



PROSTHETIC FOOT SELECTION FOR PEOPLE WITH LOWER LIMB AMPUTATION: A QUALITATIVE STUDY OF PATIENT PERCEPTIONS

CLiMB
Center for Limb Loss and Mobility

Elizabeth G. Halsne, CPO, PhD^{1,2}, Talia R. Ruxin¹, Heather A. Feldner, PT, PhD²,
Sara J. Morgan³⁻⁴, Brian J. Hafner, PhD², David C. Morgenroth, MD^{1,2}

W
UNIVERSITY of WASHINGTON

¹VA RR&D Center for Limb Loss and Mobility (CLiMB), VA Puget Sound Health Care System, Seattle, WA, ²Dept. of Rehabilitation Medicine, University of Washington, Seattle, WA,
³Gillette Children's Specialty Healthcare, St. Paul, MN, ⁴Dept. of Rehabilitation Medicine, University of Minnesota

INTRODUCTION

The process for selecting a prosthetic foot relies on clinicians to decide which foot will best match an individual's functional goals (Stevens, 2018). However, persons with lower limb amputation (LLA) rarely have the opportunity to provide experiential input to the foot prescription process.

A proposed "test-drive" approach to foot selection, in which prosthesis users trial multiple feet and contribute their experiential preferences to foot selection, could enhance foot selection.

The extent to which people with LLA may benefit from trialing prosthetic feet as part of a foot selection process remains unknown.

PURPOSE

To develop an understanding of prosthesis users' experience trialing (or "test-driving") multiple prosthetic feet compared to their experiences receiving a foot as part of routine care.

STUDY DESIGN

- Qualitative, grounded theory study (Corbin & Strauss, 2015, Charmaz, 2014) (Fig. 1)

PARTICIPANTS

- Twelve participants with unilateral LLA completed the interviews after "test-driving" prosthetic feet
- Ages ranged from 38-74 years
- Time since amputation ranged from 1-17 years
- Most participants had an amputation due to either trauma (n=6) or dysvascular disease (n=5)



Figure 1: Schematic of qualitative study design and iterative recruitment and thematic analysis.

METHODS

APPARATUS

- Participants were recruited from a pool of prosthesis users who trialed three types of prosthetic feet both in a laboratory and during two-week trial periods in the community
- Order of feet was randomized and participants were blinded to the types of commercial feet

PROCEDURES

- Individual, semi-structured interviews were conducted using an interview guide (Table 1)
- Purposive (i.e., maximum variation) and theoretical sampling were used iteratively to recruit a diverse sample
- Interview audio recordings were transcribed verbatim

Table 1: Example prompts from semi-structured interview guide

Semi-structured interview prompts

"Walk me through how your most recent prosthetic foot was chosen."

"Tell me what it was like to try out, or "test-drive", different types of feet in the study."

"Describe how clinicians (e.g., a doctor or prosthetist) should be involved in deciding which foot a person wears."

ANALYSIS

- Transcripts were analyzed using qualitative analysis software (i.e., Atlas.ti) to identify and code findings
- Open and focused coding were conducted independently by two coders
- Constant comparison, deductive and inductive reasoning, triangulation of results across multiple sources, and member-checking were used throughout analysis

RESULTS

Within the core category of the relationship between access to knowledge about prosthetic feet and decision-making power, five themes were identified (Fig. 2):

- Foot prescription is an educational journey where decision-making dynamics change over time
- Relationships with clinicians are a key element of the foot selection process
- Individual preferences, such as one's desire to be involved in foot selection, influenced the foot selection process
- Matching a prosthetic foot to each individual's priorities and activities is essential
- Trialing feet can accelerate prosthesis users' education and facilitate discussion with their health care team

DISCUSSION

Gaining knowledge about prosthetic feet, whether through experience over time, discussions with clinicians, or trialing feet, empowered prosthesis users to become actively involved in decision-making with their clinicians. Notably, participants described trialing feet as a means of accelerating their ability to understand differences between feet, to compare foot features, and to determine their relative preferences.

SIGNIFICANCE

These findings suggest a collaborative approach to prosthetic foot selection that incorporates prosthesis user preference in decision-making may improve patients' foot prescription experiences and accelerate knowledge acquisition. Providing prosthesis users with an opportunity to trial multiple feet may facilitate discussions about prescription options with their health care team.

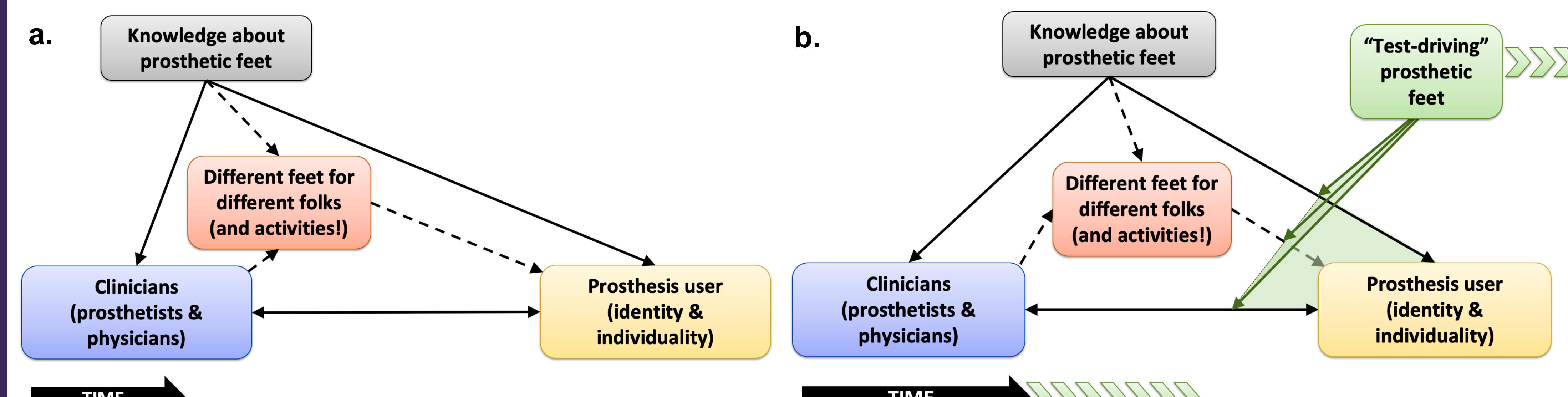


Figure 2: a) Theoretical framework for the relationship between knowledge about feet and decision-making power, and b) the effect of "test-driving" multiple feet as part of foot selection, shown in green.

REFERENCES

- Stevens, P.M., et al. JPO 30(4), 175-180, 2018.
- Corbin, J., Strauss, A. Sage Publications, 2015
- Charmaz, K. Sage Publications, 2014.

ACKNOWLEDGEMENTS

This research was supported through Department of Defense OPORP award number W81XWH-16-1-0569.