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TRANSPORT FINDINGS

Linking Neighborhood Walkability to the Independence and Quality of Life of Older Adults across Canada

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Keywords: older adults, walkability, Canada, quality of life, Walk Score

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Findings

In car dependent societies, driving cessation may reduce older adults' independence and quality of life. One way to maintain independence for older adults after quitting driving is to encourage walking to local destinations. This paper explores how neighborhood walkability impacts older adults' ability to maintain their lifestyles as they age. Based on data collected from the 2023 Aging in Place survey (N=3,551), we analyze the relationship between survey respondents' perceptions of transport in their neighborhood and its Walk Score across 6 Canadian regions. We explore the association between neighborhood walkability and respondents' perception of their independence, quality of life, and likelihood of needing to move in the future. We find that those living in walkable neighborhoods believe that they will maintain their lifestyle when they stop driving compared to those who live in less walkable areas. The results indicate that neighborhood walkability is a key element in enabling older adults to keep their independence and sustain their lifestyle.

1. Questions

As people get older, they can lose mobility due to age-related challenges and life events (Shrestha et al. 2016). In North America, older adults disproportionately use cars for their daily travel, but may need to eventually stop driving (Newbold et al. 2005). They must at that point turn to alternative modes of transport, including public transit and walking. The availability of these modes helps determine whether older adults who have stopped driving can continue to access their desired destinations and maintain their independence (Choi and DiNitto 2015). Local accessibility – sometimes referred to as walkability – is the ease of reaching nearby destinations from a particular area on foot (Handy 1992). A positive association has been shown to exist between a neighborhood's local accessibility and the use of active transport (Elldér, Haugen, and Vilhelmson 2020).

This study investigates the relationship between neighborhood walkability and older adults' independence and quality of life in six metropolitan regions across Canada: Toronto, Montréal, Vancouver, Halifax, Victoria, and Saskatoon. The study is based on the Aging in Place survey, which polled more than 3,500 older adults about their travel behavior, transport needs, socioeconomic characteristics, and residential location (Alousi-Jones et al. 2023) between February and March 2023. We analyzed the relationship between respondents' home location Walk Score (a measure of local accessibility) and their independence, quality of life, and likelihood of needing to move from their current residence. Our results can help transport planners and policymakers better understand the impacts of local accessibility on older adults.

2. Methods

The 2023 Aging in Place Survey is a comprehensive online bilingual survey that examines the travel experiences and perceptions of older adults (aged 65 and over) of their neighborhood in 6 Canadian cities. Several methods were used to recruit respondents and reduce some of the biases associated with online surveys, including social media advertising, mailing lists, radio interviews, distribution of flyers at community centers, senior centers and residences, and recruitment via a firm specialized in public opinion and surveys, Léger. Participants who faced challenges in filling the survey online were offered the option to call a phone number where one of the investigators helped in filling the survey. The final sample after cleaning and validation totaled 3,551 complete responses. Respondents were asked to state their agreement with various statements related to mobility and quality of life. These statements included “Daily travel improves my quality of life” and “I could maintain my lifestyle if I were to stop driving”. Responses were on a five-point scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree). For the purposes of simplicity, this paper has grouped Strongly Disagree and Disagree into “Disagree” and grouped Strongly Agree and Agree into “Agree”.

Respondents provided their home location, which was used to collect the Walk Score of their residential neighborhood. Walk Score is a publicly available measure of neighborhood walkability that is calculated based on the neighborhood’s proximity to businesses and amenities (Walk Score 2011). Studies have validated it as a strong indicator of local accessibility (Hall and Ram 2018). Walk Score is scaled linearly from 0-100, and split into 5 sub-groups: 0 to 24 “car-dependent” (almost all errands require a car), 25–49 “car-dependent” (most errands require a car), 50–69 “somewhat walkable” (some errands can be accomplished on foot), 70–89 “very walkable” (most errands can be accomplished on foot), to 90–100 “walker’s paradise” (daily errands do not require a car) (Walk Score n.d.). These categories were chosen because they are used by Walk Score in its own publications and were deemed applicable for our purposes. High Walk Score areas have more goods and services nearby, such as grocery stores, coffee shops, and parks. They have built environments that are more conducive to walking, including shorter blocks and more frequent intersections. These factors increase the likelihood that residents will walk in two ways. Residents are more likely to conduct errands via walking if they can do so while only walking 5-10 minutes. Second, pedestrian-friendly built environments make walking feel more pleasurable, including by increasing walkers’ perceptions of safety. To retrieve the Walk Score data, we used an API to pull the Walk Score value for home location of each survey respondent. Walk Score’s API allows users to pull up to 5,000 locations per day for free, which was sufficient for our purposes.

