Physical Inactivity Among Francophones and Anglophones in Canada

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ABSTRACT

OBJECTIVE: Leisure-time physical activity participation is influenced by various socio-demographic factors. Recent evidence suggests that being part of a minority negatively impacts an individual's health status. The objective of this study was to compare inactive leisure-time physical activity between the Francophone minority and the Anglophone majority in Canada.

METHODS: Data from the fusion of cycles 2.1, 3.1, 4.1, 2008 and 2009 of the Canadian Community Health Survey (CCHS) were used. The linguistic variable was determined by languages spoken at home, first language learned and still understood, language of interview, and language of preference. Leisure-time physical activity was based on a questionnaire provided during the interview. Factors associated with inactive leisure time were examined using logistic regression models.

RESULTS: Francophones were more likely than Anglophones to be physically inactive in their leisure time (49.1% vs. 47.2%). A greater percentage of Francophones had poor self-perceived health, were older, were single, had lower education, had higher rate of unemployment and lived in rural areas compared to Anglophones. When these socio-demographic factors were taken into account, there were no further differences in the likelihood of being inactive between Francophones and Anglophones.

CONCLUSION: The Francophone minority in Canada is characterized by socio-demographic factors that have a negative impact on leisure-time physical activity participation.

KEY WORDS: Minority health; language; leisure activities; public health

La traduction du résumé se trouve à la fin de l'article.

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Studies of physical activity among Canadian adults have typically amalgamated data from Francophone and Anglophone participants. However, cultural differences as well as socio-demographic disparities between these groups may be related to leisure-time physical activity. To our knowledge, relatively little information is available about physical activity levels as well as factors that may influence Francophones' participation in physical activity in Canada. According to the Second Report on the Health of Francophones in Ontario, the proportion of physically active Francophones from Ontario aged 12 years and over was significantly lower compared to Anglophones of similar age; physical activity declined with age; and men were generally more active than women. In addition, a positive association was found between education and being more physically active.¹ All these data come from the province of Ontario and little is known about the correlates of physical activity for the Francophone minority across Canada.

The objectives of the current study were therefore to 1) compare leisure-time physical activity between the Francophone minority and the Anglophone majority in Canada, and 2) determine socio-demographic factors associated with inactive (compared with active and moderately active) leisure time.

METHODS

Data source

To compare the leisure-time physical activity of Francophone minority and Anglophone majority in Canada, we performed a sec-

ondary analysis of the Canadian Community Health Survey (CCHS) cycles 2.1, 3.1, 4.1, 2008, and 2009. CCHS is a national population survey conducted by Statistics Canada every two years since 2001 and every year since 2007. Because the number of Francophones in one survey cycle was insufficient to perform in-depth analyses, we merged five CCHS cycles to increase the sample size. The target population was all Canadians aged 12 years and older, excluding individuals living on Indian Reserves, institutional residents, full-time members of Canadian Forces, and residents of certain remote regions. We excluded Quebec as the study examined the situation of Francophone minorities. Additionally, pregnant women and women who were breastfeeding were excluded from the survey. The average number of respondents in our sample over the five cycles was 21,068, representing in total 20,300,384 Canadians.

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Table 1. Physical Activity, Health and Socio-demographic Characteristics by Language Groups (Francophones and Anglophones)

		Francophones (N=21,580)	Anglophones (N=333,933)
		%	%
Physical activity	Active	25.5*	28.2
	Moderate	25.4	24.6
	Inactive	49.1*	47.2
Health			
	Self-rated health		
	Poor/fair	13.3*	10.9
Self-rated mental health	Good/very good/excellent	86.7	89.1
	Poor/fair	5.6	5.2
	Good/very good/excellent	94.4	94.8
Socio-demographic			
	Sex		
	Women	52.5*	50.5
Age (mean (CI), median)	Men	47.5	49.5
	Age groups (years)	46.1 (45.8-46.5), 46*	42.7 (42.6-42.7), 42
	12-17	6.6*	9.5
Marital status	18-34	22.2*	27.4
	35-49	28.8	27.9
	50-64	25.9*	21.5
Number of children in the household (mean (CI))	≥65	16.5*	13.7
	Married/common-law	62.4*	58.3
	Single/widowed/divorced/separated	37.6	41.7
Education		0.32 (0.31-0.34)*	0.40 (0.40-0.41)
	Less than secondary school	26.2*	22.4
	Secondary school	14.0*	17.3
Employment	Some post-secondary	7.4	8.6
	Post-secondary graduation	52.5	51.7
	Currently working regular job	75.6*	78.6
Income quintiles	Not working regularly	24.4	21.4
	1 st quintile	19.5	19.6
	2 nd quintile	18.1	19.9
Area of residence	3 rd quintile	20.2	20.2
	4 th quintile	20.7	20.1
	5 th quintile	21.4	20.1
Area of residence	Urban	69.7*	82.9
	Rural	30.3	17.1

* Significant at the 0.05 level of confidence.

