

Clinical Commentary in Response to: Severity of Contracture and Self-reported Disability in Patients with Dupuytren's Contracture Referred for Surgery

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WHAT QUESTION DID THIS ARTICLE ANSWER?

Loss of motion, particularly functional extension, and the resultant activity limitations in Dupuytren's disease (DD) are among the motivations for a patient to pursue hand surgery.¹ The authors of this article set out to investigate if there was a relationship between the loss of active extension and the level of self-reported disability in persons planning to undergo surgical release for DD. Because the small finger is affected more often than other digits in DD, they also were interested in determining if self-reported disability was associated with the amount of extension loss (contracture) of any particular digit or a product of the total movement losses in the entire hand. Evidence from this study will add to the larger body of evidence that previously looked for a relationship²⁻⁴ using the same patient-reported instrument (the DASH—Disabilities of the Arm, Shoulder and Hand Questionnaire) and range-of-motion (ROM) measures.

HOW DID THESE STUDY DESIGN AND METHODS ANSWER THIS QUESTION?

This study drew from the baseline information gathered from 153 participants in a randomized

controlled trial for surgical management of DD. The authors analyzed the data from a single point in time (preoperative assessment) to create a prospective cohort. In addition to basic demographic data, participants completed a DASH Questionnaire to record their perceptions of the disability they were currently experiencing as a result of DD. Active ROM was measured for the MCP, PIP, and DIP joints of only the hand for which surgery was planned (although this was not explicitly stated). The authors established that DD generally affects people bilaterally, and that the DASH Questionnaire asks the respondents to report their function based on their total bimanual abilities,⁵ but movements were not evaluated in both hands. The authors did not appear to screen for confounding factors with a potential effect on self-reported hand function in this cohort (average age, 67.4 yr), such as osteoarthritis and compression neuropathies.

Measurements of ROM were performed by one of two trained raters and were recorded to the nearest 2 degrees; the level of agreement (interrater reliability) between the two raters was reported. Total active movement (TAM) was found to be greatest in the radial digits and most impaired in the small finger, consistent with what we expect from this patient population.

The average preoperative DASH score reported in this study was 15.87 (range, 0–62.1). This was consistent with previous studies that also reported average DASH scores reflective of “mild disability.”² However, it should be noted that both studies that looked exclusively at DD^{2,3} presented raw DASH scores, because they identified a score of 30 as no disability; therefore, they should not be directly compared with the corrected scores presented in this article with a potential range of 0–100 (raw scores have a potential range of 30–130).

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When the scores gathered using a particular outcome measure for a specific patient population are consistently close to the positive health state relative to the possible range of scores on the assessment tool, it is known as a ceiling effect.⁶ When preoperative scores (the point at which the greatest disability would be expected in the DD population) demonstrate a ceiling effect, as in this study, it may suggest that the outcome measure may not be one that best measures the condition or characteristic of interest within that particular population.

This study found generally weak correlations between impairments (as quantified by losses in TAM of one hand) and self-reported disability in the upper extremities. Statistical correlations are used to illustrate the strength of a relationship between two or more variables: in this case, a weak correlation may be expected if one believes that TAM taps into a different concept than the DASH (i.e., movement vs. function, impairments vs. disability). This study found that the correlation or relationship was strongest for the radial digits: although they were generally less affected, the findings would suggest that those deficits were associated with a greater functional loss. The direction of the relationship was, as the TAM score became smaller (less movement), the DASH score became larger (more restrictions in activity and participation).

HOW COULD I USE THIS INFORMATION IN MY CLINICAL PRACTICE?

The results of this study suggest that the DASH may not be the most useful tool for preoperative measurement of self-reported disability in DD. As the authors pointed out, the activities that create the greatest functional concern for persons with DD may not be reflected by the DASH. They also raise the issue of aesthetics, which again is not a construct included in the DASH.

So, what measures would be best to use in this patient population? Clinicians treating persons with DD may wish to consider the merits of other self-reported rating scales. The Canadian Occupational Performance Measure or Patient Specific Rating Scale may be useful adjuncts for the assessment of the issues specific to the individual client and the pattern of movement loss they have experienced with DD. Both of these tools allow the individual to identify and rate particular activities, functional challenges, or participation goals. They have been shown to be reliable, valid, and responsive in a variety of other populations;⁷ however, they have not been tested specifically in persons with DD.

A number of other self-report assessment tools exist that have been tested for use in upper extremity problems, including the Patient-rated Wrist and Hand

Evaluation (PRWHE), the Patient Evaluation Measure (PEM), and the Michigan Hand Questionnaire (MHQ).⁸ The responsiveness of the PRWHE was tested in a general hand injury population that included postoperative DD⁹ and was found to be responsive to change. This study also added an aesthetics question to the PRWHE that was slightly less responsive. However, given that pain is not usually a central concern in preoperative DD,¹ the PRWHE may be less responsive to pre- and postoperative disability in DD, as pain items contribute half of the score. The MHQ has been used to measure patients with pre- and postoperative DD and was found to show similar changes after therapy as the DASH.¹⁰

FUTURE CONSIDERATIONS FOR RESEARCH

Several authors have now sought to correlate the DASH and ROM measures;^{2,3} it would be interesting to evaluate other measures, such as the PEM, PRWHE, or MHQ, for correlations with impairment measures in DD to assist clinicians in making evidence-informed selections from existing self-report measures for the purposes of monitoring changes in their individual clients and to inform future study of this population.

A study of persons with Dupuytren's contracture to determine what is of concern to this patient population could be carried out using qualitative methodology and could form the basis of item development for a new condition-specific outcome measure for DD. The 2009 qualitative study cited in this article had only seven participants and did not reach "saturation,"¹¹ the term used by qualitative researchers to indicate that enough participants have been included in the study to give confidence in the results. A study is usually considered to have reached "saturation" when the research team sees no new themes or ideas emerging as the study progresses.¹¹ A patient sample large enough to reach saturation of emerging themes using a mixed-methods approach could be used not only to identify key concerns but also to have persons with DD rate existing self-report tools, such as the DASH, MHQ, or PRWHE, for ease of use and relevance (content validity) to their unique concerns. One possible structure for such an analysis could use the International Classification of Function (ICF) domains for health and quality of life as categories to organize the information elicited from semi-structured interviews of persons with DD. This would allow direct comparison for content coverage on existing tools, which could be linked (a formal way of coding or organizing) using the same ICF framework.¹²

As new treatment options emerge for this population with the advent of efficacious enzyme

injections,^{13,14} the opportunity is also ours as hand therapists to continue to refine how we measure outcomes in DD and advocate for our surgical and research partners to use tools informed by the best available evidence. More importantly, we can use appropriate outcome measures to assist our patients on their rehabilitation journey: to inform collaborative decision making about treatment options, to monitor their progress, and to guide our intervention choices.

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