



ELSEVIER

Contents lists available at ScienceDirect

Journal of Hand Therapy

journal homepage: www.jhandtherapy.org

Scientific/Clinical Article

The validity and clinical utility of the Disabilities of the Arm Shoulder and Hand questionnaire for hand injuries in developing country contexts: A systematic review

Susan de Klerk B OT, DHT, M OT^{a,*}, Helen Buchanan BSc OT, MSc OT, PhD^b,
Christina Jerosch-Herold DipCOT, MSc, PhD^c

^a Division of Occupational Therapy, Department of Health and Rehabilitation Sciences, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, South Africa

^b Division of Occupational Therapy, Department of Health and Rehabilitation Sciences, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa

^c School of Health Sciences, University of East Anglia, Norwich, UK

ARTICLE INFO

Article history:

Received 21 April 2017

Received in revised form

4 October 2017

Accepted 6 October 2017

Available online xxx

Keywords:

Disabilities of the Arm, Shoulder and Hand

questionnaire

Validity

Utility

Hand injury

ABSTRACT

Study Design: Systematic review.

Introduction: The Disabilities of the Arm Shoulder and Hand Questionnaire has multiple language versions from many countries around the world. In addition there is extensive research evidence of its psychometric properties.

Purpose of the Study: The purpose of this study was to systematically review the evidence available on the validity and clinical utility of the Disabilities of the Arm Shoulder and Hand as a measure of activity and participation in patients with musculoskeletal hand injuries in developing country contexts.

Methods: We registered the review with international prospective register of systematic reviews prior to conducting a comprehensive literature search and extracting descriptive data. Two reviewers independently assessed methodological quality with the Consensus-Based Standards for the Selection of Health Measurement Instruments critical appraisal tool, the checklist to operationalize measurement characteristics of patient-rated outcome measures and the multidimensional model of clinical utility.

Results: Fourteen studies reporting 12 language versions met the eligibility criteria. Two language versions (Persian and Turkish) had an overall rating of good, and one (Thai) had an overall rating of excellent for cross-cultural validity. The remaining 9 language versions had an overall poor rating for cross-cultural validity. Content and construct validity and clinical utility yielded similar results.

Discussion/Conclusions: Poor quality ratings for validity and clinical utility were due to insufficient documentation of results and inadequate psychometric testing. With the increase in migration and globalization, hand therapists are likely to require a range of culturally adapted and translated versions of the Disabilities of the Arm Shoulder and Hand. Recommendations include rigorous application and reporting of cross-cultural adaptation, appropriate psychometric testing, and testing of clinical utility in routine clinical practice.

© 2017 Hanley & Belfus, an imprint of Elsevier Inc. All rights reserved.

Introduction

The Disabilities of the Arm Shoulder and Hand (DASH) questionnaire is an extensively researched evaluative and discriminative region-specific patient-rated outcome measure (PROM) used

This paper was adapted from a presentation on the preliminary results entitled: *The validity and clinical utility of the DASH for hand injuries in developing country contexts: A Systematic Review*, presented at the IFSHT conference in Buenos Aires, Argentina, 25–28 October 2016.

* Corresponding author. Division of Occupational Therapy, Department of Health and Rehabilitation Sciences, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, South Africa. Tel.: +27 21 9389017.

E-mail address: sdk@sun.ac.za (S. de Klerk).

by many clinicians and researchers in the field of hand therapy.¹ This instrument was first developed by the American Academy of Orthopedic Surgeons, the Council of the Musculoskeletal Speciality Societies, and the Institute for Work and Health (IWH), Toronto (Ontario), and published in 1996 by Hudak et al.¹ The DASH measures symptoms and some aspects of activity and participation according to the 9 domains outlined in the International Classification of Functioning, Disability and Health in patients with musculoskeletal (MSK) conditions of the upper limb.^{1–4} Assessments of upper extremity function used in routine hand therapy practice have traditionally focused on aspects of body function and structure (such as the measurement of range of motion or strength), which are clinician derived rather than patient reported.⁵

In more recent publications, a number of authors have investigated the advances in the use of instruments addressing aspects of activity and participation in addition to the predictable use of instruments that measure a single dimension such as strength or sensation.^{5–8} The implementation of and call for more client-centered approaches, addressing the broader understanding of health brought about by adopting the International Classification of Functioning, Disability and Health framework, which also encompasses a patient perspective, has paved the way for greater use of PROMs that assess aspects of activity and participation.⁹

In South Africa, the routine use of measures of activity and participation remains low.¹⁰ Therapists offer time constraints and lack of applicability in the practice context as reasons for nonuse of the DASH.¹⁰ Time constraints are a common reason for nonuse of PROMs.^{6,7,11} In contrast, the quick administration time of the DASH has been reported in some studies.^{12,13} It is however worth exploring the notion of lack of applicability and time constraints associated with using such a rigorous instrument, with well-established psychometric properties, in this context. A systematic review of the cross-cultural adaptation of the DASH included only English-language publications ($n = 9$); 8 of 9 from developed country contexts.¹³ This presents a biased view in research on this topic for developed countries.