Measures

The linguistic variable was determined by language spoken at home, first language learned and still understood, and preferred language of interview according to the algorithm developed by Bouchard.² Only respondents who could be identified as either Francophone or Anglophone were included in the study: 4.4% of the population was identified as Francophones and 95.6% as Anglophones.

We adapted Statistics Canada's definition of leisure-time physical activity which categorized respondents as being "active", "moderately active", or "inactive" based on the average daily energy expended during leisure-time activities by the respondent in the previous three months. Active leisure time was equivalent to walking at least 1 hour every day; moderately active leisure time, to half an hour per day; and inactive to less than half an hour per day. The Physical Activity Index used the same criteria used to categorize individuals in the Ontario Health Survey (OHS) and in Campbell's Survey on Well-Being. The definition of physical activity was the same across all the CCHS cycles.

Several socio-demographic characteristics were examined as predictors of leisure-time physical inactivity: age (categorized in groups of 12-17 years, 18-34, 35-49, 50-64, and 65 and over), sex, rurality (urban or rural), education (less than secondary, secondary school, some post-secondary, and post-secondary education), income quintiles, employment status in the past 12 months (employed and not employed), marital status (married/common-law and single/divorced/separated) and self-perceived health (poor/fair and good/very good/excellent).

Statistical analyses

Descriptive statistics (mean, frequency distributions) on the socio-demographic characteristics of Francophone and Anglophone populations and on leisure-time physical inactivity were calculated.

Chi-square comparisons were used to identify significant differences between the Francophone minority and the Anglophone majority. Multinomial logistic regression models were used to determine whether socio-demographic factors influenced the relationship between physical inactivity and language minority groups. The factors were entered in the model based on their importance in predicting physical inactivity. Factors not related to outcome or to exposure were excluded from the model. The strength and direction of the relationship between physical activity and the linguistic variable was also assessed using multinomial logistic regressions. Despite the fact that the interaction term between language and sex variables was not significant ($p=0.15$), we fitted separate models for men and women since adjusting for age changed the direction of the association between language variable and inactivity for men and women.

To account for the complex surveys design, sampling weights and bootstrap variance estimation were implemented in the analyses, all of which were carried out with SAS 9.2.

RESULTS

Francophones and Anglophones in Canada – how inactive and who are they?

As presented in Table 1, Francophones were more likely than Anglophones to be physically inactive in their leisure time: 49.1% versus 47.2%. Significantly more Francophones than Anglophones reported their general health as poor/fair rather than good/very good/excellent (13.3% vs. 10.9%). No difference between groups was noted for self-rated mental health. For socio-demographic profile, a greater proportion of women were found in Francophones

Table 2. Physical Inactivity According to Health and Socio-demographic Characteristics in Francophones and Anglophones

Characteristics			Inactive (%)	
			Francophones	Anglophones
Health	Self-perceived health	Poor/fair	70.0*	67.6
		Good/very good/excellent	45.9	44.7
	Self-perceived mental health	Poor/fair	63.5	60.8
		Good/very good/excellent	48.2	46.4
Socio-demographic	Sex	Men	45.1	44.3
		Women	52.6	50.0
	Age groups (years)	12-17	26.1	26.3
		18-34	44.7	43.2
		35-49	49.1	49.9
		50-64	53.3	51.7
		≥65	57.9	57.2
	Marital status	Married/common-law	50.2	50.3
		Single/widowed/divorced/separated	46.4*	42.8
	Number of children in the household		0.30 (0.28-0.33) *	0.41 (0.41-0.42)
	Education	Less than secondary school	53.5*	47.3
		Secondary school	51.9	51.2
		Some post-secondary	49.1	44.5
		Post-secondary graduation	46.0	45.9
Employment		Currently working regular job	46.8	46.7
		Not working regularly	54.8*	50.1
Income quintiles	1 st quintile		58.3	55.8
	2 nd quintile		51.6	52.4
	3 rd quintile		51.8*	47.5
	4 th quintile		44.3	42.3
	5 th quintile		38.6	36.7
Area of residence	Urban		48.8	47.3
	Rural		49.9*	46.7

* Significantly different distribution for Francophones compared to Anglophones ($p < 0.05$).

compared to Anglophones (52.2% vs. 50.5%). Francophones were older (mean: 46.1 vs. 42.7), slightly less educated (26.2% vs. 22.4% had less than secondary education), and had higher rate of unemployment (24.4% vs. 21.4%). More Francophones were married or lived in common-law partnership (62.5% vs. 58.4%) and a higher proportion of the Francophone population lived in rural areas (30.3% vs. 17.1%).

