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Training Primary Care Physicians to Give Limited Manual Therapy For Low Back Pain

Patient Outcomes

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Study Design. Randomized controlled study of standard manual therapy given by 31 generalist physicians to 295 patients, in primary care practice.

Objectives. To determine whether training primary care physicians in techniques of limited manual therapy would result in improved outcomes for their patients with acute low back pain.

Summary of Background Data. Controversy continues regarding the benefit of spinal manual therapy and the role of highly trained manual therapists in the care of low back pain. Continuing medical education in manual therapy is frequently offered to generalist physicians, but nothing is known of the value and effectiveness of this training.

Methods. Thirty-one primary care physicians were trained to provide optimal low back care (enhanced care) and a sequence of eight standard manual therapy techniques. Two hundred ninety-five patients were randomized into two treatment groups: enhanced care alone and enhanced care with manual therapy. Main outcome measures included the Roland–Morris functional disability scale measured over time and patient-reported time to functional recovery, time to complete recovery, and satisfaction with care.

Results. No differences were found in Roland–Morris scores over time, mean functional days to recovery, days absent from work, or patient satisfaction. More patients receiving manual therapy (21; 14%) had completely recovered after the first visit compared with the control group (8; 6%; $P = 0.01$). Patients who received more intense manual therapy (four or more maneuvers) had a more rapid return to functional recovery (7.8 days) compared with those who received less intense manual therapy (11.1 days; $P = 0.02$).

Conclusion. Limited training in manual therapy techniques offers very modest benefit compared with high-quality (enhanced) care for acute low back pain. Outcomes may have been modified by failure of some participant physicians to undertake the required sequence of maneuvers. Intensity of manual therapy may be a factor in improving patient outcomes and needs further study. [Key words: low back pain, manipulation, manual therapy, training] **Spine 2000;25:2954–2961**

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During the past 20 years, a marked increase in care-seeking for acute and chronic low back pain (LBP) has been reported in industrialized countries.[5,21,32] Few interventions have shown significant benefit, and clinical practice guidelines in the United States, United Kingdom, and Holland recommend mainly avoidance of expensive imaging, the use of analgesics, an early return to activity, and spinal manipulation in some subsets of patients.[2,11,17,20]

For many years, manual therapy has been widely practiced in North America by doctors of chiropractic and osteopathy, and in Europe by a variety of practitioners incorporating somewhat differing approaches and philosophies of care.[18,23,29,35,36] Training in manual therapy has, for many years, been offered to physicians and physiotherapists, usually in the form of courses ranging from 2-hour to 1-week workshops.[13,30] For example, Paterson and Burn reported the development of a theoretical and skills curriculum using a nonsectarian empirical approach in three 2-day courses.[27] This form of continuing medical education presumes that learning "limited" manual therapy offers primary care physicians an additional strategy to improve the care of LBP, although outcomes of this training have never been studied.[4,22,24] The current authors have previously shown that primary care physicians can be trained to undertake a standard approach to limited manual therapy in their practices.[16]

Given the modest benefit of manual therapy in treating LBP and the frequency of this problem in primary care, the authors sought to examine the effectiveness of limited manual therapy in a primary care setting.[2,15] The hypothesis was that limited manual therapy would improve the outcome of acute LBP by at least 2 points on the Roland–Morris functional scale.[3]

Subjects and Methods

Training in Manual Therapy Technique. Academic osteopathic and chiropractic texts indicate that accurate diagnosis followed by specific therapeutic maneuvers, with subsequent reassessment, are the keys to success in treatment.[23,24,29,35] However, the authors' experience and observation of the practice of many busy manual therapists suggest that, whatever the specific mechanical diagnosis, it is common practice to first use a standard sequence of muscle energy and high-velocity, low-amplitude maneuvers applied to more than one musculoskeletal region.[27] Theoretically, improvement using a standard sequence of maneuvers, which adjust and stretch joints and soft

tissues, might be caused by general inhibition of C-fibers, release of local nerve compression, or neuroplastic effects on dorsal horn cells, thus reducing central pain perception.[12,25] In fact, manipulation does little to alter the position of joints, and its effect is very likely to be due to reflex mechanisms.[6,33] Thus, it may not be necessary to make a specific mechanical diagnosis for acute LBP.

