Service Provision for Youth and Young Adults with Traumatic Brain Injuries.

Melissa McCart D.Ed.
Center on Brain Injury Research and Training
University of Oregon
Outline

• What is TBI?
• Summary of issues in educating children with TBI
• *Transition planning for students with TBI.*
• Resources Available
  o *In the Classroom*
  o *Brain Injury in Youth: Community of Practice*
  o *Transition Tool Kit for students with TBI*
  o *Webinar with Dawn Rowe*
I, Melissa McCart, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.
What Is CBIRT?

• Research center at University of Oregon
• State programs:
  • Oregon TBI TEAM
  • Governor’s Task Force on TBI
• Research:
  • Descriptive: hospital-school transition, post-school experience
  • Interventions to support children at home and school
What is a Brain injury?

- Disruption in normal brain function due to blow or jolt to the head
- CT or MRI almost always normal
- Invisible injury
Traumatic Brain Injury

Coup - Contrecoup injuries
Traumatic Axonal Injury: brain is shaken and rotated inside the skull, stretching and tearing axons. White matter underneath stretched and torn.

Axon Shear (Post Concussion Syndrome)

A. Trauma causes the axon to twist and tear
B. The result is permanent death of the brain cell
CDC Data on Brain Injuries

- 35.2% Falls
- 16.5% Struck By/Against
- 17.3% Motor Vehicle Traffic
- 21% Unknown/Other
- 10% Assault
Epidemiology of Brain Injury

• Falls, MVA, assaults are most common causes
• 20% sports-related – adolescents % higher
• 10% sports concussions involve loss of consciousness
• Risk of TBI is 4-6 times greater after one and 8 times greater after two
UNIQUE STUDENT CHARACTERISTICS

Unfamiliar to educators
Student Characteristics

• Inconsistent learning profiles
• Students may have no physical signs of disability
• Effects of TBI are subtle and confusing
• Poor academic outcomes
Symptoms of Concussion or Brain Injury

- Appears dazed or stunned
- Exhibits confusion
- Unsure about what happened
- Fatigue
- Nausea or vomiting
- Double vision, blurry vision
- Sensitivity to light and noise
- Feels “sluggish”
- Feels “foggy”
- Problems concentrating
- Problems remembering

- Moves clumsily
- Balance problems
- Personality change
- Responds slowly to questions
- Forgets events around the injury
- Loss of consciousness
- Headache
Definitions
(504, IEP and research)

• Acquired brain injury (ABI)
• Traumatic brain injury (TBI)
• Concussion = mild TBI
Types of Brain Injuries

• **Closed Head Injuries**: Occurs when brain tissue impacts the inside of the skull. Can cause bleeding, bruising, tissue damage, neurochemical changes and increased intracranial pressure or fluid buildup.

• **Penetrating injuries**: Open fractures of the skull, gunshot wounds, entry of any foreign object into the brain, resulting in damage to the brain structure neurons.

• **Anoxic injuries**: Occur when the lack or reduction of oxygen causes brain cells to die. Anoxic injuries can produce widespread effects throughout the brain.

• **Toxic injuries**: Caused by exposure to toxic chemical agents, which can cross the blood-brain barrier & damage or kill brain cells.
Mechanism of Injury

• Complex physiological process
• Sudden chemical changes
• Traumatic axonal injury
• Causes a neurometabolic cascade – brain goes into an energy crisis usually lasts up to 7-10 days
• Symptoms may get worse before they get better
Brain Injuries in Children

Children respond to brain injuries differently than adults.

- less likely to lose consciousness
- have higher survival rates for serious injuries compared to adults
- tend to have faster physical recovery of motor skills than adults
- have a harder time learning new skills because the damage happens to a brain that is still growing and developing
- some of the skills a child will need as an adult have not yet developed, but may still be impacted by the brain injury.

The full effects of the brain injury are unknown until higher thought processes develop
How is pediatric TBI different from other pediatric disabilities?

1. Sudden occurrence of disability
2. Sudden ongoing medical needs
3. Sudden disruption of prior normal brain development
4. Potential for difficulties to manifest over the years as the brain matures and develops
5. Sudden loss of peer relationships

6. Students tend to lack self-awareness of new injury imposed deficits

7. Prior knowledge tends to remain intact. Future learning is impacted.

8. Regular IQ testing tends to gauge prior knowledge. Testing of **cognitive processes** is most important for students following TBI.
9. Exacerbation of **prior** cognitive, behavioral, psychological deficits
10. Reconciliation of “old” self with “new” self
11. More **extreme** discrepancies among abilities and uneven and unpredictable progress
TBI Impacts All Aspects of Functioning

- N = 526 parents of children hospitalized for TBI (Hawley et al. 2004)

Behavioral, emotional, memory and attention problems reported by:
- 33% of severe injuries
- 25% of moderate injuries
- 10-18% of mild injuries
TBI Transition Study

• Conducted between 1999-2007
• Focus on transition outcomes
• 90 students in Oregon and Washington
• Interviews with Parent and Youth every 6 months
Key Findings

• Many students left school unprepared for work and post-secondary education
• At age 25, most working entry-level or low-skilled jobs
• About ½ of the sample were living on their own at age 25
Implications for Practice

Special education interventions for students with TBI should...

