Combat to College: Challenges Faced by Veterans with Traumatic Brain Injuries

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Presenters and Format

- Shoba Sreenivasan, Ph.D., GLA Psychologist:

Theoretical

- Dan Smee, M.S.W./Combat Iraq War Veteran:

Experiential

- Sandra Buenrostro, M.A., CRC, Adjunct Counselor/Riverside Community College

Application

- ***"To care for him who shall have borne the battle, and for his widow, and his orphan" ~ Abraham Lincoln***

Mild Traumatic Brain Injury (mTBI)

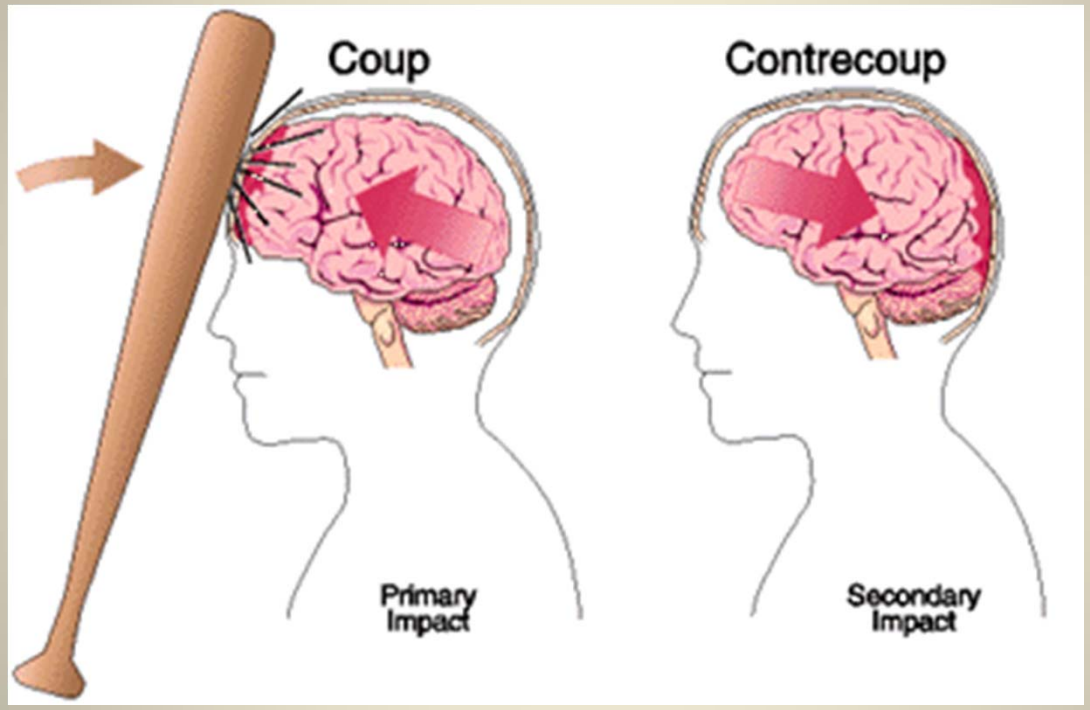
- A traumatically induced physiological disruption of brain function, as manifested by at least *one* of the following: [from blow or jolt to head]
  - any period of loss of consciousness (LOC)
  - any loss of memory for events immediately before or after the accident (posttraumatic amnesia, PTA)
  - any alteration in mental state at the time of the accident (e.g., feeling dazed, disoriented, or confused)
  - focal neurologic deficit(s) that may or may not be transient
- Harrington et al., (1993) from Wortzel, 2009

American Congress of Rehabilitation Medicine

- The severity of the injury does not exceed the following:
  - LOC ≤ 30 minutes
  - after 30 minutes, Glasgow Coma Scale = 13-15
  - PTA ≤ 24 hours
- TBI producing disturbances that exceed these criteria is classified as moderate or severe

Wortzel, 2009

Mechanism of Injury – Acceleration/Deceleration



(image from braininjury.com)

Injury Factors: Translation, Rotation, & Angular Acceleration Forces (Figure from Arciniegas and Beresford, 2001)

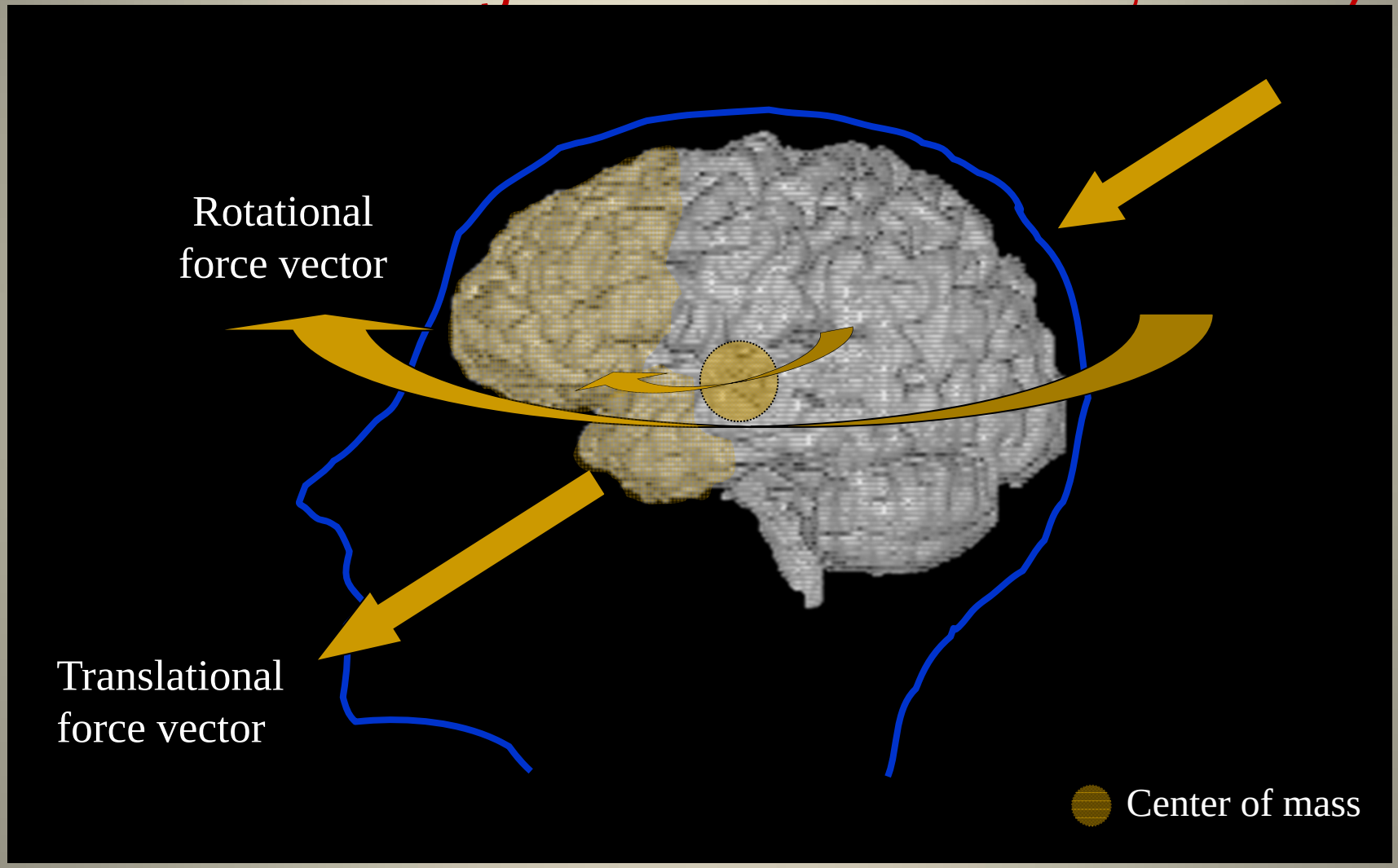


Figure adapted from Arciniegas and Beresford 2001

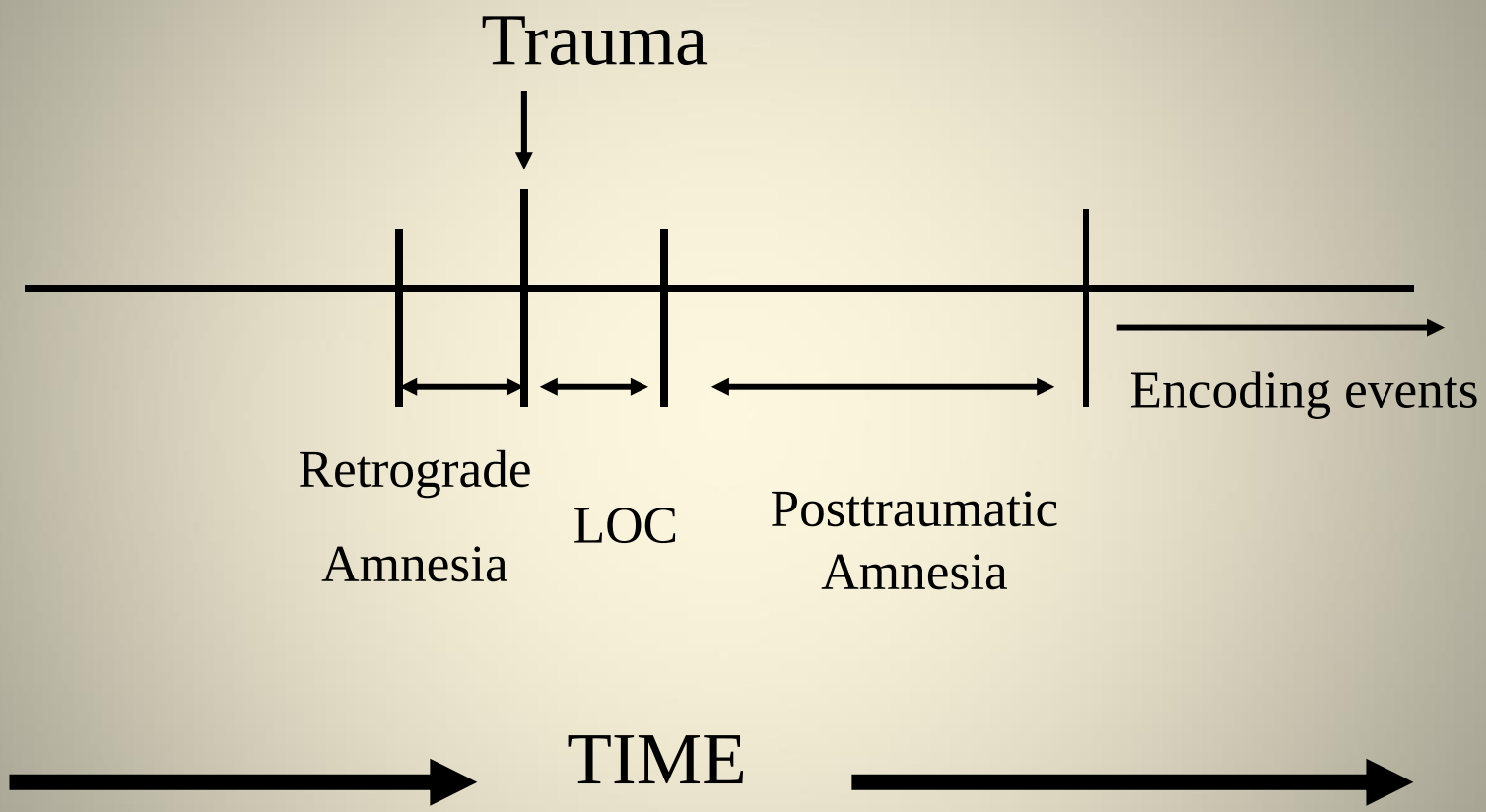
Blast Injury

- Primary –blast wind from explosive
- Secondary – from explosion, fragments objects thrown
- Tertiary – individual thrown by blast and strikes and object
- Quaternary-burns, toxic inhalation