An intensive training course was developed by the authors for primary care physicians that consisted of two full days of educational and skill workshops, 1 month apart, with a later refresher session (18 hours in total)[16] Essential ingredients of this course included an introduction to the paradigm of limited manual therapy, acquiring palpation and motion-testing skills, a patient-centered approach to management, training, frequent testing of manual skills on instructors and simulated patients, and practice in how to incorporate the maneuvers into a clinical encounter.[16] In the course, it was clearly communicated that although the effectiveness of manual therapy for acute LBP was not yet well validated, the therapy could be used with minimal risk. Beginning with the first workshop, participants were encouraged to practice the manipulation techniques in their own practices until the clinical trial began approximately 3 months later.

The workshop and participation in the clinical trial of manual therapy was offered to 87 eligible primary care physicians who had already been involved in the previous North Carolina Low Back Pain cohort study, as well as to 630 primary care physicians from the North Carolina Physician Masterfile.[5] Of 58 respondents to the invitation, 14 physicians from the cohort study and 19 from the Masterfile were eligible and agreed to participate.[16] The study was approved by the Human Rights Committee of the School of Medicine at the University of North Carolina (UNC).

Physicians were trained to perform a set sequence of eight maneuvers for acute LBP, once they had examined the patient and excluded serious disease.[2] They were, however, given discretion to limit treatment if the patient was in severe pain or distress. They were contacted regularly to assess how well they were integrating these skills. In each office, an administrator or nurse facilitated patient identification and data collection from the medical records. Two years after initial training, the physicians were surveyed regarding their attitudes and continued use of manual therapy.

Study Design. The clinical trial consisted of randomization into two arms. The manual therapy arm consisted of a protocol of standardized maneuvers for each side of the trunk, involving the psoas and piriformis muscles, the sacroiliac, and the lumbosacral articulations. For each side there were five muscle energy techniques and three high-velocity, low-amplitude thrusts. In addition, manual therapy patients received enhanced high-quality care for LBP. The control arm received only enhanced care. If not yet recovered, patients in each arm could make up to four visits to the physicians. "Enhanced" care consisted of a patient-centered approach to questioning, careful low back examination using palpation and functional assessment, management using national guidelines on back care, and specifically designed patient handouts regarding exercises and activities of daily living. The options of standard medications, brief bed rest, local trigger-point injections, and referral to other professionals were available as part of the usual care given by the physician.

Implementation. Blocked randomization, using sealed opaque envelopes in blocks of four, was provided by the investigators for each physician's enrolled patients. At the enrollment visit, the physician invited the patient to participate if certain criteria were met. These included age 21 to 65, acute LBP of less than 2 months' duration (acute or gradual onset), no prior spinal surgery or chymopapain therapy, no severe osteoarthritis or osteopenia, no pregnancy, no history of nonskin malignancy, no morbid obesity, no prior manual therapy by this physician, and no neurologic deficits detected in a physical examination. After signing a consent to participate, the patient completed the Roland–Morris low back functional disability scale.[6]

After a screening neurologic evaluation and examination of the back and legs, the physician recorded a diagnosis and then, based on random assignment, gave enhanced care alone or performed manual therapy plus enhanced care, checking off each maneuver on a flow sheet.

After the enrollment visit, patients in each arm of the study could return for up to four more visits (depending on need) at a rate of two per week, which was deemed reasonable for a primary care practice. The physicians received $40 compensation for each visit (no charge to the patient) after the index visit (which was initiated by the patient). The medical office also received $200 to cover administrative expenses during the period of the study. Patients were compensated $15 for participating in the phone interviews. Charges for imaging, referral, and other forms of therapy were handled in the usual way.[3]

Outcome Measures. Within 7 days of the index visit, the patient received a baseline telephone interview undertaken by trained staff of the Survey Research Unit at the UNC School of Public Health. These interviewers were routinely monitored for accurate questioning and recording and were blinded to the treatment allocation. Items included previous back pain history, past treatment, current functional status, severity of pain, pain perceptions and beliefs, work function, and activities of daily living. Follow-up interviews took place at 2, 4, and 8 weeks after the index visit.

