

CHIROPRACTIC IN NORTH AMERICA: A DESCRIPTIVE ANALYSIS

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ABSTRACT

Objective: This paper provides descriptive data on chiropractors, their practice, and their patients in North America in the past decade.

Method: Five sites in the United States and 1 in Canada were chosen, and a random sample of chiropractors was interviewed. In each practice, 10 patients were systematically selected on a single day. A total of 131 chiropractors and 1275 patients were interviewed.

Summary: The results suggest that doctors of chiropractic have firmly established themselves within the health care system in the United States and Canada and are able to attract patients who come to them directly for treatment, for largely back-related conditions, and who are willing to pay for their care. (*J Manipulative Physiol Ther* 2005;28:83-89)

Key Indexing Terms: *Chiropractic Patients; Practice; Chiropractors*

Of the complementary or alternative medical (CAM) systems, chiropractic represents 1 of the most firmly entrenched in North America. It is also somewhat unique by being 1 of the few indigenous CAM systems having its origins in the mid-Western state of Iowa. Approximately two thirds of all outpatient visits for back pain are made to chiropractors.¹ Chiropractors in the United States are responsible for the largest amount of billed services for manipulation covered by insurance (94%), and the estimated annual expenditure for chiropractic services was US\$2.4 billion by 1988.² The mean number of patient visits per week per chiropractor in 1994

was reported as 109.2.³ It is estimated that around 7% of the total medical patient population uses chiropractic at any given time.⁴

Despite the widespread use of chiropractic, good descriptive data on chiropractors and their patients are limited. There is an extensive list of publications spanning over 40 years in sociology and anthropology. This body of literature in the social sciences, however, gives limited descriptive information about chiropractic being more focused on theoretical issues about the role of the chiropractor and its status within the culture. A second and growing body of literature is in the area of health services research. Although the data from this study are also dated (1993-1994), it is the most current national data available. This probably reflects the high cost and the effort needed to do such surveys.

Although this work has contributed to our knowledge of chiropractic, much of it is limited in its usefulness for descriptive purposes either because it is based on data limited to a single state,⁵ to areas within a state (eg, rural),⁶ or relies on data from outside the United States.⁷⁻⁹ Even where US community-based data have been used¹⁰ the analysis is based on data that are now dated. More recently studies have been done through an established chiropractic practice network,^{11,12} but these are convenience samples and are therefore more constrained in terms of generalizations. The only recent data that can be generalized are from 2 previous publication from this project^{13,14} which are based on randomly selected practices and patients in cluster samples in North America.

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Much work is still needed therefore before a coherent, objective, and contemporary account of chiropractic will be available. It requires, as a minimum, adequate descriptive data on the chiropractor profile, the chiropractic practice, the broad range of health services provided by the chiropractor, the patient demographics, patient use patterns, the health status of the patients, and the role of the chiropractor in the patient's total health care. Recent studies internationally^{9,15,16} have clearly established that the amount of spending on alternative health care, such as chiropractic, is considerable and estimated at around US\$12 billion out-of-pocket expenses annually for alternative health care in the United States, comparable to the out-of-pocket expenditures for hospital care.¹⁶

The following study provides descriptive data of chiropractors and their patients in 6 sites in North America; used random samples for providers, systematic sample of the patients; has geographic representation; and collected detailed data not available from such sources as claims data or patient files. For example, a unique feature of the present study is the data collected on the general health status of the chiropractic patients, which allows comparisons to other, nonchiropractic, patient populations. Apart from the usefulness of such data for describing chiropractic, it has a valuable contribution to make to chiropractic researchers for such methodological challenges as doing power calculations for future empirical studies.

METHODS

Sample

Six sites were chosen (5 in the United States and 1 in Canada) that represent a range of chiropractic-to-population ratios and geographic areas and because they vary in the legislated chiropractic scope of practice. The sites were San Diego, Calif; Portland, Ore; Vancouver, Washington State; Minneapolis-St. Paul, Minn; Miami, Fla; and Toronto, Ontario, Canada.

