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SPECIAL ISSUE PAPER

Highway to health? Commute time and well-being among Canadian adults

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This paper examines commute time, time spent in activities benefical to well-being, and the relationship to self-assessed well-being. Using cross-sectional data from the 2010 Canadian General Social Survey, Cycle 24, time use patterns and feelings of well-being are assessed for a subsample of 3409 men and women who regularly commute to work by car. Drawing upon a resource drain model, daily activities known to affect well-being were selected for analysis, and well-being was measured by life satisfaction and time pressure. Time spent commuting is associated with lower levels of life satisfaction and an increased sense of time pressure. Reduced time for physically active leisure and experiences of traffic congestion mediate the association of commute time with well-being, consistent with a resource drain model. Results suggest workplace practices aimed at increasing opportunities for physical activity and government-led efforts towards more integrated solutions to reduce traffic congestion may help increase well-being.

Keywords: car commuting; commute time; physical activity time; resource drain model; time use; traffic congestion; well-being

With increasing suburban sprawl and subsequently longer commutes, the relationship between commuting and well-being is becoming a pressing concern (Pisarski, 2006). In Canada, the effects of long commute times are of particular interest since recently enacted employment legislation requires people collecting employment insurance benefits to seek and accept jobs with a daily commute time of up to one hour each way, or a two-hour round trip (Government of Canada, 2013). Lengthy commutes have been linked to poor physical and mental health outcomes such as hypertension, obesity, decreased cardiovascular fitness, stress, low energy and illness-related work absence (Hansson, Mattisson, Björk, Östergren, & Jakobsson, 2011; Hoehner, Barlow, Allen, & Schootman, 2012). Understanding how commuting is associated with time for leisure and other activities beneficial to well-being may offer insight into workers' quality of life and ultimately contribute to programmes and policies designed to better support population health. This study examined the relationship between commute time and self-assessed well-being

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among Canadian adults who commuted by car, and potential explanatory factors in links between commute time and well-being.

In Canada, 82% of adults working for pay rely primarily on cars to travel to work. Only 12% take public transit and just 6% use an active mode of transportation (e.g., walking, bicycling; Turcotte, 2011). Other industrially advanced countries have similarly high rates. In Australia, four of five workers (80%) are car commuters (Australian Bureau of Statistics, 2009) and in the USA, 86% travel to work by car (McKenzie & Rapino, 2011). Car commuting is somewhat lower where there is a better developed network of public transportation. In England and Wales, for example, 57.5% of people drive to work, with an additional 5.1% acting as passengers (Gomm & Wengraf, 2013). Active transportation has many health benefits (Lindstrom, 2008), but ineffective public transit, travel distance to work and convenience lead to a preference for the car (Levinson & Wu, 2005; Lyons & Chatterjee, 2008). Environmentally and socially based arguments have been made to explain the links between long car commutes and reduced well-being. Traffic congestion, trip patterns and environmental pollutants reduce well-being (e.g., see Smyth et al., 2009), and decreased time for family, discretionary activities and sleep also contriubute to this negative association (Basner et al., 2007; Besser, Marcus, & Frumkin, 2008; St. George & Fletcher, 2012).

In contrast, commuting may have potential benefits for well-being (Lyons & Urry, 2005). Commuting provides transition time allowing a mental shift between different activity spheres. It can create a *time out* from other commitments and responsibilities, which could include pleasureable activities such as listening to music, enjoying the scenery or simply allowing some coveted time alone (Jain & Lyons, 2008). Commuting may include leisurely moments for some, even if the amount of time spent commuting prevents participation in other activities.

Theoretical framework

The resource drain model provided a theoretical framework for our study. Originating in the work-family literature, it is a causal work-life conflict model where change in one sphere of activity negatively affects the other (Frone, 2003). Resource drain assumes that reallocation of resources such as time, energy or attention may be intentional, or even unintentional when structural constraints such as mandatory overtime prevent spending time with friends or family (Edwards & Rothbard, 2000). The zero-sum approach to resource allocation has been noted by Robinson (1999) regarding temporal resources. Trade-offs between time for work, family and leisure highlight how time allocation is influenced by individual preferences, biological needs, social roles and related commitments (Michelson, 2005). Accordingly, the resource drain model can help to understand the effects of time spent commuting on the allocation of time to other activities associated with well-being and the relationship of these activity patterns to quality of life.