• Target emotional adjustment and executive functioning
• Transition services should consider family issues
• Connect youth and family with post-secondary disability services and other community supports
Implications for Practice

• Transition continues well beyond high school graduation
• The service system youth enter is the same one that produces 40% employment for adults with TBI
Educator Training in TBI

- 2012 survey of educators
- N = 352
- 85% had worked with student with TBI
- Special educators (62%) and general educators (38%)
- 75% had master’s degree

Ettel, Glang, Todis, & Davies, 2016
Teacher Training in TBI

Percentage with prior TBI Training

No TBI Training, 75%
More than half of the sample answered these items incorrectly.

- After a brain injury, children/adolescents can forget who they are and not recognize others, but be ‘normal’ in every other way. **FALSE**
- A brain injury affects girls’ and boys’ brains differently. **FALSE**
- Children/adolescents who have had one brain injury are more likely to have a second one. **TRUE**
School Psychologist Training in TBI

• Survey conducted in 2014 (N= 232)
• Outcomes: Knowledge, self perception
• 88% had worked with student with TBI
• 78% held masters degree or higher

Glang, McCart, Moore & Davies, in press
Percent of School Psychologists with prior TBI training

- 43% have prior TBI training
- 57% have no prior TBI training
School Psychologists rated themselves...

• 48% were qualified to differentiate between students with TBI and students with other disabilities
• 47% were able to provide a school with information about TBI
• 27% felt comfortable serving as an IEP case manager
NASDSE Survey (2012-13)

- Survey of State Directors of Special Education (N = 43)
- 55% of respondents report that TBI count for their state is inaccurate

Glang, Ettel, Todis et al., 2015
Why are the IDEA counts inaccurate?

• lack of awareness about TBI
• lack of communication between hospital and school
• students identified under different eligibility categories

Glang, Ettel, Todis et al., 2015
Hospital to School Transition Service Delivery Following TBI: A Longitudinal Qualitative Study
Bonnie Todis, Melissa McCart and Ann Glang

• 21 cases including students, families and teachers followed

• Preliminary findings:
  • Hospital to school transition only made a difference if educators had training.
  • If there was no educator training hospital to school transition made little to no difference.
Historically Documented

Timeline

• **1984** “We need effective teacher training” – NHIF meeting

• **1988** “School psychologists have not been trained about TBI” - Mira & Tyler

• **1991** “Very few educators receive training for working with students with TBI” – Ylvisaker, Hartwick & Stevens

• **1996** “Effective programs for students with ABI...includes...increasing teacher capacity through in-service” - Todis & Glang

• **1997** Educators showed misconceptions in the areas of coma, memory, and new learning. -Farmer, & Johnson
Historically Documented

• **2001** “teacher training in TBI is critical” – HRSA, NIDRR & OSEP

• **2004** Endorsed misconceptions about TBI indicating a lack of knowledge about moderate to severe TBI. – Guilmette & Paglia

• **2005** “The need for teacher training remains strong” – Ylvisaker et al.

• **2010** “Educators need training in methods validated for students with TBI” -Glang, Todis, Sublette, Brown, & Vaccaro
Historically Documented

• **2012** “75% of teachers never received training on TBI” - Glang, Todis & Davies

• **2015** “Children with TBI are under-identified because there is a lack of educator awareness of TBI as a disability”
  – Glang, Ettel, Todis et al., 2015

• **2016** “75% of teachers have had no training in TBI”
  – Ettel, Glang, Todis, & Davies

• **2018** “73% of school psychologists did not feel comfortable serving as the case manager for a student with TBI” - Glang, McCart, Moore & Davies
For years at least **34 years** we have been documenting the need for educator training.

New struggles are emerging...

- lack of release time
- lack of finances
- lack of time
Now What?!!
Concussion in the Classroom: Best Practices for Student Success
Concussion in the Classroom: Best Practices for Student Success

• Target: What’s different about TBI?
• Topics identified by educators
• Focused on classroom teachers
Awareness

Positive student outcomes

Knowledge

Applied Skills
Instructional Design

• Information: text, video testimonials
• Resources: printable forms, links, case studies
• Skills training: interactive video
In the Classroom After Concussion - Best Practices

Best Practices for Student Success

Welcome to In the Classroom!
We all want students to be successful in the classroom.

