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Neuropsychological Considerations When Preparing The Brain-Injury Case

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Forensic neuropsychology is the application of clinical neuropsychology to legal questions seeking the functional expression of acquired neurological injuries. The aim of clinical neuropsychology is the establishment of principles regarding brain-behavior relationships and the methods for clinical application of these principles. Achievement of these aims requires knowledge of both the brain and relevant activities.

Neuropsychologists are trained in the assessment of cognitive abilities and behavioral functions. The accuracy of the measurement of cognitive functions depicts the biological condition of the brain and the validity of the conclusions. Clinical neuropsychology derives its significance not from diagnosing brain lesions, but instead from accurate delineation of the cognitive, behavioral, and emotional consequences of the brain lesions.

The mechanism by which the neuropsychologist is able to do this is the neuropsychological examination (NPE). The NPE employs a standardized assembly of tests with norms and cut-off scores. These well-standardized measures are empirically derived and include normative data in order to assess performance of the patient. Areas evaluated consist of, but not limited to: Perceptual skills, attention/concentration, memory, speech and language functions, learning capacity, intellectual level, executive functions, speed of processing, self-awareness of level of functioning, judgment, coordination of simple motor responses, and emotional and motivational characteristics.

Unfortunately, a frequent error seen in NPEs is to express a statistical conclusion about a patient which may be totally irrelevant to that patient because of his/her dissimulation to the group on which the test was “normed.” In other words, these groups bear little resemblance to the group of persons used for the original validation of the test.

By virtue of the various ways in which brain-damage manifests itself, several procedural and methodological strategies are required in evaluating the data. The NPE becomes the “blueprint” regarding the presence or absence of cognitive impairment, the extent and nature of the brain dysfunction, and the ecological impact upon the patient’s daily adaptive functioning.

In order to be considered an NPE (in contrast to a psychological examination measuring intellect, achievement, or educational ability) the following criteria must be met regarding appropriate standard of care: The test should evaluate the full range of neurocognitive functions dependent upon the brain, tests that measure general brain dysfunction, tests that measure specific brain dysfunction, employment of several approach strategies that go beyond merely a level of performance (comparing the patient’s performance to normative samples), each test has been carefully validated for its sensitivity to brain damage, and the neuropsychological data is consistent with the clinical history.

Next, the patient’s complaints reported during interview (emphasized by many psychologists) are an insufficient basis for substantiating any claims. The patient’s self-report of deficits should be confirmed and validated by the NPE. Attorneys involved in brain injury litigation cases should be thoroughly familiar with the literature regarding neuropsychology, the underlying neuropathology, and specialized neurological diagnostic procedures. He/she should understand the significance of procedural approach methodology when comparing profiles across various neurological conditions. It is imperative that the test procedures be relevant to the specific condition. The brain can be affected by a variety of injuries or illnesses. How the neuropsychologist proceeds in gathering the data is very important. What tests were selected? How did he/she draw conclusions about the effects of, for example, traumatic brain injury if the tests employed were never validated in identifying the effects of brain injury? What were the normative samples? Was there evidence of the tests employed capable of distinguishing abnormal cases from normal variability in general population?

The essential point of the NPE is to evaluate each patient’s brain rather than each patient’s complaints. When studying the approach methodology of the neuropsychologist, it is important to understand the model of interpretation of the results. Were the clinical conclusions concerned only with the level of performance, that is, how well the patient performed (percentile rank)? Approaching the data in this manner there is little probability for errors in the neuropsychologist’s interpretation will be detected. The conclusions will be about test scores rather than about the brain of the patient.

An additional fundamental procedural adequacy issue in the NPE is the question whether there is a relationship between the patient's behavior as measured by the neuropsychological tests and the condition of the brain. The accuracy of this relationship can be compromised by a number of variables, most importantly, low effort or exaggeration. Non-credible neuropsychological results can be detected by the use of symptom validity tests. Two approaches exist in which standard neuropsychological tests are employed to yield derived measures of negative response bias (NRB) or amplification/exaggeration. The first derives scores from a single test that are atypical for neurological dysfunction, or by identifying atypically low performance relative to people with true neurological disorders. Thus, Performance validity assesses the legitimacy of the patient's performance during the NPE. Whereas, Symptom Validity assesses the validity of the patient's symptomatic complaints. Between the two approaches, coupled with the qualitative observations of the neuropsychologist, he/she is in an excellent position to determine the true profile of the patient.

Thus, when preparing for cross-examination, the attorney should understand the neuropsychological facts and methodology of the case. The neuropsychologist should be questioned about research studies that have been done with the tests he/she administered. Is there adequate evidence that the tests validly differentiate between brain-damage and non-brain-damage groups?

Furthermore, the neuropsychologist should be asked about the extent to which the tests he/she administered were specific for brain-damage (or alternatively, for example, stroke, dementia, learning disability). Given the test(s) he/she administered are sensitive to the effects of brain damage, what is the evidence to indicate that they exclude or are not affected by other conditions such as emotional/behavioral conditions?

Finally the neuropsychologist should be questioned about the accuracy of the tests he/she relied upon in reaching their conclusions about the patient's cognitive status. This is important. Regardless of the statistical significance of test percentiles based on group comparisons, it remains a matter of relevance involved in the individual patient's case. As shown in the literature concerning accuracy with CT and MRI, the accuracy of neuropsychological test results for the individual patient involved in litigation must also be established if the findings are to have precise meaning and relevance. For various reasons, cognitive impairment is sometimes identified in patients who have sustained no brain damage. Conversely, there are patients who sustained no impairment due to brain injury but are classified as significantly impaired. As all trial attorneys know, neuropsychologists for one side have found no impairment whereas the neuropsychologists for the other side have found significant impairment. The question is why? There are five reasons: The patient and his/her performance in the testing situation, the tests employed, the manner and expertise involved in administration of the tests, the neuropsychologist who interprets the test, and factors that relate to motivation and negative response bias on the part of the patient.

In conclusion, the trial attorney would be well advised to consider carefully the psychologist/neuropsychologist's background, training, nature of practice, plaintiff/defense expert witness bias, tests employed, and his/her ability to interpret the test results. Brain-behavior relationships are immensely complex, and interpretation of the test results that reflect these relationships is inescapably complex. The situation creates a circumstance, in which variable competence among neuropsychologists is not surprising, and in fact, must be expected. It also creates a circumstance in which bias, or a prejudice position, may have a determinant influence on the conclusions reached.

Until this approach is applied, the area of forensic neuropsychology will be beset by confusion and impressionistic methods of the examiner. As long as this persists, the procedural adequacy of examining clinical patients merely by interviewing/observing behavior, using unsubstantiated or weak neuropsychological measures, will continue to provide a basis for controversy in the legal arena.

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