The primary outcome was the Roland–Morris functional scale, a spine-specific and responsive assessment of physical functioning. A change of two or more points in the score is regarded as clinically significant.[3] Two secondary outcomes were the time to self-assessed functional recovery by the patient, which was defined as the date on which the patient was able to perform the usual daily activities as well as before this episode of LBP, and the patient's assessment when complete recovery had been made from the pain and disability. Other outcomes included a visual analogue pain scale (0–10) and number of days absence from work due to back pain. The other major outcome measured was the level of patient satisfaction, based on the scale developed by Cherkin et al[5,10] This addressed satisfaction with the process of evaluation, diagnosis, and treatment.

After the interview data had been collected by the Survey Research Unit, information from patient records and physician's study records were abstracted and merged into SAS data files.[28] These were cleaned and converted into STATA files.[31]

Data Analysis. The main dependent variable was the Roland–Morris scale.[3] There was adequate power (0.77) to detect a 2-point difference and greater power (0.92) to detect a 2.5-point difference. Independent variables were assignment to

manual therapy or to the control intervention, enhanced care. Analysis was undertaken using intention to treat. Multiple independent variables were examined among subject baseline characteristics to assess the effectiveness of randomization. Major variables included in the analyses were age, gender, duration of LBP episode, presence of sciatica, workers' compensation status, education (highest grade attained), household income, and amount of lifting at work.

Bivariate analyses were used to examine the effect of each of the variables on the Roland–Morris score. Analysis of covariance was used to calculate the covariate adjusted mean differences in the Roland–Morris score between the two treatment arms. Because physicians had the option of restricting treatment for clinical reasons, the effect of the intensity and frequency of manual therapy on functional outcome was determined. Based on the authors' experience, high-intensity treatment was defined as four or more maneuvers performed on each side of the trunk per visit, and low-intensity was less than four maneuvers. Frequency was the number of times the patient attended for manual therapy.

Cox proportional hazard modeling was used to compare survival curves for time to functional recovery for the two treatment arms and to examine the effects of intensity and frequency of manual therapy. Because patients were randomized to each treatment arm within physician, no physician intraclass correlation was anticipated. However, for all analyses, presence of intraclass correlation was determined and the standard errors of the results adjusted when necessary.

Table 1. Patient Baseline Characteristics After Randomization

	Enhanced Care N = 143	Manual Therapy + Enhanced Care N = 152	*P* Value
	n (%)	n (%)	
White	123 (86)	117 (77)	.06
Male	62 (43)	69 (45)	.7
Income > $20,000	109 (78)	111 (74)	.4
Employed	126 (88)	140 (92)	.3
Used Workers' Compensation Insurance	20 (14)	21 (14)	1.0
Sciatica	25 (17)	30 (20)	.6
Ever received LBP treatment prior to this episode	75 (52)	74 (49)	.5
One or more previous (severe) LBP episodes	116 (81.7)	120 (79)	.6
Ever received spinal manipulation prior to study	23 (16)	29 (19)	.5
	Mean (SD)	Mean (SD)	
Mean age (SD)	42.7 (11)	41.1 (11)	.2
Mean Roland score (0–23) at randomization (SD)	15.6 (5.4)	15.5 (5.1)	.9
Mean pain score (0–10) (SD)	4.6 (2.1)	4.8 (2.4)	.5
Mean LBP days prior to entry into study	14.1 (11.5)	17.8 (15.4)	.02*

* Significant at *P* 0.05.

■ Results

Three hundred thirty-five eligible patients were recruited, with 40 refusals, resulting in 295 subjects enrolled in the trial. Follow-up of the subjects was excellent with complete 8-week information available for 278 patients (94%). The patient characteristics at randomization are shown in Table 1 and are typical for LBP patients.[5,31] The patients were middle-aged, most were employed, and mean Roland–Morris functional disability score was of 15.5 ± 5.2 (SD), indicating moderately severe impairment at the time of their enrollment visits. On average, they had had back pain for approximately 2 weeks before randomization. Fifty-five (18.6%) had sciatica and 52 (17.6%) had previous experience with spinal manipulation from a therapist other than their physicians. The only significant difference between enhanced care and manual therapy groups was a slightly longer duration of pain before entry into the study within the manual therapy group.

