The Presence of Comorbidities Does Not Preclude Regular Mobility for Patients with Lower-Limb Amputation

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INTRODUCTION

The rise in prevalence of lower-limb amputation (Ziegler-Graham, 2008) increases pressures for improved prosthetic resource allocation to assure access to proper technologies and care for appropriately indicated patients. The characterization of patients with lower-limb amputation and their function with a lower-limb prosthesis is critical to improved resource allocation. The purpose of this retrospective database review of lower-limb prosthesis users was to: (1) determine whether a patient's overall health, noted by the presence of multiple comorbidities, can inform the lower-limb prosthesis user's mobility, and (2) determine the impact of certain major comorbidities on mobility for the lower-limb prosthesis user.

METHOD

Subjects: 596 participants were included for analysis (m: 448; age: 57.8±14.4 years; height: 175.5±11.2 cm; mass: 92.5±24.0 kg; cause of amputation: vascular disease/diabetes/infection: 332; injury: 138; cancer: 24; congenital: 23; other: 33; unknown: 46; amputation level: BK: 393; AK: 141; bilateral: 62)

Apparatus: Prosthetic Limb Users Survey of Mobility (PLUS-M) (Hafner, 2017) for mobility and Functional Comorbidities Index (FCI; Groll, 2005).

Procedures: Retrospective database review of outcomes collected within multiple prosthetic clinics. Data Analysis: Cohorts grouped by FCI and by presence of specific comorbidities. Significant differences for PLUS-M T-scores (i.e., mobility) tested between groups through one-way ANOVA with Tukey post-hoc tests (α =0.05).

RESULTS

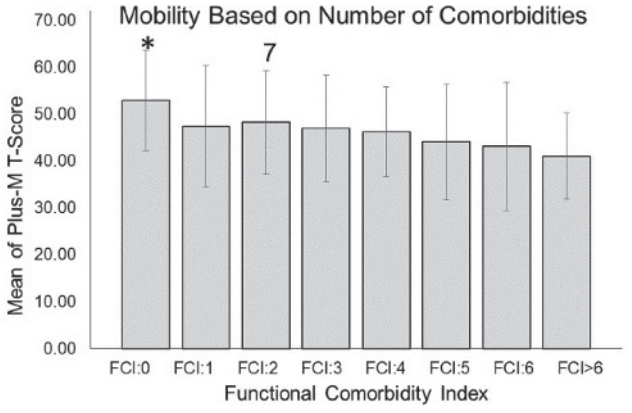

Figure 1. There were no differences between any groups that had comorbidities, with exception of FCI:2 and FCI>6. All groups were lower than FCI:0 but were within one standard deviation of FCI:0. *Sig. versus all other groups; 7Sig. versus FCI>6.

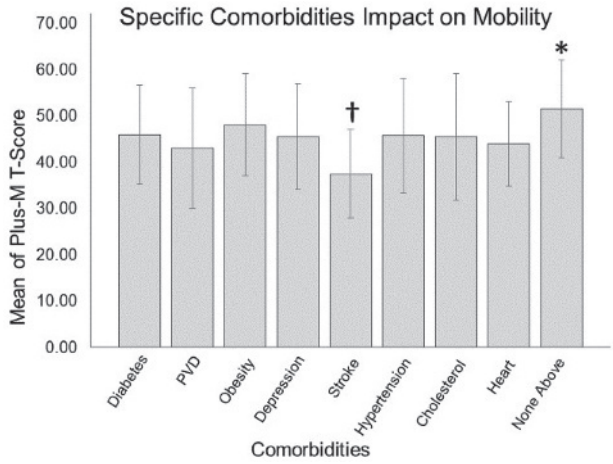

Figure 2. The presence of certain comorbidities reduced mobility, yet all groups except stroke were within one standard deviation of the "none" group. *Sig. increased mobility versus diabetes, PVD, depression, stroke, hypertension, hypercholesterolemia, and heart issues. †Sig. reduced mobility compared to all other groups.

While the presence of comorbidities reduced mobility, all groups within the FCI analysis still had a mean PLUS-M T-score greater than 40, indicating they were still within one standard deviation of the group without any comorbidities (Figure 1). For specific comorbidities, despite preconceived notions about limited mobility following certain comorbidities, only stroke patients reported mobility that fell less than one standard deviation from the "none" group (Figure 2) consistent with previous literature (Herbert, 2012). However, of the 28 individuals with stroke history, only three (10.7 percent) scored a 21.8, indicating "unable to do" on any of the 12 items of the PLUS-M 12-item.

DISCUSSION AND CONCLUSION

Although the presence of comorbidities results in reduced mobility compared to individuals without any of the noted comorbidities, whether examined holistically (i.e., FCI) or via specific comorbidities, individuals with comorbid health conditions still report high mobility.

CLINICAL APPLICATIONS

The presence of comorbidities in any fashion should not be utilized as a determinant of access to prosthetic rehabilitation.

REFERENCES

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