Commuting and well-being

Commuting research is informed by a broad array of perspectives (Novaco & Gonzalez, 2009). For this study, we were guided primarily by research on physical and mental health, which are both critical contributors to well-being (Warburton, Nicol, & Bredin, 2006; Zuzanek, Robinson, & Iwasaki, 1998). Longer commute distances are negatively associated with physical activity and positively associated with hypertension, waist

circumference and body mass index (Hoehner et al., 2012). Physical inactivity is a risk factor for Type 2 diabetes, cardiovascular disease, osteoporosis and metabolic risk syndrome (Katzmarzyk, Church, Craig, & Bouchard, 2009; Warburton et al., 2006; Wijndaele et al., 2009). Commuting by car has also been linked to poor sleep quality, lower levels of self-assessed health and higher obesity rates (Frank, Andresen, & Schmid, 2004; Hansson et al., 2011). These health issues have led to calls for further research on strategies to reduce sedentary behaviours related to work and transportation activities, including time spent commuting by car (Owen et al., 2011).

Commuting is also related to poor mental health outcomes. Compared to active modes of transportation, car commuters experience more negative moods and stress (Wener & Evans, 2011), which is partially attributable to the greater mental effort involved in driving and lower levels of predictability related to traffic and commute time. Traffic congestion and lengthy commutes were associated with higher stress levels among full-time workers in Canada (Turcotte, 2011). As the unpredictability of commute time increased, so did perceptions of stress (Gottholmseder, Nowotny, Pruckner, & Theurl, 2009). Traffic congestion and others' driving practices create acute stress, and daily long distance journeys took a physiological toll over time (Gulian, Matthews, Glendon, Davies, & Debney, 1989). Novaco and colleagues (1990) reported that impedance, experienced as physical obstacles like traffic congestion and subjective perceptions of constraints, was a key contributor to commuter stress. Greater physical impedance was related to lower frustration tolerance and negative moods, while subjective impedance was linked to health problems, poor mood at home, and decreased job and residential satisfaction.

Although often overlooked in discussions of commuting and health, leisure may play a role in enhancing well-being. Leisure has the potential to provide health benefits for workers experiencing job-associated effects of late modernity such as time pressure and job instability (Cartwright & Warner-Smith, 2003). Leisure participation is associated with greater life satisfaction, happiness and psychological well-being, and physically active leisure can moderate the detrimental effects of stress (Iso-Ahola, 1997). Leisure can provide a means of coping with stressful work situations (Iwasaki, 2003) and with chronic stressors (Hutchinson & Kleiber, 2005). Therefore, opportunities for leisure may be an important consideration for people with long and/or stressful commutes.

Commuting and time use

Lyons and Chatterjee (2008) observed that, "The commuting journey represents a spatial and temporal frame around which other travel and activities and lifestyles are based" (p. 183). Accordingly, more attention to the influence of commuting on daily activity patterns might be expected. Most time use research exploring commuting, however, focuses on other aspects such as concurrent activities (e.g., Lyons & Urry, 2005), the relationship to paid work time (Levinson & Wu, 2005) or the effect of geographic location (e.g., Millward & Spinney, 2011). Time diaries have shown how daily behavioural patterns including the amount of time and timing of activities such as work, leisure, caregiving and sleep may be shaped by commute time. Kitamura et al. (1992) compared time use patterns in California and the Netherlands to explore the effect of travel time on time for activities related to social capital such as leisure, social and religious activities. Long work hours and lengthy commutes reduced time for leisure, sleep and other subsistence activities. Greater commute time also meant less time spent

travelling for leisure activities or to maintain social relationships. Similar results have been found with the US National Household Travel Survey. Besser, Marcus, and Frumkin (2008) examined the effect of commute time on access to social ties, as measured by the number of trips with a social purpose such as going out to dinner with friends or to attend school activities. Adults commuting 90 minutes or more had significantly fewer socially oriented trips.