The sampling frame for each site was established by combining the telephone yellow pages, the state licensing lists, and where applicable, the mailing list of the local chiropractic college (available in Toronto, Portland, and Minneapolis-St.Paul). From the combined lists, excluding duplicates, a random sample of practitioners was chosen, 20% of which were from rural areas in Oregon, Minnesota, and Ontario. The criterion for inclusion was that the chiropractor had to be in practice in the geographic area before January 1, 1990, so that during the time of the data collection (1993-1994), we were not assessing practices just being established.

Of the 185 eligible chiropractors selected, 131 participated for an overall response rate of 71%. Each chiropractor was paid an honorarium for participating (US\$100 with an additional US\$30 for the office personnel who assisted in providing records and enrolling patients).

Table 1. Selected characteristics of the practice

Characteristic	Percentage
Full time practice (36 hours weekly)	83%
Owner of the practice	80%
General practice	23%
Specialty	28%
Both a general practice and a specialty	47%
Employ a chiropractic assistant	69%
Additional staff	54%
Patients seen weekly	
<50 patients	21%
50-70 patients	22%
>71 patients	57%
Gross income	
>US\$200,000 annually	37%
US\$81,000-\$200,000 annually	41%

Data Collection

Data were collected from 3 major sources, including patient files, practitioner interviews, and patient interviews. This paper, however, reports only the interviews on 131 chiropractors and 1275 patients. At an office visit by the research staff, the chiropractor was asked to complete a demographic questionnaire that included questions about the practice. In addition 10 patients were systematically chosen throughout a single day, the ratio determined by the number of patients seen on that day, and they were asked to complete a structured questionnaire. The patient questionnaire included questions on demographic characteristics, history of chiropractic use, current health problem, a modified Roland/Morris Scale for low-back pain, the SF-36 instrument for general health status, questions pertaining to that day's visit, insurance and costs of care, care before chiropractic, satisfaction with care, and health beliefs.

Analysis

For this article, descriptive statistics were calculated for the data collected.

RESULTS

The results are presented under 3 headings: the practice, the practitioners, and the patients.

The Practice

A summary of the data presented on the practice are shown in Table 1.

Organization of the practice. Eighty-three percent of the practitioners describe their practice as full time (36 hours or more per week), and 80% are the owners of the practice. A further 8% have a contractor relationship, and 8% are a partner. Only 1% report being an employee.

Forty percent have practiced in their present location for 1 to 5 years, with 53% having been there longer. The

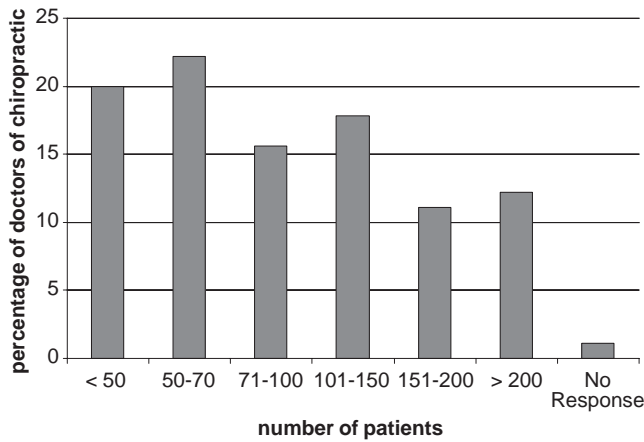


Fig 1. Patients seen in a typical week.

