

A Community-Based Study of the Use of Chiropractic Services

ABSTRACT

Background: Little population-based information is available on the use of chiropractic services.

Methods: We analyzed data from the RAND Health Insurance Experiment (HIE), a community-based study of the use of health services. Insurance claim forms for all fee-for-service patients who completed the study were examined for all visits coded as being seen by a chiropractor. Services provided and patient-specified symptoms were taken from these forms. Population-based use rates were calculated for each HIE site. Use rates and services were calculated separately for first visits and repeat visits.

Results: There were 5,279 persons who contributed 19,021 person-years of exposure during the study; 395 different persons used 7,873 chiropractic services for a visit rate of 41 per 100 person-years and rate of use of 7.5 percent. Forty-two percent of all visits were for pain in the back. Spinal manipulation accounted for 61 percent of all services provided. Compared to non-users, users tended to be White, middle-aged, married, and high school educated. Seven-fold geographic variations in the use of chiropractic services were seen.

Conclusions: Chiropractors deliver a substantial amount of health care to the US population, and there are significant geographic variations in the rate and intensity of use of chiropractic services. (*Am J Public Health* 1991;81:439-442)

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Introduction

Previous studies of the use of chiropractic services have used patient samples that were obtained from selected chiropractors' offices or clinics.¹⁻⁸ Such studies have shown that chiropractic users are more likely to be middle-aged, employed, and high school educated. No difference in gender has been seen. Most studies have shown use among races in proportion to their representation in the population, but one study reported significantly greater use by Whites.² Low back pain is the most common complaint of patients seeking chiropractic care (from 32 percent to 45 percent, depending on the study), and spinal manipulation is the most frequently provided service (from 76 percent to 92 percent of all services). Population-based use rates cannot be estimated from these studies. Therefore, we analyzed data from a prospective, large-scale, community-based population to answer the following questions: How many people use chiropractic services? What are their demographic characteristics? For what symptoms do they seek care? What services are provided? Are there geographic variations in use?

Methods

The RAND Health Insurance Experiment was designed to assess how varying the patients' share of costs for health services affected their use of services, their satisfaction with health care, the quality of their care, and the state of their health. Eligibility, enrollment, data collection, and principal results have been reported elsewhere.⁹

In brief, the study was conducted between 1974 and 1982 at six sites: Seattle, Washington; Dayton, Ohio; Fitchburg,

Massachusetts; Franklin County, Massachusetts; Charleston, South Carolina; and Georgetown County, South Carolina. These sites were chosen to represent the four major census regions, both rural and urban areas, and differing levels of demand for health services. The population enrolled in the experiment, which was entirely civilian and under age 65, has been shown to be representative (across a wide range of variables) of the communities from which it was drawn and of the US population aged younger than 65.¹⁰ Each enrollee was randomized to one of 14 fee-for-service insurance plans. All plans covered an identical wide range of services, including chiropractic care. Families were followed for three to five years.

Insurance claim forms of all fee-for-service patients who completed the study were examined for patient visits that had been coded as visits to a chiropractor. The symptoms we report here were the symptoms reported by the patients on their insurance claim forms as reasons for the visits. We took the services provided to be those for which reimbursement was sought by the chiropractor: visits, manipulations, X rays, laboratory tests, etc. Some patients and providers may have recorded more symptoms than others for equivalent conditions. We adjusted for this possibility in the following way. If multiple symptoms were recorded for a

