Psychometric Testing of the Collaborative Behavior Scale-Shortened (CBSS)

Jaynelle F. Stichler, DNSc, RN, NEA-BC, FACHE, FAAN
Professor Emerita – SDSU
Professional Development & Research Consultant
Sharp Memorial & Sharp Mary Birch Hospital for Women & Newborns
Past-President Gamma Gamma Chapter STTI
Acknowledgements

• Lisa Kath, PhD, Associate Professor
  Industrial-Organizational Psychology,
  San Diego State University (SDSU)
• Mark Ehrhart, PhD, Associate Professor,
  Industrial-Organizational Psychology,
  SDSU
• Michael Gates, RN, PhD, Associate
  Professor, Nursing, SDSU
• Maria Shirey, RN, PhD, NEA-BC, FACHE,
  FAAN, Professor, Nursing, U of Alabama
Objectives

At the completion of this session, participants will be able to:

• Describe the methods used to test the psychometric properties of the new 8 item CBSS scale
• Apply the use of the CBSS in their own practice setting
Purpose of Study

• To identify predictors and moderators of nurse leader stress
• To test the psychometric properties of a shortened 8 item version (CBSS) of the original 20 item Collaborative Behavior Scale (CBS) – Cronbach’s $\alpha = .98$
Significance

Collaboration in nursing has significant positive effects on:

• Job satisfaction \( R^2 = .40^{***} \) (Chang et al, 2009)
• Organizational commitment \( r = .399^{**} \)
• Professional fit \( r = .457^{**} \)
• Patient outcomes - \( R^2 = .35^{***} \) (Chang et al, 2009)
• Job strain \( R^2 = .43^{***} \) (Almost & Laschinger, 2002)
• Workplace empowerment \( r = .415^{***} \)

(Almost & Laschinger, 2002)
Method

• Multi-trait-multi-method (MTMM) approach (Polit & Beck, 2008)
• Reviewed inter-item correlations among items from previous studies using CBS
• Original concept analysis – three dimensions
  – Balance of power,
  – Integration,
  – Interpersonal valuing
Methods (continued)

- A panel of five experts reviewed 8/20 items from original survey based on original concept analysis and theoretical frameworks Deutsch, (1973) Homans (1950) & Kilmann, (1977)

- CBSS (8 items) used in a multi-site (36 hospitals) to evaluate stress among nurse leaders (n = 751; 70% response rate)
Scoring of the CBSS

- Responses coded
  - 4 = *nearly always*,
  - 3 = *often*,
  - 2 = *sometimes*,
  - 1 = *rarely*,
  - NA

- Total scale score & total *mean* score should be calculated for analysis
Please tell us more about your relationship with your supervisor:

<table>
<thead>
<tr>
<th></th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Nearly Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>My supervisor and I trust one another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My opinions are listened to by my supervisor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel that my input is truly valued by my supervisor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>There is a feeling of mutual regard and respect with my supervisor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My supervisor and I share information openly with one another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My supervisor and I recognize the need to have a sense of “give and take” in the work relationship.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My supervisor and I recognize our interdependence with one another in order to meet our goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My supervisor and I are committed to the process of working together to meet our goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
CBSS – 8 items (please only use with permission)

1. My supervisor and I trust one another.
2. My opinions are listened to by my supervisor.
3. I feel that my input is truly valued by my supervisor.
4. There is a feeling of mutual regard and respect among my nurse peers.
5. The physicians and the nurses share information openly with one another.
6. My supervisor and I recognize the need to have a sense of “give and take” in the relationship.
7. My supervisor and I recognize our interdependence with one another in order to meet our goals.
8. My supervisor and I are committed to the process of working together to meet our goals.
Results - CBSS

- Cronbach’s $\alpha = .96$
  (CBS $\alpha = .98$)
- Item total correlations $= .77 - .86$
  (CBS $.84 - .90$)
- Convergent & discriminate validity was confirmed using (MTMM) approach (Polit & Beck, 2008)
CBSS

• Convergent validity
  – Participation in Decision Making ($r = .436^{**}$)
  – Job Control/Decision Authority ($r = .502^{**}$)

• Divergent validity
  – Meyer & Allen Continuance Commitment Scale ($r = .106^*$)
  – Cortina et al. Workplace Incivility Scale ($r = -.483^{**}$)
Results - CBSS

• CBSS was significantly correlated with:
  – Organizational voice ($r = .411^{**}$)
  – Authentic Leadership ($r = .792^{**}$)
  – Transformational leadership ($r = .784^{**}$)
  – Supervisor support ($r = .834^{**}$)
  – Job satisfaction ($r = .319^{**}$)

• Findings support correlations previously reported in the literature
Factor Analysis

• Original CBS – Exploratory factor analysis with Varimax rotation yielded a simple structure with 73% of the variance attributed to Factor 1 (factor loadings ranged from .79 to .92)

• CBSS – (n = 577) Principal component analysis with Varimax rotation with Kaiser normalization resulted in a unidimensional model with 82% of variance attributed to Factor 1 (factor loadings .77-.86).
Applications

• CBSS can be used to assess collaborative behavior:
  – Nurses in interactive situations
  – Shared governance initiatives
  – Magnet journeys
  – Professional practice environments
  – Resolution of conflictual situations
  – Among nurses, between nurses and managers, & between nurses and physicians
Recommendations for Future Research

• Test the CBSS for other relationships
  – Nurses & physicians
  – Among nurses on a unit
  – Nurses and other interdisciplinary partners
  – New nurse graduates or nurse residents and nurses on the unit
Conclusions

• The 8 item CBSS can be used in research in lieu of the 20 item CBS to measure collaborative behavior among various groups.
Implications for Practice

• Collaborative behaviors among interdisciplinary healthcare providers is essential for quality patient care, professional practice, a positive work environment, job satisfaction and professional / organizational commitment.
References


References


Contact Information

Jaynelle F. Stichler, DNSc, RN, NEA-BC, FACHE, FAAN
Professional Development & Research Consultant
Sharp Memorial & Sharp Mary Birch Hospital for Women & Newborns

619-871-0298 Mobile
jsticher@aol.com

Professor Emerita Nursing Leadership in Health Systems
SDSU
Questions?