

Chapter 2

Current Status and Recognition of Chiropractic Care

The World Health Organization has recently described occupational LBP [low-back pain] in the industrialized world as an epidemic that can only be controlled through multidisciplinary management, including use of the unique skills of the chiropractic profession.

-Dr. Pran Manga

Overview

Chiropractic is now firmly rooted in public consciousness as a primary agent of health care management. According to a study published in the *New England Journal of Medicine*, the number of visits to non-medical care providers totaled 425 million in 1990, 9.5% more than the total number of visits to all family physicians that year (Eisenberg et al. 1993). A follow-up study determined that in 1997 total visits to non-medical providers were 629 million, exceeding the total projected visits to all primary care physicians by 63% (Eisenberg et al. 1998). Visits to chiropractors exceeded visits to any other practitioner of alternative health care.

RAND, a prestigious nonprofit research organization and “think tank,” has conducted several studies of chiropractic. Dr. Paul Shekelle, a medical doctor and a primary researcher for RAND, has stated, **“Instead of thinking of chiropractic as an alternative or some kind of therapy separate from other health care, we really should consider it equivalent”** (Qtd. in Brin 1998). Changes in health insurance coverage indicate this shift in perspective as well: A 1999 study found that coverage of chiropractic care is “offered by nearly two-thirds of all HMOs (65%)” (Landmark 1999, 14). When surveyed concerning their policies toward alternative therapies, 43% of HMO representatives reported that they “do not regard chiropractic as an alternative therapy” but as a form of mainstream health care¹ (11).²

Widespread consumer and practitioner interest in chiropractic care has flagged the profession for study by government, the private sector, and organized medicine. This interest has subsequently led to significant research conducted by major organizations throughout North America, Europe, and other areas of the world. A substantial number of systematic reviews of literature and meta-analyses have been conducted recently concerning the efficacy, patient satisfaction, and cost-effectiveness of chiropractic care. The existing literature is consistent in reporting substantial evidence that chiropractic treatment is effective for both acute and chronic low-back pain and neck conditions (Bronfort 1999; Van Tulder, Koes, and Bouter 1997; Aker et al. 1996; Hurwitz et al. 1996; Shekelle et al. 1992; Anderson et al. 1992; DiFabio 1992; Ottenbacher et al. 1985).

This literature review probes historical highlights of the emergence of chiropractic and covers documented evidence of its effectiveness. Among other evidence judged to be significant, several studies

¹ In consideration of these data and because chiropractors represent the third largest primary health care profession (surpassed in numbers only by medical and dental practitioners), the chiropractic community and those served by the profession do not generally apply the terms “alternative” or “unconventional” as descriptors of chiropractic care. Where the terms do appear in this chapter, they are utilized by authors of a particular study.

² The figure “11” indicates page 11 of the study previously cited. This format is followed throughout this report.

presenting findings of the effectiveness of chiropractic care for conditions other than low-back and neck pain are included.

The literature review herein includes many prominent studies such as the Wilk lawsuit, testimony of which evidenced the effectiveness of the chiropractic profession in providing efficacious health care for many conditions. The New Zealand Commission Report was another early and influential study that established chiropractic efficacy. In 1979, after an exhaustive international investigation of chiropractic, the New Zealand Commission of Inquiry concluded that “modern chiropractic is a soundly based and valuable branch of health care in a specialized area” (2). A series of studies conducted by the prestigious RAND Corporation (Shekelle et al. 1991, 1992, 1994; Coulter et al. 1996) demonstrated the efficacy of chiropractic for treating acute low-back pain and that chiropractors are utilizing manipulation for appropriate clinical conditions. The Manga Reports summarize two inquiries commissioned by the Canadian government and recommend that chiropractic services should be fully covered by government health insurance and “fully integrated into the health care system” (Manga et al. 1993; Manga and Angus 1998, 12).

Based on the prominent studies presented in this review, chiropractic care indeed has a strong research base and has earned a solid reputation in the treatment of low-back pain, neck pain, and several other conditions. Low-back pain is a problem that affects half the U. S. population by age 30; low-back pain costs billions of dollars in treatment and days lost from work, and it should be properly characterized—not as several symptoms with a few long-term effects, but as a long-term problem with several symptoms (Croft 1998). While this report presents evidence of chiropractic’s effectiveness for many conditions, future research may address additional conditions that chiropractors effectively manage.

Chiropractic Within the Health Care Environment

Widespread Use of Alternative Care

Vast public utilization of and interest in alternative/non-medical care have caught the attention of medical and governmental institutions. In the *New England Journal of Medicine*, Eisenberg et al. (1993) reported results of a randomized telephone survey regarding public use of non-medical therapies. According to the survey report, “The estimated number of visits made in 1990 to providers of unconventional therapy was greater than the number of visits to all primary care medical doctors nationwide” (251). One-third (34%) of the respondents had used at least one non-medical therapy in 1990, and chiropractic was among the most frequently used non-medical therapies.

