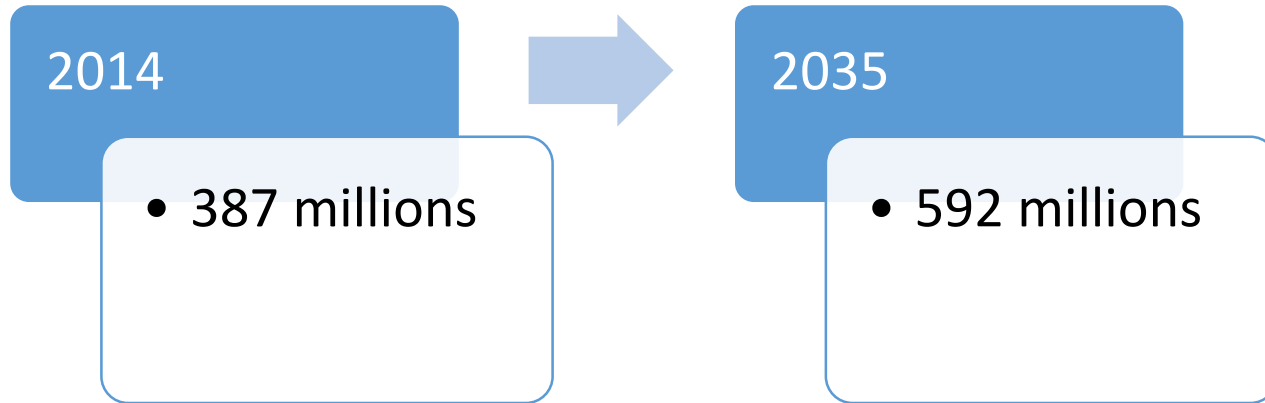


Manual Wheelchairs for People with Diabetes: Expert's Opinion on Indications for Wheelchair Adjustments

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Diabetes



(Cho et al, 2014)



Low-to middle income
countries: 77% of cases

Diabetes and mobility impairments

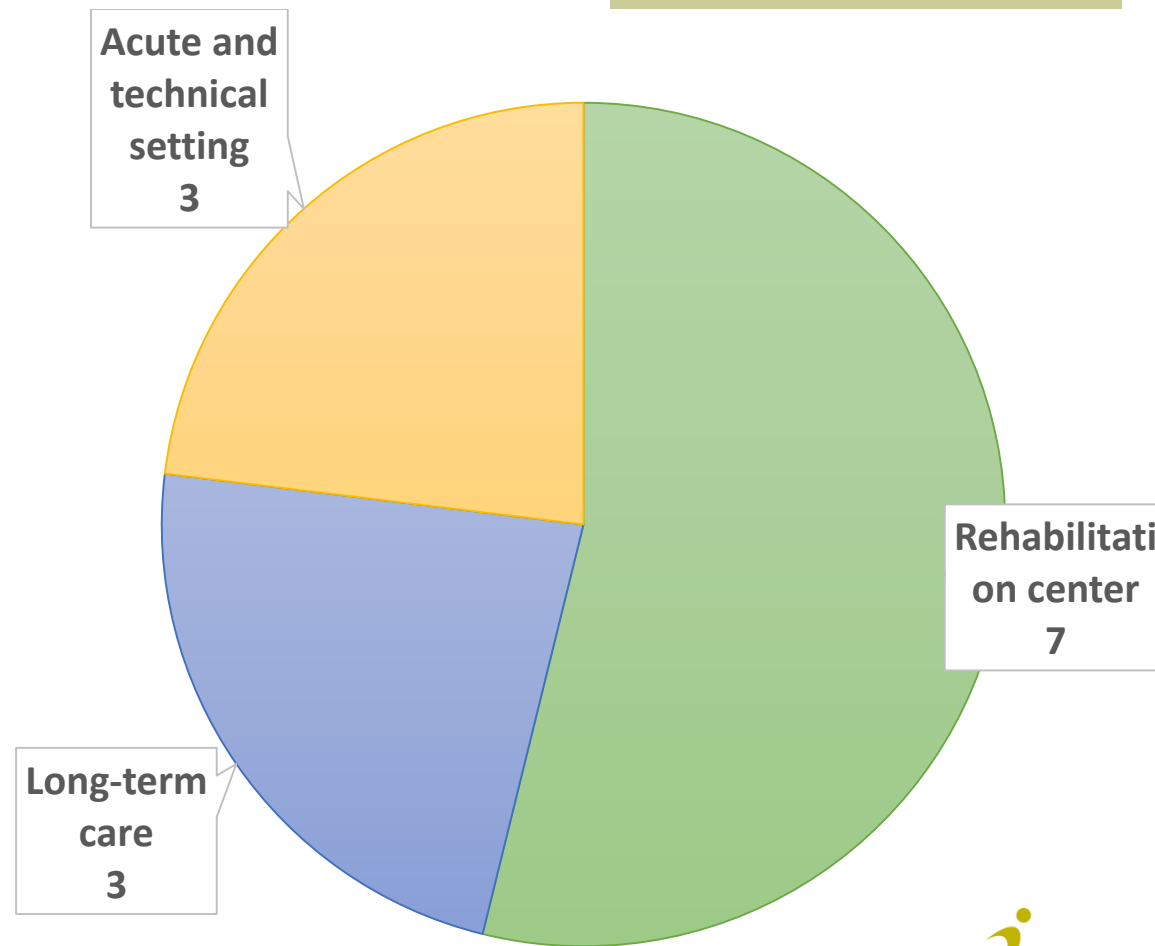
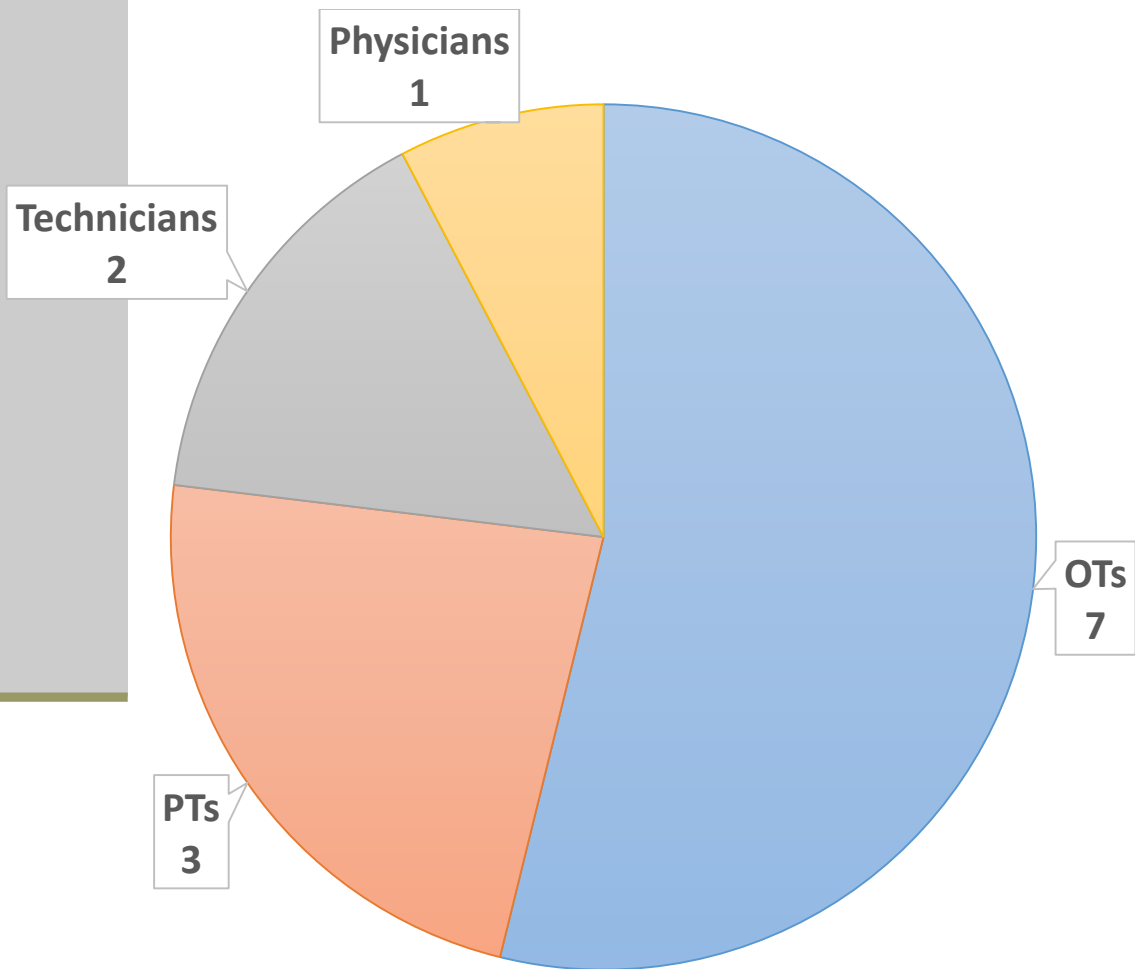
- Complications include:
 - Obesity
 - Neuropathies
 - Loss of sensation
 - Visual impairments
 - Cognitive impairments
 - Decreased blood flow, skin ulcers
- A common consequence is amputation of foot or lower extremity
- **Wheelchairs** are often recommended to people with diabetes who have mobility limitations

