SHORT REPORT

Acculturation status and hypertension among Asian immigrants in Canada

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Some evidence of a protective function of immigrant status against chronic illness is found in the literature.[1] However, as immigrants' period of residence and level of acculturation increase, so does the prevalence of chronic conditions.[2 3] One classic study found that more traditional Japanese compared with their Westernised counterparts had a lower coronary heart disease prevalence rate.[4] A MEDLINE/PubMed search found few published studies of the effects of acculturation on hypertension with a nationally representa-tive sample of Asian immigrants. Therefore, the primary objective of our research was to examine the hypothesis that prevalence of hypertension among Asian immigrants differs by acculturation status.

METHODS

A multiple logistic regression was conducted to assess the independent effects of acculturation and other factors on hypertension. We analysed data from the 1996–97 Canadian

Table 1 Factors associated with hypertension among Asian immigrants in Canada aged 20 years and older

	n†	%‡	AOR§ (95% CI¶)
Gender			
Female	989	9.4	1.00
Male	982	10.1	1.03 (0.53 to 1.97)
Age (y)			
20–39	1032	1.2	1.00
40–49	456	8.8	9.19 (1.55 to 54.34)*
≥50	483	27.5	36.73 (3.88 to 347.92)**
Education			
< Secondary	273	22.1	1.00
Secondary	327	5.0	0.25 (0.03 to 2.34)
Some postsecondary	683	7.5	0.50 (0.32 to 0.79)**
Postsecondary	645	7.5	0.23 (0.14 to 0.36)***
Duration of residence (y)			
0–4	338	2.8	1.00
5–9	492	7.4	2.91 (2.00 to 4.24)***
10+	1111	13.3	4.21 (1.41 to 12.62)*
Current smoker			
No	1655	10.2	1.00
Yes	304	7.2	0.65 (0.20 to 2.14)
Type of drinker			
Non-regular drinker	1343	11.4	1.00
Regular drinker	600	5.8	0.65 (0.27 to 1.58)
Physical activity			
Active	888	10.2	1.00
Inactive	959	9.1	1.29 (0.49 to 3.37)
Self assessed health			
Poor	181	23.6	1.00
Good	1790	8.1	0.58 (0.23 to 1.42)
Body mass index			
BMI <27.0	1633	8.8	1.00
BMI ≥27.0	262	15.9	2.10 (1.54 to 2.85)***
Chronic conditions			
Absence	1491	7.0	1.00
Presence	477	19.1	1.10 (0.65 to 1.89)
Functional limitations			
Absence	1844	8.6	1.00
Presence	126	23.8	0.18 (0.02 to 1.90)
Psychological distress			
Absence	779	8.2	1.00
Presence	994	11.0	1.91 (1.42 to 2.57)***
Last blood pressure check††			
Mean (SE)	1643	1.7 (0.4)	1.05 (0.77 to 1.43)
Regular doctor			
Yes	250	3.0	1.00
No	1721	10.7	1.78 (0.2 to 15.61)

*p<0.05, **p<0.01, ***p<0.001; †unweighted numbers; ‡percentage (weighted) reporting hypertension; §AOR=adjusted odds ratios (adjusted for all other variables in the table); ¶CI=confidence interval; ††scores ranged from 1 (less than six months ago) to 5 (five or more years ago).

National Population Health Survey (NPHS). The sample size of Asian immigrants available from the NPHS for this study was 1972. The dependent variable was hypertension and the independent variable of interest was duration of residence. Hypertension was considered present if an affirmative answer was given to the question of whether the NPHS respondent had been diagnosed with high blood pressure by a health professional. Acculturation was defined as duration of residence in Canada and grouped into three categories: 0 to 4 years, 5 to 9 years, and 10 years and more. Control variables, identified in previous research as risk factors for hypertension, included smoking, alcohol use, physical inactivity, self assessed health, body mass index (BMI), chronic conditions, functional limitations, psychological distress, access to health services (last blood pressure check, have a regular doctor), and sociodemographic characteristics (gender, age, and education). All analyses were weighted to reflect the sample design, adjustments for non-response, and poststratification with standard errors and significance tests computed using SUDAAN (Research Triangle Institute, Research Triangle Park, NC).

RESULTS

Table 1 shows the descriptive and multivariate results. The findings from the bivariate analysis indicate that as Asian immigrants' period of residence in Canada increased, so did the prevalence of hypertension. The differences in the prevalence of hypertension were 2.8%, 7.4%, and 13.3% among those with 0 to 4, 5 to 9, and 10 years or more of residence, respectively. The logistic regression model showed a gradient of association between hypertension and duration of residence after adjusting for all other variables in the model. Age (older), educational attainment (lower), BMI (overweight), and psychological distress were all significantly predictive of hypertension.

DISCUSSION AND CONCLUSIONS

The results show a significant relation between Asian immigrants' length of residence in Canada and hypertension, after adjusting for sociodemographics, smoking, drinking, health status, access to health services, and psychological wellbeing. Longer term immigrants were more likely than recent immigrants to report hypertension. Important strengths of the NPHS include its population based nature; its high participation rate (82.6%), and its representative sampling frame. Some potential limitations are that the study is cross sectional in nature, the data are based on self reported information, some results must be interpreted with caution because of the small cell sizes, and length of residence as used in the study may be only a partial measure of cultural/behavioural adaptation. The relation between acculturation and health status is a complex one that may occur in an ordered fashion with different components of acculturation playing a part.[3] One firm conclusion that can be drawn from our study is that different patterns in the prevalence of hypertension follow different degrees of cultural adaptation. Differences in hypertension attributable to acculturation status may be a result of lifestyle changes and dietary practices, including meal patterns and food choices.[5] The challenge for health policy makers and health promoters in increasingly diverse societies will be to minimise the harmful effects and maximise the salutary effects of the acculturative process.[3]

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