Treatment Outcomes in Veterans Diagnosed with Service-related Mental Disorders

DND/CIMVHR Mental Health Research Symposium, Ottawa, 3 May 2016

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Faculty/Presenter Disclosure

- Faculty: Dr. J Don Richardson

- Relationships with commercial interests:
  - Grants/Research Support: None
  - Speakers Bureau/Honoraria: None
  - Consulting Fees: None
  - Other: not applicable
Disclosure of Commercial Support

- This program has received financial support from not applicable in the form of not applicable.
- This program has received in-kind support from not applicable in the form of not applicable.

- Potential for conflict(s) of interest:
  - Dr. J Don Richardson has received not applicable from not applicable.
  - Not applicable a product that will be discussed in this program: not applicable.

- Mitigating Potential Bias:
  - This research has been peer-reviewed
Collaborators

- Ateka A. Contractor, PhD
- Cherie Armour, PhD
- Kate St. Cyr, MSc
- Jon D. Elhai, PhD
- Jitender Sareen, MD, FRCPC
Background History

- Most treatment guidelines recommend psychotherapy & pharmacotherapy

- Poor response in combat veterans & treatment programs for military-related PTSD (Creamer et al., 2002; Johnson et al., 1996; Friedman 1997; Schoenfeld, Marmar et al. 2004; Benedek, Friedman et al, 2009)

- Meta-analysis comparing pharmacotherapy & psychotherapy trials for combat-related PTSD (Stewart & Wrobel, 2009)
  - Larger effect for medication
  - ↓ symptom severity was 2X for drug treatments
Factors predicting poor response in combat PTSD:

- **Chronicity & comorbidity** *(Shalev, Bonne et al. 1996; Friedman 1997; Forbes, Creamer et al. 2003)*

- **Anger** *(Forbes, Bennett et al. 2005)*

- **History of prior trauma & psychiatric illness** *(Hourani L. L. and Yuan H. 1999)*

However, poor response...

- Recruited veterans from VA setting who have been suffering with PTSD for several decades & have often failed many treatment modalities *(Friedman et al., 2007)*
Objective of this study:

- Identify predictors of treatment outcomes among a sample of treatment-seeking CF veterans.

- We hypothesize that:
  - *comorbid psychiatric conditions*” &
  - *chronicity of PTSD symptoms*”
  - …will have a negative effect on treatment outcomes.
Methods

- **Participants:**
  - 151 vets receiving outpatient psychiatric treatment at the Parkwood OSI clinics.
  - Retrospective chart review *(Institutional Review Board approval)*

- **Inclusion:**
  - Maximize the generalizability of findings to “real world” clinical practice
    - Allowed for all coexisting axis I, II & III disorders
    - Primary clinical diagnosis of PTSD (DSM-IV), confirmed by the CAPS

- **Exclusion:**
  - Patients receiving psychiatric care in the community
  - Participants who did not complete 1 Y of treatment \( (n = 17) \) or who were currently in treatment for \(< 1 \) Y \( (n = 17) \)
Treatment protocol

- **Standardize assessment & treatment protocol,**
- **Basic Phase approach:** Focus on stabilization in 6-12 M
  - Psychoeducation: Group or individual format
  - Anxiety Management
  - Med. dosing & psychotherapy was flexible & adjusted according to symptoms & side effects
- **Psychiatric care:**
  - Q 2 -4 Wks - until stabilization followed by Q 1-3 M
  - Symptoms scales administered prior to F/U app.
- **Psychotherapy:** provided by psychiatrist, psychologist, MSW or CNS *(clinical nurse specialist)*
Outcome measures

• **Assess change using two psychopathology measures:**
  - 1. PTSD (PCL-M)
  - 2. Depression (BDI-II)

• **Predictor variables:**
  - Baseline scores on the two psychopathology measures not included as outcomes in the given analysis,
  - Baseline **AUDIT** score
  - **and Chronicity** (years with PTSD symptoms)
Analysis

- **Conducted Latent Growth Curve Modeling**
  - PCL-M and BDI-II scores were analyzed longitudinally over 9 time points (at 3-M intervals) from initial assessment to 2 years

- **Missing values:**
  - Estimated using max. likelihood procedures with robust standard errors (MLR) for the growth modeling
  - Multiple imputations for all other analyses
Results
### Categorical Variables