In sum, considerable evidence suggested that workers with lengthy car commutes often experienced lower levels of self-assessed health and well-being. Traffic congestion and the unpredictability of travel time exacerbated stress levels associated with lengthy commutes. Despite these issues, some workers experienced commuting as an activity that provided a time out from responsibilities and obligations, which could enhance well-being. Nevertheless, the resource drain model suggests that a lengthy commute time will negatively influence well-being due to the reallocation of time away from family and other activities. Thus, we examined the relationship between commute time and well-being and tested the extent to which physically active and social leisure time served as potential mediators in any association found between commute time and well-being. Beyond the amount of time spent commuting, we also examined how perceived traffic congestion might mediate the association between commute time and well-being.

Method

We drew on Statistics Canada's General Social Survey, Cycle 24. Data were collected from 15,390 Canadians age 15 years and older throughout 2010 using computer-assisted telephone interviews (Statistics Canada, 2011). This approach represented a participation rate of 55.2%. From the Public Access Microdata File, we selected a subsample of 3563 individuals who worked for pay for at least two hours on the diary day and indicated that they regularly commuted to work by car. Respondents with fewer than 10 daily activity episodes or more than 60 minutes of unaccounted time were eliminated from the subsample. This provided a total of 3409 participants.

Time use

In a time diary module, participants outlined the activities in which they participated during the 24 hours on the previous day. Time use was measured in minutes per day and then categorised by activity by the researchers.

Commute time was operationalized as the reported time spent travelling to and from work. *Paid work* was all activities related to work (whether as an employee or self-employed), including work breaks, travel required for work (excluding commute time at the beginning and end of the day) and overtime work. *Physically active leisure* included sport and fitness activities such as walking, participating in a sport or exercising. *Social leisure* consisted of socialising with friends or family either at a private home or a public venue such as a restaurant, bar or club, as well as online texting, chatting or socialising. With the exception of commute time, which consisted of a single variable, the time use categories were derived by summing the time duration of activities engaged in within each category outlined above.

Well-being

Well-being was measured using two indicators: life satisfaction and feelings of time pressure. *Life satisfaction* is a commonly used measure of well-being (OECD, 2013) and denoted how participants feel about their life as a whole, where 1 = *very dissatisfied* and 10 = *very satisfied*. *Time pressure* was measured by a 10-item time crunch index (cf., Robinson & Godbey, 1997) based on positive responses to items such as: feeling trapped in a daily routine, worrying about not spending enough time with family and friends, or not having time for fun anymore. A *no* response was coded as zero and a *yes* response as one. Scores for the 10 items were summed and ranged from 0 to 10 with higher scores indicating greater feelings of time pressure. Previous research has shown this index to be a valid and reliable measure (e.g., Andersen & Beaujot, 2007).

Socio-demographics

Several factors known to influence time use and well-being were included in the analyses. *Gender* was indicated as male = 0 or female = 1. *Partnered* participants were designated by 1 = were married or cohabiting, whereas those who were designated by 0 = single, separated, divorced or widowed. *Education* was represented by 0 = secondary school education or less, and 1 = education beyond high school at a trade school, college, or university. *Age* in years was derived from age categories that were originally grouped in 5-year increments by using the mid-point of each age category. *Household income* was based on the median household income category. An annual household income of $79,999 or less = 0 and $80,000 or more = 1. *Flexible work hours* were indicated as 1 = those who had the option to choose the time they begin and end the workday, and 0 = workers who did not have this option. *Place of residence* was designated by 1 = larger urban population centres and 0 = rural or small populations centres.

In addition, *traffic congestion* was assessed by asking participants, "Overall, how serious a problem is traffic congestion for you?" Answers ranged from 1 = very serious to 4 = not at all serious. This variable was reverse-coded so that a higher score was associated with stronger perceptions of traffic congestion as a problem.

Analysis plan

Analyses began with descriptive statistics of sample characteristics. After checking for skewness, time use variables were log transformed. Two linear regression models explored the association of commute time and well-being. The first model tested the relationship between commute time and life satisfaction, and the second model examined the relationship between commute time and time pressure. Both models controlled for gender, age, income, education, partner, flexible schedule and place of residence. To test the resource drain hypothesis, each model included paid work time, physically active leisure time, social leisure time and traffic congestion as potential mediators. The test of mediation used bootstrapping to create a reference distribution used for significance testing and 95% confidence interval estimation (Preacher & Hayes, 2008). It also allowed an examination of the contribution of each mediator to the relationship between the independent and dependent variable, along with a comparison between mediators. The upper and lower levels of the confidence intervals (ULCI and LLCI, respectively) were provided for the point estimates of mediation pathways. Results were considered significant when the confidence interval did not cross zero.