A Follow-up Survey

In a follow-up study, Eisenberg et al. (1998) found that use of non-medical treatments had increased significantly since the 1990 survey: In 1997, “overall prevalence of use increased by 25%, total visits by an estimated 47%, and expenditures on services provided by practitioners of alternative therapies by an estimated 45%” (1574). Of the survey respondents, 11% had used chiropractic care within the last year.

A Corroborative Study

These data are similar to those from another study published in the *Journal of the American Medical Association* and conducted by Astin (1998), a researcher at the Stanford (California) Center for Research in Disease Prevention. Astin reported that 40% of the respondents stated that they had used some form of alternative health care in the previous year; the most widely used alternative treatment had been chiropractic (15.7%), and that “chiropractic care represented close to 50% of all alternative treatments used for headaches” (1550).

The New Zealand Commission of Inquiry

In 1979, based on international investigations, the New Zealand Commission of Inquiry found that chiropractors were suitably trained to diagnose and treat back pain and the public interest is best served when chiropractors administer spinal manipulation when appropriate. The Commission also found that other non-chiropractic practitioners should refrain from attempting spinal manipulation. The authors concluded, “Chiropractors should, in the public interest, be accepted as partners in the general health care system. No other health professional is as well qualified by his general training to carry out a diagnosis for spinal mechanical dysfunction or to perform spinal manual therapy” (4).

The Wilk v. AMA Lawsuit

In 1976, five members of the chiropractic profession filed an antitrust suit against the American Medical Association. In 1987, following 11 years of legal action, a federal appellate court judge ruled that the AMA had engaged in a “lengthy, systematic, successful and unlawful boycott” designed to restrict cooperation between M.D.s and chiropractic physicians in order to eliminate the profession of chiropractic as a competitor in the United States health care system. A 1990 ruling from the 7th United States Circuit Court of Appeals upheld the lower court’s findings (Wilk et al. v. AMA et al. 1990).

The U.S. District Court Judge rejected the AMA’s patient care defense and cited scientific studies which showed that “chiropractors are twice as effective as medical physicians and physical therapists in the care and alleviation of neuro mechanical problems” (“Chiropractors File Supreme Court Response” 1990, 1). The court determined that chiropractic care was therapeutic based on evidence that “chiropractors are particularly effective in relieving long term chronic and severe pain syndromes, headaches, and stress and strain problems associated with pregnancy” (1-2).

Effectiveness of Chiropractic Care for Acute Low-back Pain

Rand Studies

RAND, a prestigious nonprofit research organization and think tank, “conducts the largest private program of health policy research in the country. Their Health Sciences Program is widely recognized as an international health finance, quality of care, and methodological research center” (Alabama State Chiropractic Association 1993). RAND has completed several large-scale studies of chiropractic that are summarized below.

In *The Use and Costs of Chiropractic Care in the Health Insurance Experiment*, Shekelle (1994) analyzed the use and cost-effectiveness of chiropractic services from data collected during the

RAND study entitled the *Health Insurance Experiment (HIE)*. The HIE was a government-sponsored project designed to record the use of medical services and resulting health status of enrollees between 1974 and 1982. The data established that chiropractors deliver 40% of primary care to patients with low-back problems, retain 92% of their patients, and receive about 10% of their patients from those changing providers. The study also established that chiropractors performed over 90% of all spinal manipulation. Per back-pain episode, chiropractors averaged more total visits but also averaged lower total costs than orthopedists, internists, osteopaths, and most other physicians³.

RAND also conducted a study consisting of two major projects divided into four stages. The first project included an extensive literature review on spinal manipulation; the second included a multidisciplinary panel and an all-chiropractic panel who rated clinical conditions as to their appropriateness for spinal manipulation (Shekelle et al. 1992). Paul Shekelle, who is a medical doctor and the primary researcher for the study, collaborated with other authors and organizations to reach the following conclusions regarding spinal manipulation:

- Spinal manipulation is of benefit to some patients with acute low-back pain. This conclusion is based on an extensive literature review, or Stage I of the RAND study (Shekelle et al. 1991).
- Spinal manipulation is appropriate for many cases of acute low-back pain and a few cases of subacute and chronic low-back pain. These conclusions are based on Stages II and III which consisted of panels of experts rating the suitability of various clinical scenarios for spinal manipulation (Shekelle et al. 1992).
- Chiropractors, in the majority of cases, make appropriate decisions in administering spinal manipulation: Forty six percent (46%) of the cases had received appropriate treatment compared to 25% of the cases judged uncertain and 29% of the cases judged inappropriate. The authors concluded that this ratio is similar to the appropriateness rates of many medical and surgical procedures after initial evaluations. These conclusions are based on Stage IV, a retrospective study of chiropractic treatment records (Shekelle et al. 1998).

