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Paper

Williams AC, Nicholas MK, Richardson PH, Pither CE, Justins DM, Chamberlain JH, Harding VR, Ralphs JA, Jones SC, Dieodonne I, et al. Evaluation of a cognitive behavioural programme for rehabilitating patients with chronic pain. *Br J Gen Pract* 1993; 43(377), 513-8.

Reviewer

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Abstract

This article represents the first extensive evaluation of multidisciplinary cognitive behavioural treatment for chronic pain conducted in the UK. Back in 1993, evidence was beginning to accumulate in the US to support group-based pain management programmes, but it was not clear whether those results would translate to the different pain populations found in Britain. This study reports on 212 consecutive patients with a mean pain duration of 10.5 years who completed the four week INPUT Pain Management Programme and were followed up six months later. Multiple domains of assessment were employed, including psychometric scores (mood, confidence, self reported disability), physical functioning measures (walking, stair climbing, sit-to-stands) and use of pain medications. The results demonstrated comprehensive changes in quality of life for these long term pain sufferers across all domains by the end of treatment, and the changes were maintained at six months follow up – with the exception of pain intensity. As the first of its kind in the UK, this study was not a controlled trial but an evaluation of treatment effectiveness for chronic pain patients who met the deliberately broad inclusion criteria (disabling chronic pain for which there was no further medical or psychiatric treatment available). It remains an important study not just for its originality, but for the rigour with which outcomes were evaluated and the novel assessment of treatment satisfaction and adherence to self management strategies. It was a catalyst paper for a range of subsequent studies which have collectively moved the field forward extensively.

Introduction

Following the publication of Fordyce's (1976) seminal work outlining non-medical approaches to managing chronic pain, group based pain management programmes flourished in the US. (review book on shelf). By the mid to late 1980s, the literature was sufficiently extensive for a number of review papers to have been published (including one meta analysis). These studies indicated that behavioural and cognitive behavioural therapy (CBT) methods were effective in reducing pain-related disability for patients with persistent chronic pain problems. However, the research had been conducted either in America (or Sweden), and it was a reasonable question as to whether the results would translate to British pain patients. US pain studies in this area typically comprised male, working age, compensable subjects with a shorter history of pain than seen in the UK.

Study participants

This paper represents the outcomes obtained over the first two years of the INPUT programme run at St Thomas' Hospital London by Amanda C de C Williams and her colleagues. The inclusion criteria for participating in the programme were deliberately kept broad, with any two out of the following determining suitability: widespread disruption in activity due to pain (except work activity), use of excessive pain medications, high affective distress, use of unnecessary aids, high levels of pain behaviour, work reduced, impaired or ceased due to pain. Participants were excluded if they could not speak or write English, they had pain for less than one year, or if further physical pain treatment was suitable. They were also excluded if they were currently psychotic or were unable to climb stairs (as stair climbing was an outcome measure).

In total, 212 patients completed pretreatment and posttreatment data over this two year period. 23 patients dropped out of treatment before the posttreatment evaluation, representing a very respectable 9.5% drop out rate. There was a 71.1% retention rate for follow up data at 6 months following programme completion.

The participants were very much the "heart sink" chronic pain patient cohort – a mean pain duration of 10.5 years (SD=9.9 years), 47.8% with at least one pain-related surgery, and 81.6% taking at least one pain medication. In contrast to the US pain management programmes data, most of the participants were female (65.1%), and only 12.5% had compensation claims. The mean age of the participants was 50.0 years (SD= 13.3 years) with just 14.6% currently working full or part time.

Treatment

Each patient group had input from two psychologists, physiotherapist, occupational therapist, nurse and anaesthetist. The programme ran 08.30 to 17.00, 5 days per week, for four weeks so was an intensive outpatient intervention by any standard. The intervention ran along conventional behavioural lines, using strategies to increase functional activity levels while simultaneously decreasing pain behaviour expression and the use of pain medications. Cognitive principles detailed methods to control negative affect associated with pain, and relaxation methods taught as an adaptive response to increases in pain. Exercise and therapeutic stretch programmes were individualised for each patient, with a specific application to sitting, standing, walking and other functional movements. Activity pacing was taught alongside the exercises. Patients were given the choice of pain medication reduction method: a morphine-based cocktail in which the active ingredients were gradually reduced, or following a written reduction plan.

