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Measuring patient satisfaction with exercise therapy for knee osteoarthritis: evaluating the utility of the physiotherapy outpatient survey.

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Measuring patient satisfaction with exercise therapy for knee osteoarthritis (OA) and its relationship with clinical outcomes.

Short Title: Measuring patient satisfaction with physiotherapy for knee OA

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ABSTRACT

Objectives: To assess patient satisfaction with exercise for knee osteoarthritis (OA) and to compare the relationship between patient satisfaction and clinical outcomes.

Methods: A convenience sample of 27 patients recruited to a randomised controlled trial (RCT) comparing open kinetic-chain (OKC) and closed kinetic-chain (CKC) exercises for knee OA were reassessed at 9 months post-randomisation. Clinical outcomes included self-report and physical performance measures of function and pain severity. They also completed the Physiotherapy Outpatient Survey (POPS) which is a multidimensional measure of patient satisfaction with physiotherapy.

Results: There was no significant difference in satisfaction between the two intervention groups. Overall mean satisfaction for the entire cohort was 4.07 of a maximum score of 5 (standard deviation (SD) =0.52). Lower levels of satisfaction with outcome (mean =3.56, SD=0.8) were reported compared with other domains of expectations, communication, organisation and the therapist (mean=3.79-4.49; SDs=0.42-0.92). Changes in pain and function were also more strongly correlated with satisfaction with outcome ($r=0.38-0.48$) than other satisfaction subscales ($r=0.004-0.33$). Both intervention groups improved from baseline on clinical outcomes, with no significant differences between the two groups.

Conclusion: High levels of satisfaction were reported in this subsample of knee OA patients participating in an RCT evaluating the effects of different exercise approaches for knee OA. Satisfaction varied depending on the satisfaction domain, with lower satisfaction with outcome compared to other aspects of care. A stronger relationship between satisfaction with outcome and clinical outcomes compared to other features of satisfaction was also found. The POPS is a useful questionnaire to evaluate the multidimensional aspects of satisfaction with physiotherapy for OA.

Keywords: patient satisfaction, physiotherapy, knee osteoarthritis, outcome

INTRODUCTION

Patient satisfaction is an increasingly important method of evaluating healthcare. As the provision of healthcare has moved towards a market model, patients play a more pivotal role in determining how and where their healthcare is delivered (Chen, Bain, Horan, & Hawkins, 2007). It has been described as an attitude about service, service providers or patients' health status (Keith, 1998). Satisfaction within a physiotherapeutic context is defined as 'a sense of contentedness, achievement of fulfilment that results from meeting patient's needs and expectations with respect to specific and general aspects of healthcare' (Hills & Kitchen, 2007c)(pg 245). Satisfied patients are most likely to actively participate in their treatment (Aharony & Strasser, 1993), whilst dissatisfied patients may not return for care (Keith, 1998).

Dimensions of Satisfaction

Satisfaction is a complicated and multidimensional concept, and patients will be satisfied or dissatisfied with different aspects of healthcare (Grimes, 2003). It includes both affective and cognitive components (Keith, 1998) and can only be measured against individuals' expectations, needs or desires (Crow et al., 2002). Satisfaction with care assesses the patient's rating of the quality of the medical care process (Ware, Snyder, Wright, & Davies, 1983), whilst satisfaction with outcome relates to changes in symptoms (George & Hirsh, 2005). Patients appear to evaluate care and outcome separately and for many, satisfaction with outcome is more important (Hudak & Wright, 2000). In measuring patient satisfaction in clinical trials, satisfaction with care is less likely to detect differences in treatment effects as the correlation between care and outcomes is probably weak (Hudak & Wright, 2000).

Satisfaction with treatment effect is important to distinguish from satisfaction with treatment delivery as those who are satisfied with their symptoms would be less likely to seek additional treatment, which has an impact on health-care utilisation (George & Hirsh, 2005). They should be measured separately to allow clinicians to look at their relationship with each other as well as other variables (Hudak & Wright, 2000).