In a related RAND study, *The Appropriateness of Manipulation and Mobilization of the Cervical Spine*, Coulter et al. (1996) conducted a literature review and utilized an interdisciplinary panel survey to determine the appropriateness of manipulation and mobilization for neck pain, headache pain, and related problems. The researchers concluded that spinal manipulation has at least short-term effectiveness for patients with subacute or chronic head pain, neck pain, and tension-type headaches.

Agency for Health Care Policy and Research: *Clinical Practice Guideline*

In 1994, the Agency for Health Care Policy and Research published Clinical Practice Guideline Number 14-Acute Low Back Problems in Adults (Bigos et al. 1994). The guideline defined acute low-back pain, evaluated different treatments for low-back pain, and then offered recommendations as to the efficacy of those treatments. A private-sector, multidisciplinary, 24-person panel, consisting of doctors of medicine, doctors of chiropractic, other health care professionals, and a consumer representative developed the guideline.

³ Chiropractors and general practitioners averaged the lowest total costs (\$281 and \$199 respectively) compared to orthopedists (\$531), internists (\$332), osteopaths (\$388), and other physicians (\$348).

The guideline concluded that spinal manipulation is one of the most effective treatments for most acute low-back pain. The guideline also determined that spinal manipulation, along with or in place of over-the-counter medication, is the safest treatment for low-back pain.

Missouri Study

Erhard, Delitto, and Cibulka (1994), a doctor of chiropractic and other researchers at the University of Pittsburgh Medical Center and the Jefferson County Rehabilitation Center, Missouri, found that manipulation and flexion/extension exercises resulted in greater improvement than exercises alone. The researchers designed a study to compare the effects of an extension program (as proposed by McKenzie) versus a manipulation program with flexion and extension exercises. The authors concluded that greater and more rapid improvement occurred in the group that used exercises and manipulation: “The major benefit of manipulation appears to us to be the speed at which the severity of the patient’s symptoms is reduced, allowing... patient management to shift from a goal of pain modulation to a home program involving active patient involvement, self-care, fitness exercises, flexibility, education in body mechanics, and so forth” (15).

Los Angeles/Vermont Study

In a study reported by doctors of chiropractic and another researcher at the Los Angeles College of Chiropractic and the University of Vermont, Hsieh et al. (1992) compared spinal manipulation treatment to massage and electrical treatment modalities for subacute low-back pain. The researchers found the effectiveness of chiropractic care to be “superior” to massage therapy, corset, and TMS (transcutaneous muscle stimulation). Patients were randomized into one of four groups: chiropractic manipulation, stroking massage, corset, and TMS. All patients received treatment for three weeks. The authors concluded that “the group that received chiropractic manipulation did improve... with significant difference from the massage and TMS groups” (8).

Efficacy of Chiropractic Care for Chronic Low-back Pain

Netherlands Study

Van Tulder, Koes, and Bouter (1997), researchers in the Netherlands funded by the Dutch Health Insurance Board, conducted a systematic review of literature regarding the effectiveness of various conservative treatments of acute and chronic low-back pain (LBP). The researchers retrieved and evaluated the evidence of 48 randomized controlled trials that addressed the treatment of acute and chronic LBP. The study determined that spinal manipulation is one of the most effective treatments for chronic low-back pain. The authors found “strong evidence that manipulation is more effective than a placebo treatment for chronic LBP” (2135). The authors also found manipulation to be “more effective for chronic LBP than usual care by the general practitioner, bed-rest, analgesics, and massage” (2135).

Texas/Illinois Study

Researchers at the Institute for Spine and Biomedical Research, Plano, Texas, and the National College of Chiropractic, Research Department, Lombard, Illinois, designed a study to evaluate the

clinical effectiveness of spinal manipulative therapy for chronic low-back pain (Triano et al. 1995). The researchers found that spinal manipulative treatment alleviates pain and improves ability to function more effectively than do mimic treatments or back school programs.

Canadian Studies

In a Canadian study conducted by a medical doctor and a chiropractor at the University Hospital in Saskatoon, authors Kirkaldy-Willis and Cassidy (1985) concluded that spinal manipulation is helpful for patients with referred pain and nerve compression syndromes, including patients with “posterior joint and sacroiliac syndromes[,] ... low-back and/or leg pain [without] signs of radiculopathy[,] nerve root entrapment syndrome[,] and a small, select group of patients with central spinal stenosis syndrome who were unfit for surgery” (63). All of the patients with nerve compression syndrome had signs of radiculopathy.

At the beginning of the study, the researchers characterized the patients as “totally disabled.” Treatment consisted of daily chiropractic manipulation that lasted two to three weeks. Improvement was measured one month after treatment ended and every three months after that. Eighty-one percent (81%) of those patients with referred pain syndromes and 48% of those patients with nerve compression syndromes became symptom-free or retained only intermittent pain and were not restricted from work or daily activities. The results of the study indicated striking improvement ratings; the authors labeled this “a clinically significant improvement” for subjects originally classified as totally disabled.

