Other Aspects of Evaluation
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The specific types of epilepsy involved, and related severity, will in large part determine the most appropriate type of medical care and the rehabilitation plan, as well the suitability of future employment. For this reason, it is especially important to carefully assess each case of post-traumatic epilepsy.

A variety of tests may be used to complete the vocational evaluation of clients with post-traumatic epilepsy, including aptitude, emotional, personality, and achievement tests as well as vocational interest and work value inventories. The neuropsychological effects of post-traumatic epilepsy often need to be evaluated separately and sometimes provide the most accurate assessment of later employability. In many cases, the client may need to be enrolled in a community based assessment or job station program in order to clarify abilities and better facilitate work access.

Neuropsychological Evaluation

The use of neuropsychological assessment (or at least screening) in the treatment and rehabilitation of those with brain injury is standard clinical practice. A study by Dikmen and Reitan (1978) further emphasizes its importance in cases of brain injury and post-traumatic epilepsy, underscoring the fact that impairment of psychological function may be caused by seizure-related variables rather than by the brain trauma itself (Dikmen and Reitan, 1978, p 181). Although a number of neuropsychological batteries exist, the Halstead-Reitan is the one most commonly used (Halstead, 1947; Reitan and Davison, 1974). Most neuropsychologists will utilize at least part of this battery.

More recently, a comprehensive study conducted by Dodrill (1978) identified 16 discriminative measures specifically sensitive to brain impairment in patients with epilepsy. The Dodrill battery contains the 16 discriminative measures and subsumes the Halstead-Reitan tests within its content. Additionally, the battery includes general function measures such as the Wechsler Adult Intelligence Scale-Revised, the Minnesota Multiphasic Personality Inventory-II, and the Lateral Dominance Examination. These tests provide the Dodrill battery with a basis for examining a wide range of functions related to vocational and educational performance as well as general life
performance. They permit the assessment of motor skills, sensory perceptual abilities, the ability to attend to a task, aspects of problem-solving, language skills, different measures of mental flexibility, and visual-spatial abilities. The battery provides an excellent benchmark assessment of brain-related assets and deficits and indicates the areas of neuropsychological function that may respond well to remediation efforts, as well as the areas that will need to be emphasized or accommodated to facilitate labor market re-entry.

In a study by Fraser et al. (1986), neuropsychological measures were the best discriminators of later employability (job maintenance at one year) when considered within the context of demographic, seizure-related, or other psychosocial variables. In a discriminant-function analysis, the Name-Writing test (total time) and the Digit-Symbol subtest from the Wechsler Adult Intelligence Scale correctly identified 75% of the later employed and 74% of the later employed clients entering vocational services at the University of Washington Epilepsy Center. As opposed to neuropsychological impairment, early program drop-outs seem to have greater levels of anxiety and depression, be more maladapted to their seizure condition, and be in greater financial crisis—their “vocational staying power” is limited (Fraser et al., 1987).

Vocational Evaluation

Many of the aptitude, interest, and achievement tests traditionally used in rehabilitation settings are applicable to cases of post-traumatic epilepsy. The range of typical aptitude batteries (e.g., the Differential Aptitude Test, Adult Basic Learning Exam, or the General Aptitude Test Battery) are standardly used by State Vocational Rehabilitation service providers. Substantial sub-test scatter on these batteries has also been effective in encouraging the State Vocational Rehabilitation Agency to invest in more comprehensive assessment of brain function using a standard neuro-psychological battery. The McCarron-Dial is a neurobehavioral battery, incorporating assessment of a range of different abilities, including emotional-coping strategies. In some states, findings from the battery can indicate a diagnosis of brain impairment for purposes of State Vocational Rehabilitation eligibility—this is particularly assistive if there is a dearth of psychologists in an area.

Other tests that may be useful in screening for brain impairment include the Benton Visual Retention Test, the
Symbol-Digit Modalities Test, the Trailmaking Test, and the Wisconsin Card Sort. Incorporation of some of these tests in the formal assessment process can complement aptitude battery results and substantiate marked neuropsychological impairment.

