

Managing Behavior Dysfunction Post Traumatic Brain Injury (TBI)

Part I: Behavior Assessment

Dysfunctional behaviors can be the most debilitating consequence of TBI, dramatically impacting family, social, and vocational relationships. Estimates of behavioral challenges among children with TBI range from 35% to 70%. Estimates among adults range from 25% to 61%. In this TBI Research Brief, we present Part I of a two-part series on evidence-based guidelines for managing these challenges. In Part I, we focus on three key elements: common challenging behaviors post-injury; causes of challenging behaviors; and a process for evaluating behaviors. Part II will focus on specific management strategies.

What are common dysfunctional behaviors post-injury?

- * acting without thinking
- * irritability
- * aggression
- * sexually inappropriate behavior
- * reduced anger control
- * hyperactivity
- * distractibility
- * focus on self
- * socially inappropriate/immature behavior
- * depression
- * verbal statements without regard to truth
- * lack of initiation
- * social withdrawal
- * repeating the same behavior or topic over and over

What influences or causes these behaviors? These include but are not limited to:

Physical changes

- * severity of the brain injury
- * location of the brain injury
- * impaired vision, hearing, sensation, movement
- * headaches, fatigue, dizziness
- * seizures
- * changes in medication

Psychoemotional changes

- * feelings of grief, loss and/or frustration
- * changes in reactions to others in the environment

Cognitive/self-regulatory changes

- * increased confusion, disorientation
- * slow processing speed
- * impaired executive functions (planning, organization, initiation, self-monitoring)
- * impaired attention, memory
- * impaired speech-language/communication skills

Pre-injury characteristics

- * previous personality characteristics, social interaction styles, motivation, etc.

Dysfunctional behaviors may also serve a particular purpose, including but not limited to:

- * Attempting to communicate a need or desire
- * Seeking attention
- * Seeking to escape or exert control over a situation

What is the best way to evaluate behaviors?

A *Functional Behavioral Assessment (FBA)* is a process for identifying the events that reliably predict and maintain a problem behavior. Conducting a FBA is an essential first step in developing effective behavior management strategies. This process is required in school settings and is extremely useful with any difficult behavior. Methods for obtaining FBA information include talking to the person with the TBI and their significant others (e.g., family members, teachers, caregivers) as well as observing their behavior.

There are four steps to obtaining the needed information for the FBA:

We will illustrate these steps using two hypothetical case studies: Steve & Maria

Background:

Steve, 45 years old

Steve owned an auto-shop prior to his brain injury sustained in a fall. He is now employed in a supported work setting and experiences challenging behaviors at the end of his work shift.

Maria, 12 years old

Maria was injured in a car crash at 10 years of age. Prior to her injury, she was a straight A student. Now she has trouble initiating math problems and completing her work at school and at home.

	Steve	Maria
1. Describe behavior(s): Describe the behavior in objective/neutral words	Avoid saying: “Steve is just trying to get out of his work and is out of control.” Instead say: “Steve gets out of his chair, walks up and down the aisle, and yells obscenities at his co-workers.”	Avoid saying: “Maria is lazy and just doesn’t want to do her math problems.” Instead say: “Maria has trouble starting her math problems. She opens up her textbook but doesn’t begin the problem.”
2. Identify: Systematically observe and record <i>where, when, and with whom</i> the behavior occurs. What happens before the behavior occurs? What happens after it occurs? Does the person get or avoid something? How often does the behavior occur? How long does it last? How intense? Are there any other factors to consider such as medications, fatigue, sleep patterns? When does the behavior not occur? Does the person have a positive alternative behavior to replace the dysfunctional behavior?	Steve’s dysfunctional behaviors occur: <i>Where?</i> At work only; behaviors do not occur at home <i>When?</i> In the afternoon, before the end of his shift; while working on multi-step sorting tasks <i>With whom?</i> In response to the afternoon shift supervisor’s prompts	Maria’s dysfunctional behaviors occur: <i>Where?</i> At school and home <i>When?</i> Whenever asked to do complex math problems (e.g., long division) <i>With whom?</i> Math teacher, teacher’s aide, parents

	Steve	Maria
3. Determine reason(s) why: Develop a list of possible reasons why the behaviors occur. The underlying reason might be attributed to the brain injury itself (e.g., executive function impairment) and/or conditioned responses (e.g., people will remove demands if the survivor has an outburst). (Note: Not all of these reasons may apply, however, for the sake of illustration we've provided examples of each.)	<i>Physical cause?</i> Steve may be extremely tired at the end of his shift.	<i>Physical cause?</i> Maria's vision problems may make it difficult to track numbers on a page.
	<i>Cognitive/Self-Regulatory?</i> Steve sustained severe damage to the frontal lobes resulting in executive function impairment, specifically disinhibition.	<i>Cognitive/Self-Regulatory?</i> Maria sustained damage to the frontal lobes making it difficult to initiate activities.
	<i>Psychoemotional Changes?</i> Steve used to own his own auto-shop and may be grieving/frustrated over the loss of his work identity.	<i>Psychoemotional Changes?</i> Maria may be anxious over her performance in math.
	<i>Pre-Injury Characteristics?</i> Family and former co-worker report that Steve was very controlling before his injury.	<i>Pre-Injury Characteristics?</i> Maria was a straight A student before her injury and excelled in math.
	<i>Possible purpose?</i> Steve may be trying to exert control over his work situation.	<i>Possible purpose?</i> Maria may be seeking to avoid the math problems out of embarrassment.

4. Create the behavior management plan then evaluate:

Systematically address the behavior using specific strategies (See the *Fact of the Matter Behavior-Part II* brief) and keep data to demonstrate the need to continue, revise, or stop the plan. Include the person with TBI in making, carrying out, and evaluating the effectiveness of the plan.

Behaviors change as individuals move through stages of healing and may worsen in both children and adults even as other areas of function improve. Of note, children injured at younger ages are particularly susceptible to increased behavior challenges as they enter adolescence due to significant developmental (e.g., physical/hormonal) and environmental changes (e.g., transition from elementary school to middle school).

NOTE: TBI may co-occur with mental illnesses including schizophrenia and bi-polar disorder. Post-traumatic stress disorder (PTSD) may also co-occur with TBI. While several of the guidelines discussed here may be helpful for these individuals, it is beyond the scope of this brief to provide management guidelines specifically linked to the mental health component.

Where can I find out more information?

- * LearnNet <http://www.bianys.org/learnet/>
- * Technical Assistance Center on Positive Behavioral Interventions & Supports <http://www.pbis.org/links/default.aspx>
- * Sohlberg & Mateer (2001). *Cognitive Rehabilitation: An Integrative Neuropsychological Approach*. Guilford Press, New York
- * TBIEducator <http://www.tbied.org/evidence/behavior-ebp/>
- * Brainline <http://www.brainline.org>
- * Ylvisaker, M. et al. (2007) Behavioural interventions for children and adults with behaviour disorders after TBI: A systematic review of the evidence. *Brain Injury*. 21(8): 769-805. http://www.ncds.org/index.php?option=com_content&view=article&id=9&Itemid=9#TBI