



AOTA Evidence Briefs

Brain Injury

**A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

BI #6

Early intervention and provision of vocational services may improve vocational outcomes for clients with brain injury

Malec, J. F., Buffington, A. L. H., Moessner, A. M., & Thompson, J. M. (1995). Maximizing vocational outcome after brain injury: Integration of medical and vocational hospital-based services. *Mayo Clinic Proceedings, 70*, 1165–1171.

Level: IIA

Nonrandomized controlled trial, 2 groups, 20 or more participants per condition (validity not reported)

Why research this topic?

Clients with brain injury identify returning to work as their primary goal in rehabilitation, yet medical center-based rehabilitation for persons with brain injury does not typically include vocational services.

What did the researchers do?

The researchers, all affiliated with the Mayo Clinic Rochester (Minnesota), evaluated a case-management system operating at the Mayo Medical Center that integrated medical and vocational services and emphasized early intervention. When they wrote their article, the system had been operating for about a year. For a more complete report on this system, see Malec et al. (Malec, J. F., Buffington, A. L. H., Moessner, A. M., & Degiorgio, L. [2000]. A medical/ vocational case coordination system for persons with brain injury: An evaluation of employment outcomes. *Archives of Physical Medicine and Rehabilitation, 81*, 1007–1015).

People eligible to receive the benefits of the system were Minnesota residents between the ages of 18 and 55 who had a diagnosis of brain injury. Those who had a primary psychiatric or substance abuse diagnosis, lived in a residential-care facility, or showed no evidence of brain injury on a neuropsychological assessment were excluded. Between October 1, 1994, and September 30, 1995, the nurse case coordinator identified 509 persons with brain injuries who were referred to the emergency trauma unit. Of these, 350 were excluded and 13 had evaluations pending, leaving a study sample of 147. Of those, 116 had experienced a mild injury and 31 had experienced a moderate to severe injury.

The outcome areas of interest to the researchers were *disability related to brain injury* (as measured by the Mayo-Portland Adaptability Inventory) and *vocational outcome* (as measured by a 5-point scale, ranging from 1—Unemployment, to 5—Competitive employment).

What did the researchers find?

During the first year of the project, the number of people served was greater than predicted. Of the 98 people with mild brain injury whom project personnel were able to contact by telephone, 36 had one or more residual symptoms. The prediction was 20–25%.

Also during the first year, 67 people with brain injury began receiving vocational services through the project, and 34% were placed in community-based nonsheltered work or training programs. This number did not reach the project's goal of 70% or more. However, the researchers noted that the vocational component did not get fully under

way until 3 months into the project. Of the 26 people referred for vocational services during the component's first 6 months of operation, 73% were successfully placed. Experience suggests that "many participants require up to 9 months to obtain satisfactory work placement after receiving vocational services."

What do the findings mean?

- For *therapists and other providers*, the findings suggest that early intervention and provision of vocational services can increase the proportion of clients with brain injury who return to work.
- Savings in human and financial costs by these programs should be noted.

What are the study's limitations?

The researchers' method of selecting study participants was not systematic. That is, they selected persons consecutively admitted to the facility. This flaw in the study's design lowers confidence that the results can be attributed to the intervention.

The study provides useful information. However, it has limited generalizability for the population of persons with traumatic brain injury across settings because the participants did not represent all age ranges and all types of head injuries.

- Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

This work is based on the evidence-based literature review completed by Beatriz C. Abreu, PhD, OTR, FAOTA, and colleagues.

For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