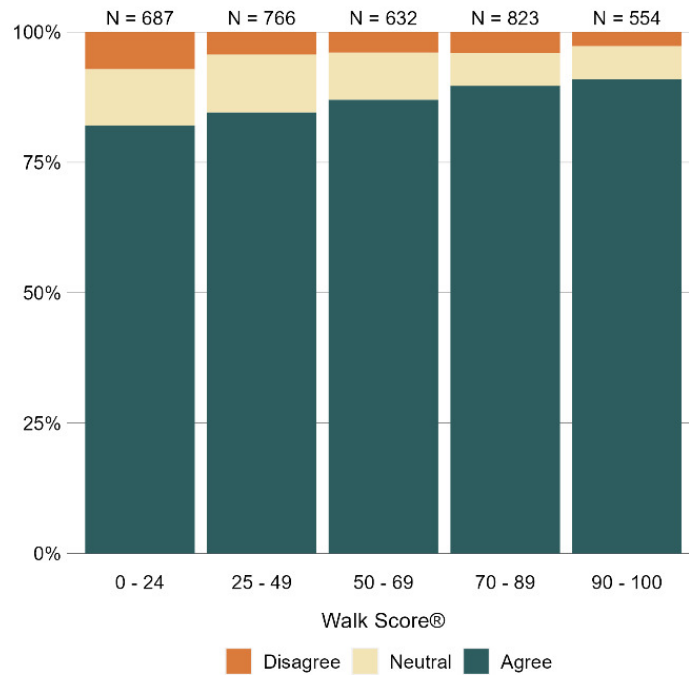


Figure 1. Agreement with ‘Daily travel contributes positively to my life’

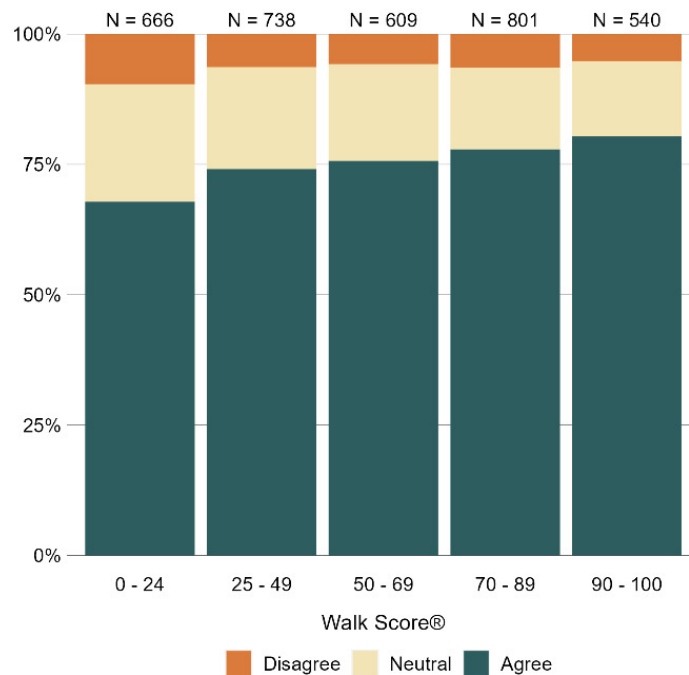


Figure 2. Agreement with ‘I enjoy conducting my daily activities independently’

3. Findings

We first explored the relationship between Walk Score and respondents’ perception of daily travel. Those living in “walker’s paradises” were more likely to indicate that daily travel contributed positively to their daily life than those in the least walkable areas (80% compared to 68%) – see [Figure 1](#). As [Figure 2](#) shows, they were also more likely to enjoy conducting daily activities independently (91% to 82%).

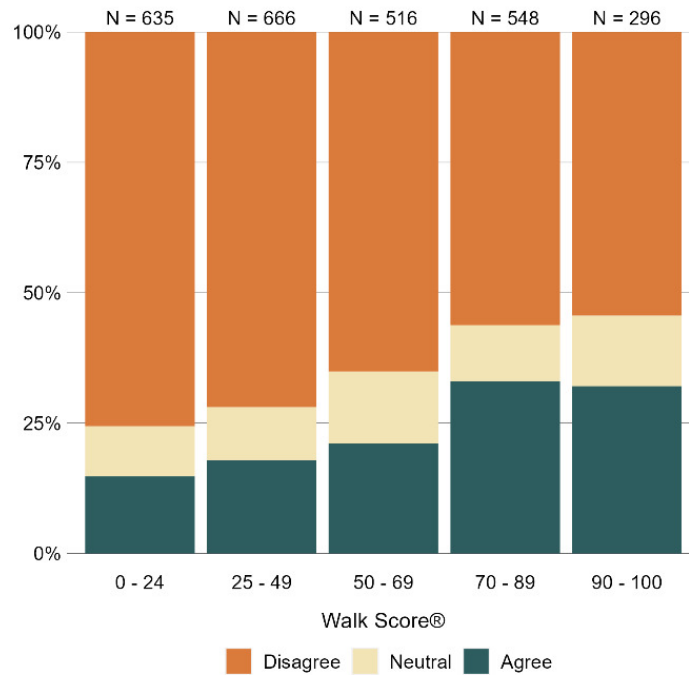


Figure 3. Agreement with 'I could maintain my lifestyle if I were to stop driving'

