Comparing Neuropsychological and Psychiatric Evaluation of Competency in Rehabilitation: A Case Example

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This report describes the case of a 20-year-old man who sustained a gunshot wound to the forehead, resulting in traumatic brain injury and C2 ventilator-dependent quadriplegia. Issues of personal control and autonomy typified his psychological adjustment. The question of competency to refuse medical treatment arose when he disallowed intervention for a suspected ear infection not confirmed by culture. Subsequently, the patient was alternately described as incompetent by a psychiatrist and competent by a medical ethics review panel. These decisions are interpreted within the context of existing medical-legal literature and historical precedent of competency in civil law. Central to competency evaluation is the patient's ability to recognize that a decision-making process is required, to review the pros and cons of various options, and to communicate a decision. Importantly, this decision need not be in accordance with the opinion of family or the health care team. Neuropsychological screening indicated the patient's cognitive abilities were within functional limits, and he subsequently agreed to treatment after experiencing pain and fever, and learning of a positive culture. It is concluded that a two-pronged neuropsychological evaluation of competency based on the patient's information processing capabilities is most appropriate in medical rehabilitation settings.

A BASIC PREMISE of medical rehabilitation is the promotion of the individual's physical and cognitive autonomy after acquired disability. When autonomy strivings take the form of refusal to consent to recommended treatment, the rehabilitation team is challenged pragmatically and philosophically. Rehabilitation professionals seek alliance with patients to effectively and efficiently accomplish treatment goals. When patients with cognitive-behavioral impairment opt out of that alliance, it may be questioned whether such patients understand enough about their condition to appropriately refuse treatment. Further, the degree to which emotional or motivational issues (ie, depression) confound that understanding must be considered. Therein lies the basis for this review of competency evaluation procedures. Specifically, at what point can an authoritative body override an individual's autonomy to direct treatment? This paper reviews key concepts in assessing competency in medical rehabilitation, and illustrates through a case example the benefits of utilizing a neuropsychological information processing paradigm.

LEGAL FOUNDATIONS OF COMPETENCY

Melton and associates[1] reviewed the historical basis for current competency law and documented a strong trend away from earlier patriarchal enforced provision of care for minors and so-called "mental defectives" to the modern view that the right to refuse treatment is grounded in one's constitutional right of bodily privacy and self-determination. As a result of court challenges to enforced psychiatric treatment (usually the administration of psychotropic medications) over the past three decades, current civil competency law is formulated on "the general interest in the maintenance and control over one's body." Determination of a clear and present danger to self or other may prevail in enforcing nonconsensual treatment, although a clinician's statement of "needs treatment" is insufficient evidence in the present zeitgeist.

Historically, the mere presence of mental disease or disorder was sufficient cause for declaration of a global incompetence to manage one's affairs, be they legal, financial, or medical. This too has changed, as Melton[1] states: "Mental health professionals and jurists should attend to whether there are specific *functional* incapacities that render a person incapable of making a particular kind of decision or performing a particular kind of task. The underlying rationale for the competency rules alluded to above is that mentally disabled persons *as persons* have a right to self-determination in the absence of compelling reasons to the contrary" (p. 245).

Thus, the analysis of specific functional skills is central to contemporary competency evaluations. It is frequently assumed that being competent is the same as being "correct," and the "rationality" of the patient's choice has been proposed as a test of competency.[2] To the contrary, Alexander[3] states that "whether a patient makes a decision that his competent peers would have made is largely irrelevant to the issue of competence."

Several authors[3,4] have proposed models for assessing the primary cognitive abilities necessary for effective problem solving. These core skills (attention, language, memory, executive skills) form the substrate for competent decision-making and should be considered necessary but nonsufficient indicators of the potential for self-determination. In our opinion, this initial nomothetic comparison fosters appropriate case conceptualization. However, a strictly nomothetic approach or one based on diagnostic classification alone (ie, frontal lobe syndrome, dementia) is insufficient.