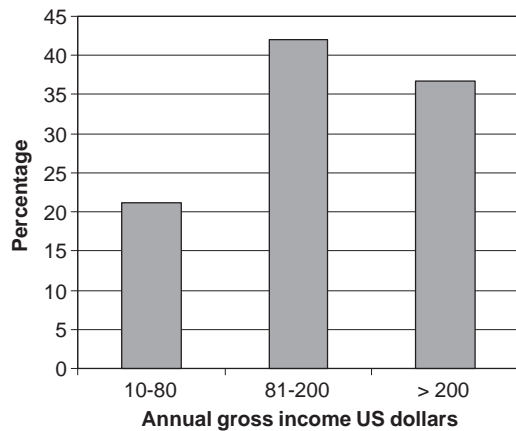


Fig 2. Gross income from chiropractic practice.

majority of chiropractors (61%) practice 4 or more days a week. The chiropractors used 2 general terms to describe their practice: a specialty (23%) and a general practice (28%), but the largest group (47%) described it as both a general practice and a specialty.

Sixty-nine percent of the chiropractors employ a chiropractic assistant, and of those, 40% employ 1 and 31% employing 2. Only 54% report employing additional staff with a large group, 42%, do not. For those that employ additional staff, 49% only employ 1 additional person, 25% report 2, and 32% more than 2.

Economics of the practice. The number of patients seen in a typical day ranges from less than 10 to greater than 50. Thirty-one percent of the chiropractors report seeing 21 to 30 patients daily, and 28% see 10 to 20 patients. A small group (13%) see over 50 patients daily. The numbers seen in a typical week are shown in Fig 1. Twenty-two percent see 50 to 70 patients weekly, 21% see less than 50, whereas 57% are seeing more than 71 patients weekly. Included in the latter is a small group (12%) seeing more than 200 patients weekly.

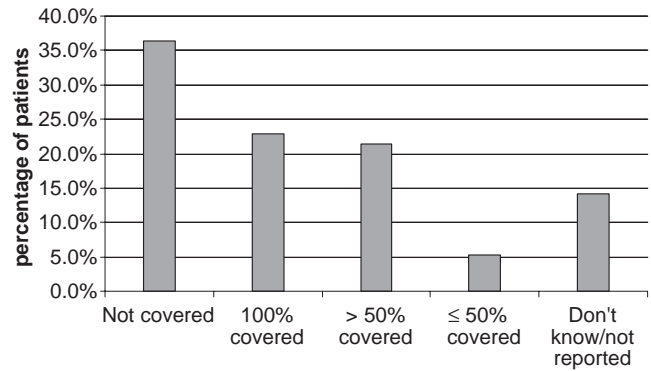


Fig 3. Patient costs for visit covered by health insurance.

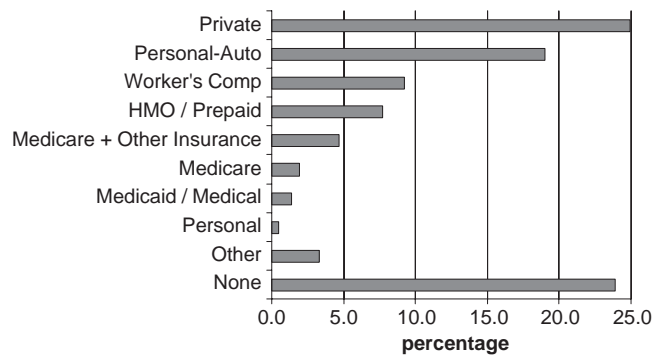


Fig 4. Patient health insurance for chiropractic care.

The gross income from the practice is shown in Fig 2. A sizeable group (37%) reports that their gross income is more than US\$200,000 annually. A further 41% report gross income between \$81,000 and \$200,000. The proportion of the gross that goes to overhead varied considerably, but 44% of the practitioners reported that it accounted for 51% to 75% of the gross.

The chiropractors estimated that 36% of the patients were not covered by health insurance, and only 23% had all their costs covered (Fig 3). Of those who had insurance, the chiropractors estimate that 25% have private insurance, 8% have HMO prepaid, 9% have workers compensation, and 19% had personal auto insurance. Only 1.9% had Medicare, and 1.4% had Medicaid/Medical (Fig 4). Most of the chiropractors (86%) report carrying malpractice insurance.