In another Canadian study conducted at the University of Calgary, authors Herzog, Conway, and Willcox (1991) concluded that “SMT [spinal manipulative therapy] was more effective than BST [back school therapy] in restoring normal gait symmetry in chronic sacroiliac joint patients” (109).

Polish Study

In a study from the neurological clinic at the Silesian Medical School in Poland, author Arkuszewski (1986) concluded that manual treatment of the spine, along with physiotherapy and drugs, led to significantly better results than did physiotherapy and drugs alone. The average treatment duration for the experimental group was 3.1 weeks and for the control group, 3.8 weeks. The average severity of low-back syndrome was approximately the same for both groups at admission. According to the study, “After the first week of treatment, the improvement was significantly greater in MTG [the manually treated group] and continued to be even greater until the day of discharge” (69).

The author concluded, “A very important sign of improvement after manual treatment of LBP [low-back pain] is patient’s [sic] greater ability to resume professional employment” (70). Of the manually treated patients in the study, 60% returned to work within six months and 25% were on disability, compared to only 36% of the control group returning to work and 57% being on disability.

Efficacy of Chiropractic Care for General Low-back Pain

Literature Review

Bronfort (1999) conducted a systematic review of literature concerning the efficacy of chiropractic treatment of low-back pain. The author found evidence of “short-term efficacy for SMT [spinal manipulative therapy] in the treatment of acute LBP [low-back pain]” (107). Additionally, the author found a

combination of spinal manipulation and mobilization to be an effective treatment of chronic low-back pain “compared with a placebo and commonly used therapies such as general medical practitioner management” (98).

Meta-Analysis

In a 1992 study, Anderson et al. conducted a meta-analysis of 23 randomized controlled clinical trials that evaluated the effectiveness of spinal manipulation in the treatment of back pain. The researchers, a medical doctor, private practitioners, several chiropractors, and another professional, at Palmer College of Chiropractic-West, the San Francisco Spine Institute at Seton Medical Center, Daly City, California, and the Los Angeles College of Chiropractic, stated that “the trend for spinal manipulation to produce better results than any form of treatment to which it was compared was consistent and strong” (193). For 86% of the outcomes, spinal manipulation was more effective than any other treatment.

British Study

In a study published in the British Medical Journal, Meade et al. (1995) compared the effectiveness of chiropractic with hospital outpatient management for low-back pain. The researchers found “a 29% greater improvement in patients treated with chiropractic compared with hospital treatment” (350).

Polish Study

In a study comparing manual therapy to other treatments for low-back pain, Kinalski, Kuwik, and Pietrzak (1989) concluded, “Manual therapy is an efficacious alternative method of conservative treatment for some low back pain conditions” (45). The authors stated that spinal manipulation was not only effective but reduced duration of back pain episodes.

Texas/Illinois Study

In an article on the use of chiropractic manipulation in lumbar rehabilitation written by doctors of chiropractic from the Texas Back Institute and Institute for Spine and Biomedical Research in Plano, Texas, and the National College of Chiropractic in Lombard, Illinois, authors Triano, McGregor, and Skogsbergh (1997) outlined the beneficial effects of chiropractic for patient rehabilitation. The authors stated that the symptom relief and increased flexibility provided by chiropractic care provide a “valuable tool,” assisting and easing patients into necessary rehabilitative programs:

The demonstrated effects of manipulation to relieve symptoms and enhance flexibility can serve as a vehicle to encourage confidence in the safety of movement. This may be valuable both for those being transitioned into rehabilitation programs from passive care, and for those who have experienced an exacerbation or new injury during the course of their rehabilitation... [M]anipulation on a limited basis has permitted people to complete programs when symptomatic recurrence would have caused delay in progress, or abandonment of the treatment plan. (395)

Not only can chiropractic treatment relieve symptoms that interrupt therapy, but the authors also asserted the value of chiropractic in restoring patients’ confidence in movement, discouraging chronicity, and encouraging patients to continue rehabilitation: “Increased flexibility with reduced symptoms facilitates the rehabilitation process” (396).

Efficacy of Chiropractic Care for Neck Pain

U.S./Canadian Study

Hurwitz et al. (1996), a doctor of medicine and doctors of chiropractic from RAND, the University of California, Los Angeles, the Canadian Memorial Chiropractic College, the Los Angeles College of Chiropractic, Palmer College of Chiropractic-West, and the West Los Angeles Veterans Affairs Medical Center, conducted a review of literature on treatments for neck pain. This review, published in *Spine*, was based on the 1996 Rand study of the appropriateness of manipulation for neck and head pain (Coulter et al. 1996). The authors found that, for some patients with subacute or chronic neck pain, manipulation is more effective than mobilization or physical therapy, “and all 3 treatments are probably superior to usual medical care” (1755).

Welsh Study

In a randomized controlled trial conducted by general practitioners and another professional in private practice and at the Welsh National School of Medicine, authors Howe, Newcombe, and Wade (1983) illustrated the efficacy of manipulation in alleviating neck and shoulder pain: “Pain in the neck, pain or paraesthesia in the shoulder and stiffness of the neck were all improved significantly after manipulation... Manipulation produced a highly significant immediate improvement in rotation and lateral flexion” (578).