<table>
<thead>
<tr>
<th>Category</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relationship Status</strong></td>
<td></td>
</tr>
<tr>
<td>Common-law/marriage</td>
<td>71.8 (84)</td>
</tr>
<tr>
<td>Divorced/Separated/never married</td>
<td>28.2 (33)</td>
</tr>
<tr>
<td><strong>Work Status</strong></td>
<td></td>
</tr>
<tr>
<td>Working/attending school or retraining</td>
<td>48.8 (57)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Completed Secondary</td>
<td>56.0 (66)</td>
</tr>
<tr>
<td><strong>Deployment</strong></td>
<td></td>
</tr>
<tr>
<td>Balkan states <em>(former Yugoslavia/Kosovo)</em></td>
<td>41.9 (49)</td>
</tr>
<tr>
<td>Africa <em>(Somalia, Rwanda, Eatreia, and Sierra Leone)</em></td>
<td>14.5 (17)</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>26.5 (31)</td>
</tr>
<tr>
<td><strong>Traumatic Event Exposure</strong></td>
<td></td>
</tr>
<tr>
<td>Combat/War Zone</td>
<td>88.0 (103)</td>
</tr>
<tr>
<td>Assault with Weapon</td>
<td>79.3 (92)</td>
</tr>
<tr>
<td>Transportation Accident</td>
<td>59.1 (68)</td>
</tr>
<tr>
<td>Captivity</td>
<td>17.9 (21)</td>
</tr>
</tbody>
</table>

### Continuous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>40.18 years (8.10)</td>
</tr>
<tr>
<td>CAPS Total Baseline Score</td>
<td>86.57 (17.30)</td>
</tr>
<tr>
<td>PCL-M Total Baseline Score</td>
<td>64.30 (10.68)</td>
</tr>
<tr>
<td>BDI-II Total Baseline Score</td>
<td>33.15 (10.45)</td>
</tr>
<tr>
<td>AUDIT Total Baseline Score</td>
<td>8.47 (8.89)</td>
</tr>
</tbody>
</table>
Medication at 2 Year

• Pharmacotherapy
  • Antidepressant: 94.9%
  • Antipsychotic: 53.8%
  • Anticonvulsant: 29.1%
  • Stimulant: 11.1%
  • Benzodiazepine: 5.1%

• Combination treatment
  • 2 or more antidepressants: 69.2%
  • Antidepressant & antipsychotic: 53%
Treatment Outcome
Latent growth curve modeling ...
PTSD

- **Unconditional model**
  - Significant, indicating significant ↓ in PTSD severity over time.  
    \[ \text{[Yuan-Bentler } \chi^2 (40, N = 117) = 221.25, p < .001] \]
  - Baseline PCL-M score was not related to changes in PCL-M scores \( (\beta = -.24, SE = .19, p = .193) \).
  - **Mean improvement of** -1.97/3 M \( (\beta = -0.96, SE = .24, p < .001) \).

- **Conditional Model**
  - Depressive symptom severity \( (\beta = .67, SE = .20, p = .001) \) was positively related to PTSD severity.
  - Depression severity was the only covariate that had a significant effect on PTSD severity over the 2-years \( (\beta = -.44, SE = .15, p = .004) \).
Depression

- **Unconditional model**
  - Significant, indicating significant ↓ in Depression severity over time. \[Yuan-Bentler \chi^2 (40, N = 117) = 162.23, p < .001\]
  - Baseline BDI-II score was related to changes in BDI-II scores \((\beta = -0.344, SE = 0.147, p = 0.019)\).
  - Mean improvement of -0.83 units \((\beta = -0.62, SE = 0.215, p = 0.004)\).

- **Conditional Model**
  - PTSD symptom severity \((\beta = 0.47, SE = 0.09, p < 0.000)\) was positively related to BDI severity.
  - No covariates (PTSD, alcohol use or chronicity) had a significant effect on BDI severity over the 2-years.
Latent Trajectories Unconditional Models

Figure 1

Growth model estimated means
Scale Severity Scores (25 Month Follow-up)

Total Score

13M  25M

PCL: Yuan-Bentler $\chi^2 (40, N = 117) = 221.25, p < .001$
BDI: Yuan-Bentler $\chi^2 (40, N = 117) = 162.23, p < .001$
Response Rates
At Two Years...

- Using a PCL-M cut-off score of 50:
  - 65.8% \((n = 77)\) of participants no longer met the probable PTSD diagnosis.
Discussions

- Treatment outcome demonstrated progressive improvement over time
- Response rates (PCL-M ≤50) of almost 66% is encouraging …,
  - 34% still have PTSD after 2 year!
- Factors predicting PTSD outcomes:
  - Depression severity (BDI-II)
  - However, NO evidence for:
    - Chronicity (duration of illness)
    - and History of alcohol use
Limitation

- Absence of a control group
  - Cannot conclude that the changes observed were strictly due to the treatment process.
  - Many intervening variables that might have moderated the treatment effects. i.e. Peer support
- Single site & specialized clinic limits generalizability
- Use of self-rating questionnaire (PCL-M) to assess treatment response
- Chronic PTSD demonstrates significant variability in symptoms over time which limits the results
Conclusions

- In this “real-world” study of veterans with military-related PTSD:
  - ...comorbid depression severity acted as a significant predictor of PTSD symptom response.

- Critical to assess & treat comorbid depression in veterans with military-related PTSD.

- Encouraging patients to remain in long-term treatment is important:
  - ...as progressive improvement in PTSD severity can be achieved over a 2-year period.
Predictors of long-term treatment outcome in combat and peacekeeping veterans with military-related PTSD.

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Thank You

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