Students with brain injury, including concussion, may have ongoing physical symptoms, and may struggle with the demands of school. In the Classroom provides helpful information, practical strategies and resources for educators working with students with brain injury.
Home Page Topic Options

Return to School
- How is Brain Injury Different from Other Disabilities?
- Return to School After Concussion

Screening and Services
Accommodations and Modifications
Classroom Strategies
Promoting Social Interactions
Behavioral
Transition
Parental Communication
Resources
Goal Setting and Action Plans During Transition

1a. Goal Setting and Action Plans During Transition

Attempt: 1

You have completed 0% of the lesson

Overview

Until students identify their goals, it’s hard to help them make a plan to reach them. Setting goals is key to an effective transition process. Working toward meaningful goals can motivate a student to acquire skills, complete high school, and become more self-directed. Setting goals and working toward achieving them are also skills that students can use in their adult lives.

Some students with a brain injury have trouble thinking about abstract concepts, such as “What do I want my life to be like in 5 years?” For those students, it is important to break down the goal-setting process into more immediate, concrete steps. For other students, setting goals and determining action plans can be difficult because of compromised self-awareness, especially if their injury was relatively recent. Before the injury, the student might have enjoyed activities that are now difficult or impossible. The student might not be aware of how much things have changed. Sometimes you might wonder if a student is in denial about her changed abilities. It is more likely that because of the brain injury, she has trouble accurately evaluating her performance in different areas. By helping students identify their strengths, needs, preferences, and interests, teachers can help their students set meaningful, achievable goals.

Actions

- Continue to Hear from an Expert
Strategies for Success

1a. Goal Setting and Action Plans During Transition

You have completed 29% of the lesson

Strategies for Success

Help your student identify meaningful goals.

When goals are aligned with a student’s preferences, interests, needs, and strengths, the transition process goes more smoothly and leads to better transition outcomes. For students who are on an IEP, developing meaningful goals is a requirement of transition/special education law.

**HOW?**

- Help your student identify her strengths by asking her what positive qualities she thinks she has and what positive qualities she would like to have. If it is hard for her to answer this question, you can try asking her how others would describe her.
  - “One of the qualities you mentioned is your creativity. Tell me how you use your creativity to be successful at school.”
- Help your student identify needs by asking about accommodations that help her succeed in school and at home.
  - “In the past, what has helped you pay attention in a loud classroom?”
See it in Action

video-based learning

See It in Action

In this example, the teacher helps Dani identify and set meaningful, achievable goals by helping her create an action plan.
Positive Examples
Negative Examples
Hear from an Expert

Strengths and Needs:
Gina Piccolini, Special Education Coordinator, describes the importance of students being able to recognize their strengths and needs.

Actions
- Continue to Strategies for Success
Videos From Real Educators
Case Studies

applied examples

Case Study

Background
Victor is 20 years old and getting ready to transition out of high school. When he was 8 years old, he fell from the top bunk, hitting his head on a hard tile floor. This followed a hit to the head with a baseball bat when he and a neighbor were roughhousing about a year before. After the fall from the bed, Victor began exhibiting erratic behavior, and by the time he was 12 years old, it was common for him to have angry outbursts. He had a hard time sitting still for more than a few minutes and paying attention in class.

Victor was put on an IEP in middle school based on the need for accommodations due to his brain injury. His teachers didn’t expect much from him academically (he didn’t test well in reading and math), so they focused mostly on behavior management interventions—without much success.

By the time he started high school, Victor had a reputation for being lazy and unmotivated. His parents don’t think he can find a job and live on his own after he graduates, so they expect him to continue living with them indefinitely. He has had some work experience opportunities—working on the coffee cart at his high school and with an evening cleaning crew at an office building—but he didn’t like either of those jobs and just showed up because his parents told him to.

How the issues were addressed
Victor’s transition specialist started talking with Victor about a transition plan based on Victor’s interests, needs, and preferences, rather than those of his family. The transition specialist helped Victor
Learn More

knowledge practice with feedback

1a. Goal Setting and Action Plans During Transition

You have completed 43% of the lesson

Janelle is a high school senior meeting with her transition specialist to work on creating new goals for her transition plan. She wants to set an employment goal for after she graduates, but she is having a hard time deciding what the goal should be. Which of the following is NOT a good way for her teacher to help her?

- Talk to Janelle about her preferences, interests, needs, and strengths.
- Work with Janelle to identify a smaller short term goal that can lead to her long-term goal.
- Talk to Janelle’s family and ask them what the goal should be.