Physician characteristics demonstrated that these were mostly experienced clinicians. There were 14 internists and 17 family practitioners in the study. Most were men (74%), 19% were in solo practice, and the average number of years in practice was 11.5. The average number of patients enrolled per physician was 9.5. Thus, each physician treated between four and five patients with limited manual therapy in between three and five visits.

Both groups of patients improved rapidly after randomization. Similar to results in other studies of acute LBP, 265 (90%) of the patients had returned to pre-episode functional status within 8 weeks after the initial physician visit.[5,8,14]

Improvements in Roland–Morris disability scores showed a persistent but slight trend during the 8-week study period in favor of the manual therapy group (Table 2). This was not statistically or clinically significant. Patients in the manual therapy group achieved functional recovery an average of 1.5 days sooner, but this also did not achieve statistical significance ($P = 0.3$). The proportion of patients who reported that they were fully recovered at the postinitial treatment baseline interview was significantly greater for the manual therapy group (22; 14%) compared with 8 (6%), $P = 0.01$). However, at 2 and 4 weeks, the proportions fully recovered were almost identical. During the 8-week follow-up period, there were no differences in levels of pain, days absent from work, and overall patient satisfaction between the two groups. Use of linear regression when the Roland–Morris score was the outcome and Cox proportional hazard modeling for return to functional recovery, allowed examination of multiple covariates. The main results did not change after controlling for functional status at index visit, duration of pain before randomization, and differences in drug therapy. The adjusted hazard ratio comparing manual therapy to enhanced care was 1.07 with 95% confidence interval of 0.83–1.40 (Figure 1). Similarly, physician self-efficacy (measured by survey) and instructor-assessed physician competency at the time of training did not seem to affect patient outcome.[16]

Similar to the findings of Meade et al,[26] there was evidence that the patient with previous experience of manual therapy is more likely than others to benefit from

Table 2. Outcomes of Manual Therapy

	Enhanced Care N = 143	Manual Therapy + Enhanced Care N = 152	*P* Value
Change in Roland–Morris score from randomization to baseline interview (SD)	−2.6 (5.7)	−3.5 (5.9)	.2
Change in Roland–Morris score from randomization to 2 wk interview (SD)	−8.7 (8.0)	−8.5 (7.5)	.8
Change in Roland–Morris score from randomization to 4 wk interview 0 (SD)	−9.8 (7.3)	−10.6 (7.1)	.4
Change in Roland–Morris score from randomization to 8 wk interview (SD)	−11.1 (7.9)	−12.3 (7.2)	.2
Mean # days to functional recovery (SD)	11.1 (12.4)	9.6 (10.3)	.3
Number functionally recovered at 8 weeks (recovered at some point between baseline and 8 weeks)	128 (90%)	137 (90%)	.9
Number completely recovered from LBP episode at post-initial treatment baseline interview	8 (06%)	22 (1.4%)	.01
Number completely recovered from LBP episode at 8 weeks	82 (61%)	85 (59%)	.7
Mean # days off work after randomization (SD)	2.2 (3.4)	2.9 (4.7)	.2
General satisfaction with care (1–5, 1 = excellent, 3-item scale) (SD)	2.1 (1.1)	2.0 (1.0)	.4

spinal manipulation.[26] For patients receiving manual therapy, with prior experience, Roland–Morris scores were 2 points lower at 2 weeks ($P = 0.3$), 5 points lower at 4 weeks ($P = 0.02$), and 4 points lower at 8 weeks ($P = 0.06$). After controlling for the Roland–Morris score at baseline and a range of variables, these differences were of borderline significance.

The patients in each arm were equivalent in the types of treatments received (other than spinal manipulation; Table 3). Number of visits, referral rates to physical therapy, proportion receiving care from other back pain providers, use of radiographs, and imaging procedures were all very similar (Table 3). Medication use was substantial in both groups, with 104 (35%) receiving narcotic analgesics and a majority of patients (202; 68.5%) receiving muscle relaxants. Significantly fewer patients in the limited manual therapy group received muscle relaxants ($P = 0.008$); however, adjustment for this difference did not change the main findings.

