Patient Expectations of Benefit from Physiotherapy and Relationship to Self-Reported Outcomes: A Pilot Study

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ABSTRACT

Research demonstrates that patient expectations have an influence on physiotherapy outcomes, but little is known regarding expectation changes over time. The primary objective of this pragmatic prospective cohort pilot study was to correlate patient expectations at baseline and after 2 weeks of physiotherapy to self-reported patient outcomes at discharge from physiotherapy treatment. Eligible adult patients with a variety of musculoskeletal disorders reported recovery expectations at initial evaluation and after 2 weeks of treatment. Correlations between expectations and self-reported outcome measures were calculated. Seventeen participants completed this study, and made clinically important improvements over the course of care. Expectations at baseline and 2-week time points generally indicated that participants expect to have a positive outcome from physiotherapy treatment. Participants' baseline expectations were not significantly correlated to outcome measures or clinically important changes. Yet 2-week expectations were significantly correlated with outcomes and the likelihood of achieving clinically important changes in outcome measures. This relationship may be stronger at 2 weeks compared to baseline. Clinicians might consider repeated measuring of patient recovery expectations across the plan of care to best meet patient needs.

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INTRODUCTION

Evidence-based practice consists of three components: best research evidence, the therapist's clinical experience, and the patient's values, beliefs, and preferences (American Physical Therapy Association, 2020; Sackett et al., 1996). Patient beliefs and preferences can be wide-ranging, such as what an examination entails, what treatment should include, or expectations for recovery. Patient expectations have been described as a particular belief that a clinical outcome will occur and are commonly categorised into treatment-specific or recovery expectations (Uhlmann et al., 1984; Wiles et al., 2008). Treatment-specific expectations relate to the interventions a patient believes will be helpful for their outcomes, whereas recovery expectations indicate whether a patient feels that the course of treatment (physiotherapy) will be successful or not. Multiple studies have shown a correlation between patient recovery expectations and patient outcomes (Auer et al., 2016; Barron et al., 2007; Bishop et al., 2013; Henn et al., 2007; Mahomed et al., 2002; Myers et al., 2008). These expectations are unique to each individual and are shaped by many factors including past personal experiences and the experiences of family members and acquaintances (Bishop et al., 2013). Thus, the therapist should consider the patient's recovery expectations for therapy and how these beliefs impact the overall plan of care and potential outcomes for the patient.

Measuring baseline recovery expectations has been advocated as a component of best practice during physiotherapy examination (Wassinger et al., 2022), yet less is known about the stability of recovery expectations over time. Physiotherapists have a role to play in modifying patient expectations. For example, a strong therapeutic alliance, or provider-patient relationship, may positively impact expectations while ineffective communication or lack of empathy may worsen patient expectations after the start of care (Ferreira et al., 2013). Expectations are variable as they have been shown to change, including over the plan of physiotherapy care (Iles et al., 2012; Verbeek et al., 2004). Understanding expectation shift, or reappraisal, and how this is related to patient outcomes may help clinicians best meet patient needs while working to promote positive outcomes. There is minimal research on the relationship between patient recovery expectations after the start of care and how these relate to patient outcomes. Thus, the purpose of this pilot study was to determine the relationship between patient recovery expectations at baseline and after 2 weeks of physiotherapy

treatment to the change in patient self-reported outcomes over the course of care.

METHODS

Patient selection

This pragmatic prospective cohort pilot study was conducted on patients with primary musculoskeletal complaints, such as low back pain or osteoarthritis, who sought treatment at one of two private outpatient physiotherapy practices under the same ownership. Patients were enrolled in the study over the course of six months from January 2019 to June 2019. Eligible patients were at least 18 years or older and had a variety of musculoskeletal disorders. Patients were excluded if they were minors (less than 18 years old), were unable or unwilling to complete the online surveys in English, or presented with non-musculoskeletal disorders (stroke, multiple sclerosis, etc.). East Tennessee State University ethics review committee approved the study protocol (1118.10s-ETSU).

