

Comparing the Satisfaction of Low Back Pain Patients Randomized to Receive Medical or Chiropractic Care: Results From the UCLA Low-Back Pain Study

Ruth P. Hertzman-Miller, MD, MPH, Hal Morgenstern, PhD, Eric L. Hurwitz, DC, PhD, Fei Yu, PhD, Alan H. Adams, DC, MS, Philip Harber, MD, MPH, and Gerald F. Kominski, PhD

Patient satisfaction is an important component of evaluating care for low back pain, especially because objectively measurable treatment outcomes are largely absent. Among low back pain patients in the United States, about one third as many go to chiropractors as to medical doctors.¹ In recent decades, the formerly skeptical physician community has been reexamining the chiropractor's ability to treat low back pain and to achieve high patient satisfaction.^{2,3}

In 3 earlier randomized clinical trials, investigators compared patient satisfaction with spinal manipulation vs medical care or physical therapy for low back pain. The first study concluded that patients were more satisfied with chiropractic care than with physical therapy after 6 weeks.⁴ In the second, patients receiving chiropractic manipulation and patients receiving the McKenzie method of physical therapy had similar levels of satisfaction after 4 weeks.⁵ In the third study, patients receiving osteopathic manipulation and patients receiving standard medical therapy (with similar numbers of visits) had similar levels of satisfaction after 12 weeks.⁶

Results from observational studies suggest that back pain patients are more satisfied with chiropractic care than with medical care.⁷⁻⁹ In meta-analyses of clinical outcomes of spinal manipulation for back pain, some researchers have concluded that spinal manipulation is more effective than a placebo,² whereas others have argued that no conclusion can be drawn from existing evidence.¹⁰

Predictors of satisfaction with chiropractic care have included total duration of treatment, number of visits, and patient's perception of improvement.¹¹ In more recent studies, predictors of satisfaction with medical therapy for low back pain have included posttreatment pain, disability, and employment status¹²; coping styles; and baseline ex-

Objectives. This study examined the difference in satisfaction between patients assigned to chiropractic vs medical care for treatment of low back pain in a managed care organization.

Methods. Satisfaction scores (on a 10–50 scale) after 4 weeks of follow-up were compared among 672 patients randomized to receive medical or chiropractic care.

Results. The mean satisfaction score for chiropractic patients was greater than the score for medical patients (crude difference = 5.5; 95% confidence interval = 4.5, 6.5). Self-care advice and explanation of treatment predicted satisfaction and reduced the estimated difference between chiropractic and medical patients' satisfaction.

Conclusions. Communication of advice and information to patients with low back pain increases their satisfaction with providers and accounts for much of the difference between chiropractic and medical patients' satisfaction. (*Am J Public Health.* 2002;92:1628–1633)

pectations of effectiveness.¹³ For these medical patients, the change in pain and disability over the course of treatment did not predict satisfaction.^{12,13}

Results from previous studies suggest that chiropractors' communication styles and beliefs differ from those of physicians. Chiropractors believe that treatment can prevent continuation or recurrence of low back pain¹⁴ and that the success of treatment depends on the patient's understanding of low back pain and its treatment.^{15,16} The extent to which differences in giving advice might account for differences in patient satisfaction has yet to be explored. We know from studies of primary care physicians that providing information¹⁷ and encouraging patient participation in care¹⁸ lead to greater patient satisfaction. Thus, in the context of our randomized trial of low back pain treatment, we addressed 3 questions: (1) whether chiropractic patients are more satisfied than medical patients with their back care; (2) whether chiropractors communicate more advice and information to their patients than do medical providers; and (3) whether such differences in communication account for differences in patient satisfaction between chiropractic and medical patients.

METHODS

Study Site and Participants

Our study was conducted in a large managed care organization in Southern California, primarily consisting of a salaried group practice that accepted capitated payments for approximately 100 000 members. Eligible subjects were network members aged 18 years or older who presented to 1 of the 3 study sites from October 30, 1995, through November 9, 1998, for treatment of lumbosacral pain with or without leg pain. Subjects were excluded if they had received treatment for low back pain in the month prior to presentation or had low back pain due to fracture, tumor, infection, spondyloarthropathy, or other nonmechanical cause; severe coexisting disease; use of pacemakers or other implantable electronic devices; coagulation disorders; use of corticosteroids or anticoagulant medications; progressive unilateral lower limb muscle weakness; or symptoms or signs of cauda equina syndrome. Nonmedical exclusion criteria included plans to move out of the area, lack of a telephone, inability to read English, and third-party liability or workers' compensation payments related to the back pain episode.

