Health Care Delivery

Managing Low Back Pain—A Comparison of the Beliefs and Behaviors of Family Physicians and Chiropractors

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Random samples of 605 family physicians and 299 chiropractors in Washington were surveyed to determine their beliefs about back pain and how they would respond to three hypothetic patients with back pain. With 79% of the family physicians and 70% of the chiropractors responding, family physicians and chiropractors differed greatly not only in their technical approaches to back pain—such as drug therapy versus spinal manipulation—but also in their underlying beliefs and attitudes. Family physicians think that most back pain is caused by muscle strain, that lumbosacral radiographs are rarely useful, that appropriate therapy does not depend on a precise diagnosis, and that back pain will usually resolve within a few weeks without professional help. Family physicians were more likely than chiropractors to feel frustrated by patients with back pain, less likely to think they can help patients prevent future episodes of back pain, and less confident that their patients are satisfied with their care. Studies are needed to determine whether the different perspectives of family physicians and chiropractors are associated with differences in the costs and outcomes of care.

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Back pain is one of the most common and costly health problems affecting the populations of industrialized nations. Swedish studies suggest that as many as 80% of adults will experience back pain during their lifetimes[1] and that 40% to 50% of adults experience back pain each year.[2] An estimated $5 billion is spent annually in the United States on the diagnosis and treatment of back pain, and an additional $14 billion is consumed in lost productivity, disability payments, and lawsuits.[3]

According to the 1980 National Medical Care Utilization and Expenditure Study, 40% of Americans with chronic back pain sought care for their back pain during 1980 from doctors of medicine or osteopathy and 30% sought care from chiropractors.[4] Because persons receiving back care from chiropractors made more visits than those receiving care from allopathic and osteopathic physicians (means of 8.2 and 2.8 visits, respectively), almost two thirds of all visits for back pain were to chiropractors. Despite the prominent role that chiropractors play in caring for patients with back pain, there is little information in the medical literature about how chiropractors actually manage patients with back pain, the efficacy of chiropractic therapy, or the relative cost-effectiveness of chiropractic care versus allopathic or osteopathic care for this problem.

Because of concerns about the costs and quality of care given patients with back pain, an effort was made to learn how family physicians and chiropractors provide care for patients with back pain and how patients respond to the care they receive from these practitioners. We compare the beliefs and attitudes about back pain of family physicians and chiropractors and their clinical responses to patients with back pain.

Methods

Provider Samples

The physician sample included all 181 family physicians employed by the largest health maintenance organization (HMO) in the state of Washington and a 50% random sample (424) of the 847 non-HMO members of the Washington Academy of Family Physicians. The higher sampling rate of HMO physicians was required to ensure an adequate sample size for a second HMO-based study of low back pain comparing physician and patient responses. The HMO does not employ chiropractors, though about a third of its 320,000 enrollees have insurance coverage for up to $200 of self-referred chiropractic services per year. Chiropractors were selected by taking a 50% random sample of the 642 members of the Washington State Chiropractic Association residing in the geographic area served by the HMO—that is, the Puget Sound area.

Survey Instruments

A two-stage process was followed in constructing the survey instruments used to gather information from the providers. First, separate groups of family physicians and chiropractors were assembled for discussions of how they

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managed patients with back pain. This process helped us identify the range of provider beliefs, attitudes, and behaviors associated with managing back pain. Using the discussion group information as a guide, we then constructed and pilot-tested questionnaires designed to determine the prevalence of the specific beliefs and behaviors that had been identified.

The questionnaires included items concerning provider characteristics—such as age, sex, years in practice, adequacy of training to manage back pain, and personal experience with back pain—provider beliefs and attitudes about managing back pain, and attitudes about patients with back pain. In addition, three clinical vignettes were included that asked providers what tests, therapies, and follow-up they would order for three different types of patients with back pain. Providers were also asked how confident and comfortable they would feel when managing each type of patient. These vignettes were chosen to cover a wide range of types of patients with back pain that are frequently seen in primary care settings. For each vignette, providers were asked to indicate their most likely response on the first visit with these patients. The vignettes were as follows:

Patient 1. A 37-year-old woman sees you with her first episode of low back pain. It was of sudden onset yesterday when she bent over to pick up her 3-year-old daughter. The pain is constant and she is having difficulty performing her usual activities. She has some muscle tenderness in the lower back, but the neurologic examination is normal.

