The Chiropractic Report

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Chiropractic Management of Back Pain

A Treatment that Stands Up

A. Introduction

THE LATEST NATIONAL SURVEY on back pain, this one in Canada and released last month, is just the most recent of many such studies reporting that patients increasingly choose and prefer chiropractic care for the common and disabling complaint of back pain.

The Environics Research Group survey, in which a representative sample of 1500 Canadians aged 18 and over were interviewed at the end of April 2003, was conducted to examine "the extent to which Canadians suffer from back pain, the action that they take to relieve their suffering, and levels of satisfaction with various therapies."[1]

The survey found that 71% of Canadian adults reported having back pain ("pain in the shoulders, upper or lower back") during the past two years. As shown in Figure 1 it also found:

a) The most popular choice for those who consulted a healthcare practitioner for their back pain was a chiropractor. This is particularly significant – or in technical language shows strong "revealed preference" – because the cost of medical care is covered in full under the Canadian healthcare system whereas patients pay a substantial co-payment or user fee for chiropractic care.

b) There was a much higher patient satisfaction level for chiropractic care than any other treatment approach. More than 2 in 3 (69%) were "very satisfied", more than 9 of 10 (92%) "very or somewhat satisfied". This compares with less than half "very satisfied" with medical and/or physiotherapy care (43%), or use of prescription and over-the-counter (OTC) medication (35% and 30% respectively).

The other treatment scoring well with patients in Canada was massage therapy. All of this is consistent with a US national survey on back and neck pain from Harvard's Department of Healthcare Policy, published earlier this year.[2]

2. How significant are these public surveys? How do they compare with other forms of research? There is general acceptance that back pain is a huge and costly problem that has been managed poorly under traditional healthcare – and that the healthcare system must prefer and promote evidence-based treatment. Are surveys a legitimate part of that evidence?

The answer, knowing what we now know in 2003, is an emphatic yes. Over the past two decades research has come out of its ivory tower. Increasingly it reflects what patients and third party payors actually want to know about healthcare methods, namely:

a) **Safety and Effectiveness** (appropriateness). Is it safe and effective – in itself, and in comparison with other treatments. This has been the traditional focus of research, and obviously remains important.

b) **Cost-Effectiveness**. It is cost-effective? This is a question that requires sophisticated analysis by experts, such as healthcare economists. Issues include direct healthcare costs, indirect costs (e.g. compensation costs for work loss), the cost of errors/complications and cost substitution.

c) **Patient Preference**. Is there strong demand? Is this a form of healthcare that patients prefer and want? If one healthcare approach is as safe, effective and cost-effective as the second one, but also strongly preferred by patients, patient preference is an important criterion in making decisions on access and choice.

d) **Patient Satisfaction**. This speaks for itself.

Quite simply, in the management of patients with most common forms of back pain, chiropractic care outperforms all others on these parameters. It is the

Our 100th Issue – Thank You

This is the 100th issue of *The Chiropractic Report*, which has been published every two months since the first issue titled *Migraine* in November 1986.

In celebration of this fact we are devoting the whole issue to the most common complaint of chiropractic patients, and the one for which there is the strongest evidence of the effectiveness of chiropractic care – back pain. We return to our usual format in the next issue.

To our subscribers – thank you for your support. Many of you have been with us since the beginning.

Readers may be interested to know that *The Chiropractic Report* currently has approximately 6,000 subscribers. The majority is in the US, Canada and the UK, but the Report is read by chiropractors in over 40 countries.

During the early 1990s the Report was published in English and French (known as *Le Dossier Chiropratique*). Today it appears in English and Japanese.

Thank you again. It is our pleasure to continue to bring you news of the research and other professional developments that are shaping the future of the chiropractic profession.

"treatment that stands up", to quote the brand or slogan of the Ontario Chiropractic Association in Canada. In the more measured and independent words of Manga et al., health economists from the University of Ottawa, in a comprehensive government-funded report titled *The Effectiveness and Cost-Effectiveness of Chiropractic Management of Low-Back Pain:*

"In our view, the constellation of the evidence of:

(a) The effectiveness and cost-effectiveness of chiropractic management of low-back pain.

(b) The untested, questionable or harmful nature of many current medical therapies.

(c) The economic efficiency of chiropractic care for low-back pain compared with medical care.

(d) The safety of chiropractic care.

(e) The higher satisfaction levels expressed by patients of chiropractors

together offers an overwhelming case in favour of much greater use of chiropractic services in the management of low-back pain.[3] "

3. In this issue we review the current evidence supporting this claim. First, though, some general observations about back pain – the size of the problem, the causes, acute and chronic pain, and the myth of natural remission.