Measurement of patient satisfaction

A number of patient satisfaction questionnaires are available but most of these were developed for use in the United States where differences exist between physiotherapy service delivery compared with the UK and Ireland (Beattie, Pinto, Nelson, & Nelson, 2002; Goldstein,

Elliott, & Guccione, 2000; Monnin & Perneger, 2002; Roush & Sonstroem, 1999) so these instruments may not be as relevant to assess satisfaction with physiotherapy in an Irish setting. These questionnaires also focus on satisfaction with care, rather than outcome. The Physiotherapy Outpatient Survey (POPS) was recently developed and validated in the UK for the measurement of patient satisfaction in a musculoskeletal outpatient physiotherapy setting (Hills, 2003). It measures satisfaction across a range of dimensions including communication, patient expectations, outcome, the therapist and organisational issues. The initial survey which contained 44 items was developed from focus groups and multiphase interviews to determine the domains of particular importance to patients with acute and chronic musculoskeletal problems receiving outpatient physiotherapy. (Hills & Kitchen, 2007b). Factor analysis of the pilot survey of the questionnaire on 120 patients resulted in a 38-item questionnaire that has demonstrated high internal consistency ($\alpha > 0.8$). Although ceiling and floor effects of the POPS have not been formally assessed, data from a survey of 279 patients in the UK suggest that there were no floor effects. Results also suggest that there were moderate ceiling effects for the Communication and Therapist sub-scales, slight ceiling effects for the Organisation, Satisfaction and Expectation subscales but none for the Outcome subscale. Therefore both further deterioration and improvement in scores are possible using the scale which is a 5-point Likert scale. As patient satisfaction was identified as an important outcome to assess in an ongoing RCT evaluating the effect of exercise therapy and manual therapy in hip osteoarthritis (French et al., 2009), the POPS was considered an appropriate tool to measure satisfaction. It was important that its feasibility was tested in a similar sample of subjects prior to its use in the RCT. Consequently, it was piloted in a convenience sample of patients who took part in a RCT evaluating two different exercise regimes in knee OA (Keogan, 2007).

Aims/Objectives

The aim of this study was to evaluate patient satisfaction in a sample of patients recruited to a RCT evaluating quadriceps exercise for knee osteoarthritis at 9 months, and to examine the relationship between clinical outcome and patient satisfaction. A secondary aim of the study

was to test the feasibility of using a previously validated satisfaction questionnaire (POPS) to assess patient satisfaction.

METHODS

A convenience sample of patients who took part in a RCT which compared open kinetic chain (OKC) and closed kinetic chain (CKC) quadriceps strengthening exercise for knee OA (Keogan, 2007) was utilised for this study which took place in an acute hospital setting. A total of 111 patients were randomised to the original RCT using a computer-generated table of random numbers. Patients who were 9 months post randomisation between July and August 2006 were contacted by letter to invite them to participate in the study. To be eligible for inclusion, patients had to have been recruited to the original RCT with a diagnosis of knee OA, using the ACR criteria (Altman et al., 1986). Exclusion criteria included clinical inflammatory arthropathy, unstable co-existing medical condition such as unstable hypertension, recent myocardial infarction, that precluded safe participation in an exercise programme or was more limiting than the knee OA, neurological conditions such as previous stroke or multiple sclerosis, previous knee replacement or planned surgery during the study period, steroid injection into the knee in the preceding 3 months, physiotherapy for treatment of knee OA during the preceding 12 months or knee strengthening exercises in past 6 months, less than 40 years of age, co-morbidities or other musculoskeletal problems affecting gait or causing greater pain or disability than knee OA or congenital abnormalities, and lack of understanding of the study (dementia, insufficient English language).

Those who expressed an interest in partaking in the study were contacted by the research assistant (LW) who arranged an appointment for completion of outcome measures

Ethical Issues

Ethical approval for this study was sought and obtained from Beaumont Hospital Research Ethics Committee. All participants provided written informed consent prior to study participation.

Outcome Measures

The following outcomes were collected by the research assistant who was blinded to original group allocation until data collection was completed. Baseline clinical data from the RCT (WOMAC, 50 foot walk test and pain severity with activity) were provided by the original researcher (FK) for utilization in assessment of change scores.