When a patient's core cognitive skills fall within a grossly acceptable level of performance (see table 1 for suggested guidelines), a second phase of inquiry is needed to address those abilities *specific* to the referral question. Such idiographic analysis is fostered by Alexander's[3] three-stage assessment process: (1) Does the patient recognize that a decision-making

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Table 1: Assessment of Competency

Model Parameters	Patient's Performance
Psychiatric	
Clear and present danger to self or others	
Neuropsychologic	
Attention	
Forward digit span < 5	6
Decreased mental control (serial subtraction)	Serial 7s within normal limits
Memory	
Disorientation	Consistently oriented
Inability to learn/recall 4 word list	RAVLT 14/15 trial 5 13/15 trial 7 (short delay) 14/15 long delay
Language	Intact
Impaired speech production/ comprehension	
Spatial-Perceptual	
Hemispatial neglect	Blind right eye
Motor-constructional deficit	Quadriplegia
Agnosia	
Reasoning	
Concrete, tangential, autistic thinking	Thoughts organized, reality-based, could state costs/ benefits of options.
Emotional/Affective	
Receptive Aprosodia	N/A
Anosognosia	N/A
Euphoria/Depression	Adjustment disorder with mixed emotional features; denied suicidal ideation/ plan

From Melton[1] (psychiatric assessment) and Alexander[3] (neuropsychological assessment).

process is indicated? (2) Is the patient able to review with an examiner the pros and cons of proposed options? (3) After such a review, does the patient clearly communicate that a decision has been made and the specific nature of that decision?

Freedman and colleagues[4] phrase this three-stage model in neurobehavioral terms (reflecting arousal/attention, language, and executive skills, respectively). The key benefit of this targeted inquiry is that each successive question allows the patient the opportunity to demonstrate specific competence within a focused domain, as mandated by current law. In our view, this two-pronged hierarchical model (combining nomothetic and idiographic modes of assessment) allows evaluation of specific capacities for the kinds of competency questions that commonly arise in medical rehabilitation.

Complicating matters is the fact that in recent years, requests for psychiatrists to assess the competency of medical patients have increased dramatically.[5] In contrast to the legal system's emphasis on patients' information processing capacities, psychiatric evaluations commonly rely on assessment instruments like the Mini Mental State Examination (MMSE) that lack sufficient sensitivity and specificity for these types of questions. In addition, although several models of clinically assessing decision-making capacities have been proposed in recent years,[2,3,5-8] psychiatrists assessing patients with organic brain disorders have persisted in basing competency recommendations on outmoded definitions of competency.[9] As a result, Farnsworth[10] found that courts concurred with psychiatric recommendations of incompetence in medical patients in only 7 of 26 cases (27%).

Rehabilitation patients may present with emotional-motivational disturbances such as depression. The degree to which depression is meaningfully related to competence has been indirectly addressed in two lines of research. Davidoff and colleagues[11] reported that up to 50% of patients with spinal cord injury (SCI) demonstrate concomitant cognitive deficits, with the combination of sensory-motor and cognitive impairment relating to poorer psychosocial adaptation. Nonetheless, Buckelew and associates[12] found that although inpatient rehabilitation staff consistently perceived a high incidence of significant mood disturbance in SCI patients, diagnosable mood disorders occurred only in approximately 30% these patients. Thus, although some level of transitory mood disturbance may be more common, the true incidence of serious mood disorders—the type most likely to confound competency evaluations of acute rehabilitation patients—is far less than rehabilitation staff or lay persons expect. Although some literature has indicated that the incidence of mood disorders increases with time since injury,[13] other reports conclude that time since injury is related to increased use of adaptive coping mechanisms.[14]

Second, a thorough review by Sweet and colleagues[13] addresses the potential impact of depression on neuropsychological performance. They cite the work of Richards and Ruff,[15] who concluded, "Although depressed patients may be less motivated, this reduced motivation may not fully account for the observations of cognitive deficits in depression." Sweet[13] summarized their review by stating, "We are currently unable to predict which individuals will show impaired cognitive functioning concomitant with depression or in what specific fashion these effects will be manifested."

Therefore, the "common sense" understanding that rehabilitation patients will be frequently and significantly depressed and that this will importantly diminish their information-processing capabilities appears not to be supported by current research. Clearly, clinical assessment of the individual patient is warranted to rule out severe, "retarding" endogenous depressions that may reduce cognitive functioning and confound competency.

The following case illustrates the limitations of a traditional psychiatric evaluation of competency in medical rehabilitation settings, and the utility of a neuropsychological information-processing evaluation model.

