Project Victory – A Brief, Intensive, Residential Treatment Program for Mild Traumatic Brain Injury from Combat-Related Blast Exposure

A Description and Preliminary Data Analysis

Gary S. Seale, Ph.D.
INTRODUCTION

• Traumatic Brain Injury (TBI) is the signature injury of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF)


• A **significant** number of Veterans of OEF/OIF that accessed services from Veterans Administration (VA) hospitals showed symptoms of mild TBI or post concussion syndrome (Couch & Cohen, 2012).
INTRODUCTION

• Commonly reported symptoms, up to 8 years post deployment:
  – headache
  – dizziness
  – balance problems
  – poor coordination
  – poor memory and
  – difficulty making decisions

• A significant number reporting mTBI or post concussive symptoms also report ➔ one or more psychiatric disturbances:
  – post traumatic stress disorder (PTSD) or
  – depression, anxiety

• and head, neck or back pain (Taylor, Hagel, Carlson, et al., 2012).
INTRODUCTION

• If still on active duty status ➔
  – receive case management services and
  – have access to therapy services provided by poly trauma units or Wounded Warrior regiments

• If leave active duty status ➔
  – may not have access to the same services or
  – service delivery may be fragmented.

• Recent studies recommend the use of interdisciplinary treatment and evidenced-based therapy techniques (RAND Report, 2008).
INTRODUCTION

Project Victory was developed for active duty and veteran military personnel who sustained mild TBI or multiple concussions due to blast exposure while serving in OEF/OIF theatres of combat. It was designed to provide:

– evidenced-based
– interdisciplinary
– residential
– post acute
– rehabilitation services
METHODS

Approach and Data Collection

The Project Victory program encouraged:
• development of skills and compensatory strategies
  ➔ For safe and independent performance of advanced activities of daily living (ADL’s) using community skills training techniques (Cullity, Jackson & Shaw, 1991)
• use of external aids (including smart phone, IPad technologies)
  ➔ For memory compensation, (Cicerone, 2005; Gordon, 2006)
• use of individual and group cognitive-behavioral psychotherapies
  ➔ For treatment of anxiety and depression, (Beck; Michenbaum)
• use of Motivational Interviewing and Stage Change techniques
  ➔ For treatment of substance use/abuse, (Miller & Rollnick, 2002; Diclemente, 2003)
• use of the Shut-I protocol
  ➔ For sleep disorders
• use of community exposure (i.e., structured generalization)
  ➔ For treatment of anxiety in community settings.
METHODS

Approach and Data Collection

Therapeutic Environment:

- All therapies were provided in modules of about one (1) hour duration;
- 5-6 hours of skilled therapy were delivered each week day;
- All therapies were delivered by licensed/certified staff
Methods

Inclusion Criteria

Military personnel who sustained combat-related TBI or multiple concussions while serving in OEF/OIF theatres were eligible to participate in Project Victory.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Range</th>
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<tbody>
<tr>
<td>Age (years)</td>
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<td>22-50</td>
</tr>
<tr>
<td>Length of Stay (days)</td>
<td>54</td>
<td>1-92</td>
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<tr>
<td>Time since injury (years)</td>
<td>4.5</td>
<td>&lt;1-9</td>
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Methods
Population

<table>
<thead>
<tr>
<th>Variable</th>
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<tbody>
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<tr>
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<tr>
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<td>Army</td>
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<tr>
<td>Navy</td>
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<td>7%</td>
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<td>Marines</td>
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<tr>
<td>Cause of Injury</td>
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<td>Blast</td>
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<tr>
<td>Fall</td>
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<tr>
<td>Blow/head</td>
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<td>25%</td>
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<tr>
<td>GSW</td>
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<td>Co-Morbidities</td>
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<tr>
<td>PTSD</td>
<td>33</td>
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<tr>
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<tr>
<td>Sub Abuse</td>
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<td>Sleep Prob</td>
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<td>70%</td>
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<tr>
<td>Cog Prob</td>
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<td>100%</td>
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<tr>
<td>Anger</td>
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<td>VAMC</td>
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<tr>
<td>Other</td>
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Additional Inclusion Criteria

Other inclusion criteria included:
- medical stability (participant did not require 24-hour nursing care);
- self-preserving (participant was not a danger to self or others),
- and sobriety (participant was not chemically dependent) at the time of admission.
Outcome Measures

Objective measures collected within 24 hours of admission and again within 24 hours of discharge:

• Participation in activities of daily living ➔ the Mayo-Portland Adaptability Inventory – 4 (Malec, 2005).

