

This is the first of four articles on medical controversies in this issue.

Chiropractic: A Skeptical View

Spinal manipulation can be useful, but chiropractic's theoretical basis is a strange and never-demonstrated notion of subluxations.

William Jarvis

CHIROPRACTIC is the most significant nonscientific health-care delivery system in the United States. As a result of their high level of organization and aggressiveness, chiropractors are licensed to practice in all 50 states and several foreign countries. Chiropractic is so well entrenched that it must be viewed as a societal problem, not simply as a competitor of regular health-care.

“Chiropractic” literally means “done by hand” (*chiro* = hand; *praktos* = practice), referring to manipulation of the spine. Manipulation (i.e., “the forceful, passive movement of a joint beyond its active limit of motion,” according to *Dorland's Illustrated Medical Dictionary*) is not the exclusive domain of chiropractors. Folk practitioners sometimes called “bonesetters” have long used the notion of bones “going out of place” to explain maladies, and they employ manipulation as a panacea. Andrew Taylor Still invented “osteopathy” based upon the theory that luxated bones interfere with blood circulation, producing all manner of diseases. (Osteopathy officially abandoned Still's theory in 1948.)

Today, physiotherapists, athletic trainers, and several medical specialists sometimes employ manipulation for neuromusculoskeletal conditions. There is sufficient evidence that manipulation can at least temporarily improve the range of motion of impaired joints and relieve pain—sometimes dramatically—to make it a worthwhile, albeit limited, medical procedure. Manipulation

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requires a good deal of individual skill, which many chiropractors apparently possess.

History

Chiropractic's uniqueness is not in its use of manipulation but in its theoretical basis for doing so—which also explains why chiropractors overutilize spinal manipulation therapy (SMT), often applying it without justification.

Chiropractic is the brainchild of Daniel D. Palmer, a late-nineteenth-century dabbler in metaphysical approaches to health care. Palmer had practiced phrenology and magnetic healing, and had some osteopathic training. He reported that a spiritualist medium inspired him in his search for “the single cause of all disease.” He puzzled over the fact that pathogenic germs were found in both healthy and sick people and searched for an explanation. (Today, we know that the immune system makes the difference.) He claimed that one day in 1895 he restored the hearing of janitor Harvey Lillard and experienced an illumination that the spine was the key to health and disease.

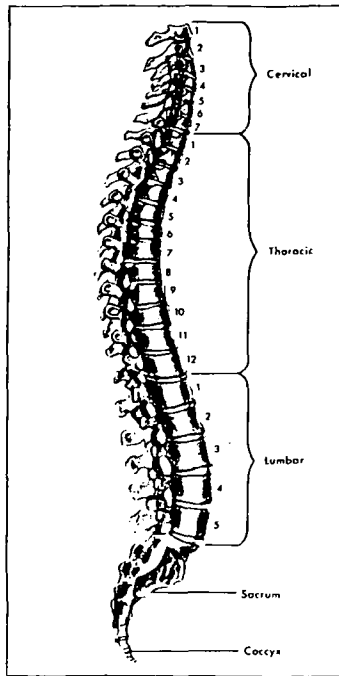
Unique Theory

Palmer contrived the notion that “subluxations” of the spine impinge nerves, interfering with nerve flow, which he dubbed the Innate Life Force, and that all a practitioner had to do was to adjust the spine—the healing powers of nature would do the rest. Neither Palmer nor any other chiropractor has ever been able to reliably demonstrate the existence of “subluxations,” much less validate their importance to health and disease. Nevertheless, chiropractic has grown and thrived and boasts of 24,000 practitioners nationally.

When chiropractors are challenged to explain precisely what effect nerve impingement is supposed to have upon a nerve impulse (i.e., frequency of propagation, amplitude, etc.), they either fall back upon metaphysical notions of the Innate Life Force or evoke one of many common ploys: (1) make a virtue of their ignorance by retorting that they don't know how it works but that it does; (2) claim that studies to determine the mechanism are now under way or just completed but unpublished (the “Oh, haven't you heard? You're behind the times!” ploy); or (3) do as the American Chiropractic Association has done—evade the issue by officially changing the rhetoric and adding uncertainties: “Disease *may* be caused by disturbances of the nervous system. . . . Disturbances of the nervous system *may* be caused by derangements of the musculoskeletal structure. . . . Disturbances of the nervous system *may* cause or aggravate disease in various parts or functions of the body. . . .” (ACA 1984, pp. 8-9). They do this while continuing to practice as if subluxations were an established reality.