B. Back Pain

4. **Size of the Problem**. In terms of personal and societal disruption and cost back pain is huge. It is standard practice for research papers in this field to begin with facts such as:

a) Back pain is the second most common reason, after respiratory disorders, that patients use the health care system.[2,4]

b) Eighty-five percent of people will be disabled by an attack of back pain during their lives, and at any given time 7% of the adult population is suffering from a bout of back pain lasting 2 weeks or longer.[5]

c) Back pain is the most frequent and expensive health care problem in the 30–50 age group, and it the most common cause of work loss and disability.[6]

d) Disability and cost caused by back pain have been growing far more quickly than the population over several decades. For example between 1971 and 1981 the U.S. population rose by 12.5% but the population disabled by back pain grew by 168%.[7] There has been a similar pattern in the UK[8] and many other countries.

e) It is now known that back pain is common from early adolescence—a Danish study reports a large increase during the ages 12—14, and that 50% of young women have had their first episode of back pain by age 18, 50% of young men by age 20.[9]

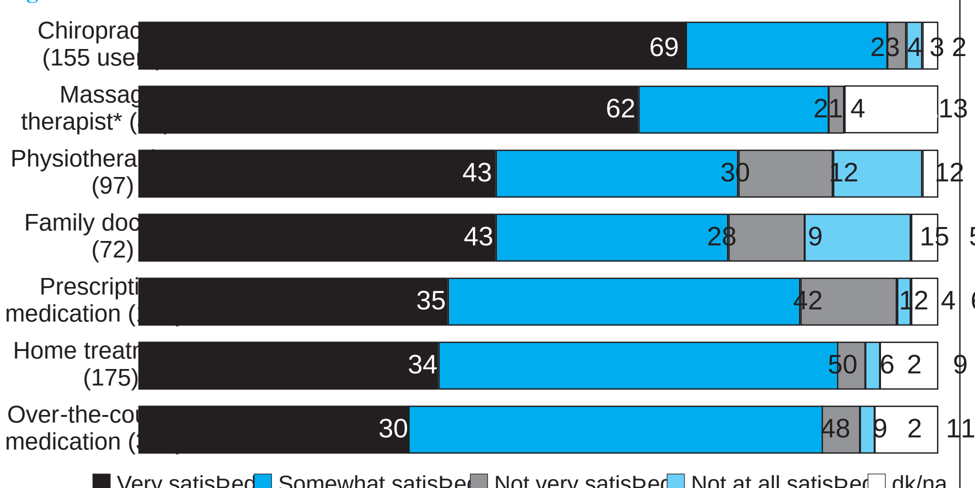
5. **Causes of Back Pain**

a) **Mechanical/Functional Pathology**. Over 90% of back pain, including strains and sprains and back pain caused by the normal wear and tear of life, is caused by *functional* pathology (e.g. restricted joint movements; stiffness, weakness or trigger points in muscle; nerve entrapment) rather than *structural* pathology (e.g. disease, tumors, fractures, disc herniation). In the words of the leading US orthopedic surgeon Dr. Vert Mooney:

"We have not been honest with ourselves in the past when we have supported months of passive modality care that can offer no long-term benefit. We have not been fair to our patients when we have focused on *pain* rather than *function*. We, as medical clinicians, have relied only on the science available to us for the care of *structural deficits* . . . the time has come to develop rational principles of care."[10]

b) **The Biopsychosocial Model**. Scottish orthopedic surgeon Dr. Gordon Waddell,

Figure 1. Satisfaction with Treatments for Back Pain



Please note that bar segments are not exactly to scale

Q.11 – How satis ed were you with the treatment(s) you received when you [treatment mentioned in Q.9a]? Were you . . .?

Subsample: Respondents who have experienced back pain in the past two years, and sought treatment for it from these various sources.

* The numbers with an asterisk represent small sample sizes (an N below 100). Hence, caution should be used in the interpretation of these results.

Courtesy of Environics Research Group

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a foremost medical expert in the management of back pain, commences his highly regarded text *The Back Pain Revolution* with the uncompromising statement that "back pain is a 20th century medical disaster".[11] This, he says, is because management has been wrongly based on a biomedical model, with over-emphasis on the disc, rest and surgery.

Management must change from rest to early activity. The model must change from one based on structural pathology and disease, to the *biopsychosocial* model illustrated in Figure 2. The overlapping causes of most back pain are mechanical pathology (*bio*), psychological factors (*psycho*) and factors related to lifestyle, work and how patients have learnt to view back pain (*social)*.

Rest is not only inappropriate but is also harmful, physically and psychologically. Helpful effects of early activity include the promotion of bone and muscle strength, improved disc and cartilage nutrition, increased endorphin levels bringing reduced sensitivity to pain and avoidance of psychological problems.

