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Self-Perceived Skills Confidence: An Investigative Study of Chiropractic Students in the Early Phases of a College's Clinic Program

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Abstract

Objective: This pilot study surveyed students at early stages of a chiropractic college's clinical curriculum, at the time when integration of patient evaluation and management begins to occur, for collecting data regarding perceived levels of confidence in their spinal analysis and adjusting (manipulation) skills.

Methods: An online, cross-sectional survey based on students' perceptions of their skills was conducted in a basic technique review class for 3 consecutive terms. Questions primarily focused on full-spine radiography (Gonstead-type) analysis, radiographic descriptive analysis, motion palpation analysis, and manual full-spine and diversified spinal manipulation.

Results: Of 226 eligible students, 108 participated. The respondents were overall more confident with their analysis skills in full-spine radiographs and descriptive listings than they were with their motion palpation analysis. Self-confidence with spinal manipulation skills followed a general pattern from confident to unconfident to unsure. Students were most confident with prone thoracic spinal manipulation and least confident with seated cervical spinal manipulation. With lumbar and pelvic manipulation, confidence levels varied between side posture pushes, side posture pulls, and prone setups.

Conclusions: Considerably more than half of the respondents were confident enough with their skills to feel comfortable beginning the clinical experience. (J Manipulative Physiol Ther 2010;33:201-206)

Key Indexing Terms: *Self-Concept; Chiropractic; Clinical Competence; Data Collection; Educational Measurement; Evaluation Studies*

In chiropractic and in other health care fields, proficiency with patient evaluation and management is essential, as it may correlate with being successful in practice. Throughout the educational process, success as a student relates to demonstrating competence when being assessed in the classroom and in laboratories, when taking objective structured clinical examinations (OSCEs), and when taking national and state board examinations. All program accreditation bodies demand at least summative evaluations to summarize the outcomes of teaching effort,[1] and standardized, valid, and reliable testing methods are necessary for the assessment of performance competency.[2]

Evaluation of student competence with health care skills has varying results in the literature. One study found that a substantial portion of students entered their intern year without any skill experience,[3] and another discovered a chasm between subject competence and assessed performance.[4] Similarly, the literature addressed issues of student confidence, with some studies reporting the students' considerable uncertainty about their clinical skills. These impressions can give reason for implementing standardized assessments,[5] for obtaining confidence measurements, or for having students rate tasks to determine if they feel prepared to be independent practitioners.[6] Results of other studies suggested that student confidence grew due to the influence of supplemental instruction and that there were statistically significant increases in self-perceived confidence evident during postgraduate and formal skills training.[3,7,8]

Other research evaluated confidence and its association with teaching methods and program content. In one report,

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students compared a more structured teaching model to traditional clinical methods and found no evidence to indicate a difference between the two,[9] yet in other studies, there was evidence of statistically significant improvements in confidence and competence upon completion of intervention periods and/or facilitation programs,[10-13] particularly in the clinical climate.

There may be good correlation between clinical experience and the level of student confidence.[2] Progressing from classroom to clinic signifies achievement of an educational milestone that can affect students; however, this exposure may not affect competence. Several studies found that clinical experience minimally related to performance on an OSCE,[14] and although some students had significantly more clinical exposure, it was reported that there was no association between OSCE or its components and any aspect of clinical experience.[15] Although clinical experience can demonstrate an increase in student confidence, it may not have a predictive value in performance assessment.[2]

Confidence in skills has been used as a "subjective indicator" of clinical competence.[16] One study suggested that the terms confidence and competence are effective terms to express perceptions about abilities.[8] Another explained that increased confidence is indicative of increased ability; but there was also evidence to support the lack of congruence between confidence and performance.[17] Other research reported that students felt poorly prepared for duties and were objectively not competent in their basic clinical skills,[11] but other studies determined that no correlation existed between student self-ratings of confidence and their measured performance.[17-19]

Assessments are a necessary instrument for faculty to use to gauge student understanding and performance, and the literature concluded that it is possible to assess self-perceived competency with skills.[13] Although summative evaluations may not enlighten faculty on students' intent to use information or skills in future clinical practice,[1] having confidence may help students with patient procedures later in the curriculum,[3] and preparedness appears to have a link to their confidence, which follows through to their performance.[1]

In the early stages of the clinical curriculum at the Life University College of Chiropractic (Marietta, GA), the integration of patient evaluation and management begins. The intent of this pilot study was to survey a group of students about their perceptions of self-confidence with their skills in spinal analysis and manipulation.

Methods

The college's institutional review board for the protection of human subjects reviewed and approved this study. This study used a 15-question, cross-sectional survey that was developed to assess levels of student confidence in their analysis and adjusting skills. The document was subject to peer review by faculty colleagues, and based on the critique, the formatting and content were modified for effectiveness. The survey instrument used a Likert 5-point scale, with the options of strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree about how confident the student felt (Fig 1).

The survey consisted of 15 questions. Eleven of the questions related to confidence in different types of intersegmental spinal analysis and manipulation. Topic inquiries were developed in a closed-ended format and contained questions relating to clinic level, sex, attendance, and if participants had transferred from another school. The instrument was generated through the college's Blackboard Learning System because this Web-based delivery system was user friendly, allowed for access control, provided immediate feedback, and had automated scoring capabilities.

Student access was available during the fourth week of each term for those who were registered for the basic technique review class. Because the course met one time per week and during each term there were 5 to 7 sections that met at different times, the survey had a response time of approximately 10 days (±1 day). This format allowed for students to start the survey at one time, save responses, and then finish it at a later date within the time frame. It did not permit for multiple response attempts. Upon survey completion, students were awarded one bonus point (of 245 course points) toward their final grade as a small incentive to participate. Students were notified in class about the project, were provided with a study information sheet, and gave their written informed consent to participate.

At the time of each term's survey, most of the students were enrolled in the latter part of their second year of study and had successfully completed prerequisite coursework in biomechanical analysis, in motion and static palpation assessment, and in full-spine adjusting technique. The number of students included in the study was determined by the number of students who were enrolled in the school's college of chiropractic and registered for the basic technique review course. During this time frame in the curriculum, these students were entering, were active in, or had recently completed activity in the school's student clinic. All were in these early phases of clinical training, making the educational status of the population relatively equal.

The participants were identified by whether they had responded to the survey and by the term for which they were registered. Information pertaining to sex, transfer status, and class attendance was also collected but not evaluated in depth.

The project took place over 3 consecutive 10-week terms: summer 2006, fall 2006, and winter 2007. At the end of each term, the survey results obtained from the college's Blackboard Learning System were downloaded into an Excel spreadsheet. At the end of the term, all the data were compiled into Excel, reviewed, and then prepared for this report. Because this was a pilot study, its intent was simply