Chiropractic Identity: A Neurological, Professional, and Political Assessment

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Abstract

Objective: The purpose of this article is to propose a focused assessment of the identity of chiropractic and its profession, triangulating multiple viewpoints converging upon various aspects and definitions of neurology, manual medicine, and alternative or mainstream medicine.

Discussion: Over 120 years since its inception, chiropractic has struggled to achieve an identity for which its foundations could provide optimal health care. Despite recognition of the benefits of spinal manipulation in various government guidelines, advances in US military and Veterans Administration, and persistently high levels of patient satisfaction, the chiropractic profession remains underrepresented in most discussions of health care delivery. Distinguishing characteristics of doctors of chiropractic include the following: (1) they embrace a model of holistic, preventive medicine (wellness); (2) they embrace a concept of neurological imbalance in which form follows function, disease follows disturbed biochemistry, and phenomenology follows physiology; (3) they diagnose, and their institutions of training are accredited by a body recognized by the US Department of Education; (4) they manage patients on a first-contact basis, often as primary care providers in geographical areas that are underserved; (5) the spine is their primary—but not exclusive—area of interaction; (6) they deliver high-velocity, low-amplitude adjustments with a superior safety record compared with other professions; and (7) they use a network of institutions worldwide that have shown increasing commitments to research.

Conclusion: This article provides an overview of chiropractic identity from 6 points of view: (1) concepts of manual medicine; (2) areas of interest beyond the spine; (3) concepts of the chiropractic subluxation; (4) concepts of neurology; (5) concepts of mainstream or alternative health care; and (6) concepts of primary care, first-contact provider, or specialist. (J Chiropr Humanit 2016;23:35-45)

Key Indexing Terms: *Manipulation, Spinal; Neurology; Chiropractic; Complementary Therapies; History, 20th Century*

Introduction

From its origins in 1895 with DD Palmer's original focus on magnetic healing,[1] chiropractic identity has been beset with the challenging task of keeping up not only with clinical and scientific observation but with political trade winds involving public perception and the marketplace of health care. Originally, DD Palmer viewed the body from a more mechanical viewpoint, like a machine, for at the turn of the 20th century he indicated that:

> "A human being is a human machine and, like a machine, would run smoothly, without any friction, if every part was in its proper place. If every bone, nerve, and all blood vessels, muscles, etc., were just right, there would be nothing wrong. A Chiropractic looks the human machine over, and finds what parts are out of place, why the blood does not circulate freely to all parts, why the nerves cry out with pain. Disease is the effect or result of some part of the body being disarranged. To put them in their proper place, would give the diseased person ease, and allow Nature to rebuild without being obstructed".[1]

With that in mind, DD Palmer paid particular attention to the nerves:

> "The human body is a bundle of fine sensitive nerves, passing over, under, and between the two hundred bones and many muscles and ligaments. These nerves are liable to be pinched, strained, stretched, or pulled out of place by the displacement of any one of the bones, muscles or ligaments, causing any of the many nerve diseases."[1]

It was from this origin that the popular but often misinterpreted concept grew that doctors of chiropractic dealt with "bones out of place," the locus of such derangements being the spine. Wrestling with what would become a perennial question of chiropractic identity nearly a century later, the World Federation of Chiropractic (WFC) organized 2 years of workshops, driven in part by a survey conducted by Manifest Communications that emphasized what had become

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a disparity between what the public and doctors of chiropractic commonly perceived as chiropractic treatment. By a wide margin, the survey and various studies suggested that doctors of chiropractic were managing primarily musculoskeletal problems with emphasis upon back pain.[2–5]

Taking these findings to the WFC Congress in Sydney, Australia, in June of 2005, the Identity Consultation Task Force concluded the following: (1) It is important for the profession to have an identity; (2) most agree that the chiropractic profession suffers from an unclear identity and position within today's health care plans; and (3) it is important to understand how doctors of chiropractic think that the profession *should* be viewed and how they believe that *it is actually viewed*. Here one finds substantial discrepancies: (1) whether the profession offers primary or specialist health care; (2) whether the profession is mainstream (ie, core to the health care delivery system) or if it is an alternative; and (3) whether the profession offers wellness and nonsurgical, nondrug health care or simply manages back, neck, and spinal problems.