Procedures

Potential participants were made aware of the study by flyers that were visible in the waiting room of the participating clinics. In addition, evaluating physiotherapists asked all new patients if they were interested in participating. All interested participants were provided with an overview of the study's aims and methods by the examining physiotherapist. Any additional questions were answered by the co-investigators (full-time clinicians at the participating clinics). All eligible participants were provided a written informed consent form for review. Eligible participants who consented to the study were asked to complete an initial online survey on a clinic laptop in a private examination room without the physiotherapist present. Participants also completed an abbreviated online survey in a similar fashion at their 2-week follow-up visit. Patient outcomes used for this investigation were collected at the time of evaluation (initial visit) and discharge from physiotherapy treatments.

Patient surveys

The initial patient survey included general demographic information, the primary body region for seeking treatment, and the duration of symptoms. There is no validated method or best question(s) to determine patient recovery expectations (Wassinger et al., 2022). Thus, the expectation question on the survey created for this study asked, "How helpful do you think physiotherapy will be for treating your current injury or health condition?" The participant was asked to indicate this answer on an 11-point Likert scale ranging from 0 (not helpful at all) to 10 (extremely helpful). This final question was utilised to examine the patient's recovery expectations. If the participant required assistance in filling out the online survey, another member of the clinic staff (physiotherapy technician or front office worker) helped the participant complete the survey. At the 2 week follow-up visit, the participant was again asked to complete an abbreviated online survey consisting of the same 11-point Likert scale. The participant was also given the opportunity to opt out of the study at that time. The evaluating physiotherapist was blinded to the patient's expectations throughout the study.

Lastly, each participant was required to complete a corresponding self-reported region-specific outcome (i.e., if referred for knee pain, the Lower Extremity Functional Scale) and Patient-Specific Functional Scale (PSFS) at baseline, 2 weeks, and discharge. The outcomes of the self-report functional scores were entered into the database by the treating physiotherapist. Region-specific outcome scores were used as scores of disabilities based on normative functional tasks whereas the PSFS was used as a measure of individually determined functional tasks (Pathak & Sharma, 2022).

Treatment

As this was a pragmatic study, all treatments utilised were individualised for each participant and determined by the treating physiotherapist in consultation with their participants. Specific interventions and plans of care were not recorded. There was no intention to address or direct treatment toward patient recovery expectations.

Outcomes

The PSFS was used for all participants as a patient-centred outcome with an emphasis on activities the patient selects that are impaired due to their current musculoskeletal complaints. Multiple validated region-specific outcome measures were used based on patient presentation.

The following reliable and valid region-specific outcome measures were used for relevant patients in this study. The modified Oswestry Disability Index (ODI) (Johnsen et al., 2013) and the Neck Disability Index (NDI) (Cleland et al., 2006; Cleland et al., 2008) were used for spinal pain of the low back and neck, respectively. The short form of the Disability of the Arm, Shoulder, and Hand (QuickDASH) (Franchignoni et al., 2014) was used for all upper limb disorders and the Lower Extremity Functional Scale (LEFS) (Mehta et al., 2016) was used for all lower limb disorders.

The PSFS was also used for all participants in the study. The PSFS asks individuals to identify up to five important activities they are unable to perform or are having difficulty performing because of their injury or health condition. They rate each of these activities from 0 (unable) to 10 (able to perform as before the injury) (Horn et al., 2012; Maughan & Lewis, 2010). PSFS scores were calculated as a percentage to allow comparisons between participants.

Analyses

All region-specific outcome measures were described as a percentage and transposed to function scores as relevant. For example, the disability score on the ODI was subtracted from 100% to determine the function score (e.g., 26% disability = 100 – 26 = 74% function) (Hashimoto et al., 2006; Slover et al., 2006). Participants' outcomes were also classified as clinically important (greater than the minimal clinically important difference (MCID)) or not, based on previously reported values. The MCID used for each outcome measure in this study were ODI = 12.9% (Johnsen et al., 2013); NDI = 19.0% (Cleland et al., 2006; Cleland et al., 2008); QuickDASH = 15.9% (Franchignoni et al., 2014); LEFS = 9 points or 11.3% (Mehta et al., 2016); and the PSFS = 2 points/item or 20% (Maughan & Lewis, 2010).

