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The Corrections Staff Resilience Inventory™ (CSRI)

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The Corrections Staff Resilience Inventory™ (CSRI)

DATA SHEET

By Michael. D. Denhof, PhD.

What is Corrections Fatigue?

Corrections Fatigue[1] can be understood as a collection of negative and inter-related consequences upon the health and functioning of corrections workers and the workplace culture as a whole. Consequences follow from a combination of exposure to traumatic, operational, and organizational stressors. The extent to which aspects of Corrections Fatigue manifest, take hold, and shape workplace culture is dependent upon the extent and quality of various social and work environment features having potential to counter components of Corrections Fatigue. Corrections Fatigue manifests in negative personality changes, negative and dysfunctional ideology, depressed mood, moral injury, and decreased morale, among other problematic or debilitating conditions or consequences.

What is the Corrections Staff Resilience Inventory (CSRI)?

The Corrections Staff Resilience Inventory (CSRI) is a scientifically-developed assessment tool that allows for the reliable and valid measurement of the presence and extent of various types of resilience-promoting behaviors (RPBs) potentially being performed by corrections professionals who make up the workforce. Resilience is defined here as "A degree of immunity to health-degrading consequences of potentially traumatizing or other high-stress events". Resilience-promoting behaviors are specific types of actions which, if performed, and to a sufficient degree within the workforce, have the effect of bolstering the health and functioning of the workforce and its constituent members. The CSRI quantitatively measures the presence and extent of four specific sets of behaviors/actions with resilience-promoting potential: (1) Supportive Staff Relationship Maintenance Efforts, (2) Self-Care Health Maintenance Efforts, (3) Confident/Perseverant Frame of Mind, and (4) Controlled/Logical Problem Solving.

How the CSRI is Used

Using an online web application that staff can access from work or home via internet connection, the CSRI provides a convenient way for an organization's staff members to submit quantitative data for aggregation and analysis by staff at Desert Waters Correctional Outreach. Staff are provided a password to access a list of multiple-choice style questions that ask about a variety of specific behaviors and efforts that are known to promote resilience. Staff are able to participate anonymously, without providing specifically identifying information. The collected CSRI data are aggregated and statistically analyzed in relation to cut-points and to national baseline data from corrections professionals.

Results indicate an organization's status in terms of the ways and extent to which resilience-promoting behaviors are being performed by staff. This information puts organizations in an excellent position to evaluate where to focus improvement efforts. For example, some key resilience-promoting behaviors may not be taking place at all, or to a large enough extent. CSRI results provide highly specific and actionable information that decision-makers can use (1) to optimally design and structure improvement efforts and target key areas for change in order to increase staff resilience and deter Corrections Fatigue, (2) as a basis for assessing before and after interventions (i.e., pre/post testing), or (3) for ongoing and periodic assessment for the purpose of monitoring routine/typical behavior and adjusting or implementing programming to keep the workforce functioning optimally.

[1] Denhof, M.D., Spinaris, C.G., and Morton, G.R. (2014). *Occupational Stressors in Corrections organizations: Types, Effects, and Solutions.* United States Department of Justice. National Institute of Corrections. Available at: http://nicic.gov/library/028299

CSRI Assessment Scales and How They Are Used

The CSRI's individual scales represent distinct and reliable measures of types of behaviors associated with resilience in corrections professionals. When an organization's staff demonstrate mean/average scores for particular scales that exceed clinically-derived thresholds and/or depart substantially from national baseline scores for corrections professionals, then ideal content focal points for improvement efforts are identified, and using a data-driven, evidence-based approach.

For example, it might be discovered that a given workforce is routinely engaging in one class of Resilience-Promoting Behaviors (RPBs) but falling short in another. In a case like this, CSRI results provide a profile of what staff are doing well and not so well. CSRI assessment result reports provide not only scores but also clear and concise narrative recommendations, as indicated in the example.

