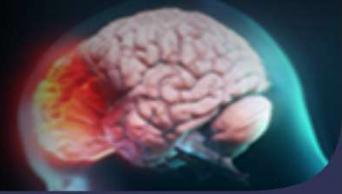


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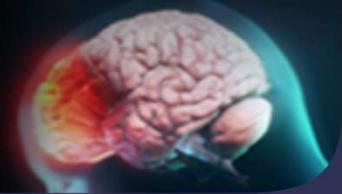
TBI and Vulnerable Populations

Ashley Bridwell, LMSW

Barrow Concussion and Brain Injury Center

September 27, 2018

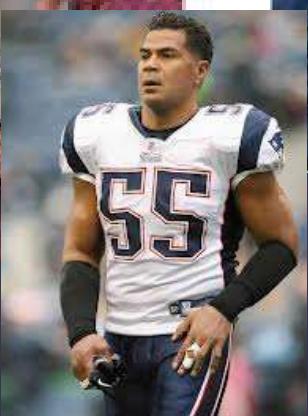
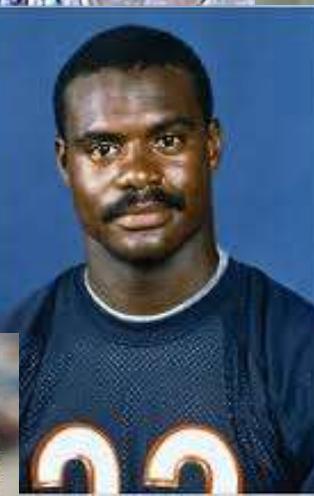




Objectives

- TBI 101
- TBI in DV
- TBI in vulnerable populations
- Barrow Concussion and Brain Injury Center
Domestic Violence Program
- Implications for Medical and DV community

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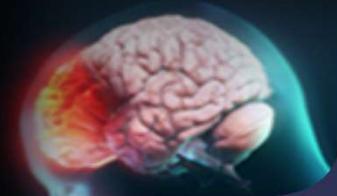
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First Chapter



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Second Chapter



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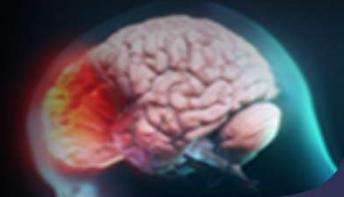
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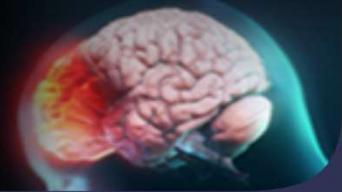


#WorldNewsTonight

abcNEWS.com

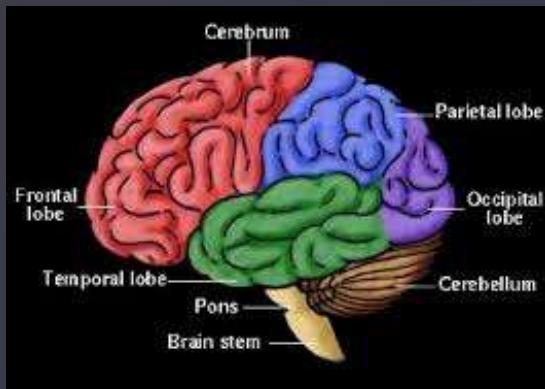
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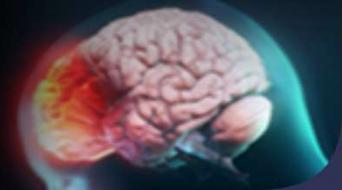




Prevalence

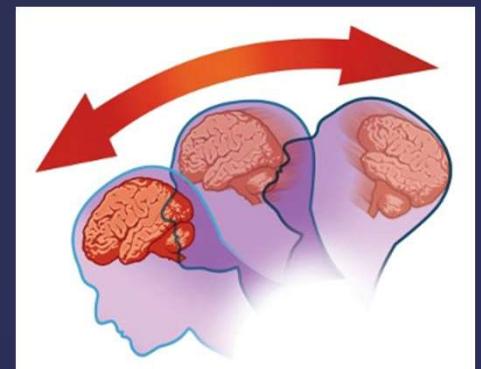
- In the United States...
 - 1.7 million people are diagnosed with TBI (not including those that do not seek medical care)
 - TBIs cost Americans \$76.5 billion in medical care, rehabilitation, and loss of work every year



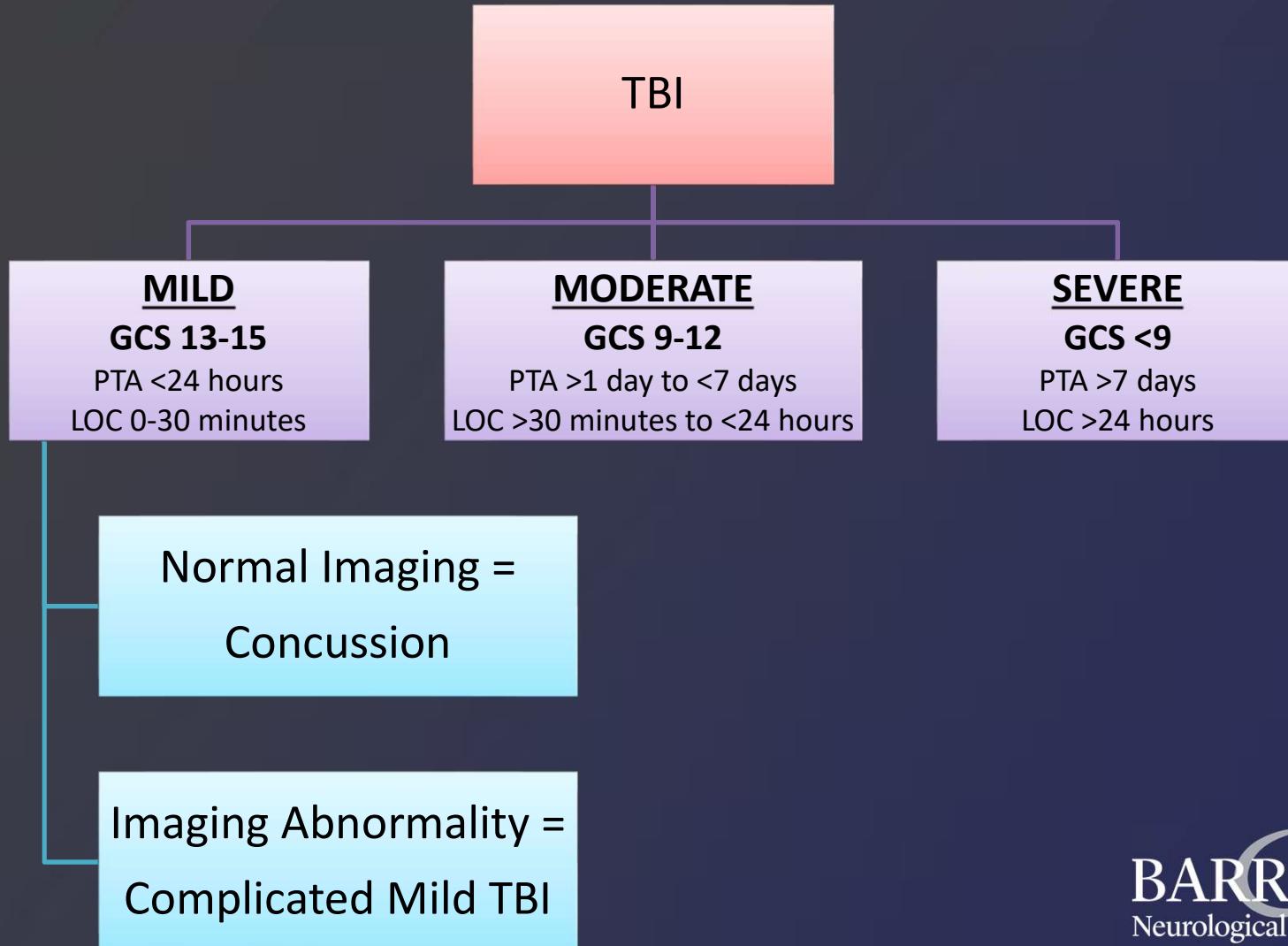
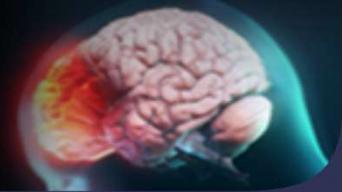