The field coordinator and office staff identified patients presenting with back pain to a chiropractor, physician, nurse practitioner, or physician assistant at any study site. Each patient who agreed to participate received a screening history and physical examination from the provider to whom the patient had initially presented. The field coordinator then obtained informed consent from eligible patients.

Study Design

Subjects were randomized to 4 treatment groups: medical care with physical therapy (MDPt), medical care alone (MD), chiropractic care with physical modalities (DCPm), and chiropractic care alone (DC). Randomized assignments in blocks of 12, stratified by site, were placed in sequentially numbered sealed envelopes; as each subject was enrolled, an envelope was opened.

Patients assigned to the MD group received standard medical care from family practice doctors teamed with physician assistants or nurse practitioners, without physical therapy. Patients in the MDPt group received the same type of medical care as the MD group, plus physical therapy from trained physical therapists as well as physical therapy assistants and aides. Those in the DC group received standard chiropractic care, which typically included spinal manipulation but not adjunct physical therapeutic modalities such as ultrasound or electrical nerve stimulation. Patients in the DCPm group received the same type of chiropractic care as the DC group, plus adjunct physical therapeutic modalities provided by the chiropractors. Treatment was at the provider's discretion, except for the limitations placed on the DC group. Subjects could not be blinded to their treatment assignments. During the first 4 weeks of follow-up, patients assigned to the chiropractic groups were treated by 1 of 3 primary providers and those assigned to the medical groups were treated by 1 of 33 primary providers.

Subjects completed written questionnaires at baseline and after 2 weeks of treatment and were interviewed by telephone at 4 weeks. The telephone interviewer was blinded to treatment group assignment. The health network provided administrative data regarding patient visits and charges.

Subjects received \$10 upon enrollment and \$10 after completing a final follow-up ques-

tionnaire. They were required to pay out-of-pocket health care costs as usual.

Measurements

Satisfaction with the medical or chiropractic provider was measured at 4 weeks with a 10-item index.¹⁹ Items were rated by the respondent on a 1 to 5 scale and summed for a possible range of 10 (least satisfied) to 50 (most satisfied). The coefficient α for the total score in our sample was .87. Satisfaction with physical therapists was measured separately and is not reported here.

Self-care advice was measured by summing how many of 10 specified types of advice the subject reported having received from his or her primary provider during the 4-week period. The index included 3 items on general health practices (diet, nutrition, or weight loss; stress reduction; and other physical activity) and 7 items on the management of back pain (back exercises, job activities, pain management, moist heat, ice therapy, back brace, and transcutaneous electrical nerve stimulation). The coefficient α for this index was .57.

The explanation-of-treatment variable was the subject's answer (yes or no) at 4 weeks to the question, "Did your provider explain your low back pain treatment plan (for example, did he or she tell you how often you should schedule visits)?" We used administrative data to calculate number of low back pain office visits, number of patients who received radiological studies, and copayment amounts during the 4-week period as well as to identify the primary provider. Patients were considered to have received prior benefit from their assigned treatment if they reported at baseline that they had received benefit previously from therapies typically used by their assigned provider type to treat low back pain.

Baseline low back pain disability and changes in disability from baseline to 2 weeks were measured with the Roland-Morris Disability Questionnaire, a 24-item scale with possible scores ranging from 0 (minimal disability) to 24 (severe disability).²⁰ Questions were modified to include leg pain as well as back pain. The modified Roland-Morris questionnaire scores at baseline and 2 weeks had α coefficients of .87 and .89, respectively. Average pain levels for the previous week were measured at baseline and 2 weeks by self-report on an 11-point scale (0=no pain; 10=unbearable pain).