Results

Repeated measures analysis of variance showed significant improvements across all domains of assessment, with the intriguing exception of the pain intensity scores. By the end of treatment, patients had halved their time to walk 20 metres, increased their distance walked in 20 minutes by 52%, and increased their stair climbing by 58%. The mean score for depression was now in the normal range, having fallen from the mild/moderate range. There were substantial changes in pain medication use, for example opioid medication use fell from 55% of the sample using opioids at pretreatment to just 11% at posttreatment. However, pain

intensity scores fell by just 6.2 points on a 0-100 numerical rating scale at posttreatment, a non-significant difference for the full programme completers. This was a particularly important clinical finding for patients and professionals alike – instead of continuing the fruitless chase for pain relief with these long-term patients, CBT pain management programmes could improve quality of life regardless.

By the six month post-programme follow up, the improved scores for depression, self-efficacy and disability were maintained, as were performances on all the physical measures. The medication use data remained improved compared to pretreatment but had begun to rise again, particularly with opioids (up from 11% posttreatment use to 25% of the sample using opioids again at six months follow up).

The authors were not just interested in the clinical outcomes however, they also assessed process variables. Treatment satisfaction ratings were taken at the one month posttreatment follow up, and showed that only 6% were unsatisfied with the programme (68% were very satisfied). They also assessed posttreatment adherence to the self management strategies, in terms of frequency of carrying out exercises, stretches, relaxation practice and other coping techniques. Implementation of active coping techniques is the cornerstone of self management programmes, and is now a topic of major importance in this area (Nicholas et al., 2012). Very high adherence rates were reported by this sample – for example, six months after completing their programme, 56% of the participants reported carrying out their exercise programme five times or more per week.

Impact and Continuing Relevance

The Williams et al. (1995) study was not a randomised controlled trial with strict inclusion criteria, but a systematic evaluation of whether an intensive, multidisciplinary, theoretically driven intervention could be effective with a high disability, high distress clinical population for whom all other treatments had failed. It demonstrated that despite regional differences between the UK and North America in terms of medical and compensation systems (and culture to some extent), this form of intervention could bring about significant change in the most chronic of long term pain sufferers.

The study foreshadowed later work by Haland Haldorsen et al. (2002) showing that with the most chronic of chronic pain patients, only a high intensity pain management programme (100 treatment hours at least) will be effective. It also spawned a range of follow up papers by the INPUT team which, having established that this form of intervention was effective, sought to extend the understanding of group based pain treatments. A randomised controlled trial was conducted comparing inpatient and outpatient treatment formats (Williams et al. 1996), as well as a patient-choice intervention comparing different opioid reduction methods (Ralphs et al. 1994). An important study examining predictors of drop out from this form of treatment (Coughlan et al. 1995) was later followed by a paper confirming what all pain management programme clinicians anecdotally know – clinical outcomes tend to falter during phases of high staff turnover (Williams and Potts, 2010).

The 1993 paper was by no means without fault. As the authors acknowledge, the lack of continued improvement after treatment is “somewhat disappointing”, considering that in theory patients should become more adept at the skills and strategies with time. A six month follow up for patients with a mean pain duration of 10 years of pain would now be considered limited. The fact that the medication usage rates rose again during the follow up period probably speaks as much to prescriber ignorance of pain management objectives as to patient medication demands.

Ultimately however this is an important paper in the history of CBT pain management, both in the UK and across the world. It showed for the first time in the UK that patients whose lives had been taken over by chronic pain, and for whom medical treatment options had run out, now could be taught to help themselves and make positive changes – *despite* their pain.

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