TBI - Defined

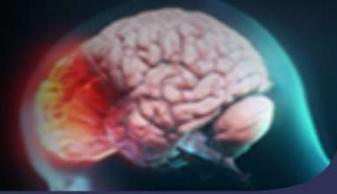
- “*TBI is defined as an alteration in brain function, or other evidence of brain pathology, caused by an external force.*”
 - Brain Injury Association of America
- Concussion: “*A trauma induced alteration in mental status that may or may not include a loss of consciousness.*”
 - American Academy of Neurology



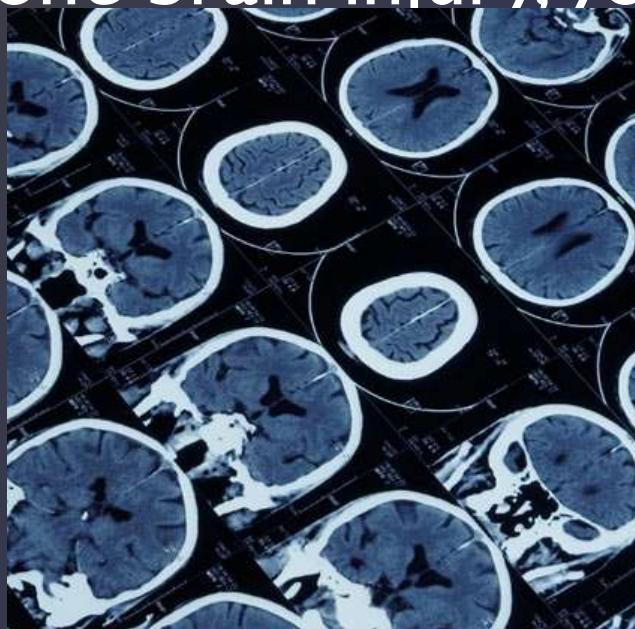
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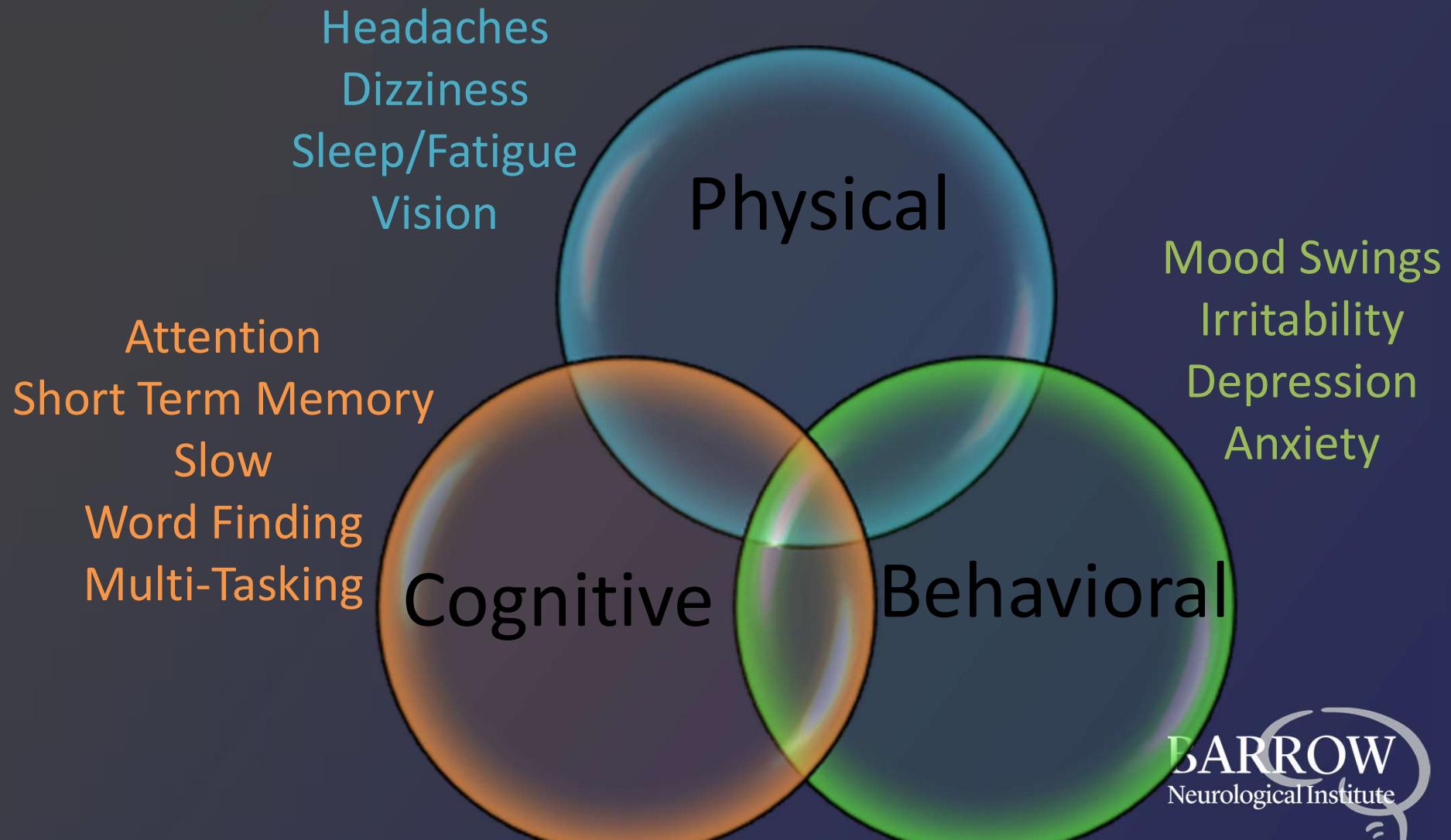
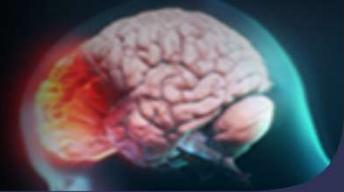
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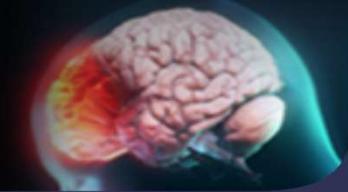
If you've seen one brain injury, you've seen one
brain injury.



