

## THE VOCATIONAL EVALUATION OF HEAD INJURED PATIENTS

JUDI WEINBERGER

**ABSTRACT:** Each year 400,000 to 600,000 persons sustain a severe traumatic head injury. As a result of technological advances in medicine and rehabilitation, increasing numbers of head injured persons are surviving, yet 30,000 to 50,000 a year continue to manifest disabilities severe enough to preclude a return to a normal life (U.S. Department of Education, 1981). A significant portion of this group consists of adolescents and young adults involved in automobile, motorcycle or sports accidents (Kalsbeck, McLaurin, Harris, & Miller, 1980). One of the most difficult challenges these individuals face is entering into the workforce.

In recent years, there has been an influx of individuals with traumatic head injuries seeking vocational services. These individuals pose a particular challenge for the vocational evaluator accustomed to working with the physically disabled because of the combination of physical, cognitive, and behavioral impairments associated with head injuries. The complexity of this disability has led vocational evaluators to question the efficacy of standard vocational assessment procedures. This paper addresses the role of vocational evaluation in the rehabilitation of the head injured patient, focusing on the limitations of traditional assessment procedures, and the need for alternative means of evaluating this population.

## Functional Limitations

An individual who has suffered a traumatic head injury is typically left with a complex set of deficiencies. Unlike other diseases of the brain (i.e., Stroke, brain tumor) that result in localized brain damage and predictable functional consequences (Lezak, 1983), a head injury results in damage to diffuse areas of the brain. As a result, each patient presents a unique set of symptoms and functional deficits which contributes to the difficulty in working with this population (Anderson, 1981).

The multiplicity of deficits for the head injured are noted in physical, cognitive, and behavioral functioning. In addition to hemiparesis, physical impairments may include muscle spasticity, seizures, receptive and/or expressive aphasia, visual and sensory deficits, and reduced bowel and bladder control (Anderson, 1981).

Memory impairments are the most frequently cited cognitive deficits by head injured patients (Benton, 1979). Other cognitive deficits that interfere with vocational functioning may include decreased attention span and concentration; increased distractibility; impaired learning ability; slowing in the speed of information processing, reaction time and decision making; diminished abstract reasoning; and decreased generalization of ideas and tasks (Benton, 1979; Long & Webb, 1983).

Cognitive limitations and disturbances in social behavior have a strong negative impact upon returning to gainful employment (Najenson, Grosswasser, Mendelson, & Hackett, 1980). Following a head injury, changes in personality and temperament which impact on social behavior are often noted. The head injured patient may experience fluctuations in affect and mood (including depression and euphoria), lowered tolerance for frustration, and easily succumbs to fatigue. In addition, increased

egocentricity results in a diminished awareness of social conventions, sensitivity to others' feelings and feedback concerning their own actions. Further, many head injured patients will experience difficulty in spontaneously initiating purposeful activities and planning for the future (Benton, 1979; Lynch, 1983).

A major obstacle for the vocational evaluator is the head injured patient's lack of awareness of his/her current deficits (Rosenthal, 1983). Commonly, they perceive themselves functioning as they had prior to the injury. This lack of awareness is much a function of cognitive deficits as psychological defenses such as denial. In general, the personality and behavioral changes experienced by the head injured patient are a result of pathology to specific areas in the brain, complicated by the psychological aspects of dealing with the disability.

### **Vocational Evaluation**

It is helpful to conceptualize two distinct, but related, phases of vocational evaluation during the rehabilitation process for the head injured patient. The first phase ideally begins while the patient continues to receive physical, occupational and speech therapies. The patient should be generally oriented to the environment and capable of performing purposeful activities for short intervals of time. During this time, the purpose of vocational evaluation is to obtain and provide information to the interdisciplinary rehabilitation team about the types of skills which would be necessary for the patient to return to his previous level of functioning in work or school, and to allow the patient an opportunity to practice these or related activities. This phase of vocational evaluation is most appropriate for patients who have had a previous work history.

For example, a 32 year old mailman sustained a head injury resulting most notable in left hemiparesis,

short term memory deficits, inappropriate affect, and depression. Of significant importance to his rehabilitation was his difficulty in recognizing how the exercises performed in physical, occupational and speech therapies would assist him in returning to work as a mailman. He often became disruptive and refused to participate in therapies. When the vocational evaluation began, this patient was repeatedly given tasks related to mail sorting, beginning with sorting titles by color and progressing to sorting letters and packages. He was motivated to perform these tasks as they were directly related to his job. The other therapies began to incorporate job-related tasks into their routines which the patient readily performed. The patient eventually returned to work as a mailman.

