NORMATIVE PEQ-MS AND ABC SCORES AMONG PERSONS WITH LOWER LIMB LOSS

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INTRODUCTION

Lower limb prostheses are often provided to address functional deficits associated with limb loss, such as limited mobility and impaired balance. Prosthetists are increasingly encouraged to measure and document these important outcomes in routine practice. Although instruments like the Prosthesis Evaluation Questionnaire (PEQ) and Activities-specific Balance Confidence Scale (ABC) are available for such purposes, they have not been widely adopted by the clinical community. Reluctance to use these tools may stem from these measures' psychometric limitations, burden of administration, and difficulties with score interpretation. To address these concerns, the PEQ Mobility Subscale (PEQ-MS)[1] and ABC[2] were scored using Rasch analysis and revised to improve their response options. These revised versions show improved psychometric properties and lower administrative burden. However, normative data are not available and are needed to facilitate their use and interpretation in routine clinical practice.

METHOD

Short-form versions of PEQ-MS and ABC were administered to a large community sample of lower limb prosthetic users via online and paper surveys. Respondents were recruited via clinics, consumer magazines, list-servs, websites, and social networks. Selection criteria included 18+ years of age, ability to read English, unilateral lower limb amputation, traumatic or dysvascular etiology, and use of a prosthesis to ambulate. Summary scores for PEQ-MS and ABC were obtained according to developers' instructions for the population as a whole as well as by subgroups defined by level and etiology of amputation (i.e., transtibial-trauma [TT-TR], transtibial-dysvascular [TT-DYS], transfemoral-trauma [TF-TR], and transfemoral-dysvascular [TF-TR]). Differences among groups were assessed with independent t-tests and corrected for multiple comparisons (α=0.0083).

RESULTS

PEQ-MS and ABC short-forms were administered to 942 persons with lower limb loss (gender: 71% male; age: M=54 and SD=12 years; time since amputation: M=12 and SD=14 years). Respondents often reported medical conditions associated with limb loss, such as residual limb sores (61%), loss of residual limb sensation (37.8%), residual limb pain (74%), phantom pain (80%), knee pain (54%), and back pain (40%). Overall, respondents scored 33.2 (SD=10.3) on the PEQ-MS and 2.6 (SD=1.0) on the ABC. Mobility and balance were affected by both etiology and level of amputation. All four subgroups differed significantly (p<0.0001) in PEQ-MS and ABC scores (Figure 1). Persons in the transtibial-trauma group showed significantly better mobility (M=37.0, SD=9.6) and balance (M=3.0, SD=0.8) than all other groups, while persons in the transfemoral-dysvascular group reported significantly worse mobility (M=26.3, SD=11.1) and balance (M=2.0, SD=1.0) than the others.
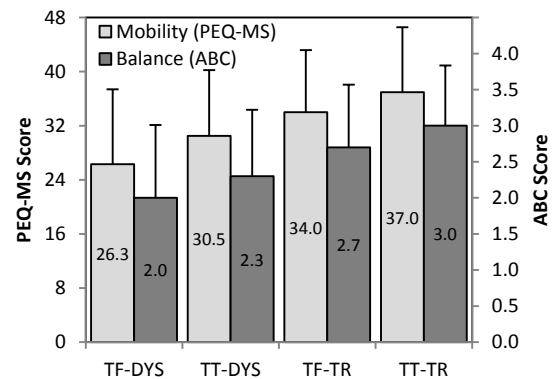

Figure 1. PEQ-MS and ABC scores for persons with lower limb loss by subgroup (TF=transfemoral, TT= transtibial, DYS=dysvascular, TR=trauma).

DISCUSSION

Mobility and balance are significantly affected both by level and etiology of amputation. PEQ-MS and ABC can be used to quickly and easily measure mobility and balance outcomes and may be used to evaluate the effect of clinical interventions.

CONCLUSION

Brief surveys like the PEQ-MS and ABC can be used to measure aspects of health that are important to both prosthetists and lower limb prosthetic users. The scores based on a large sample of individuals with lower limb loss can serve as normative data, aid in interpretation of individual patients' scores, and serve as a reference when these instruments are used in clinical practice and research.

CLINICAL APPLICATIONS

Population-specific outcome measures like the PEQ-MS and ABC can document important clinical outcomes like mobility and balance. These tools can be used to assess patients' perspectives on their care and facilitate improved treatment and outcomes.

REFERENCES

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