Organizationally, therefore, it would seem that chiropractic offices still tend to be modest in the number of employees and owned and operated by solo practitioners. Chiropractors report having busy practices. A sizeable number of the patients pay for their own care and managed care in the form of prepaid HMOs have only modestly penetrated the practices. Where patients have insurance, it is most likely to be private insurance.

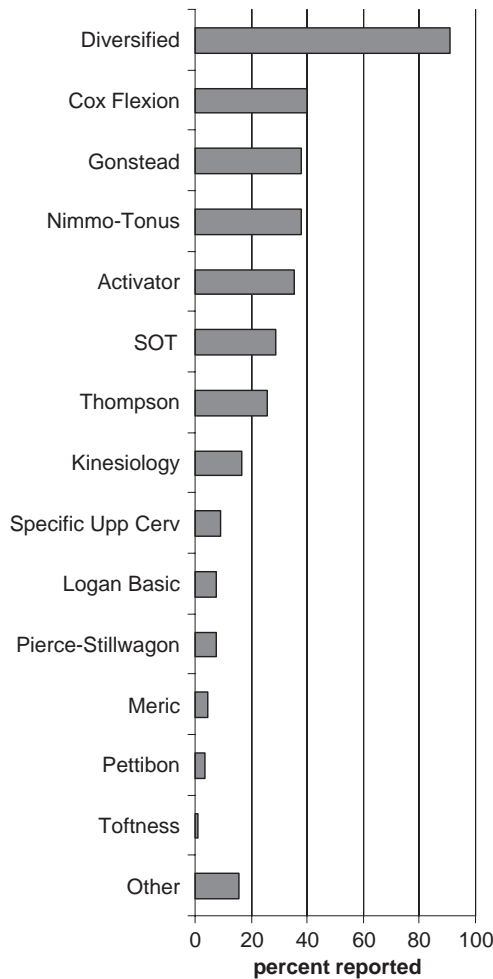


Fig 5. Frequency of routinely used adjustive techniques.

The Practitioners

Demographic profile. The chiropractors (n = 131) were predominantly male (83%), had a mean age of 40.6 years, and are overwhelmingly white (94%) with only 3% Asian, 1% Latino/Hispanic and 2% other. In addition to their chiropractic degree, 49% have a bachelor's degree (BA/BSc), 25% had an associate degree (AA), and 13% have more advanced degrees. Their average age at graduation from chiropractic school was 28.4 years. In the United States, the chiropractors were largely born here (97%), but in Canada, they were equally likely to be foreign-born as born in Canada (48% vs 53%). The majority of chiropractors are married (68%).

In terms of postgraduate board eligibility or certification, 51% had no postgraduate certification, and 19% had 1 of the chiropractic professionally recognized certifications. Twenty-five percent reported some other form of postgraduate eligibility/certification. In this study, for the American chiropractors, 44% belonged to the American Chiropractic Association, and 9% to the International Chiropractic Association (the 2 major national trade

associations) with 36% belonging to neither. Canada only has 1 national association.

Forty percent of the practitioners have been in active practice for 6 to 10 years, 34% for 11 to 15 years, and 14% longer than 16 years.

The demographic profile in this study is similar to national surveys conducted by the National Board of Chiropractic Examiners in 1993 in the United States and Canada of 6197 chiropractors.^{17,18} In that study, 87% of the chiropractors were white, 85% were male, and 48% had a bachelor's degree in addition to the chiropractic degree.

Practice therapies. The most common therapy in chiropractic is the chiropractic adjustment. However, there are many systems or techniques of adjustments within chiropractic. Fig 5 summarizes those that are routinely used (ie, daily or often) by the practitioners. By far, the most common is diversified technique (over 92%). With the exception of Cox flexion (39%), Nimmo-Tonus (37%), Gonstead Technique (36%), and activator (35%), all the others were used regularly by less than 30% of the practitioners.