Confidence that the assigned treatment would be effective for back pain was measured at baseline—after randomization but before the start of treatment—on an 11-point scale, scores from which could range from 0 (low confidence) to 10 (high confidence). Other baseline variables included age, sex, race/ethnicity, education, and mental health status. Mental health status was measured with the 5-item mental health subscale of the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36),²¹ which had a coefficient α of .77.

Statistical Methods

All statistical analysis was performed with SAS version 6.12 for Windows (SAS Institute Inc, Cary, NC). Distributions and summary statistics were examined for all variables, and inconsistency checks were also performed. Unadjusted comparisons of variable means between assigned treatment groups were made with *t* tests (continuous variables) or χ^2 tests (dichotomous variables).

The mean satisfaction scores and variances for the MD and MDPt groups were similar, as were those for the DC and DCPm groups. In preliminary analyses, we also found that the associations between satisfaction and predictor variables were similar for patients in the MD and MDPt groups and for patients in the DC and DCPm groups. Thus, we combined subjects in the 2 chiropractic groups (DC and DCPm) and in the 2 medical groups (MD and MDPt) for all analyses reported in this article (intent-to-treat analysis).

We used mixed linear models to estimate the effects on patient satisfaction of assigned provider type (chiropractic vs medical) and selected covariates. The effects of the following covariates were treated as fixed: age, sex, education, race/ethnicity, disability score and average pain at baseline, duration of the current pain episode, presence of leg pain, mental health status, changes in average pain and disability from baseline to 2 weeks, baseline treatment confidence, perceived past benefit from the assigned treatment, total co-payment amount, average visit duration, and number of visits to the primary provider. Differences among individual primary providers were modeled as random effects. We checked regression assumptions by examining residual plots, variance inflation factors, and histograms of esti-

mated random effects. Logistic regression analyses that treated the satisfaction outcome variable as dichotomous were also performed to confirm the results of mixed linear modeling.

We used 2 methods to explore the extent to which 1 or more covariates might explain the observed difference in mean satisfaction score between chiropractic and medical patients. First, we compared the estimated unadjusted satisfaction difference (chiropractic–medical) with the estimated satisfaction difference adjusted for covariates. Three sequential models were used in this comparison. Model 1 adjusted only for clinical measures (average pain and disability scores at baseline and changes from baseline to 2 weeks); Model 2 adjusted for clinical measures and the 2 communication variables (self-care advice and explanation of treatment); and Model 3 adjusted for clinical measures, communication variables, and other hypothesized predictors of satisfaction, including demographic factors. Second, we assessed the extent to which the effect of assigned provider type varied by level of each communication variable. We modeled these interactions by creating indicator variables that combined each covariate category, or combination of categories for both covariates, with each assigned provider group. Of the variables initially considered for inclusion in the model, we excluded race/ethnicity, age, income,

presence of leg pain, and duration of the current pain episode because their estimated effects on satisfaction were small, their *P* values were $>.15$, and their exclusion did not alter other parameter estimates.

RESULTS

Baseline Characteristics

We screened 2355 patients and excluded 886; another 788 declined to participate. Of the 681 patients randomized, 340 were assigned to the 2 medical groups and 341 were assigned to the 2 chiropractic groups. All refusals occurred before treatment group assignment. Complete questionnaire and administrative data from baseline to 4 weeks were available for 672 (99%) of the subjects.

Table 1 shows means and frequency distributions of selected baseline characteristics by assigned provider type. Study patients were well educated and mostly non-Latino White; about half were male. Almost half of study patients reported that their current episode of low back pain had begun more than 1 year prior to study entry and almost 60% had back-related leg pain. In the medical and chiropractic groups, average Roland-Morris disability scores were approximately 11, levels associated in past studies with moderate to severe

pain²⁰ and some disability at work.²² Mental health SF-36 scores averaged about 70, which is similar to the average of scores reported for another population of chronically ill patients.²¹

Unadjusted Differences Between Assigned Provider Groups

The mean satisfaction score was 30.6 for medical patients and 36.1 for chiropractic patients. Thus, the unadjusted difference in mean satisfaction was 5.5 points (95% confidence interval [CI]=4.5, 6.5), which is approximately equal to 1 standard deviation in the total sample.