Image from: www.aaaceus.com
NL0311A: BLAST INJURIES

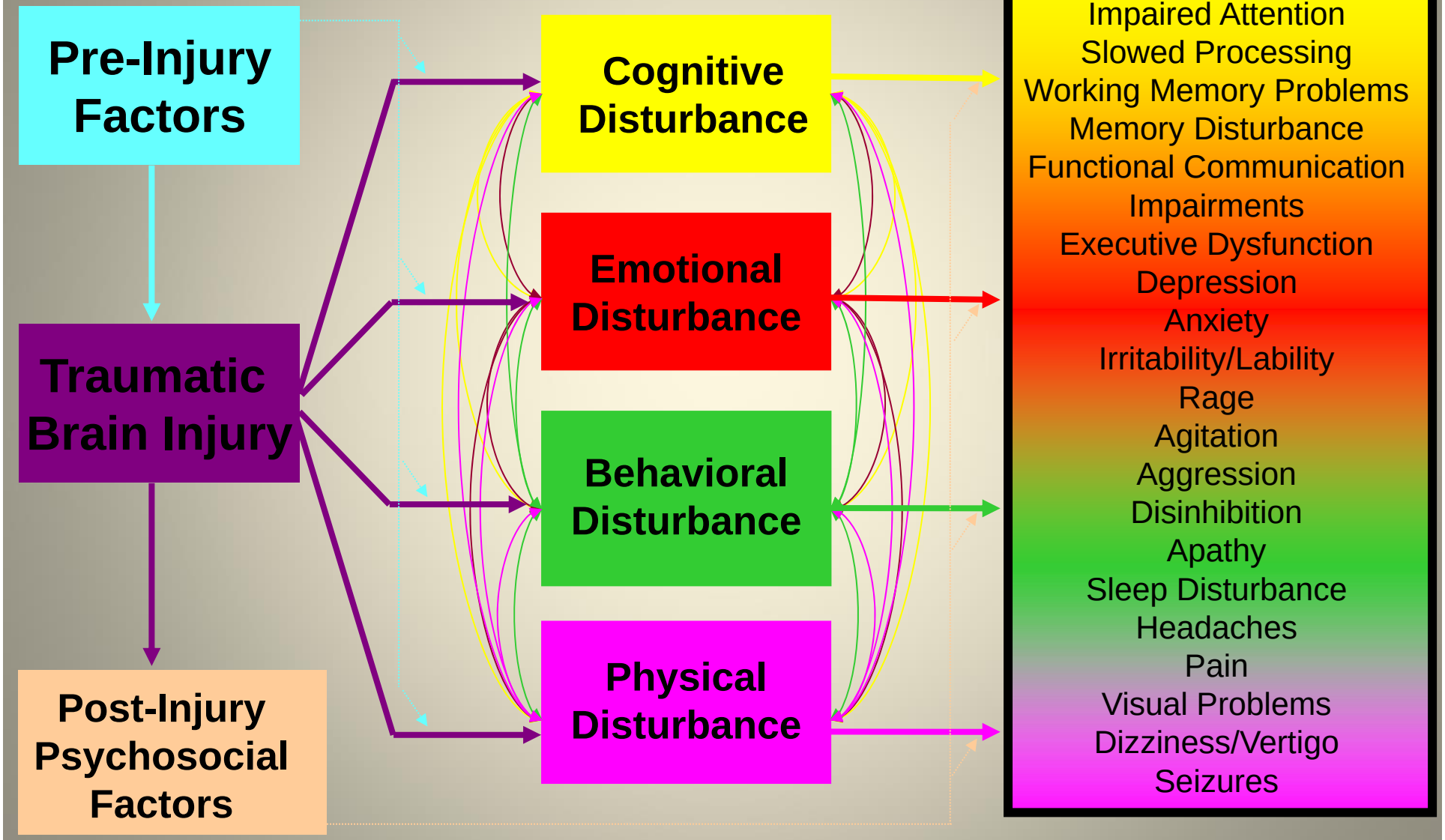
Posttraumatic Amnesia

(Wortzel, 2009; MIRECC)



John Kirk, PhD

A Model of Influences on Neurobehavioral Outcome after TBI (Wortzel, 2009 as adapted from Silver & Arciniegas, 2006)



(Adapted from Silver and Arciniegas 2006)

Pre-Injury Factors: Wortzel, 2009

- Age and gender
- Baseline intellectual function
- Psychiatric problems & substance abuse
- Sociopathy
- “Risk-taking” and “novelty-seeking” behavior
- Premorbid behavioral problems
- Social circumstances and SES
- Neurogenetic

Post-Injury Risk: Re-deployed into high stress war-zone

Post-injury Factors

- EXPOSURE TO ADDITIONAL BLASTS/DIRECT HITS-CUMULATIVE TRAUMA EFFECTS (Iverson, 2010)

- CIVILIAN ISSUES: (Wortzel, 2009)
- Lack of family, friends, or resources to support recovery
- Premature return to work/school with ensuing failure to perform at expected levels
- Poor adjustment to or coping with disability by injured person or family
- Litigation or other legal entanglements

Posttraumatic Cognitive Impairments (Wortzel, 2009)

- In the acute and late periods following TBI, the domains of cognition most commonly affected by TBI include:
  - arousal/disturbances of consciousness
  - processing speed/reaction time
  - attention (selective, sustained, alternating, divided)
  - working memory
  - memory (new learning, retrieval, or [usually] both)
  - functional communication (use of language)
  - executive function

(Reviewed in: Bigler 2007; Arciniegas and Silver 2006; Nuwer 2005; Meythaler et al. 2001)

Common Mild TBI/Posttraumatic Symptoms

Wortzel, 2009

- Headache
- Sleep Disturbances
- Fatigue
- Dizziness
- Light sensitivity
- Sound sensitivity

