
ABSTRACTS OF ACC CONFERENCE PROCEEDINGS

Round Table Discussions

A Clinical Chiropractic Teaching and Learning Experience Abroad Introducing Students to Chiropractic Care in an Interdisciplinary International Setting

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In 1994, a clinical program was developed which would eventually offer chiropractic students an alternate clinical experience in countries where chiropractic is not currently a strong presence in the nation's health care systems. The program began with one faculty clinician participating in an interdisciplinary team experience in Haiti. Later, several students and clinic faculty were invited to join in on subsequent trips, and the Clinic Abroad Program was born as a teaching and learning experience. Next, several trips were added to countries such as Micronesia, Fiji, Nepal, Brazil, and India. This presentation will describe the Clinic Abroad experience to India, and will explore how such experiences may change student attitudes, confidence levels, and proficiency in providing chiropractic care.

OBJECTIVES

This Clinic Abroad experience to India aims to:

1. Expose students to a culture and health care system different from their own.
2. Offer students the opportunity to serve a population that may not otherwise receive chiropractic care.
3. Allow students to provide chiropractic adjustments to a population with much greater and more complex health care needs than the typical chiropractic student clinic.
4. Offer students and faculty the opportunity to share information about chiropractic with both the leaders and the communities of other lands, and in turn to gain knowledge of the health care system/culture of that country.

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METHODS

Twice a year, students may apply for a Clinic Abroad experience to India. Students submit an essay on their reasons and qualifications for applying, and documentation of their good academic and clinical standing. Students are selected to participate by a faculty team, and then spend a 2-week period in that country working with an interdisciplinary team of health care providers. Students are assessed at the end of the Clinic Abroad experience on their perceptions of the educational value of this experience and on its clinical components.

RESULTS

Over 100 students have completed the Clinic Abroad experience to India. Six trips, each with 24 students participating, have been made to India to date. During these trips, the student and health care team provide patient care for an average of 6 days total, seeing approximately 800 patients per day. The team consists of medical, chiropractic, and nursing professionals and students, working together to provide appropriate care as indicated in each patient. Student assessments indicate that this experience is perceived as an extremely valuable, yet challenging experience.

DISCUSSION

This experience is multifaceted, offering education to chiropractic students and clinicians alike on the health care system, culture, and people of India. This program is perceived as a very valuable teaching and learning experience by both faculty and students who participate. The locations where these Clinic Abroad programs set up patient

care clinics have been extremely amenable to welcoming the teams back twice a year, indicating the perceived value of this program by the host country.

CONCLUSION

Further assessments should be developed to study the clinical knowledge gained through the Clinic Abroad

experiences. Little is known of the long-term health benefits on the patients cared for on the Clinic Abroad trips. In recognition of this fact, the groundwork has been laid for follow-up of patients seeing the chiropractic care team on subsequent Clinic Abroad trips. However, this program has been an extremely successful and popular one among both students and teaching faculty, who are keenly interested in serving such populations in great need of chiropractic and other health care services.



Factors that Effect Student Knowledge Retention in the Basic Sciences

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In a curriculum where one course requires knowledge from previous courses, the question arises just how much information can an instructor expect the students to retain and what are some of the factors that effect student knowledge retention. Blizard et al. (Br J Med Educ, 1975) found that medical students had a retention level of 65% of physics and chemistry as they entered a physiology course. This study proposes to measure student retention rates and compare these rates to each other, to time between the end of the class and this examination, grades earned in the classes, and age of the student in two areas of the basic science curriculum at Cleveland College, anatomy and physiology. Finally, this study will examine whether student knowledge retention rates can be used as a predictor of National Board performance.

METHODS

A 50-question multiple-choice comprehensive test in both gross anatomy and physiology was constructed based on National Board criteria. The anatomy test was given on the first day of classes following our gross anatomy sequence of courses. The physiology test was given on the first day of classes immediately following the physiology course sequence. The students had 45 minutes to complete the tests. Prior to the test, each student was ask to provide demographic information which was separated from the test booklet for later analysis. Students were told that the tests had no effect on their grade, but to try as hard as possible. The data were analyzed using ANOVA analysis.

