

Using Hand Strength Measurements to Evaluate Fatigue: A Cross Cultural Assessment Protocol

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Introduction

Measuring hand strength (HS) is an important cross cultural assessment because strength is required to engage in many occupations. HS measurements provide objective assessment and treatment information. This presenter will introduce a simple protocol to measure HS to evaluate fatigue that is applicable across cultures.

The **purpose** of this study was to determine if the protocol could be used to identify the point at which fatigue in one's hand occurs and to assess its clinical usefulness.

Objectives of Study/Presentation

To explain the applicability of measuring HS of individuals from diverse cultures.

To present a protocol to measure HS that requires little time and equipment that can be used to evaluate fatigue across diagnoses and cultures.

To present research results which determined if the protocol could identify a point at which participants fatigue.

To explain how these research results relate to social participation and the practice of occupational therapy.

Methods

30 females between 21 and 35 were measured, including Caucasians, Hispanics, African-Americans, and Asian-Americans. A Jamar dynamometer was used to measure HS. Participants were measured eight times using a rigorous protocol which will be presented in detail. Fatigue was defined as a significant difference between one HS measurement and a later HS measurement, with the second measurement being significantly lower than the first.

Results

Data, analyzed using a Lindquist Type I ANOVA, revealed a significant difference in HS across the eight trials. Further analysis using Scheffe's post hoc, undertaken to determine where the decrease in HS occurred, revealed a significant difference between the first HS measurement and the seventh and eighth measurements.

Conclusions/Contributions to Evidence-Based Practice

The hypothesis that a significant difference would be found among the eight measurements of HS was confirmed. Fatigue occurred between the first and seventh measurements and the first and eighth measurements. These results provide therapists with an additional way to use HS measurements during evaluations and reevaluations of the hand. A current common use is to use pre and post HS measurements to assess the effects of therapy and provide scientific evidence that HS measurements may be used to measure fatigue, providing important information when assessing occupational competency.

