Return To Work After Chronic Back Pain Rehabilitation

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Abstract

This study assesses the return to work rate of chronic back pain patients completing a comprehensive rehabilitation program at the Canadian Back Institute (CBI). The influence of the patients' perception of their residual pain on outcome is also examined. The average time between the date of injury and the first day of treatment at CBI was 6.1 months.

Using a structured telephone interview, 83 consecutive patients were contacted 4 months after discharge. Only 5% of the patients stated their pain was abolished. Intermittently pain free status was achieved by 41% and 30% stated their pain had reduced. Nearly a quarter of the patients had no pain control.

There was a significant correlation between the patients' description of their pain and a successful outcome ($p=0.02$). The average treatment duration was less than 17 days after an average delay in initiation of therapy greater than six months. The percentage of patients who were working increased as their ability to control their back pain increased ($p=0.02$). For chronic patients, the goal of achieving pain control is still relevant, but should be de-emphasized if there is clearly no improvement after one week, usually five treatment visits.

key words: work, outcome, compensation, rehabilitation, chronic

Introduction

This study assesses the return to work rate of chronic back pain patients completing a comprehensive rehabilitation program at the Canadian Back Institute (CBI). The influence of the patients' perception of their residual pain on outcome is also examined. Outcome for this study is the actual work status of the patient, determined by a follow-up telephone interview 4 months after completion of the patient's program.

For 90% of back pain sufferers, symptoms resolve within three months of onset. It is the remaining 10% who create the greatest financial burden, representing 80% of the monetary costs associated with back pain (1-5). These chronic patients are often a diagnostic challenge for the physician and defy conventional treatment. The rate of recovery is uniformly low. Catchlove and Cohen quote four studies on chronic back pain patients receiving Workers' Compensation with return to work rates of only 20-30% (6).

There is well-documented literature on the beneficial effects of return to work for a chronic pain population (6-12). Many authors have concluded that a return to work is an essential element in continuing rehabilitation (5,13-22). A patient's attitude toward work will affect the return to work (23) and failure to solve the work situation allows patients to view themselves as dependent and incapable. In this situation, any physical gains from the treatment program will be nullified (6).

Clinical records at CBI indicate the most common reason for a patient's unwillingness to return to work after treatment is a continuing complaint of disabling pain. The patients remain focused on their pain and this constant complaint leads their doctors to primarily treat on subjective complaints. Neither the patient nor the physician will consider a return to work while symptoms persist. Hall (24), Nachemson (19), Waddell (25) and others (12,26-29) state there is no consistent correlation between subjective back pain and physical injury and the complaint of pain without objective findings is an unreliable criterion upon which to base a return to work recommendation.

Methodology

Defining success as return to work, we evaluated the outcome of 83 consecutive patients treated at the Canadian Back Institute in Edmonton from January to August 1992 and CBI Calgary from April to September 1992. All patients were on Alberta Workers' Compensation and all were enrolled in a comprehensive rehabilitation program. Thus, all injuries were work related. Patients eligible for this program are 10 or more weeks post injury. The average time between the date of injury and the first day of treatment at CBI was 6.1 months.

This comprehensive rehabilitation program consists of three stages. The first five days (stage 1) focus on pain control. Passive modalities are completely avoided. Treatment consists of education, posture correction, and flexion or extension exercises depending on the pain pattern.

For the next five days (stage 2) the emphasis shifts to recovery of movement. Patients expand their routines to include stretching and strengthening exercises, as tolerated. Spinal range of motion is measured and the goal is recovery of movement in all directions.

The remaining twenty days (stage 3) concentrate on physical conditioning. The principles and techniques of stage 1 and 2 are not abandoned, but the focus remains on physical conditioning where these parameters require measurement: strength, endurance, aerobic capacity, lifting capacity and postural tolerance. The therapeutic exercise regime incorporates walking, stationary, cycling, free weights, resistance training and job simulation.

Using a structured telephone interview, each patient was contacted 4 months after discharge. This short follow up period was chosen to increase the rate of patient contact. The follow up status was unknown for only four patients and they were not included in any analyses. Previous attempts, from past research, had failed to locate a significant number of patients using a 6 month post-discharge follow up.

A patient judged to have a successful outcome met at least one of the three established criteria at the time of the post discharge telephone interview. No attempt was made to differentiate between full and part time work. The criteria are presented in Table 2.

Table 2 Criteria For Classification Of A Successful Outcome

1) working, full or modified duty
2) patient admitted he or she was capable of work, but was not working due entirely to job unavailability
3) not working due to a new injury unrelated to the original problem treated at CBI. The patient had been either working or fit for work before the new injury occurred.

Eight patients withdrew before completion of the program. However, at the time of the follow up, all eight patients were successfully working. Others were able to perform work duties before the end of the full 30 day program and were not required to continue.