There was some evidence that the intensity of manual therapy may affect outcome. There were 106 patients who received low-intensity manual therapy, and 46 patients who received intensive manual therapy. Although there were no differences in Roland–Morris scores between these two groups, mean time to functional recovery was 11.1 days for patients receiving only enhanced care, 10.4 days for the low-intensity, and 7.8 days for the high-intensity manual therapy groups. Cox proportional hazard modeling showed that patients receiving high-intensity manual therapy recovered 60% more rapidly

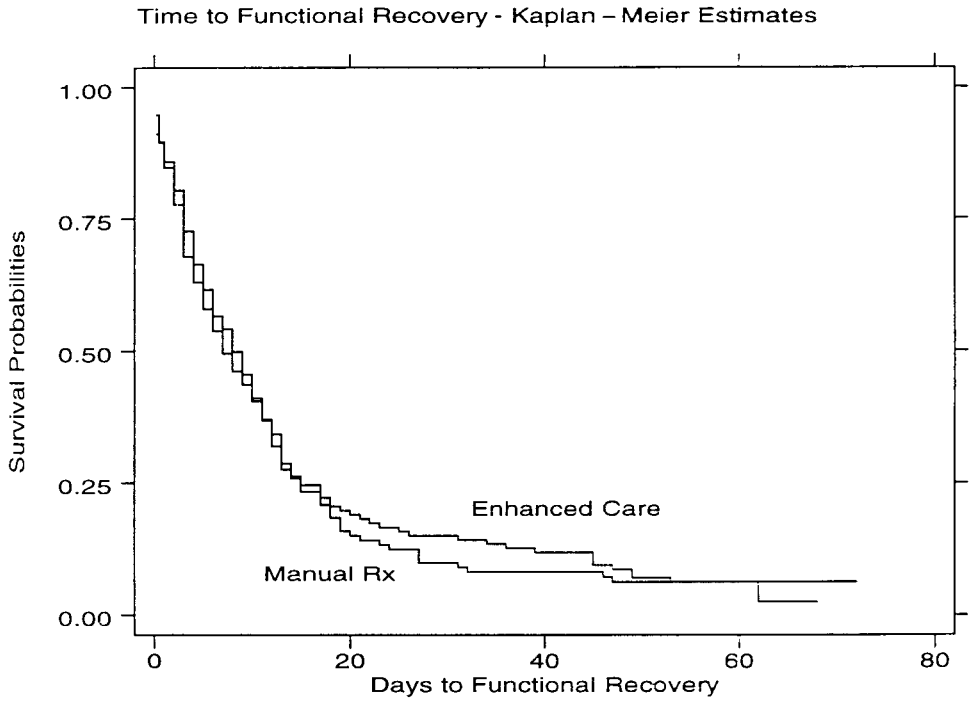

Figure 1. Adjusted for functional status at index visit, presence of sciatica, duration of LBP before index visit, use of a muscle relaxant, and physician gender.

Table 3. Types of Treatment Received by Patients

	Enhanced Care N = 143	Manual Therapy + Enhanced Care N = 152	*P* Value
Mean visits (based on telephone interviews) (SD)	3.2 (1.7)	3.6 (2.4)	.2
Mean visits (medical record) recorded on medical record (SD)	3.3 (1.6)	3.5 (2.2)	.3
Number manual therapy maneuvers performed per side of trunk, per visit (SD)	0 (0.0)	3.1 (1.4)	–
Number referred to physical therapists	10 (7%)	12 (8%)	.8
Number receiving LBP care from physical therapists	20 (14%)	19 (13%)	.7
Number receiving LBP care from other providers (orthopedists, physical therapists, chiropractors, *etc.*)	32 (22%)	33 (22%)	.9
Number receiving lumbar spine radiographs	27 (19%)	30 (20%)	.9
Number receiving CT/MRI	7 (5%)	9 (6%)	.7
Number receiving narcotic analgesics	49 (34%)	54 (36%)	.8
Number receiving prescription muscle relaxants	108 (76%)	93 (61%)	.008

than those with low-intensity manual therapy (Hazard ratio: 1.6; CI 1.05–2.33). There was no difference in pain levels or in time absent from work for this subset analysis.