Canadian Studies

A study performed at Canadian Memorial Chiropractic College in Toronto and reported by a doctor of chiropractic and other professionals concluded that spinal manipulation of individuals with chronic mechanical neck pain can increase local paraspinous pain threshold levels (Vernon et al., 1990).

Patients with joint dysfunction of the cervical spine and a hypomobile spinal motion segment were evaluated for pressure pain threshold (PPT) levels. Next, an impartial clinician performed either mobilization or manipulation techniques on the patients. After five minutes, a second impartial clinician remeasured the PPT levels.

Concerning the group receiving manipulation, increases in PPT ranging from 40 to 55% were recorded in all four points around the spinal segments that were manipulated. Virtually no changes occurred in the pre- to post-intervention levels of the group receiving mobilization. At each point, the differences between the groups were highly statistically significant. The authors noted that these findings can only be applied to the cervical spine. Notably, while none of the manipulation subjects experienced pain during manipulation, the rise in PPT levels meant that subjects were able to tolerate more generalized pain as a result of having undergone manipulation.

In a subsequent Canadian study reported by a doctor of chiropractic and other professionals in private practice at the University of Calgary and at the Bow Valley Centre, Calgary, authors Verhoef, Page, and Waddell (1997) found spinal manipulation to improve neck mobility and decrease neck pain: “patients suffering from back and/or neck complaints experience chiropractic care as an effective means of resolving or ameliorating pain and functional impairments. Moreover, the patients... demonstrated a high degree of satisfaction with the care they received” (240).

Netherlands Studies

Following a randomized clinical study evaluating patient complaints of chronic back and neck pain reported to doctors of medicine and other professionals from The Netherlands, Koes et al. (1992) concluded that “manual therapy showed a faster and larger improvement in physical functioning” compared to physiotherapy, treatment by a general practitioner, and a placebo therapy (22).

Physiotherapy included therapies such as “exercises, massage, and physical therapy modalities” (17); manual therapy consisted of manipulation and mobilization of the spine “according to the directives of the Dutch Society for Manual Therapy”; general practitioner treatment consisted of prescription of medication and advice about home exercises, posture, sports, rest, and so on; and the placebo therapy “consisted of a physical examination and subsequently detuned shortwave diathermy and detuned ultrasound” (17). All therapists used the treatments they felt were appropriate within conventional parameters; for example, physiotherapists did not perform manipulative techniques. All treatments were administered for a maximum of three months; after six weeks, the patients had the opportunity to decide whether to continue or change treatment.

Researchers measured the outcome at 3, 6, and 12 weeks after randomization. At the times of these three measurements, all four groups showed an improvement in physical functioning, rated by an impartial research assistant, but the improvement for the “manual therapy group was larger than for the other groups at all follow-up measurements” (19).

In a follow-up of the previous study, Koes et al. (1992a) concluded that manipulative therapy and physiotherapy are better than general practitioner and placebo treatment, and manipulative therapy is slightly better than physiotherapy after 12 months.

Efficacy of Chiropractic Care for Head Pain

Minnesota Study

Boline et al. (1995), doctors of chiropractic, a doctor of medicine, and another professional from the Northwestern College of Chiropractic and the Pain Assessment and Rehabilitation Center, Ltd., in Minnesota, performed a study that compared the effectiveness of spinal manipulation to the administration of the drug amitriptyline for patients with chronic tension-type headaches. The authors determined that “spinal manipulative therapy is an effective treatment for tension headaches” (153). Four weeks after the end of treatment, the patients who received spinal manipulation experienced a sustained therapeutic benefit in all the major outcome measures—in contrast with the patients who received amitriptyline and returned to baseline values.

Researchers used four outcome measures: headache pain intensity, headache frequency, use of over-the-counter medicine, and effect of headache on general health. Patients measured these by keeping headache diaries and answering questionnaires. After six weeks, both groups had “improved at similar rates from their original baseline measures. The amitriptyline group showed more improvement in headache intensity... [However,] [f]our weeks after the end of intervention, the spinal manipulation group showed a 32% reduction in headache intensity, 42% in headache frequency, 30% in over-the-counter medication usage, and a 16% improvement in functional health status, in relation to baseline values. The amitriptyline therapy group showed no improvement or slight worsening” (150).

Canadian Study

In an uncontrolled retrospective/prospective study of the effects of chiropractic manipulative therapy on benign, chronic headaches, a doctor of chiropractic from Canadian Memorial Chiropractic College found that in both the retrospective and the prospective groups, subjects with headaches improved with chiropractic manipulation (Vernon 1982).

Researchers randomly selected treatment records of, and mailed a follow-up questionnaire to, past headache patients and interviewed current headache patients. According to the study, both groups showed significant improvement after treatment: “CMT is efficacious in the management of adult benign headaches. It is well worth mentioning that no side effects or worsening was reported by any of the subjects” (112).