CSRI SCALES	GROUP SCORE	SCALE SCORE INTERPRETATION
SUPPORTIVE STAFF RELATIONSHIP EFFORTS	1.8	**SUBSTANTIAL IMPROVEMENT NEEDED.** An average/group CSRI scale score of **1.8** is a **LOW SCORE** by clinically-derived criteria.
SELF-CARE HEALTH MAINTENANCE EFFORTS	2.2	**SLIGHT IMPROVEMENT NEEDED.** An average/group CSRI scale score of **2.2** is a **SLIGHTLY LOW SCORE** by clinically-derived criteria.
CONFIDENT/PERSEVERANT FRAME OF MIND	2.6	**FAIRLY GOOD SITUATION.** An average/group CSRI scale score of **2.6** is a **SLIGHTLY ELEVATED SCORE** by clinically-derived criteria.
CONTROLLED/LOGICAL PROBLEM SOLVING	3.2	**VERY GOOD SITUATION.** An average/group CSRI scale score of **3.2** is an **ELEVATED SCORE** by clinically-derived criteria. This score is also significantly higher than the national average scale score for corrections professionals.

RESULTS NARRATIVE – CSRI scale scores were calculated for your facility based upon a total of 552 fully-completed CSRI assessments. Scale scores demonstrated varying results. In the areas of CONFIDENT/PERSEVERENT FRAME OF MIND and CONTROLLED/LOGICAL PROBLEM SOLVING, your staffs' average scores indicate that Resilience-Promoting Behaviors (RPBs) are taking place at a good rate. The average score for the CONTROLLED/LOGICAL PROBLEM SOLVING scale was also significantly higher/better than the national average ($p<.05$).

In the area of SUPPORTIVE STAFF RELATIONSHIP EFFORTS, substantial space for improvement in the RPB rate was found. In the area of SELF-CARE HEALTH MAINTENANCE EFFORTS, slight space for improvement was found.

RECOMMENDATIONS – In order to increase the classes of behaviors associated with the SUPPORTIVE STAFF RELATIONSHIP EFFORTS and SELF-CARE HEALTH MAINTENANCE EFFORTS scales, targeted programming focused on these content areas is recommended. In order to maintain optimal health and functioning of the workforce, additional health maintenance recommendations include: Training on the nature of Corrections Fatigue, Supervisor Support programming, and periodic quantitative assessment of both Corrections Fatigue levels and RPB levels for the purpose of monitoring and informing the direction of improvement efforts or other intervention types as needed.

CSRI Scales	Targeted Content / Based on Constituent Items
Supportive Staff Relationship Efforts	The extent to which corrections professionals: support each other through validating or supportive communications and acknowledgements; talk to each other about best practices and lessons learned; seize opportunities to encourage teamwork and collaboration, exert effort to maintain professional and healthy relationships or repair damaged ones; make efforts to "stay connected" with other staff, and seize opportunities to improve the workplace environment in general.
Self-care Health Maintenance Efforts	The extent to which corrections professionals: take steps to ensure activity and enjoyment during time outside of work; take steps to address potential relationship difficulties related to workplace stress; take steps to stay emotionally connected with significant others outside of the workplace; let go of workplace issues when returning home after their shift; maintain an optimistic frame of mind; make sure to obtain adequate sleep/recovery; and let go of anger related to workplace frustrations.
Confident/Perseverant Frame of Mind	The extent to which corrections professionals: are able to maintain determination and confidence in their ability to perform effectively on the job; feel skillful/masterful at addressing challenging situations; follow through with tasks, even when challenging; model/demonstrate admirable/professional behavior in the workplace; and are able to maintain adaptability in the face of changing circumstances on the job.
Controlled/Logical Problem Solving	The extent to which corrections professionals: are able to remain mindful that all events cannot be controlled; see mistakes as learning opportunities; remain mindful, when experiencing elevated stress, that perseverance pays off; are able to calm themselves in response to anger/agitation before responding to situations; remain mindful, when facing workplace challenges, that facing one's fears pays off; and utilize the strategy of tackling big problems by first breaking them down into smaller and more manageable parts.

Psychometric Properties of the Corrections Staff Resilience Inventory™ (CSRI)

CSRI Scale Reliability Information

The internal consistency reliability of each of the CSRI's four scales were assessed using Cronbach's Alpha (α). Alpha values above .7 are generally considered to demonstrate adequate internal consistency reliability.