• Alcohol Dependency ➔ the Alcohol Use and Dependence Identification Test (AUDIT) (Saunders, et al., 1993).

• Depression ➔ the Centers for Epidemiologic Studies Depression Scale (Ratliff, 1977).

• Positive Emotion ➔ the 4 positive affect items from the CESD

• Life Satisfaction ➔ the Satisfaction with Life Scale (Diener, et al., 1985).
Outcome Measures

Self-report measures collected during treatment:

- Quality and duration of sleep ➔ participants asked to record the hours of sleep and self-report on the quality of sleep.
- Anxiety in community-based settings ➔ participants self-rated on a 1 to 10 scale with 1 indicating no anxiety and 10 indicating extreme anxiety.

At discharge, a satisfaction survey was competed:

- Participant satisfaction ➔ a TLC Patient Satisfaction Survey developed by the facility to assess consumer satisfaction.
RESULTS

- Thirty-three participants (83%) completed Project Victory and graduated; seven participants did not complete the program (2 discharged – medical reasons; 5 AMA).

At discharge:
- Participants demonstrated significant improvement in function as measured by the Mayo-Portland Adaptability Inventory – 4 ($p < .001$). The greatest improvement was noted in the Ability subscale which measured activities of daily living and cognition.
- Of participants reporting substance use/abuse prior to admission, 73% maintained sobriety during treatment; 27% continued to engage in alcohol consumption.
- 65% reported fewer depressive symptoms as measured by the CESD
- Participants reported a significant increase in positive emotion ($p = .004$).
- Participants reported significant increase in life satisfaction as measured by the SWLS ($p = .002$).
RESULTS

• Seventy (70%) of participants reported sleep difficulty at admission (i.e., difficulty going to sleep, difficulty staying asleep, nightmares, etc.); no significant change was reported at discharge.

• No statistically significant reduction in self-reported anxiety in community settings was noted at discharge.
In terms of participant satisfaction:

• 80% - 100% received needed clinical services

• Clinical and Residential services received highest ratings (90% - 100%) for knowledge/experience, professionalism, caring, helpfulness and quality of services.

• Physical plant received high ratings (90% - 100%) for accessibility, cleanliness, furnishings, and comfort.

• Consumer satisfaction issues ranked 100% for: respect for rights/dignity; taking seriously & handling questions/concerns; opinions listened to/input solicited.

• Over 90% of participants would refer someone to Project Victory.
DISCUSSION

Consistent with reports in the current literature:
• Large % sustained mild TBI or multiple concussions from blast exposure.
• All participants reported cognitive deficits stemming from injury
• Large % reported psychiatric disturbance (i.e., anxiety, depression, etc.).
• Cognitive deficits and psychiatric disturbances continued for up to nine years post deployment for some participants.

Using an interdisciplinary approach and evidenced-based techniques:
• Significant improvement was noted in safe and independent performance of advanced ADL’s, and cognitive function; use of external compensatory strategies for memory deficits; reported level of positive emotion; and life satisfaction. A large percentage maintained sobriety while in the program.

Significant change not noted in:
• Self-reported depressive symptoms, sleep quality or duration, or anxiety in community settings.
(brief length of stay (i.e., average length of stay of 54 days), and non-compliance with some aspects of treatment may account for these results)
Limitations:

While the preliminary analysis of Project Victory appears promising, a number of limitations exist:

– small sample size
– non-random assignment of participants to treatment
– a significant number of participants were lost during follow-up
CONCLUSIONS

• Project Victory approach may be an effective post acute rehabilitation model for mTBI due to combat-related blast exposure.

• Established private sector post acute rehabilitation programs can extend military continuum of care to the large number of soldiers returning from deployment with mTBI.

• Allocate resources for follow-up/maintenance as TBI is now recognized as a chronic condition (Masel & DeWitt, 2010).
QUESTIONS?

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REFERENCES