Immediately post-injury 80% to 100% describe one or more symptoms

Most individuals return to baseline functioning within a year

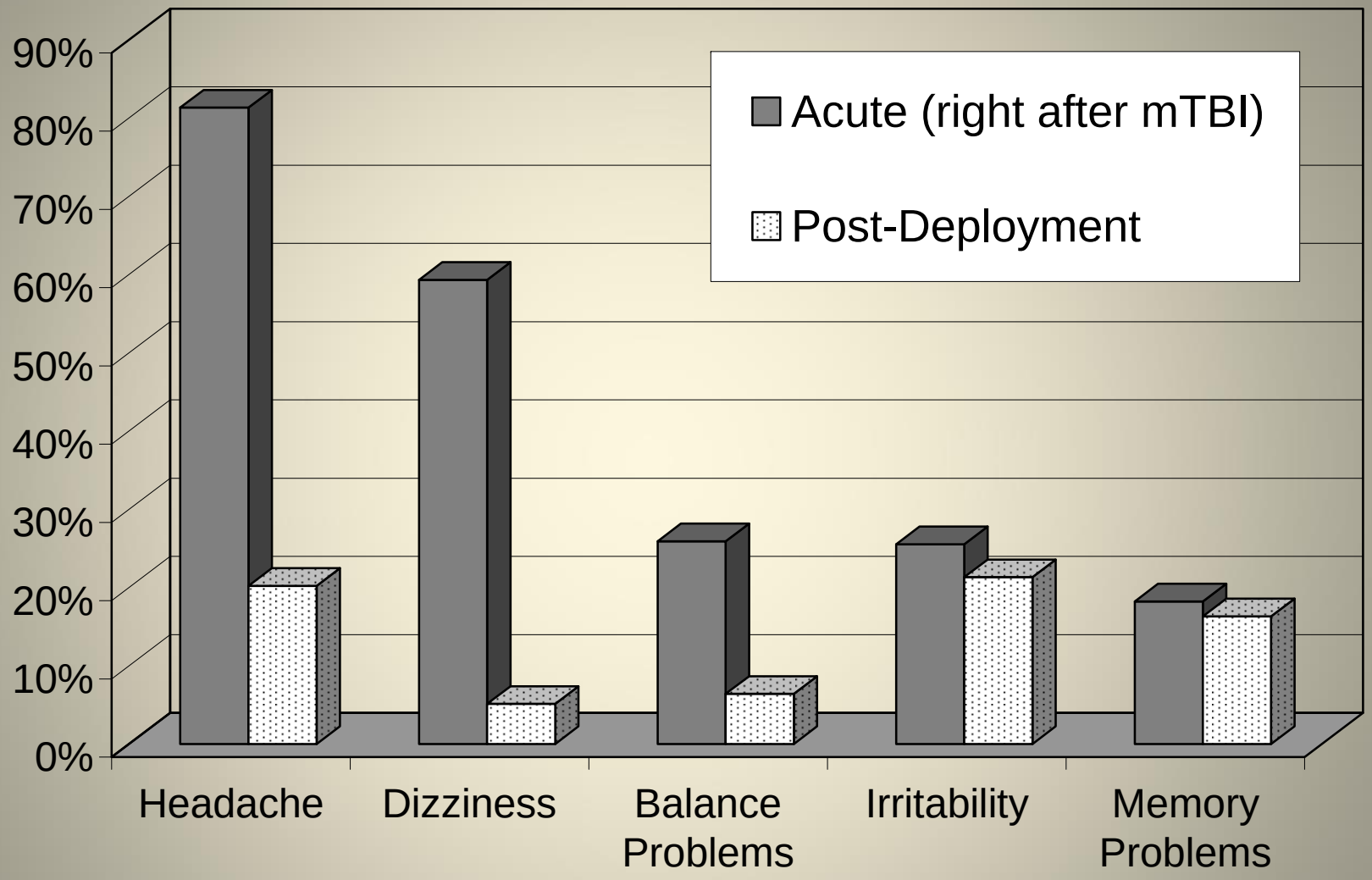
NOTE: MAY NOT ACCOUNT FOR COMBAT BASED RECURRENT EXPOSURE TO TRAUMA

Ferguson et al. 1999, Carroll et al. 2004; Levin et al. 1987

Data from Lisa Brenner, Ph.D. 2009

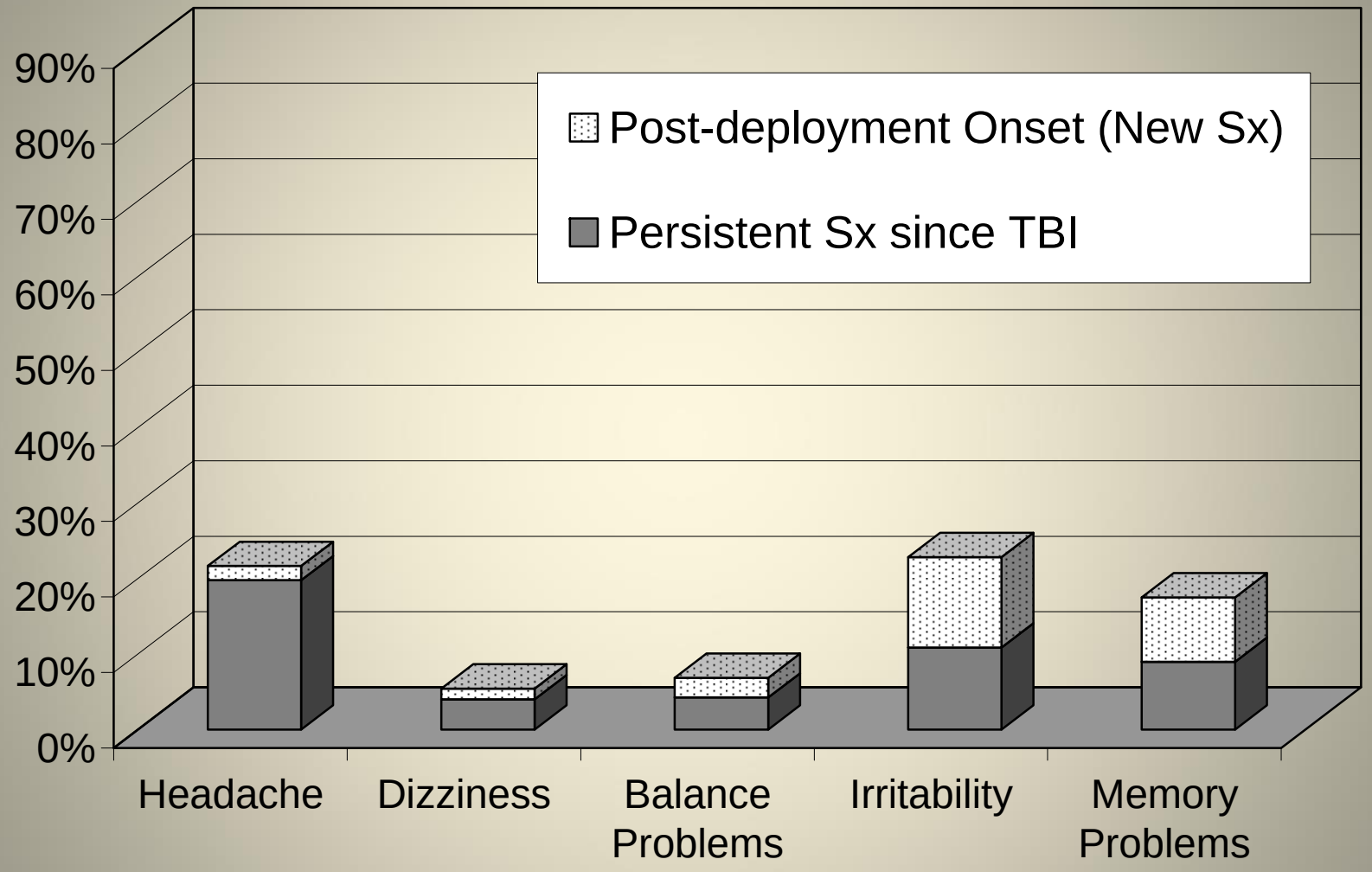
- From Dr. Brenner's power point 2009
- Data related to Fort Carson personnel

Ft. Carson: Post-Deployment Data (n = 907)



Terrio, H., Brenner, L.A., Ivins, B., Cho, J.M., Helmick, K.,Schwab, K., Scally, K., Bretthauser, R., Warden, D. Traumatic Brain Injury Screening: Preliminary Findings Regarding Prevalence and Sequelae in a US Army Brigade Combat Team. Journal of Head Trauma Rehabilitation. 2009

Currently Symptomatic: Onset of Symptoms (n = 844)



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Posttraumatic Emotional and Behavioral Problems

- Depression
- Suicide risk increased (especially TBI+PTSD)
- Anxiety
- Irritability or loss of temper (“rage episodes”)
- Disinhibition
- Agitation/Aggression (“socially inappropriate behavior”)
- Apathy (loss of drive to think, feel, and/or behave)
- Psychosis

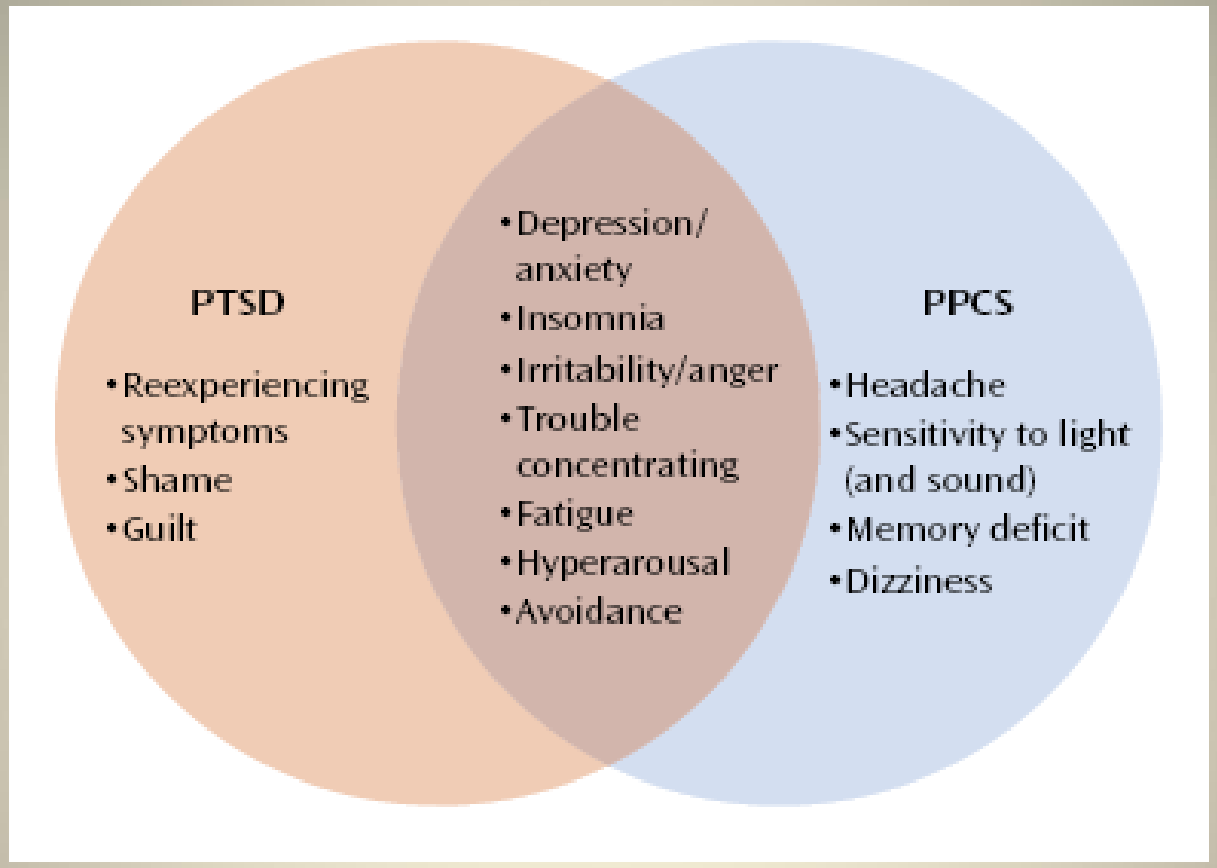
(From Wortzel, 2009)

Simpson & Tate (2007)

Suicide risk compared to general population…
Standardized Mortality Ratios and 95% CI

Males with TBI	3.9	3.13-4.59
Females with TBI	4.7	3.06-7.06
Age at injury < 21	3.5	1.92-6.27
21-40	4.7	3.35-6.50
41-60	5.2	3.73-7.17
>60	2.5	1.55-4.01
Concussion	3	2.82-3.25
(Severe) Lesion	4.1	3.33-4.93
Comorbid Substance Abuse	**7.4**	**4.32-12.82**

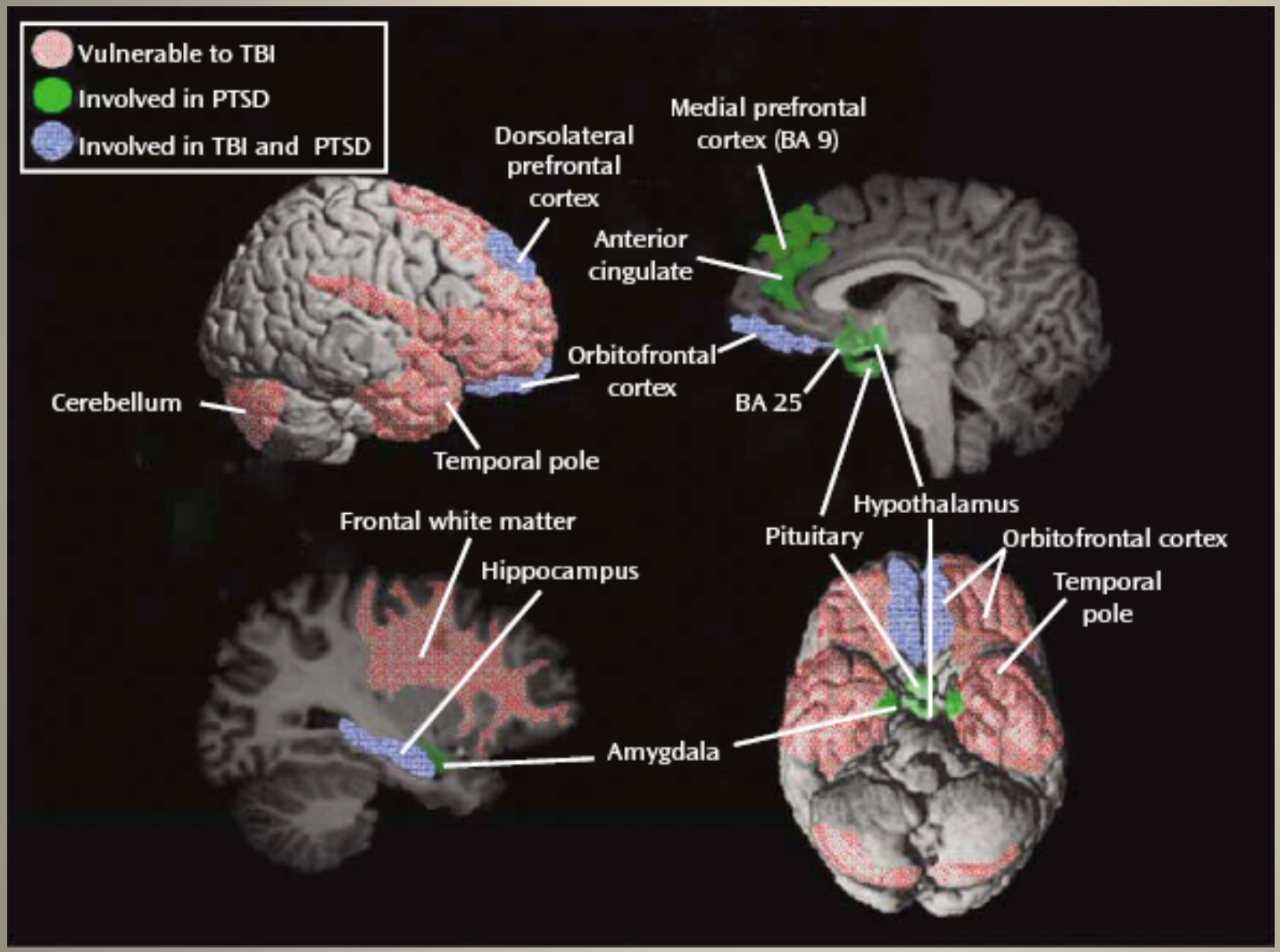
TBI and PTSD



Stein & McAllister 2009

TBI+ PTSD: increases risk for suicide

Shared Anatomy of TBI & PTSD



Stein & McAllister, 2009

From PPT by Wortzel, 2009

IED Iraq Video


33
USA
GI Bill 1944

Pilot Study Findings

Journal of Applied Rehabilitation Counseling, Winter 2013

Volume 44, Number 4, Winter 2013

Combat to College: Cognitive Fatigue as a Challenge in Iraq and Afghanistan War Veterans with Traumatic Brain Injury: Pilot Study Survey Results

Dan Smee
Sandra Buenrostro
Thomas Garrick
Shoba Sreenivasan
Linda E. Weinberger

Objectives

1. To identify the needs of returning veterans with TBI who are college students.
2. Identify the types of college programs and services that could meet their needs.
3. Identify how to market the services to veterans.