SUBMIT
Quiz

professional development units

ITC 20180117 > Classroom Strategies > 4b. Test your knowledge

Question 1

When helping your student select a support tool, you should take into consideration the student's

Select one or more:

☐ needs.
☐ skill level.
☐ preferences.
☐ All of the above.

Question 2

Which of the following are examples of benefits your student could receive by using mobile applications?

Select one or more:

☐ Fulfillment.
Evaluation

You say your program works but why should I believe you?

Because I have evidence.
Pilot Study

• Pilot test (N = 18 Oregon educators)
• Measure refined: test/retest reliability (N = 44)
• Gains in knowledge, knowledge application, self-efficacy
• Educator response overall positive
RCT Evaluation

• Randomized controlled trial

• N = 100 classroom teachers (Oregon/Ohio)

• Randomly assigned to either *In the Classroom (Intervention)* or *LEARNet (Control)*

• 5 hours total content
Evergreen Evaluation

- Quasi experimental within subjects design study

- N=81

- All online without supervision (real world application)
Knowledge

The two most common reasons a student exhibits problem behaviors are:

a. She needs more discipline
b. She is trying to get something
c. She has an emotional problem
d. She is trying to get out of something
Knowledge Application

You are helping your student prepare for an upcoming Social Studies final test. Your class has been covering one new chapter each week for the past three weeks, and the test will cover all three chapters. At the end of each chapter, the students took a quiz covering the main topics of the chapter. How can you help your student determine what he knows and what he needs to study more of?
Knowledge Application

1. Tell him to look through all three chapters and write down the ideas he thinks are most important.

2. Tell him to study the quizzes at the end of each chapter.

3. Tell him to review all the questions and to focus mostly on the quiz items that he got wrong on the quizzes.

4. Tell him to study parts of the chapters that weren’t covered by the quizzes.
Self Efficacy

- Video or text-based scenario presented
- I am confident I could successfully handle a situation like this.
- 6 Point Likert Scale
- Modified from, Teaching Students with Disabilities Efficacy Scale (Dawson & Scott, 2013)

*Strongly disagree*  -----  *Strongly Agree*
Self Efficacy

Sample items:

• I can adapt the curriculum to help meet the needs of a student with disabilities in my classroom.

• I can break down a skill into its component parts to facilitate learning for students with disabilities.

• I can manage a classroom that includes students with disabilities.
## Test Statistics from ANCOVA Models

<table>
<thead>
<tr>
<th></th>
<th>Adjusted Posttest Means</th>
<th>Test Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Treatment</td>
</tr>
<tr>
<td>Knowledge</td>
<td>68.4</td>
<td>77.1</td>
</tr>
<tr>
<td>Knowledge application</td>
<td>72.3</td>
<td>77.4</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>4.2</td>
<td>4.4</td>
</tr>
</tbody>
</table>
Program Satisfaction

• 98% found the program easy to use
• 96% did not need help to use the program
• 100% thought people would learn to use the program quickly
• 100% felt confident using the program
• 100% did not need to learn new things to use the program
• 100% said they would recommend the program to others
Brain Injury in Youth: Community of Practice

https://youthbraininjury.obaverse.net/2/group/view.php?id=2

Brain Injury in Youth – Supports for School Success

Welcome

- The Brain Injury in Youth - Supports for School Success is a Community of Practice (CoP). This CoP is a nationwide interactive online resource community designed for those currently working in the field of education and brain injuries. The purpose of the site is to share ideas, discuss issues, and generate strategies for those who educate, advocate for, and support children and adolescents with brain injury in schools.

- This site has useful information for all types of brain injuries: traumatic brain injury (TBI), including concussion, and non-traumatic brain injury. Although...
Collection: Transition to Adulthood

Transition to Adulthood

About  Planning  Pre-Employment Transition S...  Resources for the Student &...  Transition Assessments  Web-Based Resources  Recorded Webinars | Online ...

by Brain Injury in Youth – Supports for School Success

Here we provide a collection of resources for supporting post-secondary transition for all students with disabilities, including brain injury.

Overview

This collection is a place to share new resources, upcoming events, and other information relevant to transition planning for students with disabilities. We'll call attention to helpful resources from organizations both within and outside of the field of brain injury.

Transition Research


Recorded Webinars - National Technical Assistance Center on Transition (NTACT)
Webinars
November 7th- Dawn Rows on Transition Assessment
Join the Conversation

Like our facebook page: **CBIRT Online**

Updates on news and research related to TBI, CBIRT events, and new resources
YouTube: CBIRTonline
Melissa McCart
mccart@uoregon.edu / 541-346-0597