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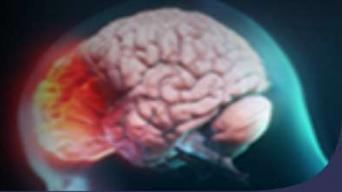
Domestic Violence and TBI





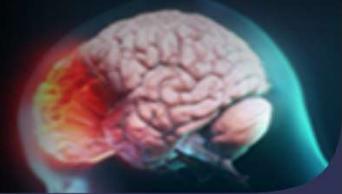
Seldom Assault only once

- A study in DV shelters in NY showed:
 - 92% had been hit by their partners more than once
 - 83% had been both hit in the head and severely shaken
 - 8% had been hit in the head over 20 times in the past year



Mild TBI

- 97% of people with mild TBI or concussion see resolution of symptoms within 3-7 days
- 3% will have longer lasting symptoms
 - Cumulative effect
 - Psychiatric issues
 - History of complex migraines



Ideal Rehabilitation

- Physical therapy
- Occupational therapy
- Speech therapy
- Psychology
- Psychiatry
- Social Work
- Vocational Rehabilitation



Injuries in DV or Any Abuse

- Greater than 90% of all injuries in DV occur to the head, neck or face
- Varying injury mechanisms:
 - Hit with fist
 - Hit with object
 - Kick
 - Smashing head against wall
 - Strangle
 - Shaking
 - Pushing down stairs

Homelessness and Risk Factors For Acquiring TBI

- Increased risk for injury & trauma
- Elevated substance abuse

TBI and Risk Factors for Becoming Homeless

- Decreased Income
- Decreased Social Support

Brain Injury



Homelessness

Barrow Concussion & Brain Injury Center



Income and Brain Injury

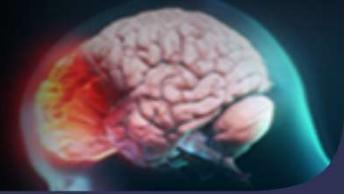




Income and TBI

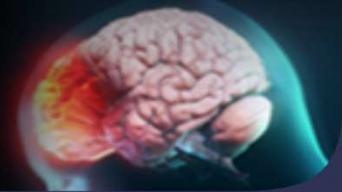
- Poor Women are at a higher risk for violence as poverty increases stress and lowers a person's ability to take control of their own environment and seek protective care
- Study out of John Hopkins found:
- 436 sheltered homeless and low income housed women
- 84% of these women had been assaulted
- 63% had been assaulted by parental caretakers
- 60% had been physically attacked by intimate male partner

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Incarceration and Brain Injury

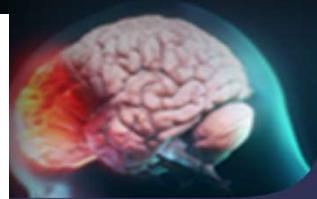
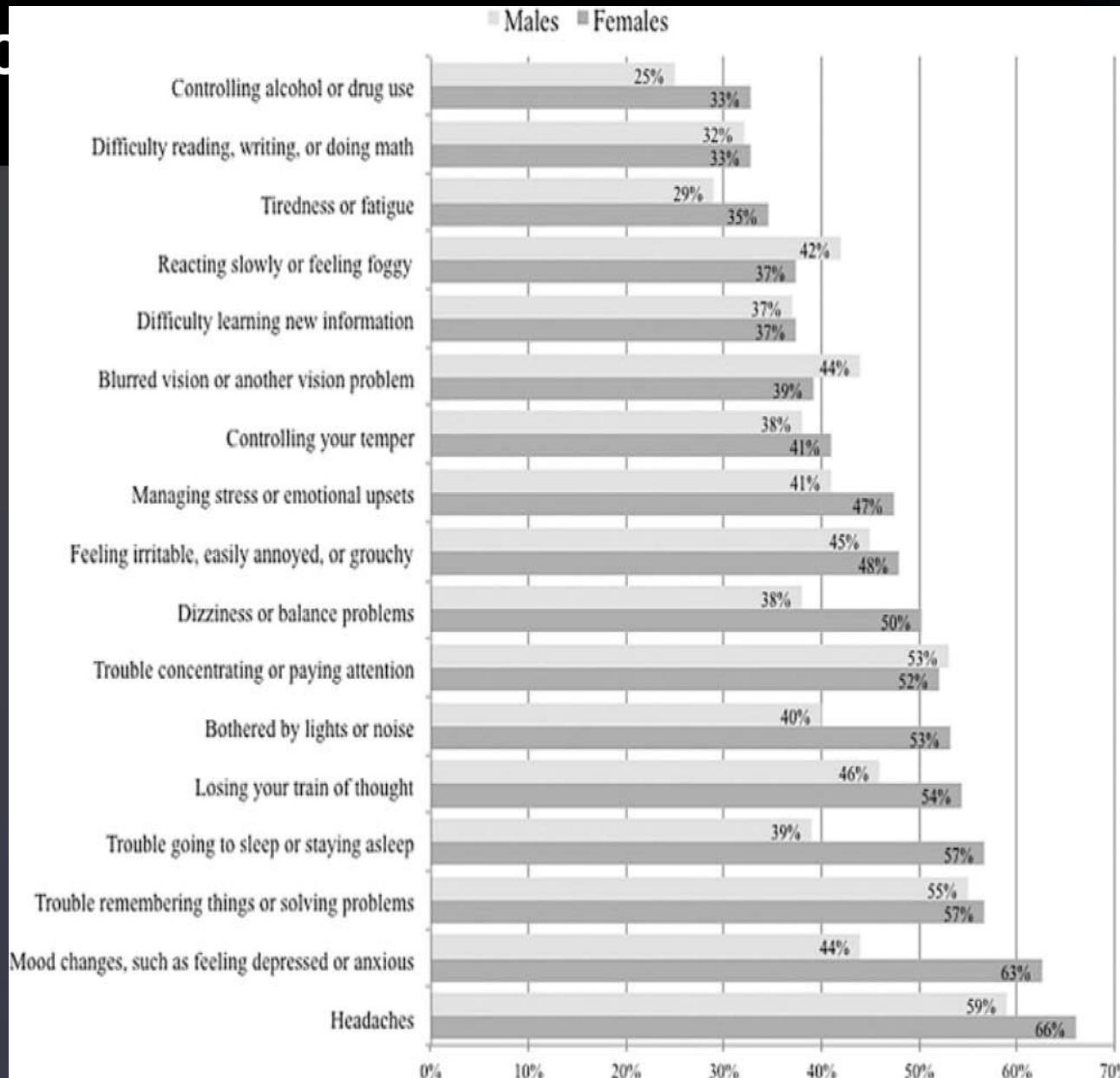