Chiropractic patients reported receiving more self-care advice than did medical patients, were more likely to report receiving an explanation of their treatment, and visited their primary providers more often (Table 2). Of those patients who reported past experience with their assigned treatment, slightly more chiropractic than medical patients reported that the treatment had been beneficial; however, fewer chiropractic patients than medical patients had prior experience with their assigned treatment. Per-visit co-payment, visit duration, level of confidence in treatment, average changes in pain and disability in the first 2 weeks, and number of patients who received radiological studies were similar for patients in the 2 groups. No deaths or serious adverse events occurred during the 4-week period.

Explaining the Difference in Satisfaction Between Provider Groups

To explain the difference in satisfaction between provider groups, we first adjusted for the following clinical variables: average pain and low back pain disability scores at baseline, changes in these scores from baseline to 2 weeks, and individual provider effects (see Model 1 in Table 3). According to this model, the estimated difference in satisfaction between chiropractic and medical patients was 5.2 points (95% CI=2.9, 7.5), which is similar to the unadjusted difference between assigned provider groups.

When we added explanation of treatment and amount of self-care advice as covariates, the estimated satisfaction difference decreased to 3.1 points (95% CI=1.6, 4.7) (see Model 2 in Table 3). Next, we added confidence in treatment, past benefit from assigned treatment, co-payment, duration and number of visits, and baseline demographic and clinical

TABLE 1—Means and Standard Deviations or Percentages of Baseline Variables, by Assigned Provider Group

Variable	Assigned Provider Group	
	Medical (n=340)	Chiropractic (n=341)
Mean SF-36 mental health score (SD)	70.1 (16.8)	72.5 (16.2)
Mean Roland-Morris Disability Questionnaire score (SD)	11.1 (5.5)	10.8 (5.3)
Mean average pain during past week (SD)	4.6 (1.9)	4.6 (1.9)
Mean age, y (SD)	49.3 (16.6)	52.6 (16.6)
% with pain for >1 y prior to study	49	45
% with leg pain	57	59
% male	50	46
Education, %		
High school or less	27	32
Vocational school or some college	37	42
College degree or more	36	26
Race/ethnicity, %		
Non-Latino White	57	64
Latino	33	26
Other	10	10

Note. SF-36 = Medical Outcomes Study 36-Item Short-Form Health Survey.

TABLE 2—Means and Standard Deviations or Percentages of Postrandomization Variables, by Assigned Provider Group

Variable	Assigned Provider Group		P value ^a
	Medical (n = 340)	Chiropractic (n = 341)	
Mean satisfaction score (SD)	30.6 (7.1)	36.1 (5.4)	<.001
Mean no. of items of self-care advice ^b (SD)	1.6 (1.6)	2.3 (1.4)	<.001
Mean no. of classes of medication recommended (SD)	1.3 (0.8)	0.1 (0.3)	<.001
% reporting explanation of treatment	16	61	<.001
% reporting past benefit from assigned treatment ^c	75	50	<.001
% reporting any experience with assigned treatment ^c	91	56	<.001
% reporting past benefit from assigned treatment (among patients having experience with assigned treatment) ^{c,d}	83	90	.03
% with any radiological study	4	3	.3
Mean improvement in disability score ^e (SD)	1.9 (4.9)	2.0 (4.7)	.8
Mean improvement in average pain ^e (SD)	0.6 (2.0)	0.7 (2.0)	.4
Mean confidence in treatment ^e (SD)	6.7 (2.7)	6.9 (2.4)	.2
Mean co-payment per visit, \$ (SD)	4.6 (5.1)	4.6 (5.6)	1.0
Mean visit duration, min (SD)	14.4 (8.1)	14.7 (8.3)	.6
Mean no. of back pain visits to primary provider (SD)	1.1 (0.5)	2.7 (1.5)	<.001

Note. Variables were measured at 4 weeks (or over the 4-week interval) unless otherwise noted.

^aFor *t* test (continuous variables) or χ^2 test (dichotomous variables) of no difference between groups.

