Gender and Transportation Access among Community-Dwelling Seniors

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RÉSUMÉ

But : La présente étude évalue la prévalence des problèmes de transport chez un échantillon de personnes âgées résidant à domicile en milieu urbain et étudie le rôle que le sexe de la personne joue dans la capacité des aînés à maintenir leur mobilité dans la communauté.

Structure et méthode : Les données recueillies dans le cadre d'une étude évaluant la prévalence et les conséquences des besoins non comblés de services communautaires d'un échantillon tiré au hasard de 839 personnes âgées de 75 ans et plus ont fait l'objet d'analyses bidimensionnelles et multivariables.

Résultats : La prévalence des problèmes de transport s'élève à 23 pour cent; 33 pour cent des femmes et 10 pour cent des hommes affirmaient avoir des problèmes de transport. Du groupe de personnes confrontées à ces problèmes, 88 pour cent étaient de sexe féminin. En plus d'être en grande majorité des femmes, les personnes ayant des problèmes de transport étaient plus âgées et en moins bonne santé, disposaient d'un revenu moindre et manifestaient une moins grande satisfaction à cet égard.

Constatations : Les problèmes de transport sont une question importante à laquelle les personnes âgées doivent faire face, surtout les femmes. Ces résultats font ressortir que le processus de vieillissement est une expérience différente pour les hommes et pour les femmes par rapport aux effets sociaux, aux besoins et à l'importance que revêt l'expérience.

ABSTRACT

Purpose: This study estimates the prevalence of problems with transportation in a sample of community-dwelling seniors residing in an urban setting and investigates the role that gender plays in the ability of seniors to remain mobile in their communities.

Design and Methods: Data collected as part of a study assessing the prevalence and consequences of unmet needs for community-based services in a random sample of 839 elderly aged 75 years and older were employed in bivariate and multivariable analyses.

Results: The prevalence of problems with transportation was 23 per cent, with 33 per cent of females and 10 per cent of males categorized as having problems with transportation. Of those subjects categorized as having problems with transportation, 88 per cent were women. In addition to being predominantly women, those who reported problems with transportation were older, in poorer health, and had lower income and income satisfaction.

Implications: Problems with transportation are an important issue facing seniors; women, in particular. These results highlight the differences in aging as experienced by women and men with respect to social effects, needs, and the significance attached to the experience.

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Introduction

Being able to move about freely, to leave one's home, and to participate fully in everyday life is closely linked to good mental and physical health, and these abilities are thus considered components of successful aging (Marcellini, Gagliardi, & Leonardi, 2000). Access to family, friends, health services, social activities, and various goods and services is vital for seniors' well-being and quality of life, and seniors who are able to maintain their mobility in the community are also able to maintain greater independence and control over their lives (Burkhardt, Berger, Creedon, & McGavock, 1999; Coughlin, 2001; Organisation for Economic Co-operation and Development [OECD], 2001; Schaie & Pietrucha, 2000).

Few studies are specifically designed to explore the concept of outdoor mobility among seniors (Marcellini et al., 2000) or focus on issues of transportation for seniors with restricted mobility (Charest, 1991). Some studies have assessed the transportation habits of seniors, focusing to a large extent on the frequency of outings, the modes of transport employed, and the distances travelled (Mollenkopf et al., 1997), but the needs, preferences, and perceptions of the seniors themselves have received little attention (Straight, 1997; Vézina & Pelletier, 1997).

Seniors are heterogeneous in their transportation requirements (Siren & Hakamies-Blomqvist, 2004), and thus one must avoid the temptation to combine all seniors into a single group. Health status, physical and emotional well-being, level of education, and physical mobility should be considered in order to capture the diversity of this population (Marcellini et al., 2000; OECD, 2001). In particular, elderly men and women differ markedly in terms of their habitual modes of transportation and their economic resources (Rosenbloom & Winsten-Bartlett, 2002).