The final Identity Consultation Task Force Final Report that emerged from the 2005 WFC Conference[2] concluded that a leading statement of identity was mandatory to be:

> "…established and maintained through the use of the following three linked concepts:
>
> 1. A leading statement on identity, which must be clear, concise, and immediately relevant to both the public and the profession—the 'pole' (brand platform).
> 2. Several important qualifying statements, which provide the necessary context and foundation for the pole—the 'ground' (brand pillars).
> 3. A description of the qualities or essential personality of chiropractors—the 'personality' (tone)."

The "pole" was that doctors of chiropractic should be regarded as "the spinal health care experts in the health care system." The ground statements emphasized (*a*) a patient-centered approach to health care; (*b*) wellness; (*c*) the self-healing powers of the individual; (*d*) avoidance of the use of drugs and surgery wherever possible; (*e*) examination, diagnosis, and treatment based upon available research; and perhaps the most critical element of all, (*f*) the relationship between the spine and the nervous system.[3]

In adopting these identity statements by consensus, the WFC Conference clearly identified the spine as an element, without which most perceptions of chiropractic were assumed to wither away, wiping out chiropractic's identity in the process. This raised the question of whether the public would now regard the profession as a specialist form of health care delivery and fail to perceive the spine as a dynamic entity that is hard-wired into the nervous system, such that the latter network and actual scope of practice of the profession would be overlooked. In other words, there would be a repudiation of the framework with which chiropractic needed to be regarded as expressed by none other than DD Palmer:

> "Life is the expression of tone. In that sentence is the basic principle of chiropractic. Tone is the normal degree of nerve tension. Tone is the expression in function by normal elasticity, activity, strength and excitability of the various organs as observed in a state of health."[6]

As Joseph Brimhall, President of the Council of Chiropractic Education and Director of the Council of Chiropractic Education International, explained, there was no wording in the accreditation standards of the Council of Chiropractic Education (US), the Model Standards of Council of Chiropractic Education International, or other jurisdictions that restricted the chiropractic profession to the spine.[7]

Adding fuel to these fires of unrest are 2 major questions, 1 philosophical and 1 as to whether the chiropractic profession is based upon the chiropractic subluxation (including a meaningful definition of the latter) and should offer limited prescriptions, given that the medical profession has shown in several instances to be deficient in understanding and especially diagnosing a variety of musculoskeletal conditions.[8–11]

Chiropractic's identity thus remains, at best, a work in progress and, at worst, a matter of considerable controversy. Therefore, the purpose of this article is to address this dilemma through discussion of the following 6 topics: (1) concepts of manual medicine; (2) areas of interest beyond the spine; (3) concepts of neurology; (4) concepts of the chiropractic subluxation; (5) mainstream or alternative; and (6) primary care, first-contact provider, or specialist.

Concepts of Manual Medicine

Chiropractic occupies 1 niche in the broad field of physical or manual medicine that spans soft tissue, mobilization, and manipulation techniques.[12–16] Included in the manual medicine portfolio are such interventions as osteopathic manipulative medicine, massage, physical therapy, McKenzie method, craniosacral therapy, myofascial release, Rolfing structural integration, Qigong, Shiatsu, and even acupressure.[17] Although chiropractic has attempted to define its niche in spinal manipulation using short-lever, high-velocity, low-amplitude (HVLA) techniques,[18] those approaches are not fully circumscribed by doctors of chiropractic alone. The challenge becomes even greater when one attempts to reconcile the nearly 100 named chiropractic techniques that have been identified by Bergmann.[19] From such an expanded catalog, it is apparent that a vast array of low-velocity, soft-tissue, and even instrumental techniques are included, which speak to an extensive overlap with other branches of manual medicine. Craniosacral therapy and myofascial release, for example, are commonly practiced by osteopathic manipulative therapists.[20] And HVLA manipulations, which traditionally have been associated with doctors of chiropractic, have also been applied

