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short commentary

The Patient-Specific Functional Scale: How Close are We to Reaching the Mark?

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Abstract

The Patient Specific Functional Scale (PSFS) has been found to be a reliable and valid measure of physical function in patients with musculoskeletal and non-musculoskeletal disorders. However, the clinimetric properties of the PSFS are more strongly supported in musculoskeletal populations than in non-musculoskeletal populations. The patient-specific nature and flexibility of the instrument is appealing to both investigators and clinicians, yet problematic in regard to generating comparable data and assessing construct validity. The clinical value of the PSFS is well established, however, the instrument should be used in conjunction with other vetted outcome measures.

Keywords: Community-dwelling older adults; Patient-specific functional scale; Physical function; Reliability and validity

Introduction

Clinical measurement of physical function that is both specific to the individual and generates comparable outcome data is a fundamental need in clinical examination. The Patient-Specific Functional Scale (PSFS) is a patient reported outcome measure that was designed to be easily administered, applicable to a variety of conditions, and a means of measuring change in physical function in response to an intervention. Administration of the PSFS enables a patient to report 3 to 5 functional activities that he or she is either unable to perform or has difficulty performing. The individual is instructed to rate the difficulty of performing each activity on a Likert-type scale of 0 to 10. A rating of "0" corresponds to being unable to perform the activity, whereas a rating of "10" corresponds to being able to perform the activity without difficulty [1].

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Previous studies indicate the PSFS is a reliable and valid assessment tool for physical function in musculoskeletal populations [1-4]. Multiple systematic reviews of the PSFS have been published. In an initial systematic review completed by Horn et al., [5] measurements for the PSFS were reported to be reliable and valid for musculoskeletal lower extremity and spine dysfunction for the following conditions: knee dysfunction, acute low back pain, mechanical low back pain, cervical radiculopathy and neck dysfunction. More recent systematic reviews of orthopedic conditions are in agreement, finding the PSFS to be reliable, valid, and responsive for patients with upper extremity involvement (shoulder and hand osteoarthritis) as well as spine dysfunction (low back pain) [6,7].

The PSFS is utilized as an outcome measure in both scientific research and clinical practice. Pathak and Sharma [8] summarized the advantages of utilizing the PSFS, which contribute directly to the popularity of the instrument. These advantages include accessibility, ease of administration, patient-centered, patient specific, brief, and the ability to be administered in person or virtually [8,9]. Additionally, previous studies have investigated the degree to which the PSFS compared to the International Classification of Functioning, Disability, and Health (ICF) domains [5,10,11]. The results of these studies indicated items of the PSFS could be mapped to the ICF domains and is an appropriate measure of the various aspects of physical function in people with musculoskeletal disorders [5,9-12]. Furthermore, Pathak et al., [9] found that in a review of both musculoskeletal and non-musculoskeletal populations, 80-100% of items indicated on the PSFS fell in the Activities and Participation component.

The popularity of the PSFS has led investigators to translate the instrument into several languages and expand from the instruments' original application in musculoskeletal populations to a variety of non-musculoskeletal conditions [12-24]. Out of 55 studies included in the initial systematic review by Horn et al., [5] 47 studies were performed in populations where the validity of the PSFS had not been previously reported. Investigators have since recognized the need for a broader application of the PSFS and responded with studies that centered on a variety of conditions, including Parkinson's, multiple sclerosis, coronary artery disease, cancer, acquired brain injury, intact/impaired cognition, snake envenomation and community dwelling older adults [12,17-24].

While the reliability, validity and responsiveness of the PSFS is considered well-established in the musculoskeletal population, the clinimetrics of the PSFS, in the broader application to non-musculoskeletal populations, has been both promising and problematic. Furthermore, Pathak et al., [9] employed the Consensu-based Standards for the selection of health status Measurement Instruments (COSMIN) to evaluate the existing body of evidence and found that the reliability of the PSFS in musculoskeletal populations was at low-to-moderate certainty and in non-musculoskeletal populations was at low certainty [9,25]. Additionally, Pathak et al., [9] found "insufficient" evidence to support the construct validity of the PSFS but did find that the PSFS demonstrated content validity for both musculoskeletal and non-musculoskeletal conditions and responsiveness for musculoskeletal conditions.

The PSFS appears to be a patient reported outcome measure that often meets an acceptable standard of evidence in individual studies in both musculoskeletal and non-musculoskeletal populations, however, falls short when amassed together in a larger body of evidence. The PSFS is both a convenient and contrary instrument, individually simplistic but aggregately complex. The most appealing characteristic of the instrument, the opportunity for individuals to identify activities that are personally difficult and "highly specific" for them, is the very characteristic that creates challenges when attempting to generate and analyze comparable data [8]. Additionally, constructs used to analyze data generated by standardized instruments may not be sufficient to analyze data generated by a flexible instrument, such as the PSFS [9].

While challenges exist in the formation and assessment of comparable data in non-musculoskeletal conditions, the advantages of utilizing the PSFS as a patient reported outcome measure in cohorts who experience chronic disease and progressive loss of function are noteworthy. For example, the PSFS has been found to be reliable and valid in community-dwelling older adults with a change of 2.8 or greater on the PSFS indicative of a true change in physical function [12]. Furthermore, evidence suggests that the PSFS has the predictive ability to classify community-dwelling older adults into categories of loss of physical function, which could be important for purposes such as evaluation, screening, and measuring clinically important differences in loss of physical function [26]. The PSFS allows persons in this population to report items of difficulty that are highly individual and vary greatly. Examples reported include difficulty with stepping in and out of a fishing boat, gardening, navigating uneven and unfamiliar terrain, and walking long distances required to reach recreational sports fields, concert venues, and graduation ceremonies. Few instruments provide the level of individualism, flexibility, and adaptability that the PSFS offers in assessing loss of function in the community-dwelling older adult.

Conclusion

The PSFS is a patient reported outcome measure that has been in use for almost 30 years, primarily in musculoskeletal populations. In the nearly three decades of application, both in scientific research and clinical practice, the PSFS has been found to be a valuable tool in quickly identifying and quantifying activities that are uniquely difficult for an individual. Evidence regarding the reliability, validity, and responsiveness of the PSFS is stronger in musculoskeletal populations than in non-musculoskeletal populations. The specific and flexible nature of the PSFS presents challenges in generating comparable data and determining the extent of some clinimetric properties, including construct validity [9]. While the PSFS has limitations and is lacking evidence in non-musculoskeletal populations, it is clinically useful, especially when paired with other gold standard objective outcome measures, in assessment of individuals who are demonstrating loss of function.

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