

Sherman College Research Program Subjects Subluxation Concept to Contemporary Scientific Study

Throughout much of chiropractic's history, the idea of applying formalized, scientific research techniques to the study and validation of chiropractic principles was seen as almost at odds with the vitalistic philosophy upon which the field was developed. Many in the profession did not want to see chiropractic shoe-horned into a medical model of study. But as chiropractic has grown in public use and acceptance, it has also come under greater scrutiny, and demand to build evidence for the philosophies and tenets on which it is based.

There is a perception within the profession, I think, that vertebral subluxation-centered chiropractic is not based on science or evidence, and that it does not lend itself to critical study. We are accustomed to thinking in terms of the traditional medical model that relies on studying the body as a machine made up of separate parts, and of treating specific conditions with new procedures and drugs and watching for changes in those conditions. It is difficult for many people to even conceive of conducting chiropractic research that focuses on quality of life, preventive care, and maintenance care.

A major goal of the research program at Sherman College is to demonstrate that it is possible to study the elements of vertebral subluxation in a scientific setting, and to use contemporary, objective research techniques to test and gain a better understanding of many of the precepts espoused by straight chiropractic philosophy. We are making great progress in modernizing our approach to chiropractic research and developing unique methods of studying and validating subluxation theory.

New Paradigm

One of the greatest challenges to enhancing vertebral subluxation-centered research is the same one often encountered in chiropractic - it requires breaking new ground and developing whole new approaches to scientific research. Vertebral subluxation-centered chiropractic does not fit with the prevailing biomedical approach to research. In traditional biomedical research, you look at and measure symptoms and conditions. You then apply a particular therapy and gauge whether the condition got better or worse. Those methods don't fit when you are trying to measure quality of life, performance and health maintenance. We want to know how removing nerve interference enhances life expression.

"The most important and exciting aspect of our research agenda at Sherman College is that we are truly breaking new ground," explains Brian McAulay, DC, PhD, interim president of Sherman College. "We are developing entirely new approaches to health-oriented research and establishing scholarship priorities that reflect the vitalistic principles of straight chiropractic philosophy."

Because the Sherman College research program is built around a different paradigm of health and performance than traditional medical models, researchers have to develop ways to study an entirely different set of questions than traditional biomedical research poses and answers. The

Sherman College research program includes exploration of the subluxation concept, measuring the impact of regular chiropractic care on human performance and quality of life, searching for better methods of locating and assessing vertebral subluxations, and evaluating the efficacy of existing analysis and adjusting techniques and the circumstances under which particular techniques might work best.

In addition to furthering faculty understanding and contributing to the advancement of the profession, college-based research programs enhance student learning by involving them in hands-on discovery and scholarship. It's important that future graduates gain the skills for finding answers on their own and even the skills to read the research results and published articles of other scholars with a critical, informed eye.

Current Research Projects

Sherman College faculty and students are currently pursuing four major research initiatives.

1. Prone Leg Check

Conducted by Alan Hartley, PhD,DC, former dean of clinical sciences, and recent Sherman College graduates Leigh Charley and Tony Southwell, this study explores how much outside variables contribute to changes in results and accurate interpretation of the prone leg check. Practitioners use the prone leg check, or leg length inequality, to look for asymmetry in the neuromuscular tone of the body that might indicate the presence of vertebral subluxation. In the leg check, the chiropractor has the patient move the head or flex the legs in various ways and looks for changes in the balance of the legs. Although chiropractic literature includes several studies that assess examiner reliability of the prone leg check, little has been done to describe and standardize the test in postural leg checks.

"The reliability of the leg check is greatly lowered by spontaneous changes that might be occurring at the same time as the check," explains Dr. Hartley. "So many other factors can confuse the information you get from a leg check. The practitioner might not perform it exactly the same way each time. The legs seem to change by themselves sometimes." He calls such changes "noise" because they act like static that interferes with an accurate and reliable reading. The goal of this study has been to identify the producers of such "noise" and evaluate how much they contribute to changes in results. DCs Hartley, Charley and Southwell explored such issues as the level of consistency of clinicians in their application of force: the consequences of asymmetrical application thereof; and correlations between the side of the short leg and the dominant handedness of the subject doctors.

The researchers found that some doctors seem to have a bias toward finding a short leg more often on one side than the other, which reduces their ability to agree with other doctors' findings. They also failed to find evidence for a relationship between the side of the short leg and a tendency for foot inversion on the same side, a concept often taught in technique protocols. In the next phases of the study, researchers will search for ways to standardize the leg checking procedure, looking at how doctors judge leg length and how much force they apply during a standard leg check.

2. Pattern Analysis

In this project, John Hart,DC, associate professor of clinical sciences, and I are analyzing patterns in paraspinal temperature readings and how accurately they reflect the presence of vertebral subluxation. Pioneered by B.J. Palmer, the theory behind the approach holds that, because the nervous system is reacting and adapting to its internal and external environment all the time, the

normally functioning system is dynamic. When an individual is not subluxated, therefore, paraspinal temperature readings would vary throughout the day and from day to day, so little or no pattern would exist in ongoing temperature readings.