Danish Study

Nilsson, Christensen, and Hartvigsen (1997), doctors of medicine and doctors of chiropractic at the University of Odense and the Nordic Institute of Chiropractic and Clinical Biomechanics in Denmark, conducted a randomized controlled trial comparing two treatment modalities for cervicogenic headaches. The study compared spinal manipulative treatment to soft tissue therapy that utilizes deep massage and laser light therapy. The same two chiropractors treated both groups. The researchers concluded that, as opposed to soft tissue therapy, “spinal manipulation seems to have a significant positive effect... in cases of cervicogenic headache” (330).

Significantly, “in the soft-tissue group, there was a statistically significant reduction in number of headache hours per day, but neither headache intensity nor analgesic consumption changed significantly. In the manipulation group, all three primary outcome variables [number of headache hours per day, number of pain killers per day, intensity of headache episodes] showed significant improvement” (328).

New Anatomical Discoveries

U.S. Study

Chiropractors have always reported substantial clinical success in the treatment of headaches by adjusting the cervical vertebrae. Traditionally, the experts on headaches have been medical neurologists. By training and inclination, neurologists explored the brain to explain headaches and virtually ignored the cervical spine as a contributing or causative agent of headaches. Recently, a possible connection between headaches and the cervical spine was disclosed. In 1998, dental researchers who had performed a dissection from a non-traditional angle reported a landmark anatomical discovery. The researchers discovered that bridges of connective tissue between muscles at the back of the neck and the protective covering of the brain and spinal cord establish a direct connection between the muscular system and the nervous system in the upper cervical region (Hack, Dunn, and Young Toh 1998). The authors explained, “While the notion that headache pain may arise from cervical (neck) structures may be new to some medical practitioners, it is a concept that is widely accepted by chiropractors, osteopaths, and other professionals who regularly perform manipulative procedures involving the cervical spine” (22). These anatomists reported on the effect chiropractic treatment may have on the delicate relationship between the neck muscles, the head, and the filigree-like tissue connecting them:

Spinal manipulation as a treatment for tension headache is predicated upon the assumption that dysfunction in the neck muscles contributes to the head pain... The muscle-dura connection may represent—at least in part—the underlying anatomic basis for the effectiveness of this treatment. Such treatment, as performed by a chiropractor, would decrease muscle tension and thereby reduce or eliminate pain by reducing the potential forces exerted on the dura via the muscle-dura connection. (22)

United Kingdom Study

A group of professionals from universities in the United Kingdom described “previously unreported” ligaments of the neck attached to the base of the skull (Mitchell, Humphreys, and O’Sullivan 1998). This discovery has implications for manual therapy and the treatment of cervicogenic headaches caused by damaged ligaments—mainly in cases of moderate to severe whiplash.

Efficacy of Chiropractic Care for Carpal Tunnel Syndrome

Minnesota Study

In a study designed to compare the chiropractic treatment of carpal tunnel syndrome (CTS) to conservative medical treatment of CTS, Davis et al. (1998), doctors of chiropractic, professors at Northwestern College of Chiropractic in Minnesota, and another professional, found that both treatments were effective; the researchers postulated that chiropractic treatment may be an effective remedy for CTS patients sensitive to side effects of medical treatment.

In the study, the medical group received ibuprofen and wore wrist supports while the chiropractic group received manipulation, ultrasound treatment, and wrist supports. According to the study, “subjects in both treatment groups improved significantly; they felt better, their nerve conduction velocities increased and their finger sensation improved. Overall improvement... can be considered clinically meaningful... [Therefore,] if evidence continues to indicate that chiropractic treatment is appropriate for CTS, another mode of conservative treatment could be offered to patients with CTS, especially to those who are unable to tolerate ibuprofen” (321-322).

Efficacy of Chiropractic Care for Fibromyalgia

Canadian Study

In a study reported by three Canadian doctors of chiropractic, Blunt, Rajwani, and Guerriero (1997) asserted that “chiropractic management may improve cervical range of motion, lumbar range of motion, spinal flexibility (as measured by straight leg raise) and reported pain levels in a representative sample of patients with fibromyalgia attending a rheumatology clinic” (394). The subjects were 18 to 70 years old and fulfilled the American College of Rheumatology’s 1990 criteria for the classification of patients with fibromyalgia. Researchers allowed patients to take their prescribed medications of at least eight weeks’ standing during the study period.

Researchers reported clinically significant improvement in flexibility and reduction of pain levels. The authors recommended that chiropractic treatment be included in a multidisciplinary treatment regimen for patients with fibromyalgia.