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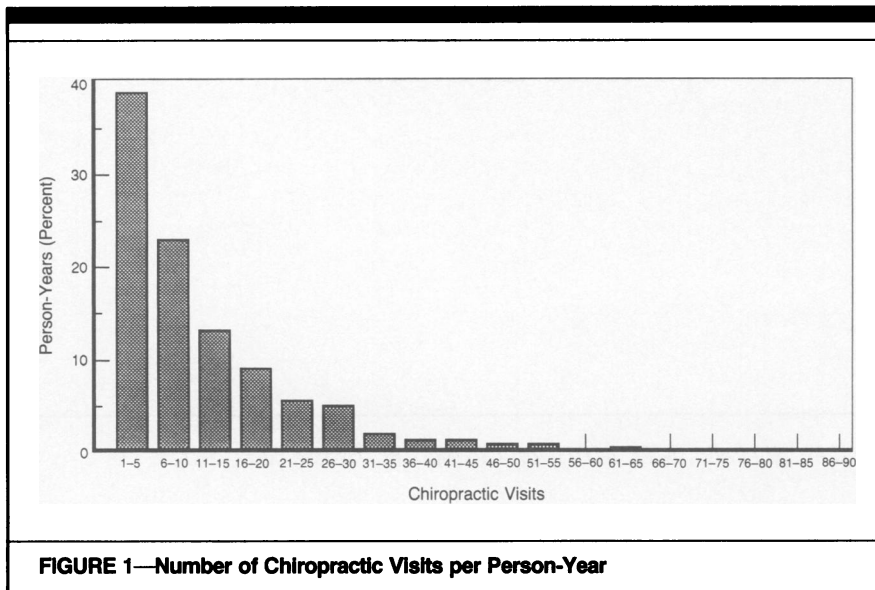


FIGURE 1—Number of Chiropractic Visits per Person-Year

TABLE 1—Comparison of Selected Demographic Characteristics of Chiropractic Users and Nonusers in the RAND Health Insurance Experiment

Characteristic	Chiropractic Users (%)	Nonusers (%)	Difference (95% Confidence Interval)
Male	49	48	1 (-4, 6)
White ^a	96	84	12 (9, 15)
Age			
<18	16	36	-20 (-24, -16)
18-50	70	50	20 (15, 25)
51+	14	13	1 (-3, 5)
Education ^a			
< High school	26	31	-5 (-10, 0)
High school graduate	47	36	11 (5, 17)
> High school	27	33	-6 (-11, -1)
Married ^a	74	45	29 (24, 34)
Working ^a (not homemaker)	67	64	3 (-2, 8)
Median family income ^a (1973 dollars)	\$11,078	\$11,192	114 (-666, 894)

^aFor adults age 18 or older.

single visit, each symptom was given a simple fractional weight so that for each visit the total symptom score summed to 1.0 (e.g., if two symptoms were recorded, each was given a weight of 0.5). Symptoms and services are presented here both as percentages and in terms of 100 person-years of exposure. A person-year was defined as a 12-month period beginning on date of enrollment (or anniversary date of enrollment) in the Health Insurance Experiment (i.e., not a calendar year). Population-based use rates were calculated for each Health Insurance Experiment site. Use rates and services provided were calculated separately for both the first patient visit and the repeat visits. First visits and repeat visits were defined by a specific

code on the insurance claim forms to indicate whether the patient had seen this particular provider before. Because we could not calculate the number of visits on a per-episode basis, we calculated the number of chiropractic visits per person-year.

Results

The 5,279 people who completed the Health Insurance Experiment were enrolled for three or five years and represented a total of 19,021 person-years of exposure. During the study, 395 different persons (7.5 percent) made at least one visit to a chiropractor: 7,873 visits in all, or 41 chiropractic visits per 100 person-years. Repeat visits accounted for 82 per-

cent of all visits. Only 1 percent of visits did not involve a face-to-face meeting between the patient and the chiropractor. Fewer than 1 percent of the visits were referred from another health care provider (either a physician or another chiropractor), seven percent of all visits were accident-related, and 1 percent were employment-related.

The 395 persons who saw chiropractors visited a chiropractor at least once during 683 person-years. In almost 40 percent of these person-years there were five or fewer chiropractic visits per year (Figure 1), and in 75 percent of them there were 15 or fewer visits per year. The median number of visits per year was seven and the mean was 11.5. In 13 person-years there were more than 50 visits per year, and these person-years contained 780 visits.

Table 1 compares the demographic characteristics of the chiropractic users with those of the nonusers. Chiropractic users were more likely to be White, aged 18-50, married, and high school graduates.