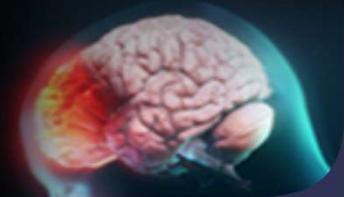
Results

- Reported at least one TBI with alteration of consciousness
 - 65% of male releases and non releases
 - 72% and 73% of female releases and non releases
- Reported at least 1 TBI with LOC
 - 42% male releases and 50% males non releases
 - 50% of female releases and 33% of non releases
 - 35% of male releases
 - 42% of non releases
- 55% female releases and 58% of non releases report ongoing symptoms

Barrow C

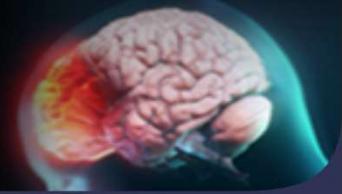


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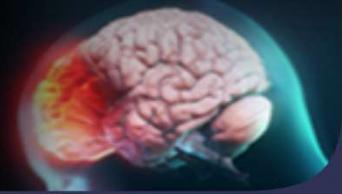
Substance Abuse and TBI





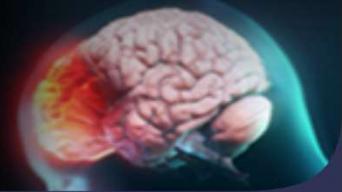
Substance Abuse

- Before their injury, people who sustain a TBI are twice as likely as others in the community to have issues with substance abuse – the use may have led to the injury (--Mount Sinai Medical Center).
- Some studies suggest that use may get worse 2 to 5 years post injury (--Ohio Valley Center for Brain Injury Prevention and Rehabilitation).



Psychiatric Co Morbidities and Brain Injuries

- Research is showing that there is a high prevalence of individuals reporting TBI with co occurring substance disorder and severe mental illness, one study reports up to 72%
- Symptoms like paranoia, obsessional disorder, depression
- PTS



Suicide and TBI

- Pts with TBI are 4 times as likely to commit suicide
- One study screened 172 participants with TBI using the Beck Scale for Suicide Ideation
 - 35% had significant levels of hopelessness
 - 23% had suicide ideation
 - 18% had made a suicide attempt

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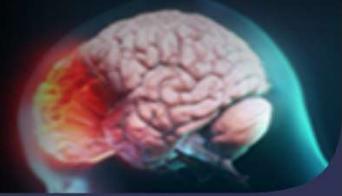


“ I have an idea”



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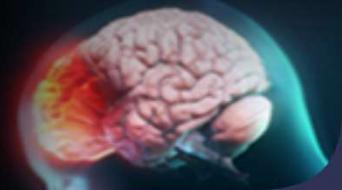
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- <https://www.today.com/video/at-this-brain-injury-clinic-victims-of-abuse-get-to-rebuild-their-lives-1281002563594?v=railb&>

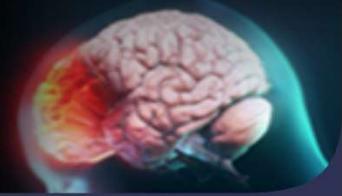


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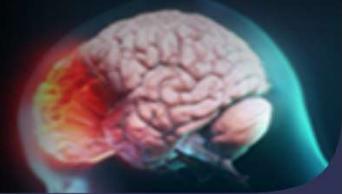
Barrow Steps Up!





Program at Barrow

- Medical
- Community
- Research



HELPS Screening Tool

- Developed in 1991 by Pickard et al¹ as a brief screening assessment to determine if a person may have suffered from a TBI
- 5 basic questions
- If “Yes” to ≥ 2 questions, more evaluation/referral warranted
- Used by our shelters to refer patients to our clinic (TBI of all causes)

HELP BRAIN INJURY SCREENING TOOL

Consumer Information: _____

Agency/Screener's Information: _____

H Have you ever Hit your Head or been Hit on the Head? Yes No
Note: Prompt client to think about all incidents that may have occurred at any age, even those that did not seem serious: vehicle accidents, falls, assault, abuse, sports, etc. Screen for domestic violence and child abuse, and also for service related injuries. A TBI can occur from violent shaking of the head, such as being shaken as a baby or child.

E Were you ever seen in the Emergency room, hospital, or by a doctor because of an injury to your head? Yes No
Note: Many people are seen for treatment. However, there are those who cannot afford treatment, or who do not think they require medical attention.

L Did you ever Lose consciousness or experience a period of being dazed and confused because of an injury to your head? Yes No
Note: People with TBI may not lose consciousness but experience an "alteration of consciousness." This may include feeling dazed, confused, or disoriented at the time of the injury, or being unable to remember the events surrounding the injury.

P Do you experience any of these Problems in your daily life since you hit your head? Yes No
Note: Ask your client if s/he experiences any of the following problems, and ask when the problem presented. You are looking for a combination of two or more problems that were not present prior to the injury.
 headaches difficulty reading, writing, calculating
 dizziness poor problem solving
 anxiety difficulty performing your job/school work
 depression change in relationships with others
 difficulty concentrating poor judgment (being fired from job, arrests, fights)
S Any significant Sicknesses? Yes No
Note: Traumatic brain injury implies a physical blow to the head, but acquired brain injury may also be caused by medical conditions, such as brain tumor, meningitis, West Nile virus, stroke, seizures. Also screen for instances of oxygen deprivation such as following a heart attack, carbon monoxide poisoning, near drowning, or near suffocation.

