Dynamic Chiropractic

VA Funds Cervical Diagnostic Pilot Study

COLLABORATIVE EFFORT BETWEEN NATIONAL COLLEGE AND VA

Editorial Staff

The Rehabilitation Research and Development Service of the Department of Veterans Affairs approved the pilot study "Biomechanics of Cervical Diagnostic Maneuvers." The study has a tentative start date of October 1, 1992, and will be funded through September 30, 1993.

The Rehab. R&D Service will provide $48,495 to support the pilot study.

The objective of the study, in the words of the investigators, is to "quantify and describe the biomechanical events that occur during orthopedic diagnostic testing conducted on neck pain patients."

All but one of the project's investigators is from National College of Chiropractic: Maruti R. Gudavalli, Ph.D. (principle investigator); John J. Triano, M.A., D.C., (co-principle investigator); Marion McGregor, D.C., M.Sc. (investigator); and Robert Havey, B.S., (biomedical engineer). The VA's representative is Avinash G. Patwardhan, Ph.D. (co-principle investigator).

The investigative team spelled out their proposal to the VA: "...establish the feasibility of (1) conducting in-vitro experiments to measure the biomechanical events and (2) using a computer model to predict these events. The in-vitro experiments will be conducted on five fresh cadaveric cervical spine specimens to measure the vertebral displacements, ligament stretches, ligament loads, and vertebral artery stretch.

"The valid and predictive model developed for the cervical spine as a result of this project constitutes the first step in the development of a comprehensive model for studying the diagnostic maneuvers. The comprehensive model we plan to develop will account for several diagnostic maneuvers, soft-tissue changes, and muscle reactions expected in the in-vivo clinical situation."

With this as a background, we asked Drs. Gudavalli and Triano to elaborate:

"DC": What benefits do you see for the chiropractic profession from this pilot study?

Dr. Triano: If our current direction is successful, and our goals are met, it would be possible for the chiropractic profession in practice to clearly substantiate what it is they are treating in the neck and to have a better set of outcome measures to assess whether or not the treatments were effective.

"DC": Would it give the chiropractic profession the ability to rely on certain tests that would determine the appropriateness of cervical manipulation?

Dr. Triano: Absolutely. It would give one the ability to say that under a certain set of test results manipulation of type "A" would be inappropriate; type "B" might be appropriate, or you might say manipulation is appropriate, but other kinds of therapy are inappropriate, or vice-versa.

"DC": Where might this study be published?

Dr. Gudavalli: In journals like Spine, JMPT, and Clinical Biomechanics.

Dr. Triano: It's probably that the study would first appear in a technical journal that chiropractors would probably not want to read. But the study would then appear in secondary publications focusing on the clinical aspects that would be targeted towards the chiropractor.

"DC": Depending upon the outcome of the study, what can you see as a follow-up project?

Dr. Triano: The main project following that would be to test the validity of a number of different diagnostic procedures used by health care providers; to attempt to define what tissue is actually under the greatest stress during these procedures. Right now we have some vague anatomical notions about what these tests might be doing, but in fact they have never been looked at to validate that they really do that.

"DC": Are the diagnostic procedures you're speaking of in the realm of chiropractic?

Dr. Triano: The first test we're looking at is the vertebral artery screening test which is used, or at least portrayed, as being able to screen those patients who might be susceptible to injury during a manipulation of the neck. We can go on to almost any orthopedic maneuver from there.

"DC": What are the practice applications for the computer model you're developing?

Dr. Gudavalli: This is a generalized computer model that can taken into effect the ligaments, the muscles, and what effect it has when you apply different loads to the human body. The model will be focused on the cervical spine, but it can as well be extended to the lumbar spine or any joint.

Dr. Triano: It could be used, for example, to study the effects of a whiplash injury, or the displacements and loadings of a manipulation acting on the neck. It has all kinds of ramifications.

"DC": Could the model ultimately be used to developed a computer assisted diagnostic program that would allow a chiropractor to do an examination, enter the findings into the computer, and receive assistance in developing a diagnosis?

Dr. Triano: Such a computer model would not be a practical application in day-to-day practice under these circumstances. The diagnostic assistance will come from the results of testing the orthopedic procedures.

"DC": Is it true that this is the first time that the federal government has financed chiropractic related research from a chiropractic college?

"Dr. Triano: This is the first time that any agency of the federal government has directly funded a true R01 application for research. RO1 means its peer-reviewed. This project was review three times: once by local expert at the request of the local VA; a second time by the a local VA administrative group; and then the reviews and recommendations from those groups were sent to to the Department of Veterans Affairs in Baltimore, where it was accepted on September 17.

"DC": What is the significance that the VA made the grant?

Dr. Triano: I think the real significance is that Dr. Gudavalli and I have had an appointment at the VA Hospital in the orthopedic research section for about two and one-half years. We have developed a working relationship leading to interest in questions relevant to chiropractic. By being a part of a collaborative group, we have been able to submit a collaborative study to warrant

funding. We are beginning to present an image and impression to the decision makers in the government that chiropractors and chiropractic related researchers are able to do high quality work that should be considered seriously.

"DC": So, the door is open.

Dr. Triano: We now have a door open and we have to produce. It's put up or shut up time. If we produce good work, that's useful to the clinical community, we should be able to expect a serious consideration of renewal.

"DC": What about the other researchers in chiropractic, is the door opening for them as well?

Dr. Triano: Chiropractic researchers should be able to present a legitimate and well though out proposal with less fear of political factors being the primary consideration. They will still have to meet the scientific standards before it will be seriously considered.

We're where we are because of approximately one decade of effort, focusing primarily on high quality science. It's important now not to let our guard down and anticipate rapid acceptance of this opportunity nor to expect that this can be used in other way than the search for good scientific knowledge of the cervical spine. In other words, don't make a big PR issue out of this and don't go running around expecting that you can now focus research for the purpose of public relations.

Although the pilot study is of one-year duration, Drs. Gudavalli and Triano expect to continue this type of work for five years. They predict that over the course of the latter three years of their work, clinicians can expect to receive information of value to their practices.

OCTOBER 1992