

## **Measuring function in everyday life: enhancing the Disabilities of the Arm, Shoulder and Hand questionnaire for use post-stroke.**

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### **Introduction**

Upper limb disability after stroke is an important focus of occupational therapy intervention. It is a challenge to demonstrate that occupational therapy interventions result in improved functional use of the arm. The Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire is a self-report instrument designed to measure the physical function and symptoms in the upper limb. Testing has shown that the DASH performs well in musculoskeletal populations, but validity of the questions and rating scale for use with adults after stroke is unknown.

### **Objectives**

The aim of this study was to examine the psychometric properties of the DASH when completed by people who have suffered a stroke.

### **Methods**

One hundred and fifty seven patients who suffered a stroke completed the DASH questionnaire. The first 90 patients also completed another self-reported questionnaire about upper limb function and an observational upper limb movement assessment. Rasch measurement modeling were used to transform the ordinal ratings into linear measures and evaluate measurement properties at both scale and item levels.

### **Results**

The original scale was found to have disordered rating scale structure. Further Rasch modelling with collapsed rating scale structures resulted in the DASH scale conforming to the expectations of the model. Item fit results suggest that the hierarchy of the original 30 items does not make sense clinically, with few items at the level of the most disabled people. Moderate correlations were found between manual ability and pain.

### **Conclusion**

The results of this study suggest that with scale and item modifications, DASH is a promising outcome measure that has adequate psychometric properties and can be used to complement other objective clinical measurements.

### **Contribution to the practice/evidence base of occupational therapy**

Study findings provide occupational therapists with recommendations for simple modifications to the DASH outcome measure that will allow this measure to be used with stroke patients. Reliable instruments that can be used to assess any or all joints in the upper limb are crucial to both planning functional goals and monitoring progress, and to the ultimate aim of post-stroke rehabilitation, that is, enabling a person their full societal participation.