CASE REPORT

The patient was a 20-year-old man who sustained a .45 caliber gunshot wound to the forehead. The bullet proceeded in a downward parasaggital midline course through the frontal lobes, proceeding to impact at the C2 vertebral level. At that point, the bullet fragment was deflected downward, ablating the spinal cord at levels C2 through C5, and finally exiting the spinal canal at C5; bullet fragments remained embedded in the posterior neck tissue.

On admission to the emergency room, the patient was in deep coma (Glasgow Coma Scale, 3/15). Blood alcohol and drug screens were negative. Computed tomography (CT) of the brain and cervical spine documented posterior frontal sinus fractures with fragmentation into the frontal lobes, right orbital wall fracture, diffuse brain edema, and the previously described spinal cord injury at levels C2 through C5. Neurological status was described as penetrating traumatic brain injury and Frankel A ventilator-dependent quadriplegia. He was also blind in the right eye.

Remarkably, the patient progressed rapidly and was following one-step commands one day after the trauma. At that time he underwent debridement of devitalized brain and bone, and dural repair was performed. Cognitive recovery continued with post-traumatic amnesia (PTA) lasting only three days; virtually no retrograde amnesia was observed. On day eight, further debridement was performed to remove potentially infected frontal sinus tissue. Secondary to medication prophylaxis, no seizure activity was observed.

Acute hospital course was complicated by recurrent temperature spikes (37 to 40K) that were resistant to infection control measures. It was consistently observed that as the patient's temperature increased, he would manifest verbal agitation; tracheostomy care also became a trigger for aggressive and profane verbalizations. On such occasions the patient would intermittently express passive death ideation. As his temperature decreased, however, he would routinely deny suicidal thoughts, express remorse for his agitated behavior, and become more hopeful about his future.

His medical history was remarkable for a brief inpatient psychiatric hospitalization several years before his injury, on the death of a parent after a long illness. Apparently, the surviving parent had noted the patient giving away personal items and feared this was in preparation for a suicidal gesture. No actual plan was expressed, nor did a suicide attempt occur. During that psychiatric hospitalization, no psychoactive medications were prescribed. Furthermore, no professional psychiatric or psychological contact had occurred since discharge until his admission to the rehabilitation service. The patient and his family denied significant substance use or abuse. They maintained the firm conviction that the patient was shot by others, though he was unable to name the person(s) involved. The formal issue of the patient as a victim of others versus one of self harm remains unresolved.

The patient was transferred for acute inpatient rehabilitation 36 days after injury. Because of verbal outbursts and noncompliance with tracheostomy care, a psychiatric consult was ordered, resulting in a diagnosis of Major Depressive Disorder with suicidal ideation. The psychiatrists recommended that guardianship proceedings be initiated on the basis of the patient's organic brain syndrome, although they noted that the patient was able to discuss the implications of guardianship and had endorsed his parent as his chosen guardian. Imipramine (75mg every night) was started.

A rehabilitation psychology consult was also ordered at this time. Cognitively, the patient scored 28/28 on the MMSE (being unable to perform writing/copy tasks secondary to quadriplegia) and he denied suicidal ideation. Additional aspects of his cognitive assessment are detailed in the table and are compared to the cognitive domains recommended by Alexander[3] as relevant to the assessment of competency. As can be seen, the patient performed well across the key cognitive domains of attention, memory, and reasoning. Of particular note is his very strong performance on the Rey Auditory-Verbal Learning Test (RAVLT). Several recent reports[16-18] have described the sensitivity of the RAVLT to generalized brain dysfunction. Therefore, his strong performance on this measure is indicative of cognitive skills that might not have been expected on the basis of type of injury alone.

Feelings of loss of personal control typified this patient's emotional adjustment to his injury, because he was totally dependent for activities of daily living, voiding functions, and respiration. Rehabilitation psychology recommended that all therapy appointments be scheduled with the patient's input, that spontaneous rearrangement of his room furnishings occur only with the patient's cooperation and consent, and that he be allowed to coordinate the timing of tracheostomy care within well-defined parameters. Each of these steps was designed to increase the patient's sense of control while assuring that rehabilitation therapy continued. When staff complied with these recommendations, outbursts were reduced dramatically.

By day 55, the patient had continued to intermittently refuse care, and medical staff suspected that an ear infection was beginning; an ear tissue culture was requested to confirm this impression. The patient refused because he felt no ear tenderness or pain and his temperature was normal. He concluded, therefore, that the invasive procedure was unnecessary. Given past difficulties with multiple infections and temperature spikes, the medical team believed strongly that a proactive stance was needed, and as a result a psychiatric consultation was again ordered. The consulting psychiatrist posited that due to the patient's organic brain syndrome and depression, he was not competent to refuse recommended treatment and again strongly advocated for guardianship. Also, the patient's imipramine dosage was increased to 150mg every day.