Combat Operations

Approximately 2.5 million servicemembers have deployed in the Global War on Terror (GWOT) includes OEF/OIF/OND

Approximately 320,000 service persons sustained probable traumatic brain injury (TBI)during deployment (RAND, 2008)

(Source: RAND Corporation,2008)

TBI effect are Persistent

Combat TBI typically involves

- multiple exposures to blasts waves (from explosions, disrupts brain functioning)
- Direct hits by I.E.D.

Combat TBI reflects cumulative exposures to injuries to brain from blasts/direct hits

Persistence of symptoms even if category is "mild TBI" over years

“Mild” TBI is not “Mild” in impact

Added problems of blast exposure

- Impact of the direct hit of the Bomb blasts
- Impact of blast Injuries
- Impact of no recovery time in a combat zone

In combat there is no period of rest / high stress, high sympathetic nervous system arousal – no period of recovery “hyper alert” mode = brain continuous stress

TBI effects= lowering of mental efficiency

Mild combat TBI = chronic and unremitting headache, dizziness, nausea/vomiting, trouble concentrating, irritability, fatigue, ringing in the ears and sensitivity to noise and light.

(Ruff, 2005; Iverson, 2010)

TBI Symptoms Cognitive Fatigue:

Under high demand, such as high intensity academic situations, combat TBI symptoms of migraine headaches and/or vertigo may be aggravated and may reduce cognitive efficacy and require a prolonged recovery period.

Cognitive Fatigue Syndrome

High Intensity Academic Cognitive demands

COGNITIVE FATIGUE

Slowed thinking,

Headache,

Dizziness,

Light/noise sensitivity

COGNITIVE BURNOUT

Depletion of mental energy

Inability to attend

Inability to complete tasks

PROLONGED RECOVERY TIME

Cannot bounce back from fatigue

Longer time for brain to "recharge"

COLLEGE FAILURE

POOR STUDY SKILLS AND PROGRESS

CHRONICALLY DROPPING CLASSES

FAILING CLASSES

DROPPING OUT OF COLLEGE

TBI: Additional effects due toBlast Exposure

- Atmospheric pressure changes that result in brain injury- call this blast TBI (bTBI)
- OIF/OEF veterans have multiple blast exposures
- Do not seek treatment until two or more exposures
- Persistent post-concussion symptoms present: headache, concentration, dizziness, tinnitus

CSF Cavitation: Biomechanics of why blasts cause the brain to be injured

CSF cavitations causes “bubbles” in the liquid areas (cerebrospinal fluid) of the brain (ventricles)

When a frontal blast wave encounters the head, a shock wave is transmitted through the skull, cerebrospinal fluid (CSF), and tissue, causing negative pressure at the contrecoup that may result in cavitation

Non- Cavitating & Cavitating

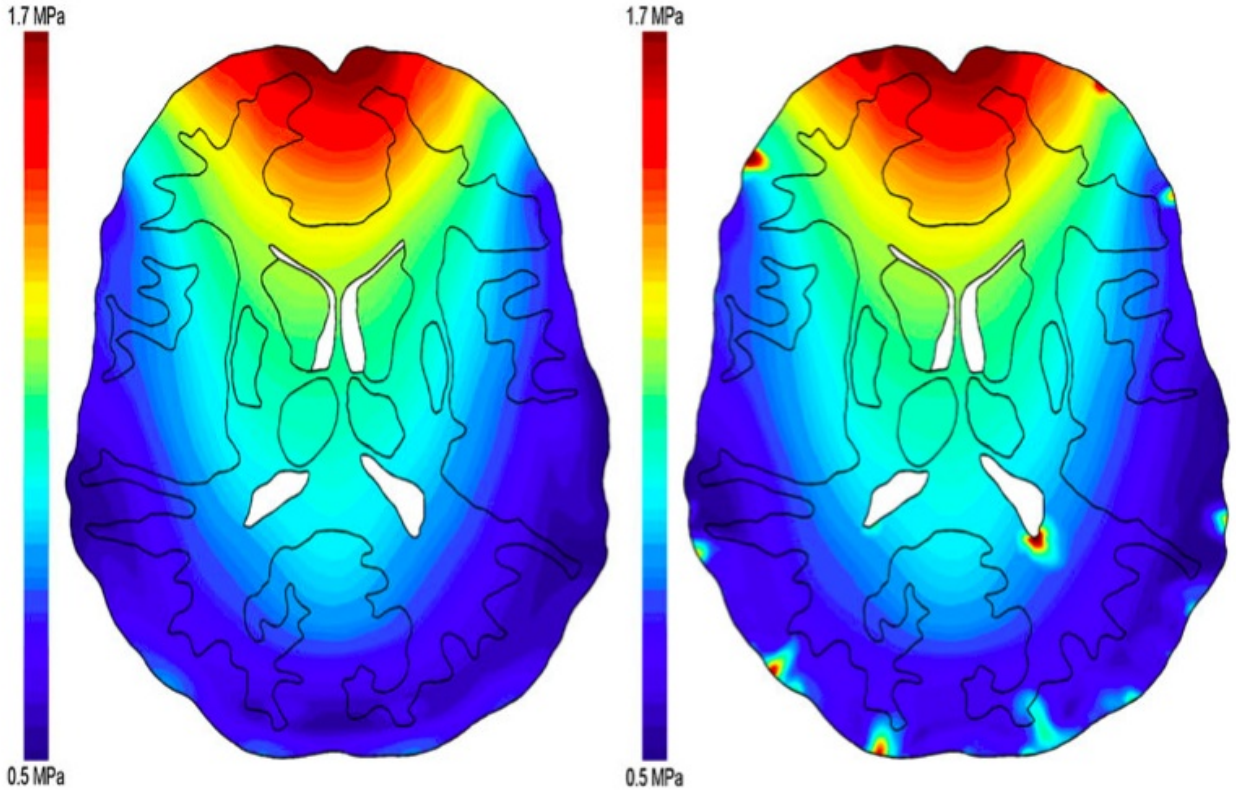


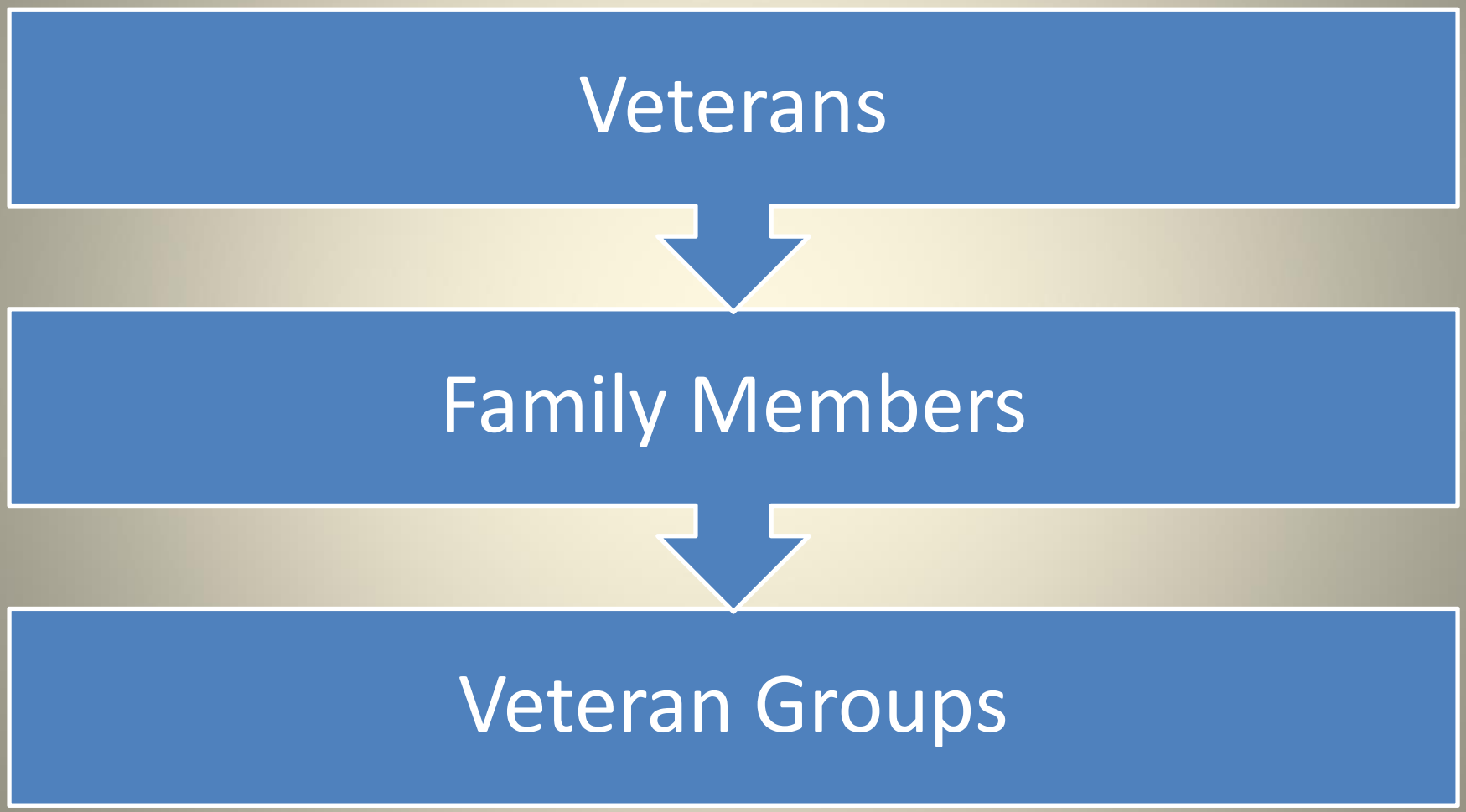
FIGURE 5. Comparison of the distributions peak brain tissue pressure between the non-cavitating (left) and cavitating (right) models for the 500 kPa/4 ms blast condition.

