Comparison between primary care physiotherapy education/advice clinics and traditional hospital based physiotherapy treatment: a randomized trial

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SUMMARY

Background. *Studies have shown that patients prefer to received physiotherapy services in the primary care setting, but none has made direct comparisons between hospital and primary care based physiotherapy.*

Aim. *This pragmatic randomized trial set out to compare general-practice-based physiotherapy education and advice clinics with traditional physiotherapy treatment in an acute hospital setting.*

Method. *The study involved 130 patients referred to physiotherapy services by 43 general practitioners over a one-year period. Patients were included in the study if they were at work, independent in all activities of daily living and would have routinely been referred to the hospital physiotherapy department for treatment. Patients were randomly allocated to one of two intervention groups: general practice education/advice, or treatment and education/advice at the local hospital. Patients completed a questionnaire prior to their first physiotherapy appointment and again 6 weeks later.*

Results. *A disappointing number of patients failed to attend either the first or subsequent appointments. The post-intervention scores revealed improvements in patients' problems, with the advice group exhibiting a slightly better outcome than the hospital group, as measured by the Nottingham health profile, the anxiety component of the hospital anxiety and depression rating scale, pain and problem size visual analogue scales, and measures of patient satisfaction. Advice group patients also had less attendances than the hospital treatment group. The general practitioners surveyed commented favourably on the advice clinics.*

Conclusion. *The findings of this study justify the concept of general-practice-based physiotherapy education and advice clinics.*

Keywords: physiotherapy services; GP services; hospital services; patient satisfaction; randomized trials.

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Introduction

THERE is a trend toward siting physiotherapy services in general practice.[1,2] This is driven by two main forces: the Government's emphasis on health promotion and on caring for patients in the community,[3] and the advent of general practitioner fundholding and the general practitioner's demand to have a greater say in determing local health priorities.

By siting the physiotherapy service in a health centre or general practice, patients are able to attend the service with minimal disruption to their work routine and they spend less time travelling. There are also reduced costs for the purchaser and the patient.[4] Early assessment, advice and education by a therapist in this setting often mean that patients are able to manage their own conditions with follow-up at a later stage if appropriate.[5]

Studies to date have shown that patients prefer to be seen in the primary care setting and require fewer treatment sessions in this setting.[1,4] Investigators have suggested that early access to primary care physiotherapy could also reduce the costs of drug prescribing, particularly of analgesics and non-steroidal anti-inflammatory drugs.[4] It has been shown that less time is lost from work and normal duties for patients attending a practice with on-site physiotherapy.[6] Ankhorn and colleagues found that the savings from employing a physiotherapist in a general practice were sufficient to cover the salary of the physiotherapist.[7]

However, none of these studies has made direct comparisons between primary care physiotherapy and hospital based physiotherapy. Walker's study compared the two settings contemporaneously; direct comparisons between primary care and hospital-based physiotherapy were not intended or attempted.[1] Therefore, this study was designed to test the hypothesis that there would be no difference in outcome and patient satisfaction for patients receiving hospital-based physiotherapy treatment and those receiving general-practice-based physiotherapy advice and education.

Method

Between January 1993 and January 1994, 43 selected general practitioners from the east side of Southampton were invited to send their direct access physiotherapy referrals to a central referral point. These patients were then randomly allocated to one of two groups using computer-generated randomization: an education/advice clinic at the general practice; and treatment and education/advice at the local hospital. Patients were included in the trial only if they would have normally received physiotherapy treatment, and if they were independent in all activities of daily living and were able to work or were working at home. Patients who did not require treatment were offered advice/education sessions as appropriate. Patients that did not match the remaining criteria were offered physiotherapy treatment at the hospital site.

