Chiropractic and Type O (Organic) Disorders: Historical Development and Current Thought

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The chiropractic profession originated at a time when the healing arts were comprised of a medley of capricious theories, practitioners, and practices. Early chiropractors claimed to treat and cure a wide spectrum of ailments; however, in this era, the diagnosis and treatment of disease was, by definition, the practice of medicine or osteopathy. To avoid conflict with the law and differentiate chiropractic from medical practice, the profession abandoned medical terminology and chiropractic as a disease-specific intervention in favor of a distinct lexicon and a doctrine of chiropractic as a non-therapeutic philosophy, science and art. This allowed for the possibility that analysis, detection and correction of the chiropractic lesion could indirectly cure or improve a wide range of clinical conditions – both musculoskeletal and organic (Type O) – without infringing upon the practice of licensed healthcare providers.

On the surface, improvement or cure of organic disorders by manual treatment methods seems to be "... a fantastic and totally unacceptable claim." Is improvement or cure by manual treatment methods of non-musculoskeletal conditions possible? Or are such notions implausible and unlikely? The evolution of the profession's claims, management, clinical success or failure with Type O disorders is generally discussed in the historical context of the healing arts and scientific evidence.

Introduction

The genesis of the chiropractic profession occurred when a self taught healer of the late nineteenth century, Daniel David Palmer, manually manipulated the upper dorsal spine of a partially deaf janitor, restoring his sense of hearing. Today, this claim would be met with skepticism or discounted as outright quackery; however, during the 19th century, people would find this claim acceptable, if not likely.

In this treatise, the origination of the chiropractic profession and claims of improvement or cure in cases of Type O disorders by manual treatment methods will be explored in the historical context of the healing arts. Additionally, manual treatment of Type O disorders will be broadly discussed in light of a government investigation and the scientific literature.

The Healthcare Landscape and Medical Education circa 1800-1900

During the early nineteenth century, healthcare was a hodgepodge of capricious theories, practitioners and practices: approaches included allopathy, herbalism, Thomsonism, homeopathy, Grahamism, hydropathy, Seventh-day Adventism, phrenology, Fletcherism, Christian Science, magnetic healing, osteopathy, patent medicines, Mesmerism, electro-medicine, divine

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healing and physical culture, among others. More was known about human anatomy than ever before, yet the healing arts still reflected local customs, traditions and spiritual influences in ridding the body of physical ailments.

Although allopathic medicine is the primary method of care in today's society, at the turn of the twentieth century, a visit to an allopath was often a last resort. Allopathic physicians believed that the harshness of the remedy should be proportional to the severity of the disease, meaning the sickest patients often received the most invasive treatments. "Heroic therapy," including regimens of bloodletting, purgatives and emetics, was often more harmful than the disease itself. Ludmerer notes, "It was estimated that a patient in 1900 stood only a fifty-fifty chance of benefiting from an encounter with a random physician." Thus, it is not surprising that alternatives to "orthodox" allopathic medicine existed at this time as patients were commonly afraid of accepted techniques.

In the late 1800s, however, medical education in the United States was primarily by apprenticeship with no formalized academic standards for the training of physicians. Consequently, most allopathic physicians were no better off in terms of the foundation of their methodologies than their "unorthodox" counterparts. It was not until 1910, with the publication of the Flexner Report describing medical education as a shambles, that the orthodox medical establishment made sweeping changes to improve the quality of medical education. In his landmark report, Abraham Flexner exposed the following:

A) Most medical schools required only a high school diploma as eligibility for enrollment;
B) Few schools assigned grades or gave examinations;
C) A standard course of study lasted from sixteen to twenty weeks;
D) Laboratories and libraries were all but non-existent in most institutions;
E) The primary method of instruction was lecture with little personal contact between student and professor, or between student and patient;
F) At many schools, students could fail several courses and still obtain a medical degree; and,
G) 120 of the more than 150 medical schools in operation should be closed.