Table 1. Characteristics of car commuters.

Category (variable)	*M* (%)	*SD*
Socio-demographics		
Female	41.3	–
Urban	80.7	–
Married/cohabiting	73.5	–
Post-secondary education	80.2	–
Flexible work hours	42.6	–
Income at median or above	61.5	–
Age in years	42.5	11.9
Seriousness of traffic congestion (1–4)	1.9	0.9
Time use (minutes per day)		
Commuting	53.2	47.8
Paid work	514.6	140.1
Physically active leisure	18.9	45.6
Social leisure	51.6	87.9
Well-being		
Life satisfaction (1–1)	7.53	1.68
Time pressure (0–10)	4.03	2.62

Note: $N = 3409$.

Results

Socio-demographic characteristics are shown in Table 1. The average amount of time spent travelling to and from work was 53.2 minutes per day, although this varied by demographic factors. Independent samples *t* tests showed that men spent significantly more time commuting than women (58.4 versus 45.9 minutes, $t = 7.58$, $p < .001$), and commuters who lived in large urban locations had longer commute times than rural or small town residents (54.9 versus 46.1 minutes, $t = 1.22$, $p < .001$). More highly educated workers had longer commutes than individuals with a high school education or less (54.7 versus 46.6 minutes, $t = 14.39$, $p < .001$). Similarly, an income at or above the median was associated with more time commuting than an income below the median (55.4 versus 51.2 minutes, $t = 1.12$, $p = .001$).

On workdays, participants worked for pay for an average of 8 hours, 35 minutes. Social leisure activities accounted for approximately 52 minutes of daily activity. On average, 19 minutes were allocated to physically active leisure. The mean score for traffic congestion was 1.90 ($SD = 0.90$), which suggested a moderate level of perceived seriousness of traffic congestion. Participants were generally satisfied with their life as a whole ($M = 7.53$, $SD = 1.68$, range = 1–10), and experienced moderate levels of time pressure ($M = 4.03$, $SD = 2.62$, range = 0–10).

Well-being

Life satisfaction

Being partnered, having a higher household income, flexible work hours and not living in a large urban centre were significantly associated with greater life satisfaction (see Table 2, Model 1). More time spent commuting was related to lower life satisfaction (see Table 2, Model 2). Mediation analyses determined the extent to which the relationship

Table 2. Contribution of demographics, selected time use categories, and perceived seriousness of traffic congestion to *life satisfaction*.

	Model 1		Model 2		Model 3	
Category (independent variables)	*B*	*SE*	*B*	*SE*	*B*	*SE*
Constant	7.08***	.17	7.36***	.19	8.10***	.64
Demographics						
Gender (female = 1)	−.01	.06	−.02	.06	−.05	.06
Age	.00	.00	.00	.00	.00	.00
Partnered	.53***	.07	.54***	.07	.51***	.07
Post-secondary education	−.13	.08	−.12	.08	−.12	.08
Urban residence	−.20**	.07	−.18**	.07	−.08	.08
Household income above median	.37***	.07	.37***	.07	.38***	.07
Flexible work hours	.21***	.06	.19**	.06	.20**	.06
Time allocation (minutes per day)						
Commuting			−.18**	.06	−.11	.07
Paid work					−.20	.22
Physically active leisure					.12**	.04
Social leisure					−.04	.03
Traffic congestion						
Perceived seriousness (1–4)					−.20***	.04
Adjusted R^2	.05		.05		.07	

Note: n = 2939; **p < .01, ***p < .001.

between time spent commuting and life satisfaction was accounted for by each mediator (see Figure 1; Preacher & Hayes, 2008). First, the total effect (c) of commute time on life satisfaction was significant (B = −.179, p = .005), but the indirect effect (c') was not (B = −.011, p = .114), indicating that the model was fully mediated by the addition of other time use categories and perceptions of traffic congestion. There were significant indirect effects for time spent in physically active leisure (a_2b_2 path: *point estimate* = −.01, *SE* =.006; LLCI = −.027, ULCI = −.004) and seriousness of traffic congestion (a_4b_4 path: *point estimate* = −.06, *SE* = .013; LLCI = −.085, ULCI = −.032). Finally in a test of contrast between these pathways, perceived seriousness of traffic congestion was a significantly greater mediator than time spent in physically active leisure (*point estimate* = .04, *SE* =.015; LLCI = .017, ULCI = .074).