In a study of travel among older Americans, older women reported the fewest trips per day, travel the shortest distances, are least likely to drive, and report more medical conditions that limit their travel (Collia, Sharp, & Giesbrecht, 2003). In another study, older age, female gender, and residing in an urban environment were associated with poor access to personal transportation (Cutler & Coward, 1992). Women aged 75 or older were most likely to express an unmet transportation need, with 11 per cent indicating that, although they would like to use public transportation, they were unable to do so. This group also represents one of the most vulnerable with respect to financial resources and access to automobiles and is one of the fastest-growing groups in the senior population (Marshall, McMullin, Ballantyne, Daciuk, & Wigdor, 1995).

These few studies draw a fragmented portrait of transportation among seniors and highlight the fact that, in general, there is still a great deal to be learned about the travel habits of seniors (Siren & Hakamies-Blomqvist, 2004). Nevertheless, the existing research suggests that, in relation to transportation, older women must cope with a number of circumstances that can restrict their mobility. Indeed, Siren and Hakamies-Blomqvist (2004) have suggested that more research is required in order to understand better the association between demographic variables, such as gender and mobility among older adults, and to identify barriers related to these underlying variables. One obvious explanation may be that women tend to live longer than men. This has been referred to as the ''feminization of aging'' (Marcellini et al., 2000). For example, statistics indicate that a Canadian woman aged 65 in 1997 could expect to live on average, another 20 years, almost 4 years longer than a man of the same age. However, only one of these additional years would be disability free, and two would involve severe disability (Health Canada, 1999). Older women are more likely to require assistance with regard to transportation and mobility (Alsnih & Hensher, 2003) because they are more likely to suffer from mobility problems and from prolonged terminal illness (Scott & Wenger, 1995) and have a higher prevalence of disability than men (Health Canada, 1999). While men can expect to be supported by their wives in old age, women are more likely to be widowed, to live alone, and therefore to rely on alternate sources of assistance (Scott & Wenger, 1995).

Similarly, previous research has highlighted the fact that men and women follow different paths across the life course, which can lead to disparities in economic

and social resources in later life (Arber & Ginn, 1991; Browne, 1998) and to significant financial disadvantages for older women (Marshall et al., 1995). The fact that women are likely to live longer then their male counterparts puts them at an increased risk of exhausting their financial resources in later years (Arber & Ginn, 1991).

The goals of the study reported here were to assess the prevalence of transportation problems in a random sample of community-dwelling elderly residing in an urban setting, to determine whether there are gender differences in the experience of transportation problems in old age, and to examine to what degree gender is associated with mobility constraints in this population. We also investigated the prevalence of health problems and the lack of financial resources among those who reported transportation problems. This article presents a description of the modes of transportation used by 839 community-dwelling seniors as well as an investigation of the differences between those who reported having difficulty meeting their transportation needs and those who did not.

Design and Methods

This research is a secondary analysis of data collected in a study examining the prevalence and consequences of self-reported unmet needs for community-based services among seniors aged 75 years and older (Podoba, 2004). The methodology of the larger study, a community-based sample, is described in detail elsewhere (Podoba, 2004). The recruitment process was contracted out to a Montreal-based market research firm, Léger Marketing. Each week, Léger Marketing conducts an ''Omnibus Survey'', in which a sample of approximately 5,000 households in Quebec is contacted by telephone. Léger Marketing uses random-digit dialling to obtain random samples of the Quebec population. Respondents are asked a series of questions, including the age category to which they belong. Contact information for the Omnibus respondents is banked, creating a list that represents a random sample of the Quebec population. For the purposes of our study, sub-lists were created from this list, representing all respondents living on the Island of Montreal and the North and South Shores who were 75 years of age or older. These sub-lists were used by Léger Marketing as the source of phone numbers for households in which seniors were known to reside. Using trained recruiters, Léger Marketing then conducted a recruitment interview, designed by the study research team, to identify potential participants who met the following criteria: aged 75 years and older, community dwelling (i.e., not living in an institution), English- or French

speaking, and not cognitively impaired (as determined by a score of 14 or more on the ALFI telephone-administered cognitive screening test) (Roccaforte, Burke, Bayer, & Wengel, 1992).