Humvee after IED blast

Humvee

In one blast crater

Stakeholders



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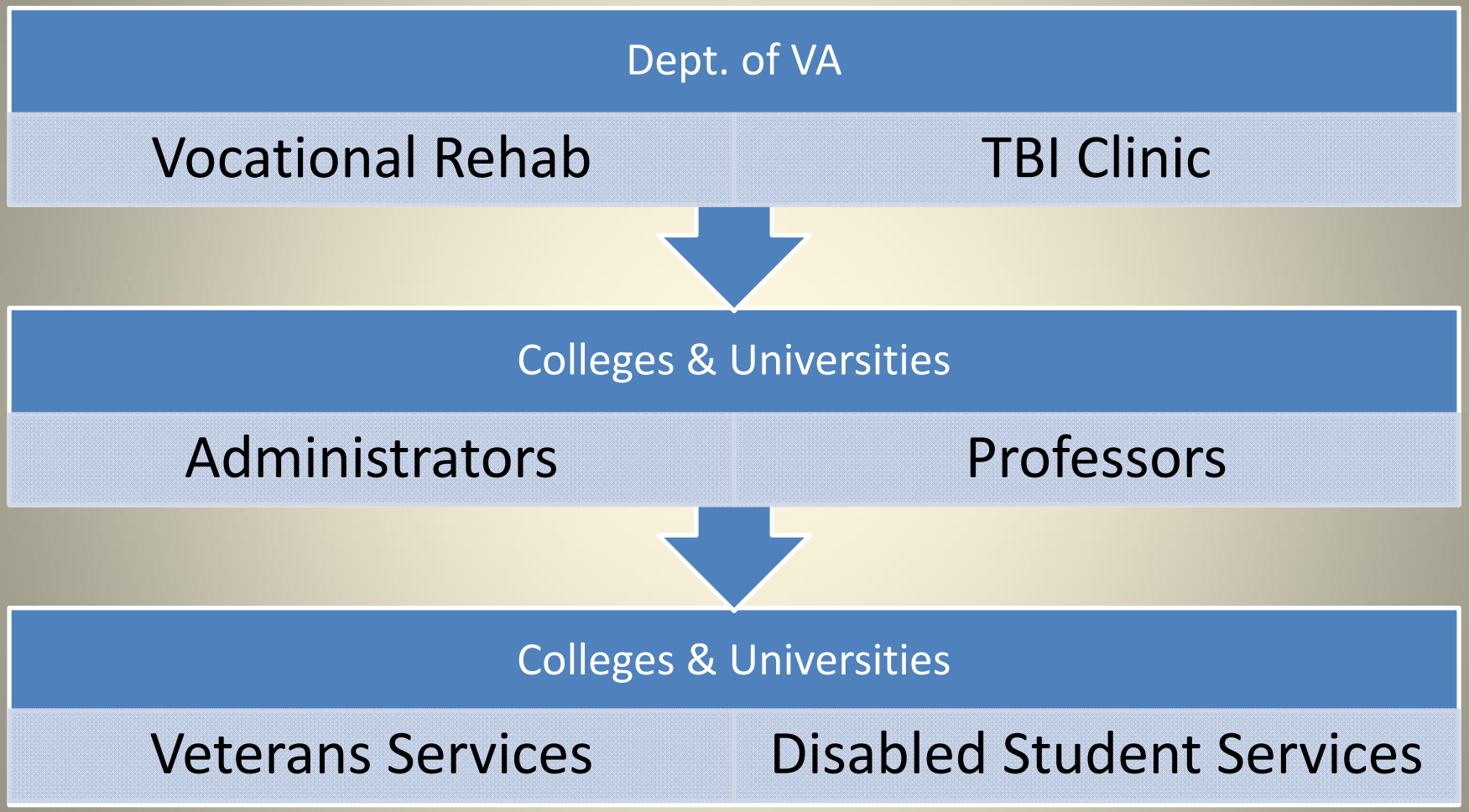
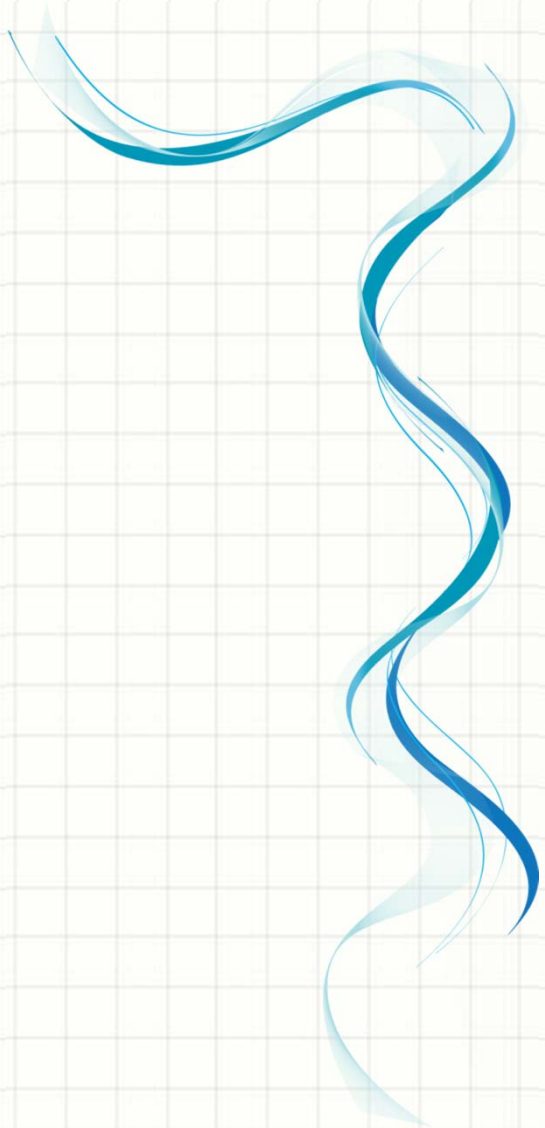


Methods



Methodology: Rationale

Use of survey data for quantitative analysis

Use of a qualitative method

- Gathering individual perspectives
- Obtaining information about experiences and struggles in academic environment
- Identifying what programs and services are needed for successful college performance

Pilot Study Design

- Self-identified as having a V.A. diagnosis of TBI
- Subject Recruitment: Through Veteran Service Organizations (I.A.V.A, Wounded Warrior Project, and TBI support groups)
- 2 community colleges

Participants

16 responded

(January-June 2011)

2 community colleges
2 OIF/OEF organizations

- Low N believed due veterans surveyed would be reluctant to identify themselves as disabled due to discomfort in doing so as related to having a “hidden wound” of war as opposed to a readily visible wound such as a missing limb.
- Most veterans would “tough it out” and minimize their difficulties due to military mentality of “suck it up and move on.”

Table 2

Cognitive Fatigue Items

AFTER EXERTING MENTAL CONCENTRATION ON AN ACADEMIC TASK DO YOU FIND THAT YOU BECOME TIRED AND UNABLE TO FOCUS (THAT IS FEELING MENTALLY DRAINED)?

YES___ HOW MANY TIMES IN A WEEK?_____

NO ___

AFTER EXERTING MENTAL CONCENTRATION ON AN ACADEMIC TASK DO YOU EXPERIENCE A SEVERE HEADACHE?

YES___ HOW MANY TIMES IN A WEEK?_____

NO ___

ARE YOU OFTEN IRRITABLE AND SHORT-TEMPERED AFTER HAVING HAD TO EXERT MENTAL CONCENTRATION ON AN ACADEMIC TASK?

YES___ HOW MANY TIMES IN A WEEK?_____

NO ___

DOES EXPENDING ALL THIS ENERGY WEAR YOU OUT PHYSICALLY?

YES___ HOW MANY TIMES IN A WEEK?_____

NO ___

DO YOU FIND THAT YOU CONCENTRATE HARDER BECAUSE YOU ARE ALREADY HAVING A HARD TIME CONCENTRATING?

YES___ NO ___

ARE YOU LIGHT SENSITIVE?

YES___ NO ___

DO YOU BECOME EASILY FRUSTRATED IF YOU ARE EXPECTING TO DO ONE THING AND IT SUDDENLY GETS CHANGED OR SOMETHING NEW IS ADDED?

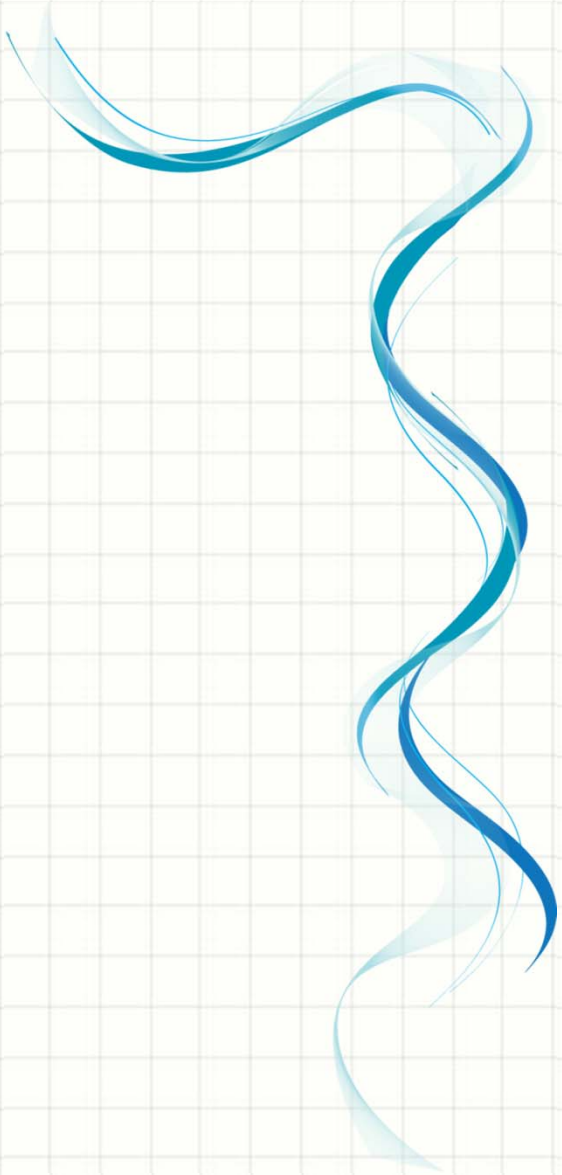
YES___ NO ___

HAVE YOU FAILED CLASSES RELATED TO THESE PROBLEMS?

YES___ NO __

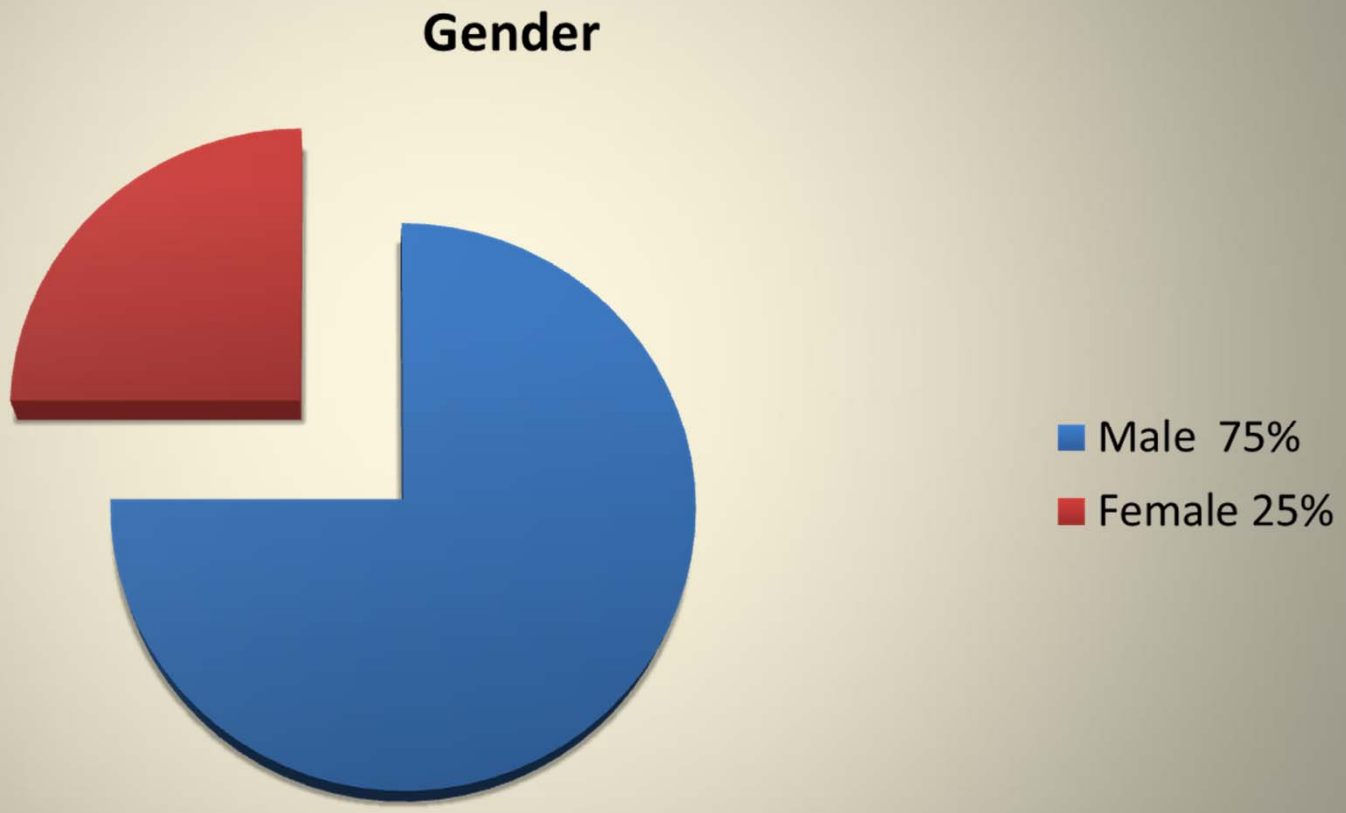
Sample of Interview Questions

1. What symptoms of TBI do you experience on a day-to-day basis?
2. How do they impact your ability to complete college courses?
3. Are you comfortable disclosing your status to others (e.g., professors, enrolling in disabled students programs)? If no, why not?
4. Have you felt uncomfortable asking for special accommodations? If yes, why?