All of the CSRI's individual measurement scales demonstrate excellent internal consistency.

The constituent items in the CSRI's scales vary in number from 6 to 12. Items within each scale target measurement of their overall scale construct from various angles, promoting convergent validity and generating a stable and reliable scale total score.

Reliability Statistics	Scale α	# of Items
Supportive Staff Relationship Maintenance Efforts	.89-.92	12
Self-Care Health Maintenance Efforts	.88-.91	9
Confident/ Perseverant Frame of Mind	.86-.90	8
Controlled/Logical	.81-.82	6

Sample Data Information

Data Collection: Corrections agency staff working at correctional organizations located in two geographical areas of the United States were invited to voluntarily participate in a password-protected web-based assessment battery. All participants were required to certify their current employment status as a corrections professional and agree to an informed consent to participate contract.

Data Sample 1: A first development sample consisted of data from corrections professionals working in a metropolitan jail in a Northwestern state (N=273). Demographics: female (19.4%), male (80.2%) undisclosed sex (.4%); aged 18-29 (4.8%), 30-41 (20.5%), 42-53% (42.5%), 54-65 (31.5%), 66+ (.4%), undisclosed age (.4%); white (66.3%), black (15%), mixed/ multiple (7.3%), latino/a (5.1%), asian (5.1%), Native American (.7%), undisclosed affiliation (.4%); Security Staff (100%).

Data Sample 2: A second development sample consisted of data from corrections professionals working in Midwestern state (n=176 complete cases). Demographics: female (65%), male (35%); aged 18-29 (7.4%), 30-41 (34.1%), 42-53 (36.9%), 54-65 (19.9%), 66+ (1.7%); 93.2% white, 6.8% other; 6 mo-5 yrs. experience (20.5%), 6-10 yrs. (24.4%), 11-15 yrs. (13.1%), 16-20 yrs. (13.1%), 20+ yrs (29%); probation (37.5%), prison (22.2%), parole (27.3%), 13% (Other); Parole Officer/Agent (21.6%), Probation officer/agent (27.3%), supervisors (10.2%), administrative staff (6.3%), security/custody staff (7.4%), and other job titles (27.2%).

Factor Loadings

The CSRI's four scale factor structure has been found to be robust and recoverable in independent data samples, based upon Principal Components Analysis and Confirmatory Factor Analysis using Structural Equation Modeling (SEM). Average factor loadings per scale are indicated below. Results supports the ability of the CSRI's four measurement scales to distinctively measure their respective unique content. Factor loading magnitudes are strong.

| Average Factor Loading Per Scale	
Supportive Staff Relationship Maintenance Efforts	.65-.65
Self-Care Health Maintenance Efforts	.67-.69
Confident/Perseverant Frame of Mind	.67-.67
Controlled/Logical Problem Solving	.50-.64

Inverse Relationship Between CSRI Overall Scores and Comorbidity

More Resilience-Promoting Behaviors (RPBs) = Lower Health and Functioning Impairment