Participants' baseline and 2-week expectations were correlated with (a) percentage change in self-reported region-specific outcome scores between evaluation and discharge; (b) percentage change in PSFS scores between evaluation and

discharge; (c) patients who exceeded MCID for one outcome measure type (region-specific or PSFS; and (d) patients who exceeded MCID for both outcome measures. The relationship between expectation and outcome scores was made using Spearman correlations and the relationships between expectations and exceeding MCID were made using point biserial correlations. All analyses were performed using SPSS 28.0 (SPSS Inc., Armonk, NY). Significance was set at 0.05 *a priori*. Correlations were interpreted as follows: 0–0.25 little to no relationship, 0.25–0.5 mild relationship, 0.5–0.75 moderate relationship, and 0.75–1.0 strong relationship (Portney & Watkins, 2009).

RESULTS

Four physiotherapists contributed to this study with an average of 7 (range 1–13) years of experience. Three of the four physiotherapists had additional training and specialty certifications in orthopaedics or sports practice. Thirty-four patients consented to participate in this study. All were insured through private or federal health insurance programmes. Seventeen participants had complete data sets that included data from the 2-week and discharge follow-up time points. Due to the large proportion of dropouts, a post-hoc non-parametric between-group comparison (Mann-Whitney U) analysis was performed to compare baseline details between the group used for analysis and the dropout group (Table 1). Significant differences were only found between groups for the duration of their current complaint.

In the group used for analysis, the proportion of injuries by region was lower extremity injuries 35%, cervical spine 6%, upper extremity 47%, and low back 12%. The injury regions for the dropout group comprised lower extremity injuries 24%, cervical spine 18%, upper extremity 24%, lower back 28%, and thoracic spine 6%. The results presented below include participants with data able to be analysed (full data sets).

Participant expectations

Patients came to physiotherapy with generally high (8.7/10) expectations (0 = not helpful at all to 10 = extremely helpful) for a positive outcome. Expectations, expectation changes, outcome changes, and MCID threshold scores are shown in Table 2. Mean patient expectations did not change between the baseline and 2-week follow-up time points.

Participants' baseline expectations were not significantly correlated with region-specific outcome score, PSFS scores, or clinically important changes in these outcomes. Significant correlations were noted between 2-week expectations and change in PSFS scores as well as the likelihood of exceeding MCID of one outcome or both outcomes (Table 3). Expectations at 2 weeks were not significantly correlated with a change in region-specific function score.

DISCUSSION

This pilot study aimed to correlate patient recovery expectations among a group of patients seeking care for a range of musculoskeletal complaints to the change in self-reported outcomes over the course of physiotherapy treatment. Patients generally had high recovery expectations from physiotherapy regardless of the duration of their symptoms. This aligns with previous studies that describe high expectations for the chosen course of care (Arden-Close et al., 2019; Bishop et al., 2013; Chester et al., 2018; Groeneweg et al., 2017; Wassinger et al., 2022). Our results may be skewed toward greater expectations as potential patients or research participants with lower expectations may have declined to participate in this study, did not complete follow-up data collection or appointments (dropouts), or sought treatment elsewhere. It seems intuitive that patients seek treatment from providers whom they feel benefit them. The majority (14/17) of patients reported clinically important improvements in one outcome measure, eight (8/17) reported clinically significant improvements in both outcomes, one patient described clinically important declines in one outcome, and two patients had no change in function, beyond MCID, over the course of physiotherapy treatment.

A recent systematic review reported that baseline patient recovery expectations are commonly associated with patient

Table 1

Participant Demographics

Variable	Analysed group	Dropout group
Age (years)	46.5 (18.4)	43.18 (17.4)
Sex, *n* (%)		
Male	6 (35.3)	7 (41.1)
Female	11 (64.7)	10 (58.9)
Ethnicity, *n*		
European descent	16	17
Native Hawaiian	1	0
Duration of current complaint (months) [a]	19.2 (31.4)	43.9 (75.3)
Baseline expectation (0–10)	8.7 (1.7)	7.4 (2.8)
Baseline function regional specific outcomes (0–100)	54.4 (16.6)	47.0 (20.4)
Baseline function PSFS (0–10)	65.7 (22.3)	67.0 (22.7)

Note. Data are shown as mean (standard deviation) unless otherwise noted. PSFS = Patient-Specific Functional Scale.