On the same day, a medical ethics review panel met with the patient to discuss his decision to refuse care and to address the issue of competency. Focusing on the patient's information processing capabilities, and specifically citing his ability to discuss his reasons for refusing treatment, they ruled that he was competent to refuse the nonemergency procedure. The patient stated that if he experienced pain or increased temperature, he would consent to a tissue culture. Two days later, pain and increased temperature were noted by the patient and he consented to culture; positive results were obtained and medication treatment was started without refusal.

DISCUSSION

Competency law protects the rights of disabled persons to self-determination in the absence of compelling reasons to the contrary.[1] Pragmatically, if a patient can demonstrate an awareness that a decision-making process is required, can review the pros and cons of various courses of action (or nonaction), and communicate his or her decision, the likelihood is that the patient's right of self-determination will be preserved.

Often, persons with acute quadriplegia perceive decreased self-efficacy and control in navigating the demands of rehabilitation. Numerous studies have documented the health benefits of perceived control and self-efficacy,[19,20] yet as rehabilitation patients attempt to regain this sense of self-efficacy, their behaviors may be interpreted as noncompliant. The labeling of autonomy strivings as "incompetence" represents a double-bind communication to these patients and is at odds with rehabilitation objectives.

The manner in which treatment recommendations are presented to the patient can have a great impact on noncompliance and, ultimately, on questions of competency. Mode of presentation (ie, auditory, visual, etc.), rate of presentation, number of exposures, complexity of information, and environmental factors can significantly alter the patient's comprehension and recall of such information.[21,22] Neuropsychological assessment data can be invaluable in determining which parameters are salient for a given patient.

Too often, presence of brain dysfunction or psychiatric diagnosis is presumed to be *prima facie* evidence of incompetence.[6,21,23] This is insupportable in the current medical-legal environment. It is clear that a focus on specific or operational competencies is mandated, and that the concept of a "general competency" for all tasks or decisions is a myth. The assessment of specific competencies requires the use of measures with adequate normative standardization, as well as sensitivity to scores across the entire range of performance within a given patient population.[17] Unfortunately, the traditional psychiatric evaluation (often based solely on the MMSE as the cognitive evaluation tool) lacks the sensitivity/specificity required in rehabilitation settings.[10]

A two-pronged neuropsychological evaluation focused on the cognitive domains endorsed by Alexander[3] can effectively elicit key information processing data bearing on competency decisions. By combining nomothetic and idiographic assessment

procedures, both the cognitive substrate for competent decision-making and the appropriate application of those resources to the presenting question can be evaluated.

We conclude that the neuropsychological evaluation of competency is most appropriate in medical rehabilitation settings based on the information processing standard underlying current conceptualizations of competency. Among the supporting evidence:

1. Neuropsychological evaluations can focus on specific information processing skills and interpret these within the context of appropriate age-, gender-, and education-based norms.
2. As part of the interdisciplinary rehabilitation treatment team, the psychologist can easily obtain multiple samples of patient behavior across situational contexts. Given that inconsistency of performance is common in patients because of fatigue, illness, medication effects, and/or injury-course variables, multiple assessments will increase reliability of data by allowing application of a "best performance rule".[21] Clearly, one-time-only consultations will severely limit the range of observable performance.
3. Meehl and Rosen[24] long ago addressed the diagnostic importance of understanding the base-rates of relevant behaviors within various patient groups. As Buckelew[12] reported, significant depression is observed only in approximately 30% of spinal cord injured patients—far less than rehabilitation staff or lay persons expect. These base-rates are markedly different than encountered in psychiatric inpatient or outpatient settings. Because the rehabilitation psychologist is more familiar with the base-rates of competency-relevant behaviors in rehabilitation patients, the evaluation of competency will be enhanced through the neuropsychological procedures described herein.
4. Last, neuropsychological findings (addressing attention, memory, language, perception, executive skills), can assist staff in formulating the best modality and manner in which to present treatment recommendations. In this way, rehabilitation professionals may best foster the patient's understanding and, ultimately, development of the patient's functional skills and self-confidence.

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