A total of 4,420 seniors from the 4,475 households initially phoned by Léger Marketing recruiters were contacted. Of these, 1,300 met the eligibility criteria and 946 (73%) agreed to participate. When contacted by the study interviewers, 107 of the 946 people initially recruited had either changed their minds and refused to participate in the study (69/107) or could not be located (38/107). Seven-hundred-and-eighty-three subjects (93%) gave consent for the use of data contained in the provincial Régie de l'assurance maladie du Québec (RAMQ) and MEDECHO databases regarding their prescription use and visits to the doctor. These databases contain information on health services utilization for all residents of the province of Québec, including visits to the doctor, prescriptions, surgeries, and hospitalizations. In the current analysis, these data were used to create a measure of health status.

Following oral consent, potential study subjects were sent an introductory letter, followed by a telephone call about 1 week later from one of the trained study interviewers. The interviewers then arranged to complete the consent forms and to conduct the in-home interview. Each study subject who consented to participate underwent an extensive in-home baseline interview, which took place between 13 February 2001 and 5 March 2002.

In the current study, the overall participation was 65 per cent (839/1300), which is comparable to response figures achieved in other studies involving seniors. For example, in the Canadian Study of Health and Aging (CSHA), 71 per cent of eligible participants in the province of Quebec agreed to participate in the study (CSHA Working Group, 1994). An important strength of the present study is that random sampling techniques were employed for data collection. A comparison of the distribution of demographic variables in our study sample with those obtained from the 2001 Canadian Census (Direction de la santé publique de Montréal, 2003) indicates that the population of our sample was slightly younger than was the elderly population of Montreal. Therefore, the prevalence estimates obtained from our study may be an underestimate of the prevalence of transportation problems for seniors in the greater Montreal area. Because the current study presents a sub-analysis of data collected from a larger study, some variables that might have been of interest were unavailable.

Dependent Variable

For the purposes of this analysis, we created an indicator of *transportation problems* (TP) that categorized subjects into those for whom transportation was a problem and those for whom it was not. We considered those subjects who drove their own vehicles, who took the bus or metro alone and without difficulty, or who received help with transportation for other than health reasons (e.g., because they could afford it, because their spouse did the driving) as having no problems with transportation. This classification allows for the fact that many healthy women in this cohort have never driven, due to the influence of traditional gender roles, but have no TP because someone is available to drive them. As has been reported in other studies, many women in this cohort have never been licensed drivers, and thus they receive help from spouses or children, not because of their state of health, but because these "others have always done it". Therefore, following the example of Allen, Mor, Raveis, and Houts (1993), we recognize the importance of including a gender-related helping pattern item as one of the response choices. The inclusion of this response choice is essential to ensure that the number of participants receiving help for health-related reasons is not overestimated, particularly in studies of older populations. We categorized transportation as a problem for those who took the bus or metro alone and found this somewhat or very difficult and for those who received help with transportation for health-related reasons.

The dependent variable, TP, was defined in an attempt to capture not just those who received help and, therefore, relied on others to meet their transportation needs but also those who, for whatever reason, continued to travel without assistance, despite the fact that this was difficult. Secondary to our main objectives and in order to validate this variable construction, those experiencing TP were further studied for reported negative consequences of inadequate transportation (e.g., inability to participate in religious and social activities or missed appointments with a health-care professional over the preceding month). Negative consequences of TP were indicated by a positive response to any of the following:

> Because you had no transportation, have there been times in the past month when you . . . a) missed a health-care professional or doctor's appointment? b) were unable to go places you wanted to for fun or recreation? c) ran out of food? d) ran out of medication or other medical supplies? e) could not attend religious services?

Additionally, the presence of a consequence was recorded if the participant responded either *occasionally* or *often* to the following question: "Have there been times in the past month when you needed help (or more help) with transportation?"

Independent Variables

In order to conduct a gender-based analysis, the following variables were included in the model: gender, age, education, income, income satisfaction, marital status, living arrangement, a score assessing perceived level of control and variables relating to health status, including the Chronic Disease Score, self-rated health, self-reported vision status, and physical mobility.

