

Associations between the neighbourhood environment characteristics and physical activity in older adults with specific types of chronic conditions: the ALECS cross-sectional study



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BACKGROUND

- Neighbourhood characteristics may influence physical activity (PA), which has positive effects on the health of older adults.
- Older adults with chronic conditions are less active and possibly more affected by environmental factors than their peers.
- Understanding neighbourhood characteristics associated with PA specific to older adults with chronic conditions is currently lacking.
- This cross-sectional study aimed to assess the associations between the neighbourhood environment and various forms of PA in older adults with and without visual impairment, hearing impairment, musculoskeletal disease and/or genitourinary disease.

METHODS



909 Hong Kong older adults

mean (SD) age, 76 (6) years; gender, 34 % male

- 124 preselected neighbourhoods stratified for walkability and socioeconomic status.
- Statistical models were used to examine associations of perceived neighbourhood environment characteristics, and the moderating effects of having specific chronic conditions, with PA outcomes.

RESULTS

Thirteen perceived neighbourhood characteristics were associated with older adults' PA in the expected direction irrespective of their health condition. Nine neighbourhood characteristics had associations with PA that were dependent on hearing impairment, vision impairment, musculoskeletal disease or genitourinary disease. In general, associations between environmental characteristics and PA were stronger in participants with than without a specific chronic condition.

Moderating effects of diagnosed chronic conditions on associations between perceived neighbourhood characteristics and physical activity outcomes

Chronic conditions	Perceived neighbourhood attributes (PCN)	Physical activity outcome (PAO) minutes/week	Associations between PNC and PAO	
			Without chronic condition	With chronic condition
 Vision impairment	Land use mix – access to services	Non-walking PA [#]	0.943 [0]	1.189* [+]
	Physical barriers to walking	Non-walking PA [#]	0.978 [0]	0.750*** [-]
	Aesthetics	Within-neighbourhood walking for transport	1.248*** [+]	1.003 [0]
 Hearing impairment	Land use mix – diversity	Non-walking PA [#]	0.943 [0]	1.189* [+]
	Land use mix – access to services	Non-walking PA [#]	1.315*** [+]	1.794*** [+]
	Pedestrian infrastructure	Non-walking PA [#]	1.129 [0]	1.810*** [+]
	Crime	Non-walking PA [#]	1.163 [0]	0.866* [-]
	Traffic & road hazards	Non-walking PA [#]	1.164 [0]	0.715* [-]
 Musculoskeletal disease	Land use mix – diversity	Non-walking PA [#]	0.999 [0]	1.398** [+]
	Proximity to recreational facilities	Non-walking PA [#]	0.903 [0]	1.655*** [+]
	Easy access of residential entrance	Within-neighbourhood walking for transport	0.911 [0]	1.392* [+]
 Genitourinary disease	Land use mix – access to services	Within neighbourhood walking for recreation	1.233** [+]	2.115*** [+]
	Pedestrian infrastructure	Within-neighbourhood walking for transport	1.169 [0]	1.807*** [+]
	Traffic & road hazards	Within-neighbourhood walking for transport	0.952 [0]	0.501*** [-]

Notes: All models are adjusted for socio-demographics, type of recruitment center, specific diagnosed chronic condition type (visual impairment, hearing impairment, genitourinary diseases, and musculoskeletal diseases), number of other medical conditions, and other significant perceived neighbourhood characteristics and environment by chronic condition interaction effects. PA, physical activity; -, negative effect; 0, no effect; +, positive effect; * p < .05; ** p < .01; *** p < .001; # only in those who participate

CONCLUSIONS

There are specific neighbourhood characteristics associated with PA in older adults with hearing impairment, vision impairment, musculoskeletal disease and genitourinary disease. The findings are important for ensuring good urban design for ageing populations with chronic conditions who are likely to find their neighbourhood environment more challenging than their peers.



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