CSRI Overall Score Ranges Versus Presence of Negative Health Conditions
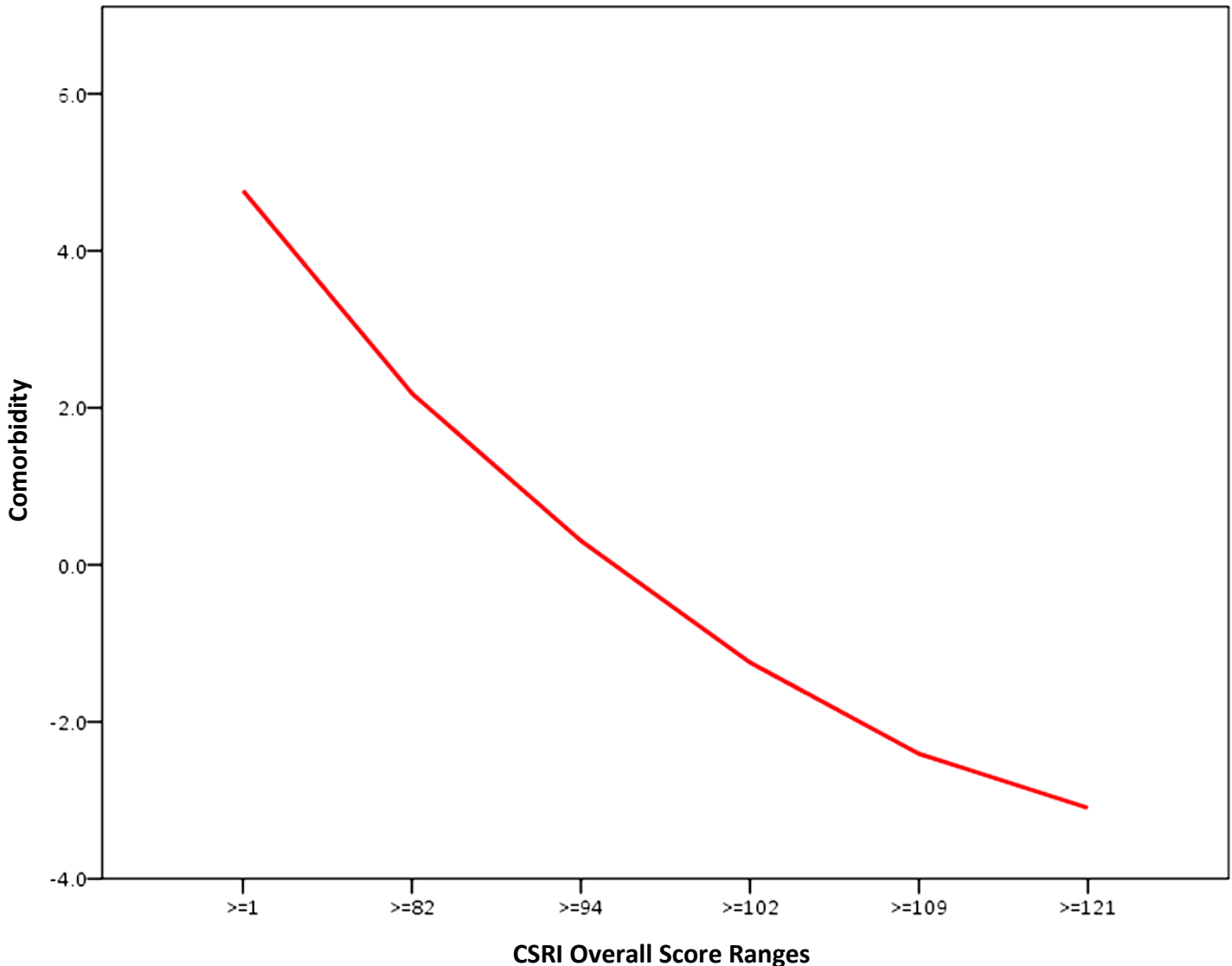
*Comorbidity was defined for analysis as an aggregate score from several health-related assessment scales (i.e., the CFSA Overall score, PCL-5 total score, DDS score, DASS-21 Depression score, DASS-21 Anxiety score, and DASS-21 Stress score), after converting scale data from raw to z-scores. In the line chart above, the mean Comorbidity score is plotted against CSRI overall score ranges that included an approximately equal number of cases between them.