Chiropractors also use a wide range of other nonadjustive therapies. Fig 6 again focuses only on those used daily or often. Patient education is the most widely reported nonadjustive therapy (95%), followed by exercise (92%), ice therapy (78%), massage (77%), electrical therapy (71%), physical therapy (70%), ultrasound (67%), heat therapy (66%), and acupressure (61%). Such things as traction (58%), therapeutics supports (56%), and nutritional supplements (52%) are reported as being used less frequently.

The Patients

Demographic profile. The demographic profile of the patients (n = 1275) is shown in Table 2. The patients were largely white (83%), with an average age of 42 years, predominantly women (61%) and married (57%). Although on most demographic variables the Canadian and US samples are either identical or very similar, in terms of education, they differ. In the American sample 54% had a degree, compared with 38% in Canada, and a further 33% had some college education compared with 15% in Canada.

In terms of income, 27% of the patients had incomes in excess of US\$50,000, a further 26% earn between US\$30,000 and US\$50,000. Twenty-one percent earn less than US\$20,000.

Problems treated by the chiropractor. Very little previous data are available on the health status of chiropractic patients. Overwhelmingly, the patients reported being treated for a back-related problem (76%). When asked to specify their illness or injury, 27% reported it as a neck/cervical problem, 22% as a low-back problem, and 21% as a back/spine problem (6% did not specify the location of their illness or injury). Extremities accounted for 13% of the reports. Most had experienced the symptoms for less than 3 weeks (45%), but 1 sizeable group had symptoms for more than

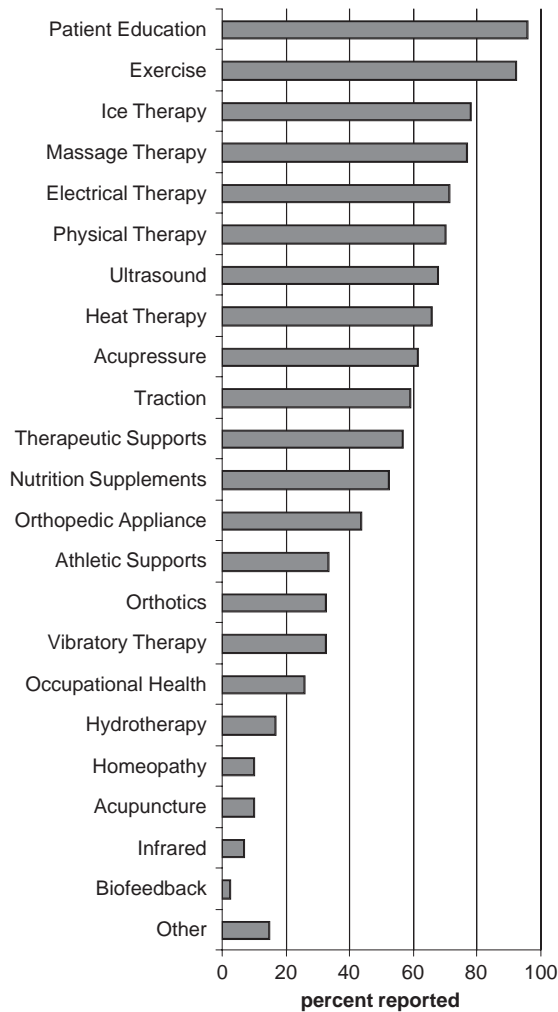


Fig 6. Frequency of routinely used nonadjustive techniques.

6 months (21%). Just over half of the patients (53%) reported having an injury, and the most common reported source for an injury was for non-work-related injuries (43%) with work-related accounting for only 16% (21% were classified as nonspecific.).