Time pressure

Being female and having a partner or spouse was associated with higher levels of time pressure, whereas those with flexible work hours and older participants reported significantly less time pressure (see Table 3, Model 1). A longer commute time was also related to greater time pressure (see Table 3, Model 2). With the addition of the mediators, time spent commuting was no longer significant. Mediation analysis of the relationship between time spent commuting and time pressure (see Figure 2; Preacher & Hayes, 2008) revealed a significant direct effect of commute time (c) on feelings of time pressure (B = .209, p = .032). The model was fully mediated, so that the indirect effect (c') was not significant (B = −.001, p = .990). The indirect path for paid work was

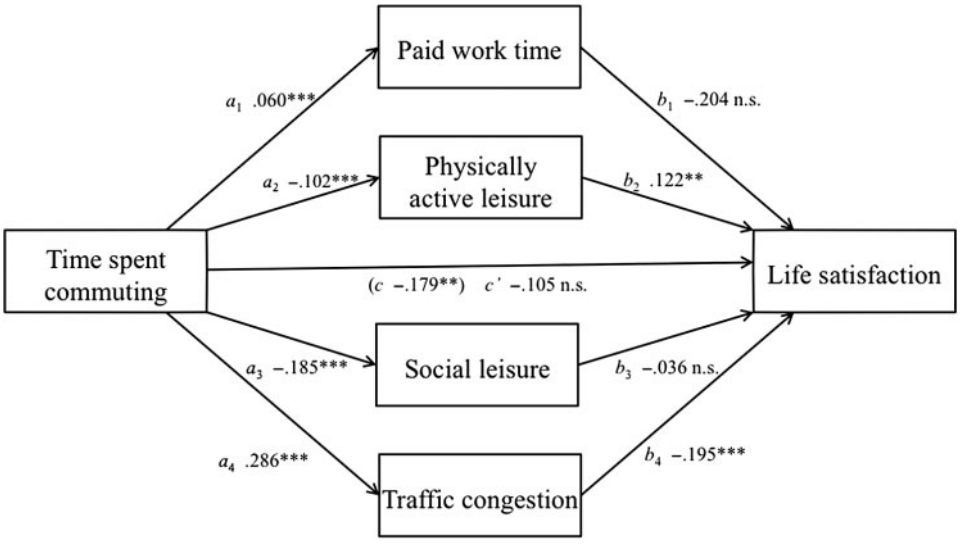

Figure 1. Association between time spent commuting and *life satisfaction* with tests for mediation by paid work time, time for physically active leisure, time for social leisure and perceived seriousness of traffic congestion; $n = 2939$; $^{**}p < .01$, $^{***}p < .001$.

Table 3. Contribution of demographics, selected time use categories, and perceived seriousness of traffic congestion to feelings of *time pressure*.

	Model 1		Model 2		Model 3	
Category (independent variables)	*B*	*SE*	*B*	*SE*	*B*	*SE*
Constant	5.15***	.25	4.83***	.29	2.45**	.95
Demographics						
Gender (female = 1)	.52***	.10	.53***	.10	.61***	.10
Age	−.03***	.00	−.03***	.00	−.03***	.00
Partnered	.43***	.11	.42***	.11	.49***	.11
Post-secondary education	−.02	.12	−.03	.12	−.03**	.12
Urban residence	−.00	.11	−.03	.11	−.29	.11
Household income above median	−.15	.10	−.15	.10	−.19	.10
Flexible work hours	−.23**	.10	−.21*	.10	−.22*	.10
Time allocation (minutes per day)						
Commuting			.21*	.10	.00	.10
Paid work					.70*	.33
Physically active leisure					−.28***	.06
Social leisure					.08	.05
Traffic congestion						
Perceived seriousness (1–4)					.53***	.06
Adjusted R^2	.04		.04		.08	