Patient 2. A 44-year-old man sees you for the first time, complaining of mild low back pain. He has been seen by other physicians over a period of years for recurrent low back pain dating to an injury ten years ago while working in a warehouse. He says that previous physicians were unable to find a cause for the pain. He cannot pinpoint when the pain started this time but thinks it might have been related to working on his roof a week ago. He has no other symptoms and his general and neurologic examinations are unremarkable.

Patient 3. A 52-year-old man sees you the day after a minor automobile accident. Although he felt well initially, he was unable to sleep last night because of increasing pain in the lower back and sciatica on the left side. On examination the ankle reflex is depressed and straight-leg raising is positive.

The questionnaires sent to family physicians and chiropractors were similar except for differences in the range of specific response options for the clinical vignettes. For example, because chiropractors cannot prescribe medications, they were not asked questions about drug therapy. Chiropractors were also not specifically asked if they would do laboratory tests for their patients or if they would refer patients for physical therapy but were given an opportunity to specify "other" tests or therapies they would order. Fewer than 4% of chiropractors indicated they would order laboratory tests or physical therapy referrals on the first visit for any of the three patients. These estimates, however, might be lower than would have been found had these items been specifically listed on the questionnaire.

Response Rates

After three mailings, usable responses were received from 79% (476/605) of the family physicians. After excluding 22 chiropractors who were not in practice or whose addresses were no longer valid, the adjusted response rate for chiropractors was 70% (208/299).

Statistical Tests

Even though non-HMO family physicians were sampled at half the rate as HMO family physicians, responses by HMO and non-HMO family physicians were given equal weights in the analyses to avoid confusion about the meaning of "weighted" estimates and the statistical problems associated with calculating variance estimates for weighted samples. None of the conclusions reached in this study would be different had weighted estimates been used, as the responses of the HMO and non-HMO physicians were generally similar. Student's t test was used to compare differences between means, and the χ^2 test with continuity correction was used to compare differences in responses to dichotomous variables. The conventional criterion of statistical significance ($\alpha = .05$) was used. Due to the large sample sizes, all of the differences that were clinically important were statistically significant.

Results

Provider Characteristics

There were significant differences between the family physicians and chiropractors studied for all of the provider characteristics examined, although the differences were not large for age, sex, and years in practice (Table 1). However, 42% of family physicians felt they had been poorly trained to manage low back pain when they first entered practice, triple the percentage for chiropractors. While more than three quarters of the family physicians reported having personally had low back pain, back pain was an almost universal experience among chiropractors. Of the family physicians, 77% had completed at least two years of residency training.

Family physicians and chiropractors were also significantly different in terms of their fundamental practice style philosophies (Table 1). While more than 40% of the family physicians claimed to emphasize the "art of medicine over the science of medicine" and to "often deliberately take advantage of the placebo effect" to help their patients, few chiropractors claimed to emphasize the "art of chiropractic over the science of chiropractic," and virtually all said they did not deliberately use the placebo effect. Family physicians were also more likely to admit discomfort with clinical situations that involved a high degree of uncertainty, although the difference between the two types of providers, while statistically significant, was not large.

Patient Vignettes—Tests

Lumbosacral radiographs were ordered by almost all chiropractors on the first visits with all three patients (Table 2). In contrast, the percentage of family physicians who would

TABLE 1.—*Provider Characteristics of Family Physicians and Chiropractors Included in the Study**†

Characteristics	*Family Physicians*	*Chiropractors*
Age, mean years	43.6	41.5
Duration in practice, mean years	13.4	11.6
Male, %	84	90
Felt poorly prepared to manage back pain when first entered practice, %	42	15
Have had low back pain, %	78	97
Tend to emphasize art of medicine/chiropractic over science, %	43	11
Often deliberately take advantage of the placebo effect to help patients feel better, %	43	3
Uncomfortable with clinical situations involving high degree of uncertainty, %	45	36

*Due to missing information for some items, sample sizes range from 466 to 473 for family physicians and from 204 to 206 for chiropractors.
†All differences between providers are statistically significant ($P < .05$).

order a radiograph varied by patient, ranging from 10% for the woman with the lifting injury (patient 1) to almost 93% for the man with sciatica (patient 3). In addition, 10% to 22% of chiropractors noted they would also order other types of radiographs (primarily cervical and full-spine radiographs) for the three patients (Table 2). In all, 5% of chiropractors and 6% of family physicians indicated they would order a computed tomographic scan for the patient with sciatica.