Effectiveness of Chiropractic for Infantile Colic

British Study

Klougart, Nilsson, and Jacobsen (1989) reported a prospective study of 316 cases of infantile colic. The authors, a doctor of medicine and doctors of chiropractic in private practice and at the Anglo-European College of Chiropractic, England, found that 94% of the infants appeared to be helped by chiropractic treatment “within 14 days from the start of treatment.” The infants included in the study had moderate to severe infantile colic and were otherwise healthy, averaged two weeks of age at the outset of colic, and averaged 5.7 weeks of age at the start of treatment.

The authors found that chiropractic treatment resulted in “both a reduction of the daily length of the colic periods and a reduction of the number of colic periods per day” (287). Because recovery began between 5.7 and 7.7 weeks of age, the authors maintained that this provided substantial evidence that the improvement could not be attributed strictly to “natural cessation of colic symptoms” (286).

Danish Study

In a 1999 study similar to the 1989 colic study (reported above), Wiberg, Nordsteen, and Nilsson found that “spinal manipulation has a positive short-term effect on infantile colic” (520). Researchers randomly placed otherwise healthy, colicky infants into one of two treatment groups: chiropractic treatment and dimethicone medication. Parents kept a diary of symptoms and behaviors before the trial to establish baseline data and continued to keep a diary of symptoms during the trial. Both groups received two weeks of treatment. The infants in the chiropractic group exhibited “a reduction of 67% on day 12” of daily hours with colic, which was nearly identical to the results of the first study. The “dimethicone group only had a reduction in daily hours with colic of 38% by day 12” (520).

The dimethicone group had several subjects drop out of the study because their symptoms worsened. These subjects and their corresponding data were excluded from the results, creating better overall improvement statistics for the dimethicone group than actually occurred. Yet, the chiropractic subjects still exhibited twice as much improvement at the end of the trials when compared to the dimethicone group.

The authors noted that “[s]pinal manipulation is normally used in the treatment of musculoskeletal disorders, and the results of this trial leave open 2 possible interpretations. Either spinal manipulation is effective in the treatment of the visceral disorder infantile colic or infantile colic is, in fact, a musculoskeletal disorder, and not, as normally assumed, visceral” (520).

Patient Satisfaction with Chiropractic Care

Landmark Healthcare Survey

A 1998 study conducted for Landmark Healthcare, Inc. reported that chiropractic is the most frequently used non-medical health care and elicits high satisfaction from its users: “virtually everyone treated by a chiropractor is satisfied with their care; three-fourths (73%) are ‘very satisfied’ and 23% are ‘somewhat satisfied’” (Landmark 1998, 13).

Harris and Associates Survey

A study conducted for the American Chiropractic Association by the research organization Louis Harris and Associates of New York addressed public opinion concerning back problems and related treatments (Balduc 1994). A doctor of chiropractic who reported the study found that, of those who had seen a particular practitioner for back problems, 63% of chiropractic patients were satisfied with the care provided compared to 56% of those who saw a physical therapist, 52% of those who saw a medical doctor, and 50% of those who saw an osteopath. When asked how important the availability of chiropractic would be to a respondent who had back problems for which spinal manipulation was recommended, 70% of the general public responded that “it is important that their health-care plan includes chiropractic care as a basic benefit” (55).

Survey of Low Back Pain Patients

A study conducted by professionals at the University of Washington School of Medicine, Seattle, and the University of Northern Colorado, Greeley, compared patients’ evaluations of their care for low-back pain from family physicians and chiropractors (Cherkin and MacCornack 1989). The study concluded that patients of chiropractors felt more satisfaction with the treatment itself and also the demeanor and capability of the provider. Patients receiving treatment from chiropractors for low-back pain “rated the care they received much more highly than persons who sought care from family physicians” (354).

Additionally, patients felt much more comfortable with chiropractors themselves than with medical providers: “Patients of chiropractors were more likely than patients of family physicians to have been satisfied with the information they were given about their problem, to have perceived that their provider was concerned about them during and after the visit, and to have felt that their provider was comfortable and confident in managing low back pain” (354). Patients agreed that they would go back for care and that the chiropractor did everything he or she could to help. The study determined that “the percentage of chiropractor patients who were ‘very satisfied’ with the care they received for low back pain was triple that for patients of family physicians (66% versus 22%)” (353).

Cost-effectiveness of Chiropractic

The First Manga Report

Manga et al. (1993) conducted a literature review funded by the Ontario Ministry of Health concerning the high prevalence and costs of back pain, the efficacy of chiropractic care, and the cost-effectiveness of chiropractic. At the time of the study, chiropractic was partially funded by the Ontario Health Insurance Program (OHIP) and reimbursed through workers’ compensation throughout most of Canada; Quebec was under a fee schedule. The authors recommended that the government institute such policy changes as implementing full health insurance coverage of chiropractic treatment, transferring more low-back pain cases to chiropractors for management, and facilitating more cooperation between chiropractors and medical professionals in order to more capably manage low-back pain. The authors based their recommendations on the following conclusions:

- Low-back pain can be described as a “sleeper” epidemic because its nature is chronic—not terminal like cancer and heart disease. Hence, this widespread problem lacks the attention and resources accorded other illnesses, while responsibility for it diffuses among the government, the private sector, health insurance programs, and workers’ compensation.