Note: $n = 2950$; $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

significant (a_1b_1 path: *point estimate* = −.04, *SE* = .021, LLCI = .005, ULCI = .088). Those individuals who spent more time commuting also worked for longer hours, which was related to greater time pressure. Similar to life satisfaction, the indirect effects of the

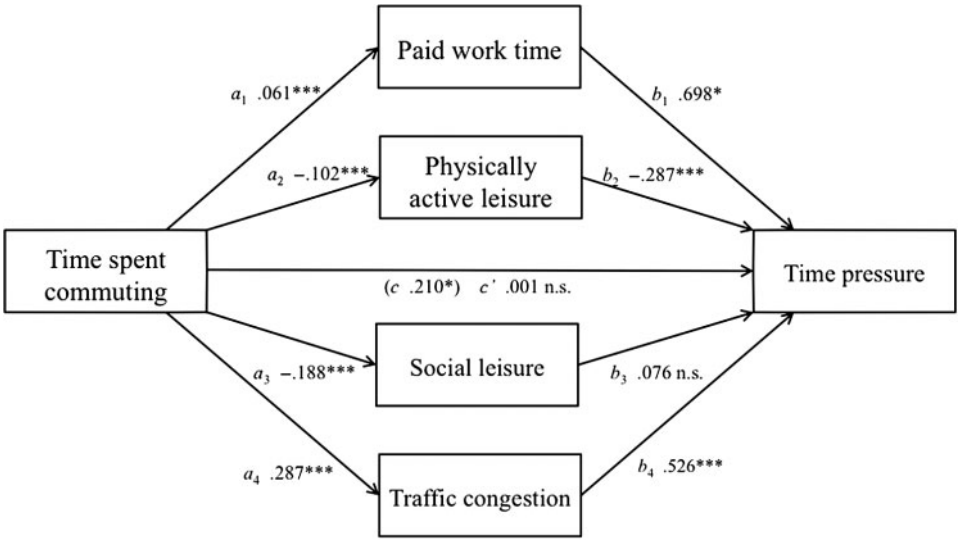

Figure 2. Association between time spent commuting and *time pressure* with tests for mediation by paid work time, time for physically active leisure, time for social leisure, and perceived seriousness of traffic congestion; $n = 2950$; *$p < .05$, **$p < .01$, ***$p < .001$.

a_2b_2 path for time spent in physically active leisure and the a_4b_4 path for seriousness of traffic congestion were also significant (physical activity time; *point estimate* = .03, *SE* = .010, LLCI = .012, ULCI = .054; traffic congestion, *point estimate* = .151, *SE* = .025; LLCI = .108, ULCI = .204). In the test of contrasts, there was a significant difference in the effect of physically active leisure time and traffic congestion (*point estimate* = −.120, *SE* = .027, LLCI = −.178, ULCI = −.074), demonstrating that the perceived seriousness of traffic congestion was a significantly greater mediator of time pressure than time spent engaging in physically active leisure. Similarly, the pathways of traffic congestion and paid employment were significantly different (*point estimate* = −.110, *SE* = .032, LLCI = −.172, ULCI = −.048), with traffic congestion again being a stronger mediator in the relationship between commute time and time pressure than paid employment time.

Discussion

Using population-based Canadian data, we explored the relationship between time spent commuting by car and perceptions of well-being. There was more support for a resource drain explanation for the association of commute time with well-being than for the benefits or *gift* discourse outlined by Jain and Lyons (2008). However, it seemed that the relationship of commute time to well-being was not as straightforward as the resource drain model suggests. Although a longer time spent travelling back and forth to work clearly influenced time spent in other activities associated with well-being, the resource drain model became less relevant when experiential qualities of the commute were considered. The perceived seriousness of traffic congestion was a crucial ingredient in understanding the well-being of commuters. Not simply a matter of the *quantity* of time devoted to commuting, it was also the perceived *quality* of that time which seemed to affect workers' well-being.