Following initial assessment, both groups of patients were reassured and educated about their condition with emphasis placed on patient-directed discussion. Patients were then given a patient-specific home exercise programme consisting of self-

mobilization techniques,[8,9] neural tension mobilization techniques,[10,11] and active mobilizing and strengthening exercises. This home exercise programme was designed from the customary, day-to-day advice given by physiotherapists working with outpatients referred by general practitioners. Patients were also encouraged to take up general exercise where appropriate; for example, swimming, brisk walking or cycling.

Patients in the hospital treatment group were then treated accordingly. The treatment option comprised those treatment modalities available in the physiotherapy outpatient department: ultrasoncs, interferential therapy, transcutaneous electical nerve stimulation (TENS), and cervical and lumbar traction. 'Hands-on' treatment was drawn from the work of Maitland and consisted of mobilization and manipulation.[12,13] The number of times that patients were seen in the treatment group was decided on clinical grounds and agreed as part of the treatment 'contract' with the patient.

Patients in the general practice advice group were followed up twice, at 3-week intervals, following the initial assessment.

Outcome was assessed using the Nottingham health profile,[14] the anxiety component of the hospital anxiety and depression scale,[15] a general measure of 'improvement',[4] a pain visual analogue scale[16] and a problem size visual analogue scale,[17] and questions regarding modes of transport and patient satisfaction with the service were provided. Patients in both groups completed the study questionnaire on attending for their first appointment, after giving their consent to take part in the study and prior to their first 'episode of care'. The questionnaire was completed again after 6 weeks by both groups.

The Nottingham health profile's emphasis is on the respondent's subjective assessment of their health status. The profile contains 38 items that can be grouped into six sections — physical mobility (eight items), pain (eight), sleep (five), social isolation (five), emotional reactions (nine) and energy level (three). All items use a yes/no format. In this study, the unweighted scoring system was used in which the number of affirmative responses in each section was counted.

Two senior 1 physiotherapists worked on the trial, each for a period of 6 months. They were responsible for a full clinical caseload and administration of the patient questionnaire; the physiotherapists were not blined to the group allocation.

All patients were clinically assessed over similar time periods. Patients from both groups were invited to contact the physiotherapist after dischage if they did not continue to improve or were concerned for any reason. The site of pain was taken from the patient's subjective assessment and not the therapist's opinion.

A questionnaire was sent to the general practitioners involved in the study to ascertain their views on the physiotherapy service, and on the communication between the physiotherapist and the general practitioners, and also to see if they were aware of any patients that had been disadvantaged by not receiving hospital physiotherapy treatment. Any other comments were also welcomed so that a broad impression of the general practitioners' views could be recorded. The study was approved by the local ethics committee.

Results

Four hundred and nine referrals were received over the 12-month study period. Of these, 238 (58.2%) met the inclusion criteria and were randomly allocated to one of the two groups. A total of 97 patients (40.8%) did not attend their first or subsequent follow-up appointment — 54 in the advice group (45.4%) and 43 in the treatment group (36.1%). There was no significant association between attendance and group allocation. Eleven patients allocated to the advice group were withdrawn from the study at a later date when it was found they did not meet the inclusion criteria (they did not require treatment). Thus, 130 patients were interviewed and completed the two questionnaires — 54 in the advice group and 76 in the treatment group.

As expected, the two groups were similar with respect to mean age {treatment group 42.9 years [standard deviation (SD) 14.3 years], advice group 46.6 years (SD 15.6 years)} and sex (treatment group 55% women, advice group 54%). More patients in the advice group reported spinal pain than in the treatment group (71 versus 59%). In the treatment group, 9% of patients reported hip/foot/ankle pain while none of the advice group reported pain the this site. The percentage of patients reporting pain of other sites were similar: shoulder — treatment group 14%, advice group 13%; knee — 10%, 10%; elbow/hand — 4%, 2%; other — 4%, 4%.

The pre- and post-intervention scores are shown in Table 1. The higher the score, the more severe the patients perceived their problem to be. Five of the 10 pre-intervention scores for the advice group were slightly higher than the pre-intervention scores for the treatment group (the median of the other five scores were the same). None of the measures indicated a deterioration in the patient's perception of their problem at post-intervention for either group. An improvement (decrease) in score was noted for six measures in the treatment group and for eight measures in the advice group.

