9-30-2014

The Responsiveness Of The Quick DASH Versus The full DASH In Patients With Hand Pathologies

Erika Derks
University of New England

Follow this and additional works at: http://dune.une.edu/pt_studcat

Part of the Physical Therapy Commons

Recommended Citation

Derks, Erika, "The Responsiveness Of The Quick DASH Versus The full DASH In Patients With Hand Pathologies" (2014). *Critically Appraised Topics (CAT)*. 8.
http://dune.une.edu/pt_studcat/8

Title: The Responsiveness of the Quick DASH versus the full DASH in Patients with Hand Pathologies.

Author: Erika Derks

Date CAT Completed: 9/30/14

Clinical Scenario: The patient is a 71 year old female referred to physical therapy for bilateral osteoarthritis of the hands. Prior to her initial examination, she was given the Quick DASH as an outcome measure. This examination tool will be used in documenting/detecting her progress throughout physical therapy. It will be an extremely important examination tool because it will allow us to document her progress in alternative measures. Her range of motion was limited. Due to severe osteoarthritis and calcium build up, minimal increases in her range of motion were expected. Therefore, the outcome measure would permit us to determine her progress by looking at how she improves in her function and symptoms without relying solely on range of motion measurements. This led to my clinical question of whether or not the Quick DASH would be as responsive to these changes, in comparison to using the full DASH. Especially when dealing with the function and symptoms of the hand. This is important for her because it will be one of the main tools used in determining her progress throughout physical therapy.

Clinical Question: Is the full DASH questionnaire better at detecting meaningful change in a patient's status compared to the Quick DASH, specifically in female patients at an outpatient clinic with osteoarthritis of the hands?

  Patient/Problem – Female patients at an outpatient clinic with osteoarthritis of the hands

  Intervention – Full DASH questionnaire

  Comparison – Quick DASH

  Outcome – Ability to detect meaningful change in patient's status

Clinical Bottom Line: The Quick DASH was determined to be as "responsive" (ability to detect meaningful change) as the full DASH, if applied to a similar patient population. The sample consisted of outpatient hand pathologies treated during a 12 week period of time. The patient described above fit perfectly into this sample description. Therefore, having her take the Quick DASH as opposed to the full DASH will not negatively affect the ability of the outcome measure to detect the patient's change in function and symptoms. Since the Quick DASH is just as responsive, and is quicker and easier to complete and score, it seems to have more overall clinical usefulness with regards to this patient. Therefore, I will continue to have the patient fill out the Quick DASH to document her progress. In addition, the outcome measure that was calculated for this patient upon initial examination can be taken as both valid and useful. If there is change seen in her Quick DASH score at discharge, I can be fairly certain that the change was both clinically and statistically significant and not due to chance. In the future, someone

who falls into this patient population can be given either the Quick DASH or the full DASH. For convenience to both the patient and the clinician, the Quick DASH may be a better alternative since both are responsive outcome measures.

Search History:

Databases/Sites Searched	Search Terms	Limits Used
I searched two databases to find an article that answered my clinical question. I started my search on PubMed, but did not find any results. I then searched CINHAL, in which I found the article I chose.	Search terms I used were DASH, Quick disability arm shoulder hand, Quick DASH, validity, and osteoarthritis. I originally searched for DASH and Quick DASH, but had better results when using the full name of the outcome measure, as opposed to the abbreviation. My final search was "quick disability arm shoulder hand AND validity".	The limits I used were: English Language, Published Date (October 2004 –October 2014), and Peer Reviewed.

Citations: Whalley K, Adams J. The longitudinal validity of the quick and full version of the Disability of the Arm Shoulder and Hand questionnaire in musculoskeletal hand outpatients. *Hand Therapy* [serial online]. March 2009;14(1):22-25. Available from: CINAHL Complete, Ipswich, MA. Accessed September 30, 2014.

Summary of Study:

Study Design: The study was a longitudinal cohort study that included multiple patients treated by occupational therapists at an outpatient clinic. There was no exclusion criteria, every patient that was referred to occupational therapy was included in the study. Therefore, the patients recruited for this study was a convenience sample. Patients completed the questionnaires at the time of referral and at discharge.

Setting: All patients were referred to an outpatient occupational therapy clinic. They were referred by hand surgeons, the Hampshire Primary Care Trust team and local general practitioners. The study took place in Southampton, UK.