by osteopaths,[21] physical therapists, German medical therapists, and practitioners of Chinese medicine.[21,22] Part of the identity problem is that doctors of chiropractic are often included with other practitioners. However, the literature shows an inferior safety record with the other professions and laypeople having had lesser training and/or displayed less competence in musculoskeletal medicine.[23–25] The superior safety record of doctors of chiropractic compared with other manual therapists clearly stands out as a distinguishing characteristic of chiropractic.[26] The safety of the HVLA procedures delivered by doctors of chiropractic has been shown to be greater than what has been encountered in medical procedures.[27,28] In addition, many of the soft tissue techniques applied by doctors of chiropractic could be conflated with approaches used by massage therapists. Therefore, on the basis of overlap with such a broad array of techniques applied by all the above-named practitioners, it would be unproductive to define chiropractic on the basis of manual techniques alone.

Areas of Interest Beyond the Spine

The historical record and majority of rigorous research—as well as the aforementioned Identity Consultation Task Force[1]—has focused upon the spine as the most successful area of intervention with which doctors of chiropractic are identified. Nevertheless, alternatives in addition to the spine in which the usefulness of chiropractic care has been documented include the following:

1. *Extremities*: the successful outcomes regarding chiropractic treatments of the extremities, supported by a body of literature which suggests effective outcomes in managing repetitive motion disorders.[29–32]
2. *Neck muscles*: published reports of chiropractic effleurage of the sternocleidomastoid muscles, proposed to be an effective part of the chiropractic management of otitis media.[33]
3. *Skull*: the successful applications of craniosacral therapy, reported by the National Board of Chiropractic Examiners to have been practiced by 38.0% of doctors of chiropractic in 2003[34] and focusing upon the skull as well as the vertebral canal.[35]
4. *Neck muscles*: the application of myofascial release, also known as *ischemic compression*, directed in at least 1 study to the active upper trapezius trigger points with a successful outcome.[36]
5. *Temporomandibular joint*: chiropractic treatment of temporomandibular disorders, necessarily involving applications to areas of the jaw and sides of the neck, for which a fair level of supporting evidence of effectiveness has been reported.[37]
6. *Hip and knee*: chiropractic management of osteoarthritis of the hip[38] and knee,[39] for which supportive evidence of efficacy has recently been emerging.
7. *Muscles*: chiropractic testing of muscle function in all parts of the body is 1 application (applied kinesiology), reported by the National Board of Chiropractic Examiners to have been practiced by 37.6% of doctors of chiropractic in 2003[25] and involving muscles throughout the entire body.
8. *Nutrition*: nutrition and wellness, major components of health maintenance and prevention, often advocated by doctors of chiropractic. In fact, the National Board of Chiropractic Examiners found in 2003 that more than 96% of the chiropractic profession in America engaged in instructing their patients in health and wellness.[25]

Thus, it is awkward to consider chiropractic interventions to be limited to the spine. The forgoing body of literature shows that treatment limited to the spine should not be considered to be the sole lens through which chiropractic is viewed. Applications by doctors of chiropractic to other regions of the body have demonstrated clinical effectiveness and should not be categorically dismissed.

Concepts of Chiropractic Subluxation

Identity of chiropractic has been intimately associated with the chiropractic subluxation[40,41], a topic of considerable debate within itself. As defined by the Association of Chiropractic Colleges in July 1996 and the subject of texts that have been considered to be definitive,[42] the chiropractic subluxation was regarded to be:

> "… a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health."[43]

Historically, definitions of *chiropractic subluxation* that presented the term in 3 dimensions were beset by a number of challenges[44–46]:

1. In terms of misalignments, it was clear that these could not be detectable by technological methods existing at that time.
2. In terms of aberration of movement integrity, either deficient or excessive motion, reliable measurements of motion remained elusive.
3. In terms of physiologic dysfunction, these could be present with or without pain and could facilitate one's understanding of chiropractic subluxations. But simply presenting a clinical complaint as a physiological dysfunction was essentially a circular argument, begging the question and demanding further clarification.