Commute time and other daily activities

Reduced time for physically active leisure and more hours of paid work were two explanatory factors for reduced well-being with greater commute time (Basner et al., 2007; Hoehner et al., 2012). The finding for physically active leisure was a particular cause for concern because health problems associated with lengthy periods of sedentary activity can hamper well-being and have implications for public healthcare resources (Katzmarzyk et al., 2009). Although the resource drain model focused mainly on the redistribution of resources between work and family domains (Frone, 2003), lower levels of physical activity suggested that people with long commutes sacrificed other activities beneficial to well-being, presumably because they chose or needed to attend to other activities associated with daily living and participation in family life (Brown & Roberts, 2011).

Social leisure time did not emerge as a potential explanatory factor in these analyses, perhaps due in part to our conceptualization of social leisure. It could be that with the inclusion of online social activities in this category, the detrimental effect of lengthy commutes may not be as notable. Online social leisure can generally be pursued without the same level of planning, energy, coordination and time commitment characteristic of face-to-face encounters and, therefore, time spent commuting was not likely to have the same negative impact.

Commuting and well-being

Perceived seriousness of traffic congestion helped to explain the association of commute time with both life satisfaction and time pressure, and underscored the importance of considering not only the quantity but also the quality of commute time. Traffic congestion can contribute to frustration, negative moods and decreased satisfaction with both one's job and home life due to the unpredictability of traffic flow, physical obstacles and a lack of situational control (Novaco, Stokols, & Milanesi, 1990). Therefore, although the resource drain model did play a part in the commute time and well-being relationship, feelings of increased time pressure and decreased life satisfaction resulting from difficult daily commutes should not be overlooked.

Physically active leisure time was an effective mediator with both life satisfaction and time pressure. The loss of physically active leisure time likely diminshes its potential as a resource in coping with stress (e.g., Hutchinson & Kleiber, 2005; Iwasaki, 2003). Conversely, physically active leisure could mitigate commuting-related stress if workers can include it in their daily routines. An obvious constraint is time scarcity, because longer commutes were linked to less time for physically active leisure. Health problems related to sedentary aspects of commuting, then, may not just be the result of sitting in a car for extended periods of time, but also the decreased amount of time available for physical activity.

In addition, workplace policies and cultures may strengthen or weaken the relationship between commute time and well-being. Flexible work hours were associated with enhanced well-being, as the ability to control when the workday begins and ends might help workers to avoid traffic congestion, resulting in shorter commute times (Lucas & Heady, 2002). Flexible work hours may also allow workers more opportunities to engage in physical activity because they may be able to more easily access organised activities or fit physically active leisure into daily routines.

Our study had some limitations. The use of cross-sectional data precluded causal claims. Furthermore, other activities known to influence well-being such as volunteering have been overlooked because they occur on a weekly or even monthly basis, making them less suited for time diary analysis. More research is needed to understand how long commute times affect opportunities to volunteer or participate in community activities. In addition, the sample included only people who had access to a land-line telephone, which excluded 13% of the target population (Statistics Canada, 2011). The findings may be somewhat limited because workers who use cell phones exclusively are often younger in age compared to land-line users.

Some policy implications of this study can be noted. Physically active leisure is an effective contributor to worker well-being and population health, so employers could encourage flexible work hours that more easily accommodate opportunities for physical activity. Governments might offer tax rebates or incentives for employers to set up fitness facilities on company premises given the significant positive returns of employee wellness programmes (Berry, Mirabito, & Baun, 2010). In addition, reducing traffic congestion could become a greater government priority at all levels. Where possible, employers could encourage active forms of transportation, which would not only reduce traffic congestion, but also lead to significant health benefits among employees (Blake, Zhou, & Batt, 2013). Given the preference for and prevalence of car commuting in Canada, it is perhaps more realistic to look at improving the transportation system before implementing policies such as mandating job searches within a one-hour commute radius, which could eventually result in greater costs to the public health care system. A concerted effort by policy-makers and employers to reduce traffic congestion, decrease time spent commuting and increase opportunities for physically active leisure could help to offset the negative effects of long commutes and enhance the well-being of Canadian workers. Given the relatively high percentages of car commuters in other countries too, it may be that the outcomes and policy implications relative to Canadians' experiences of commuting and well-being could be more broadly applicable elsewhere.

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