Scoring the HELPS Screening Tool
A HELPS screening is considered positive for a possible TBI when the following 3 items are identified:
1.) An event that could have caused a brain injury (yes to H, E or S), and
2.) A period of loss of consciousness or altered consciousness after the injury or another indication that the injury was severe (yes to L or P), and
3.) The presence of two or more chronic problems listed under P that were not present before the injury.
Note:

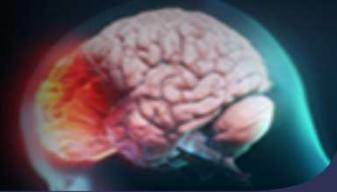
- A positive screening is not sufficient to diagnose TBI as the reason for current symptoms and difficulties - other possible causes may need to be ruled out
- Some individuals could present exceptions to the screening results, such as people who do have TBI-related problems but answered "no" to some questions
- Consider positive responses within the context of the person's self-report and documentation of altered behavioral and/or cognitive functioning

The original HELPS TBI screening tool was developed by N. Rose, D. Gostin, C. Polak, OPH, International Center for the Disabled, TBI-HCT, U.S. Department of Education, Rehabilitation Services Administration, Grant #H133A00022. The Help Tool was updated by project personnel to reflect recent recommendations by the CDC on the diagnosis of TBI. See http://www.cdc.gov/ncipc/tbi-rev/tbi_toolkit/physicians/tools/helpscreen.htm.

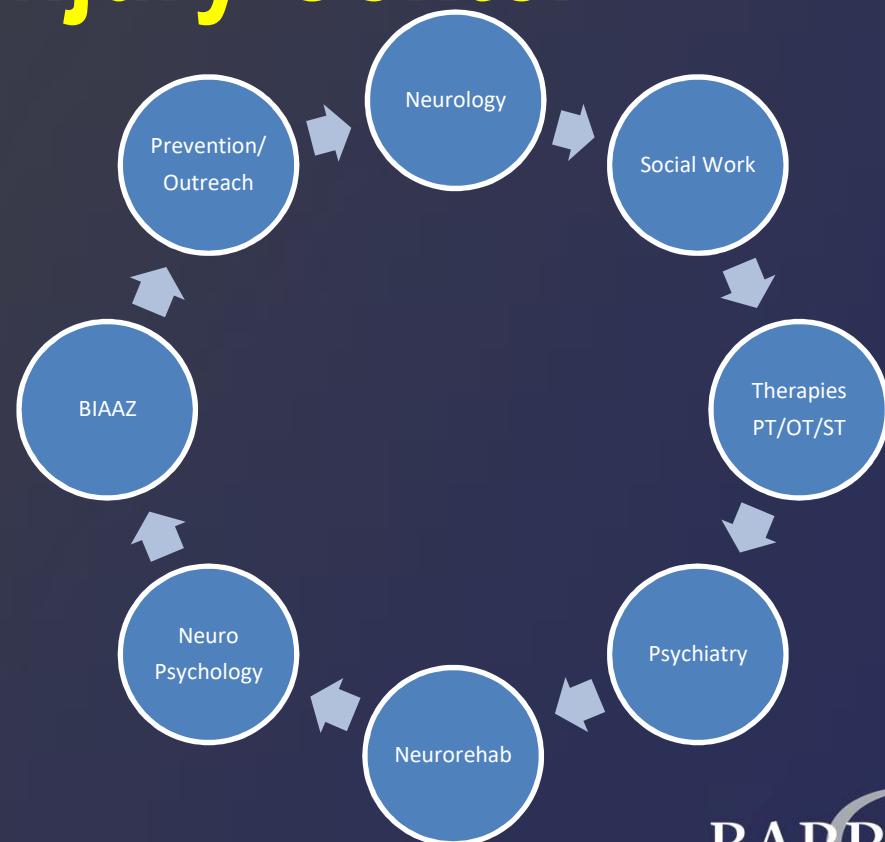
This document was supported in part by Grant R133A00022-01 from the Department of Health and Human Services (DHHS) Health Resources and Services Administration, Maternal and Child Health to the Michigan Department of Community Health. The contents are the sole responsibility of the authors and do not necessarily represent the official views of DHHS.

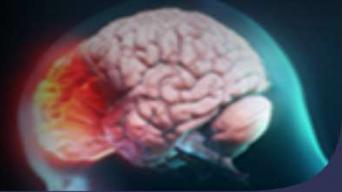
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Barrow Concussion and Brain Injury Center



- Mission: To improve outcomes of those who suffer from neurological injury through comprehensive, patient-centered care, collaboration and research.





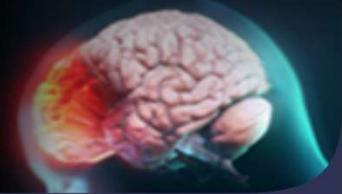
Goal of Intervention

- Was this worse than a mild injury?
- Is there a physical symptom that is prolonging recovery?
- Is there an emotional component?
- Did the injury exacerbate something that was already going on (premorbid condition)?

Recognizing a
Traumatic Brain Injury



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Retrospective Review

- Retrospective chart review of all patients seen through this program from its inception in April 2012 through November 2015
 - 208 patients
- All ages included
- Exclusion criteria: TBI due to cause other than DV, no history of TBI
- n = 115

Journal of Neurotrauma, VOL. 34, NO. 4 | Original Articles

normal

Traumatic Brain Injury in Domestic Violence Victims: A Retrospective Study at the Barrow Neurological Institute

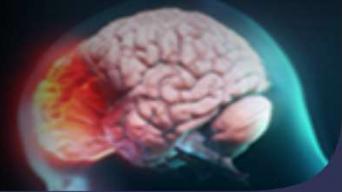
Zieman Glynnis, Bridwell Ashley, and Cárdenas Javier F.