Therefore, the question has remained whether the chiropractic subluxation could be shown as a clinical reality by objective measurements, in addition to what its attributes

really were. Capturing the proper definition of chiropractic subluxation is a goal that nobody could dispute. Fortuitously, it is the emergence of research with an eye toward systemic and arguably *non*muscular domains responding to spinal manipulation that could be credited with a new, progressive recasting of the chiropractic definition of chiropractic subluxation appearing in the fourth edition of the *Clinical Practice Guidelines* (2013) issued by the Council on Chiropractic Practice which reads[47]:

> "Subluxation is a neurological imbalance or distortion in the body associated with adverse physiological responses and/or structural changes, which may become persistent or progressive. The most frequent site for the chiropractic correction of the subluxation is via the vertebral column."

This groundbreaking concept meant that the term *neurological imbalance* had now emerged into public view, taking precedent over so many of the hidebound terms that used to be grounded in segmental, articular, or vertebral terms from the 1930s for at least 60 years.[41] To what may we attribute this audacious (if not auspicious) turn of events? The Council on Chiropractic Practice itself has stated[33] that "the change in the definition represents the Board's analysis and research into the continued evidence supporting spinal adjustment of dysfunctional vertebra leading to brain metabolic[48] and transient cortical plastic changes in the brain and nervous system."[49] A few more outstanding chapters in research that have paved the way toward this dramatic revision of the chiropractic subluxation's definition are worth citing:

1. The finding that spinal manipulation at the C5/C6 spinal segment is regionally related to the infraspinatus but not gluteus medius muscle, suggesting in the authors' own words that "the primary physiological effect of SMT *may be neurological rather than changed joint mechanics* (italics mine)."[50]
2. The dramatic observation by Karason and Drysdale[51] that an HVLA thrust at the lumbosacral junction produced a significant increase in cutaneous blood flow over the L5 dermatome in nonsmokers but not smokers, suggesting the role of a nicotine-sensitive receptor or other trigger.
3. The award-winning research of Song and his coworkers[52] at Parker College, demonstrating a broad spectrum of anti-inflammatory, joint-specific effects of Activator treatments in a rat model encompassing behavioral, cytological, and neurophysiological benchmarks.
4. The demonstration that a bilateral hypothenar type adjustment accompanied by audible cavitation specifically produced a decrease in the production of the inflammatory cytokines tumor necrosis factor–α and interleukin-1β in human subjects.[53]
5. The revelation that 2 patients with cervicogenic headache after 4 weeks of manipulative therapy posted reductions of tumor necrosis factor–α exceeding 50%.[54]
6. Continuing with observations regarding the inflammatory cytokines, the observation that the direction of strain in cultured fibroblasts determined the levels of specific cytokines produced, raising the practical concern that *the effects of manipulation may vary in patients depending upon tissue strain directions.*[55]
7. Two of the outstanding colic studies, 1 of only 2 areas of pediatric chiropractic care supported by clinical trials and possibly involving nonmusculoskeletal mechanisms, demonstrating that manipulation rapidly produced significant reductions of this disorder.[56,57]
8. The finding that cervical spine manipulation not only altered cortical integration of dual somatosensory input but also changed the way the central nervous system responded to a subsequent motor training (typing) task.[58]

All these findings defined objective physical attributes that could be attributed to what one referred to as the chiropractic subluxation and how chiropractic interventions attenuated this disorder. These concepts suggest a nonmusculoskeletal, systemic disorder that involved neurological function.

These discoveries and the resulting redefinition of the chiropractic subluxation did not exist at the turn of the century in 2000. Casting the chiropractic subluxation in light of these systemic changes brings this discussion back to the original concept of DD Palmer, identifying chiropractic's primary target as the nervous system as quoted above.[7] It also leads directly to the following topic.