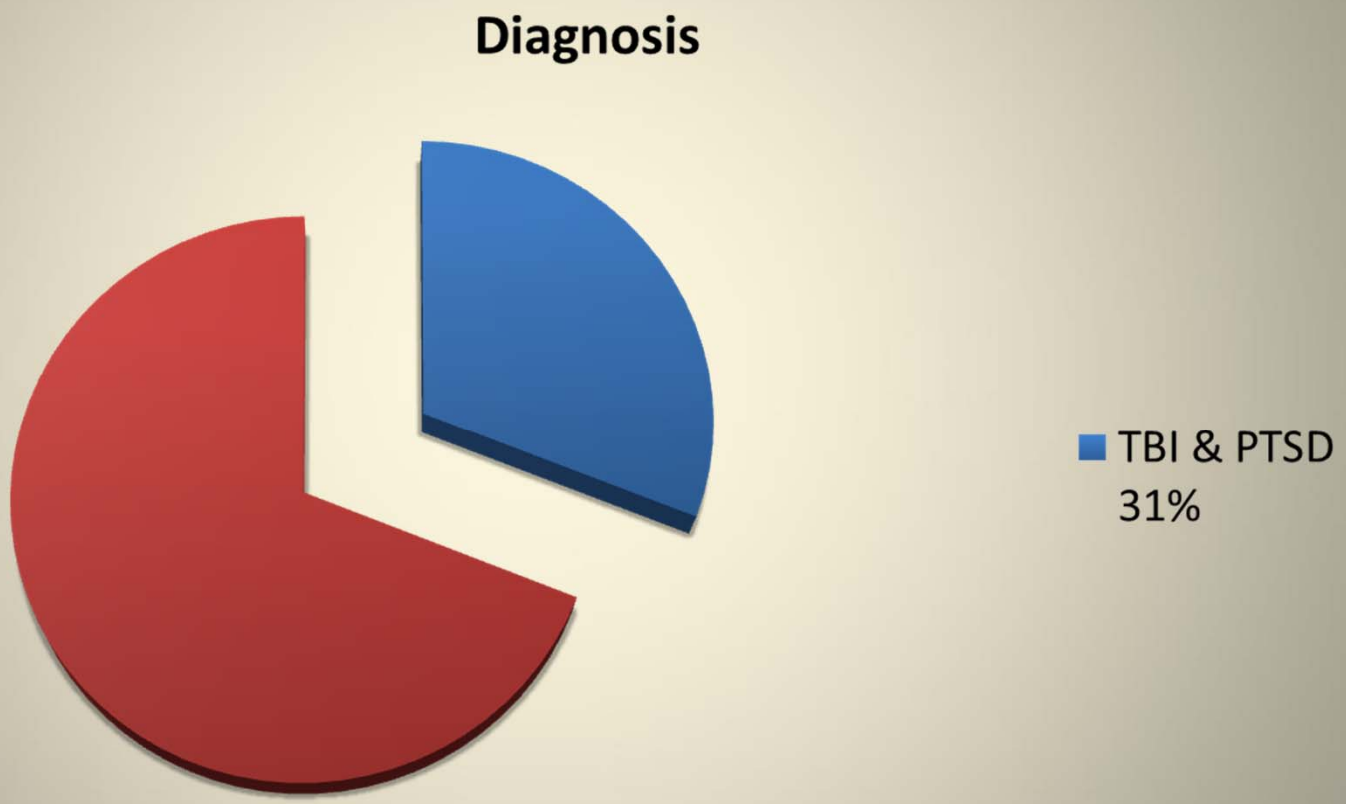


Results

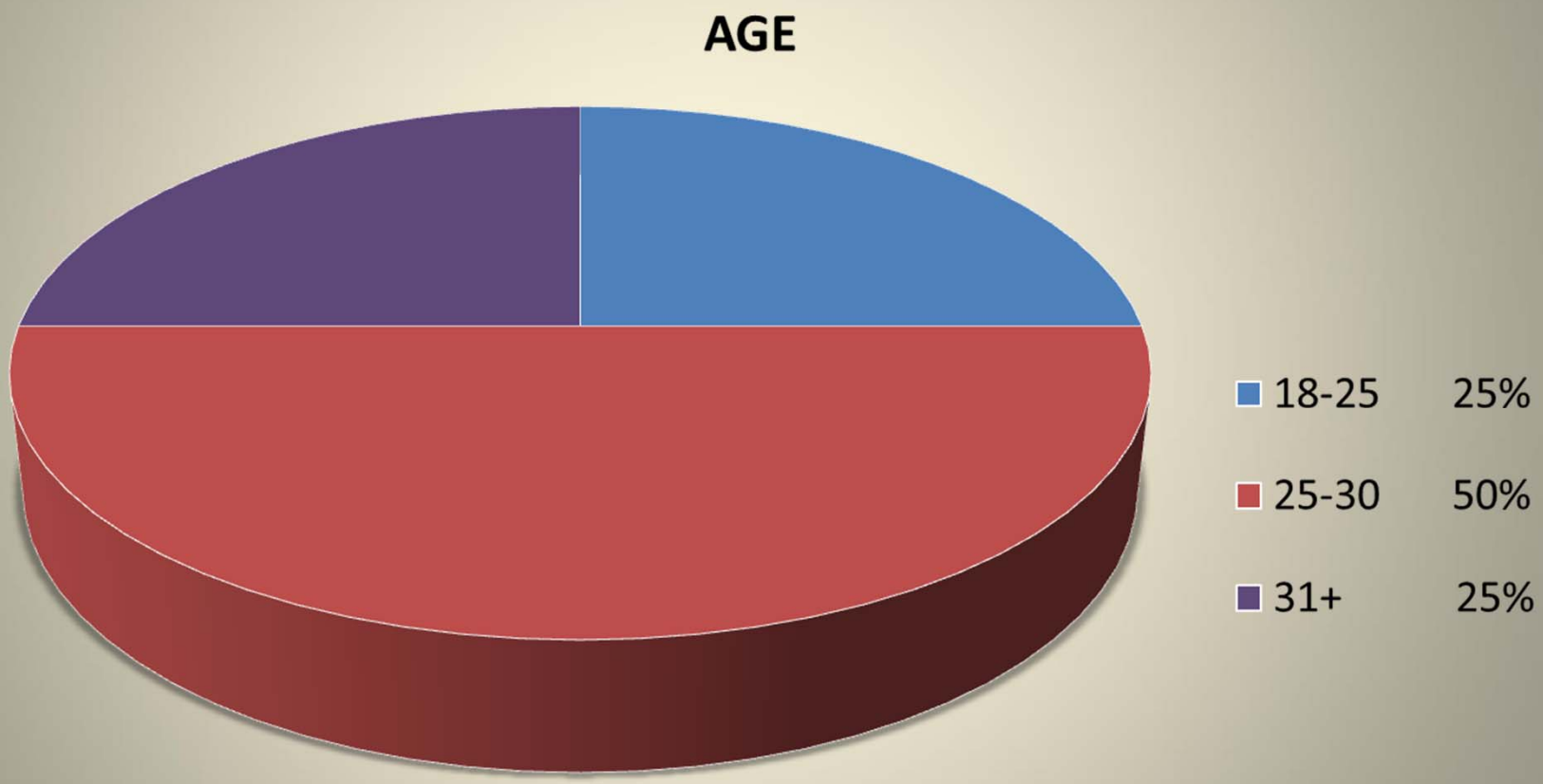
Demographics



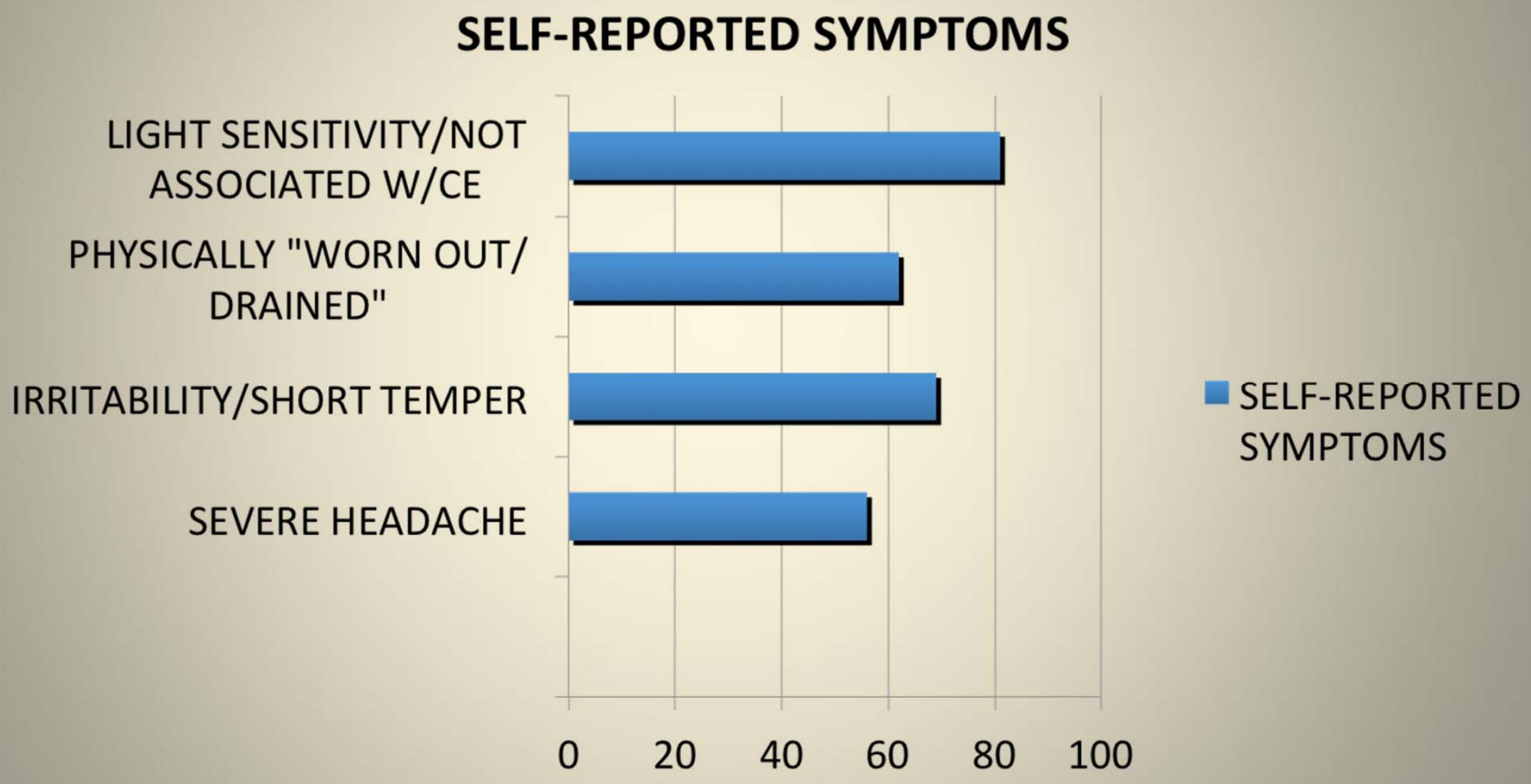
Demographic



Demographics



SURVEY RESULTS



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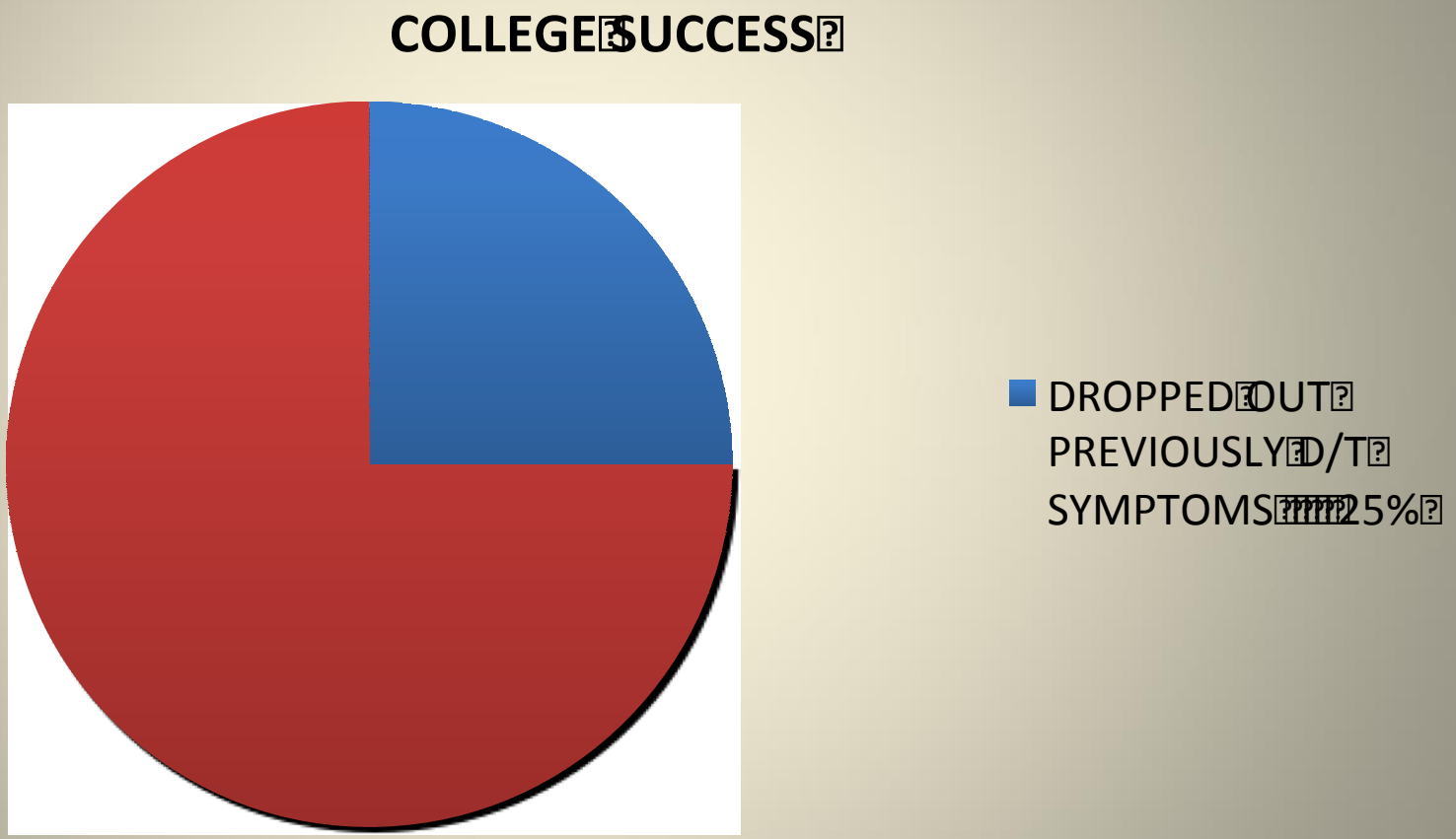

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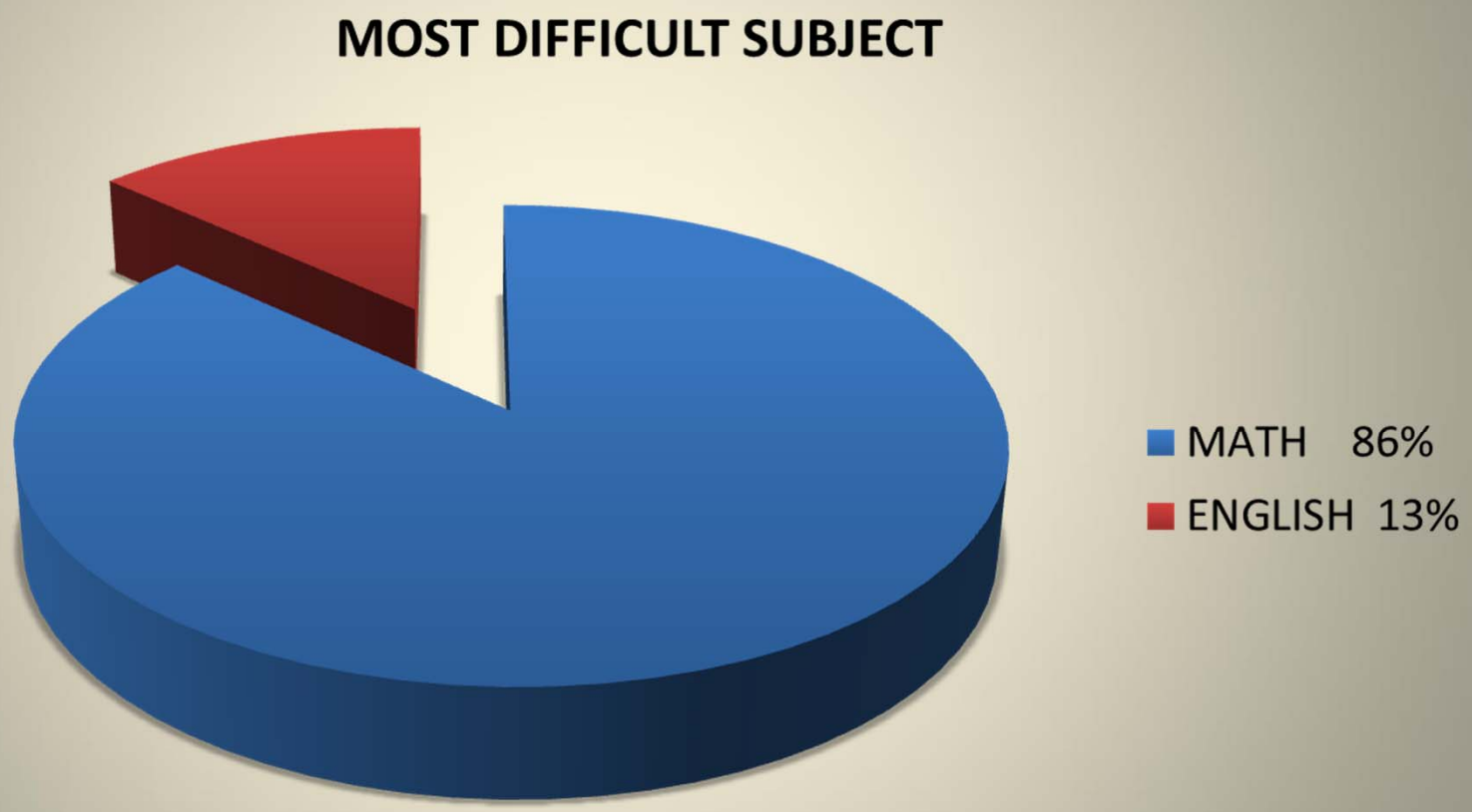


Summary

- Results demonstrate persistence of symptoms in this group (all were in college at least three years)
- Symptoms impacting class performance among the survey respondents.
- Clear reluctance to disclose their TBI to professors and others in the academic environment as well as request accommodations.

Qualitative Data

- Veterans in the survey identified need for easy access to programs as needed and having tutors.
- Veteran's support group as on campus as a useful college program to have

Cognitive Fatigue Syndrome, Accommodations and College Success

Cognitive Fatigue Syndrome

High Intensity Academic Cognitive demands

COGNITIVE FATIGUE	COGNITIVE BURNOUT	PROLONGED RECOVERY TIME