Information on the educational status of the subject was obtained from a question with the following response categories: *elementary school or less*, *high school*, *technical or trade school or college*, or *university*. Based on the distribution of income in the sample, personal income was categorized into three groups: *less than $15,000 per year*, *$15,000–$34,999 per year*, or *$35,000 or greater per year*, before taxes. Twenty-one participants were missing responses for this variable. A sensitivity analysis was conducted using multiple imputation to assess whether imputing the missing information would improve the validity of this measure. There was no improvement using the imputed data, and therefore missing responses were not imputed for the income variable (Podoba, 2004). A measure of income satisfaction asked, "How well do you think that your income currently satisfies your basic needs?" Response choices were *very well*, *adequately*, *with some difficulty*, *not very well*, *totally inadequately*. Responses for marital status were *currently married or living in a common law relationship*, *single*, *divorced*, *widowed*, or *other*. The *number of cohabitants* refers to the number of people reported to be living with the subject at the time of the interview.

To assess the amount of perceived control that participants felt they had over the forces affecting their lives, we used the highly regarded seven-item scale previously developed by Pearlin and Schooler (1978) (see Schieman & Turner, 1998). Questions include "Do you think that you have control over what happens to you?" and "Do you feel helpless when faced with problems in your life?" Response choices are *not at all*, *to a small extent*, *to some extent*, *to a large extent*. The responses to the seven questions were summed, with possible values ranging from 7 to 28 and higher values indicating that the individual felt a greater sense of control.

Self-rated health was assessed using the question, ''How would you rate your current state of health: excellent, very good, good, fair, poor or very poor?'' Responses were dichotomized into either *good or better*, or *fair or worse*. A Chronic Disease Score (CDS) (Von Korff, Wagner, & Saunders, 1992) was used to assess health status and was based on information pertaining to several chronic conditions and to prescription use. The CDS increases with the number of co-morbid conditions and with the complexity and severity of a condition. Prescription information for the following conditions was included in the score: heart disease, respiratory illness, asthma, rheumatoid arthritis, cancer, Parkinson's disease, hypertension, diabetes, epilepsy, asthma relating to rhinitis, ulcers, glaucoma, gout and hyperuricemia, high cholesterol, and tuberculosis. A physical mobility indicator was created, based on the variable employed by Cvitkovich and Wister (2001) in their study of transportation dependence in community-dwelling seniors. Subjects were categorized into two groups, those with good mobility and those with limited mobility (difficulty walking a block or 150 m in summer, or requiring a physical aide such as a cane, walker, or wheelchair in order to remain mobile). Vision was assessed by the question: ''Is your vision, even with glasses, good, medium or poor?''

Analysis

In addition to estimating the prevalence of TP and assessing the distribution among various modes of transport of this population of seniors, the cross-sectional correlates of TP were examined. Logistic regression analysis was used to assess both bivariate and multivariate associations between the dependent and independent variables, with the *OR*s representing the odds of experiencing TP, given the presence of a particular variable of interest. All variables outlined above were included, with the exception of the number of cohabitants, as this variable was highly correlated with the marital status variable (Pearson's correlation coefficient = -0.81). In order to determine the optimal variable construction of marital status, the analyses were conducted in three ways. The first used a dichotomous variable, with one group containing all those who were married or in a common law relationship and the other group containing those who were single, divorced, widowed, or other. The second used dummy variables, with the reference category of married, and the third used an ordinal variable, with *married* coded 1, *widowed* coded 2, *separated or divorced* coded 3, and *never married* coded 4. The results of these models did not differ from those obtained using the dichotomized

marital status variable. Therefore, the results presented here are from the model using the dichotomized marital status variable. The multivariate analysis estimates the odds of experiencing TP for the variables indicated, controlling for the other variables in the model. All analyses were conducted using SAS version 8.2.

In addition, we theorized that marital status might play a role in the occurrence of consequences of TP and not solely in the presence of TP itself, and therefore we conducted additional analyses with this variable. To obtain the most information from this analysis, we examined the association between consequences of TP and marital status, using the dummy variables for marital status described earlier. We also included measures of income and income satisfaction.

Results

The sample consisted of 263 (31%) males and 576 (69%) females. Subjects ranged in age from 75 to 96 years old, with a mean age of 80 years. Overall, the prevalence of TP was 23 per cent (95% CI: 20, 26%) with 33 per cent (95% CI: 29, 37%) of females and 10 per cent (95% CI: 6, 14%) of males being categorized as having problems with transport (Table 1). Females represented 88 per cent (119/217) of all subjects for whom transportation was a problem. As well, 7 per cent ($n = 41$) of females were found to be receiving help for reasons other than those related to their state of health, a result largely explained by the number of women reporting that they received help because the other person had ''always done it''. While 72 per cent ($n = 188$) of males drove a car for their transportation, only 27 per cent ($n = 154$) of females did.