The most frequently given reason for a chiropractic visit (42 percent) was pain, swelling, or injury to the back region (Table 2). This symptom plus "back adjustment" accounted for 50 percent of visits overall, and this value varied from 41 percent to 69 percent, depending on the site.

Table 3 shows the services provided during the Health Insurance Experiment for the 395 chiropractic patients, by first visit and repeat visits. In the first chiropractic visit, manipulation (39 percent) accounted for the majority of services, but physical medicine visits (23 percent), office visits (19 percent), and X rays (17 percent) together accounted for almost 60 percent of the total services. Manipulation (66 percent) accounted for the majority of services provided for repeat visits, with physical medicine visits, office visits, and X rays accounting for 32 percent.

The frequency of chiropractic visits varied widely among the six Health Insurance Experiment sites (Table 4). The number of persons seeking care per 100 person-years ranged from 0.6 (Charleston) to 3.1 (Seattle). The number of services per 100 person-years on first visits and repeat visits varied from a low of 3.5 and 9.5, respectively, in Dayton and Charleston, to a high of 23.8 and 86.0, respectively, in Georgetown County, South Carolina.

Discussion

Our community-based study demonstrated a chiropractic visit rate of 41 per 100 person-years of exposure and that 7.5

TABLE 2—Patient-Specified Reasons for Chiropractic Visits

Reason for Visit ^a	Per 100 Person-years (N = 19,021 Person-years)	%
Pain, swelling, injury—back region	17.4	42.1
Pain, swelling, injury—face/neck	4.2	10.3
Headache	4.0	9.6
Back adjustment	3.4	8.2
Pain, swelling, injury—upper extremity	1.5	3.6
Pain, swelling, injury—lower extremity	1.2	2.8
Other symptoms referable to the digestive system	1.1	2.6
Progress visit, problem unspecified	1.0	2.3
Other examinations	1.0	2.2
General medical examination	0.8	1.8
Hip problems	0.6	1.4
Orthopedic foot problems	0.5	1.1
All others (75 different symptoms)	4.9	12.0
	41.6	100.0

^aIncludes all symptoms accounting for more than 1 percent of total visits.

TABLE 3—Services Provided by Chiropractors on First Visit and Repeat Visits per 100 Person-Years of Exposure

Type of Service	First Visit		Repeat Visits	
	Per 100 Person-years (N = 19,021 Person-years)	%	Per 100 Person-years (N = 19,021 Person-years)	%
Manipulation				
One area	4.1	38.9	25.8	66.1
Each additional area	<0.1	0.2	<0.1	0.2
Physical medicine visit	2.4	22.8	7.1	18.3
Various levels of office visit	2.1	19.3	4.2	10.7
Various X rays	1.8	16.8	1.2	3.2
Various laboratory tests	<0.1	1.0	0.2	0.5
All others	0.1	1.0	0.6	1.2
Total	4.2	100.0	45.5	100.0

percent of a community will use a chiropractor's service in a three- or five-year period. These numbers are somewhat lower than the 62 visits per 100 person-years and visit rate of 3.6 percent per year during the same time period that have been reported in the 1980 report to Congress on Manpower in the Chiropractic Profession.⁴ Our study confirms previous observations that chiropractic users tend to be middle-aged and high school educated and that users do not differ from nonusers in their gender and income. We observed a greater use of chiropractic services by Whites, as also seen in one other survey.²

In previous studies, the average number of visits per user per year has varied between 5⁶ and 18.⁴ Our data, with a median of 7 and an average of 11.5, show that

chiropractic use has a substantial tail to the right. In 13 person-years there were 50 or more visits per year. These 13 person-years (2 percent of the total person-years examined) contained 10 percent of the total number of visits. Results from the National Medical Ambulatory Care Survey between 1975 and 1980 showed that 7.7 visits per 100 person-years for back pain were made to physicians.¹¹ Our study showed that, during approximately the same time period, there were 17.4 visits per 100 person-years to chiropractors for the same complaint. Therefore chiropractors accounted for about twice as many visits for back pain as did physicians, as has been shown before.¹²

Symptoms of back pain accounted for 42 percent of patients visits. This finding is similar to 45 percent reported in

Dade County, Florida;⁵ 44 percent from Portland, Oregon⁶; and 32 percent from Tucson, Arizona.⁸ This consistency from different geographic areas and time periods suggests that the symptoms for which patients seek chiropractic care vary little across the country.