Inactive leisure time is presented in Table 2 according to health and socio-demographic characteristics in Francophone minority and Anglophone majority populations. A greater percentage of Francophones than Anglophones with poor/fair self-perceived health were inactive (70.0% vs. 67.6%). No difference between the proportion of inactive Francophones and inactive Anglophones was noted with regard to self-rated mental health. The proportion of inactive Francophones being single, with lower education and living in rural areas was greater compared to their Anglophone counterparts.

Physical inactivity in Francophone and Anglophone groups?

Crude association between groups and physical activity was 1.08 (1.03-1.13) for Francophones vs. Anglophones (Figure 1). This association was stronger for women than for men (1.11 [1.04-1.19] and 1.03 [0.96-1.11], respectively). After controlling for age, the relationship became weaker in both groups and insignificant in women. The odds ratios did not change substantially after adjusting for self-rated health, sex, marital status, number of children in the household, education, having a regular job, income quintiles and living in a rural area. The general trend of Francophone women being more inactive than Anglophone women remained after controlling for the previously mentioned factors. The adjusted odds of being inactive were 8% higher (1.08 [0.98-1.19]) for Francophone women compared to Anglophone women. This was not the case for Francophone men. After taking into account the covariates, Francophone men were more active than their Anglophone

counterparts: the adjusted odds of being inactive were 3% lower (0.97 [0.87-1.07]) for Francophone men compared to Anglophone men.

Predicting physical inactivity

Although language *per se* is not a significant predictor of physical inactivity, other factors such as self-perceived health, age, education, income, having a regular job, number of children in the household, and being married significantly increase the likelihood of being inactive in men and women (Figure 2). Self-perceived health was the most significant factor determining physical inactivity. The odds of being inactive were over two times higher for those reporting a poor/fair vs. good/very good/excellent health in both women (OR: 2.14) and men (OR: 2.22). The odds of being inactive increased by 1% for women and by 2% for men with increasing age. The likelihood of being physically inactive also increased with lower education attainment. Respondents with less than secondary education and with secondary education were approximately 28% and 19% (women) and 25% and 23% (men) more likely to be inactive than those with post-secondary schooling. Compared to those with the highest income, those in the lower income categories were more inactive, with this trend decreasing as the income increased (OR: from 2.25 to 1.35 for women and 2.16 to 1.26 for men). Respondents who had a regular job were more inactive than those without regular jobs, and working men were much more likely to be inactive than working women (OR: 1.88 for men and 1.25 for women). In addition, the odds of being inactive were approximately 20% lower for single respondents compared to non-singles. The odds of being inactive increased by 4% (for men) and by 7% (for women) with every additional child in a family.

DISCUSSION

To our knowledge, this is the first study that provides insight into the levels of physical inactivity between the Francophone minori-

Figure 1. Crude and adjusted odds ratios (OR) relating inactive (vs. active) leisure time to language groups

* Significant at the 0.05 level of confidence.

† Unadjusted OR.

‡ OR adjusted for age.

§ OR adjusted for self-rated health, marital status, number of children in the household, education, employment status, income quintiles and rurality.

ty (outside Québec) and the Anglophone majority in Canada. Our descriptive results show that leisure-time physical inactivity is significantly higher in Francophones than in Anglophones. Our results also highlight that proportions of Francophones having poor self-perceived health, being older, being single, with a low educational attainment, having higher rate of unemployment and living in rural areas are higher compared to their Anglophone counterparts. Once these health and socio-demographic factors are taken into account, no significant difference in physical inactivity during leisure time is noted between the Francophone minority and the Anglophone majority in Canada.

