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Kino-Québec, Aménageons nos milieux de vie pour nous donner le goût de bouger. WEB site : www.kino-quebec.qc.ca/municipal.asp

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LÉA·ROBACK CENTRE DE RECHERCHE

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Potential of Residential Neighbourhoods for Promoting an Active Lifestyle: Selected Results from the MARCHE Project

Highlights of the Research Project

Physical inactivity is an important public health issue. The costs associated with diseases related to an inactive lifestyle are high and a large proportion of the population is not sufficiently active to reap health benefits. According to public health authorities, people should accumulate at least 30 minutes of moderate intensity physical activity on most if not all days of the week to accrue health benefits. Data show that populations facing social and economic deprivation are more inactive.

To develop effective population-based interventions, it is essential to better understand the individual and environmental determinants of regular involvement in physical activity. In this regard, there are significant gaps in the knowledge base regarding the association between residential environments and levels of physical activity in general and walking in particular. A better understanding of these associations would be fruitful for the development of population-based interventions. The main goal of this research project was to better understand the association between neighbourhood active-living potential and walking in a sample of urban and suburban neighbourhoods. Towards this end, we conducted a two-phase research project.

Phase 1

The first database included information gathered following a series of observations conducted in neighbourhoods located in each of the 27 boroughs of the island of Montréal. Using checklists, observers evaluated three dimensions of active-living potential in 112 neighbourhoods (defined here by the contours of census tracts), namely activity-friendliness, safety, and density of destinations.

Phase 2

The second database included information from 2923 persons aged 45 years and over and who lived in the 112 census tracts. Data were collected during telephone interviews that addressed walking habits, other lifestyle habits and socio-demographic characteristics.

The Three Dimensions Underlying Neighbourhood Active Living Potential

- **Activity-friendliness**: physical characteristics that encourage different forms of physical activities like walking, cycling, skating with roller blades, and traveling in wheelchairs
- **Safety**: physical and social characteristics that create a sense of security among people circulating in the neighbourhood;
- **Density of destinations**: physical and social characteristics associated with a significant number and variety of destinations that allow people to accomplish tasks such as purchasing consumer goods, working, participating in community using public facilities and leisure activities.

Phase 1

Methods

Following a three-day training session, 8 observers received geographical maps of 112 census tracts on which pre-determined routes had been traced. Working in pairs, observers walked along the pre-determined routes and evaluated the neighbourhood's active-livingpotential using an 18-item checklist. The 18 items assessed three dimensions of neighbourhood active-living potential, namely activity-friendliness (6 items), safety (4 items), and density of destinations (8 items). A total of 4032 observations were collected. Data from the 2001 Canadian Census were linked to neighbourhood data to better understand the relationship between active-living potential and the socio-economic conditions of populations living in these neighbourhoods.

Results

The reliability and validity of measures of active-living potential were very good. In addition, neighbourhood safety was associated with economic wealth. In neighbourhoods where density of destinations was higher, residents' level of material wealth was lower. However, neighbourhoods with a higher density of destinations also had a greater proportion of persons who reported walking as a method of transportation to get to work. Finally, in neighbourhoods with a greater density of destinations, levels of activity-friendliness and safety were lower.

Different Types of Walking and Public Health Recommendations

- **Utilitarian walking**: walking to fulfill personal goals (e.g., running errands, transportation, outings...)
- **Recreational walking**: walking specifically to maintain or improve health or for the inherent pleasure of walking.
- To meet public health recommendations regarding the minimum amount of physical activity required to accrue health benefits, a person must walk at about 5km per hour for at least 30 minutes, at least 5 days a week.

Phase 2

Methods

A sample of 2923 persons aged 45 years and older and who lived in the 112 census tracts observed during Phase 1 participated in a 20-minute telephone interview. The interview addressed utilitarian and recreational walking, other lifestyle habits, health status and personal characteristics. Interview data were linked with observations from the 112 census tracts and characteristics of the populations living in these areas.

Results

A sub-sample of 2614 people provided complete data on all variables included in this set of analyses. About 26 people were recruited in each census tract. The sample included more women than men (61.1%) and more people aged 55 years and over compared with these between 45 and 54 years. About one quarter of the sample had not completed high school. About 31.6% of respondents had completed a university degree, 71% had a valid driver's license and 21.7% were born outside Canada. About 43.5% lived with a partner and 42.9% were retired. About 18.7% had an average family income below $20 000 a year and 22.3% had an annual family income exceeding $60 000 per year. With respect to health, about 36.3% of respondents had a body mass index suggesting excess weight whereas another 15.7% had a body mass index indicative of obesity. About 17.2% perceived themselves to be in average or poor health, 16.7% indicated that their health had deteriorated in the previous year, whereas another 16.7% indicated that their health had improved over the same period.

Results show that the likelihood of walking regularly for utilitarian purposes varied significantly across neighbourhoods (estimated proportion of 17%; estimated range between 9.9% and 27.8%). However, walking regularly for recreational purposes did not vary significantly across neighbourhoods (estimated proportion of 15%; estimated range between 15% and 17%). Over and above individual level characteristics, a greater likelihood of walking regularly for utilitarian purposes was associated with living in a neighbourhood with a greater density of destinations and with a higher proportion of people who had completed a university degree. None of the neighbourhood characteristics measured here were associated with a greater likelihood of walking regularly for recreational purposes.

Summary

- In neighbourhoods where the density of destinations is greater, safety and activity-friendliness are lower
- Greater density of destinations is associated with greater probability of walking regularly for utilitarian purposes (i.e. for at least 30 minutes, 5 or more days a week)
- A greater proportion of people with a university education living in the neighbourhood is also associated with a greater probability of walking regularly for utilitarian purposes
- Recreational walking is not associated with the neighbourhood characteristics measured in this project

Limitations

- The design of this study is cross-sectional; longitudinal data would be more informative
- Data pertaining to walking should be cross-validated with other measures

Issue and Recommendation

- Issue: populations are not randomly assigned to neighbourhoods; people who choose to live in a particular neighbourhood likely do so to accommodate their preferred lifestyle;
- Recommendation: create neighbourhood environments that promote mixed land use