Spinal manipulation, although still accounting for the majority of services provided, accounted for somewhat less than the 76 percent to 92 percent previously reported. In addition, there were differences in the types of services provided on the first visit and repeat visits. The typical first visit to a chiropractor appeared to consist of an office visit and/or physical medicine visit; most patients received an X ray and then manipulation. Repeat visits consisted of manipulation, with or without an additional office visit, and no further X rays. Because most chiropractic treatments involve a series of manipulations, it is not surprising that the number of manipulations far exceeded the number of office visits. As in previous studies, X rays and laboratory tests accounted for a relative minority of the total services.

First-visit use and repeat-visit use showed sevenfold and ninefold geographic variations, respectively, in chiropractic use in the Health Insurance Experiment. A previous study⁴ had noted variations in chiropractic use, with greater use in the west and north-central regions of the US than in the South or Northeast. Our data cannot confirm these findings. In addition, Seattle and Charleston (both urban areas) had fourfold differences in use; Franklin County and Georgetown County (both rural) showed threefold differences in use. There was also substantial variation within a geographic area: the two southern sites exhibited the widest variation in use of chiropractic services.

The major limitations to this study are that its data are a decade old and that the elderly were excluded from the population. It has been estimated that the use of chiropractic services has been increasing during the past 20 years,⁶ and the rate of use may be greater today than was seen in the RAND Health Insurance Experiment. A previous study of chiropractic use² reported that patients over age 65 accounted for 13 percent of the total number of chiropractic patients, and therefore we expect that excluding the elderly from our study will not qualitatively alter its conclusions. With these caveats, our study, because of its community-based design, provides an unbiased estimate of the use of chiropractic services, and documents that there are significant geographic vari-

TABLE 4—Use of Chiropractic Services for First Visit and Repeat Visits per 100 Person-Years, by Study Site

Site	Number Seeking Care per 100 Person-years	Services Used per 100 Person-years	
		First visit	Repeat visits
Dayton, OH	1.2	3.5	18.3
Seattle, WA	3.1	13.4	50.4
Fitchburg, MA	2.7	9.4	32.3
Franklin County, MA	1.9	7.1	30.5
Charleston, SC	0.6	5.7	9.5
Georgetown County, SC	2.8	23.8	86.0

ations in the rate and intensity of use of chiropractic services in the United States. □

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\$7.5 Million Grant Program to Strengthen State Data Systems

The Robert Wood Johnson Foundation recently announced a \$7.5 million grant program to be made available to state policy-makers to provide them with more accurate, up-to-date data about health care issues.

In the first phase of the program, up to 10 states will be awarded grants of up to \$150,000 each to identify gaps in health policy and program information, and then to develop plans to fill them. Grant project directors will review information needs and set priorities, establish short- and long-term plans, and develop a specific proposal for enhancing existing data systems or for creating new ones to meet high priority information needs.

Each grant will be carried out by a lead government agency designated by the governor, and a working group composed of analysts from other state agencies, the legislature, state health program managers, health data agency representatives, private sector organizations, consumer groups, and others.

Based on the strength of the plans developed during the 18-month grant period, the RWJ Foundation will award as many as six four-year grants for amounts up to \$1 million each; these grants will be used to develop and test the planned data system improvements, for data collection, analysis and dissemination.

The deadline for submitting proposals is August 1, 1991. Grant applicants must be state government agencies. An information conference for potential applicants is scheduled for May 1991.

Agencies wishing to apply for funds should contact: Ann P. Pumphrey, Program Assistant, Robert Wood Johnson Foundation, Route 1 and College Road East, P.O. Box 2316, Princeton, NJ 08543-2316. Technical assistance to the program will be provided by Ruth S. Hanft, PhD, research professor, Department of Health Services Management and Policy, George Washington University, Washington, DC.