The results of comparing the differences between the two groups are also shown in Table 1. There was a significantly greater improvement within the advice group than within the treatment group for the emotional reactions section and the Nottingham health profile score narrowly failed to reach statistical signifance for the anxiety component of the hospital anxiety and depression score.

The median number of attendances was three in the advice group [interquartile range (IQR) 3 to 3], and five in the treatment group (IQR 3 to 7). Sixty-eight per cent of patients in the treatment group and 69% of the advice group travelled to their appointments by car. Fifty-six treatment patients and 35 advice patients indicated how they travelled to their appointment. Twenty-seven per cent of the treatment group travelled by bus, with 5% walking. Eleven per cent of the advice group travelled by bus and 20% walked.

The service was rated as 'better than expected' by 71% of the treatment group and 57% of the advice group. Two per cent of the treatment group felt the service was 'worse than expected, while the remainder of both groups rated the service 'as expected'. All of the advice group and 95% of patients in the treatment group stated that they would 'be happy to attend physiotherapy in the same place again'. The remaining 5% of patients in the treatment group 'would rather go somewhere else next time'.

Sixty-one per cent of the treatment group were 'very satisfied' with the service, with 37% 'satisfied' and 2% 'dissatisfied'. Fifty-one per cent of the advice group were 'very satisfied' with the service; the remaining 49% were 'satisfied'.

General practitioner survey

Of the 43 general practitioners involved in the study, 17 (40%) returned their questionnaires. Nine were extremely satisfied with the physiotherapy service, seven were satisfied and one was dissatisfied.

Seven respondents recorded that they were extremely satisfied with the communication with the physiotherapist, eight were satisfied and two were dissatisfied. Comments from those who were dissatisfied suggested that the communication had been 'patchy'. Those who were satisfied made comments such as 'much better

Table 1. Pre- and post-intervention scores and changes in scores.

	Median score (interquartile range)						
	Treatment group (n = 76)		Advice group (n = 54)		Median difference in score (interquartile range)		95% CI of difference
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Treatment group (n = 76)	Advice group (n = 54)	
Nottingham health profile							
Energy level	1 (0 to 2)	0 (0 to 1)	1 (0 to 2)	0 (0 to 1)	0 (−1 to 0)	0 (−1 to 0)	0 to 0
Pain	3 (0 to 2.5)	2 (0 to 4)	4 (2 to 5)	1 (0 to 4)	−1 (−2 to 0)	−1 (−3 to 0)	−1 to 0
Emotional reactions	0 (0 to 2.5)	0 (0 to 2)	1 (0 to 3)	0 (0 to 1)	0 (−1 to 0)	−1 (−2 to 0)	−1 to 0*
Sleep	1 (0 to 3)	1 (0 to 3)	1 (0 to 3)	1 (0 to 2)	0 (−1 to 0)	0 (−1 to 0)	0 to 0
Social isolation	0 (0 to 0)	0 (0 to 0)	0 (0 to 1)	0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	0 to 0
Physical mobility	2 (0 to 3)	1 (0 to 2)	2 (1 to 3)	1 (0 to 2.5)	0 (−0 to 0)	0 (−1 to 0)	−1 to 0
Total	8.5 (3 to 14)	5 (1 to 11)	11 (6 to 13)	5 (1 to 10)	−2 (−5 to 1)	−3 (−3 to 0)	−3 to 0
Anxiety (HAD)	5 (3.5 to 8)	5 (3 to 8)	6 (4 to 9)	5 (2.5 to 8.5)	0 (−2 to 1)	−1 (−3 to 0)	−2 to 0*
Pain VAS	5 (3 to 6)	4 (2 to 5.5)	5 (4 to 6.5)	3 (2 to 4)	−1 (−3 to 0)	−1 (−4 to 0)	−2 to 0
Problem Size VAS	5 (4 to 7.5)	4 2 to 6)	6 (4 to 8)	3 (2 to 5)	−1 (−3 to 0)	−2 (−4 to 0)	−2 to 0

n = number of patients in group. CI = confidence interval. HAD = hospital anxiety and depression scale. VAS = visual analogue scale. *P<0.05, Mann-Whitney U-test.

than usual' and 'good telephone feedback as well as written'.