Patient satisfaction

The Physiotherapy Outpatient Survey (POPS) is a 35-item self-completed questionnaire that measures satisfaction with 5 dimensions of physiotherapy care:

- Expectations: expectation of physiotherapy
- Communication: therapist's role in providing teaching and training
- Therapist: professional manner and personal characteristics
- Organization: issues relating to the organisation and content of treatment sessions
- Outcome: patient's perception of their outcome of physiotherapy

The 35 items are presented in the form of statements worded in a positive or negative direction and respondents score using a 1-5 Likert scale ('strongly agree', 'agree', 'not sure', 'disagree', 'strongly disagree'). Subscale scores were calculated by summing all question scores and dividing by the number of questions. The overall score was calculated by calculating the mean of the subscale scores. The higher the score, the higher the level of satisfaction for that subscale, with maximum satisfaction score being 5. It was developed from focus group interviews of patients attending physiotherapy in the UK National Health Service (NHS) (Hills, 2003; Hills & Kitchen, 2007b). Patients were advised to complete the questionnaire on their own, although the outcome assessor was available to clarify any questions. As the questionnaire is structured with positive and negative statements, one example of each was shown and explained to the patients before they completed the questionnaire.

Function using WOMAC: this self-administered questionnaire consists of 24 questions regarding pain, stiffness and physical function. A summary score of each subscale or a total score can be given. The lower the score is, the better the outcome. It is reliable, valid (Bellamy, Buchanan, Goldsmith, Campbell, & Stitt, 1988) and responsive to change (Theiler et al., 1996), and is recommended for use in knee and hip OA by the International Osteoarthritis Research Society (OARSI) (Pham et al., 2004).

Pain severity with activity using a Numerical rating scale (NRS)

The NRS is a scale which measures pain severity by asking the patient to select a number from 0-10 to represent how severe the pain is. It was developed as an alternative to the visual analogue scale (VAS) which had a number of limitations including poor reliability in non-literate populations. It produces less missing and incomplete data, and is less abstract and easier to understand (Dworkin et al., 2005). It has been recommended as a core outcome measure for chronic pain trials by the Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT) (Dworkin et al., 2005).

Walking Speed using Fifty-foot timed walk

This is a measure of walking speed where subjects are asked to walk at their fastest speed along a pre-marked walkway of 25 feet, turn and return to the starting point. It has the advantage of being simple to complete and is closely related to important activities of daily living which affect those with knee OA. It is commonly used as an outcome in OA studies (Fransen, Nairn, Winstanley, Lam, & Edmonds, 2007; Schilke, Johnson, Housh, & O'Dell, 1996; Silva et al., 2008)

DATA ANALYSES

All data analyses were performed with SPSS (version 15.0), (SPSS Inc, Wacker DR, Chicago, Il, 60606). Descriptive statistics for the POPS including means, medians and standard deviations for the total cohort were calculated. Mean differences and standard deviations between the two intervention groups at the 9 month follow-up were calculated. As patient satisfaction data were not normally distributed, Mann Whitney U test was used to compare POPS results between the 2 groups. Two sample t-tests on change scores (baseline to 9 month follow-up) were used to compared changes in pain, WOMAC and 50 foot-walk. Pearson's' correlation coefficients were used to assess the association between clinical outcomes of pain and function and patient satisfaction. Significance level was set at $p < 0.05$.

RESULTS

Thirty-one patients were identified as potentially suitable for inclusion in this study within the timeframe of 8 weeks available for data collection. Of these, 27 consented to be part of the study. Demographic details of the sample are outlined in Table 1.

Table 2 shows the baseline, final and change scores for the 2 groups in the main outcome measures. Results showed that both groups improved in all outcomes of pain and function at 9 months post randomisation, with no significant differences between the two interventions.

There was no significant difference in satisfaction scores of the POPS subscales or overall satisfaction between the two groups (Table 3).

When satisfaction scores of the entire sample (n=27) were compared with the clinical outcomes of pain and function, there was a significant correlation between the POPS outcome subscale only and all clinical outcomes (Table 4).

DISCUSSION

The results of this study demonstrate that overall satisfaction levels were high in this sample, using a multidimensional measure of satisfaction. Results should be interpreted with caution due to the small subsample of 27 patients from the initial RCT (n=111). Subscale means of ≥ 4 were previously considered as high satisfaction in the POPS survey (Hills & Kitchen, 2007a). In this study, all subscales, with the exception of the outcomes subscale scored means >3.5 . This is consistent with other studies where satisfaction rates of 75% or more have been reported (Casserley-Feeney et al., 2008; McCracken, Klock, Mingay, Asbury, & Sinclair, 1997).

