Development of the Quick-FAAM: A Shortened Version of the Foot and Ankle Ability Measure for Chronic Ankle Instability

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Context: The Foot and Ankle Ability Measure (FAAM) is a region-specific patient-reported outcome instrument commonly used to evaluate function in individuals with chronic ankle instability (CAI). Reducing the number of FAAM items while maintaining strong psychometric properties would be beneficial for clinical and laboratory settings as this would reduce administration and scoring time. Objective: Develop a shortened version of the FAAM that could be applied to individuals with CAI. Design: Cross-sectional. Setting: Laboratory. Patients or Other Participants: Forty individuals with CAI (13 males, 27 females, 23.25±4.79 years, 168.85±9.20 cm, 72.04±14.36 kg) participated. Participants were included if they reported ≥1 ankle sprain, ≥2 episodes of "giving way" in the past three months, scored <24 on the Cumberland Ankle Instability Tool (CAIT, 16.30±4.55), and answered “yes” to ≥5 questions on the Ankle Instability Instrument (6.60±1.41). Interventions: Within a single session, all participants completed the Foot and Ankle Ability Measure (FAAM) including the Activities of Daily Living (ADL) and Sport subscales. Main Outcome Measures: The FAAM-ADL and FAAM-Sport contain 21 and 8 items, respectively. Traditionally, each subscale is scored separately (0-100%) with lower scores indicating decreased foot and ankle function. To develop a single reduced-item FAAM instrument, the subscales were combined to collectively examine all 29 items. To identify items for removal, the skewness and corrected item-total correlation was calculated for each item. Items with a z-skewness of ≥±1.96 or a corrected item-total correlation of ≤0.40 were removed. The reduced-item FAAM was examined for dimensionality using principle components analysis, coverage redundancy using inter-item correlations, and internal consistency using Cronbach’s α. Convergent validity was examined through Pearson correlations with the original FAAM and CAIT. Descriptive statistics (mean±standard deviation, median(interquartile range), and z-skewness) were calculated for both FAAM instruments. Alpha was set at p≤0.05 for all analyses. Results: Seventeen items were removed based on a z-skewness of >±1.96; however, no items were removed based on weak corrected item-total correlations (r≥0.61). This resulted in a 12-item instrument which included 5 ADL and 7 Sport items. The reduced-item instrument demonstrated unidimensionality based on a single component exhibiting an Eigenvalue ≥1 (Eigenvalue=7.47, Explained Variance=62.11%). The reduced-item FAAM demonstrated acceptable redundancy across items (average r=0.59, minimum r=0.36, maximum r=0.77) and excellent internal consistency (α=0.943). The reduced-item FAAM (70.31±16.60%, 72.91%(28.65%), z-skewness=-1.60) was strongly correlated to the original FAAM (r=0.95, p<0.001; 78.81±13.53%, 84.05%(16.38%), z-skewness=-3.40) and the CAIT(r=0.65, p<0.001). Conclusions: The reduced-item or Quick-FAAM provides an alternative region-specific patient-reported outcome for assessing function in physically active adults with CAI. While the original FAAM provided more extensive item coverage, the Quick-FAAM emphasizes items frequently experienced and deemed important by individuals with CAI. Other properties of the Quick-FAAM including test-retest reliability, responsiveness, and appropriateness for other patients or conditions require further investigation.

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