0290

Brian Hafner (1) presenting   Sara Morgan (1)   Robert Askew (2)

University of Washington, Seattle, WA, USA (1)   Northwestern University, Chicago, IL, USA (2)

Reliability of self-reported outcome measures in people with lower limb loss: implications to clinical care and research

Background

Evidence of reliability is needed to determine the purposes for which an outcome measure can be used. It is generally accepted that measures should demonstrate reliability of 0.7 or greater to be used for comparisons between groups of people.[1,2] For applications that involve decisions about individuals, measures should demonstrate reliability of 0.9 or greater.[3] Reliability therefore becomes a key factor in distinguishing measures that can be recommended for individual-level applications and measures that can be recommended for group-level applications.

Aim

The goal of this project is to assess the test-retest reliability of self-reported outcome measures designed to assess people with lower limb loss and to make recommendations for those that are best suited to individual- or group-level assessments.

Method

People with unilateral, lower limb loss were recruited to take two self-reported outcome measure surveys 2-3 days apart. Mode of administration (paper or computerized) was randomly assigned. Surveys included several standardized measures, including the Prosthetic Limb Users Survey of Mobility (PLUS-M), the Prosthesis Evaluation Questionnaire Mobility Subscale (PEQ-MS), Activities Specific Balance Confidence Scale (ABC), Socket Comfort Score (SCS), and Patient Reported Outcomes Measurement Information System Brief Profile (PROMIS-29). Surveys also included demographic and health questions that were used to characterize the sample. Reliability of each instrument was quantified using the intraclass correlation coefficient model 3, type 1 (ICC 3,1).

Results

Participants (n=201) were an average of 60 (SD=11) years of age and 18 (SD=17) years post-amputation. They were mostly male (67%), white (91%), and non-Veteran (74%). Participants were of mixed level of amputation (35% above-knee, 65% below-knee) and etiology of amputation (60% trauma, 23% dysvascular, 12% infection, 4% tumor, 1% congenital). Retest surveys were taken, on average, 2 (SD=0.2) days after the test survey. Time to complete the test and re-test surveys was 12 (SD=7) minutes and 10 (SD=6) minutes, respectively. Reliability of the administered measures ranged from 0.74 to 0.96. PLUS-M, ABC, and PEQ-MS showed high reliability (0.96, 0.95, and 0.92, respectively). SCS showed lower reliability (0.74) and reliability of PROMIS instruments ranged from 0.79 (Social Role Satisfaction) to 0.88 (Physical Function and Depression).

Discussion & Conclusion

Results of this study indicate that the tested self-report health surveys have moderate-to-high (>0.7) test-retest reliability among people with limb loss. This indicates that the measures tested are suitable for group-level applications, such as quality improvement programs. Select measures (PLUS-M, ABC, and PEQ-MS) have high reliability (>0.9) and are suitable for individual-level applications, like monitoring patients over time. Use of these measures is therefore advocated, given their reliability, ease of administration, and potential to inform on individuals' health outcomes.

References

1. Reeve BB, et al. Qual Life Res. 2013;22(8):1889-905.
2. Terwee CB, et al. J Clin Epidemiol. 2007;60(1):34-42.
3. Fitzpatrick R, et al. Health Technol Assess. 1998;2(14) :1-74.