The second phase of vocational evaluation should begin once the client has received maximum benefit from the physical rehabilitation and cognitive remediation programs (see Gianutsos, 1980; Pollack, Kohn, Miller, 1984 for a description of cognitive remediation). The purpose of this phase is to assess residual vocational assets and limitations, and provide recommendations for competitive employment or an alternative placement. Before beginning the evaluation process, the vocational evaluator must consult with the interdisciplinary team in order to understand the combination and degree of physical and cognitive deficits. Once this information is obtained, the evaluator can design an evaluation program which is tailored specifically to the individual needs of each head injured patient.

As with other populations, present skills, capacities for new learning and work behaviors are of major consideration during the vocational evaluation. The process is complicated, however, by the head injured patient's myriad of cognitive deficits that result in difficulties in transferring adaptive strategies and behaviors

from one context to another. The presumed integration of skills and aptitudes and generalization of other contexts as assessed through aptitude testing and work sampling frequently does not occur for the head injured patient (Silver, Lakin, Ross, Rattok, Thomas, Diller, & Ben-Yishay, 1982). Thus, traditional testing measures generally are weak predictors of work potential.

For example, a head injured patient may successfully be able to file 3" x 5" cards in alphabetical order. However, it can not be presumed that this patient would be capable of working as a file clerk. The significance of limitations such as hemiparesis, distractibility, or poor organizational skills exhibited in an actual work situation, may not have been apparent during the work sampling. Conversely, a patient with aphasia may not be able to complete an adding machine work sample involving written instructions, but may be able to work as an office clerk using an adding machine where instructions are given verbally. Finally, a patient may have average verbal and numerical aptitudes as demonstrated by paper and pencil aptitude testing. However, short term memory deficits may preclude his ability to enter into occupations which would incorporate these aptitudes. The aptitude testing alone would not be able to demonstrate the effects of such memory deficits.

In addition to aptitudes and skills, work behaviors displayed during the structured testing situation may not be evidenced consistently in the actual work setting. The patient may display appropriate work behaviors in a quiet, nondistracting setting when tasks are presented one at a time the patient's work behavior may deteriorate, though, when placed in a noisy work environment with many co-workers in close proximity and several work duties which are presented at the same time.

## Assessment Techniques

Due to the limited value of standard assessment procedures, a creative, individualized approach is needed for a formal assessment of specific work skills and learning potential. The evaluator must determine not only whether the head injured patient can perform certain tasks within acceptable time limits, but also the manner in which new information is learned, whether the patient can resist distractions and stay on task, and whether the performance can be repeated. In addition, the evaluator should be cognizant of compensatory strategies (i.e., memory aids) that the patient might employ in order to successfully complete tasks. If the patient does not use compensatory techniques, the evaluator can assist the patient to develop strategies which might enhance his/her work performance.

Standardized work samples are effective in evaluating skills and learning potential when used in a flexible, nonconventional manner. Care must be taken, however, when interpreting the results of the patient's performance since the normative data associated with each work sample is rendered invalid with the deviations from the administration protocol. Therefore, close observation of the patient's performance is crucial in order to assess his/her learning potential.

A detailed case example will demonstrate the use of modified work samples in assessing the vocational capabilities of head injured patients:

A 19 year old head injured patient was given the Computing Postage Work Sample of the JEVS Work Samples. The patient was unable to complete the work sample because he had difficulty comprehending and performing the multi-step written directions. This appeared to be the result of cognitive impairments including poor organizational skills, short term memory deficits,

distractibility, and limited frustration tolerance.

The evaluator assisted the patient by reading the instructions to him and helping him to devise a simple flow chart to help him remember the order of the steps required to complete the task. Next to decrease the likelihood of the patient becoming frustrated, the evaluator demonstrated each step of the tasks and had the patient repeat each step on his own. In approximately three hours, the patient was able to follow the flow chart independently and successfully complete the task. Although time consuming, the flow chart was invaluable in assisting the patient to compensate for his distractibility, poor organizational skills, and short term memory deficits. The patient was able to repeat his performance the next day with minimal assistance. By the third day, with the use of the flow chart, he was completing the tasks independently.

The evaluator was able to assess the types of specific work skills that the patient was capable of performing and devise an effective method for the patient to learn tasks while compensating for cognitive deficits. This information was invaluable when placing the patient in competitive employment.

As stated previously, work behaviors displayed during a structured vocational evaluation may not be evidenced consistently in a less structured work setting. Therefore, the evaluator should not rely solely on information obtained during a traditional vocational evaluation in order to predict work behaviors on the job. Rehabilitation facilities are beginning to incorporate work tryouts into the vocational evaluation of the head injured patient (Musante, 1983; Silver et al., 1982). An extended evaluation in an actual work setting allows the evaluator to conduct repeated evaluations of behaviors and skills in order to assess changes in work behaviors and the patient's potential for learning. During this time, the evaluator can help the head injured

patient devise compensatory methods for completing tasks and modifying behaviors which would interfere with successful job placement.