Palmer surmised that the nervous system of an individual that exhibited a clear pattern over several different sessions was "stuck" in one mode of operation or reaction and was not functioning as a dynamic system. Therefore, the presence of such a pattern would suggest that the individual is subluxated. Generally, if a practitioner observes a pattern on three successive visits, he or she will adjust and then watch for changes in future readings. If the pattern changes or becomes random, it is an indication that the nerve system is again functioning in a dynamic way.

As part of this study of the effectiveness of pattern analysis in predicting subluxation, we wanted to provide an objective measure of how similar patterns were from reading to reading. I wrote a unique software program to calculate the congruence (or agreement) among various patterns and to provide an objective measure of the similarity of patterns taken at different times. The software takes the guesswork out of the process and provides a reliable number that represents a degree of similarity among various readings. This provides us with more accurate and helpful information, because the software measures the variance in objective terms without human interference. It also provides us with a degree of variance that is much more useful than a simple yes or no type of answer.

Steps will next include developing thresholds and cut-offs for readings to be able to say what types of results suggest when an adjustment is indicated. We also plan to compare the scales to the readings of experts that are accustomed to interpreting thermograms to see if the results from the software will agree with doctors' interpretations of patterns. Once we are certain the software is reliable, we will compare our results to other subluxation detection methods to see if the pattern readings are an accurate indicator of vertebral subluxation.

3. Muscle Palpation

Muscle palpation is a vertebral subluxation detection technique that was expanded and refined at Sherman College and it is currently taught by Joseph Donofrio, DC, assistant professor of clinical sciences. The concept behind it holds that a vertebral subluxation creates an asymmetry in local muscle tone. The muscle fibers around a vertebral subluxation will have a greater degree of tension in them because they are working to correct the subluxation.

Donofrio's research focuses on attempting to define how reliable muscle palpation is in identifying subluxated vertebrae. Muscle palpation is a highly subjective art that requires a high degree of sensitivity to changes in muscle tension on the part of the chiropractor. One goal of this study is to assess how much the findings of various practitioners agree.

In a preliminary study conducted in the Sherman College Chiropractic Health Center during Lyceum 1999, researchers found very little agreement in the findings of several practitioners. Four doctors were set up with patients in four isolated locations apart from their colleagues. Blindfolded, the chiropractors did not know which patients they were palpating, and they had no access to the findings of their colleagues. The findings from one practitioner to another varied considerably. Further study is needed to clarify what factors contributed to these results.

We need to evaluate if the setup of the experiment itself makes the task artificially difficult, or if the problem is in performing the assessment itself. We need to pull apart the results to see if, for example, the difficulty lies in locating the structure or in testing to see how much tension is present. Sherman College researchers have recently designed a follow-up study and secured

funding from the Federation of Straight Chiropractors and Organizations (FSCO) to compare practitioners' abilities to locate structural landmarks in the cervical area with the findings of a three-dimensional digitizer. This study will enable us to determine if doctors can reliably locate specific bony structures and the attachment points for muscles. Doctors will locate key structures; computers will then track the points of the digitizers to the same point and plot them. This will help us understand if part of the reason for varied findings among practitioners of muscle palpation is that they actually aren't palpating the same locations.

We also plan to measure whether the chiropractors have a high enough degree of sensitivity in their fingers to discern hard versus soft structures. I have in the works a "palpometer" device that would help to measure relative hardness and softness in spinal structures.

4. Maintenance/Wellness: Applications of Subluxation-Centered Care

Drs. McAulay, Robert Irwin, DC, instructor in clinical sciences, and I are looking for ways to measure the impact of vertebral subluxation correction on health, performance and the expression of potential. For this project, we are developing a network of practicing chiropractors to help carry out a major study of people under regular care. Using already existing, highly regarded and tested survey instruments, we will measure the impact of regular maintenance care on general health and quality of life.

One of our goals is to conduct a true longitudinal study through which we will survey the same people over a time span of several years. If we can show a positive relationship between vertebral subluxation-centered care and better function and performance, it would have a profound impact on the progress and growth of the chiropractic profession. The study will measure the impact of vertebral subluxation correction on issues such as life satisfaction and physical performance.

To complete this study, we need to work with chiropractors that promote a maintenance approach to chiropractic and have significant numbers of patients who have been under care for several years. We don't ask much more from the doctors than that they consistently give the brief surveys to their patients and ask them to complete them. Doctors who are interested in participating in this important study should contact Dr. Irwin at Sherman College at rirwin@sherman.edu or at 800-849-8771, extension 1238.

On the Horizon

As Sherman College looks to the future of the profession, we believe that objectively exploring the impact of vertebral subluxation correction on human health and performance could have a significant influence on the use and acceptance of ongoing, meta-therapeutic chiropractic care. It is important for all disciplines to hold their own philosophies, theories and techniques up to the rigorous examination of objective study.

All chiropractors can enhance the quality and reputation of the profession by participating in meaningful, objective chiropractic research. For those in practice, this might take the form of providing confidential access to patients who might be willing to participate in studies, and by submitting case studies for research and teaching uses. Practitioners can also get more involved by supporting chiropractic research through financial contributions and even by merely reading and reacting to published research in the field.

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