Previous research has indicated that the presence of Comorbidity in corrections professionals is associated with notably worse health status across a spectrum of health-related measures (Denhof, Spinaris, and Morton, 2013). CSRI data indicate that when correctional workforces demonstrate more resilience-promoting behaviors, the presence of negative comorbid health conditions is incrementally lower. This relationship suggests the utility of CSRI scale scores for optimally customizing improvement efforts and focal points for staff trainings and other interventions designed to promote resilience in the workforce. Thus CSRI assessment data provides a data-driven, customized approach to positive culture change and reducing the presence and/or extent of Corrections Fatigue and disorder vulnerability experienced by staff members.
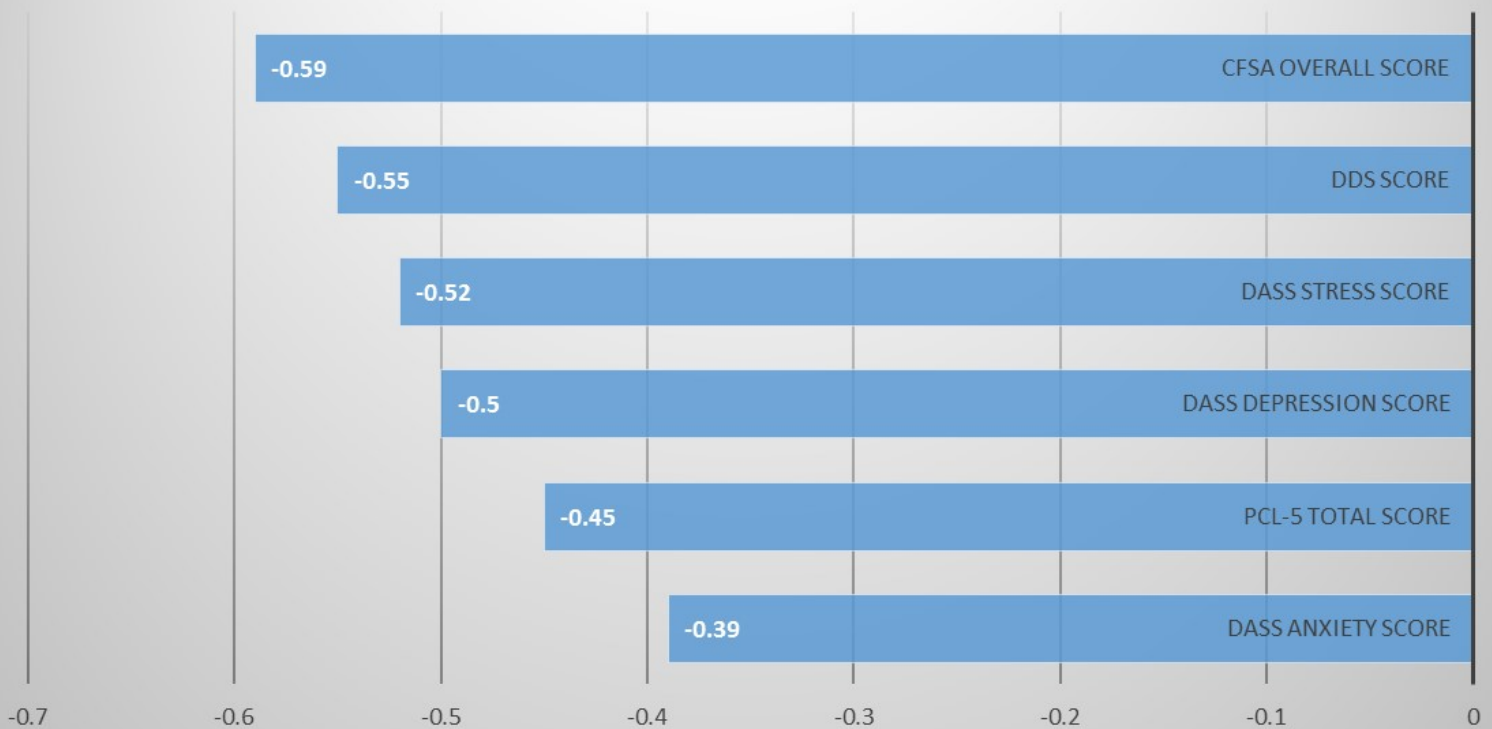
[1] Denhof, M.D., Spinaris, C.G., and Morton, G.R. (2014). *Occupational Stressors in Corrections organizations: Types, Effects, and Solutions.* United States Department of Justice. National Institute of Corrections. Available at: http://nicic.gov/library/028299

Concurrent Validity

Concurrent validity support for the CSRI and its distinct measurement scales has been obtained through the concurrent administration of the CSRI and several established health-related assessment instruments. Concurrently administered assessment instruments included the Depression, Anxiety, and Stress Scales (DASS-21; Henry & Crawford, 1995)[1], the PTSD Checklist for DSM-5 (PCL-5; Weathers, Litz, Herman, Huska, & Keane, 2013)[2], the Corrections Fatigue Status Assessment (CFSA-v5; Denhof and Spinaris, 2013)[3], and the Depression Danger Scale (DDS; Denhof, 2014)[4].