Respondents in more walkable areas indicated they were more able to comfortably walk to local destinations than those in unwalkable areas. Both respondents who continued to drive and those who had stopped driving identified a link between driving cessation, walkability, and quality of life. Drivers in the most walkable areas were more confident that they could maintain their lifestyle if they were to quit driving compared to those in the least walkable areas (32% vs. 15%) (Figure 3). The results diverged the most among those who have quit driving. While sample sizes were small, we found that 71% (n = 73) of residents in the most walkable neighborhoods were able to maintain their quality of life, compared to only 33% (n = 21) of residents in the least walkable areas (Figure 4). Beyond the link between walkability and quality of life, it is notable that there is a material gap between older adults' perception of how their quality of life would change if they were to stop driving (Figure 3) and the actual experiences of those who have quit driving (Figure 4). These two groups were similar in age, ethnicity, and immigration status. Those who had stopped driving were less educated (45% had a university degree, compared to 57% of those still driving), and far more likely to have a mobility-limiting disability (49% compared to 27%). These questions asked respondents to predict or assess how their quality of life would or has changed relative to their own baseline. As such, we believe this difference is caused by a perception gap, driven by a systematic underestimation of how walking and transit can help satisfy one's transportation needs.

The results suggest that beyond simply impacting quality of life, walkability can lead older adults to considering moving neighborhoods. Those in the least walkable areas were more likely to believe that they would need to move out

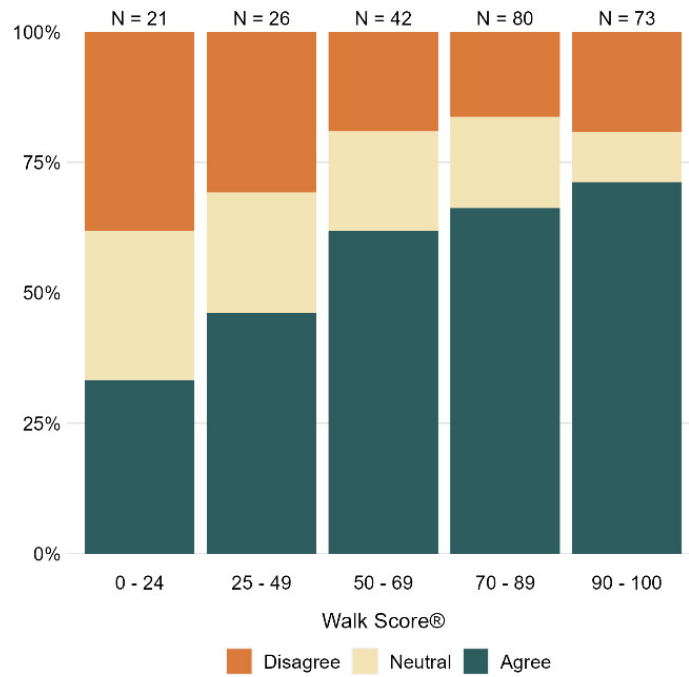


Figure 4. Agreement with ‘Since I stopped driving, I have maintained my quality of life’

Table 1.

Question		Neighbourhood Walk Score				
		0-24	25-49	50-69	70-89	90-100
Daily travel improves my quality of life	% in agreement	68%	74%	76%	78%	80%
	n	666	738	609	801	540
I can conduct my daily activities independently	% in agreement	82%	85%	87%	90%	91%
	n	687	766	632	823	554
I can comfortably walk to destinations	% in agreement	42%	54%	64%	79%	80%
	n	714	784	652	850	564
I could maintain my lifestyle if I were to stop driving	% in agreement	15%	18%	21%	33%	32%
	n	635	666	516	548	296
Since I stopped driving, I have maintained my quality of life	% in agreement	33%	46%	62%	66%	71%
	n	21	26	42	80	73
I will need to leave my neighbourhood after I stop driving	% in agreement	51%	48%	38%	33%	31%
	n	585	637	523	722	463

of their neighborhood after they stop driving than those in walker’s paradises (51% to 31%). [Table 1](#) shows agreement levels by Walk Score category for each of these questions. Regional differences were investigated but no between-region disparities were observed.

These results imply that neighborhood walkability is vital for older adults' independence and quality of life as they age and give up driving. Two policy recommendations can be derived from this research. First, new housing developments that cater to older adults should be carefully located in areas with higher local accessibility. Second, areas with higher concentrations of older adults are good candidates for land use zoning changes that aim to increase walkability. These changes include permitting more diverse land uses to increase the number of nearby destinations and interventions that make built environments more friendly to pedestrians.

Limitations of this study should be noted. Surveys may be impeded by non-response bias, where certain survey participants are unwilling to respond to specific survey questions. This may lead to certain populations being over-represented in the sample (Andrade 2020). To reduce such bias in-depth interviews or analysis of open-ended questions could clarify if such bias exists in the current sample and complement the information collected to provide a more nuanced understanding of the link between walkability and quality of life among older adults. The use of an online survey tool can be challenging for some older adults. To address this challenge the survey was pilot tested with a small group and validated for language simplicity by a group of older adults. In addition, a phone number was included in all the advertising materials as well as an email address to contact in case the respondent faced any challenges in filling the survey to receive help from one of the investigators.

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