement in Cronbach’s Alpha, and overall utility of the measure was enhanced by providing additional specificity, so the decision was made to retain these items in the STSI-OA.

Analysis of item statistics revealed that respondents scored their organizations higher on items related to promoting self-care and positive peer support, and ensuring physical versus psychological safety of workers. This finding is expected as self-care strategies are recommended most frequently in the literature as the best way of promoting the safety of workers. This finding is expected as self-care strategies are recommended most frequently in the literature as the best way of promoting the safety of workers. Additional specificity, so the decision was made to retain these items in the STSI-OA.

Organizational attention to issues of psychological safety was subordinate to the represented organization’s performance in the area of physical safe management. This is inconsistent with workforce policy trends as Samra, Gilbert, Shain, and Bilsker (2009) note emerging legal and regulatory mandates that specify an employer’s responsibility to address psychological safety in the workplace. Trauma work with vulnerable clients necessitates the use of executive functioning skills that can be compromised if environmental conditions are harsh, punitive or unsafe, adding ethical and moral urgency to the issue. The STSI-OA allows for surveillance of psychological safety in the workplace so that focused attention can be applied to improving the emotional perils associated with trauma work.

This study of the STSI-OA in a diverse pool of respondents representing multiple service systems and organizational roles allowed for standards to be established that would have maximum utility and applicability under varied conditions and within different organizational cultures. Future research should examine whether the total STSI-OA score could be predicted by gender, age, service system, role and years of experience, and whether the factor solution is variant across these subgroups.

In 2014 the American Psychological Association’s The New Haven Trauma Competency Group developed five basic foundational and functional competencies for mental health providers, including a set of trauma focused competencies that transcend all areas of practice (Cook & Newman, 2014). These Cross-Cutting Trauma-Focused Competencies involve the requirement that practitioners demonstrate their “capacity for self-reflection and tolerance for intense affect and content, ethical responsibility for self-care, and self-awareness of how one’s own history, values, and vulnerabilities impact trauma treatment deliveries,” “demonstrate understanding about how trauma impacts a survivor’s and organization’s sense of safety and trust,” and “demonstrate the ability to understand and appreciate the value and purpose of the various professional and paraprofessional responders in trauma work and work collaboratively and cross systems to enhance positive outcomes” (Cook & Newman, 2014; p.303). These competencies align remarkably with the overall purpose and item set within the STSI-OA, further underscoring the face validity of the instrument and its utility in application.

One purpose of the STSI-OA is to develop a blueprint for how organizations can implement, or carry out, strategies to become more secondary traumatic stress informed. Pragmatically, most organizations have few resources available to implement change in the area of secondary trauma-informed practice. The STSI-OA provides a critical tool for taking a precise inventory of need so that prioritization of goals can occur. According to the National Implementation Research Network (NIRN), “When creating implementation capacity in an organization new to active implementation, the first task is to map the current implementation landscape” (Blase & Fixen, 2013; p. 4). The STSI-OA provides a roadmap of conditions from the perspective of the individual, manager, program, and/or organizational leadership to facilitate strategic planning and change at every step of the process. Leadership, competency, and data supported decision making are key implementation drivers facilitated by the use of the STSI-OA that lead to success (Proctor, 2009).

This exploration phase of implementation is the first step in setting goals and making administrative, practice, and policy changes. Organizations may use this phase to identify the simplest or most cost-effective strategy to create change or to identify large scale initiatives requiring more investment and resources toward a bigger payoff. In both instances the STSI-OA can be used repeatedly to assess progress, course correct, or address specific areas of need. This stepwise assessment-based implementation strategy offers a consistent and reliable model for progressive development and sustainability of best practice in reducing the risk of Secondary Traumatic Stress and building a resilient workforce and organization.

Limitations

Although the STSI-OA was used as a self-report measure, it is possible to use it in an interview format. The method of data collection used in this study did not allow for comparison across other forms of administration. Additionally, the tool makes the a
prior assumption that STS is a concern salient enough to warrant organizational attention and intervention, and is not intended to establish whether or not this is a valid supposition. The fact that an organization would undergo such a self-assessment suggests a concern with the impact of indirect trauma in the workplace, though these suspicions should be verified by examining STS at the individual level prior to implementing an organizational assessment or response. Concurrent criterion validity compared the STSI-OA to the Vicarious Trauma Subscale of the TSRT, a tool designed for readiness assessment in a specific system of care, child welfare. Further validity analyses with tools that are not system specific is in order. Test–retest was limited to 90 days and should be reexamined at longer intervals given the protracted trajectory of many STS organizational initiatives.

Conclusion

According to the Substance Abuse Mental Health Services Administration (SAMHSA) Treatment Improvement Protocol on Trauma-Informed Care in Behavior Health Services (SAMHSA, 2014), trauma-informed organizations invest in their staff by adopting trauma-informed principles for workforce development and protection, including addressing the impact of secondary traumatic stress. It is clear from the organizational assessment literature that a key challenge for any assessing any trauma-informed organization is ascertaining the degree to which STS is addressed at the organizational level. The STSI-OA provides a clear framework for how an organization can become STS-informed, thereby facilitating the implementation of trauma informed care.

The STSI-OA can be accessed by following this link [www.uky.edu/CTAC](http://www.uky.edu/CTAC).

References


Received July 8, 2016
Revision received October 5, 2016
Accepted October 21, 2016
Correction to Sprang et al. (2016)

In the article, “Psychometric Properties of the Secondary Traumatic Stress–Informed Organizational Assessment” by Ginny Sprang, Leslie Ross, Brian C. Miller, Kimberly Blackshear, and Sarah Ascierto (Traumatology. Advance online publication. December 19, 2016. http://dx.doi.org/10.1037/trm0000108), In the Measures section, the 15th line, first complete sentence should read as follows: Total scores range from 0 to 200, with higher scores indicating a higher level of competency in each area of activity.

All versions of this article have been corrected.

http://dx.doi.org/10.1037/trm0000125