[a] Significant difference between analysed group and dropout group.

Table 2

Participant Expectation and Outcome Change Scores

Participant	Expectation score			Change score (%)	
	Baseline	2 weeks	Change	Regional outcome	PSFS outcome
1	10	10	0	25.5 [a]	35.0 [a]
2	7	10	+3	8.0	–6.7
3	10	10	0	4.0	58.3 [a]
4	9	9	0	12.0	20.0 [a]
5	10	10	0	22.0 [a]	26.7 [a]
6	10	10	0	65.0 [a]	28.3 [a]
7	7	8	+1	27.0 [a]	36.7 [a]
8	5	8	+3	–33.0 [a]	–10.0
9	10	10	0	38.0 [a]	33.3 [a]
10	10	10	0	27.0 [a]	60.0 [a]
11	10	4	-6	–6.9	–23.3 [b]
12	9	9	0	27.7 [a]	50.0 [a]
13	10	7	–3	42.7 [a]	8.3
14	5	6	+1	0.0	26.7 [a]
15	8	10	+2	17.3 [a]	66.7 [a]
16	9	9	0	32.0 [a]	83.3 [a]
17	9	8	–1	–7.5	16.7
M (*SD*)	8.7 (1.7)	8.7 (1.7)	0.0 (2.1)	17.7 (22.7)	30.0 (28.4)

Note. Change in expectations score is between the evaluation date and 2 weeks. Outcome change scores are from the date of evaluation to discharge from therapy. PSFS = Patient-Specific Functional Scale.

[a] Change score exceeds the minimal clinically important improvement.

[b] Change score exceeds the minimal clinically important decline.

Table 3

Correlations Between Expectations and Outcomes

Timepoint	Region-specific change (%)	PSFS change (%)	Exceeding MCID of *one* outcome measure	Exceeding MCID of *both* outcome measures
Baseline	0.443	0.111	–0.076	0.328
2 weeks	0.330	0.490 [a]	0.569 [a]	0.539 [a]

Note. MCID = minimum clinically important difference; PSFS = Patient-Specific Functional Scale.

[a] Significant correlation at $p < 0.05$ level.

outcomes for musculoskeletal physiotherapy treatment (Wassinger et al., 2022). Recovery (overall) expectations can be described as the belief that physiotherapy will be of benefit (or not). These may be contrasted with treatment-specific expectations that relate to the interventions used and if those are expected or preferred by a patient. Patient recovery expectations in this study were significantly correlated with changes in self-reported outcomes over the course of care. That is, if a participant perceived that physiotherapy was going to be "extremely helpful (10/10)" they were more likely to demonstrate clinically important improvement in function than a patient with low expectations for a positive outcome. The overall strength of the correlations ranged from minimal to moderate with r-values ranging from 0.076 to 0.569.

There is little research on how expectations change over time and the relationship between patient outcomes and expectation changes. On average, patient recovery expectations did not change from baseline to 2 weeks, yet individual changes were noted. Participants' correlations between 2-week expectations and self-reported outcomes were stronger and more consistently correlated with outcomes than baseline expectations. Specifically, 2-week expectations were significantly correlated with change in PSFS score and exceeding MCID on one or both outcome measure types, whereas baseline expectations were

not significantly correlated with any outcome measure. This may suggest that initially, patients are not sure what to expect from physiotherapy but that, as time goes on, a clearer expectation of how physiotherapy may or may not be of value to their condition may be formed. Further, patients learn the process of physiotherapy and are able to determine if they feel treatment is beneficial for them (or not). This may have an additional contribution to the dropout rate. These correlations generally describe only mild or moderate relationships.