About a quarter of family physicians would order urinalysis and the measurement of the sedimentation rate for the patient with a vague onset of pain, and a similar proportion would do a urinalysis for the patient with sciatica (Table 2). Smaller proportions of family physicians indicated they would do a complete blood count. Only about 1% of the chiropractors indicated a desire for a laboratory test. Fewer than 3% of providers said they would order any other type of test for any of the three patients.

It should be noted that some of the chiropractors expressed discomfort with the limited amount of information available on each patient, and roughly 20% made a point of noting on the questionnaires that they would do range-of-motion, palpation, neurologic, orthopedic, or chiropractic examinations as part of their assessment of the patients. In contrast, similar concerns and comments were made by only about 1% of family physicians. In addition, 22% of family physicians and 12% of chiropractors noted a desire to review the old medical records of the patient with a long history and vague onset of pain (patient 2).

TABLE 2.—*Percentages of Providers Ordering Tests During First Visit With Hypothetic Patients*†*

Tests	*Patient 1*	*Patient 2*	*Patient 3*
Lumbosacral radiograph, %			
Family physicians	10	49	93
Chiropractors	92	93	95
Other plain radiographs, %			
Family physicians‡	0	0	0
Chiropractors‡	10	15	22
Urinalysis, %			
Family physicians	11	23	27
Chiropractors‡	1	1	0
Sedimentation rate, %			
Family physicians	2	27	8
Chiropractors‡	0	1	0
Complete blood count, %			
Family physicians	4	16	13
Chiropractors‡	0	1	0

*Patient 1: a 37-year-old woman with a lifting injury has disabling back pain; patient 2: a 44-year-old man has a vague onset of mild symptoms; patient 3: a 52-year-old man has sciatica after a car accident.

†Percentages are based on responses from 469 to 475 family physicians and 205 to 208 chiropractors. All differences between providers are statistically significant ($P <$ .05) except for lumbosacral radiographs for patient 3.

‡Indicates write-in responses in "other" category.

TABLE 3.—*Percentages of Providers Ordering Nondrug Therapies During First Visit With Hypothetic Patients*†*

Nondrug Therapy	*Patient 1*	*Patient 2*	*Patient 3*
Bed rest, %			
Family physicians	52 (3.1)	18 (3.8)	86 (5.0)
Chiropractors	30 (2.7)	8 (2.5)	51 (4.4)
Spinal manipulation, %			
Family physicians	5	2	2
Chiropractors	92	86	76
Ice/heat, %			
Family physicians	84	60	71
Chiropractors	91	60	88
Exercises, %			
Family physicians	29	50	9
Chiropractors	19	43	11
Physical therapy, %			
Family physicians	13	49	21
Chiropractors‡	1	3	3

*Patient 1: a 37-year-old woman with a lifting injury has disabling back pain; patient 2: a 44-year-old man has a vague onset of mild symptoms; patient 3: a 52-year-old man has sciatica after a car accident. Percentages are based on responses from 472 to 475 family physicians and 203 to 207 chiropractors.

†The numbers in parentheses indicate the mean number of days of bed rest ordered for patients prescribed bed rest. Differences in mean number of days of bed rest between providers were statistically significant ($P <$ .05) only for patient 2. All other differences between providers were statistically significant except for ice/heat therapy for patient 2 and exercise therapy for patients 2 and 3.

‡Indicates write-in responses in "other" category.