^bMore patients in the chiropractic than in the medical group reported receiving advice about back exercises (odds ratio [OR] = 7.4; 95% confidence interval [CI] = 5.1, 11), heat (OR = 2.7; 95% CI = 2.0, 3.8), and pain management (OR = 2.1; 95% CI = 1.5, 3.0). For other types of advice, the ORs of reporting advice were similar for chiropractic vs medical patients (adjusted OR for receiving any of the remaining types of advice = 0.94; 95% CI = 0.78, 1.1; *P* > .05 for Woolf's test for homogeneity).

^cMeasured at baseline. For patients assigned to the chiropractic group, past benefit could be from chiropractic or from other complementary and alternative therapies.

^d*n* = 309 for medical group; *n* = 192 for chiropractic group.

^eChange between scores measured at baseline and 2 weeks. A positive score indicates improvement.

cal characteristics (see Model 3 in Table 3). From Model 3, the estimated satisfaction difference between chiropractic and medical patients was 2.5 points (95% CI = 0.7, 4.2).

As shown in Table 3 (see Model 3), factors other than provider group appear to have affected patient satisfaction at 4 weeks. Amount of self-care advice and treatment explanation received was positively associated with satisfaction. Smaller increases in satisfaction were observed for patients who had more provider visits, longer visits, more improvement in low back pain disability, and more confidence in treatment.

We next examined the interactions of self-care advice and treatment explanation with assigned provider group. A fitted model that included the interaction of self-care advice with provider group plus the other covariates in Model 3 (Table 3) yielded an estimated difference in satisfaction between chiropractic and medical patients of 4.0 points for patients who reported receiving 0–1 items of self-care advice, 1.7 for those reporting 2–3 items of advice, and

0.7 for those reporting 4 or more items of advice (Table 4). Similarly, when we examined the interaction of explanation of treatment with provider group, the difference in satisfaction between chiropractic and medical patients was greater for patients who did not report receiving an explanation of treatment than for patients who did report receiving such an explanation (see Table 4). When we modeled the 3-way interaction among both communication variables and provider group, the estimated difference in mean satisfaction scores between chiropractic and medical patients nearly disappeared for patients who received an explanation of their treatment and at least 4 items of self-care advice (adjusted difference = 0.1; 95% CI = -2.6, 2.9).

DISCUSSION

In this randomized trial, chiropractic patients were more satisfied with their back care providers after 4 weeks of treatment than were medical patients. Although similar re-

sults have been reported by others,^{4–9} those investigators did not examine the role of other factors in explaining this satisfaction gap.

Most of the covariates we measured did not appear to explain the satisfaction gap. For example, although clinical improvement during the first 2 weeks of follow-up, more and longer visits to the provider, and baseline confidence with the assigned treatment were associated with greater satisfaction at 4 weeks, these variables explained very little of the difference in satisfaction between chiropractic and medical patients. Most of the other covariates were only weakly associated with patient satisfaction and did not contribute at all to an explanation of the satisfaction gap.

By contrast, we found that receipt of self-care advice and explanation of treatment had strong estimated effects on patient satisfaction. These findings are consistent with previous studies that demonstrate associations between the amount of information patients receive and their degree of satisfaction.¹⁷ When we controlled for amount of self-care advice and treatment explanation received, the estimated difference in satisfaction between chiropractic and medical patients decreased appreciably. Furthermore, the estimated satisfaction gap essentially disappeared among patients who reported receiving an explanation of treatment and at least 4 items of advice from their providers.

Among patients who reported receiving little or no self-care advice, however, chiropractic patients were more satisfied with their providers than were medical patients. One possible explanation for this residual difference is that chiropractors might be perceived as specialists. In previous studies, patient satisfaction has been greater with specialized providers of back care such as orthopedists⁷ and specialized pain clinics¹³ than with generalist care. The hands-on nature of chiropractic treatment may also lead to a greater perception of efficacy and thus to greater satisfaction than medical treatment. A second possibility is that the residual difference might have occurred because patients in the chiropractic group were more likely to be seeing new providers (a "honeymoon effect"). This explanation, however, is not supported by our observation that the estimated satisfaction difference between provider groups did not change appreciably when we controlled for baseline measures of experience with, and perceived