6. **Acute and Chronic Pain**. Rather surprisingly, there has never been agreement amongst health professionals and experts on what amounts to acute (short-term) and chronic (long-term) back pain. Much clinical research is conducted on the basis that acute means pain for less than 2 weeks, with pain for 2-6 weeks being described as sub-acute. Chronic pain is variously described as pain persisting for more than 6 weeks or 12 weeks or 6 months.

What about someone who has had various episodes of back pain over several years but is often pain free? The emerging view of experts is that it is wrong to see back pain as largely a short-term problem that usually resolves, with a small number of patients having long-term chronic problems. Rather, in the words of UK researchers Croft et al., back pain "should be viewed as a chronic problem within an untidy pattern of grumbling symptoms and periods of relative freedom from pain and disability, interspersed with acute episodes, exacerbations and recurrences."[12]

US experts such as Mooney and Haldeman agree. Common or mechanical low-back pain is typically a recurring condition in people who have developed a weakness but are continuing with their lives. The goal of management is to limit disability and pain as promptly and as effectively as possible, and to try to prevent future problems through education, exercise and preventive care. [13,14]

7. **Natural Remission**. It follows from the above that the oft-quoted principle of natural remission – that most patients with back pain seen in practice will get better without any treatment within a month anyway – is wrong. Many will get over their immediate problem, but more slowly, with greater present and future disability, and a greater number will lapse into truly chronic pain and disability.

As Croft et al. explain, the concept of natural remission was fueled by misinterpretation of a 1973 study of one medical practice where recovery was judged on whether or not patients made further visits to the general practitioner, not on whether the patient actually got better.

Croft et al. saw that this was logically inconsistent with much other data on back pain. In the UK, for example, 38% of adults reported significant episodes of back pain each year – which suggests recurring unresolved problems. A previous episode of back pain is the strongest risk factor for a new episode – which suggests the same, and compensation for disability for back pain has risen greatly in recent decades.

Croft et al. therefore did a much more thorough study demonstrating that the concept of high rates of natural remission was a myth. [12] For 463 consecutive patients with back pain seen in general medical practice, 59% (275) had no repeat visit, and only 8% (38) had a repeat visit after 3 months. However, research nurses visiting all patients to measure pain and disability found:

- Only 2 out of 10 (21%) had recovered at 3 months, only 1 in 4 (25%) at 12 months.
- Of those disabled by pain at the first visit, less than 1 in 5 (18%) had fully recovered after 12 months.

This demonstrates the danger of assuming recovery – either from natural remission or the success of treatment – on the basis of whether or not a patient makes a further visit. Smedley et al. have now shown that back pain also persists, rather than resolving naturally, in nurses.[15] Danish chiropractic researchers Lise Hestbaek et al. [16] have just completed the first systematic review of the literature in this area. It identifies 36 studies and reports:

- Where no treatment is given an average of 62% of patients (range 42-75%) still experienced pain after 12 months.
- The prevalence of a new episode of back pain is more than twice as high for those with a previous episode of back pain (62%) than for those without a previous episode (22%).

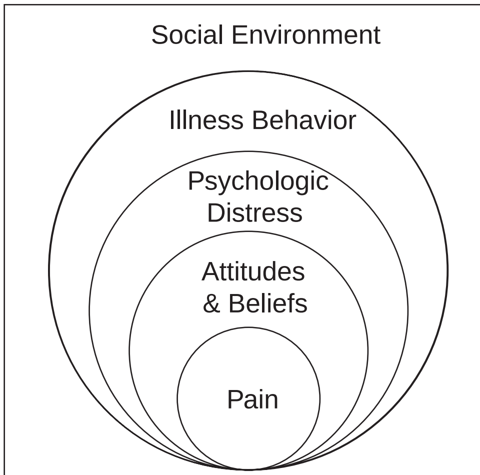

Figure 2
Adapted with permission from Waddell G, The Back Pain Revolution, **1998.**

C. Chiropractic Management

8. **Weighing Evidence.** As we now turn to review the evidence relating to chiropractic management of patients with back pain, let us begin with a few observations about the weight and credibility of evidence.

a) **Methodology**. On issues of the effectiveness (i.e. as in normal daily practice) or efficacy (i.e. as under ideal research conditions) of a specific treatment or management approach, the randomized controlled trial (RCT) carries more scientific weight than a retrospective or prospective case series. It should be noted, however, that RCTs vary greatly in quality, and various criteria and point systems have been developed by epidemiologists for grading them. These are now used in 'systematic reviews', which provide an overview of all the trials and studies in a particular field, and are increasingly used as the basis for sound evidence of efficacy and effectiveness.