Traditional academic achievement tests and vocational interest inventories can be used in cases of post-traumatic epilepsy. It must be cautioned, however, that achievement scores often will not truly reflect the client's potential, especially in cases involving young adults who have been educated in special education programs. Placed in such programs on account of their epileptic activity, it is often the case that these persons were denied the benefit of good educational remediative strategies based upon comprehensive neuropsychological assessment. Intensive tutoring, utilizing an appropriate educational technique, can often bring about substantial academic gains for these individuals. The Adult Basic Learning Exam, however, is helpful in establishing a perspective on an individual's academic competencies for technical college programs while the Woodcock-Johnson Battery is more assistive in establishing specific learning deficiencies.

Although a number of vocational interest inventories are used at the University of Washington Epilepsy Center, the most prevalent are the Career Assessment Inventory and the Gordon Occupational Checklist. The Gordon Occupational Checklist III is particularly useful as it directly lists several hundred-work tasks in unskilled and semiskilled areas and asks the client to indicate those activities in which he or she is most interested. A section at the end of the inventory has open-ended questions, e.g., requesting clients to describe an ideal job with the specific reasons they might like or dislike the job. Responding to this type of item requires a writing sample, which can also be used to identify the effects of brain impairment. Work values or reinforcers can be just as important to assess as interests. Instruments such as the Work Preference Match (Dowd, 2001) or different value card sorts can be very helpful in establishing "reinforcers" most important to working, such as proximity to home (Fraser et al., 2000). Issues in synthesizing vocational interests and work values are overviewed in a recent article by Fraser (in press).

In addition to the Minnesota Multiphasic Personality Inventory II (MMPI), the Millon Clinical Multiaxial Inventory (MCMI)-III, and the 16 PF, another specific inventory of emotional and psychosocial functioning has been developed for use in cases of epilepsy. This
The Washington Psychosocial Seizure Inventory (Dodrill, 1980), serves as an excellent screening device in the identification of clients in need of a specific psychosocial mode of intervention or therapy. The inventory was developed in a manner similar to the MMPI and includes eight scales:

1. family background;
2. emotional adjustment;
3. interpersonal adjustment;
4. vocational adjustment;
5. financial status;
6. adjustment to seizures;
7. medicine and medical management and;
8. overall psychosocial functioning.

It should be noted that in a number of cases vocational direction can simply not be set as a function of available traditional vocational assessment, even with the inclusion of neuropsychological data. Whether an individual can actually perform a set of tasks must often be assessed situationally or "in vivo" - if there is significant doubt and yet the possibility of adequate performance, situational assessment is optimal.

**Situational or Community Based Assessment**

For large numbers of clients with significant brain impairment or a seizure disorder as a consequence of brain injury, some type of community work assessment period or job station program will be imperative. In certain cases, these community work experiences will key off "old learning" and prior work background (transferable skills) in order to aid the transition to competitive employment. Through the job tryout, accommodation needs (procedural, work site modification, and assistive technology) can be recommended as necessary. For some individuals, as an example, a procedural accommodation related to a job coach or paid co-worker as mentor might be utilized while for others work site modifications might be more critical as related to seizure safety (e.g., rubber matting/pad around a work area or certain machinery guards) - see Fraser et al. (1997) for discussion of job placement models.

These tryouts can be established in the private sector using the United States Department of Labor (1993) 215 hour waiver for unpaid work in order that those with disabilities might be assessed, explore work options and skill build. The programs will often require close monitoring on the part of the rehabilitation counselor and
the on-site supervisor. The emphasis of each client program needs be carefully and frequently reviewed by these professionals with the participation of the client using a standard protocol so that aspects of his or her work experience (inter-personal and work-related) can be linked to other cognitive rehabilitation efforts.

Works Cited:


Fraser, R.T., Vocational Interests and Work Values: A Time for Further Synthesis in Vocational Rehabilitation Assessment. Journal of Vocational Rehabilitation, in press.