TABLE 3—Estimated Effects^a (With 95% Confidence Intervals [CIs]) of Assigned Provider Group and Selected Covariates on Satisfaction Score: Results of Fitting 3 Mixed Linear Models (n = 672)

Predictor (Contrast) ^b	Model 1	Model 2	Model 3
Assigned provider group (chiropractic vs medical) ^c	5.2 (2.9, 7.5)	3.1 (1.6, 4.7)	2.5 (0.7, 4.2)
Improvement in Roland-Morris Disability Questionnaire score (5 points)	0.5 (-0.1, 1.2)	0.3 (-0.3, 0.8)	0.1 (-0.4, 0.7)
Improvement in average pain (1 point)	0.6 (0.3, 1.0)	0.5 (0.2, 0.8)	0.6 (0.3, 0.8)
Baseline low back pain disability score (5 points)	-0.4 (-0.9, 0.2)	-0.3 (-0.7, 0.2)	-0.2 (-0.7, 0.3)
Average pain at baseline (1 point)	-0.6 (-1.0, -0.3)	-0.6 (-0.8, -0.3)	-0.6 (-0.9, -0.4)
Explanation of treatment (yes vs no)	...	3.5 (2.6, 4.5)	3.3 (2.4, 4.3)
Self-care advice			
(2-3 vs 0-1 items)	...	3.6 (2.7, 4.5)	3.2 (2.3, 4.1)
(≥ 4 vs 0-1 items)	...	6.6 (5.4, 7.8)	6.1 (4.9, 7.3)
Confidence in treatment (2 points) ^d	...	...	0.3 (0.1, 0.4)
Past benefit from assigned treatment (yes vs no)	...	...	0.1 (-0.8, 0.9)
Total co-payments over 4-week period (\$10)	...	...	0.1 (-0.3, 0.4)
Average visit length (10 min)	...	...	1.2 (0.7, 1.6)
Number of low back pain visits to provider (1 visit)	...	...	0.5 (0.1, 0.9)
Baseline SF-36 mental health score (10 points)	...	...	0.2 (-0.1, 0.4)
Education			
Some college or vocational vs no college	...	...	0.7 (-0.3, 1.6)
College degree vs no college	...	...	0.3 (-0.7, 1.4)
Sex (male vs female)	...	...	0.6 (-0.2, 1.3)
Percentage of total variation in satisfaction explained by model	25	44	47

Note. SF-36 = Medical Outcomes Study 36-Item Short-Form Health Survey.

^aThe estimated effect of a covariate is the adjusted difference in mean satisfaction score attributable to that covariate.

^bThe contrast is the difference in values of the covariate for which the effect was estimated.

^cThe unadjusted difference in mean satisfaction score between chiropractic and medical patients is 5.5 (95% CI = 4.5, 6.5).

^dConfidence in treatment was measured on a 0-10 scale (see text).

TABLE 4—Estimated Adjusted Mean Satisfaction Score,^a by Assigned Provider Group and Category of Each Communication Covariate, and Estimated Difference (With 95% Confidence Interval [CI]) in Satisfaction Score Between Chiropractic and Medical Patients, by Covariate Category: Results of Fitting 2 Mixed Linear Models (n = 672)

Covariate Category	Assigned Provider Group		Chiropractic-Medical Difference (95% CI)
	Medical	Chiropractic	
Self-care advice ^b			
0-1 items	28.3	32.4	4.0 (2.1, 6.0)
2-3 items	32.7	34.4	1.7 (-0.2, 3.7)
≥ 4 items	36.1	36.8	0.7 (-1.6, 3.1)
Explanation of treatment ^c			
No	31.2	33.9	2.6 (0.8, 4.4)
Yes	35.3	36.6	1.3 (-0.8, 3.4)

^aSatisfaction scores are adjusted for all other covariates in Model 3 of Table 3. The first model includes interaction (product) terms for assigned provider group and the level of self-care advice; the second includes interaction terms for assigned provider group and category of explanation (yes or no). In both models, random effects were used to model differences among individual providers.

^bFor the null hypothesis that the satisfaction differences at all 3 levels of self-care advice are equal, the *P* value is .004.