Concepts of Neurology

Elaborating upon DD Palmer's manifesto, the link between the systemic effects (anti-inflammatory, somatosensory, behavioral, and cytological) and spinal manipulation is best understood in terms of neurology. An appreciation of this approach begins with a consideration of numerous animal studies as shown in Table 1. These demonstrate that a variety of physiological effects (*a*) are distinct from pain and (*b*) extend far from the area of stimulation. With several of these investigations demonstrating that nerve conductivity is specifically affected,[72–74] it can be construed that the nervous system provides an essential link between the experimentally produced aberrations and the physiological changes observed. Thus, a wide range of stimuli are capable of producing physiological responses, providing a much broader canvas with which chiropractic subluxations and, for that matter, chiropractic identity can be represented in experimental research, again placing the nervous system at the center.

With regard to changes in neural function in response to manipulation, however, a few observations can be brought to light: In their different approaches, all demonstrate inductions

Table 1. *Neural Responses to External Forces in Animal Models*

Animal	Intervention	Effect Observed
Mouse[59]	Ligature implant around sciatic nerve	Inflammation Reduced nerve conduction velocity Facilitation Motor disturbances in gait
Rat[60]	External pressure on L6	Slower nerve conductivity
Rat[61]	Surgical clamp insertion in sciatic nerve with bending at T10-T11	Decreased blood pressure Decreased renal nerve activity
Rat[62]	Ligature implant around sciatic nerve	Changes in gait Changes in nerve conduction velocity Enzymatic changes in denervated muscles
Rabbit[63]	Manual manipulation	Gastric smooth muscle inhibition
Dog[64]	Surgery plus glue injection into bilateral apophyseal joints in upper lateral spine	Impairment of natural killer lymphocytes
Rabbit[65]	Miniature compression cuff around 1 sciatic nerve	Decreased aldolase activity Decreased lactic dehydrogenase activity
Cat[66]	Surgical preparations Percutaneous bradykinin injections into motion segment	Slowly increasing excitatory discharges Expansion of receptive fields Hyperresponsiveness to subsequent stimulation
Rat[67]	Mustard oil injection into para-articular space around C2-C3 joint	Excitatory effects in muscles that were not local including biphasic response
Cat[68]	T3 and T4 dorsal nerve stimulation	Activated cardiac somatosympathetic reflexes
Rat[69]	Dorsal spinal afferent nerve stimulation	Specific somatosympathetic reflex activity
Rat[70]	Saline injection into ipsilateral L4/L5 facet joint	Decreased mean arterial pressure and nerve blood flow
Rat[71]	Skin pinch	Decreased gastric motility

of activities within the nervous system that project responses to manipulation well beyond the area of contact.

1. Abnormal somatosensory evoked potentials from the paraspinal musculature were found to be correlating with decreased pain responses after lumbar manipulation, possibly due to a central effect of sensory processing.[75]
2. In a cohort of 12 subjects with a history of recurrent neck stiffness and/or neck pain but no acute symptoms at the time of study, a single session of cervical spine manipulation revealed a significant decrease in the amplitude of 2 components of somatosensory evoked potentials, lasting 20 minutes following the intervention. The implication was that cervical spine manipulation may alter cortical somatosensory processing and sensorimotor integration, shedding light upon the mechanisms for the relief of pain and restoration of functional mobility which are the most widely observed outcomes to treatment by spinal manipulation.[76]
3. In subjects subjected to side-posture manipulation, both Hoffman reflex and M-wave responses displayed the greatest attenuation with actual manipulation—as opposed to a positioning maneuver.[77]
4. Following sacroiliac joint manipulation, there was a decreased inhibitory effect of knee joint pathology on quadriceps muscle activity, suggesting an interaction between spinal manipulation and the inhibition of voluntary activities produced by pain.[78]
5. Power spectrum analyses of patient electrocardiograms suggested alterations of sympathetic and parasympathetic activity produced by spinal manipulation.[79–81]
6. More recently, in 36 subjects with identifiable myofascial pain syndrome in the infraspinatus and gluteus medius muscles, spinal manipulation at the C5/C6 spinal segment significantly reduced the pressure-pain threshold in the infraspinatus muscle but not the gluteus medius. There was no decrease in either muscle in the sham-treated group. The implication was that the primary physiological effect of spinal manipulation may be neurophysiological rather than changed joint mechanics, in which spinal manipulation produces inhibitory mechanisms in the myofascial tissues.[36]