There was no difference in patient satisfaction between the two samples in this study. This is unsurprising as both groups of patients attended the same physiotherapy service, received treatment from the same physiotherapist and received similar attention and care within the setting of the RCT. The only difference that existed between the patients was the content of the exercise intervention of OKC and CKC exercise.

A previous study of satisfaction in acute and chronic patients (n=279) which used the POPS showed that patients with chronic conditions reported lower satisfaction in expectations, organisation, outcome and general satisfaction compared with those with acute conditions. (Hills & Kitchen, 2007a). In this study, the subscales of expectations, outcome and communication scored lowest. Previous qualitative research identified that patients with chronic degenerative conditions were either doubtful of improvement or unrealistic in their hopes for complete resolution of their symptoms compared with patients with acute conditions (Hills & Kitchen, 2007b).

Satisfaction with the therapist scored highly in this study. The same therapist who was a senior grade physiotherapist, specialising in musculoskeletal physiotherapy delivered all treatments. In non-pharmacological trials, the success of treatment depends on the care provider's skills, experience and enthusiasm (Boutron, Tubach, Giraudeau, & Ravaud, 2003), whilst perceptions of the quality of care are most strongly influenced by the interpersonal relationships between the therapist and the patient, the presence of concern and caring as well as technical competence (Keith, 1998). However, communication which is a key aspect of the interaction with the therapist scored lower in this sample. Of note in this sample was the difference in satisfaction with outcome compared with the other satisfaction dimensions which are more related to the process of care.

Although a relationship between expectations and satisfaction has previously been found (Skolasky, Albert, Vaccaro, & Riley, 2009), there was no relationship between the two dimensions in this study. However, expectations were measured following intervention which may have been subsequently confounded by outcome, rather than in advance of receiving treatment.

Satisfaction with outcome versus satisfaction with care

A number of other patient satisfaction surveys for use in physiotherapy exist (Beattie et al., 2002; Monnin & Perneger, 2002; Roush & Sonstroem, 1999) but few include the aspect of satisfaction with outcome, which has been shown to relate to increased likelihood of returning for future care. Few studies have investigated the satisfaction with outcome, with a greater emphasis placed on satisfaction with care in a physiotherapy context. (George & Hirsh, 2005) measured patient satisfaction 6 months after receiving physical therapy for acute low back pain as part of an RCT. Satisfaction with symptoms was lower than satisfaction with other aspects of care. Patients who were satisfied with symptoms reported higher physical function, lower pain intensity and less symptom bothersomeness at 6 months. (McCracken et al., 1997) similarly found that patient satisfaction was associated with changes in pain, pain-related anxiety and depression in a sample of chronic pain patients attending a community based chronic pain clinic.

POPS feasibility

The POPS was considered a useful measure to assess patient satisfaction in a musculoskeletal setting by the authors. It provides scope for the assessment of the various dimensions of satisfaction was completed by patients with minimal difficulty within approximately 10 minutes. Due to time and financial constraints, patients' views of the POPS as a satisfaction tool were not obtained.

Study Limitations

Some limitations with this study should be acknowledged. Firstly, a convenience sample of patients included in the original RCT was included, due to the limited time frame of data collection possible with the funding provided for this study. The sample who agreed to volunteer may have had higher satisfaction levels. As randomisation was conducted on a larger sample of 111 patients, the effect of this randomisation was lost in this follow-up study. Satisfaction levels were assessed 9 months post randomisation, which was approximately 7 months post treatment (treatment duration was 8 weeks). This may have resulted in recall bias. Other determinants of satisfaction which have previously been identified including age (Crow et al., 2002), education level and social status (Hall & Dornan, 1988) were not investigated in this study.

CONCLUSION

The POPS is a multidimensional measure of patient satisfaction developed for use in a physiotherapy musculoskeletal setting. It captures dimensions of care and outcome, both of which are important components of a physiotherapy interaction. The POPS demonstrated different levels of satisfaction across the dimensions measured, with high levels of satisfaction for organisation, the therapist and overall satisfaction and lower levels of satisfaction for outcome, expectation and communication. Changes in pain and function 7 months post physiotherapy in knee OA were more highly correlated with satisfaction with outcome than with the other aspects measured. The POPS is a useful measure of satisfaction to evaluate both care and outcome in chronic musculoskeletal populations attending physiotherapy.

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