Twelve general practitioners did not consider that any of their patients had been at all disadvantaged by receiving advice and education only, three thought that their patients had been slightly disadvantaged and one doctor thought that his patients had been completely disadvantaged (this doctor also expressed dissatisfaction with the service).

Only three general practitioners had a record of patients returning to their surgeries after seeing the physiotherapist — seven returned because they had failed to improve with physiotherapy (five from the treatment group and two from the advice group) and two returned because they required further service.

Most of the other comments made by the respondents were complementary and asked for the service to continue.

Discussion

This study was designed to allow direct comparison between general-practice-based physiotherapy education advice clinics and traditional hospital-based physiotherapy treatment. The study sample comprised patients who were independent in all activities of daily living and were still at work, who would normally have been referred to the hospital physiotherapy department for treatment. The age and sex of the study patients and the distribution of the site of pain were similar to those of the population in Walker's primary care study, with a high proportion of patients complaining of spinal pain. Patients in both the general-practice-based group and the hospital-based group received advice and education from a physiotherapist, with the hospital based group also receiving treatment from the same physiotherapist.

The pre-intervention scores for both groups suggest that the majority of patients were presenting with specific problems in the domains of pain, physical mobility, sleep and anxiety. The advice group appeared to perceive their problems as marginally greater than did the treatment group.

Changes in the scores after the intervention revealed improvements in patient's problems, with the advice group exhibiting the slightly better outcome for some scores. After the intervention, the advice group perceived themselves as less anxious and with fewer problems overall, as measured by the Nottingham health profile. As it is patient's perceived health status that predicts the use of medical services,[18] this is an important finding.

The patient–therapist interactions in the hospital setting tended to centre around the effectiveness and efficacy of the treatment modalities used. This contrasted sharply with the face-to-face advice sessions held at general practice surgeries, where the patient–therapist relationship focused on allaying fears about exercise and activity and on what patients could do to help themselves. This could be one reason for the slightly better outcome of the advice group compared with the treatment group.

As the median number of attendances was lower in the advice group than in the treatment group, the advantages for the patient of receiving advice in general practice are clear: improved outcome with fewer attendances.

A disappointing proportion of the study patients (41%) failed to attend their first or follow-up appointments. This could have been because the sample studied was independent and at work, and possibly unrepresentative of the majority of patients referred to physiotherapy services.

The study design dictated that two major variables changed simultaneously — the environment and the intervention. Therefore, it is difficult to determine which caused the greater improvement in the advice group compared with the treatment group. It may be that the single biggest factor affecting patients' satisfaction and perhaps outcome is the environment and that the nature of the patient management has little effect.

Political reasons dictated which general practitioners took part in the study, as a group of general practitioners approached the purchaser. This meant that those patients randomized into the treatment gorup may have had to travel further than the group receiving advice and education. This may also have affected patients' satisfaction.

The results of this study indicate that patients who were able to work and were independent in all activities of daily living, displayed some statistically significant improvements when they received education and advice in the primary care setting compared with hospital-based physiotherapy treatment. Advice group patients also had fewer attendances than the treatment group. The majority of general practitioners surveyed commented favourably on the education and advice clinics held in general practice. These findings justify the concept of primary care physiotherapy education and advice clinics which would result in increased throughput with lower costs. Further research is required to repeat the study over longer periods of time and to

investigate the use of primary care education and advice clinics for all patients referred to physiotherapy services.

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