



Recovery Pattern of Patients Treated With Chiropractic Spinal Manipulative Therapy for Long-lasting or Recurrent Low Back Pain

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ABSTRACT

Objective: To investigate the recovery pattern in chiropractic patients being treated for long-lasting or recurrent low back pain; in particular, to identify the minimum number of required treatments and the minimum number of days from the beginning of treatment to the occurrence of improvement.

Design: Prospective, uncontrolled multicenter study.

Setting: Private practice.

Participants: Each of 19 selected Norwegian chiropractors provided 10 consecutive patients; each of the latter fulfilled a set of criteria (low back pain, a present episode longer than 2 weeks in duration, a total of more than 4 weeks of low back pain in the preceding year, no chiropractic treatment during the preceding 6 months, and suitability for manipulation).

Response Rate: Data were collected on 164 patients (86% of the optimal study sample), 6 of whom were excluded. This left 158 patients for the analyses.

Main Outcome Measures: Information on low back pain status was collected on each visit (maximum, 12 visits) through use of both a 10-point numeric pain rating scale and a global improvement scale (for the question "Do you feel that you have improved since

you began receiving chiropractic treatment?").

5 answers were possible, ranging from "Yes, definite improvement" to "No, I am worse now than when the treatment started"). With respect to the numeric pain rating scale, "improvement" was defined as the point at which the score reached 2 for the first time or, if the initial score was 2, the point at which the score reached 1 for the first time. With respect to the global improvement scale, "improvement" was defined as the point at which the patient first answered "Yes, definite improvement."

Results: Approximately 50% of patients reported that they had "improved" at the 4th visit and within 2 weeks. After this time, fewer new cases of "improvement" occurred for every visit or day since the first treatment. At the 12th visit (earlier if treatment was concluded before the 12th visit), approximately 75% of the patients reported that "improvement" had occurred.

Conclusion: There is a large group of chiropractic patients with relatively long-lasting or recurrent low back pain who report "improvement" early in the course of treatment. (*J Manipulative Physiol Ther* 2001;24:288-91)

Key Indexing Terms: Low Back Pain; Chiropractic Manipulation; Health Services Research



INTRODUCTION

Many clinical trials have been performed on spinal manipulation and low back pain (LBP), but not all have reached the same conclusion.¹ Because the diagnosis of uncomplicated LBP is descriptive and usually not based on objective pathoanatomic findings, the inclusion of patients in such studies has generally been based on relatively non-specific criteria. However, if only certain (presently unidentified) types of LBP are suitable for spinal manipulation, the outcome of such a study would depend on the proportion of

each of these LBP types in the study sample. There is therefore a need to conduct trials for specific subgroups of patients to determine which of the different therapeutic methods is best suited to particular subgroups.² In particular, it is important to prevent the development of chronic disability and ensuing work loss, because these are difficult to revert and very costly to society and the individual patient.

During the process of planning an outcome study whose aim was to determine predictors of quick and long-term recovery with chiropractic spinal manipulation in long-lasting or recurrent LBP, it became apparent that there was no information available on the recovery pattern in this type of patient. In other words, we did not know what speed of recovery to expect and we did not know whether recovery time is uniform or whether there are several distinct subgroups—eg, patients who recover fast, patients who recover slowly, and patients who do not recover.

To obtain a better understanding of this issue, a retrospective study was performed by 6 chiropractors in the project planning group. These chiropractors identified 115 relevant clinic files describing the treatment outcomes for patients

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with LBP of a total duration of at least 30 days in the preceding 12 months and a duration of pain at the time of the first consultation of at least 2 weeks. Of the patients so identified, 66% had obtained "satisfactory improvement" by the 7th treatment and within the 5th week of treatment. The obvious limitations of this study approach prompted us to conduct an uncontrolled, prospective, multicenter investigation for the sake of visualizing the recovery pattern and finding out at what point approximately 50% of patients report definite improvement. This would enable us to identify the earliest possible time at which outcome can be measured during the course of treatment in a clinical trial.