Lack of Validity of Chiropractic Theory

A comprehensive critique of chiropractic's lack of scientific validity was writ-



ten by the College of Physicians and Surgeons of the Province of Quebec (1966) in 1963 and remains relevant today. In 1973, Yale University anatomist Edmund Crelin demonstrated that subluxations severe enough to impinge upon the nerves exiting the spinal foramina were impossible to produce without total disablement. Crelin (1985) states in *Examining Holistic Medicine* that instead of the scientific response of attempting to replicate his research, the ACA wrote a tirade of verbiage, concluding that his work was invalid because it was done on cadavers. In fact, Crelin states, the absence of a reflex response in a dead body should make subluxations easier to produce. Faced with this evidence, a true-believing chiropractor once remarked to me that the reason Crelin had failed to demonstrate the chiropractic hypothesis was that he worked with cadavers in which Innate Life Force was no longer present!

An excuse chiropractors employed for years for the lack of scientific evidence for their theory was that the government wouldn't provide the necessary research funding. The falsity of this claim was exposed in 1972, when the International Chiropractic Association reported (ICA 1972) that the federal government had approved a grant for Dr. Suh, at the University of Colorado, to develop a method for measuring spinal configurations to determine the existence of chiropractic subluxations and that the grant *application* was the *first* in chiropractic's history.

Scott Haldeman, D.C., M.Sc., Ph.D., M.D., a third-generation chiropractor whose personal commitment to validating chiropractic led him to obtain a medical degree and advanced degrees in neurophysiology, has criticized Suh's and others' attempts "to find more accurate ways of measuring a subluxation in the absence of any solid data that the subluxation is worth

measuring” (Haldeman 1977). Although providing chiropractic public relations personnel with fodder for a decade, Suh’s work on the illusive subluxation never got anywhere and now seems fruitless at best.

Lack of Clinical Reliability

Apologists have some room for defensive debate because of the difficulty of establishing mechanisms of cause and effect in many other fields of science. An easier and more practical test of chiropractic is that of the reliability (i.e., consistency) of chiropractors’ clinical ability to identify subluxations. They have not fared well in these tests.

Smith (1969) visited the Palmer Clinic in Davenport, Iowa, and the National College Clinic at Lombard, Illinois, on two successive days. At Palmer he was told that he had subluxations at the ninth dorsal and the fifth lumbar; at National a subluxation was diagnosed at the fifth dorsal only. Neither found other subluxations alleged by another chiropractor earlier.

Stephen Barrett (1980) “sent a healthy four-year-old girl to five chiropractors for a ‘check up.’ The first said the child’s shoulder blades were ‘out of place’ and found ‘pinched nerves to her stomach and gall bladder.’ The second said the child’s pelvis was ‘twisted.’ The third said one hip was ‘elevated’ and that spinal misalignments could cause ‘headaches, nervousness, equilibrium or digestive problems’ in the future. The fourth predicted ‘bad periods and rough childbirth’ if her ‘shorter left leg’ were not treated. The fifth not only found hip and neck problems, but also ‘adjusted them’ without bothering to ask permission.” Completely inconsistent findings were also diagnosed in two adult women.

Mark L. Brown, a reporter for the *Quad City Times*, serving the Davenport, Iowa, area, conducted his own five-month investigation of the practice of chiropractic. He produced an insightful 36-page Sunday newspaper supplement (available from the National Council Against Health Fraud, Inc.!) revealing some bizarre as well as some useful practices. Brown also found numerous inconsistencies, including diagnoses that his left leg was shorter than his right leg and vice versa!