Patient Vignettes—Treatments

Family physicians were about twice as likely as chiropractors to prescribe bed rest for all three of the patients (Table 3). Among providers who prescribed bed rest, family physicians did so for a longer period of time than did chiropractors for all three patients, although the difference was statistically significant only for patient 2. Although spinal manipulation was ordered by about 90% of chiropractors for the patients without sciatica and by more than three fourths of chiropractors for the patient with sciatica, it was rarely ordered by family physicians. There were no significant differences in the proportions of family physicians and chiropractors who indicated that they would prescribe heat or ice therapy for patient 2 or in the proportions who said they would prescribe exercises for patients 2 or 3. Finally, while family physicians would refer significant proportions of their patients for physical therapy, this was rarely recommended after the first visit by chiropractors. Because 6% of chiropractors commented that they could not respond to questions concerning therapy until they had seen the results of the radiographs, the percentages for chiropractors in Table 3 might be slightly underestimated.

Two other types of responses were written in by at least 5% of providers. Depending on the patient, between 4% and 11% of chiropractors said they would prescribe orthopedic supports, whereas this therapy was never mentioned by family physicians. For the patient with sciatica, 10% of family physicians and 16% of chiropractors noted that they would consult a specialist, such as an orthopedic surgeon, a neurosurgeon, or a neurologist.

Because chiropractors cannot prescribe medications, specific questions about drug therapy were asked only of family physicians. The percentage of family physicians who said they would prescribe drugs for each of the three patients ranged from 82% to 90% for anti-inflammatory drugs, 21% to 76% for analgesics, 30% to 50% for muscle relaxants, and 1% to 6% for sedatives. None of the chiropractors indicated they would recommend even nonprescription drug therapy such as aspirin for the patients.

Patient Vignettes—Follow-up Visits

More than 90% of chiropractors said they would ask the three patients to schedule a follow-up visit at the end of their visit, and 9% said they would also call patients at home the evening of the first visit. Family physicians were as likely as chiropractors to schedule a return visit for the patient with sciatica, but only 34% would do so for the woman with the

lifting injury, and only 71% would do so for the man with the vague onset of symptoms. These differences between providers were statistically significant.

Patient Vignettes—Confidence and Comfort

Almost all chiropractors felt confident that they would be able to "greatly" or "moderately" affect the rate of recovery of all three patients (Table 4). This contrasts sharply with the responses of family physicians, many of whom felt that they would have little or no effect on the rate of recovery of the woman with the lifting injury and of the man with the vague onset of pain. Almost three quarters of the family physicians, however, felt they could speed the rate of recovery of the man with sciatica. Chiropractors were also significantly more likely than family physicians to claim to feel comfortable managing the three patients (Table 4).

Provider Beliefs and Attitudes

The beliefs of family physicians and chiropractors concerning the cause, diagnosis, prognosis, treatment, and prevention of low back pain were consistently different. Family physicians attributed the largest share of back pain to muscle strain while chiropractors thought that vertebral subluxations were the principal underlying cause of most back pain (Table 5). Almost 15% of chiropractors did not respond to this question, many of whom noted that it was not possible to identify a single cause since multiple causes existed simultaneously as a "vertebral subluxation complex."

In contrast to chiropractors, most family physicians disagreed that a precise diagnosis was a prerequisite for appropriate therapy for most low back pain and agreed that radiographs were rarely useful (Table 6). Family physicians were much more likely than chiropractors to think that there was nothing physically wrong with many patients with low back pain, though the proportion of providers holding this belief was low in both groups.

Almost 90% of family physicians but fewer than a third of chiropractors think that most low back pain will resolve itself within a few weeks without professional help (Table 6). Despite this widespread belief among family physicians, less than half said that they assured patients with low back pain that the pain would go away within a few weeks. Several chiropractors noted that although pain will often resolve without help, it will often return if the underlying problem is not addressed.