These observations point toward a model of physiological activity in which form follows function. In so doing, it is useful to frame chiropractic in terms of *functional neurology*, a term in keeping with the more progressive definition of *chiropractic subluxation* and thus more amenable to interpretation, discussion, and ultimate acceptance by both other health care professions and the public. The cachet and impact of functional neurology can be illustrated by the formation of such professional societies as the International Association of Functional Neurology and Rehabilitation and the massive Society for Neuroscience. I had the pleasure of presenting research at the Society for Neuroscience Convention in New Orleans in 2012[82] and found my discussions and presentation on functional neurology widely and warmly received. These are both organizations which have much to offer chiropractic and vice versa and which I believe would both solidify and promote evolving concepts of chiropractic identity.

These examples lead to a vindication of DD Palmer's original concept of the importance of "tone,"[8] an affirmation of the significance of the nervous system as a core element of what chiropractic has attempted to address. Neither the disorder nor the intervention is necessarily confined to a local site, but rather the consequences of the disorder and the therapeutic applications involve systemic effects that could be triggered by the nervous system.

Mainstream or Alternative

A final aspect of establishing an identity of chiropractic addresses the question of whether this discipline needs to be considered a mainstream or alternative branch of health care delivery. Assumptions have been that mainstream status confers battle-tested, scientific validity as opposed to an alternative, the latter sometimes categorized as keeping bad company with, for example, purveyors of laetrile. At the same time, mainstream status may confine chiropractic to a low back or neck role by downplaying interventions outside of these regions. In addition, this recognition ignores the fact that, 35 years ago, little research existed to support what would now be considered mainstream status for chiropractic care for low back pain. In other words, those concluding that chiropractic should be considered only as a mainstream venue would be attaching such strings as "back specialists" or "musculoskeletal pain relievers" to this classification, overlooking the research and interventions that suggest the potential for chiropractic to transcend these boundaries.

Answers to address if chiropractic is mainstream or alternative are best generated by first examining what are varying concepts of alternative medicine. The German nicht-schulmedizine model considers alternative medicine as all health care practices not taught at university medical facilities or medical schools. More facetiously, health policy fanatics sometimes refer to alternative medicine as those health care practices that are not paid for by insurance and which a patient does not tell his or her primary doctor. This takes after the findings of David Eisenberg which represent the emergence of alternative medicine into national consciousness.[83] But perhaps the most telling is an opinion voiced by what was the forerunner of the National Center for Complementary and Integrative Health; that is, alternative medicine represents any health care practice that is not politically dominant at the time.

The debate over alternative medicine was best represented by the opposing viewpoints of Andrew Weil[84]:

> "Patients in unprecedented numbers are going outside of conventional medicine to look for help. Why are people doing this? Clearly, there is dissatisfaction with conventional medicine.… The therapies that we aim for are those that are reasonable, that are supported by what evidence is now available, that above all are not harmful, and that work from the premise that the body can heal itself, if you give it a chance."

and Arnold Relman[85]:

> "Most alternative systems of treatment are based on irrational or fanciful thinking … it [alternative medicine] could not be woven in to the fabric of the medical curriculum without confusion, contradiction, and an undermining of the scientific foundation upon which modern medicine rests."

However, the authoritative Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine (formerly known as the Institute of Medicine) has concluded in an exhaustive review that revered medical evidence is lacking and in need of substantial improvement.[85] In fact, in 1 study comparing the extent to which different medical specialties were evidence based, chiropractic practice was found to have the highest proportion of care (68.3%) supported by good quality, experimental evidence and was superior to several medical subspecialties.[86] Add to this a recent study of 2500 medical treatments in which only 15% were identified as being beneficial, 22% likely to be beneficial, and 47% unknown,[87] and the question arises whether the mainstream medical foundation is as commanding as it has commonly been made out to be.