Disability status. The patients with a back problem were asked to complete a disability questionnaire of 23 items. The instrument presented statements concerning disabilities and asked the patient to respond with a “yes” for agreement or “no” for disagreement and is based on one developed by Patrick et al,¹⁹ which is a modification of the Roland Disability Scale. The results on this scale have been previously published by the authors.²⁰ The average Roland score for this sample was 9.7 (where a higher value indicates more disability) which compares to acute low-back pain patients presenting to medical doctors of 10.3 for urban primary care, 12.7 for rural primary care, 11.7 for urban chiropractic, and 9.9 for rural chiropractic.²¹

General health status. All the patients were asked to complete the SF-36 to assess their general health status

Table 2. Demographic variables of patients

Variable	Overall (%)	United States (%)	Canada (%)
Age	42.2	41.9	42.8
Sex			
Men	38.4	37.5	40.5
Women	60.9	61.7	59.0
Race/ethnicity			
White	82.5	79.4	89.3
Black	3.9	5.3	1.0
Hispanic	6.4	9.1	0.5
Other	7.1	6.2	9.3
Marital status			
Married	56.7	55.5	59.3
Education			
Degree	46%	54%	38%
Some college	24%	33%	15%
High school diploma	26%	25%	26%

n = 1275.

which were also previously published.²⁰ Figure 7 shows the overall results from the SF-36 in comparison to age-/sex-matched norms and for sciatica patients seeing surgeons. A higher score indicates better health. Chiropractic patients had values midway between patients with no abnormalities and patients with sciatica on physical functioning, role-physical, social functioning, and pain. However, for role-emotional, emotional health, and vitality, the chiropractic patients report worse health status than those with sciatica seeking surgery. Compared with the matched norms, the greatest relative difference is for role-limitations physical and pain. The majority of patients (61%) reported that during the last 30 days, their pain had been moderate to severe with 33% reporting that the worst bodily pain in the last 30 days was severe to very severe. However, only 8% reported that the pain interfered extremely with their normal work.

Chiropractic treatment. The patients were also asked a series of questions at the conclusion of their visit which were specific to that visit. The majority of patients spent 6 to 10 minutes (32%) or 11 to 20 minutes (32%) with the chiropractor. Six percent received x-rays during the visit.

Care before chiropractic. The majority (58%) of patients reported having no care for the current episode of injury/illness before chiropractic. For the majority of these patients, therefore, chiropractors are the primary point of entry for care of these conditions. However, 3% reported having had surgery before chiropractic care, 20% reported having medical care other than surgery, and 18% reported having physical therapy. Few patients reported using other forms of “alternative” therapy (podiatry 1%, osteopathy 2%, acupuncture 5%, homeopathy 2%, and naturopathy 2%). They have had the current problem for less than 3 months (30%), 6 months to a year (18%), or greater than 1 year (49%). Three percent gave no response.

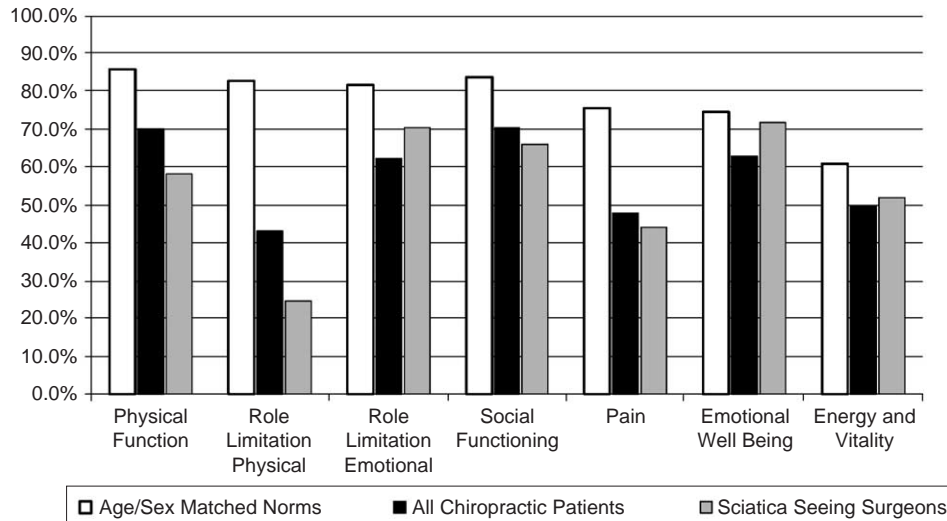


Fig 7. General health status of chiropractic patients.

