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Evidence-Based Practice and the Limits of Rational Rehabilitation

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Both the American Congress of Rehabilitation Medicine and the field of physical medicine and rehabilitation have entered an age of evidence-based rehabilitation. Despite some concerns over the difficulties in applying the methods of evidence-based practice to rehabilitation research, there is little question that we will continue to move in this direction. This will also require the translation of scientific evidence into clinical practice. Rather than representing opposing approaches to practice, the integration of the best available scientific evidence with clinical experience and judgment represent 2 of the pillars of evidence-based practice. However, we also need to recognize the subjective nature of clinical decision making as a fundamental aspect of human judgments. Finally, we need to acknowledge the subjective meanings of illness and disability to the patients we serve. Any efforts to build our practice based on the best available systematic evidence are unlikely to succeed unless we include patients' values and beliefs and incorporate this perspective into our rehabilitation research. This aspect of evidence-based rehabilitation raises important questions about our fundamental roles and how we will choose to practice and define our field in the future.

Key Words: Evidence-based medicine; Rehabilitation.

WE HAVE ENTERED AN AGE of evidence-based rehabilitation. This is apparent in the theme of our 2004 annual meeting: evidence-based rehabilitation linking science, practice, and policy. There is little question that we must embrace the principles of evidence-based medicine to advance as a scientific discipline. Of course, already there is question and debate over how far we have come, based on quantitative evidence,[1,2] but in general I think the evidence is pretty clear that we are heading in that direction. Our movement in this direction is not without resistance. Part of this resistance is based on concerns over the methodologic criterion standards of evidence-based practice, primarily the use of randomized controlled trials (RCTs). For example, RCTs may be fine when we are studying the specific effects of a simple intervention on a discrete outcome, but they are less well suited, maybe even inappropriate, for studying the complex interventions and outcomes that characterize most aspects of rehabilitation. In addition, it is unethical to randomly assign patients to a less-than-optimal treatment (or no treatment) condition when we already know (presumably based on clinical experience) that our treatment is the best option. Even if we could manage to conjure up an ethical, well-designed trial, the human and financial resources that would be required to actually conduct an RCT with an adequate number of participants would be prohibitive (certainly the funding earmarked for rehabilitation research would not be adequate, unless we partnered with a pharmaceutical company). Anyway, single-subject studies are probably a more accurate depiction of how we treat individual patients, and they allow us to accommodate our treatment to their unique needs.

So it is difficult to apply the principles of evidence-based practice to rehabilitation research. It is difficult to design and carry out well-controlled, tightly constrained, highly precise studies on specific questions about what we know, what we do, and how effective we are. But it is not an argument unique to rehabilitation. The same concerns have been voiced many times before, years earlier, in other fields of medicine.[3] We are at the early stage of developing—or it may be more accurate to say that we are just beginning to apply with some diligence—more rigorous and demanding methods and standards to our research. Yet there is little question that we will continue to move in this direction and meet these challenges.

There is an even greater concern, I think, having to do with the gap between our *evidence* and our *clinical practice.* Merely conducting the research will not fill this gap. Clinicians seem to recognize the value of good science as a basis for treatment, but they need the information distilled in just the right form and dosage to pass on to patients. Practicing clinicians may lack familiarity with the literature, frame questions that are too broad or imprecise, suppress the recognition of a need for information because of time pressure or embarrassment, and fail to initiate a search for the relevant information.[4,5] Even when they are familiar with the evidence, clinicians are less likely to follow practice guidelines that require new skills or are inconsistent with their clinical experience, norms, and values,[5,6] maybe even believing that evidence-based practice is an attempt to subvert the knowledge and autonomy of individual clinicians.[7]

Clearly, the translation of scientific evidence into practice cannot occur outside the scope of the clinician's judgment and clinical decision making. Caplan[8] has made a cogent argument for the role of clinical judgment in evidence-based practice. He notes, for example, that evidence-based reviews are useful but limited by the quality of the individual studies analyzed and that the results of many RCTs cannot be applied directly to individual patients. Caplan cites the conclusions of Thibault, which seem particularly relevant:

> We then need to decide which approach in our large therapeutic armamentarium will be most appropriate in a particular patient, with a particular stage of disease and particular coexisting conditions, at a particular age. Even when randomised clinical trials have been performed (which is true for only a small number of clinical problems) they will often not answer this question specifically

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> for the patient sitting in front of us in the office or lying in the hospital bed.[9(p947)]

The belief that evidence-based practice represents a threat to individual clinical judgment then seems to be a misconception. In fact, far from representing opposing approaches to practice, careful consideration of the best available scientific evidence together with a reliance on clinical experience and judgment represent 2 of the pillars of evidence-based clinical practice. However, we also need to recognize that we all bring our values and beliefs into the clinical situation. Cassell[10] has noted that subjectivity and subjective information have a special meaning within medicine and that *subjective* information offers important and unique information about the *meaning* of an illness to the patient. (Although the patient's experience is subjective, his report of that experience provides objective data.) Cassell also notes that "the subjectivity of the doctor as an experiencing, valuing, judging subject cannot be divorced"[11(p103)] from clinical judgment and that clinicians need to "ensure that the information on which they base their decisions and actions—whatever its source—has maximum truth value and narrow confidence limits, and that their judgments are as free from personal bias as possible."[11(p104)]

Clinicians' decision making is fraught with potential biases,[12] and these appear to be a fundamental aspect of human judgment.[13] The need to monitor common cognitive biases in our decision making is most apparent in the context of complex situations, when we are faced with incomplete information,[12] which is of course characteristic of most aspects of rehabilitation practice. Within the context of rehabilitation, even judgments about patients' functional status that rely on well-established, standardized instruments are highly susceptible to biases that are difficult to overcome.[14] Our subjective values and beliefs are likely to influence our clinical practice in more subtle, but fundamental, ways. Several years ago I surveyed both the clinical staff and the patients at our rehabilitation facility to discover which aspects of rehabilitation they felt were most important and what the obstacles were to recovery. The results of this survey were clearly discernable, although not so easily interpreted. Therapists were consistent in the belief that therapy was the most important factor in patients' improvement, whereas patients' failure to recover as expected was attributed to their poor motivation, resistance to treatment, or unrealistic expectations. The patients were equally consistent in their belief that their own motivation and the support of their families were the main reasons they improved, whereas lack of improvement was attributed to receiving inadequate therapy. These results were surprising to me, and a little disconcerting in the face of my understanding that the collaboration between clinicians and patients is a basic aspect of rehabilitation. How could clinicians and patients have such different perceptions of what is important to their rehabilitation? I now think that this finding reflects a basic attributional "bias": we all attribute our successes to our efforts and our failures to factors that we perceive to be out of our control. More important, I believe these findings reinforce the need for us to consider our patients' values and beliefs as a central aspect of the rehabilitation process.

Evidence-based practice therefore must incorporate not only our knowledge of the scientific evidence and our clinical judgment, but also the values and beliefs of the patients we serve. Our efforts to build our practice based on the best available systematic evidence are unlikely to succeed unless we include this third pillar of evidence-based rehabilitation and incorporate this perspective into the fabric of our rehabilitation research.[15] I also believe that this aspect of evidence-based clinical practice raises important questions about our fundamental roles as rehabilitation professionals and how we will choose to practice and define our field in the future. Do we examine, diagnose, and treat patients' physical and cognitive impairments due to trauma and disease? Do we train clients to compensate for their persisting functional limitations? Do we support and reassure someone faced with life-altering changes in her ability to move about freely, to make plans for her future, to be intimate with her husband and child? Do we instruct, encourage, confront, cajole, and listen when we should? Do we always offer hope? Is there evidence that we do any and all of these things?

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