In short, despite its clear prominence in terms of public perception and third-party payers, mainstream status is not without its flaws. Chiropractic, in its rush to achieve singular distinction and to seize mainstream ground in which most of the training, research, and public awareness have taken place (centering around the spine and musculoskeletal care), may have compromised its future. The profession runs the risk of mortgaging many of its traditional and hard-won attributes. These would include the very foundations of chiropractic, such as (*a*) the ability to diagnose; (*b*) patient-centered care[88]; (*c*) primary wellness care in offering an alternative to the current medical paradigm[89]; and (*d*) numerous research findings already published representing the full range of basic research, randomized clinical trials, and case series—all of which point toward a scope of practice and model of patient care which extend well beyond the specialist role of simply managing back and neck pain. In looking ahead and allowing room to expand into those areas in which there is merit, some of chiropractic's leading researchers have declared that there is reason to devote future research efforts beyond the spine and spinal conditions (ie, low back and neck pain).[90] For these reasons, alternative medicine offers the proper niche into which chiropractic may continue to evolve and express its full potential.

Yet there is no denying that, for managing low back and neck pain as well as headache, chiropractic has already achieved "mainstream" status as well. There are more 100 published clinical trials in scientific journals to support this claim, as well as the public perception that doctors of chiropractic do, in fact, know more than a little about the spine and spinal health.[72,73,91–95]

For these reasons, chiropractic needs to be considered a hybrid of both alternative and mainstream medicine:

mainstream, based upon what it has attained, and alternative, in areas in which its documented growth has occurred and must continue to occur.

Primary Care, First-Contact Provider, or Specialist

Like alternative medicine, multiple definitions have been provided for primary care that are worth reviewing:

1. Starfield: first-contact, longitudinal, coordinated, and comprehensive care (ie, practitioner should take care of the majority of problems without referral).[96]
2. Public Health Service Act: services which require family medicine, internal medicine, pediatrics, obstetrics/gynecology, dentistry, or mental health as provided by physicians or other health care professionals.[97]
3. Institute of Medicine: emphasis upon accessibility, comprehensiveness, continuity, and coordination.[98]

Notably, in primary care, nobody trains in that specific domain. Primary care is a way of delivering health care, not a body of knowledge as such. It is more characterized by the organization of care rather than practitioner type.[99]

A comprehensive community study by Abt Associates that convened 2 panels of medical experts (1 consisting solely of doctors of chiropractic) concluded that, with respect to a list of 53 primary functions found to occur daily in medical offices, doctors of chiropractic were capable of making diagnoses in 92% of those activities and capable of making therapeutic contributions in more than 50% of them.[74] On the other hand, in a competency examination comparing performances of chiropractic and medical students, chiropractic students scored higher than their medical counterparts only on the musculoskeletal portion of the examination and in several other areas scored substantially lower.[100] And access to tertiary care facilities, such as hospitals, although growing for doctors of chiropractic, remains very limited. At the same time, health care delivery as well as competency in musculoskeletal areas by medical doctors has been shown in multiple settings to be inadequate.[12,25,101] These findings would seem to position doctors of chiropractic in the United States on a spectrum somewhere between primary care providers and specialists upon referral.

At the very least, first contact for a minimum of musculoskeletal conditions would be indicated for doctors of chiropractic, buttressed by such findings by Sarnat et al[102,103] that demonstrated major reductions of hospital days, outpatient surgical procedures, and health care costs when doctors of chiropractic were given first-contact privileges to patients within an independent physicians' association. Beyond managing only musculoskeletal conditions, doctors of chiropractic in 4 medical underserved communities (rural and urban underserved) tended to deliver primary care services.[104] The same pattern was found to be true in rural communities of Ontario, with doctors of chiropractic delivering primary health care, bridged care, and interim care.[105]

It would appear that the scope of chiropractic extends beyond specialist to a first-contact provider. This scope would certainly be for musculoskeletal conditions with the potential to extend into primary care should adequate research be able to justify such an expansion. Indeed, given the shortages of primary care providers in some communities[106] and the cost-effectiveness and satisfaction with doctors of chiropractic serving in a de facto primary care capacity,[105] it would therefore seem appropriate to consider doctors of chiropractic as having successfully vacated the specialist's role.