- A small percentage of low-back claimants can account for a larger proportion of costs due to the disability factor, long-term costs, and episode length and frequency of low back pain. The U.S. “estimated direct costs [of back pain] in 1990 of \$24.3 billion and total costs of between \$50 to 100 billion per year... [Moreover,] back injuries were found to be three times more costly than other non-back injuries, and back injury claimants tended to have multiple claims compared with non-back injury claimants” (24).
- “[T]he utilization of chiropractic has grown everywhere despite the greater private out-of-pocket costs to patients [compared to free medical care]... [B]etter insurance coverage of chiropractic services can lead to reduced overall health care costs” (64).
- Spinal manipulation is the most effective treatment for low-back pain.
- “Patients of chiropractors were highly satisfied with the care they received for back pain... [T]he public in British Columbia does not believe that medical management of low-back pain is effective. Further, [a]ll categories of the survey sample considered chiropractors to be more attentive and caring; more accessible, convenient, and available; much less reliant on drug therapy; and less likely to create new problems or make old problems worse” (69).

Response to the First Manga Report

Representatives from the Ontario Ministry of Health and the Ontario Chiropractic Association presented a review of chiropractic services—largely based on the 1993 Manga Report—recommending that the government increase coverage of chiropractic, expand chiropractic privileges, promote more use of chiropractic, and permit private insurance companies to provide chiropractic coverage (Ontario Ministry of Health 1994). The authors reported, “The constellation of evidence of effectiveness, cost-effectiveness, economic efficiency, safety, patient satisfaction and public acceptance offers an overwhelming case for a shift in policy to encourage and prefer chiropractic services for most patients with LBP [low back pain]” (9).

The Second Manga Report

In a 1998 study, Manga and Angus reasserted that the Ontario government’s health insurance—which currently provides free medical care—should provide more coverage for chiropractic in order to reduce costs directly in health insurance payments, cost of care, and quality of care and indirectly in long-term disability, short-term disability, and easing the burdens of other government social programs. The authors noted that “much of the indirect costs [of neuromusculoskeletal disorders] eventually translates into a direct burden for one or another ministry of the Government of Ontario (for e.g. health, labor, social services, housing, finance, etc.)” (58). According to the report, once the government improves public access to chiropractic care, patients with neuromusculoskeletal (NMS) disorders will receive proper care sooner; furthermore, “Direct savings to Ontario’s health care system may be as much as \$770 million, will very likely be \$548 million, and will be at least \$380 million. The corresponding savings in indirect costs—made up of the short and long term costs of disability—are \$3.775 billion, \$1.849 billion and \$1.255 billion” (3).

In order to clarify underlying difficulties, the authors explained how the inherent inflexibility of the health insurance paradigm prevents patients from seeking and receiving proper treatment for specific conditions: “the creators of insurance plans did not ask what health conditions and care should be insured and then determine who should provide the thus identified care. They merely assumed that all

patients needed the care offered or ordered by medical doctors. This exclusivity and monopoly is [sic] bred into the very design of insurance plans” (8). The authors stated that while chiropractors and medical care providers complement each other, they also substitute for each other. The responsibility of the government’s health reform, argued the authors, is to implement substitutions that are more cost-effective, safe, and effective, such as chiropractic care.

U.S. Studies

Mosley, Cohen, and Arnold (1996), a medical doctor, a chiropractor, and another researcher from Tulane University and Community Health Network, Inc., of Louisiana, concluded that for patients who had back or neck pain, “chiropractic care was substantially more cost-effective than conventional care” (281).

Similarly, Stano and Smith (1996) compared insurance payments to chiropractors versus insurance payments to medical providers and concluded, “the mean cost of chiropractic first episodes... is substantially and significantly lower than medical episodes” (198). According to the study, in total insurance payments for first episodes, patients of chiropractors paid nearly *half* that paid by patients of medical practitioners (chiropractic first episodes averaged \$518 compared to \$1,020 for medical first episodes).

Lastly, the authors asserted, “The need to evaluate alternative therapies for back problems becomes especially important in light of the high costs, failure of many medical interventions, concerns about inappropriate surgery and hospitalization, and growing recognition of the efficacy of spinal manipulation for low back pain” (201).

Australian Study

In a similar study in Victoria, Australia of claimants with work-related mechanical low-back pain, Ebrall (1992) compared results of cases managed by chiropractors with cases managed by medical doctors. The researcher found that chiropractors returned patients to work with only approximately one-third the compensation days of claimants who had undergone medical management. In cases managed by a medical practitioner, the number of claims requiring compensation days averaged 774; when the provider was a chiropractor, the number of compensation days averaged only 392. Progression of claims to 90-day (chronic) status was three times more likely with medical management than with chiropractic management and the average payment per claim was greater with medical management (\$2,308) than with chiropractic management (\$963).