Slowed thinking, Headache, Dizziness, Light/noise sensitivity	Depletion of mental energy Inability to attend Inability to complete tasks	Cannot bounce back from fatigue Longer time for brain to "recharge"

Standard College Disability Model

Veteran avoids seeking services due to stigma

COLLEGE FAILURE

POOR STUDY SKILL & PROGRESS

DROPPING CLASSES

FAILING CLASSES

DROPPING OUT OF COLLEGE

Disability Services Marketed to Iraq/Afghanistan Veterans

Veteran utilizes services

COLLEGE SUCCESS

IMPROVED LEARNING & PROGRESS

COMPLETING CLASSES

REASONABLE PROGRESS IN COLLEGE

COMPLETE ACADEMIC GOALS/ ADVANCE EDUCATION

Discomfort in asking for accommodations

“I'm not evidently disabled on the outside” and, “looking at me wouldn’t know I have an injury” that were noted to be reasons for not wishing to request academic accommodations.


SGT. BARKER
IN MEMORY OF
Pvt. 2 GREGORY HUXLEY
3rd SQUAD, 2nd PLT.
B co. 317th Eng. B
You Will Not Be Forgotten
OIF
2003
SSG ROBERTS
SSG Johns

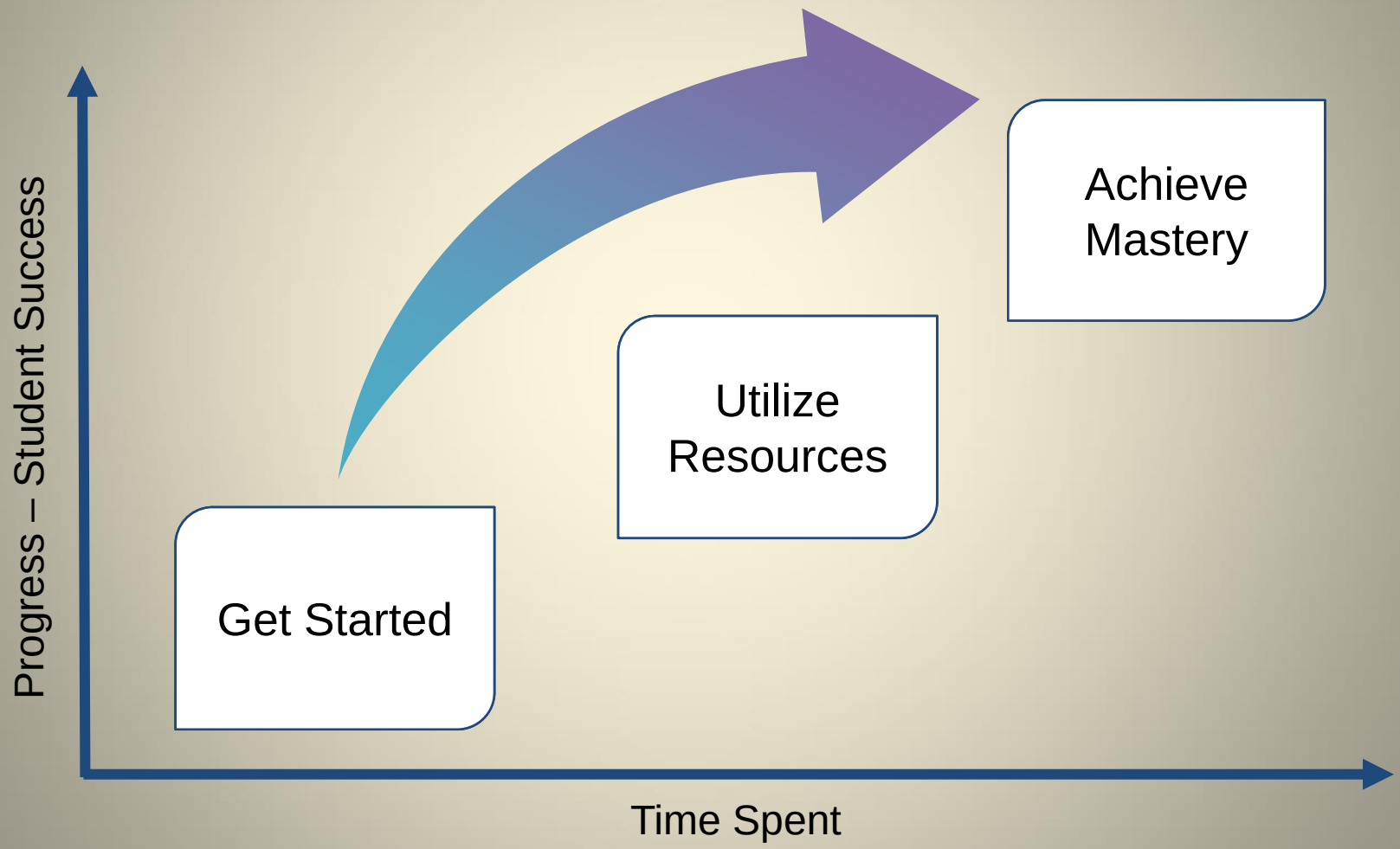
Adapting College Disability Programs for Veterans

