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Cross-cultural adaptation and validation of an Arabic version of the American Orthopedics Foot and Ankle Score (AOFAS)

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ABSTRACT

Background: The evaluation process is essential to optimize the management of patients with foot and ankle pathologies and disorders. This study aimed to translate and culturally adapt the four scoring systems of the American Orthopedics Foot and Ankle Score (AOFAS) into Arabic and explore its psychometric properties.

Methods: A multicenter observational design was used, following the forward-backward translation method. One hundred and twenty patients with foot and ankle problems were included. Construct validity and test-retest reliability were analyzed using Intra-class correlation coefficients; internal consistency was analyzed with Cronbach's alpha, and the responsiveness was analyzed using a paired-sample test.

Results: The validity ranged from 0.303 to 0.542 and from 0.018 to 0.753 when correlated to the SF-12 physical and mental component scores, respectively. Test-retest reliability ranged from 0.727 to 0.974; from 0.826 to 0.983 for internal consistency and from 0.001 to 0.182 for sensitivity.

Conclusion: The AOFAS's four systems were successfully translated and culturally adapted into Arabic with sufficient psychometric properties.

Level of clinical evidence: : II.

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1. Introduction

The disorders and pathologies of the foot and ankle are an epidemic concern in orthopedics and a major public health challenge. All the reported incident rates concerning foot and ankle disorders are high. For example, the incident rates for foot pain in older adults, hallux valgus, ankle sprain in females and males ranges from 20 to 37%, 36.3%, 13.6% and 6.94%, respectively [1–4]. A high incident rate has also been reported for the association of foot pain with calluses or corns, deformities of the hallux, hammer toes, pes planus and foot swelling [5]. Importantly, the coexisting symptomatic manifestations in people with foot and ankle conditions can lead to a disabling impact. In particular, foot and ankle related conditions are associated with pain, changes in joint function, activity limitation, reduced walking efficiency and velocity, balance impairment, and increased risk of falling, all of

which could lead to disability and reduced health related quality of life [3,5–9]. The high incident rate and the disabling impact of foot and ankle disorders and pathologies highlight the need to optimize patient evaluation approaches to enhance the healthcare management provided.

The American Orthopedic Foot and Ankle Score (AOFAS) is one of the most commonly and widely used clinical outcome measures designed specifically to examine the foot and ankle. It consists of four rating systems, where each system was established to examine a different anatomical area, which are the ankle-hindfoot, midfoot, hallux-metatarsophalangeal-interphalangeal, and lesser metatarsophalangeal-interphalangeal joints [10]. It was developed in 1994 to assess pain, function, and alignment, incorporating subjective and objective items [10]. It is clinically practical due to its ease of application and understanding and short nature, and because it requires no licensing [10]. The AOFAS has shown poor construct validity, but it has demonstrated moderately strong validity for its subjective component and satisfactory reliability [11,12].

The original version of the AOFAS is in the English language, which limits its application with non-English speaking patients. The AOFAS has been previously translated and culturally adapted

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