There are no comparable data using such a large representative sample on the prevalence of physical inactivity among the Francophone minority in Canada. We found that 49.1% of adult Francophones are physically inactive, compared to 47.2% of Anglophones. While no difference between groups was found in the percentage of moderately active, a significantly lower percentage of physically active was noted for Francophones compared to Anglophones (25.5% vs. 28.2%). These results are in line with the Second Report on the Health of Francophones in Ontario (based on the 2001 Canadian Community Health Survey, in combination with data from the 2001 census) documenting that the percentage of physically active adult Francophones in Ontario (21%) is significantly lower than that observed in the Anglophone Canadian population (25%).¹

It is now more recognized that choices in relation to being physically active are not solely individual matters, unconstrained by family, neighbourhood or material conditions.³ The evidence is that structural and social issues constrain and govern choice to a considerable extent. In this regard, we found that the proportion of inactive individuals was greater in the Francophone minority as

Figure 2. Adjusted odds ratios for predictors of physical inactivity in men and women

Note: The odds ratios are shown in pairs for men and women in the order listed in the table.

Reference categories (): Education (Post-secondary school), Income (5th quintile), Being single (Married).

compared to the Anglophone majority for those who had a poor self-perceived health, lived in rural areas, were single and had lower education attainment. These results are in line with other studies showing that socio-demographic factors greatly impact the likelihood of being physically active in the general population.⁴⁻⁷ In our study, no difference in the likelihood of being physically inactive was observed between Francophones and Anglophones when these socio-demographic factors were taken into account. This finding reinforces the notion that various indicators of socio-demographic status contribute to excluding some individuals from participating in mainstream patterns of “healthy” living.

Some limitations of the current study warrant discussion. First, the cross-sectional data limit the inference to causal relationships. Second, the estimate of physical activity used in this study was based on self-reported participation in leisure-time physical activities over the previous 3 months. Self-reports of physical activity may be subject to biases such as recall, overestimation and cultural views. Thus, future studies with objective measures of physical activity with pedometers or accelerometers would be warranted. Finally, the effect of language should be interpreted with caution. Since being Francophone means not only speaking the language, but also living in a disadvantaged socio-economic reality, the isolation of the language variable in our analysis is probably not optimal. Other statistical models, such as structural equation models that use a construct describing the socio-demographic context of Francophone minorities (a group of variables) instead of language itself, could offer a better approach for assessing physical activity levels.

In summary, the prevalence of physical inactivity is higher in the Francophone minority compared to the Anglophone majority of Canada. However, the likelihood of being physically inactive in

Francophones does not further prevail when socio-demographic factors are taken into account. The Francophone minority is indeed disadvantaged as compared to the Anglophone majority with respect to population characteristics that increase the likelihood of being inactive, such as having a poor self-rated health, being a woman, being older, having lower educational attainment and being married. These distinctive characteristics should be taken into consideration for the development of future interventions aiming at the adoption and maintenance of a regular physically active lifestyle for Francophones living in a minority setting.

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RÉSUMÉ

OBJECTIF : La participation à des activités physiques de loisir est influencée par divers facteurs sociodémographiques. De récentes évidences suggèrent que de faire partie d'un groupe minoritaire affecte négativement la santé d'un individu. L'objectif de cette étude était de comparer le mode de vie inactif entre les francophones minoritaires et les anglophones majoritaires vivant au Canada.

MÉTHODES : Les analyses sont issues de la fusion des cycles 2.1, 3.1, 4.1, 2008 et 2009 de l'enquête de santé des collectivités canadienne. Les groupes linguistiques francophones et anglophones ont été créés à partir d'un algorithme selon les variables suivantes : la langue de conversation, la langue maternelle, la langue d'entrevue et la langue de contact préférée lors de l'enquête. Le niveau d'activité physique a été estimé à partir d'un questionnaire administré lors d'une interview. L'association entre le niveau d'activité physique et les variables sociodémographiques a été étudiée à l'aide de modèles de régression logistique multivariés séquentiels additifs.

RÉSULTATS : La prévalence d'inactivité physique est plus élevée chez les Francophones comparativement aux Anglophones (49,1 % c. 47,2 %). Un pourcentage plus élevé de Francophones rapportant une mauvaise santé perçue, étant plus âgés, étant célibataires, ayant un faible niveau d'éducation, ne travaillant pas régulièrement et vivant en milieu rural est observé en comparaison aux Anglophones. En tenant compte de ces facteurs sociodémographiques, la prévalence d'inactivité physique ne diffère plus entre les Francophones et les Anglophones.

CONCLUSIONS : La minorité francophone du Canada est caractérisée par des facteurs sociodémographiques qui affectent négativement la participation à des activités physiques de loisir.

MOTS CLÉS : groupe minoritaire; langue; activités de loisir; santé publique