METHOD

Participants

A convenience sample of 19 chiropractors participated in the study (7 chiropractors in the research team and 12 colleagues of theirs who were thought to be able to reliably and promptly fill out the required number of questionnaires). Each participant was asked to recruit 10 consecutive new patients meeting the inclusion criteria for the main study. The criteria were as follows:

- LBP—ie, pain somewhere between the 12th ribs and the gluteal folds (However, additional problems in other areas of the spine or in the extremities were admissible.)
- A significant (from the patient's viewpoint) degree of pain/discomfort (Simple cases of so-called maintenance care and cases of slight discomfort only [requiring a single treatment or no treatment at all] were excluded.)
- No treatment by a chiropractor within the preceding 6 months
- Suitability for chiropractic treatment (The individual chiropractor applied the inclusion and exclusion criteria used in his or her everyday chiropractic practice.)
- A present episode of LBP of more than 2 weeks' duration
- A total of more than 4 weeks of pain during the past 12 months.

The last 2 criteria were selected because the combination of them has been identified as distinctive of a particular subgroup of patients in relation to various correlates of LBP.³

Treatment

The chiropractors were told to use their usual clinical approaches. Most, if not all, patients were therefore likely to receive spinal manipulation with or without additional treatment, such as massage, exercises, and advice.⁴

Ethics

For this type of study, no approval was necessary from our regional scientific ethics committee. However, on the first visit each patient signed a written consent form to take part in the study. Participation was voluntary, and all data were collected anonymously.

Data collection

On the first visit, the chiropractor, having obtaining the relevant information from the patient, recorded the number

of days that the present LBP episode had lasted and the approximate number of days of LBP during the last 12 months. The patient then completed the Revised Oswestry Disability Questionnaire (translated into Norwegian). This instrument has been previously tested for reliability, internal consistency, and validity on chiropractic patients and found to be acceptable.⁵ The Norwegian version has been extensively used in clinical practice by one of the team members (Ø.N.) and found to be easily understandable to patients and responsive to improvement of symptoms. The Oswestry questionnaire was used to obtain descriptive data of the patient group participating in the study, not to measure outcome.

In addition, each patient was asked to indicate the overall severity of his or her LBP problem during the previous 24 hours through use of a 10-point numeric pain rating scale; "No pain (1)" and "Worst imaginable pain (10)" were marked on the scale's left and right extremities. During the pretreatment interview portion of each consecutive visit, the patient rated his or her condition by using this scale and also by providing the chiropractor with one of 5 responses to the following question (which we refer to as the *global improvement scale* question): "Do you feel that you have improved since you began receiving chiropractic treatment?" The possible answers were as follows:

Yes, definite improvement

Yes, some improvement

No change

No, maybe some worsening

No, I am worse now than when the treatment started.

Analysis of Data

With respect to the numeric pain rating scale, "improvement" was defined as the point at which the score reached 2 for the first time. If the initial score was 2, "improvement" was defined as the point at which the score reached 1 for the first time. With respect to the global improvement scale, "improvement" was defined as the point at which the patient first answered "Yes, definite improvement."

Cumulative frequency tables were created to show (1) the number of "improvements" that were noted at the first revisit, second revisit, third revisit, etc, and (2) the number of "improvements" that were noted after 1-3 days, 4-7 days, 8-14 days, etc. These were transformed into figures to allow visual analysis. Because of the nonrandom selection of the study subjects, no measures of dispersion were calculated.

RESULTS

Descriptive Data

A total of 164 patients (86% of the optimal study sample) were recruited into the study. Six patients were excluded because they did not fully meet the inclusion criteria, so 158 patients were left for the analysis. Most of the data were complete throughout the course of treatment.