Diverse cultures, languages, and occupations make providing interventions in developing contexts more complex. Contextual variation and diversity culminates in differences in the execution and experience of daily activities, occupations, and the type of occupations performed. In client-centered care, these differences (essentially in activity and participation) have to be captured, considered, and appreciated in daily encounters with patients. Using PROMs is one way to do this. Alotaibi states that the “availability [and use] of assessments [that were] adapted for use in a different culture promotes the client’s capacity to engage in culturally meaningful occupations.”¹³ [p.178] It is therefore essential to evaluate whether a measure such as the DASH measures the constructs it appears to measure in patients with hand injuries in a developing country context.

The Consensus-Based Standards for the Selection of Health Measurement Instruments (COSMIN) checklist was devised to assist researchers and clinicians to evaluate the psychometric and clinimetric properties of health-related measurement instruments.^{14,15} It defines the measurement properties that should be assessed and the criteria for acceptable measurement. COSMIN defines cross-cultural validity as “The degree to which the performance of the items on a translated or culturally adapted HR-PRO instrument is an adequate reflection of the performance of the items of the original version of the HR-PRO instrument.”¹⁶ [p.9] Content validity is the relevance of the items of the measurement instrument to the construct of interest, and construct validity refers to the ability of an instrument to measure the theoretically intended constructs.^{17,18} In accordance with the COSMIN criteria, construct validity is evaluated by considering structural validity (through factor analysis), hypothesis testing (through moderate correlations with instruments measuring the same construct), and cross-cultural validity (by evaluating differences in factor structure or differential item function between language versions).¹⁶ Francis et al¹⁹ incorporated knowledge from the COSMIN criteria and presented a simplified checklist for evaluating the methodological quality of PROMs. They concluded that their checklist could assist researchers or clinicians with varied expertise and experience in measurement theory to evaluate the quality of the PROM in systematic reviews or for use in clinical practice.¹⁹ Francis et al¹⁹ included responsiveness (longitudinal construct validity) and predictive validity as a form of criterion-related validity. In the present review, we considered cross-cultural, construct, and content validity.

A further consideration was the clinical utility of the DASH. The complexity of clinical utility makes its evaluation a challenge. Clinical utility is defined as the usefulness of an assessment or intervention in clinical practice.²⁰ The usefulness of the DASH cannot be contested; this is clear from the multiple language versions and extensive use of the measure in clinical practice and research. In addition, the DASH can be used to assess the functional status of traumatic hand-injured patients.²¹ However, therapists in a developing context do not find the DASH useful due to lack of applicability.¹⁰ In accordance with Smarts’ conceptualization of clinical utility, therapists may not have found the instrument to benefit their treatment approach or the patient.²⁰ Smart²⁰ summarized the dimensions of clinical utility and identified the components to be appropriate, accessible, practicable, and acceptable. Corr and Siddons²² highlighted the validations of the measure for the relevant client group to be an important consideration for clinical utility. Information on the clinical utility of the DASH as a measure of activity and participation in patients with hand injuries in developing country contexts is imperative to make decisions about using it for its intended purpose.

Purpose of the review

The purpose of this systematic review was to examine the validity and clinical utility of the DASH questionnaire as a measure of activity and participation in patients with hand injuries in a developing country context.

Methods

Search strategy

We conducted a international prospective register of systematic reviews-registered comprehensive literature search using the following key electronic databases: MEDLINE (PubMed), EBSCO-Host (Academic Search Premier, CINAHL, and Africa Wide), Scopus, Web of Science, and Google Scholar. We searched grey literature through the World Health Organization Library OpenGrey and OpenDOAR. Search terms included Disabilities of the Arm, Shoulder and Hand questionnaire, cross-cultural adaptation, validity, clinical utility, and musculoskeletal hand injury. See [Supplementary File 1](#) (available online) for the electronic database search strategy. Covidence (<http://www.covidence.org>) was used to manage the review. The first author completed the database searches, scanned for relevance based on the title and abstract, and applied the inclusion criteria. The first and second authors applied all eligibility criteria against the full text of the remaining articles to select relevant studies for the review. The first author reviewed reference lists of relevant articles and performed hand searches to identify all appropriate studies. There was agreement among the authors as to which articles be included in this systematic review.

Identification and selection of studies

Inclusion criteria were any studies of the DASH questionnaire from inception to 2016, all languages, with a study population of adults (age ≥ 18 years) with MSK hand injury, and from developing country contexts (Developing country context is understood to be middle-income (upper and lower) and low-income countries according to the World Bank Rankings.²³). Study aims had to include evaluation of, or reporting on, validity and/or clinical utility. We excluded trials that used the DASH as an outcome measure without studying the measurement properties in question.

Download English Version:

<https://daneshyari.com/en/article/8590042>

Download Persian Version:

<https://daneshyari.com/article/8590042>

[Daneshyari.com](https://daneshyari.com)