The results of bivariate comparisons between the independent variables and the outcome of TP are displayed in Table 2, stratified by gender. These results indicate that older age, self-rated health of fair or worse, limited mobility, poor vision, a higher CDS, and a lower sense of perceived control over one's life had statistically significant correlations with TP for both men and women. Among women, lower educational attainment, lower income, and poorer income satisfaction were also significantly correlated with TP.

In the multivariate models (Table 3), self-rated health of fair or worse was associated with a more than 3.6-fold increase in odds of TP for both men and women. Restricted mobility was associated with a 10.5-fold increased odds of TP for men and a 7-fold increased odds of TP for women. A 1-point increase on the scale measuring perceived control over

Table 1: Modes of transport

	Men (N = 263)		Women (N = 576)	
	n	%	n	%
Transportation Not a Problem	237	90.1	385	66.8
Drives a car	188	79.3	154	40.0
Takes the bus/metro alone and without difficulty	48	20.3	190	49.4
Receives help with transportation but not for health reasons	1	0.4	41	10.7
Transportation Problems	26	9.9	191	33.2
Takes the bus/metro alone but it's somewhat or very difficult	1	3.9	36	18.9
Receives help for health reasons	25	96.2	155	81.2

Table 2: Correlates of transportation problems, stratified by gender (unadjusted analysis)

Characteristic	Men (n = 263) OR (95% CI)	Women (n = 576) OR (95% CI)
Older Age (years)	1.1 (1.0, 1.2)*	1.2 (1.1, 1.2)*
Higher Education	0.8 (0.6, 1.2)	0.7 (0.6, 0.9)*
Higher Income	0.6 (0.3, 1.1)	0.4 (0.3, 0.6)*
Poorer Income Satisfaction	1.4 (0.9, 2.1)	2.1 (1.7, 2.6)*
Marital Status		
Married	1.0 (Ref.)	1.0 (Ref.)
Widowed/Divorced/Separated/Single	0.7 (0.3, 1.7)	1.2 (0.8, 2.0)
Number of Co-habitants		
None	1.0 (Ref.)	1.0 (Ref.)
1 or more	1.6 (0.7, 3.9)	0.9 (0.6, 1.3)
Self-Rated Health		
Good or better	1.0 (Ref.)	1.0 (Ref.)
Fair or worse	5.1 (2.2, 12.0)*	6.6 (4.4, 9.9)*
Mobility		
Good	1.0 (Ref.)	1.0 (Ref.)
Limited	13.5 (5.5, 33.2)*	14.1 (9.3, 21.5)*
Poor Self-Rated Vision (with glasses)	2.1 (1.2, 3.6)*	2.7 (2.1, 3.5)*
Increasing Chronic Disease Score[a]	1.1 (1.0, 1.2)*	1.1 (1.1, 1.1)*
Control Score	0.8 (0.7, 0.9)*	0.8 (0.8, 0.9)*

*$p < 0.05$; χ^2 test using 1 DF
a A total of 56 subjects did not provide consent for access to their RAMQ data; therefore, no CDS score could be calculated for these participants.

one's life was associated with a 10 per cent and 20 per cent decrease in odds of TP for women and men, respectively. Among women only, older age, lower income and income satisfaction, and poor vision were also statistically significant.