A majority of both family physicians and chiropractors agreed that effective therapies were available for most patients with low back pain (Table 7). The fact that almost 60% of the family physicians agreed that the most important thing was to make patients comfortable while nature took its course suggests that the therapies many of the family physicians considered to be effective were probably bed rest and medication. The great majority of chiropractors rejected the notion that making patients comfortable was of primary importance, presumably because they believed they could provide a therapy—that is, manipulation—that addressed the problem, not just its symptoms. Almost all chiropractors but less than 60% of family physicians thought that they could do

TABLE 4.—*Confidence in Ability to Affect Course of Illness and Comfort Dealing With 3 Hypothetic Patients With Back Pain**†

Confidence or Comfort Level	Patient 1	Patient 2	Patient 3
Believe able to moderately or greatly affect patient's rate of recovery, %			
Family physicians	54	23	74
Chiropractors	100	98	97
Very comfortable dealing with this type of patient, %			
Family physicians	78	33	43
Chiropractors	98	90	86

*Patient 1: a 37-year-old woman with a lifting injury has disabling back pain; patient 2: a 44-year-old man has a vague onset of mild symptoms; patient 3: a 52-year-old man has sciatica after a car accident. Percentages are based on responses from 467 to 475 family physicians and 197 to 208 chiropractors.
†All differences between providers are statistically significant.

TABLE 5.—*Principal Underlying Cause of Low Back Pain**

Cause of Back Pain	Family Physicians, N=454, %	Chiropractors, N=178, %
Muscle strain	47	14
Vertebral subluxation	2	55
Facet joint syndrome†	9	10
Disc problem	12	9
Spinal arthritis	14	7
Psychosomatic	8	2
Other, unknown	8	4
Total	100	100

*Estimated mean percentage of patients.
†Only cause of pain for which differences in estimates of family physicians and chiropractors were not statistically significant.

TABLE 6.—*Beliefs Concerning the Diagnosis and Prognosis of Back Pain (percentage agreeing with statement)**

Belief	Family Physicians, %	Chiropractors, %
Appropriate therapy for most low back pain requires a precise diagnosis	31	91
X-ray films are rarely useful in the assessment of low back pain	67	6
There is nothing physically wrong with many patients who complain of low back pain	19	3
Most low back pain will resolve itself within a few weeks without professional help	88	28
I assure patients with low back pain that their pain will go away within a few weeks	46	33

*Percentages are based on responses from 467 to 475 family physicians and 196 to 206 chiropractors. All differences between providers were statistically significant ($P < .05$).

TABLE 7.—*Beliefs Concerning Therapy and Prevention (percentage agreeing with statement)**

Belief	Family Physicians, %	Chiropractors, %
Effective therapeutic interventions are available for most patients with low back pain	71	87
The most important thing to do for patients with low back pain is to make them comfortable while nature takes its course	58	14
Doctors [MD or DC] can do a lot to prevent patients with acute back pain from developing chronic back pain	57	98

*Percentages are based on responses from 472 to 476 family physicians and 200 to 205 chiropractors. All differences between providers are statistically significant.

TABLE 8.—*Comfort Managing Back Pain and Perceived Patient Satisfaction (percentage agreeing with statement)**

Belief	Family Physicians, %	Chiropractors, %
I am very comfortable managing patients with low back pain	78	98
I often feel frustrated by patients who want me to fix them	59	23
Most of my back pain patients are very satisfied with my care for their back pain	55	99

*Percentages are based on responses from 473 to 475 family physicians and 203 to 207 chiropractors. All differences between providers are statistically significant.

a lot to prevent acute back pain from developing into chronic back pain (Table 7).

Finally, although most family physicians and virtually all chiropractors claimed to be very comfortable managing patients with low back pain, most family physicians but few chiropractors admitted that they often felt frustrated by patients with low back pain who wanted to have their backs "fixed" (Table 8). Chiropractors were also much more confident than family physicians that their patients with low back pain were satisfied with their care.

Discussion

This study has shown that family physicians and chiropractors have greatly divergent beliefs about back pain and use different clinical strategies for managing back pain. Family physicians are much less likely than chiropractors to believe that they were adequately trained to manage low back pain, that low back pain is caused by vertebral subluxations, that radiographs are important for establishing a diagnosis, that appropriate therapy requires a precise diagnosis, that patients with low back pain can be benefited by professional help, that acute back pain can be prevented from developing into chronic back pain, and that their patients are satisfied. In addition, family physicians are much more likely than chiropractors to think that there is nothing physically wrong with many patients who complain of back pain and to often feel frustrated by these patients.