Flexner's report also suggested that the quality of medical education, with variable curricula and training, was further diluted by insufficient funding for facilities and the faculty necessary to effect a scientifically rigorous course of study. When the Johns Hopkins School of Medicine was opened in 1893, the school Flexner held up as ideal, American theological schools had endowments of approximately eighteen million dollars, whereas medical school endowments totaled five hundred thousand dollars. Funding for medical education was as lacking as the scientific discoveries needed to advance appropriate care and treatment.

While medicine was practiced haphazardly in the late 1800s, there were also few reliable treatments available. For example, penicillin would not be discovered until 1928 and would not be mass produced until 1943. The most common cause of death in the era of the founding of the chiropractic profession was infectious disease, namely pneumonia and tuberculosis. Mankind was involved in a death match against his own filth and the bacteria and viruses that thrived in the relatively poor sanitation of the period.

It was in this environment that rival methods to allopathic medicine found fertile soil in which to grow and flourish. These rivals found equal footing with allopathic medicine for the relief of human suf-
ferring, claiming to have solutions to all manner of ailments. In this milieu, it is not surprising that D.D. Palmer, practicing his newly established healing art of chiropractic in the Ryan Building in downtown Davenport, Iowa, claimed improvement or cure of a wide variety of disease entities presenting to his clinic. A full-page advertisement from a local broadside contains the following Palmer proclamation:

I treat all diseases, but it might be well to mention here a number of diseases in the treatment of which medical doctors rarely meet with success, whereas Chiropractics seldom fail.

Diphtheria--People say: "We can readily understand how your treatment will cure rheumatism or diseases of the joints, but you certainly do not claim to cure diphtheria." I do claim to cure diphtheria in its most malignant forms.

Bowel Troubles--Diarrhoea, flux, constipation, and, in fact all diseases of the stomach, intestines and peritoneum are relieved by restoring harmony to the vital forces.

Insanity--Has in many cases yielded to chiropractic treatment. Many cases are caused by mechanical injury.

Fever--By taking off the pressure upon nerves and controlling the caliber of small arteries.

Smallpox being cured by one or two treatments.

Female Diseases--Are very successfully treated. Local treatment is not necessary.

Goitre--Is always caused by pressure upon the nerves, and we know how to take off the pressure.

Asthma--Medical men will tell you that only a change of climate will bring relief. The trouble is, they don't know the cause. Asthma has been cured by Chiropractic treatment in one treatment. Irritation of nerves causes the spasmodic contraction, and removal of the irritation cures the disease.

To mention all the diseases treated successfully by Chiropractic would take more printer's ink than I could afford to buy, but perhaps I have mentioned enough to convince the reader that my method of treatment is not limited to the cure of a few simple troubles.11 (author's emphasis)

Figure 1 is a reproduction of the advertisement for the Palmer School and Infirmary.

Chiropractic and the Law

Prior to chiropractic licensing laws, chiropractors were routinely arrested, indicted and convicted on charges of practicing medicine or osteopathy without a license.12 D.D. Palmer himself was convicted on 28 March 1906 of practicing without a license and was sentenced to a fine of $350, or 105 days in the Scott County jail. Palmer refused to pay the fine and was incarcerated.13 Palmer's early writings and broadside advertisements provide evidence that the language he used to describe his methods included the diagnosis and treatment of disease.11 By definition, diagnosing and treating disease was the practice of medicine or osteopathy.

The first acquittal of a chiropractor arrested on the charges of unlicensed practice was secured, in part, due to the legal strategy employed by defense counsel Tom Morris. As described by Troyanovich and Keating,13 and Rehm,14 the saga concerning Japanese immigrant and Palmer School of Chiropractic graduate Shegetaro Morikubo on the charges of the unlicensed practice of osteopathy in La Crosse, Wisconsin in 1907, was strategically devised to legally differentiate chiropractic from the practice of medicine. The story is revisited here to provide context as to why medical terminology was abandoned in favor of a vocabulary and practice philosophy different from that espoused by either allopathic or osteopathic medicine:

Prior to the Morikubo v. Wisconsin case in 1907 in La Crosse, two other chiropractors, G.W. Johnson and E. J. Whipple, had been arrested on unlicensed practice charges and Whipple had been convicted (11 October 1905). At Whipple's trial, D.D. Palmer
Figure 1. 14 June 1902 Davenport Times advertisement for the Palmer Chiropractic School and Infirmary
had served as the expert witness for the defense, but his efforts in this case—as with his own case five months later—would fail to convince the jury that his beloved chiropractic was different in principle or practice than medicine or osteopathy.

