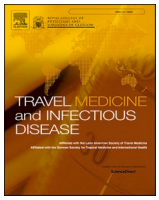
Travel Medicine and Infectious Disease 62 (2024) 102770

Contents lists available at ScienceDirect

Travel Medicine and Infectious Disease

journal homepage: www.elsevier.com/locate/tmaid



Travellers with prosthetic limbs: A neglected population

ARTICLE INFO

Keywords:
Travel health
Amputee
Disability
Body image
Travel barriers

Dear Editor,

Recent news reports of the first multiple amputee climbing Mt Everest [1], or the story of travelling as a double amputee Paralympian [2], highlight the breadth of the specialty travel health/medicine and remind us that pre-travel care is more than infection avoidance. To this end, some effort has been made to provide travel advice for people with disability and other special groups. Yet, travel medicine has, so far, neglected travellers with prosthetic limbs and their unique challenges and requirements [3].

The Global Burden of Disease Study 2019 estimated a worldwide prevalence of 176 million amputees [4]; by 2025, limb loss in the US alone is estimated at 3.6 million [5]. Limb loss can be congenital, or caused by trauma, peripheral vascular disease, infections, malignancy, or malformation. Acquired upper-limb loss is more shattering to a person than lower-limb loss due to the innumerable essential functions of fingers, hands, and arms. It is, yet, unknown how many amputees visit a travel clinic, or even if a clinician realises necessarily that a traveller has a limb loss, if a prosthesis is well covered by clothing, because of supreme movement adaptation, or in virtual appointments. Due to a lack of suitable travel advice, there may be an 'invisible' population of prosthesis users who avoid travel either partially or entirely. These people are unlikely included as a source of information on the desires and needs of amputees wishing to travel.

Prostheses replace a missing or lost body part. Their cosmesis and functionality depend on their level of sophistication regarding appearance, attachment, material, and power source. While today's prostheses have little in common with artificial limbs created throughout history, the functional, psychological, economic, and social impact of having an 'incomplete' body is still considerable and influences people's participation in social activities, including travel.

Psychologically, body image alteration [6], 'disfigurement', and changed movement lead to concerns about social acceptance and potential withdrawal and isolation [7]. Physically, the fitting of a prosthesis requires a lengthy, painful, and frustrating rehabilitation process, considering the changes to residual limb shape and volume over time, pressure sores, friction burns, and other skin problems, as well as changing biomechanics and potential over-use injuries and falls.

Building on the positive effects of travel on people's well-being, including those with disabilities, the many barriers amputees face should be addressed and travel encouraged. Whilst a prosthetist will address (bio)mechanical issues with an artificial limb, travel health professionals should not only be aware of the many practical challenges travelling amputees face, from walking on uneven ground, dealing with heat or cold, carrying luggage, personal hygiene, or even holding passport, boarding passes and carry-on bag in case of upper-limb amputation; they should be able to incorporate this awareness in their uniquely tailored travel health advice. Besides tourism, this need also holds for prosthesis users travelling domestically or internationally to access routine health care and medical tourism, or to pursue higher education or employment.

Travel health professionals should also be cognisant of the extraordinary thought and detail that must go into trip preparation, packing, travelling by plane (as the most often used transport) and navigating potentially humiliating airport security, with specifics available elsewhere [3]. Issues such as affordability, accessibility, or awareness, coupled with various cultural differences and stigma surrounding disability, however, make travel advice for prosthetic users in the developing world a subject in itself.

There will be travellers who still pursue previous activities after amputations and resume their adventure or sports travel with terminal functional attachments (e.g., activity-specific devices for running or climbing) or start challenging pastimes in an effort to overcome their 'disability' and adapt to their new abilities. Others, who need more time to cope with their altered circumstances and consider a tentative resumption of their pre-amputation lifestyle, may need much encouragement and support beyond technical issues with their prosthesis. They should not have to rely on trial-and-error, potentially ruining their trip.

Even though there may be few amputees among those consulting a travel clinic for the typical pre-travel care, clinicians should be aware and assess if any travel health advice needs modifying. Travelling with prosthetic limbs should be included in travel medicine courses and, since this is a woefully neglected area, innumerable research questions are to be raised [3], so that evidence-based guidelines may serve a group of travellers that has so far remained under the radar.

https://doi.org/10.1016/j.tmaid.2024.102770
Received 25 June 2024; Accepted 2 October 2024
Available online 3 October 2024

CRediT authorship contribution statement

Irmgard L. Bauer: Conceptualization, Writing – original draft, Writing – review & editing. **Vikranth H. Nagaraja:** Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] Atwal S. Man with three fingers and no feet is first multiple amputee to climb Everest. 2024. https://www.guinnessworldrecords.com/news/2024/2/man-with-three-fingers-and-no-feet-is-first-multiple-amputee-to-climb-everest-764262. accessed 28.3.24.
[2] Woodhall H, Chang R. I'm a double amputee Paralympian with prosthetic legs — here's what it's like to travel the world. https://www.travelandleisure.com/hunter-woodhall-traveling-as-a-double-amputee-paralympian-8557676; 6.2.2024. accessed 28.3.24.
[3] Bauer I, Nagaraja VH. Travellers with prosthetic limbs, a neglected population. A perspective on what travel health practitioners need to know. Trop Dis Travel Med Vaccines 2024;10(14). https://doi.org/10.1186/s40794-024-00226-z.
[4] Cieza A, Causey K, Kamenov K, et al. Global estimates of the need for rehabilitation based on the global burden of disease Study 2019: a systematic analysis for the global burden of disease Study 2019. Lancet 2021;396:2006–17. https://doi.org/10.1016/S0140-6736(20)32340-0.
[5] Ziegler-Graham K, MacKenzie E, Ephraim P. Estimating the prevalence of limb loss in the United States: 2005 to 2050. Arch Phys Med Rehabil 2008;89:422–9. 0.1016/j.apmr.2007.11.005.
[6] Rybarczyk B, Behel J. Limb loss and body image. In: Gallagher P, Desmond D, MacLachlan M, editors. Psychoprosthesis. London: Springer; 2008. p. 23–31. https://doi.org/10.1007/978-1-84628-980-4_3.
[7] Ostler C, Donovan-Hall M, Dickinson A, Metcalf C. Exploring meaningful outcome domains of recovery following lower limb amputation and prosthetic rehabilitation: the patient's perspective. Disabil Rehabil 2022:1–14. https://doi.org/10.1080/09638288.2022.2138989.

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