^cFor the null hypothesis that the satisfaction differences at both levels of explanation of treatment are equal, the *P* value is .07.

past benefit from, the assigned treatment. A third potential explanation is that chiropractors might elicit more confidence from their patients because chiropractors tend to express greater conviction than do medical doctors about the reasons for their patients' problems and what can be done to help them. This explanation, however, is not supported by our observation that baseline levels of treatment confidence were similar for chiropractic and medical patients with prior experience with those types of providers. A fourth possible explanation for the residual satisfaction gap is that chiropractors might give more detailed physical examinations than do medical providers. Again, this explanation is not supported by our observation that the addition of average visit length to the model did not affect the difference in satisfaction between chiropractic and medical patients.

A limitation of our study is that the provider-patient communication variables were measured by self-report. Results from previous studies have shown that satisfaction is more closely related to the actual amount of information provided than to the amount recalled²³ and that the association between satisfaction and amount of advice recalled weakens as the actual amount of advice received increases.²⁴ Those findings suggest that we may have underestimated the effect of receipt of self-care advice on satisfaction; also, they may partly explain why we observed a residual satisfaction gap among patients who reported receiving at least 4 items of self-care advice from their providers.

Because this study was conducted among privately insured managed care patients within a single group practice who were willing to be randomized, the results may not be generalizable to other settings. Nevertheless, the types of care given by medical and chiropractic providers in this study were typical of those found in other settings in the United States.^{7,16,25,26}

We conclude that providers in managed care organizations may be able to increase the satisfaction of their low back pain patients by communicating advice and information to patients about their condition and treatment. Differences in the amount of advice and explanation given by chiropractors and medical providers appear to explain much of the satisfaction gap often reported by chiropractic vs medical patients. There is evidence from other studies that training providers in communication enhances

satisfaction among primary care^{27,28} and chronic pain patients.²⁹ Giving self-care advice and explaining treatment plans may be part of a helpful or reassuring communication style. Providers who communicate in this way may also demonstrate more concern for their patients as individuals or encourage patients to take a more active role in their own care—characteristics often attributed to chiropractors.^{14–16} What we do not know is whether communicating this advice and information to patients will influence the course of their disorders. Further work is needed to determine whether patient satisfaction or related behaviors influence the clinical outcome of low back pain. ■

About the Authors

At the time of the study, R.P. Hertzman-Miller was with the Department of Epidemiology, University of California, Los Angeles (UCLA) School of Public Health and the Robert Wood Johnson/Veterans Affairs Clinical Scholars Program, Department of Medicine, UCLA Medical Center. H. Morgenstern, E.L. Hurwitz, and F. Yu are with the Department of Epidemiology, UCLA School of Public Health. H. Morgenstern, E.L. Hurwitz, and A.H. Adams are with the Southern California University of Health Sciences, Whittier, Calif. P. Harber is with the Department of Family Medicine/Occupational and Environmental Medicine, UCLA Medical Center. G.F. Kominski is with the Department of Health Services, UCLA School of Public Health.

Requests for reprints should be sent to Ruth Hertzman-Miller, MD, MPH, 18A Troy La. Waban, MA 02468 (e-mail: hertzman_miller@post.harvard.edu).

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Contributors

R.P. Hertzman-Miller contributed to refinement of study hypotheses, planning of the analysis, and interpretation of the results; also, she performed the literature review and drafted the article. H. Morgenstern contributed to the design of the study, development of the study hypotheses, and interpretation of the results; he also directed the study, supervised the analysis, and revised the article. E.L. Hurwitz contributed to the design of the study, development of the study hypotheses, interpretation of the results, and review of the manuscript; he also supervised data collection. F. Yu contributed to analysis of the data, interpretation of the results, and review of the article; also, he managed the data and provided statistical expertise. A.H. Adams contributed to interpretation of the results and review and revision of the article; additionally, he provided expertise on chiropractic practice. P. Harber contributed to interpretation of the results and review of the article and provided expertise on managed care organizations.

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Human Participant Protection

The institutional review boards of University of California—Los Angeles and the Friendly Hills HealthCare Network approved the study.

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