In a carefully thought out plan, Shegetaro Morikubo was dispatched to La Crosse to establish his own chiropractic practice with the intent of enticing the authorities to arrest him on unlicensed practice charges. This did in fact occur and local attorney, Tom Morris was hired to mount a defense.

Morris did not use the expert testimony of either D.D. or B.J. Palmer; the younger Palmer had never testified in court and the elder Palmer had not demonstrated himself to be a skilled or convincing witness. Also, the literature produced by the Palmers would be of no help to Morris or his client, Morikubo. Instead, Morris turned to the writings of one Solon Massey Langworthy, a dual degree holder in both osteopathy and chiropractic, who established the American School of Chiropractic in Cedar Rapids, Iowa in 1903.

Langworthy was responsible for a number of improvements to the profession. He was the first to use the term "subluxation" in chiropractic; established a systematic curriculum of lectures and clinical work for his school; published the first regular journal; co-authored and published the profession's first textbooks; and, was the first to sponsor legislation to regulate the profession.15, 16

As a dual degree holder, Langworthy was uniquely qualified to outline the differences between chiropractic and osteopathic manual methods. Additionally, he was able to articulate the difference between chiropractic theory and practice philosophy and that of medicine or osteopathy: chiropractors did not diagnose and treat disease. Rather, chiropractors analyzed the spine and adjusted vertebral subluxations that caused interferences to nerve transmission by pinching nerves at the intervertebral foramen. With vertebral subluxations reduced, pinched nerves were released from pressure, normal nerve transmission was restored to end-organs and “Nature” effected the cure. Therefore, spinal adjustments applied by chiropractors were not therapeutic in character, but instead an intervention aimed at fortifying the mechanics of human structure which in turn resulted in improved nervous system activity. This is how the profession differed from either medicine or osteopathy, according to the Langworthy tenets.

The Langworthy Doctrine

Further evidence of the difference in which the Palmers and Langworthy promoted their chosen profession can be seen in an advertisement for the Langworthy school and practice. Figure 2 is a reproduction of a public notice from a 1904 Cedar Rapids, Iowa broadside. In contrast to Palmer’s 1902 advertisement, Langworthy proclaimed that nature—not the chiropractor—effected the cure of patients’ ills.

Langworthy rejected medical terminology in favor of a different lexicon and a doctrine of chiropractic as a non-therapeutic philosophy, science and art. This also allowed for the possibility that analysis, detection and correction of the chiropractic lesion could result in improvement or cure of a wide range of clinical conditions—both musculoskeletal and organic—without infringing upon the practice of other licensed healing arts. Under the guidance of Tom Morris, B.J. Palmer adopted the Langworthy doctrine as a means to protect chiropractors and the profession from persecution under existing laws.13,14

By 1918, due chiefly to personal difficulties, Langworthy disappeared from healthcare. His influence on the chiroprac-
Figure 2. American School of Chiropractic advertisement circa 1904 from a Cedar Rapids, Iowa, broadside.
tic profession would be indelible, though largely invisible, as B.J. Palmer seized the helm of the profession from both his Cedar Rapids competitor and his father. The Langworthy doctrine was propagated by B.J. Palmer until his death in 1961, and influenced how the profession described the potential effect chiropractic adjustments might have on any or all body systems for decades.

**Organic Disorders, Manual Treatment Methods and Modern Allopathic Medicine**

Although it may seem implausible that manual treatment methods could result in any improvement or cure of organic disorders, medical practitioners have described the phenomenon of patients who have been helped by the use of manual treatment methods for Type O conditions. For example, orthopedic surgeon J. F. Bourdillon, physical medicine and rehabilitation physician E.A. Day, and physiotherapist M.R. Bookhout have made the following statement about the account of Harvey Lillard, the man whose hearing was restored by a spinal adjustment at the hands of D.D. Palmer:

On the face of it this is a fantastic and totally unacceptable claim. As a result of personal experience, however, there is no doubt in the mind of at least one of the authors that dysfunction in the joints in the upper thoracic spine can affect the function of the inner ear, presumably by way of its sympathetic innervation.17

Kunert, a German medical physician states,

... lesions of the spinal column... are perfectly capable of simulating, accentuating or making a major contribution to organic diseases. There can... be no doubt that the state of the spinal column does have a bearing on the functional status of the internal organs.18

Lewit, a practicing neurologist and advocate of manual treatment methods has discussed the role of the interplay between the musculoskeletal system and the body's internal organs. He states:

There is little room for controversy if our present knowledge about referred and radiating pain is taken into account. Melzack and Wall (1965) and Milne et al. (1981) have shown that nociceptive stimuli from all structures in a segment converge to cells in lamina V of the basal spinal nucleus. This, of course, also applies to pain coming from internal organs. It is, therefore, easy to see that the locomotor system can readily simulate visceral pain, and vice versa, and that this constitutes an important aspect to be taken into account in differential diagnosis. If this is clear, then the therapeutic consequences should not cause much controversy.19 (author’s emphasis)

Lewit suggests that the spine may play a role in promoting organic/visceral disease and terms this possibility as conditions having a "vertebrogenic factor."19 He goes on to describe his experimental and clinical experience using spinal manual therapy to treat conditions as varied as heart disease, digestive problems, dizziness, respiratory difficulties, migraine, gynecological disorders, tonsillitis, and an assortment of other human ailments after serious pathology has been ruled out.

G.P. Grieve, a British physiotherapist, is the author and editor of several publications regarding manual treatment methods. In his text, *Mobilization of the Spine*, he states:

All those experienced in manipulation can report numerous examples of migrainous headaches, disequilibrium, subjective visual disturbances, feelings of retro-orbital pressure, dysphagia, dysphonia, heaviness of a limb, extrasegmental paraesthesia, restriction of respiratory excursion, abdominal nausea and the cold sciatic leg being relieved by manual or mechanical treatment of the vertebral column.20

Thus, chiropractors are not the only healthcare practitioners to observe the potential effect spinal manual methods may have on the organs or viscera of the human body.
The Commission of Inquiry Into Chiropractic

Over thirty years ago, the effect chiropractic manipulation might have on organic disorders was addressed as part of a government commissioned study. The inquiry took place in New Zealand and the published proceedings became known commonly as The New Zealand Report.21 The purpose of the inquiry was to consider whether chiropractic services should be included for reimbursement in New Zealand's socialized healthcare benefits package. The Commission of Inquiry sought evidence from a wide variety of sources in New Zealand as well as Australia, the United Kingdom, Canada, and the United States. The Commission received 264 exhibits and acquired over 3,600 pages of oral testimony.21 The New Zealand study is considered the most in-depth investigation of the chiropractic profession ever undertaken.

Chapter ten of the published report specifically addresses the potential effect chiropractic manipulation might have on organic or visceral disorders. The Commission referred to these conditions as "Type O" disorders to distinguish chiropractic management of these types of conditions from musculoskeletal disorders (that the Commission designated as "Type M" disorders).

The Commission of Inquiry found that essentially all practitioners of manual treatment methods (chiropractors, osteopaths, medical manipulators, physical therapists, and lay manipulators) can report improvement or cure in cases of organic disorders. The Commission of Inquiry’s published report states:

A number of medical experts told the Commission that the results chiropractors and their patients claimed in Type O (organic) cases were unlikely to be the results of spinal manual therapy. . . However, at the same time no medical expert was prepared to say that such results were impossible, simply because knowledge of neurophysiology had not advanced to a point where the possibility of such results from spinal manual therapy—however remote he might think they were—could positively be excluded.21

Due to the compelling neuroanatomic and anecdotal evidence presented, the commission concluded that occurrences of improvement or cure by manual treatments in cases of organic disease were possible. However, the commission also concluded that the results obtained by manual treatment methods in cases of visceral disease were so unpredictable that the patient should be under concurrent medical care.