Published Online: 15 Feb 2017 | <https://doi.org/10.1089/neu.2016.4579>

Tools Share

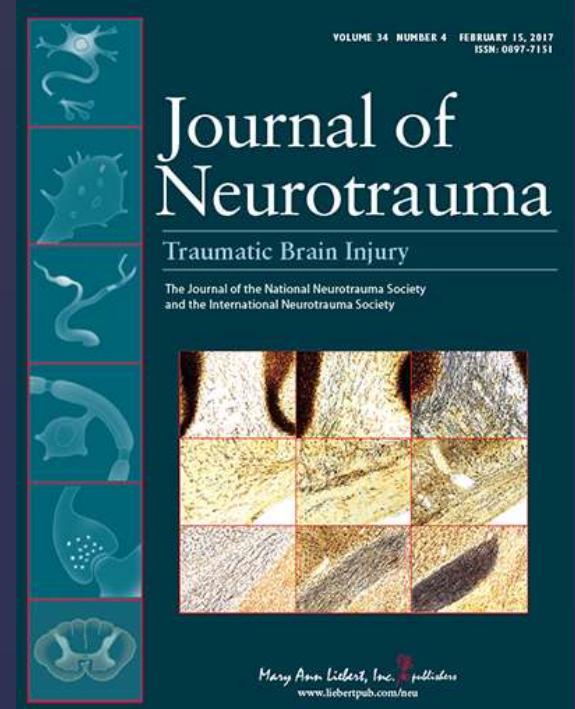
Abstract

Domestic violence is a national health crisis, which affects people of all ages, races, and socioeconomic classes. Traumatic brain injury is common in victims because of the high frequency of head and neck injuries inflicted through abuse. These recurrent injuries can lead to chronic symptoms with high morbidity. We conducted a retrospective chart review of 115 patients with a history of head trauma as a result of domestic violence. All patients were seen in a subspecialty traumatic brain injury clinic, at which time information regarding their histories and self-reported symptoms were recorded. In total, 109 females and 6 males were included in our study, with an age range of 4–68 years. Overall, 88% reported more than one injury and 81% reported a history of loss of consciousness associated with their injuries. Only 21% sought medical help at the time of injury. Whereas 85% had a history of abuse in adulthood, 22% had experienced abuse in both childhood and adulthood, and 60% of the patients abused as children went on to be abused as adults. Headache was the most common chief complaint, but on a self-reported symptom severity scale, behavioral symptoms were the most severe. Psychiatric disease was present in 84% of patients. Traumatic brain injury is a frequent sequela of domestic violence, from which many victims sustain multiple injuries without seeking medical care. Brain injuries are often sustained over many years and lead to lasting physical, behavioral, and cognitive consequences. Better understanding of these injuries will lead to improved care for this population.

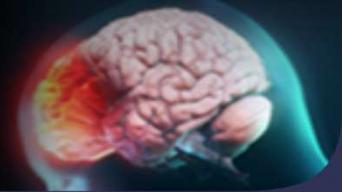


DV Study - Highlights

- Most patients:
 - Too many injuries to quantify
 - Did not seek medical care for their injuries
- Over half of the patients who experience abuse as a child went on to be abused as an adult
- Most common chief complaint was Headache
 - Behavioral and Cognitive domains overall most severe
- Neuro psychology evaluation was abnormal in 89.5%
 - Almost half were invalid due to mood
- MRI was abnormal in 14% of patients (excluding nonspecific white matter lesions)

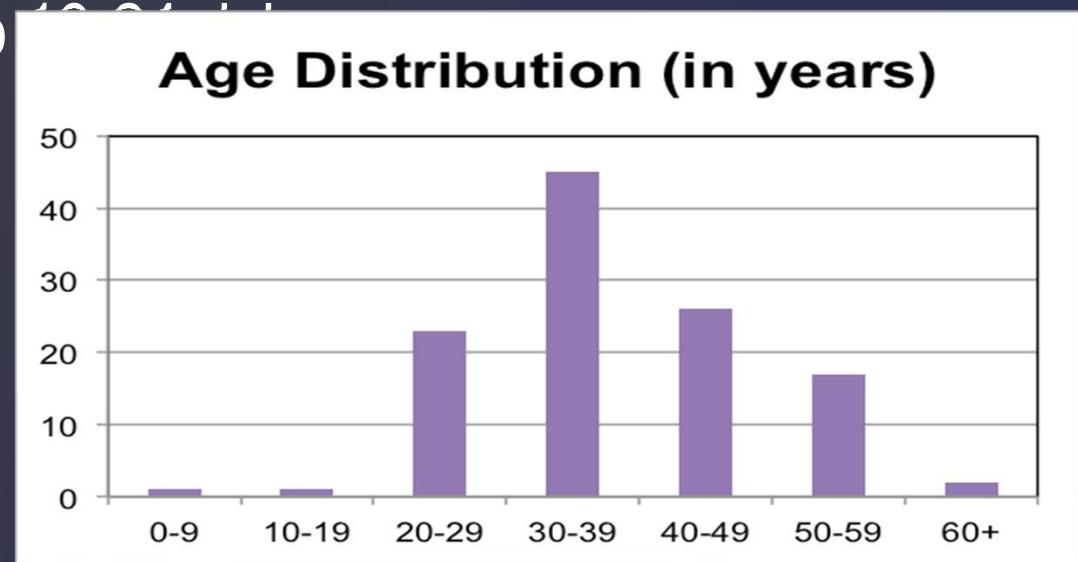
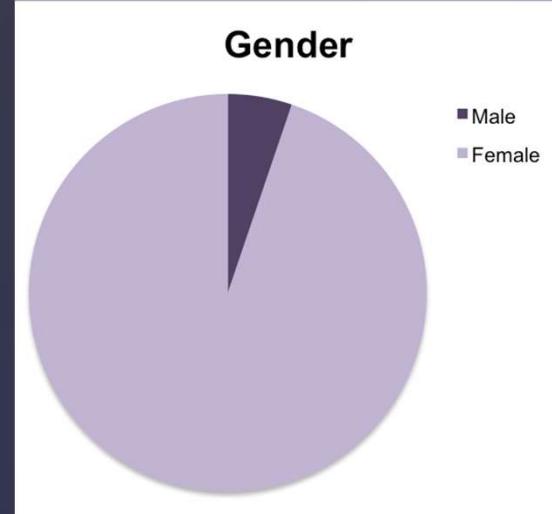


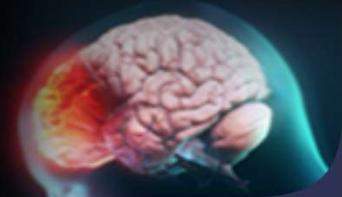
Accepted for publication June 16, 2016.