One hundred ten of the participants reported that they had had LBP for a total of at least 60 days during the preceding year, and 80 patients said that they had had LBP for at least 60 days consecutively at baseline. The distributions of the

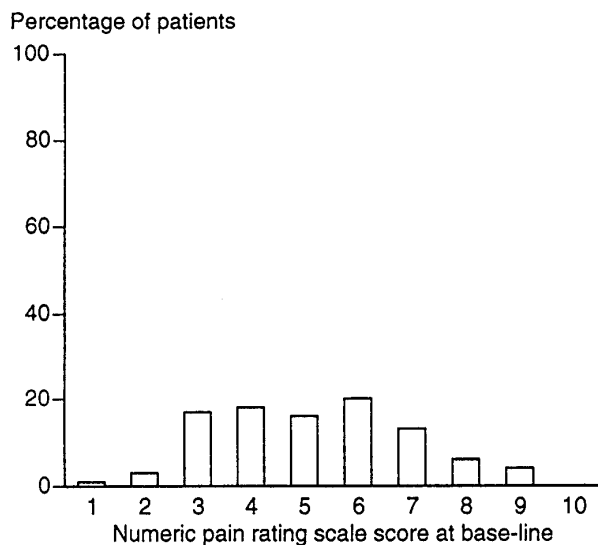


Fig 1. Description of study sample: distribution of numeric pain rating scale scores at baseline ($n = 157$).

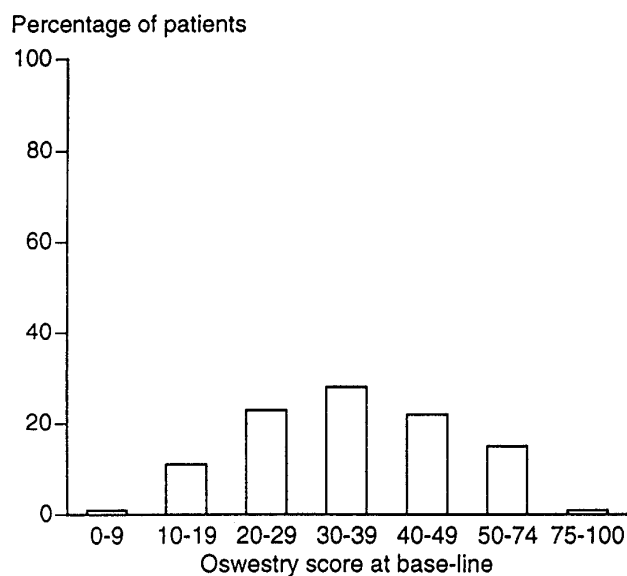


Fig 2. Description of study sample: distribution of Oswestry scores at baseline ($n = 157$).

numeric pain rating scale scores and the Oswestry scores at the first consultation are shown in Figs 1 and 2.

Improvement Patterns

The cumulative curves for "improvement" according to the numeric pain rating scale and the global improvement scale were almost identical. Steep inclines were found during the initial course of treatment, after which the 2 curves flattened out. At the 4th visit, more than 50% of patients reported improvement (Fig 3).

When the analyses were repeated in terms of the number of days rather than the number of treatments, again, 2 almost identical curves were found; these were similar to the previous curves (being steeply inclined and then leveling out).

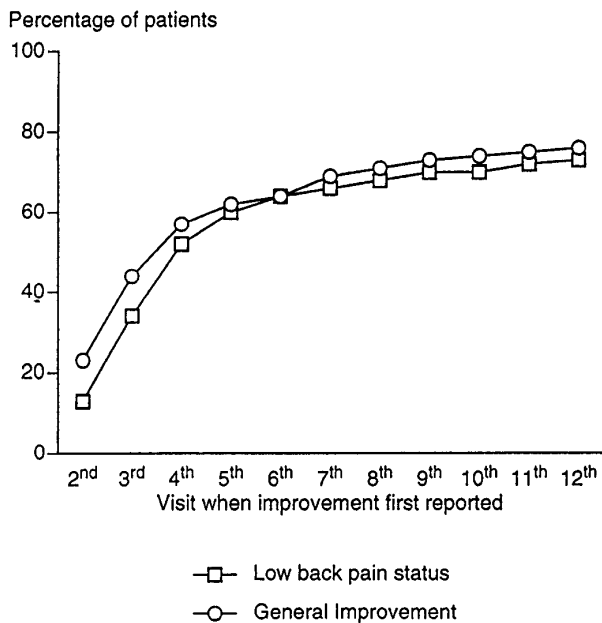


Fig 3. Improvement pattern: cumulative frequency of self-reported improvement in relation to number of visits (2nd visit = return visit after first treatment), according to 10-point numeric pain rating scale ($n = 149$) and global improvement scale ($n = 153$).