At Kessler Institute for Rehabilitation in New Jersey, head injured patients have the opportunity to volunteer for approximately twenty weeks in a department within the hospital which reflects their interests and work potential. Such departments may include dietary, housekeeping, maintenance, medical records, purchasing, or clerical services. The patient works under the supervision of an employee in the department. Before beginning the work tryout, the patient and the supervisor sign a "Work Agreement" detailing a rationale for the work experience, work behaviors expected on the job, and an outline of job responsibilities.

During the work experience, the supervisor completes repeated evaluation reports of the patient's work behaviors and job performance. The evaluator, in collaboration with the supervisor, assists the patient to design techniques to compensate for cognitive or physical limitations in order to improve job performance. Also, the patient receives counseling to incorporate more appropriate work behaviors into the work setting. By comparing evaluation reports, the patient is able to objectively review his/her progress during the work tryout and note areas that require additional improvements.

After the completion of the vocational evaluation and work tryouts, recommendations are made for the patient to begin working in either a competitive job or an alternative placement (i.e., sheltered employment, volunteer position). Evaluation services should not end at the time of placement, but should continue with the assistance of the new job supervisor to evaluate patient's adaptation to the work setting and job duties.

## Conclusion

Each head injured patient presents a unique array of physical, cognitive, and behavioral limitations which impacts strongly upon his/her vocational functioning. Traditional methods of evaluating work potential (i.e., aptitude testing and work sampling) have proven to be of limited value when assessing this population. Instead, a creative and individualized approach is needed for the assessment of a head injured patient's work skills, behaviors, and learning potential. This includes flexibility in the use of work samples and extended work tryouts.

The role of the vocational evaluator with the head injured population extends beyond assessment. The evaluator also must help the patient devise compensatory strategies to complete job tasks and develop appropriate work behaviors. In order to perform the dual roles of assessment and remediation, special personal qualities are demanded of the evaluator; notably good problem solving skills, flexibility, and emotional sensitivity. Equally important, the evaluator must possess a thorough understanding of the multiplicity of deficits presented by head injured patients and their impact upon work functioning. Specialized training consisting of formal coursework, in-service seminars, and supervised work experiences with head injured patients is strongly recommended for all vocational evaluators working this population.

## REFERENCES

- Anderson, T. (1981). Stroke and cerebral trauma: Medical aspects. In W. Stolov & M. Clowers (Eds.), Handbook of Severe Disability, Washington D.C.: U.S. Government Printing Office.
- Benton, A. (1979). Behavioral consequences of closed head injury. In Central Nervous System Trauma Research Status Report, National Institute of Neurological and Communicative Disorders and Stroke, (Available from National Head Injury Foundation, Framingham, Massachusetts)
- Gianutsos, R. (1980). What is cognitive rehabilitation? Journal of Rehabilitation, 46, 37-40.
- Kalsbeck, W.D., McLaurin, R.L., Harris, B.S., & Miller, J.D. (1980). The national head and spinal cord injury survey: Major findings. Journal of Neurosurgery, 53, 19-31.
- Lezak, M.D. (1983). Neuropsychological assessment (Second Ed.). New York: Oxford University Press.
- Lishman, W.A. (1973). The psychiatric sequelae of head injury: A review. Psychological Medicine, 3, 304-318.
- Long, C.J. & Webb, W.L. (1983). Psychological sequelae of head trauma. In R.C.W. Hall (Ed.), Psychiatric Medicine, New York: S.P. Medical and Scientific Books.
- Lynch, R.T. (1983). Traumatic head injury: Implications for rehabilitation counseling. Journal of Applied Rehabilitation Counseling, 14, 32-35.
- Musante, S.E. (1983). Issues relevant to the vocational evaluation of the traumatically head injured client. Vocational Evaluation and Work Adjustment Bulletin, 16, 45-49.
- Najenson, T., Grosswasser, Z., Mendelson, L., & Hackett, P. (1980). Rehabilitation outcome of brain damaged patients after severe head injury. International Journal of Rehabilitation Medicine, 2, 17-22.
- Pollack, I.W., Kohn, H., Miller, M.H. (1984). Rehabilitation of cognitive function in brain-damaged persons. Journal of the Medical Society of New Jersey, 81, 311-315.
- Rosenthal, M. (1983). Behavioral sequelae. In M. Rosenthal, E.R. Griffith, M.R. Bond, J.D. Miller (Eds.) Rehabilitation of the Head Injured Adult, Philadelphia: F.A. Davis Co.
- Silver, S., Lakin, P., Ross, B., Rattok, J., Thomas, L., Diller, L., & Ben-Yishay. (1982). Designing and implementing clinically managed occupational trials for head trauma

patients in rehabilitation. New York: Institute of Rehabilitation Medicine, Monograph 64.

U.S. Department of Education, Office of Special Education and Rehabilitation Services. (1981). Head injury: The problem, the need. Programs for the Handicapped, 6, 1-3.

**Author**

Judi Weinberger  
Associate Director  
Vocational Services Kessler Institute  
for Rehabilitation  
East Orange, New Jersey