In further analysis, 14 physicians were identified who used intensive manual therapy nearly all the time, and outcomes between their patients receiving manual therapy (n = 85) and only enhanced care (n = 82) were compared. There were no differences in Roland–Morris scores during the 8 weeks, but the mean number of days to functional recovery was 7.6 (manual group) compared with 11.8 (enhanced care group; $P = 0.02$). The manual group also had significantly more patients completely recovered after the first treatment (16 [19%] *versus* 7 [9%]; $P = 0.05$). This indicated that improved outcome was related to intensity of therapy for a patient of any physician rather than to attributes of particular physicians.

■ Discussion

Methodology

The study used methods conforming to the Consolidated Standards of Reporting Trials (CONSORT) statement and was completed by 94% of recruited patients.[1] The clinical trial was based on the concept of a standard "dose" of limited manual therapy to the lower back.[25,27] The outcomes of patients receiving manual therapy that involved all low back anatomic areas (four or more maneuvers), compared with patients receiving only limited or no manual therapy, showed some modest but statistically significant improvement in the speed of recovery, which persisted even when controlling for variability in the physician's intensity of treatment. This modest benefit was limited to the more subjective patient self-assessment of recovery, and was not reflected in the Roland–Morris functional status scores.

However, detailed analysis of the data showed that only 43.4% of the patients who underwent manual therapy actually received the complete planned sequence of maneuvers. Reasons given by physicians for not including all maneuvers included concerns about the effectiveness of the techniques in improving outcomes, severity of back pain in certain patients, and concern about the patient's acceptance. Although the clinicians appeared to be effectively trained to undertake and incorporate the specified manual therapy in their practices, the fact that a proportion did not undertake the complete sequence suggests a possible lack of confidence, lack of conviction in its efficacy, or reluctance to incorporate these maneuvers into busy practice, or they may have been concerned about treating patients with severe pain.[16]

Sham maneuvers were not used in the control arm of the study, and it is therefore possible that the modest benefit produced by manual therapy was a placebo effect of physical touch. It could be argued that more intensive manual therapy acts as a greater placebo than limited manual therapy, thus accounting for the differences in outcome.[19] However, compared with simple management approaches, intensive therapy for back pain by physicians using a variety of nonmanual methods has been reported to affect outcomes adversely.[34] Therefore, the extent and relevance of the placebo effect in this study remains speculative.

Interpretation

There was no clinically or statistically significant benefit of manual therapy compared with enhanced care alone. Cherkin et al[8] noted similar outcomes comparing manual therapy by chiropractors with an educational booklet.[8] Twice as many patients who underwent manual therapy in our study reported complete recovery (14% *vs.* 6%) after the first treatment, similar to the few other reports that have assessed function or pain shortly after initial therapy.[32]

Another factor speeding recovery for patients receiving manual therapy was previous experience with manipulation. The explanation is unclear but could either be a genuine biologic response and/or a placebo characteristic associated with beliefs and prior experience.

Despite some concerns about using manual therapy in practice, physicians were very positive that their newly acquired approach to back care had improved patient care. Two years after training, most physicians in the

study reported continued use of manual therapy, with approximately half using only muscle energy techniques at a frequency of two to three times weekly. They reported that they had changed their management by performing more complete examinations, more touching, less use of narcotics, reduced referrals to specialists, and increased referrals to chiropractors. The "take" rate of the training appeared to be approximately 50%. A majority of the physicians believed that they were improving patient outcomes, perhaps because of their impression of immediate improvement, now shown by the data, after the first treatment.

In contrast, Cherkin et al[9,10] developed a purely didactic educational program for generalist practitioners who reported increased confidence in management, but persistent frustration. Patient satisfaction was unchanged. Cherkin[7] suggests that meeting patient needs more effectively could be an important and innovative strategy in improving back care outcomes and the hands-on training reported in this study may be an economic way to enhance patient satisfaction.