According to their responses to the three patient vignettes, family physicians and chiropractors also have different practice styles that are clearly associated with their beliefs about back pain. Chiropractors virtually always order lumbosacral radiographs (and sometimes cervical or full-spine radiographs) on the first visit with a patient. In contrast, the radiograph-ordering behavior of family physicians was found to depend on the type of patient and, for some types of patients, on the individual physician's practice style. Laboratory tests are apparently rarely ordered by chiropractors but are ordered by a significant minority of family physicians for certain types of patients with back pain.

Heat or ice therapy and exercise were prescribed by roughly similar proportions of family physicians and chiropractors. Both types of providers prescribe bed rest, though family physicians do so more frequently and for longer periods of time. The main differences in therapy were that chiropractors almost always did spinal manipulation while family physicians almost always prescribed drugs and often referred patients for physical therapy. Chiropractors were also generally more likely than family physicians to ask patients to schedule follow-up visits. Finally, chiropractors were significantly more likely to think that they could hasten a patient's recovery and that their patients were satisfied with their care.

There are several limitations that should be considered when interpreting these results. First, the study was conducted in a single state. Because laws affecting chiropractic vary considerably from state to state, the differences between providers might have been more or less pronounced had this study been conducted in another state. Second, it is unclear if the types of patients seen by family physicians and chiropractors in their practices are similar. If family physicians and chiropractors in fact see very different types of patients who have back pain, they may envision the standardized patients in the vignettes differently in terms of patient and illness characteristics not specifically mentioned. Finally, the clinical vignettes were restricted to first visits with a limited range of patients, and it is not known to what extent provider responses to hypothetic patients reflect their actual behavior. In view, however, of the large and consistent differences between family physicians and chiropractors, it seems unlikely that many of the results would have been qualitatively different in the absence of these limitations.

Because chiropractors specialize in problems of the spine, it should not be surprising that they are more confident and comfortable than family physicians in managing problems such as low back pain. Because back symptoms are the third most common reason for visits to family physicians,[5] however, it is disconcerting that about half of the family physicians in Washington feel poorly prepared to manage back pain, frustrated by patients who have back pain, and limited in their ability to affect patients' rate of recovery and likelihood of developing chronic back pain. These feelings, if communicated to patients, could be detrimental to effective therapy.

There are a number of reasons, in addition to inadequate preparation, why family physicians may feel uncomfortable managing back pain. Family physicians may believe that for most patients seen in the primary care setting with back pain, the cause of the pain is unknown,[6] there are no tests available to provide a precise diagnosis, and there is no single therapy that is clearly superior to other therapies or to nature's own course.[1,7] In addition, physicians are often put in the position of passing judgment, without the benefit of objective measures, about the ability of patients to perform their usual work activities. By contrast, chiropractors believe they have the ability to provide patients with graphic evidence of the precise cause of their pain—that is, a lumbosacral radiograph—and to eliminate the cause by using a specific therapeutic maneuver—spinal manipulation—that they are confident is effective.

If primary care physicians accept that radiographs are of minimal diagnostic value for most patients and that no clearly superior therapy exists for back pain,[7] they must look for other ways in which they can help their patients. Back pain is not a scientific medical problem in the same sense as strep throat and hypertension, and its effective management probably depends more on the successful application of the art of medicine than the science of medicine. Deyo, for example, reported that patients with back pain who felt they had received an adequate explanation of their problem were more likely to be satisfied with their care regardless of whether a diagnostic test was done.[8] Future research on the primary care management of low back pain should pay greater atten-

tion to the impact of nontechnologic interventions, such as information, reassurance, caring, and legitimization, on the outcomes of care such as patient satisfaction, disability, and dependency.

In conclusion, there are large and fundamental differences between family physicians and chiropractors in terms of not only their technical approaches to back pain but also their underlying beliefs and their levels of comfort and confidence when dealing with patients with back pain. These differences between family physicians and chiropractors, if found to be associated with differences in cost or outcome, could have major implications for how this common and costly problem will be managed in the future.

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