Current chiropractor. The patients fall into 3 groups with regard to how long they have been seeing the chiropractor: 1 to 6 months (34%), 7 to 24 months (26%), and more than 24 months (34%). The balance are those visiting for the first time. In the last 30 days, 39% had seen the chiropractor 2 to 5 times, 21% 6 to 10 times, and 21% 1 time. A group of 17% had made more than 11 visits in that period.

Past chiropractic care. We also asked the patients the number of chiropractors they had ever seen. The mean was 1.7 (SE 0.09).

Costs. Because the costs differ between Canada and the United States (in the Canadian site, chiropractic care is covered by the Provincial Health Plan so the cost to the patient is like an additional payment), we will present them separately. For the United States, the mean cost was US\$35, and for Canada, it was US\$16. For 37% of the US patients, the visit was not covered by any insurance. For 5% of patients, less than 50% of the cost was covered, and for 21% of patients, the coverage was greater than 50% but not fully covered. Insurance covered all the costs for 22% of patients. The major type of health insurance for the United States was private insurance (25%) and personal auto insurance (19%). Medicare was 2%, and HMO prepaid was 8%.

Patient satisfaction. The mean level of patient satisfaction was measured using a previously published scale²² and was quite high (87.4 of 100). On a scale from 1 to 10 where 1 represents not confident at all about the treatment and 10 represents very confident, 42% rated the treatment as a 10, and 78% rated it as an 8 or better. Ninety percent would definitely recommend it for their family and friends, and 93% were sure they would return for care.

CONCLUSIONS

Given the similarity in the chiropractic cluster sample in this study and the data from the larger National Samples

collected by the National Board of Chiropractic Examiners,^{17,18} this sample is likely to be representative of chiropractors in North America.

The results suggest that chiropractic draws the majority of its patients from mainstream health care. The results also show that for a majority of patients, the chiropractor is the primary contact provider for the current episode being treated by chiropractic. Where the patient has been treated for the condition before chiropractic, it is most likely to have been medical treatment.

The results presented above describing the practice, the practitioners, and the patients would seem to imply that chiropractors have firmly established themselves within the health delivery system of North America. The patient clientele is largely white, which mirrors both the race/ethnicity of the chiropractors and of the general population, and based on their education, middle class.

Although the patients report considerable pain from their problems and some limitations, most appear to remain ambulatory and working. The conditions they have are neither life-threatening nor extremely debilitating. These results suggest that, on average, chiropractic patients' back problems are similar to those attending other providers. They seem to have worse mental health scores, however. Their Roland Morris score of 9.7 compares to acute low-back pain patients presenting to MDs of 10.3 for urban primary care, 12.7 for rural primary care, 11.7 for urban chiropractic, and 9.9 for rural chiropractic.²¹

In the past, many theories have been postulated to explain the survival and expansion of the role of chiropractors. These theories have ranged from seeing doctors of chiropractic as providing a psychosocial benefit for those patients either unable to be helped by traditional medicine²³ or who were rejected by traditional medicine as being psychosomatic, to the notion that chiropractors provide

substitute services in areas where medical physicians are not available.^{24,25} Previous work²⁶ has shown that the patients closely resemble the population at large, however. What was not known previously is the overall health status of chiropractic patients. The problem with earlier theory on chiropractic is that it has been based on both incomplete and inadequate descriptive data.

A limitation to this study is that managed care has grown since 1994, and any impact on chiropractic practice may not be reflected in these data. It is hoped that the descriptive data provided here will give a more current, and also more accurate, account of chiropractic.

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