The CSRI overall score, which measures the presence and extent of positive, resilience-promoting behaviors by corrections professionals, correlated strongly and negatively (i.e., inversely—as health indicators increase, CSRI scores decrease) with all health-related measures of mental health status and disorder. The CRSI overall score correlated to a statistically significant degree ($p<.01$) with the CFSA-v5 total score—a scientific measure of Corrections Fatigue, the PTSD Checklist for DSM-5—a measure of PTSD symptoms, the Depression Danger Scale (DDS)—a group-based suicide risk assessment, and the DASS-21 Depression, Anxiety, and Stress Scales—which measure depression, anxiety, and stress symptom severity.

Correlations Between the CSRI Overall Score and Various Established Health-Related Measures

Measure	Correlation
CFSA OVERALL SCORE	-0.59
DDS SCORE	-0.55
DASS STRESS SCORE	-0.52
DASS DEPRESSION SCORE	-0.5
PCL-5 TOTAL SCORE	-0.45
DASS ANXIETY SCORE	-0.39

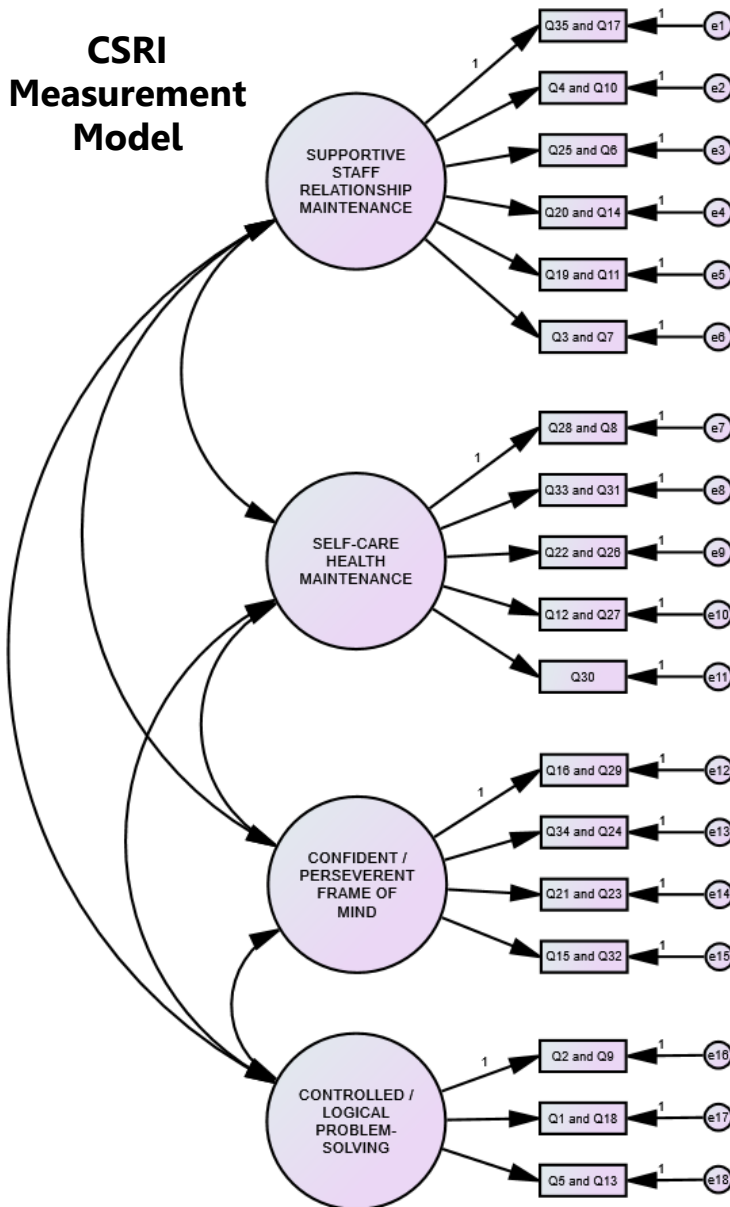*All (Pearson) correlations are statistically significant using the $p<.01$ criterion.