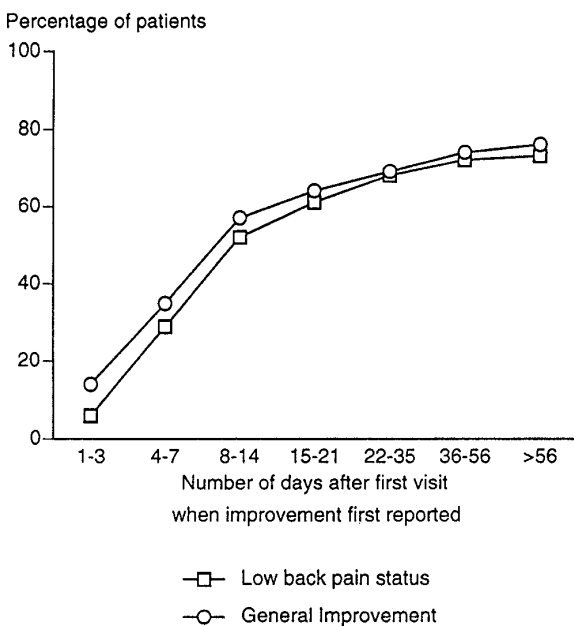


Fig 4. Improvement pattern: cumulative frequency of self-reported improvement in relation to number of days since first visit, according to 10-point numeric pain rating scale ($n = 148$) and global improvement scale ($n = 152$).

Within 14 days, more than 50% of patients had reported improvement (Fig 4).

DISCUSSION

The present study indicates that there is a large group of chiropractic patients with relatively long-lasting or recurrent

LBP who report "improvement" early in the course of treatment. Already at the 4th visit and within 2 weeks, approximately half of the patients claimed to be better. Within a maximum of 12 visits, approximately three fourths of the patients reported improvement.

The improvement pattern was similar for the 2 measures used in this study (the numeric pain rating scale and the global improvement scale). The improvement pattern was also fairly constant regardless of whether it was based on the number of visits or the number of days since treatment started. However, it is not known to what extent these 2 measures are dependent of each other (ie, whether the number and pacing of treatments have an effect on the temporal pattern).

We wanted to use a simple definition of improvement, one suitable for use in ordinary clinical situations; therefore, we opted for a categoric cutting point on the numeric pain rating scale and a simple global improvement question, because these reflect how chiropractors monitor treatment responses in their patients every day. Because improvement data were collected by the treating practitioner and not by an independent objective person, we selected the strongest possible response ("Yes, definite improvement") rather than the second-strongest possible response ("Yes, some improvement") to exclude any polite answers that had no clinical substance and any answers that had been provided in response to a hopeful expression on the face of the chiropractor. Ideally, improvement data would have been collected from patients through self-report questionnaires, but the limitations of clinic-based research are those of time (at the consultation) and ease (for the clinicians). Therefore, data collection must be closely integrated in daily routines to ensure high compliance.

Another weakness with this study is that the chiropractors might not have been representative of the Norwegian chiropractic profession, inasmuch as the group was made up of chiropractors interested in research and some specially selected colleagues thought to be compliant. However, the research question had to be addressed within a short time

frame because of deadlines associated with the main study. A randomly selected sample of chiropractors would have required more back-up resources (more information and supervision) and probably a longer period of data collection to ensure a satisfactory sample size.

CONCLUSION

At this point, we are content to state that there seems to be a distinct recovery pattern among chiropractic patients with relatively long-lasting or recurrent LBP: they report "improvement" within a short period of time and after a few treatments. In our study sample, these limits were 2 weeks and the 4th return visit. Obviously, our study design did not allow us to follow these patients for a longer period to see whether quick initial recovery predicts a favorable long-term prognosis as well; this will be investigated in our main study. Furthermore, only the use of an untreated control group will be able to tell us whether the reported "improvement" was indeed due to the treatment rather than largely reflecting the natural recovery rate. Nevertheless, clinicians might do well to be observant of these findings to try to gain a better understanding of this particular subgroup.

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