Demographics

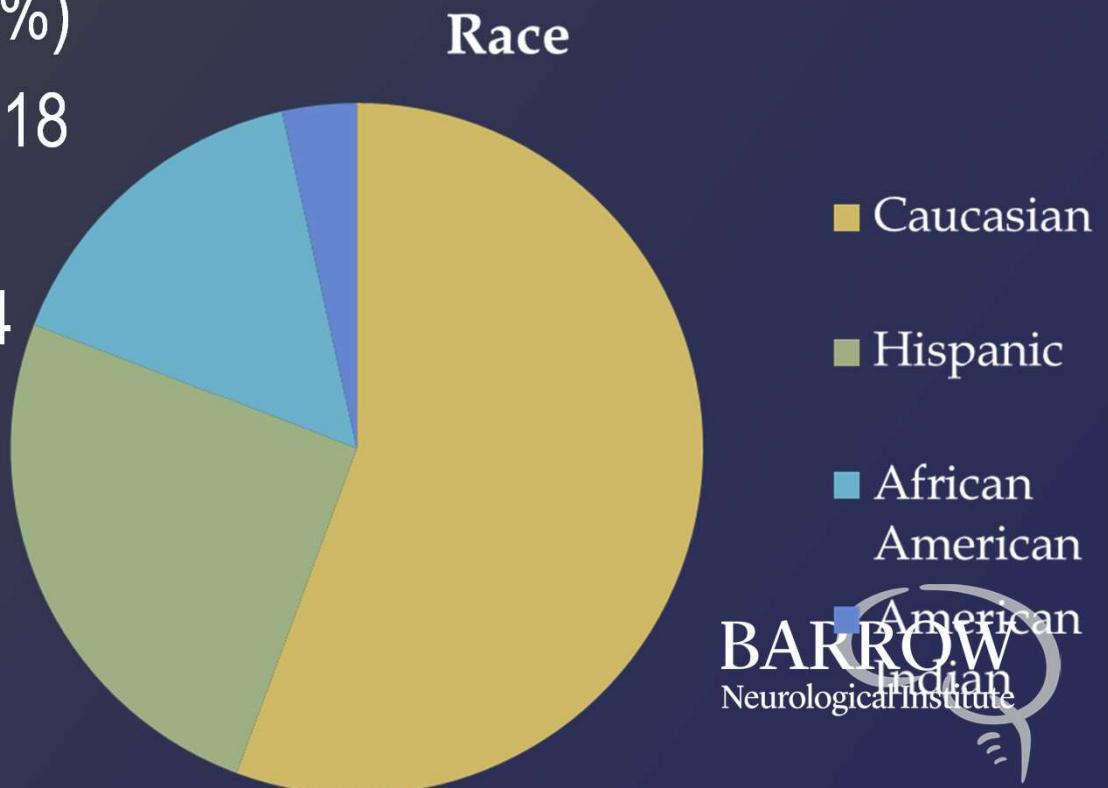
- 109/115 female (94.8%)
- Age: 4-68y
 - Mean = 37.9y (SD 10.8)
(only 1 child in study)
 - Compared to 10-24y

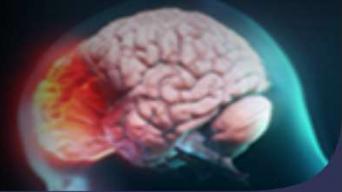




Demographics, cont.

- Race:
 - Caucasian = 64 (55.6%)
 - Hispanic = 29 (25.2%)
 - African American = 18 (15.7%)
 - American Indian = 4 (3.5%)

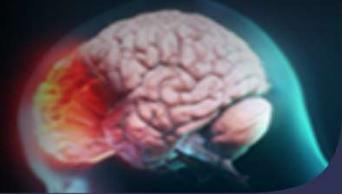




DV Study - PMH

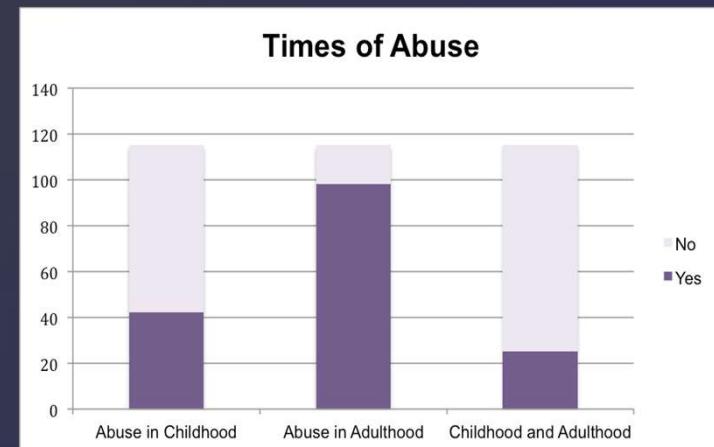
- All acquired via patient report (no medical records available)
- **97/115 (84.3%)** reported a history of a psychiatric disorder
 - 69/115 (60%) – depression (*17% lifetime general population*)
 - 54/115 (47%) – anxiety (*18%*)
 - 13/115 (11.3%) – bipolar disorder
 - 13/115 (11.3%) – PTSD (*6.8%*)
 - 10/115 (8.7%) – psychiatric symptoms (AH, VH, etc.)
- Interestingly, the large majority of patients who reported a psychiatric history had received psychiatric care

*Headache history unreliable, not quantified

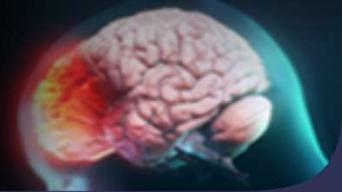


DV Study – DV History

- 98/115 (85.2%) – Adulthood abuse
- 44/115 (38.2%) – Childhood abuse
- 27/115 (23.5%) – Both

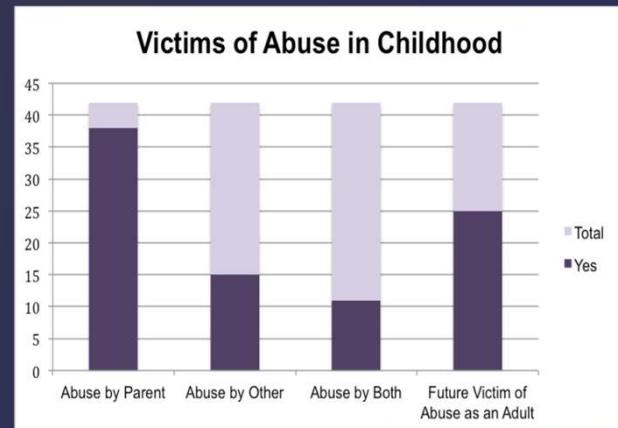
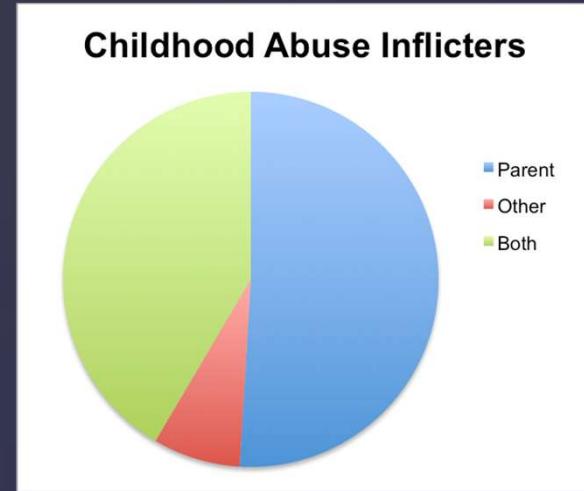