It is also important to note that the New Zealand Report clearly stated that chiropractors DO NOT treat organic disease, but rather, treat spinal column dysfunction. To emphasize this point one may look again to the New Zealand Report for an explanation:

The chiropractor does not set out to cure or relieve a particular ailment. What he sets out to do is to ensure that the spinal column is functioning normally. If a particular ailment clears up or is relieved following therapy, so much the better. If it does not, then at least the patient, now with no spinal impediment to the working of his nervous system, ought to be in a generally better condition and better able to cope with the ailment. 21

This explanation should seem familiar to the reader as it is simply a restating of the Langworthy doctrine already discussed.

As a result of the testimony and evidence presented regarding chiropractic care and Type O disorders, the Commissioners of the New Zealand Report came to several specific conclusions and recommendations. The report states:

If a patient with a Type O disorder wishes to consult a chiropractor in the hope that some relief can be obtained, there is no reason why he should not do so, provided there are no contraindications to spinal manual therapy, and provided he is encouraged to remain under medical care. . . Chiropractors should be careful to avoid giving any impres-
tion that spinal manual therapy will necessarily be beneficial to a patient with a Type O disorder. In particular chiropractors should in such cases do nothing which discourages a patient from remaining under medical care. Ideally the chiropractor should regularly consult the patient's own doctor, although present medical attitudes may rule that out as a realistic possibility.21

The B.J. Palmer Research Department

In 1935, B.J. Palmer established a research department in the B.J. Palmer Chiropractic Clinic to document improvement of patients with a wide variety of ailments presenting for chiropractic evaluation. The research department had a medical unit and chiropractic unit. In the medical unit, two "medical men" were staffed to document symptoms and pathology and derive a medical diagnosis for each patient.22 This allowed Palmer to retain documentation in the standard medical format of the period that, he believed, validated his care of patients and provided evidence of improvements made in various human physiologic parameters as a result of chiropractic care.

Palmer published the results of his findings in a series of bulletins. Five of the bulletins (Figure 3) issued from the research clinic covered changes in blood values,23 urological values,24 audiometric measures,25 electrocardiographic improvements,26 and basal metabolic improvements27 that Palmer reported were a result of specific chiropractic adjustment of the upper cervical area.

B.J. Palmer's efforts at validation and clinical research are commendable considering he had no formal training in research methodology. Perhaps one of the most significant shortcomings of Palmer's research is that there are no control groups against which to make comparisons. With no control groups, all patient improvements may have been due to natural history or regression to the mean. However, if one considers that the first published prospective randomized clinical trial did not appear in the medical literature until 1948,28 Palmer's efforts were praiseworthy for their day.

Chiropractic Research and Evidence in the 21st Century

Many have followed in BJ Palmer’s footsteps to document the effectiveness of chiropractic, and with great success. At present, there are at least fifty prospective randomized clinical trials published in the indexed medical literature supporting the efficacy of chiropractic for neck, back and headache pain. However, the evidence for the effectiveness in treating Type O disorders remains mixed.

In 1995, Troyanovich authored an article in the popular chiropractic literature titled, “I Don’t Believe in Chiropractic!”29 He argued that belief implies faith or trust without proof and, in the case of chiropractic, it was proven that chiropractic was effective in treating neck, back and headache pain. Troyanovich also reviewed the evidence for Type O disorders, presenting a table with thirty-nine citations pertaining to the chiropractic care of non-musculoskeletal conditions from the indexed literature. These articles reviewed chiropractic patients receiving care for headache, infantile colic, hyperactivity, enuresis, premenstrual syndrome, dysmenorrhea, child birth, cardiovascular conditions, seizure disorders, otitis media and blindness (Figure 4). While the list of conditions aided by chiropractic spinal manual methods may be impressive, it is not scientifically compelling as the majority of the reports are anecdotal in nature. In an anecdotal case report the number of subjects is equal to one (n=1). Even if one were to amass hundreds of case reports about the same condition, the evidence would still be anecdotal at best. A plurality of anecdotes is not equivalent to scientific data derived from properly controlled and randomized
Figure 3. Five of the bulletins issued from the B.J. Palmer Chiropractic Clinic and Research Department.
clinical trials. In 2002, Meeker, Mootz and Haldeman authored a report on the status of chiropractic research. In their review of the literature they discuss the findings of ten randomized clinical studies of chiropractic care for a number of Type O disorders. In regard to the findings of these clinical trials they state:

