

Special Article - Occupational Therapy

“Brain Tells” Recognizing Brain and Behavior Dysfunction in Daily Life

Royeen CB*, Armour AW, Provaznik C and Wickenkamp E

Department of Occupational Therapy, College of Health Sciences, Rush University, USA

*Corresponding author: Charlotte Brasic Royeen, Department of Occupational Therapy, College of Health Sciences, Rush University, USA

Received: June 06, 2017; **Accepted:** September 15, 2017; **Published:** September 22, 2017

Abstract

The brain is the driving force for participation in meaningful activities and daily occupations. When dysfunction occurs in the brain, there daily occupations can be affected. There is still much to learn about the brain and its capacities, but this article will seek to identify typical symptoms of dysfunction or irregularity that interfere with daily occupations. Much like the mnemonic “FAST” for stroke, “Brain Tells” can help not only health practitioners remember and recognize signs and symptoms of neurological conditions, but also the general population.

Keywords: Neuroscience; Daily functioning; Occupations; Brain functioning; Cognitive conditions

Objective

This article will seek to explore behavioral patterns of brain dysfunction as how they can be signals of neurological conditions. The use of these “Brain Tells” allows for many to recognize the signals of dysfunction through behavior and can be used across the general population.

Methods

With review of literature and research regarding brain functioning, this article used an occupational lens in determining the signs of brain dysfunction that can be recognizable in a clinical setting, but also used in the general population.

Results

The original article determined 11 signs of brain dysfunction and their implications for recognizing cognitive conditions.

Implications for occupational therapy practice

Within the scope of occupational therapy, daily functioning is affected by brain dysfunction. Educating patients and families on the signs and signals of brain dysfunction can lead to earlier detection of cognitive conditions and better outcomes. We suggest implementing training on awareness of the brain and behavior to increase recognition of signs and symptoms of dysfunction.

As medicine and research approach toward further understanding of the brain, there is still limited research regarding daily occupations and their relation to brain function. The complicated underpinnings of the neuroscience profession are difficult for the general public to understand and can lead to a lack of recognition of signs and symptoms of brain dysfunction. Brain irregularity and dysfunction can be seen in signals, or “Brain Tells,” stereotypical to a number of neurological conditions that affect daily functioning [1]. These “tells” as defined by Royeen et al. can and should be used in health practices and the general population for recognition of the warning signs of an undiagnosed condition.

Mnemonics are used in a variety of ways for recognizing signs

and symptoms of other conditions, such as a stroke. Using the letters in “FAST” to denote the signs someone may be having a stroke, the Department of Health in England found an increase of patients calling the helplines and emergency room admissions for stroke during the “FAST” campaign [2]. After this campaign spread, there has been continuing research to add two letters, “B” and “E,” to the mnemonic to increase symptom recognition of one of the leading causes of death worldwide [3]. The updated “BE-FAST” mnemonic would denote the sign of stroke: balance, eyes, face, arm, speech, and time, to increase the public recognition of the various symptoms. Similarly Royeen et al. suggest a “Brain Tells” mnemonic for recognition of cognitive conditions [1]. As adapted from the original article, Table 1 notes the mnemonic and what the brain may be “telling” you with the various signs and symptoms.

As science improves on knowledge of the brain as an executive function, there is increasing awareness of the brain as the organ where learning, thinking and feeling takes place [4]. Current evidence suggest that repeated exposure to concussions of head injury can lead to dementia, Alzheimer’s Disease, or Parkinson’s Disease later in life [5]. Whether it is through a sports injury or an accident, trauma to the brain has implications for future problems later in life. An estimated 300,000 sports-related head injuries occur in the United States each year [6]. While there have been movements to prevent concussions or other brain injuries in the world of sports, increasing knowledge among the general public can assist in further identifying when there is further brain dysfunction [7]. Basic neuroscience literacy among teachers, policemen, medical clinicians, and even parents can allow for better recognition of when brain dysfunction is occurring and reduce stigma or inaccurate postulations from being made. Rather than assuming the issue is external, realizing the internal causes allow for the individual to get the appropriate assistance and lessen the consequences of these assumptions.

Occupational therapists and other allied health professionals can use the 11 signs and symptoms of early brain dysfunction for understanding the internal causes and increasing skill building of the patient within the constraints of their current state. Teaching compensatory strategies and educating family on these typical signs

Table 1: “Brain Tells” [1].

Letter of Mnemonic	Brain Tell	Example
Behavior	Behavior atypical of individual.	Inappropriate remarks regarding appearance of others, public urination/defecation.
Rage	Inappropriate or un-situated rage.	Temper tantrum, rage attack, or unprovoked outburst.
Aggression	Un-situated or extreme aggression.	Physically assaulting people/animals
Intimacy	Physically based intimacy issues.	Kissing/caressing strangers, aloofness from spouses, invasion of other’s personal space.
Numbness	Loss of feelings in toes, fingers, limbs, or torso.	Pins-and-needles sensation in localized regions of body surface.
Tics	Muscular spasms in eyes, hands, and/or other body parts.	Eye blinks, shoulder shrugs, facial grimaces.
Tremors	Rhythmic oscillations of a body part.	Head movement up and down or side-to-side, pill-rolling movement of the hands.
Elevated	Elevated levels of action.	Excitement, agitation, flying high as a kite.
Language	Changes in language.	Pronominal reversals like substituting “you” for “he,” word-finding problems, gibberish, word salad, verbigeration.
Limited	Limited judgment or danger to self/others.	Riding a car without a seatbelt, riding a cycle without a helmet, casual sexual intercourse without condoms.
Signs	Sign of dominance of fight or flight or rest and restore aspects of the nervous system.	Excitement, bellicosity.

and symptoms can lead to earlier detection and increase accurate perception of the individual’s condition. Allied health professionals can see the signs and refer to other clinicians if indicative of brain dysfunction.

Conclusion

The mnemonic “Brain Tells” has implications for use in everyday practice for a variety of clinicians as well as the general population.

References

- Royeen C, Basic J, Dvorak L, Provoziak-O'Brien C, Sethi C, Ahmad S. Neuroscience Literacy: “Brain Tells” as Signals of Brain Dysfunction Affecting Daily Life. *Journal of Allied Health*. 2016; 45: 278-282.
- Flynn D, Ford GA, Rodgers H, Price C, Steen N, Thomson RG. A Time Series Evaluation of the FAST National Stroke Awareness Campaign in England. *PLoS ONE*. 2014; 9.
- Arora S, Singh R, Goldstein L. BE-FAST (Balance, Eyes, Face, Arm, Speech and Time): Reducing the Proportion of Strokes Missed Using the FAST Mnemonic. *Stroke: American Heart Association*. 2017; 48: 479-481.
- Okie S. Traumatic brain injury in the war zone. *New England Journal of Medicine*. 2005; 352: 2043-2047.
- Kiraly M, Kiraly SJ. Traumatic Brain Injury and Delayed Sequelae: A Review - Traumatic Brain Injury and Mild Traumatic Brain Injury (Concussion) are Precursors to Later-Onset Brain Disorders, Including Early-Onset Dementia. *The Scientific World Journal*. 2007; 7: 1768-1776.
- Center for Disease Control and Prevention (CDC). Sports-related recurrent brain injuries—United States. *International Journal of Trauma Nursing*. 1997; 3: 224-227.
- Kelly J, Nichols J, Filley C, Lillehei K, Rubinstein D, Kleinschmidt-DeMasters BK. Concussion in Sports: Guidelines for the Prevention of Catastrophic Outcome. *JAMA*. 1991; 266: 2867-2869.