TITLE: Wearable Motorized and Robotic Walking Assistive Devices for Patients with Compromised Mobility: Clinical and Cost-Effectiveness

DATE: 13 July 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of motorized or robotic wearable walking assistive devices for adults with compromised mobility?

2. What is the cost-effectiveness of motorized or robotic wearable walking assistive devices for adults with compromised mobility?

KEY FINDINGS

Three non-randomized studies regarding the clinical effectiveness of motorized or robotic wearable walking assistive devices for adults with compromised mobility were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and July 6, 2015. Internet links were provided, where available.

SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.
Table 1: Selection Criteria

| Population | Adults with limited or compromised mobility resulting from injury, degenerative diseases, aging, or medical conditions including knee or hip osteoarthritis, multiple sclerosis or Parkinson’s disease; excluding paraplegics and individuals with complete lower limb impairment |
| Intervention | Wearable motorized or robotic walking assistive devices (e.g., Keeogo, ReWalk, Kickstart, Honda Stride Management Assist) |
| Comparator | • Alternate wearable motorized or robotic walking assistive devices; • Manual walking assistive devices; • No comparator |
| Outcomes | Q1: Clinical effectiveness outcomes including walking and stair climbing ability/speed, mobility, independence, quality of life; Harms Q2: Cost-effectiveness outcomes |
| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations |

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and economic evaluations.

Three non-randomized studies regarding the clinical effectiveness of motorized or robotic wearable walking assistive devices for adults with compromised mobility were identified. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Economic Evaluations
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies - Paralyzed Subjects


Review Articles


Additional References


PubMed: PM24187310