

The Impact of Physical Environment on Mobility and Participation Among People with Disabilities: A Literature Review and Proposed Conceptual Framework

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CONTEXT

- This poster presents a systematic literature review on the impact of neighbourhood physical environment on mobility and social participation among people using assistive devices.
- This review was conducted as a part of a multiphasic SSHRC-community partnership Canadian Disability Participation project.

METHODOLOGY

- Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocol (PRISMA).
- Articles published in English and French from 1996 to 2016.
- Nine databases:** Academic Search Premier, AgeLine, CINAHL, Humanities & Social Sciences, Medline, Social Sciences, Sport Discuss, Geo Ref and Web of Science.
- Inclusion:** Participants are aged 18 and over and are using an assistive device (manual wheelchair, powered wheelchair, walker, cane, crutches or scooter).
- Exclusion:** Participants with hearing/visual/mental/intellectual impairment.

DEFINITIONS

MOBILITY

Physical movement from one point to another through different means: walking with or without assistive devices, automobiles, or public transportation to fulfill daily needs and activities. ⁽¹⁾

PARTICIPATION

Performing various forms of daily activities such as grocery shopping, meeting with friends, leisure, physical activities, employment, volunteering and civic engagement. ⁽²⁾

NEIGHBOURHOOD PHYSICAL ENVIRONMENT

Built and natural environment external to an individual's home. ⁽³⁾

RESULTS

- Final review Included twenty nine (29) articles published between 2002 and 2015

Table 1: Topic of Article

Topic	# of Articles
Mobility	12
Participation	7
Mobility and Participation	10

Table 2: Device Used

Assistive Design Used	# of Articles
Manual/Power Wheelchair	15
Scooter	1
Multiple Devices	13

Table 3: Method of Study

Research Design	# of Articles
Quantitative	13
Qualitative	7
Mixed-Methods	6

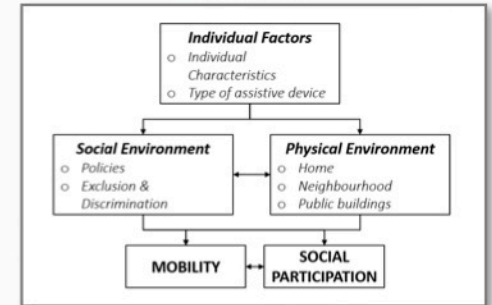
NEIGHBOURHOOD DESIGN FEATURES	MOBILITY ON THE WAY	HOME & PUBLIC BUILDINGS
 <p>PARTICIPATION ⁽⁴⁾</p> <ul style="list-style-type: none"> Neighbourhood safety = 4 Open spaces = 1 Home near family/friends = 1 Mixed-land use & density *** 	 <p>PARTICIPATION ⁽⁶⁾</p> <ul style="list-style-type: none"> Public transportation system = 4 Sidewalks and pavement = 1 	 <p>PARTICIPATION ⁽⁸⁾</p> <ul style="list-style-type: none"> Accessibility at destination = 10 Stairs, doorsteps, heavy doors, lack of ramps = 7 Accessibility of users' home = 5 Narrow/cluttered aisles, inaccessible shelves, checkout = 2 Accessible washroom & elevator = 2
 <p>MOBILITY ⁽⁵⁾</p> <ul style="list-style-type: none"> Street connectivity = 1 Walkability = 1 	 <p>MOBILITY ⁽⁷⁾</p> <ul style="list-style-type: none"> Weather conditions = 11 Sidewalks and pavement = 11 Public transportation system = 9 Traffic = 7 Curb cuts = 6 Accessible parking = 4 	 <p>MOBILITY ⁽⁹⁾</p> <ul style="list-style-type: none"> Stairs, doorsteps, heavy doors, lack of ramps = 8 Accessible washroom & elevator = 4 Narrow/cluttered aisles, inaccessible shelves, checkout = 6

*** 3 studies showed associations and 4 studies showed no associations

DISCUSSION

- Mobility and participation are complex phenomenon and interrelated concepts.
- There is a need for a unified operationalization of both concepts.
- Multiple factors of the neighbourhood physical environment influence mobility and participation among people using assistive devices.
- More research is needed to better understand the relationship between neighbourhood design and mobility and participation among this population.

Figure 1: Preliminary Conceptual Framework on the impact of Physical Environment on Mobility and Participation among People with Disabilities



FUTURE RESEARCH

Future research should:

- Look at the link between mobility and participation in users of different types of assistive devices.
- Examine the potential mediating role of mobility and participation on the link between physical environment and health of people using assistive devices.
- Adopt mixed or multi-methods to have a comprehensive and in-depth understanding of the related issues.
- Develop intervention research to generate findings that can effectively inform policies influencing planning and design of responsive neighbourhood environment.