The goal was to evaluate the feasibility of training practitioners in limited manipulation techniques, to test the viability of incorporating these skills into practice, and measure their effectiveness. By design, the physicians were not experts in manual therapy. The results should therefore not be generalized to the effectiveness of manual therapy performed by expert practitioners. Training physicians in an enhanced approach to back care results in excellent patient satisfaction, and in outcomes similar to other observational studies. The addition of limited manual therapy offers little extra benefit.

■ Key Points

- Despite controversy about the benefits of spinal manipulation, this treatment is widespread in the health care system in the United States.
- Limited training is regularly offered to allopathic physicians and evinces considerable interest.
- Results in this randomized controlled trial showed no benefit of manual therapy in terms of time to functional recovery, days absent from work, and patient satisfaction.
- More patients receiving manual therapy had completely recovered after the first visit for back pain than in the control group.
- Patients receiving more intense manual therapy (at every visit) had a quicker return to functional recovery than others receiving manual therapy or the control group.
- Limited training in manual therapy offers little benefit in improving outcomes in acute LBP.
- Intensity of manual therapy may be a factor in improving short-term outcomes of acute LBP and needs further study.

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Point of View

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Although there is still some debate over its effectiveness, manual therapy is frequently used for acute low back pain by, for example, chiropractors, osteopaths, and manual therapists. In this randomized trial, Curtis and colleagues evaluated the effectiveness of training primary care doctors in techniques of limited manual therapy by comparing enhanced care to enhanced care with manual therapy. The study population consisted of 295 patients with low back pain of less than 2 months duration. Thirty-one primary care doctors (14 internists and 17 family practitioners) received an intensive training course consisting of 2 full days of educational and skill workshops, 1 month apart, with a later refresher session (18 hours total). They were encouraged to practice the manipulation techniques in the 3 months before the start of the trial. Enhanced care consisted of a patient centered approach to questioning, careful low back examination using palpation and functional assessment, management using national guidelines on back care, and specifically designed patient handcuts on exercises and activities of daily living. The results of this study showed no differences between groups in functional status, days to recovery, and days off work after 2, 4, and 8 weeks. This trial meets most of today's methodological standards and is well designed and clearly presented. Therefore, it seems justified to conclude that training primary care doctors in limited manual therapy is not useful. As the authors have stated in their discussion, this does not necessarily mean that manual therapy is not effective. Only 43% of the patients undergoing manual therapy actually received the complete intervention, which indicates that the limited training program may not have been successful in providing adequate skills and confidence to apply these skills.

In my opinion, a very interesting point for discussion of this paper is the treatment received by the patients. Enhanced care was defined as "management using national guidelines on back care" and, therefore, should reflect recommendations made in the U.S. National Guidelines.[1] Patients had acute low back pain for an average of 14–17 days before entry into the study. Approximately, 35% received narcotic analgesics, and as high as 61–76% received a prescription for muscle relaxants. The U.S. Guideline[1] explicitly stated that muscle relaxants are of equivocal efficacy, have significant potential for producing drowsiness and debilitation, and

have a potential for dependency. Approximately 20% of the patients received lumbar spine radiographs and approximately 5% CT or MRI. These percentages seem high considering the fact that the guideline stated that there is no indication for routine use of radiographs in acute low back pain. Furthermore, approximately 35% of the patients also received care from other providers (physical therapists, orthopedists, chiropractors, etc.), while referrals are not recommended in the guideline. In my opinion, the core message of the U.S. Guideline is to provide assurance that recovery is expected and to support return to normal daily activities. Patients' functional status improved relatively quickly in the first 2 weeks after randomization, although only 60% had completely recovered after 8 weeks. These figures indicate that even with enhanced care, results of low back pain management seem somewhat disappointing. Furthermore, even enhanced care provided within a trial setting does not correspond well to the recommendations in national guidelines. One of the challenges for future back pain research seems to be the development of effective strategies for the implementation of guidelines.

Reference

1. Bigos S, Bowyer O, Braen G, et al. Acute low back problems in adults. Clinical Practice Guideline No. 14. AHCPR Publication No. 95-0642. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, December 1994.