Participants: There was no exclusion criteria. Participants were all patients that were referred to occupational therapy following trauma, surgery, degenerative osteoarthritis, and non-specific wrist and hand pain. The mean age was 58 years, 15 women and 7 men were included.

Interventions: The DASH and Quick DASH were completed at the time of referral and on discharge of treatment. Therapy was provided to those patients who took the questionnaires. Therapy lasted a mean of 12 weeks and about 2.15 hours of total treatment

time with the occupational therapist. Interventions that were done were education, massage, exercises, splints, and mobilizations.[1]

Outcome Measures: The DASH and Quick DASH are designed to measure physical function and symptoms in people with musculoskeletal disorders of the upper limb. The disability/symptom section of the questionnaires were the only sections used. The full DASH consisted of 30 items scored from 1-5. The Quick DASH consisted of 11 items scored 1-5. A higher score on either questionnaire meant greater disability.

Data Analyses: Distribution-based methods were used to analyze the data. This method allows for the calculation of how much change is true change, as opposed to measurement error or variation. Therefore, responsiveness is population specific. Using Cohen's method for interpreting effect size, "0.2 represents a small clinically important effect, 0.5 a medium effect, and 0.8 a large effect".[2] Standardized response mean, effect size, and t-tests compared the responsiveness of the full DASH and Quick DASH. Standardized response mean was calculated by dividing the mean change in scores by the standard deviation of the change. Effect size was calculated by dividing the mean change in scores by the standard deviation of the baseline scores. The higher the standardized response mean and the effect size were, the greater level of responsiveness.[3]

Summary of Evidence: The study results determined that the Quick DASH is as effective as the full DASH in detecting meaningful change or "responsiveness" in this patient population. The patient population of the study was short term outpatient therapy for hand pathologies. The responsiveness was determined by looking at both the effect size (ES) and the standardized mean response (SMR) of the data gathered. As seen in the table below, the SRM and ES of both the DASH (SRM=1.93, ES=1.38) and Quick DASH (SRM=1.77, ES=1.51) were well above 0.8. This means both had a large clinically important effect. The t-tests also showed that there was statistically significant changes from baseline to discharge in both the DASH (t=9.06, P<0.01) and the Quick DASH (t=8.30, P<0.01). Overall, this evidence refutes my clinical question. I previously thought that the full DASH would better able to detect meaningful change, in comparison to the Quick DASH, when it came pathologies of the hand. Although it needs to be noted that the study only shows the responsiveness in this specific population. Different populations and settings may produce different results and alter its relevance. In addition, "the full DASH is reported to provide greater precision, so may be better at monitoring individual progress rather than group change".[4]

Table 2 Baseline and discharge DASH and Quick DASH scores with responsiveness statistics and significance levels

	Baseline, mean (SD)	Discharge, mean (SD)	Mean change (SD)	SRM	ES	t-test and P value
DASH, (0–100)	50.20 (22.27)	19.43 (15.61)	30.77 (15.92)	1.93	1.38	$(t = 9.06)$, <0.01
Quick DASH, (0–100)	50.43 (21.22)	19.70 (16.01)	32.13 (18.16)	1.77	1.51	$(t = 8.30)$, <0.01

DASH, Disability of the Arm Shoulder and Hand questionnaire; SRM, standardized response mean; ES, effect sizes

Chart taken from article: Whalley K, Adams J. Baseline and discharge DASH and Quick DASH scores with responsiveness statistics and significance levels. Chart. *Hand Therapy* [serial

---

[1] Whalley K, Adams J. 24
[2] Whalley K, Adams J. 23
[3] Whalley K, Adams J. 24
[4] Whalley K, Adams J. 24

online]. March 2009;14(1):24 Available from: CINAHL Complete, Ipswich, MA. Accessed September 30, 2014.

Additional Comments: This study does have limitations. As mentioned before, the results of the study can only be applied to a similar patient population of this sample. In addition, a convenience sample made up the participants of the study. If a larger sample with more diversity was taken, the results may have been different. With that being said, the small sample size should not affect the statistical analysis. As stated in the article, "both SRM and SE do not utilize standard error to calculate summary statistics so therefore should not be adversely affected by small sample size".[5] Overall, I believe that this article is both valid and reliable. Despite the limitations, the analysis was valid and the results were still significant in determining a clinically important effect.

This CAT was completed as part of Scientific Inquiry II (Fall 2014) under the instruction of Sally McCormack Tutt PT, DPT, MPH.

---

[5] Whalley K, Adams J. 25