Need for wheelchair guidelines for people with diabetes



- Although there are general guidelines for wheelchair adjustments (e.g. WHO), none are specific to people with diabetes.
- **Objective:** describe the clinical reasoning underlying MWC adjustments for adults with diabetes through expert opinions

Participants (N = 13)



Example of wheelchair adjustments: skin integrity

- **Issues:** risks of sores, incidents during transfers and propulsion, incontinence and perspiration
- **Strategies:** interconnected air-cell or gel cushions; wide-back support avoid foam cushions

Example of wheelchair adjustments:obesity

- **Issues:** wheelchair durability, skin protection, community mobility
- **Strategies:** Lightweight wheelchair; double-X frame

Indications and contraindications

- Specific adjustments may be beneficial for some diabetes-associated conditions, but not for others
- **Example:** Wide-back support and deep seat to improve pressure distribution; but this makes transfer more difficult for someone with decreased strength

Considerations for less resourced settings

Issues	Strategies
Accessibility/environmental barriers	<ul style="list-style-type: none">• Large wheels• Airless tires to avoid puncture
Incontinence in humid climate	<ul style="list-style-type: none">• Waterproof seat cushion covers• Provision of extra cover to allow cleaning
Wheelchair robustness/durability	<ul style="list-style-type: none">• Fixed axles• Robust sling seat insert to avoid sling stretching and compression of buttocks

Conclusions

- Participants confirmed that the conditions associated with diabetes (neuropathy, obesity, etc.), are determining factors for wheelchair adjustments.
- Challenge is in simultaneous management of multiple conditions, often present in the same individual.
- In less-resourced settings, there is a need to increase the availability and affordability of wheelchairs, without compromising on durability and reliability

Thank you!

- For more information:
 - Scherrer S-A, Chu Yu Chee J, Vu N, Lu P, Ishack M, Archambault PS (2018) **Experts' opinion on manual wheelchair adjustments for adults with diabetes.** *Disability and Rehabilitation: Assistive Technology* 13:78-86 doi: 10.1080/17483107.2017.1283543