Given the relationships between outcomes and 2-week expectations found in this study, it may be advantageous for clinicians to understand how they can impact recovery expectations. Expectation formation and expectation change, or reappraisal, have been studied qualitatively (Abyholm & Hjortdahl, 1999; Iles et al., 2012; Rhodes et al., 1999). Several key themes have been described that may help physiotherapists improve recovery expectations and, hopefully, outcomes, in turn. Changes in both pain and function early during care were closely tied to changes in patient recovery expectations (Abyholm & Hjortdahl, 1999; Iles et al., 2012; Rhodes et al., 1999). That is, if pain and/or function improved, expectations were bolstered and vice versa if pain increased, function declined, or did not change, expectations were lowered. The therapist–patient interaction, also referred to as therapeutic alliance, was also found to be key in expectation formation and change (Abyholm & Hjortdahl, 1999; Iles et al., 2012; Rhodes et al., 1999). Therapists performing a thorough examination, providing messages about what is the problem (diagnosis) and progression (prognosis), as well as advice on how to treat the problem were often cited as key components toward expectation creation and reappraisal (Verbeek et al., 2004). Lastly, specifically asking about recovery expectations at baseline and subsequent investigation into low expectations was recommended to help positively guide expectations (Iles et al., 2012). Thus, therapists can impact expectations by addressing patients' symptoms and functional complaints early and through focused and clear communication with patients about the plan of care.

Limitations and considerations for future study

This pilot study had a small sample size and a high dropout rate. There was no target sample size included in the planning of this study. The dropout rate from this study was a combination of discontinuation of physiotherapy treatment (not returning for follow-up treatments) and a lack of follow-up data (data loss). It is also possible that some patients decided to discontinue participation in the study. Our outcomes may be biased toward patients who initially felt physiotherapy would help and maintained that belief across the plan of care. Patients whose expectations were lowered after initial treatments may have been more likely to discontinue care or participation in the study and thus not have 2-week data for analysis. There was a significant difference in symptom duration between the analysed data set (19.2 months) and the group with incomplete data (43.9 months). Thus, the results from this study may be more appropriate for patients with shorter pain durations although both groups would be said to have chronic pain (> 3 months.) All participants (in both groups) reported high expectations for physiotherapy outcomes. While there was no significant difference in baseline expectations between the analysed and dropout group, there may be differences in the 2-week expectations or outcomes not captured. Another potential limitation to consider is that the research physiotherapists did not measure or account for pre-existing knowledge related to physiotherapy treatments. Prior successful or failed prior treatments are shown to impact subsequent expectations (Carroll et al., 2016). These factors may have impacted patient expectations in this study as we did not collect this information. Lastly, the patients in this study were largely of European descent. Our outcomes may not represent the findings of patients from different ethnic backgrounds.

Future studies could consider using clinical support or administrative staff to introduce and administer the study to decrease potential patient bias, clinician influence, and possibly the dropout rate. Additionally, a dedicated on-site research clinician tracking data collection and/or outcomes could improve retention. Lastly, a one-question Likert scale response was used to measure patients' expectations of physiotherapy. The authors are unaware of a valid and reliable tool to measure expectations (Bialosky et al., 2010; Wassinger et al., 2022). There is a need for further research to develop a recovery expectation tool given the available literature on the relationship between recovery expectations and patient outcomes.

CONCLUSION

Patient expectations were related to patient outcomes and clinically important changes in patient outcomes in this pilot study. These relationships were stronger after 2 weeks of physiotherapy treatment. Clinicians may consider measuring patients' overall expectations at the time of evaluation and after several treatment sessions as part of a holistic plan of care.

KEY POINTS

1. High expectations were linked to improved patient outcomes in this study.
2. Assessing patient expectations at multiple time points is suggested.

DISCLOSURES

This study was internally funded. The authors report no conflicts of interest that may be perceived to interfere with or bias this study.

PERMISSIONS

The Institutional Review Board at East Tennessee State University, USA, approved this study (approval number, 1118.10s-ETSU).

CONTRIBUTIONS OF AUTHORS

Conceptualisation, DB, MB, JM, and CW; methodology, DB, MB, and CW; formal analysis, CW; investigation and resources, DB, MB, JM, and CW; data curation, DB, and JM; writing – original draft preparation, DB and CW; writing – review and editing, DB, MB, JM, and CW; supervision, MB and CW; project administration, CW.

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