Isolation

Chiropractors commonly blame others for their lack of science, claiming to have been isolated by organized medicine. In reality, chiropractic’s isolation is self-imposed. Chiropractors substitute chiropractic philosophy for science and commonly boast of intellectual superiority. True-believers say that someday the world will acknowledge the greatness of chiropractic. It would be impossible for chiropractors who adhere to chiropractic theory and philosophy to work with scientific health-care providers. Chiropractors’ concepts of the causes and treatments of disease differ radically; and, although health scientists worldwide can bridge barriers of language and culture via the common ground of basic science, they cannot work with pseudoscientists.

There is considerable concern about the wisdom of permitting chiropractors to serve as entry-level health-care providers. Practitioners devoted to a pseudoscientific approach to disease are apt to miss serious diseases when hearing patient complaints. Reformist chiropractor Peter Modde states that malpractice is an inevitable result of chiropractic training and philosophy.

How widely the subluxation theory is believed among chiropractors is uncertain. Quigley attempted to measure this in 1981. Eighty-eight percent of 268 responding chiropractors gave subluxations in musculoskeletal problems an importance of 70 percent or more. Sixty percent of 265 respondents gave subluxations in visceral disorders a rating of 70 percent or more (Quigley 1981). Even less is known about the proportion of chiropractors who believe in the metaphysical Innate Life Force.

Factionalism

Chiropractic has become a conglomeration of factions in conflict, bound together only by opposition to outside critics. At least a dozen different notions about how the spine should be corrected divide practitioners. Some say only the Atlas needs adjusting; others go to the other end of the spine and say only the sacral area is important. Still others use both ends (sacro-occipital). Several adhere to specific vertebral levels for specific organs or diseases. Some measure leg lengths or test muscles—called “applied kinesiology” (A-K)—for weakness or strength in association with foods, colors, music, and just about anything else. (Even A-K’s originator expressed skepticism about the technique being used to determine one’s personal star.)

The most obvious rift among chiropractors is between “straights” and “mixers.” Straights adhere more to chiropractic’s original theory and practice, while “mixers” (a term applied by the straights and abhorred by the mixers) may incorporate almost any modality into their practices. The ICA is the straights’ national organization, and the ACA represents mixers.

The utter confusion within chiropractic over subluxations, scope of practice, and other important health-care issues was rediscovered by the U.S. Department of Health and Human Services’ Office of Inspector General (OIG) in 1986. According to its report: “Heated controversy regarding chiropractic theory and practice continues to exist. . . . On-site and telephone discussions with chiropractors and their schools and associations, coupled with a review of background materials . . . result in a picture of a profession in transition and containing a number of contradictions. . . . There continues to be some disagreement within the profession regarding which conditions are appropriate for chiropractic care and regarding appropriate parameters for treatment.”

The OIG investigators also made note of “the problem side of chiropractic.” The report states: “Despite the evidence which was presented during the study regarding the increased emphasis on science and professionalism . . . there also exist patterns of activity and practice which at best appear as overly aggressive marketing and, in some cases, seem deliberately aimed at

misleading patients and the public regarding the efficacy of chiropractic care.”

There are also chiropractors who practice rational, conservative spinal manipulative therapy for neuromusculoskeletal disorders. They do not claim to be alternative practitioners but offer their skills as manipulation therapists when such treatment is medically justifiable. What proportion of chiropractors fit this description is unknown. The National Association of Chiropractic Medicine (NACM) was formed in 1984 as an attempt to organize reform-minded chiropractors. There may be a substantial number of rational chiropractors “in the closet,” in which case our view of chiropractic may be distorted by the hucksters and zealots among the guild.

Evaluating Individual Chiropractors

Because of the great diversity among chiropractors, it is impossible to evaluate individual practitioners according to the commonly advanced straights/mixers dichotomy. There is a common misconception that straights are old-fashioned (i.e., unscientific) and mixers are modern (i.e., scientific). Although straights may be labeled “cultists” for adhering to Palmer’s dogma, the additional modalities mixers employ are apt to be just as nonscientific. Mixers utilize colonics, iridology, unproven devices, applied kinesiology (muscle-testing), megavitamins, herbology, crystals, variations of acupuncture, glandular therapy, craniopathy, and a seemingly endless array of dubious diagnostic, prescription, and therapy procedures.