It is important to understand and acknowledge that poor design bedevils many RCTs in the field of back pain – but also many systematic reviews. This means that everyone must be cautious in relying on individual RCTs or systematic reviews. Many have scientific bias.

For example many systematic reviews of the evidence on the effectiveness of spinal manipulation for back pain, including the latest by prominent US medical researchers Cherkin, Sherman et al. and published in the *Annals of Internal Medicine* last month,[17] fail to differentiate between manipulation, mobilization and other joint and muscle techniques. Trials of all manual therapy by all professionals are pooled together.

How valid is this when, for example, the Meade et al. trial in the UK compared chiropractic management based on manipulation (rapid chiropractic adjustment techniques) and physiotherapy management based on mobilization (Maitland techniques) and found a major difference in favor of the former. [18,19] Independent reviewers have described the Meade et al. trial as one of the better designed ones, but its significance is lost in a systematic review classifying mobilization and manipulation as spinal manipulation. This is scientific bias.

b) **Bias**. A further major ground for caution is normal bias – in the daily meaning of that word. To be frank, there is an evident turf war in the multibillion dollar back pain marketplace, and surprisingly graphic examples of bias abound – not only at the level of professional trade associations, where you might expect bias, but also amongst prominent experts and researchers. As samples:

i) Dutch researchers Koes, van Tulder et al. note that there were 11 evidence-based national guidelines on the management of back pain published between 1984 and 2000 – in Australia, Denmark, Finland, Germany, Israel, Netherlands, New Zealand, Sweden, Switzerland, the UK and the US. [20]

In all six which involved an evidence review by representative interdisciplinary panels which included at least expert trained in manual therapy, the panels made evidence-based recommendations that spinal manipulation is a safe and effective first line treatment for most patients with back pain. The other five make no such recommendation. This led Koes, Van Tulder et al. to warn that the makeup of the guidelines committee may have a direct impact on assessment of the evidence and recommendations, and led Canadian epidemiologist Rossignol to conclude "the inclusion rather than the exclusion of important stakeholders can be seen as a necessary step in the development and implementation of guidelines."[21]

ii) US medical researchers Curtis, Carey et al. describe spinal manipulation as "one of the few treatments of acute low-back pain with demonstrated efficacy" when applying successfully for federal funds for a trial of spinal manipulation by medical doctors given limited post-graduate training in manipulation. When their trial demonstrated that such medical manipulation was ineffective, they describe spinal manipulation as "controversial" and "not well validated." [22] Very strange.

iii) Finally on bias, we have a fresh load from the UK academic Ernst, who seems bent on fashioning a career from the curious approach of approving spinal manipulation as a treatment approach but not by those with demonstrably the fullest education – chiropractors. In the most recent issue of the *British Journal of Sports Medicine*, in an article titled *Chiropractic Spinal Manipulation for Back Pain*, Ernst warns athletes that chiropractic manipulation is of "uncertain benefit" and that "everyone receiving chiropractic treatment is at risk" with a risk that "can weigh heavily". [23] His focus is osteoporosis (demineralization and weakening of bone), of little relevance to most sports persons and a factor relevant to anyone engaged in spinal manipulation. All of this comment is sharply inconsistent with respected evidence-based guidelines from the UK Royal College of General Practitioners that positively recommend skilled manipulation by chiropractors and others with appropriate specialized training.[24] Again, very strange.

9. Accordingly, it is important to sift all interpretations of the evidence carefully, no matter how respected the source or publication. Wherever possible there should be reliance on independent and/or multidisciplinary sources – the approach now adopted in the following review.

10. **What is Chiropractic Care?** Chiropractic care is not simply spinal adjustment or joint manipulation. Three core components are:

- Manual therapies. Foremost are techniques of spinal adjustment, a refined form of manipulation, but many other manual skills are used in assessment and treatment (e.g. palpation, muscle testing and balancing, mobilization, traction, trigger point therapy, deep tissue massage, etc.).
- Exercise – preventive, rehabilitative, and general.
- Patient advice, education and motivation

However the overall "clinical encounter" includes important intangible qualities that flow from the chiropractic philosophy of health and healthcare and are frequently overlooked in research and commentary. Cooper and McKee from the Medical College of Wisconsin, in a recent independent analysis of the status of chiropractic in the US, identify an holistic approach, sensitivity to patients as individuals, and confident and effective communication as hallmarks of the chiropractic clinical encounter.[25]

11. Meeker and Haldeman, respected spokespersons for the chiropractic profession invited to provide a commentary for physicians in the February 2002

A patient positioned for a lumbar adjustment.
Courtesy of Tom Bergman DC