

EVALUATION OF THE EFFECTS OF AN EVIDENCE-BASED PRACTICE CURRICULUM ON KNOWLEDGE, ATTITUDES, AND SELF-ASSESSED SKILLS AND BEHAVIORS IN CHIROPRACTIC STUDENTS

Mitchell Haas, DC,^a Michael Leo, PhD,^b David Peterson, DC,^c Ron LeFebvre, DC,^d and Darcy Vavrek, ND^e

ABSTRACT

Objective: The purpose of this study was to evaluate the effects of an evidence-based practice (EBP) curriculum incorporated throughout a chiropractic doctoral program on EBP knowledge, attitudes, and self-assessed skills and behaviors in chiropractic students.

Methods: In a prospective cohort design, students from the last entering class under an old curriculum were compared with students in the first 2 entering classes under a new EBP curriculum during the 9th and 11th quarters of the 12-quarter doctoral program at the University of Western States in Portland, OR (n = 370 students at matriculation). Analysis of variance (ANOVA) was performed using a 3-cohort × 2-quarter repeated cross-sectional factorial design to assess the effect of successive entering classes and stage of the students' education.

Results: For the knowledge exam (primary outcome), there was a statistically significant cohort effect with each succeeding cohort showing better performance ($P < .001$); students also performed slightly better in the 11th quarter than in the 9th quarter ($P < .05$). A similar pattern in cohort and quarter effects was found with behavior self-appraisal for greater time accessing databases such as PubMed. Student self-appraisal of their skills was higher in the 11th than the 9th quarter. All cohorts rejected a set of sentinel misconceptions about application of scientific literature (practice attitudes).

Conclusions: The implementation of the EBP curriculum at this institution resulted in acquisition of knowledge necessary to access and interpret scientific literature, the retention and improvement of skills over time, and the enhancement of self-reported behaviors favoring use of quality online resources. (*J Manipulative Physiol Ther* 2012;35:701-709)

Key Indexing Terms: *Evidence-Based Practice; Outcomes Assessment; Education, Professional; Chiropractic*

^a Associate Vice President of Research, Center for Outcomes Studies, University of Western States, Portland, OR.

^b Consulting Statistician, Kaiser Permanente Center for Health Research, Portland, OR.

^c Professor of Chiropractic Sciences, University of Western States, Portland, OR.

^d Professor of Clinical Sciences, University of Western States, Portland, OR.

^e Assistant Professor of Research, Center for Outcomes Studies, University of Western States, Portland, OR.

Submit requests for reprints to: Mitchell Haas, DC, Associate Vice President of Research, Center for Outcomes Studies, University of Western States, 2900 NE 132nd Avenue, Portland, OR 97230 (e-mail: mhaas@uws.edu).

Paper submitted November 9, 2011; in revised form August 23, 2012; accepted October 14, 2012.

0161-4754/\$36.00

Copyright © 2012 by National University of Health Sciences.

<http://dx.doi.org/10.1016/j.jmpt.2012.10.014>

Sackett et al¹ define *evidence-based practice* (EBP) as the integration of the best available research evidence in conjunction with clinical expertise and consideration of patient values. They assert that the well-trained clinician should display the ability to pose clinically relevant questions and access the clinically relevant literature to find, appraise, and use the best valuable evidence in routine clinical care. Population-based outcome studies have documented that patients who receive evidence-based therapy have better outcomes than do patients who do not.¹⁻⁵ Chiropractic educators have also recognized that an important goal of chiropractic clinical education should be to teach specific EBP skills to chiropractic students, interns, and doctors.^{6,7} However, a survey on the prevalence of EBP teaching published in 2000 revealed that few of the 18 responding chiropractic colleges worldwide required interns to routinely generate clinical

research questions or conduct literature searches.⁸ There is a dearth of outcomes research relative to EBP and chiropractic education. A 2004 literature review could only identify 4 studies in the chiropractic arena, most of which measured only student self-assessment of skills.⁹