Of course those who use questionable methods can be rejected as untrustworthy on that basis alone, but because chiropractors are very philosophical, individuals can be challenged on the basis of *why* they manipulate. True-believer chiropractors would be loath to admit that their ministrations are so mundane as to deal with effects rather than basic causes. This topples them from their imagined dominance as “the true physicians” to merely therapists. Rational chiropractors will readily admit that SMT relieves *effects* not *causes*. The fact that they mainly provide temporary somatic relief, rather than dealing with the causal factors of disorders, is evidenced by the large amount of repeat business they generate. Too frequent treating is a factor noted by nearly every commission that has evaluated chiropractic. Third-party payers commonly control chiropractic costs by limiting the number of treatments or the annual amount for which devotees may receive reimbursement.

Individual chiropractors may also be judged according to their opposition or endorsement of scientifically established public-health practices, such as fluoridation, immunization, pasteurization, and modern food technology. Chiropractors are often in the forefront of anti-scientific social movements opposing such practices.

Patient Loyalty

Despite its appalling lack of science, chiropractic has a loyal following of clients. I believe this can be credited to the somatic relief of SMT and the

psychological aspects of chiropractic care. SMT involves the laying on of hands, which reportedly has the effect of relaxing the patient. The laying on of hands also is said to increase suggestibility, which enhances the placebo effects of SMT. Reformer Samuel Homola, D.C. (1963) says:

The majority of the “subluxations” commonly found by many chiropractors are likely to be painless and imaginary. In replacing these imaginary subluxations, the practitioner places his hands upon the patient’s back and applies a sudden thrust, causing the bones to come together, making a noise like the “crushing of an old basket.” This thrust, with “popping” of the vertabrae, has a tremendous psychological influence over the mind of the healthy patient as well as over the mind of the sick patient. While the popping sound itself is quite meaningless . . . (such as “cracking” the knuckles) . . . this influence might be used to advantage in curing psychosomatic conditions—provided the patient is informed that the bone is “back-in-place” and will stay there. By the same token, however, such treatment used on the mentally unstable and nervous person can cause a great deal of harm; that is, by perpetuating a psychosomatic condition or even creating a new psychological illness.

Thus Homola points out that the placebo effect is not without potential for harm. By experiencing relief, the patient is *taught* illness through operant conditioning. In addition to the direct physical effects Homola describes, chiropractors engage in a great deal of verbal conditioning. Manipulation itself can feel good (although it can also be painful) and can be addictive, according to reformer Charles DuVall, D.C. (1984).

Chiropractors have been shown to be better at satisfying patients than medical doctors are. This is because they validate patients’ problems medical doctors tend to minimize, offer simplistic explanations about health and disease, and work at being friendly. Chiropractic also offers both a mechanistic and a metaphysical explanation for its effects, appealing to both needs. Chiropractic rhetoric has adapted itself to contemporary favors of “holistic” health-care. In fact, chiropractic is not holistic but spine-centered, but this seems to escape notice.

Selling Chiropractic

Success promoters who give seminars to train chiropractors in psychological patient manipulation are a notorious problem within chiropractic. I study a wide variety of health pseudosciences, but I know of no other guild that has formalized the education of practitioners in patient deception. While many of the procedures taught are simply good office practice, many others are fraudulent. (See Barrett 1980.)

Former ACA public-relations consultant Eric Baizer says the ACA conducts an aggressive public-relations program aimed at selling chiropractors as family doctors and primary-care providers. Baizer (1983) describes how as a PR expert he defended chiropractic publicly by responding to negative press reports. He says he employed stock answers and reusable clichés—what one writer termed “factoids” (i.e., statements designed to *resemble* facts). “For

example,” Baizer wrote, “if someone attacked the quality of chiropractic education, we would point out that chiropractors attended colleges accredited by an agency recognized by the U.S. Office of Education—*implying* that the schools must be of high quality. How good is the chiropractic curriculum? How qualified are the instructors? Are inspections of the colleges thorough? These are the kinds of issues best left unexplored.”

