AOTA Evidence Briefs
Brain Injury

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

BI #5

Case coordination emphasizing early intervention and community support may reduce unemployment among clients with brain injury

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.

Level: IIA

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

Why research this topic?

Often, impairments following a brain injury interfere with the client's return to work. The literature suggests that the more severe the injury, the greater the rate of unemployment.

Outpatient rehabilitation following acute medical intervention and inpatient rehabilitation generally follows one of two models: a comprehensive integrated (CI) approach or a community reintegration (CR) approach. The CI approach provides intensive treatment and may be more appropriate for clients whose self-awareness, interpersonal functioning, and cognition are severely impaired. The CR approach, which focuses on development of functional skills and community supports, may be better suited for patients whose self-awareness is less affected. Both approaches include supported employment when necessary, a strategy that provides on-site supports such as job coaches. Unemployment rates for both of these approaches have been low—15% to 25%. The Medical/Vocational Case Coordination System (MVCCS) is a comprehensive, coordinated vocational management system designed to improve vocational outcomes for persons with brain injury. The MVCCS builds on the CI and CR approaches by adding this comprehensive and coordinated component. The purpose of this study was to assess whether this added feature would improve vocational outcomes for persons with brain injury.

What did the researchers do?

The researchers, all affiliated with the Mayo Medical Center (Rochester, Minnesota), evaluated the outcomes of an outpatient rehabilitation model, the MVCC, which features (a) early case identification and coordination, (b) appropriate medical and vocational rehabilitation interventions, (c) work trials, and (d) supported employment interventions in appropriate cases. The researchers focused on initial placement and 1-year follow-up. They compared results with previous studies. The desired outcome was at least a 60% unemployment rate for clients with moderate to severe brain injury. They also were interested in identifying which of the following factors best predicted vocation placement: severity of injury (classified only for participants with traumatic brain injury), severity of impairment or disability, degree of impairment of self-awareness, time since injury, presence of any nonbrain injuries, and educational or vocational status before injury.People eligible to participate in the study were Minnesota residents between 18 and 65 years of age with acquired brain injury. They were identified by outpatient rehabilitation facilities, the MVCCS, other providers in the medical center, and community agencies. From this pool the researchers drew 114 participants (70 men and 44 women), whose average age was 37.4 years.

The MVCCS connected a nurse case coordinator based in a medical center with a vocational case coordinator, based in the same center, who served as a liaison to community-based services. This connection provided (a) early identification of individuals needing medical services, medical rehabilitation, vocational rehabilitation, and social services; (b) late identification of other persons with chronic impairments after brain injury and their service needs; (c) personal vocational counseling, consumer advocacy, and on-site consultation for clients; (d) client access to community-based vocational services; (e) client access to other community-based services that support employment; and (f) client access to medical center services that enhance vocational reentry.

The outcome area of interest to the researchers was *vocational outcome* at initial placement and at a 1-year follow-up (as measured by the Vocational Independence Scale).

What did the researchers find?

Vocational outcome approached or exceeded the benchmarks set by the researchers for initial placement and 1-year follow-up. At initial placement, 46% of the participants were in independent work, 25% were in transitional placements, 9% were in long-term supported employment, and 10% were in sheltered work. Only 10% were not placed. At 1-year follow-up (the sample now reduced to 101), 53% were in independent work, 19% in transitional placement, 9% in long-term supported employment, and 6% in sheltered work. Only 13% were unemployed.

Both a shorter time since injury and a lower severity of impairment or disability best predicted vocational placement. The best predictor of employment status at the 1-year follow-up was the level (type) of initial placement.

What do the findings mean?

- For *therapists and other providers*, the findings suggest that an early intervention system coordinating medical and vocational services and linking clients with brain injury to community-based services that will support their employment produces better vocational outcomes for such clients than the benchmarks reported in the literature. A key player in such a system, according to the researchers, is the vocational case coordinator.
- The findings also suggest that early intervention facilitates return to work.

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 geographic areas 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.