In 2004, the National Center for Complementary and Alternative Medicine at the National Institutes of Health recognized the importance of enhancing EBP skills in institutions training complementary and alternative medicine (CAM) practitioners with the release of a grant initiative using its R25 funding mechanism: "CAM Practitioner Research Education Project Grant Partnership." Its specific purpose was to "to increase the quality and quantity of the research content in the curricula at CAM institutions in the United States where CAM practitioners are trained...enhance CAM practitioners' exposure to, understanding of, and appreciation of the evidenced-based biomedical research literature and approaches to advancing scientific knowledge."¹⁰

This funding opportunity was the impetus for the University of Western States (UWS; Portland, OR) to incorporate EBP throughout its chiropractic curriculum. The principal goal of this project was to train doctors of chiropractic to develop the knowledge, skills, and attitudes to implement the EBP model in practice. Toward this end, a partnership was formed with the Oregon Health & Science University to train faculty, as well as design and implement a program fully integrated across the chiropractic curriculum that develops EBP knowledge, skills, and behaviors. Also included in this process was curriculum development with the aim of formalizing EBP skills in research and critical thinking courses, integrating EBP applications throughout the chiropractic program, and training students to apply EBP in formulating patient care. Up until now, published studies in chiropractic education have focused on single-workshop or single-course outcomes.¹¹⁻¹⁶ In distinction, this study measures outcomes from a major revision of a chiropractic curriculum, spanning all 4 years and crossing departments. Because we could find no existing comprehensive EBP curriculum in the literature,¹⁷ the project team had to develop a new chiropractic EBP curriculum from the beginning.

The purpose of this report is to describe the new curriculum and to compare learning outcomes between students educated in the pre-EBP curriculum and students educated in the new EBP curriculum. Our hypothesis was that the new curriculum would improve EBP knowledge, attitudes, and self-assessed skills and behaviors.

METHODS

Design and Protocol

A prospective cohort design was used to evaluate the effectiveness of the new EBP curriculum. We compared the last entering class of students under the old curriculum

(control cohort) with students in the first 2 classes matriculating under the new curriculum (intervention cohorts). Cohort 1 included students enrolled in September 2005 and January 2006 (Table 1). This cohort served as the control group. All curricular changes started the following academic year and were instituted throughout the 12-quarter program, starting after cohort 1 passed through each course or clinical phase of the curriculum. In this way, cohort 1 students had no direct exposure to the new curriculum. Cohort 2 (2006-2007) included the first students to receive the new curriculum. For cohort 3 (2007-2008), the program was more entrenched with some targeted curricular updates incorporated.

Student testing was not designed to evaluate learning from a single course or courses. It evaluated the effects of the complete new EBP curriculum incorporated throughout the chiropractic doctoral program. The primary outcome was an objective EBP knowledge examination score. Secondary outcomes included self-assessment of EBP skills and behaviors, as well as attitudes related to EBP. Outcomes were assessed at the end of 9th and 11th quarters. The first follow-up was administered after a limited "on-campus" clinical experience and a year after the critical thinking and EBP core courses. The final administration followed most of the outpatient clinical internship and 2 quarters of a journal club. Baseline data were collected before any exposure to EBP material whether in the old or new curriculum. The baseline questionnaire included an assessment of EBP attitudes.

Arrangements were made to administer the questionnaires during class time. Administration had no unique home because the test did not pertain to any specific course. At baseline, an investigator introduced the project to the students and asked them to fill out the instrument. The questionnaires were collected anonymously, and students were asked to create an identification code that they could remember so that data can be tracked across time. All data were secured in the University's Division of Research. Students were given the right to refuse participation. The trial was approved by the UWS Institutional Review Board (FWA 851).

New EBP Curriculum Intervention

The new EBP curriculum was the program intervention. An article describing EBP learning objectives and competencies has been published elsewhere.¹⁷ This curriculum document was based on 5 standards adopted by the Sicily conference on evidence-based medicine.¹⁸ The design of the new curriculum is divided into preclinical/periclinical courses and clinic-based training. The preclinical/periclinical curriculum is organized conceptually around 3 concentric rings (Fig 1). The center ring is composed of 4 core EBP courses. The first 2 are didactic in nature, and the last 2 are modeled after journal clubs. The intermediate ring is a cluster of first- and second-year courses that contain critical

Download English Version:

<https://daneshyari.com/en/article/2620846>

Download Persian Version:

<https://daneshyari.com/article/2620846>

[Daneshyari.com](https://daneshyari.com)