*Of patients abused as a child,
61% went on to be abused as
an adult*



DV Study - Abusers

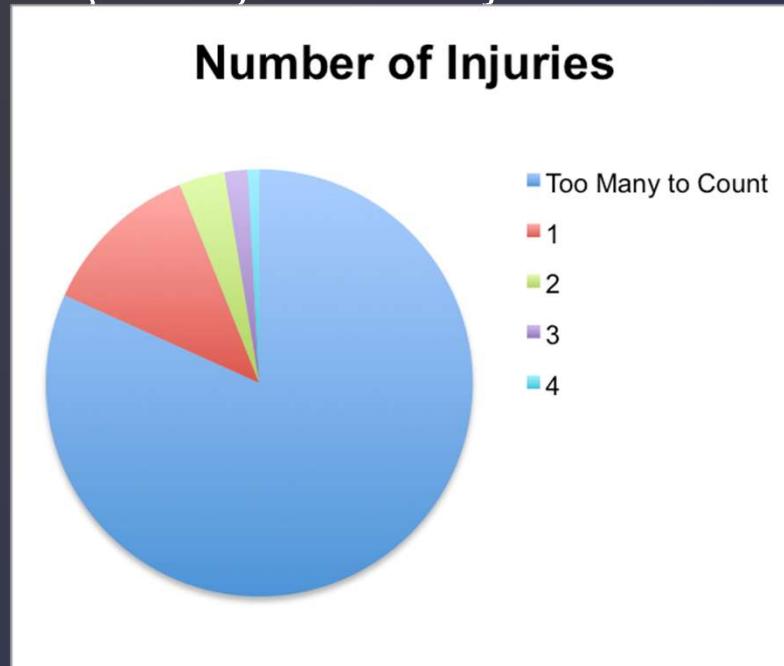
- Abused as Adult Victims:
 - 94/98 (95.9%) – IPV
 - 4/98 (4.1%) - other
- Abused as Child Victims:
 - 39/44 (88.6%) – parent
 - 10/44 (22.7%) – parent plus other
- *Overall, 45/115 (39.1%) had more than one abuser*



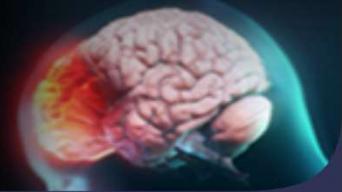


DV Study - Injuries

- 101/115 (87.8%) = >1 injury
 - Prior studies = 25-72%¹
 - Of these: 93/101 (92.1%) = too many to count

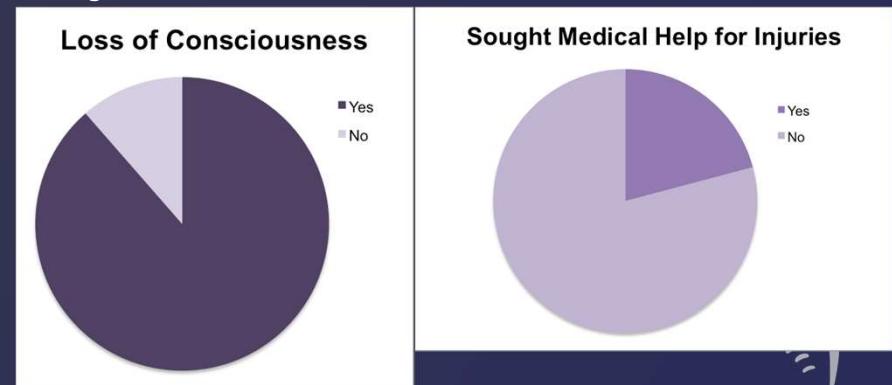


*Inconsistencies in disclosure of injury types; unreliable

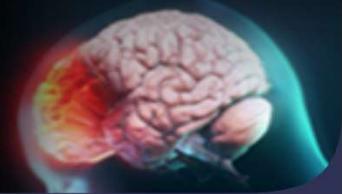


DV Study – Symptoms Surrounding Injury

- 93/115 (80.9%) reported loss of consciousness associated with at least one of their injuries
 - Prior studies = 30-80%^{1,2}
- Only 24/115 (20.9%) sought medical care at the time of at least one of their injuries
 - Prior studies = 25-74%^{3, 4}



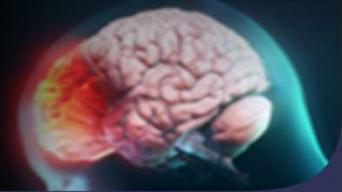
1 Corrigan et al 2001, Davis 2014, 3 Valera & Berenbaum 2003, 4 Kwako et al 2011



DV Study – Symptoms at Visit

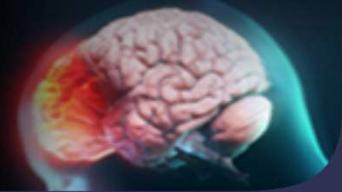
- Chief Complaint
 1. Headache (60/115, 52.2%)
 2. Memory loss (31/115, 27%)
 3. Other cognitive complaints (13/115, 11.3%)
- Prior studies: headaches, dizziness, memory loss^{1,2}





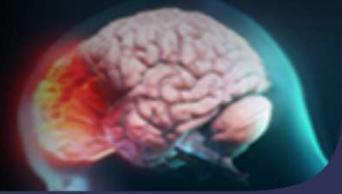
DV Study – Symptom Severity

- All BBICC patients complete symptom severity scale
- Symptoms in 3 categories: Physical, Behavioral, Cognition
- Data collected from all patients' scales and overall average taken for each symptom to identify most severe average reported symptoms



DV Study - Highlights

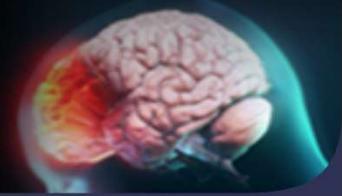
- Most patients:
 - Too many injuries to quantify
 - Did not seek medical care for their injuries
- Over half of the patients who experience abuse as a child went on to be abused as an adult
- Most common chief complaint was Headache
 - Behavioral and Cognitive domains overall most severe
- Neuro psychology evaluation was abnormal in 89.5%
 - Almost half were invalid due to mood
- MRI was abnormal in 14% of patients (excluding nonspecific white matter lesions)



Application of Study

- Medical Community and DV victims
- Police and DV victims
- Substance Abuse treatment and DV victims
- Suicide and DV victims
- Homeless case management and DV survivors
- Future Vision: Integration of Neuro Rehab in DV shelters

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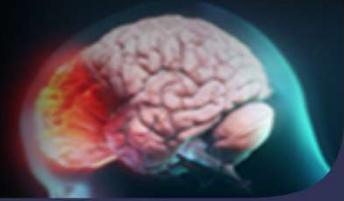


- <https://www.12news.com/video/news/local/valley/phoenix-police-receive-special-crisis-intervention-training/75-8257017>



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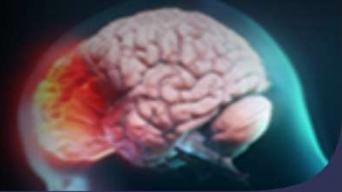


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You! Barrow Concussion & Brain Injury C

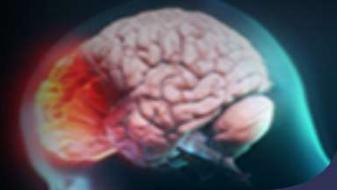




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