[1] Henry, J.D., & Crawford, J.R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44, 227-239.

[2] 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). Scale available from the National Center for PTSD at www.ptsd.va.gov.

[3] Denhof, M.D., & Spinaris, C.G. (2014). The Corrections Fatigue Status Assessment-Version 5. Located at: http://desertwaters.com/wp-content/uploads/2014/01/CFSA_V4_Data_Sheet.pdf

[4] Denhof, M.D. (2014). The Depression Danger Scale (DDS): Data Sheet. Located at http://desertwaters.com/wp-content/_uploads/2014/01/DDS_Data_Sheet.pdf

Factorial Validity / Confirmatory Factor Analysis / Replicability

CSRI Measurement Model

The 4-scale structure of the CSRI was initially established using Principal Components Analysis (PCA) and a subsequent replication attempt was performed using Confirmatory Factor Analysis (CFA) based upon Structural Equation Modeling (SEM). The path diagram below represents a measurement model prepared in SPSS AMOS 20, which was assessed for its fit to a second, independent data sample of corrections professionals. A variety of Fit Indices were employed to assess model fit, as different types of fit indices vary somewhat in their performance/accuracy relative to varying characteristics of data samples to be assessed.

Results indicated that the fit of the data to the 4-factor model was moderate to good, supporting the factorial validity of the CSRI's 4-scale structure and the CSRI scales' ability to distinctively measure different classes of resilience-promoting behaviors (RPBs).

Fit Index Estimates of Model Fit

CMIN/DF[2]	= 2.17	(Acceptable)
Comparative Fit Index (CFI)[3]	= .92	(Good)
Incremental Fit Index (IFI)[4]	= .92	(Good)
Tucker-Lewis Index (TLI)[5]	= .91	(Good)
Root Mean Square Error of Approximation (RMSEA)[6]	= .08	(Moderate)

As a further confirmation of model fit, the Standardized Residual Covariance Matrix was examined. Values in the matrix were all found to be small (<2.58), further supporting the adequacy of model fit (Joreskog & Sorbom, 1988)[7].

Fit Criteria Notes:

CMIN/DF values between 2 and 5 are indicative of acceptable model fit.

CFI, IFI, and TLI values are indicative of good model fit when their value exceeds .9 (Kline , 1998)[8].

RMSEA values <.06 indicate good fit and .08 to .1 mediocre fit (Hu & Bentler, 1999).

Analysis Notes:

Because the replication sample size was not large (n=176) and because item-level variables often departed from normality, as is typical of clinical variables, a variable parceling strategy was employed for analysis to improve distributional characteristics and to reduce potential analysis distortion following from non-normality and small sample size (Floyd and Widaman, 1995)[1]. For each set of scale item-constituents, the items with the highest and lowest level of kurtosis were combined for analysis, as indicated in the path diagram. *Kurtosis is more problematic than skew in structural equation modeling (SEM), as indicated in computer simulation studies.

Large circles represent latent variables (i.e., factors); rectangles represent indicator variables (CSRI items); small circles represent unique variance (error) of indicator variables; curved arrows represent factor correlations and straight arrows spanning from factors to indicator variables represent regression weights.

1 Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299.
2 Arbuckle, J. A., & Wothke, W. (1999). *Amos 4.0 User's Guide*. Chicago: Smallwaters Corporation.
3 Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
4 Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods and Research*, 17, 303-316.
5 Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38, 1-10.
6 Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
7 Joreskog, K. G., & Sorbom, D. (1988). LISREL 7: A guide to the program and applications. Chicago: SPSS.
8 Kline, R. B. (1998). *Principles and practice of structural equation modeling.* New York: Guilford.
9 Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.