Randomized clinical trials for primary dysmenorrhea, hypertension, chronic asthma, enuresis, infantile colic, and premenstrual syndrome have been completed in recent years with variable results. Two systematic reviews, one on extant trials at the time and one recently on asthma sponsored by the Cochrane Collaboration, concluded that the results so far do not argue convincingly for or against the utility of spinal manipulation for these kinds of conditions. Finally, in 2007 Hawk et al. published a systematic review of the scientific literature with respect to chiropractic care for nonmusculoskeletal conditions. Their search located 179 articles addressing 50 different nonmusculoskeletal diagnoses. These articles were comprised of 122 case reports or case series, 47 experimental designs (14 of which were randomized clinical trials), nine systematic reviews of the literature and one cohort study. They conclude:

Evidence from both controlled studies and usual practice is adequate to support the 'total package' of chiropractic care, including

Figure 4. Table of Type O disorders cared for by chiropractors from the indexed literature. Reprinted with permission of the author.

<table>
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<th>Condition</th>
<th>Citation</th>
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spinal manipulative therapy, other procedures, and unmeasured qualities such as belief and attention, as providing benefit to patients with asthma, cervicogenic vertigo, and infantile colic.

Evidence was promising for the potential benefit of manual procedures for children with otitis media and for hospitalized elderly patients with pneumonia.

Evidence did not appear to support chiropractic care for the broad population of patients with hypertension, although it did not rule out the possibility that there may be sub-populations of hypertensive patients who might benefit.

Evidence was equivocal regarding chiropractic care for dysmenorrhea and premenstrual syndrome . . .

There is insufficient evidence to make conclusions about chiropractic care for patients with other conditions.31

The findings summarized by Meeker, Mootz and Haldeman and Hawk et al. echo the unpredictable nature of the effects of chiropractic care on Type O disorders that the Commissioners of the New Zealand study described over 30 years ago. Hawk and colleagues, work, however, seems to have a slightly different perspective in that they attempt to define those conditions for which chiropractic care may have more beneficial results.

Chiropractic Management of Type O Disorders in the Modern Era

The entire discussion presented above may be purely academic in the present time. In 1998, an article published in the American Journal of Public Health reported on the demographics of 1,916 patients whose records were randomly selected from 131 chiropractic offices in five cities in North America (four U.S., one Canadian). Hurwitz et al.32 reported that low back problems constitute two-thirds of the patients treated by chiropractors with headache, neck pain and extremity complaints making up almost all the rest. Interestingly, only one percent of chiropractic patients had non-musculoskeletal diagnoses.

One might speculate as to Hurwitz et al.’s findings: Is it possible that modern medicine has evolved to the point where medicine’s effectiveness for many or most Type O disorders has essentially eliminated chiropractic care as a reasonable option for most patients? Or perhaps, chiropractic has evolved in the public’s consciousness to a profession with a singular musculoskeletal focus? Or is it that the influence of third party reimbursement has resulted in chiropractors only documenting musculoskeletal conditions in their patient records to insure payment? Or perhaps, the unpredictable nature of chiropractic’s effect on organic disorders has reduced the number of patients seeking this type of care? Only future research will be able to address the veracity of these speculations.

Summary and Conclusion

The chiropractic profession originated at a time in history when many types of healers, health theories, and health practices co-existed. Suffering humanity sought help from the many players in this motley collection due to the lack of effective treatments for scores of mankind’s ills. Both governmental and scientific investigators have uncovered strong neuroanatomic and compelling anecdotal evidence for the success of spinal manual methods in treating Type O disorders; however, investigators also recognize that patients’ results are unpredictable.

In the future, researchers may identify some types of organic disorders with a vertebrogenic etiology. If this occurs, medical physicians and doctors of chiropractic will have a better understanding about which organic entities might respond predictably to spinal manual therapies. Currently, however, improvement or cure in cases of organic disorders as a result of chiropractic treatment remains an unpredictable side-effect of restoring mechanical integrity to patients’ spines.
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