While marital status does not show a statistically significant association with the presence of TP, the results from the analyses using the consequences of TP indicate a possible relationship. A total of 96 participants in this cohort reported a consequence

Table 3: Multivariate logistic regression model for correlates of transportation problems[a]

Variable	Men (n = 253) OR (95% CI)	Women (n = 530) OR (95% CI)
Self-Rated Health		
Good or better	1.0 (Ref)	1.0 (Ref)
Fair or worse	3.6 (1.2, 11.3)*	3.6 (2.0, 6.6)*
Mobility		
Good	1.0 (Ref)	1.0 (Ref)
Limited	10.5 (3.5, 31.6)*	7.0 (4.1, 11.8)*
Control Score	0.8 (0.7, 1.0)*	0.9 (0.8, 1.0)*
Older Age (years)	1.0 (0.9, 1.2)	1.2 (1.1, 1.3)*
Higher Income	0.5 (0.2, 1.4)	0.6 (0.4, 0.9)*
Poorer Income Satisfaction	0.8 (0.4, 1.5)	1.6 (1.1, 2.2)*
Poor Self-Rated Vision (with glasses)	1.0 (0.5, 2.0)	1.7 (1.2, 2.4)*
Marital Status		
Married	1.0 (Ref)	1.0 (Ref)
Widowed/Divorced/Separated/Single	0.4 (0.1, 1.2)	0.7 (0.3, 1.4)
Increasing Chronic Disease Score	1.1 (1.0, 1.2)	1.0 (1.0, 1.1)
Higher Education	0.8 (0.5, 1.4)	1.0 (0.8, 1.3)

*$p < 0.05$; χ^2 test using 1 DF
a A total of 56 subjects did not provide consent for access to their RAMQ data; therefore, no CDS score could be calculated for these participants.

of TP at baseline; 6 (1%) of them indicated problem-free transportation and 90 (41%) indicated TP. The fact that consequences of TP were far more prevalent among those experiencing TP as compared to those who reported problem-free transportation lends support to the construction of the TP variable. The sample experiencing consequences was too small to support a multivariate analysis or to permit the identification of statistically significant associations. The results do suggest an association between marital status and experiencing a consequence of TP; those who were either widowed or divorced were almost twice as likely to experience a consequence as compared to those who were married (Table 4). While income was statistically significant, gender does not appear to be have been associated with experiencing a consequence; of the 26 men experiencing TP, 10 (38%) reported a consequence; whereas, of the 191 women experiencing TP, 80 (41%) did so.

Discussion

The overall prevalence of TP was 23 per cent, with 3 times as many women reporting difficulties with transportation as men. As well as being predominantly women, those who experienced TP were older and in poorer health as compared to those in the group with

Table 4: Unadjusted correlates of negative consequences among those reporting transportation problems (n = 217)

Variable	OR (95% CI)
Marital Status	
Married	1.0 (Ref.)
Widowed	1.8 (0.9, 3.6)
Single	0.8 (0.2, 2.7)
Divorced	1.9 (0.7, 5.6)
Higher Income	0.6 (0.4, 0.9)*
Gender	
Male	1.0 (Ref.)
Female	1.2 (0.5, 2.7)
Poorer Income Satisfaction	1.3 (1.0, 1.7)

*$p < 0.05$

no problems. Women who reported TP had fewer financial resources and lower income satisfaction as compared to those for whom transportation was not a problem. Thus, income inequality is an important factor related to mobility in this population and, taken as a whole, these results clearly illustrate the gender disparity in transportation among seniors.

Women are at a substantial financial disadvantage as compared to men of the same age, and a considerable number of older women are living at or below the poverty line (Browne, 1998; Rosenbloom, 2000). Our results show that, although the health-related variables were associated with TP to a similar degree for both men and women, the socio-economic variables, such as income and income satisfaction, were associated with TP for women only.

Another important gender disparity concerns the modes of transportation used. Women are far less likely than men to drive a car, as observed in previous studies (Cutler & Coward, 1992; Rosenbloom & Winsten-Bartlett, 2002). The car "for better or worse", is the principal mode of transportation for a substantial proportion of the population in North America (Schaie & Pietrucha, 2000), is associated with an "optimal" level of mobility (Alsnih & Hensher, 2003), and is the preferred mode of transportation for seniors who wish to access goods and services in their communities (Schaie & Pietrucha, 2000). Our results show that, even among those for whom transportation is not a problem, there is an inequality between men and women in terms of access to the "optimal" form of transport, the car.