RESULTS

The results from 518 students taking the gross anatomy test showed an overall retention rate of 52.9% with a range of 28%–70%. The rate of retention for the Gross I part of the exam was 53.9% with a range of 24%–77% and a retention rate of 52.0% with a range of 32%–84% for the Gross II portion of the examination. When these rates were compared to time between the end of the classes and the administration of the test, there was a significant difference ($p < .05$) between students who immediately completed the course and those who had a trimester between completion of the course and the exam. Both age and class grade appear to have no effect on the performance when taking this type of examination. The preliminary results of the 75 students who took the physiology exam show the same trends.

DISCUSSION

The results of these studies indicate that student knowledge retention levels are low compared to other areas of basic science education and suggest that instructor expectations might be too high for courses that draw on knowledge from previous courses. The major factor in knowledge retention rates appears to be the time between when information is given to the student and when the student is asked to recall that information. The grade earned in a course and the age of the student seem to have no influence on knowledge retention rates.

CONCLUSION

As this study continues to increase its database in the areas of anatomy and physiology, the factors that affect student knowledge retention rates appear more clear. Time is the number one factor as one examines student knowledge retention rates, and not grades earned or the age of the

student. In the future, this study will begin measuring results on part I of the National Board Examinations and comparing these results with the results on comprehensive testing to see if such testing can predict student performance on National Board Examinations. Also in the future, studies like this will be taken into the clinical courses to see if one can predict outcomes in clinical courses based on performance in basic science courses.



The Effects of Augmented Sensory Feedback Schedules on the Acquisition and Retention of a Kinetic Task

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Over the past 3 decades, chiropractic education has evolved considerably in terms of curriculum design and instructional methodologies. Contemporary chiropractic education devotes considerable time to the teaching and learning of psychomotor skills relevant to spinal manipulative procedures. Colleges are asked to take students who are extreme novices of manipulative skills and in a relatively short period of time (approximately 3½ years) bring them to a competent level compatible with entry-level chiropractic health care. Chiropractic students, like others learning psychomotor skills, receive important information or feedback which shapes them toward a desirable outcome. This feedback is known as knowledge of results (KR). Knowledge of results has long been regarded as one of the most important variables in motor skill acquisition and retention.

PURPOSE

The purpose of this study will be to examine the effectiveness of knowledge of results feedback in the acquisition and optimization of a simulated manipulative procedure at various predetermined performance conditions. To test this notion, subjects will control the application of force of a simulated manipulative procedure.

METHODS

Over 60 healthy male and female chiropractic student volunteers will be randomly assigned to one of two groups.

Subjects will control the application of force of a simulated high-velocity, low-amplitude chiropractic manipulative procedure (prone thoracic reinforced single contact). Two sensory feedback schedules (high-frequency KR and bandwidth KR), two performance conditions (light and heavy force levels), and three retention intervals (1, 5, and 8 days) will be studied. Twenty-five trials will be performed using "light force" and 25 using "heavy force" (total of 50 trials) during the acquisition trials. One group will receive feedback after every trial (All-KR group) and the second group will receive traditional bandwidth feedback (BW-KR group). After the 50 acquisition trials are completed, the subjects will be divided into 1-day retention groups (10 subjects from the All-KR and 10 subjects from the BW-KR), 5-day retention groups (10 subjects from the All-KR and 10 subjects from the BW-KR), and 8-day retention groups (10 subjects from the All-KR and 10 subjects from the BW-KR). All subjects will perform 2 blocks of 10 trials (total of 20 trials). The knowledge of results will not be provided for any of the retention trials.

ANALYSIS AND RESULTS

Repeated-measures analysis of variance (ANOVA) will be used to compare the two feedback groups with the two force levels and block trials as concomitant variables for the acquisition phase. Data for the retention phase will be analyzed using ANOVA with repeated measures for the two feedback groups, three retention groups, and the blocked trials. The level of significance will be set at $\alpha = .05$.