Using Military Camaraderie

Back to basics – we are one unit

Troop/Group →→→→Individual

Working Toward Mastery



Educating the Educator

- Educators may be unfamiliar with combat-based brain injury
- Educators may think “s/he looks normal” because they are not visibly impaired
- Education would include understanding mTBI as an “invisible wound of war”
- Education would include teaching that accommodations are legitimate

RESOURCE: brainlinemilitary.org; VA Home Page

Veteran Buddy System

Veteran Buddy System

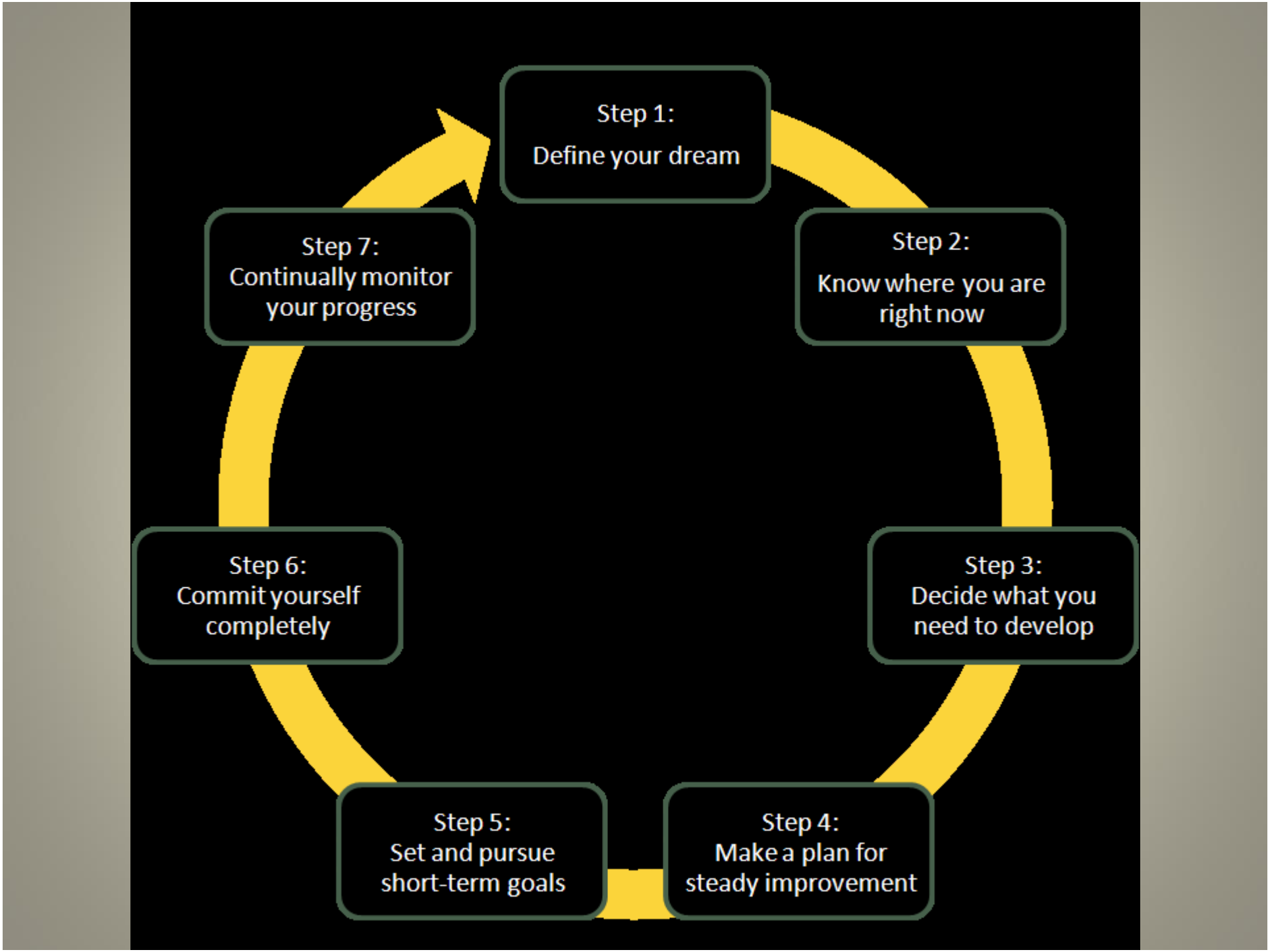
- User friendly approach- pair student veterans together
- Veteran buddy helps navigate academic requirements, college resources
- Use of cooperative learning strategies to manage cognitive fatigue
- Collaborative model; mirrors “platoon”

Reframe: Accommodations are Resilience Builders

The strength to plan, execute, and persevere through challenges

Resources

- **Goal Setting for Personal & Professional Excellence: CSF-2**


Step 1:
Define your dream
Step 2:
Know where you are right now
Step 3:
Decide what you need to develop
Step 4:
Make a plan for steady improvement
Step 5:
Set and pursue short-term goals
Step 6:
Commit yourself completely
Step 7:
Continually monitor your progress

Resilience Training to Overcome TBI Obstacles from CSF-2

- **Skill 1: Activating Events, Thoughts, and Consequences**
- **Skill 2: Avoid Thinking Traps**
- **Skill 3: Detect Icebergs**
- **Skill 4: Energy Management**
- **Skill 5: Problem-Solving**
- **Skill 6: Put It In Perspective**
- **Skill 7: Real-Time Resilience**

Skills 9-12

- **Skill 8: Character Strengths**
- **Skill 9: Strengths in Challenges**
- **Skill 10: Assertive Communication**
- **Skill 11: Active Constructive Responding and Praise**
- **Skill 12: Hunt the Good Stuff**

Using 5 Pillars of Soldiers Fitness

- **Emotional fitness**: self-control, stamina, and balance
- **Family Fitness:** healthy and secure environment
- **Physical Fitness:** ability to meet the physical demands and accomplish the mission
- **Social Fitness:** maintain valued relationships
- **Spiritual Fitness:** developing /strengthening a set of beliefs, principles, or values

Veterans should be active rather than passive learners

- Tools to seek: SMART pen (pulse pen), note sharing, extended time for Test Taking, assistive technology /APPS
- Tutoring: network with Veterans groups to see if there is a Veteran in community who can serve as Veteran Mentor

What's on Campus?

disAbility Resource Center

student success center

PUENTE

TRiO

VETERANS UPWARD BOUND

TRiO RISE

Student Support Services

PUENTE

EOPS

WorkAbility III

A partnership between the San Diego Community College District and Department of Rehabilitation

STUDENT Support Services

1CC

Centennial 1914-2014

San Diego City College DSPS

UC Resources

Resources


POST - 9/11
GI BILL


TRiO
VETERANS UPWARD BOUND


BUDDY
TO
BUDDY
Volunteer Veteran Program


RCC VETERANS CLUB
EST.
MMIX


LOS ANGELES TRADE-TECH
LATTC
A Community College
VETERANS'
CENTER

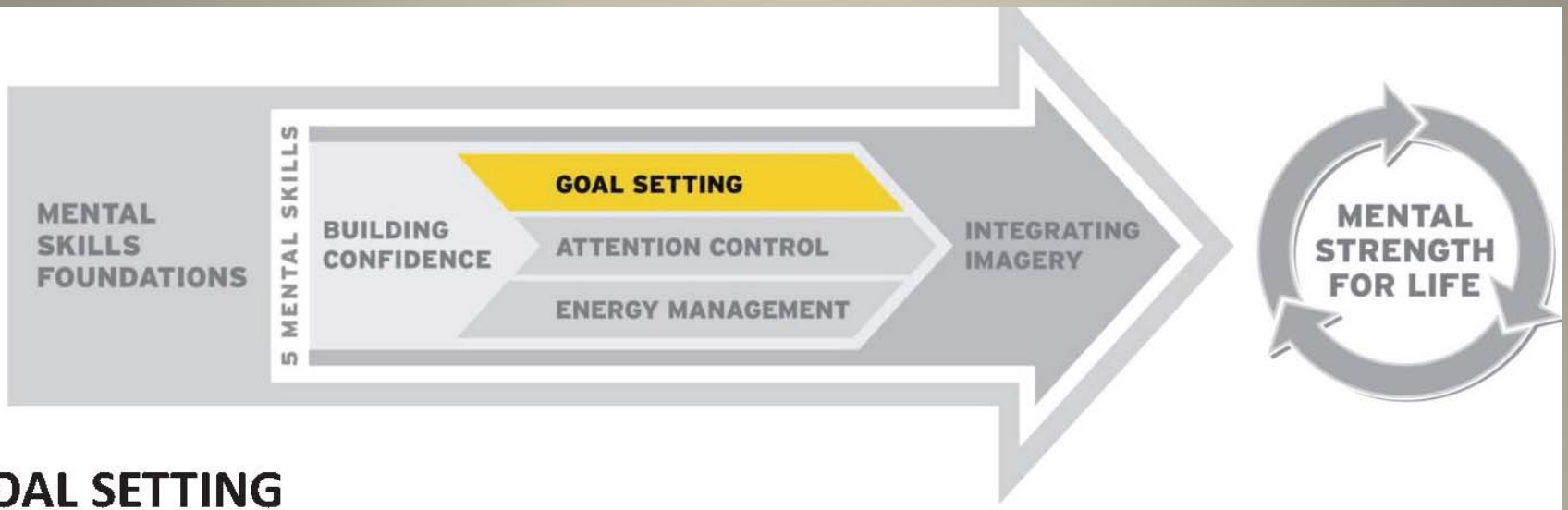
Other Resources

http://vimeo.com/94527916

After Action Reports (AAR)

- Veterans are familiar with this review process to identify what worked/didn't in a mission
- Academic situation: conduct after class or test: what worked/did not
- Self-monitoring of triggers for cognitive fatigue

Sustaining effort to accomplish the mission despite obstacles



GOAL SETTING

Defining a dream that is personally meaningful and developing the concrete steps to create a well-documented path to success.

SALUTE

- Time-management acronym (size, activity, location, unit, time, and equipment)
- Can use to assist veteran in identifying size of task, time needed to complete, what tools need

Reflexive Training

- Military operations require repeat practice of task prior to engaging in the actual mission
- Apply to academic task: test-taking requires same mechanism of review material, repeat actions prior to actual mission (taking test)

Learning *to* Better Serve Those ★ Who Have Served

Thank-you Veterans!