The total sample size was 83 patients. The average age for patients in this study was 37.17 years with a standard deviation of 9.03 years. There were 51 males and 32 females. The delay before treatment, the program length and the success rate are presented in Table 1.

Table 1 WCB Patient Data

Variable		Quantity
n		83
Age	Mean	37.17 years
	S.D.	9.03 years
Male		51 (61%)
Female		32 (39%)
Treatment onset-DOI*		6.14 months
Treatment Length	Mean	16.7 days
	S.D.	5.1 days
Success		60 (72%)
Failure		23 (28%)

*First Day of Treatment Minus Date of Injury

Results

Sixty patients had a successful outcome, a success rate of 72%.

During the follow up interview patients were asked to classify their current pain status into one of four categories: pain abolished, intermittently pain free, pain reduced but present, or no pain control. No symptoms of back pain qualified as "pain abolished". "Intermittently pain free" meant that the patient experienced identifiable totally pain free episodes every day. "Pain reduced" signified a decrease in pain intensity without the ability to completely eliminate the pain at any time. "No pain control" meant that the pain was unchanged and that the patient had no means of gaining or maintaining pain relief.

Only 5% of the patients stated their pain was abolished. Intermittently pain free status was achieved by 41% and 30% stated their pain had reduced. Nearly a quarter of the patients had no pain control. Table 3 depicts

the frequency of each response.

Table 3 Patient Classification Of Symptoms

Classification	*N=76**	*Percentage*
Pain Abolished	4	5 %
Intermittently Painfree	31	41 %
Reduced	23	30 %
No Pain Control	18	24 %

* values adjusted due to incomplete data for 7 patients

For the 60 patients with a successful outcome, 7% reported pain abolition, 47% classified their symptoms as intermittent, 31% said the pain had reduced and 15% had no pain control. The frequency of each response for successful patients and failures are presented in Tables 4 and 5 respectively.

Table 5 Patient Classification Of Symptoms For Those With A Failed Outcome

Classification	*N=22**	*Percentage*
Pain Abolished	0	0 %
Intermittently Painfree	8	36 %
Reduced	5	23 %
No Pain Control	9	41 %

* one patient did not respond

Table 4 Patient Classification Of Symptoms For Those With A Successful Outcome

Classification	*N=59**	*Percentage*
Pain Abolished	4	7 %
Intermittently Painfree	28	47 %
Reduced	18	31 %
No Pain Control	9	15 %

* one patient did not respond

A prior episode of disability was common amongst this study group. Fifty nine percent of the patients were treated for their first episode of back pain and 41% were treated for a recurrence of a previous injury. Thirty three percent had not worked since their injuries. The remaining two thirds of the patients had unsuccessfully tried to return to work.

Using Chi-Square analysis, Mantel-Haenszel test revealed a significant relationship between pain status and return to work outcome (5.26, p=0.02). The percentage of patients who were working increased as their ability to control their back pain increased (p=0.02). There were no significant findings between return to work outcome and age (p=0.51), prior episodes of disability (p=0.15), or previous work status between date of injury and treatment (p=0.09).

Discussion

The goal of return to work is both attainable and reasonable in a group of chronic back pain patients. In this study, 72% achieved that goal. The average treatment duration was less than 17 days after a delay in initiation of therapy greater than six months.

This study demonstrates that a patient's awareness of pain will affect the return to work. There was a significant correlation between the patients' description of their pain and a successful outcome ($p=0.02$). The group with no pain control failed most frequently to return to work. These patients emphasized the pain, a common finding in patients with chronic back complaints. The treating professional should understand that a temporary increase in pain does not necessarily translate into physical damage or harm to the back.

It is important to note that return to work may be influenced by factors other than physical ability. Factors such as motivation, emotional reaction, economic and cultural imperatives, job availability, job satisfaction and WCB benefits may override any improved physical function in a patient's decision to return to employment (8-11).

This program that enabled a high percentage of patients to return to work and achieve pain control supports an active approach to chronic back pain rehabilitation. However, the lack of a control group remains a limitation of this study. Further research is now underway to compare the results of a study group completing a comprehensive rehabilitation program and a control group referred for passive physiotherapy.

The fact that pain abolition or intermittent pain status was achieved by 35 (46%) patients suggests that pain control should be an initial goal in the treatment of chronic back pain. Donelson et al. (30) state that pain control should occur rapidly (48 hours) in acute patients. For chronic patients, the goal of achieving pain control is still relevant, but should be de-emphasized if there is clearly no improvement after one week, usually five treatment visits.

