

Patient-reported Outcomes in Foot and Ankle Practice: Where do we stand in 2022?

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ABSTRACT

Patient-reported outcome measures (PROMs) enable healthcare professionals to monitor their patient's physical, mental, and social health status. In this commentary, we provide an overview and a table summarizing the PROMs currently being implemented in foot and ankle surgery, along with their individual advantages and disadvantages. We also discuss barriers to meaningful implementation and the proven strategies to overcome those barriers. Even though research has demonstrated the positive role that PROMs can play in patient care, currently, only one-third of orthopedic clinics use PROMs at all. Further, <10% of orthopedic surgeons themselves utilize them in their everyday practice. We believe that for many providers, the reason behind their lack of acceptance of PROMs is because of a gap in knowledge about the many benefits of doing so. For some, PROMs may also be perceived as an additional requirement to insurance and hospital protocols, thus creating another barrier to implementation. In order to overcome these impediments, we suggest that the role of PROMs be thoroughly researched and the merits of incorporating its use into everyday clinical practice be communicated to researchers, physicians, and policymakers across the discipline. In addition, it is essential that the opinions of surgeons and patients be taken into consideration and healthy dialogue is undertaken before PROMs are introduced on a large scale. In summary, we hope our manuscript gives orthopedic surgeons, researchers, and administrators interested in PROMs a comprehensive look at where we currently are with PROMs and the directions that future research can take.

Keywords: Activities of daily living, American orthopedic foot and ankle society ankle-hindfoot scale, Foot ankle ability measure score, Orthopedics, Patient-reported outcome, Shared decision making, Society scale, Surgery, Survey, Parameters of american orthopedic foot and ankle.

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PROs IN FOOT AND ANKLE PRACTICE—WHERE DO WE STAND IN 2022?

Patient-reported outcome measures (PROMs) are standardized surveys completed by patients to enable healthcare professionals to monitor their physical, mental, and social health status. PROMs not only help assess the patient's perspective of their ailments, treatment, and quality of life but are also used for quantifying outcomes in clinical research.¹ PROMs have also been widely incorporated in prediction algorithms and artificial intelligence-based diagnostic models to improve the predictive accuracy of these methods and provide patient-centric management plans.² Equally significant, they help patients engage in self-reflection and enable them to identify what is important to them.¹

There are many PROMs designed specifically for foot and ankle disorders. Some of the salient ones include the Foot and Ankle Outcome Score (FOAS), Foot Function Index (FFI), Foot and Ankle Ability Measure (FAAM), Ankle Osteoarthritis Scale (AOS), American Orthopaedic Foot and Ankle Society (AOFAS), and PROM Information System (PROMIS) (Table 1). Each questionnaire presents its own applications, advantages, and disadvantages. For instance, the FAAM has been shown to work well for quantifying pain and physical function in chronic foot and ankle disorders,³ whereas the PROMIS captures the social and psychological factors of a patient's condition that can often be overlooked in orthopedic practices.⁴ There is a clear consensus that PROMs serve as the foundation for clinical research and have a significant impact on improving patient care by involving the patient in the process of decision-making. However, according to reports, around one-third of orthopedic centers currently collect PROMs appropriately. This is likely due to barriers of implementation, which include, but are not limited to, lack of time and interest among surgeons to administer

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and fill out the questionnaires, lack of staff to assist in data collection, lack of knowledge on how to use PROMs, lack of clear integration into clinical workflow, and limited access.¹ Many studies have introduced strategies to overcome the key barriers to the implementation of PROM.^{1,5,6} These studies have shown increased completion rates by

Table 1: The list of PROMs used in foot and ankle orthopedics practice reported in the literature, their advantages, and disadvantages

PROMs	Overview	Advantages	Disadvantages
FOAS ⁹	Consist of 42 items among five dimensions including pain, symptoms, ADL, sport and recreation, and quality of life	Focuses on foot and ankle Valid and reliable evaluation of patient outcomes related to ankle reconstruction	Time consuming Demonstrates ceiling effects
FFI ⁹	Consist of 23 items divided into three subscales including pain, disability, and activity limitations	Most extensively used region specific PROM in the foot and ankle literature Over 10 language versions Demonstrates valid test-retest reliability, internal consistency, and construct and criterion validity	Floor effects
FAAM ^{3,9}	Consist of two subscales including ADL and sport. Rated on a 5-point Likert scale anchored by 0 (no difficulty at all) and 4 (unable to do)	Validated for foot and ankle assessment Accurately highlights the connection between pain and physical function in chronic orthopedic foot conditions Comprehensive assessment of physical performance of patients with foot and ankle disorders Clinically relevant evaluation	
AOS ¹⁰	Consist of two subscales (pain and disability) each measured with nine questions	Preoperative AOS scores can predict postoperative improvement in ankle arthritis patients	Reliable and validity specifically for ankle osteoarthritis
AOFAS ⁸	Composed of subjective and objective questions covering three categories including pain, function, and alignment	Widely used instrument in clinical studies	Complex vocabulary and poor layout Not valid or reliable Poor predictor of a patient's condition Unique mixture of ordinal and interval data can result in unusual statistical behaviors that may not accurately reflect the underlying population
PROMIS ^{4,6}	Standardized item bank that measures PROs across many medical conditions, including orthopedics	Captures social and psychological factors Written below most stringent reading level recommendations Measures many domains while minimizing administration time	

Abbreviations—ADL, activities of daily living; AOFAS, American Orthopaedic Foot and Ankle Society; AOS, Ankle Osteoarthritis Scale; FAAM, Foot and Ankle Ability Measure; FOAS, Foot and Ankle Outcome Score; FFI, Foot Function Index; PROMs, patient-reported outcome measures; PROMIS, patient-reported outcome measurement information system

providing electronic reminders, using real-time monitoring, writing surveys at or below a sixth grade reading level, keeping them short, offering remote options, implementing electronic collection, and using computerized adaptive testing methods.^{1,4–7} Considering the overwhelming consensus in the literature that PROMs are useful in healthcare and health research, finding ways to remove the barriers and increase the usage rate of using PROMs should be a priority for researchers, care providers, and policymakers in healthcare.

Ultimately, the goal of encouraging providers and healthcare centers to implement PROMs into everyday clinical practice is to improve patient care *via* patient-centered assessments. However, research regarding the clinical significance of PROMs in everyday orthopedics practice is scarce. Our assumption is that many providers do not know the value of using PROMs in their daily clinical practice. Perhaps, it is viewed as an additional requirement to insurance and hospital protocols and therefore, they are resistant to implementation. Therefore, as a next step, the benefit of incorporating PROMs needs to be further evaluated and depicted in research outcomes. Additionally, more research is needed to evaluate clinicians' interests and unmet needs. Once clinical significance and physician interest are evaluated, orthopedic societies, clinicians, and researchers from around the world need to come together and deliberate on which PROMs

should be recommended for routine use and how the barriers in incorporating these into clinical practice can be addressed. There are numerous PROMs available for foot and ankle surgeons, but they lack consensus on which to be used for a given orthopedic pathology or condition. Other than the need for validity and reliability, as mentioned in a comprehensive systematic review by Lakey and Hunt, the keys to improving the quality of PROMs are minimizing patients' burden by summarizing the forms, improving their compliance, and using computer assisted methods for collecting data.⁸

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