Discussion

Opposing tides have appeared to have pulled chiropractic in multiple directions. Spine-only practitioners or more generalized? Pain therapists or beyond? Subluxation based or more medically oriented? Alternative or mainstream practitioners? Primary care, first-contact, or specialists upon referral? Debates on these topics may still linger but hopefully have been nourished by the topics discussed in this article. Nevertheless, it is still possible to attach a number of distinguishing characteristics of doctors of chiropractic (Fig 1). Although there are numerous areas that present diverging viewpoints of chiropractic, at the same time, there are unambiguous, distinguishing characteristics of chiropractic.

Even with the recognition of the benefits of spinal manipulation in various government guidelines,[107–111] the rise of the alternative health care movement, advances in the US military and Veterans Administration, and persistently high levels of patient satisfaction,[112] the chiropractic profession remains underrepresented in most discussions of health care delivery. Hopefully, a clarification of chiropractic's identity and a greater unity of practitioners in delivering this message will help to rectify this problem.

Limitations

This is a narrative review by a single author of multiple points of view of chiropractic, taking into consideration its relationships to other health care professions in manual therapy as well as its positioning in the 2 spectra of specialist/primary care and alternative/mainstream medicine. The main purpose of this assessment was to clarify, and in some instances refute, different viewpoints of chiropractic while providing several unambiguous characteristics to more clearly define chiropractic. Thus, this article is limited to 1 person's viewpoint on this topic.

Conclusion

This discussion provides a roadmap for understanding the struggle for identity that has beset chiropractic since its

- They embrace a model of holistic, preventive medicine (wellness).
- They embrace a concept of neurological imbalance to buttress their model of the chiropractic subluxation, in which—as stated by Hyman[93]—form follows function, disease follows disturbed biochemistry, and phenomenology follows physiology. This concept might be best thought of as functional neurology.
- They have an ability to diagnose with their institutions of training accredited by a body that was recognized by the U.S. Department of Education in 1974.
- Through their interventions, the eliciting of systemic neurological consequences beyond pain alleviation.
- They have an ability to manage patients on a first-contact basis, often as primary care providers in geographical regions that are underserved, either rural or urban.
- The spine is their primary—but not exclusive—area of interaction.
- They have an ability to deliver high-velocity, low-amplitude adjustments with a superior safety record compared to other professions.
- They use of a network of institutions worldwide which have shown increasing commitments to research.

Fig 1. *Characteristics of doctors of chiropractic.*

inception. It has provided 6 perspectives: (1) concepts of manual medicine; (2) areas of interest beyond the spine; (3) concepts of neurology; (4) concepts of the chiropractic subluxation; (5) mainstream or alternative health care; and (6) primary care, first-contact provider, or specialist. Numerous distinguishing characteristics, including providing a model of holistic, preventive medicine and embracing a concept of neurological imbalance, have prevailed. At present, the chiropractic profession continues to be underrepresented in most discussions of health care delivery, a situation in which the greater clarification of chiropractic's identity and more practitioner consensus may help to alleviate this problem.

Practical Applications

- Chiropractic's distinguishing characteristics may provide a useful framework to achieve a greater consensus in resolving the lack of unified identity.
- The strongest assets of chiropractic include that it embraces a model of holistic, preventive medicine by embracing a model of neurological imbalance in which form follows function.

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Contributorship Information

Concept development (provided idea for the research): A.L.R.
Design (planned the methods to generate the results): A.L.R.
Supervision (provided oversight, responsible for organization and implementation, writing of the manuscript): A.L.R.
Data collection/processing (responsible for experiments, patient management, organization, or reporting data): A.L.R.
Analysis/interpretation (responsible for statistical analysis, evaluation, and presentation of the results): A.L.R.
Literature search (performed the literature search): A.L.R.
Writing (responsible for writing a substantive part of the manuscript): A.L.R.
Critical review (revised manuscript for intellectual content; this does not relate to spelling and grammar checking): A.L.R.

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