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References

1. Hrudey WP: Onset of chronic low back pain. Presented at The Changing Face of Back Pain, Vancouver, B.C., October 30-31,1992
2. Frymoyer JW, Pope MH, Clements JH, et al. Risk factors in low back pain: An epidemiological study. J Bone Joint Surg 1983;65A:213-218
3. Spengler DM, Bigos SJ, Martin NA, et al. Back injuries in industry: A retrospective study.I. Overview and cost analysis.Spine 1986;11(3):241-245
4. Frymoyer JW. Epidemiology. In: Frymoyer JW, Gordon SL, ed. New Perspectives in Low Back Pain. Park Ridge, Illinois, American Academy of Orthopaedic Surgeons, 1989:20-33.
5. Biering-Sorensen P. Physical measurements as risk indicators for low back trouble over a one year period. Spine 1984;9(2):106-119.
6. Catchlove R, Cohen K. Effects of a directive return to work approach in the treatment of workman's compensation patients with chronic pain. Pain 1982; 14:181-191.
7. Derebery VJ, Tullis WH. Delayed recovery in the patient with a work compensable injury. J Occu Med 1983;25(11):829-835.
8. Estlander A, Mellin G, Vanharanta H, Hupli M. Effects and follow-up of a multimodal treatment program including intensive physical training for low back pain patients. Scand J Rehabil Med 1991;23:97-102.
9. Mayer TG, Gatchel RJ, Kishino ND, Keeley J, Capra P, Mayer H, Barnett J, Mooney V. Objective assessment of spine function following industrial injury: A prospective study with comparison group and one year follow up. Spine 1985;10(6):482-493.
10. Mayer TG, Gatchel RJ, Kishino ND et al. A prospective short term study of chronic low back patients utilizing novel objective functional measurement. Pain 1986;25:53-68.
11. Mayer TG, Gatchel RJ, Mayer H, Kishino ND, Keeley J, Mooney V. A perspective two year study of functional restoration in industrial low back injury. Jama 1987;258(13):1763-1767.
12. Wynn Parry CB. Pain in avulsion lesions of the brachial plexus. Pain 1980;9:41-53.
13. Cady LD, Thomas BS, Karwasky RJ. Program for increasing Health and physical fitness in fire fighters. J Occu Med 1985;27(2):110-114.
14. Cady LD, Bischoff DP, O'Connell ER, Thomas PC, Allan JH: Strength and fitness and subsequent back injuries in firefighters. J Occu Med 1979;21(4):269-272.
15. Dimaggio A, Mooney V. Conservative care for low back pain: What works. J Muscskel Med 1987;September:27-34.
16. Hall H. Passive versus active conservative treatment options. Presented at Occupational Spinal Disorders: Primary, Secondary and Tertiary Care and Prevention, Dallas, Texas, October 2, 1992
17. Hansson T, Sandstrom J, Jonson R, Roos B, Andersson GBJ. The bone mineral content of the lumbar spine in patients with chronic low back pain. Spine 1985;10:158-160.
18. Mitchell RI, Carmen GM. Results of a multicenter trial using an intensive active exercise program for the treatment of acute soft tissue and back injuries. Spine 1990;15(6):514-521.
19. Nachemson A. Work for all: For those with low back pain as well. Clin Orthop 1983;179:77-85.
20. Mooney V. Pain and soft tissue injury. Presented at Occupational Spinal Disorders: Primary, Secondary and Tertiary Care and Prevention, Dallas, Texas, October 1, 1992
21. Porter RW, Adams MA, Hutton WC. Physical activity and the strength of the lumbar spine. Spine 1989;14(2):201-203.
22. Spitzer WO, LeBlanc FE, Dupuis M. Scientific approach to the assessment and management of activity-related spinal disorders. Spine 1987;12(suppl):S1-S59.
23. Sandstrom J, Esbjornsson E: Return to work after rehabilitation: The significance of the patient's own
24. prediction. Scand J Rehabil Med 1986;18:29-33.
25. Hall H. Examination of the patient with low back pain. Bull Rheum Dis 1983;33(4):1-8.
26. Waddell G. A new clinical model for the treatment of low-back pain. Spine 1987;12(7):632-644.
27. Linton SJ. The relationship between activity and chronic pain. Pain 1985;21:289-294.
28. Rainville J, Ahern DK, Phalen L, Childs LA, Sutherland R. The association of pain with physical activities in chronic low back pain. Spine 1992;17(9):1060-1064.
29. Sachs BL, David JF, Olimpio D, Scala AD, Lacroix M. Spinal rehabilitation by work tolerance based on objective physical capacity assessment of dysfunction. Spine 1990;15(12):1326-1332.

30. Tate DG. Workers' disability and return to work. Am J Phys Med Rehabil 1992;71(2):92-96.
31. Donelson R, Silva G, Murphy K: Centralization phenomenon:Its usefulness in evaluating and treating referred pain. Spine 1990;15(3):211-213.