Survival of a Pseudoscience

The illusionary “subluxation” not only is the theoretical basis for chiropractic but constitutes its legal basis as well. State acts describe chiropractic as the finding and removal of subluxations. It is enigmatic that such a system thrives late in the twentieth century, which has seen such progress in the biological sciences and health care. While biological scientists have unraveled the genetic double-helix, chiropractors have failed to scientifically define their theory or scope of practice, or to justify their very existence as primary health-care providers.

Chiropractic’s survival and success is undoubtedly due to the reality that there is much more involved in health-care delivery than science. Politics, business considerations, and the clinical art often take precedence. Although it is the scientific validity of the methods employed that justifies modern health-care, in practical terms of survival in the marketplace, chiropractic demonstrates daily that the scientific aspects of health care are of least importance and in *greatest need of protection*.

The chiropractic guild is adept at having its way with politicians. This appears to be primarily due to its applications of business law to the health marketplace. Chiropractors pose themselves as competitors of “allopathic medicine” (a misnomer, since allopathic medicine, which employed bleeding, purging, and so forth, to balance the four Greek humors, was replaced long ago with the emergence of medical science). Unfortunately, regular medicine is regarded by many legislators as simply holding another opinion among differing viewpoints. Chiropractors encourage the concept that they are a separate but equal health-care delivery system. They find allies among those who present science as merely “Western thought” and find the Innate Life Force notion compatible with Eastern metaphysical world-views.

Politicians seem to have trouble differentiating between religious beliefs and beliefs in various forms of health care. Chiropractic’s clientele is loyal, and its political clout is greater than that of its critics. Patients willingly cooperate with chiropractors when asked to send letters to lawmakers. Many subscribe to the myth of a vindictive medical profession out to crush its opposition.

In the final analysis, the validity of chiropractic is not a medical controversy as much as one of the basic biological sciences. Medicare reimburses chiropractors with millions of taxpayers’ dollars each year for removing subluxations allegedly demonstrated by X-rays. Basic biological scientists have a public duty to objectively test a theory as radical as chiropractic’s to

determine if it is valid. The failure to require scientific validation of an entire health-care delivery system sets a disturbing precedent for other nonscientific systems to lay claim to the public purse. Transcendental meditators are trying to qualify for reimbursement in New Zealand, and Christian Science practitioners are paid for faith-healing in this country. Chiropractic and other nonscientific forms of health care will survive until the public demands that scientific justification become a primary qualification for legalization and reimbursement.

Note

1. The National Council Against Health Fraud, Inc., has published a position paper on chiropractic. A single copy may be obtained free by sending a stamped, addressed business-sized envelope to NCAHF, P.O. Box 1276, Loma Linda, CA 92354.

References

- American Chiropractic Association. 1984. *Chiropractic: State of the Art*. pp. 8-9.
- Baizer, Eric. 1983. Inside the American Chiropractic Association: Selling the chiropractor as a family doctor. *CCAHF Newsletter*, 6(1).
- Barrett, Stephen. 1980. *The Health Robbers*. Philadelphia, Pa.: George Stickley.
- College of Physicians and Surgeons of the Province of Quebec. 1966. *The New Physician*, September.
- Crelin, Edmund. 1985. Chiropractic. In *Examining Holistic Medicine*, edited by Douglas Stalker and Clark Glymour, 197-220. Buffalo, N.Y.: Prometheus Books.
- Duvall, Charles. 1984. *Chiropractic Claims Manual*.
- Haldeman, Scott. 1977. The importance of research in the principles and practice of chiropractic. *Worldwide Report*, January.
- Homola, Samuel. 1963. *Bonesetting, Chiropractic, and Cultism*. Critique Books.
- International Chiropractic Association. 1972. *International Review of Chiropractic*, April.
- Quigley. 1981. Chiropractic's monocausal theory of disease. *ACA J. of Chiro.*, June.
- Smith, Ralph L. 1984. *At Your Own Risk: The Case Against Chiropractors*. New York: Simon and Schuster. •