

Clinical Education Reform and Evidence-Based Clinical Practice Guidelines

Craig R. Denegar; Jay Hertel

The athletic training profession is in the midst of substantial educational reform. Changes in the structure of clinical education are an important component of that reform. No longer will the accumulation of hours be the standard on which the clinical education experience is judged. This standard is being replaced by a model that requires students to demonstrate proficiency in the many skills associated with the practice of athletic training. Clearly, the demonstration of specific skills is superior to the assumption that students will “get what they need” in 800 or more hours of supervised clinical training. With this change comes opportunity.

The phrase “clinical proficiencies,” used to replace “hours,” implies that these practices are effective interventions in the health care of the physically active population. We suggest that identifying specific clinical proficiencies that are essential for entry-level athletic training students to know requires the asking of a most critical question: *What do certified athletic trainers do that makes a difference in the health care of the physically active?*

The impact of modality application on treatment outcomes has been increasingly scrutinized over the past decade. Thus, we have selected therapeutic ultrasound to illustrate the issue of clinical efficacy. The new educational standards call for students to demonstrate proficiency in the use of continuous and pulsed ultrasound, as well as combination treatments with electric stimulation and phonophoresis. We call to your attention two recent review papers on therapeutic ultrasound addressing the biophysical effects and effectiveness of treatment. Baker et al¹ concluded, “there is currently insufficient biophysical evidence to provide a scientific foundation for the use of therapeutic ultrasound for the treatment of people with pain and soft tissue injury.” Robertson and Baker² concluded, “there is little evidence that active therapeutic ultrasound is more effective than placebo for treating people with pain or a range of musculoskeletal conditions or for promoting soft tissue healing.”

Our purpose is not to debate the efficacy of ultrasound but to address a larger issue: *How do we best prepare students in the art and science of evidence-based clinical practice?* Conclusions such as those reached by Baker¹ and Robertson and Baker² cannot be dismissed if students and certified athletic trainers are to learn to seek evidence to support their practice decisions. These and similar reports should be openly discussed so that we adapt our practices and educational guidelines appropriately. Under the new clinical proficiency model, however, athletic training students will be required to demonstrate proficiency in applying a treatment modality, even though the professional literature may yield considerable evidence that the treatment does not improve clinical outcomes.

Each clinical proficiency should be thoroughly examined to determine its clinical effectiveness. In some areas, such as the role of body-weight monitoring to prevent dehydration and heat illness, the validity of practice and education is evident. In other areas such as clinical examination tests, data to support the validity of these tests must be discussed. For example, what is the sensitivity (true positive) and specificity (true negative) for the McMurray test for meniscal pathology when compared with the “gold standard” of magnetic resonance imaging? If the consensus among a group of medical and allied medical professionals, based on review of the scientific evidence, is that the McMurray test is useful, then it should be included in our educational programs. If, however, data demonstrate that this test lacks sufficient sensitivity and specificity, this practice should be abandoned and our students’ time spent perfecting those assessments deemed most valid.

Demonstrating that what is done in clinical practice truly makes a difference in the outcome of patients’ health care is a daunting challenge to researchers and clinicians alike. This challenge is being addressed across medical and allied medical disciplines through the development of evidence-based clinical practice guidelines. Scalzitti,³ in the lead article of a recent issue of *Physical Therapy* devoted to evidence-based clinical practice guidelines developed by the Philadelphia Panel, stated that more than 5000 practice guideline papers were published between 1991 and 2000, with more than 700 appearing in the year 2000 alone. The athletic training profession has also started to provide practice guidelines. The Pronouncements Committee has supplied practice guidelines to protect the physically active from lightning and to address fluid replacement. To a great extent, these documents discuss procedure and prevention. All aspects of athletic training practice, however, warrant review, especially evaluation and treatment methods for specific injuries and athletes.

The clinical proficiencies provide a strong framework to assess the common practices of athletic trainers. Critical review is needed to establish the guidelines that will define the educational preparation and clinical practice of certified athletic trainers in the 21st century. We, as a profession, have this opportunity, and we must seize it and define our future.

REFERENCES

1. Baker KG, Robertson VJ, Duck FA. A review of therapeutic ultrasound: biophysical effects. *Phys Ther.* 2001;81:1351–1358.
2. Robertson VJ, Baker KG. A review of therapeutic ultrasound: effectiveness studies. *Phys Ther.* 2001;81:1339–1350.
3. Scalzitti DA. Evidence based guidelines: application to clinical practice. *Phys Ther.* 2001;81:1622–1628.

Editor's note: Craig R. Denegar, PhD, ATC, PT, is a JAT Associate Editor and an Associate Professor in the Departments of Kinesiology and Orthopaedics and Rehabilitation at Pennsylvania State University, University Park, PA. Jay Hertel, PhD, ATC, is a JAT Editorial Board member and an Assistant Professor in the Department of Kinesiology at Pennsylvania State University.