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Judith F. Baumhauer

Christopher Neville

Kostantinos Vasalos

Chad Condidorio

Kathleen Fear

See next page for additional authors

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Authors
Judith F. Baumhauer, Christopher Neville, Kostantinos Vasalos, Chad Condidorio, Kathleen Fear, and Jeff Houck

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What Are Typical Outcomes Associated with Physical Therapy for Foot & Ankle Patients?

Judith F. Baumhauer, MD, MPH, Christopher Neville, PT, PhD, Kostantinos Vasalos, DPT, Chad Condidorio, DPT, Kathleen Fear, PhD, Jeff Houck, PT, PhD

Category: Outcomes

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Introduction/Purpose: It is unclear whether patients attending physical therapy, post-op or for conservative care, achieve clinically important differences (CID) on the patient reported outcome information system (PROMIS) scales. Key PROMIS outcomes physical function (PF) and pain interference (PI) match well with treatments provided in physical therapy. Physical therapy may also influence depression (Dep). Documentation of PROMIS outcomes associated with physical therapy are useful to help set patient expectations. The purpose of this analysis was to document expected PROMIS PF, PI, and Dep outcomes after physical therapy for foot and ankle diagnoses by 1) reporting average improvement and 2) examining whether severity of symptoms (PROMIS Scales) at the start of physical therapy are associated with a 0.5 standard deviation (CID) improvement at the end of therapy.

Methods: PROMIS scales were available at the start and end of physical therapy treatment for 377 patients with foot and ankle ICD10 codes. Clinical categories(>n=20) of patients were identified for 6 groups(n=309): Achilles Rupture(n=24), Fracture(n=34), Ankle Pain(n=105), Foot Pain(n= 50), Ankle Sprain(n=51), and Achilles Non-Rupture(n=45). ANOVA models followed by pairwise comparisons were used to assess differences between start and end scores for all patients (n=377) and across diagnoses (n=309). Minimal CID was defined as improvement of t-score 3-5 and CID as above 5 (0.5 SD) consistent with published data. PROMIS scales were also converted to 0.5 standard deviation(SD) increments to document proportions of patients with symptoms relative to normal of the US population at start and end of physical therapy. Chi-square analysis was used to examine the association of PROMIS symptoms PF and PI at the start and end of care in 0.5 SD increments.

Results: Across ALL patients the largest improvements occurred in PF (6.5, $p<0.01$) followed by PI (3.9, $P<0.01$) and Dep (2.4, $p<0.01$). When evaluating diagnostic categories, all categories improved for PI ($p<0.01$), PF ($p<0.05$) and for Dep except for Ankle Pain ($p=0.22$). For PF, improvements ranged from 6.6 for Ankle Sprain to 3.3 for Achilles Non-Rupture. For PI improvements ranged from 11.1 for Achilles rupture to 4.6 for Achilles Non-Rupture. For both PF and PI there was a significant association of starting PF ($p<0.01$) and PI ($p<0.01$) score and end PF and PI scores. Patients with worse PF or PI in the midrange (55-65) at the start showed a higher percentage of patients achieving a 0.5 increment improvement at the end of therapy.

Conclusion: Although many factors influence these outcomes, physical therapy for foot and ankle patients was associated with strong positive, clinically meaningful outcomes for a majority of patients as assessed during the episode of care. As expected improvements were greater for PF and PI as compared to Dep. Providers should consider more severe symptoms as a possible indication for physical therapy referral.

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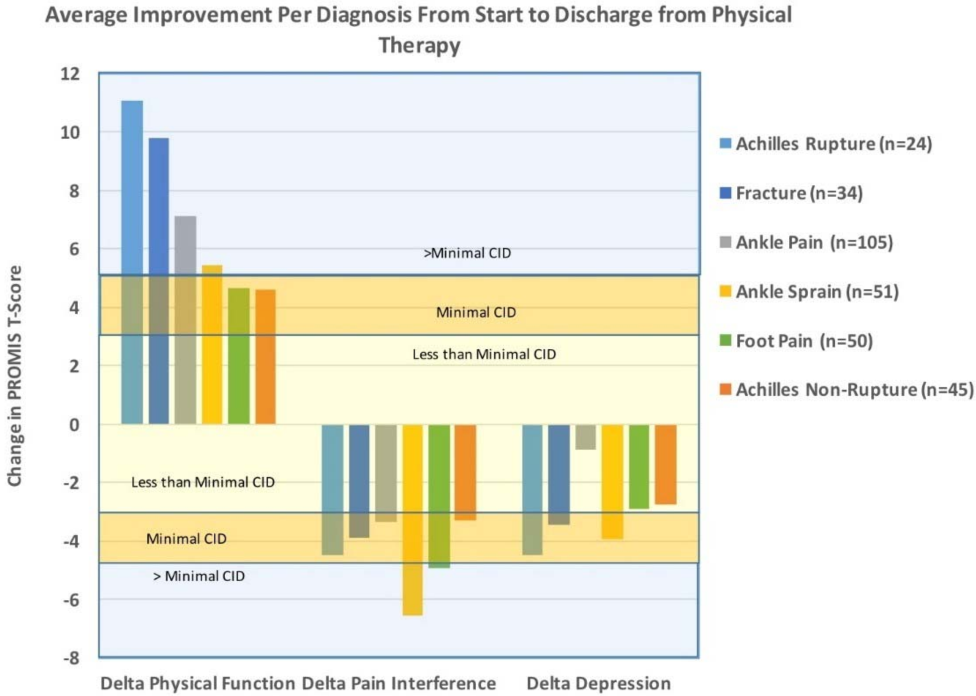

Figure 1. The average improvement in patient reported outcome information system (PROMIS) scales from the start to the end of physical therapy for 6 sets of patients grouped by ICD10 codes. Less than Minimal, Minimal (3-5) and greater than Minimal (>5) clinically important difference (CID) are shaded in yellow, orange and blue, respectively.

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