Some argue that seniors may use driving as a compensation for declining health and that the skills required for the use of other modes of transportation decline before older adults lose their ability to drive (Hjorthol & Sagberg, 2000). Although the car may be "the grand equalizer" for some seniors (Siren & Hakamies-Blomqvist, 2004), our results reveal that those who experience TP are in worse health than those who drive. This is particularly apparent in the results for the men in our sample. The vast majority of the men who reported problem-free transportation also reported driving a car as their primary mode of transport (80%), and those who experienced TP were in worse health. Therefore, at least for men, we can infer that those who drive are in better health than those who do not. Due to the smaller proportion of women who drive, similar inferences cannot be drawn for women.

The more frequent experience of TP among women is compounded by their having fewer financial resources than men. Older women may employ a variety of mechanisms to cope with this situation, such as using public transportation—which is likely to present substantial difficulties if their health begins to fail—or relying on community services, family, friends or neighbours (when available), or taxi services. Those with the fewest financial resources are most at risk for experiencing not only TP but also the negative consequences of TP (e.g., missed medical appointments, inability to participate in social or religious activities). However, of the men who reported TP, the prevalence of reporting a negative consequence was approximately equal to the prevalence among the women. This may indicate that the association between transportation and gender is at the level of TP and not at the level of experiencing negative consequences when transportation is a problem. From these preliminary results, it appears that men who experience TP are at the same disadvantage as women in terms of their inability to cope.

Lack of transportation resources is a cause for concern, as it may lead to decreased socialization, increased isolation (Carp, 1988), and lower well-being due to the inability to live independently. Our findings indicate that, for both men and women, those who feel a greater sense of control are more likely to report problem-free transportation. According to the literature on the subject, "personal control constitutes one of the most important psychosocial resources that individuals possess" (Avison & Cairney, 2003). Personal control can moderate or buffer the impact of life's stressful events and is often included in models of the stress process (Pearlin & Pioli, 2003). Our results suggest that those who experience TP, along with declining physical health, may be coping with a loss in their autonomy that leaves them vulnerable to an "erosion of mastery" (Pearlin, Menaghan, Lieberman, & Mullan, 1981).

Future research, using larger samples and multivariate analyses, is needed to determine the relative impact of gender, income, and marital status on the negative consequences of inadequate transportation. In our analysis, we assigned equal importance to each negative consequence, and we did not consider the impact of having more than one. These areas have yet to be explored. Further refinement of our TP measure is also required. The data analysed here are cross-sectional, and therefore causality cannot be established. This may be of particular importance when interpreting the effect of control and self-rated health.

What about the future? Current research shows that more women in younger cohorts are licensed drivers (Marcellini et al., 2000; Rosenbloom & Winsten-Bartlett, 2002). However, according to some researchers, new cohorts of elderly women will face similar problems with transportation, albeit with different causes (Rosenbloom & Winsten-Bartlett, 2002). For example, predictions about future cohorts of women indicate that, compared to men and married couples, unmarried women, the eldest widows, in particular, will continue to experience economic hardship (Browne, 1998) and therefore experience difficulties

when it comes to purchasing transportation services. Dailey (1998) suggests that, even though baby boom women have had greater full-time work force participation as compared to prior birth cohorts, traditional sources of retirement income, such as social security, pensions, and personal savings, will not be sufficient for most women in this cohort. As well, women of the baby boom generation will have had fewer children than their mothers did, and hence, will have fewer people on whom to rely (Rosenbloom & Winsten-Bartlett, 2002). Therefore, although some of the problems facing older women may moderate in the coming years, older women will face new challenges regarding transportation.

In summary, just over 1 in 5 seniors in our sample was found to be experiencing transportation problems, with women 3 times more likely to report problems than men. Additionally, not only are older women more likely to need assistance with transportation, but they may be less able to meet these needs than are their male counterparts, due to their having fewer financial resources. Thus, the analysis indicates that this issue is largely one affecting older women, in poor health, with few financial resources, who are experiencing a loss of perceived control over their lives. The analysis also highlights the different social effects, needs, and significance of aging for women and men. In addition, because our study shows that the risk factors of experiencing TP are more common and complex among women, our results have important implications for community agencies and policy makers, raising questions of "social justice" (Transportation Research Board, 2002). Therefore, policies and programs must be constructed to address these needs, while aiming to correct "structured inequalities" (Ginn & Arber, 1995).

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