Acculturation and immigrant health in Canada (2001 - 2005)

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Sixty percent of the Canadian's population growth is due to immigration. As a consequence, immigrant's health is becoming an area of concern in the development of policies for population health. It is well documented that immigrants are healthier than the native-born population, at least initially, upon their arrival. This foreign-born health advantage, also known as the "healthy migrant effect", has been found among immigrants in Europe, the USA and Canada. Over time, as immigrants adjust to their new homeland, this health advantage wanes, resulting in a convergence of health statuses for both immigrants and natives (Finch, Phuong Do et Frank, 2009; Ali, McDermott et Gravel, 2004, Beiser, 2005). In Canada, studies have shown that immigrants generally tend to follow this pattern of worsening health with increased length of residency.

Among the various processes that may affect immigrants' health over time, acculturation of Western norms has been singled out as a potent mechanism whereby immigrants abandon their health-related cultural norms and adopt Western lifestyles and risky behaviors that are detrimental to their health. However, the measure of acculturation in large sample surveys remains a challenge. Several authors have emphasized the limits of the variables commonly used to measure acculturation because these variables only inform on specific changes (risk behaviors, language) or on external conditions for the individual (length of residence). To overcome these limitations, Berry (1997) developed the concept of acculturation strategies in order to describe the way that people acquired new culture. The proposed measure is a four-scale acculturation variable derived from a 2X2 typology based on cultural maintenance and contact and participation to the culture of origin and to that of the host country. The aim of this paper is to analyse immigrants' health and acculturation using the concept of acculturation strategy. Based on the data from the three waves of Longitudinal Study of Immigration to Canada (LSIC), we specifically:

1. Analyze the link between acculturation strategies and health both in terms of transversal and longitudinal effects.
2. Analyze the effect of changes in acculturation strategies on general and mental health of immigrants.

Methods

Data: Data come from the Longitudinal Survey of Immigration to Canada (LSIC) over three waves in 2001, 2003 and 2005. The Longitudinal Survey of Immigration to Canada (LSIC) provides an original way to assess the effects of acculturation. The LSIC contains a cohort of 7716 landed immigrants (3819 men and 3897 women) who arrived in Canada

between October 1, 2000 and September 30, 2001, aged 15 years or more and who come from outside Canada. This implies that they had applied to visa at a Canadian mission abroad. The survey is conducted by Statistics Canada and data are available to researchers through Research Data Centers.

Measures: General health is assessed in LSIC by a five-point scale, self-declared. Respondents were asked to assess their health with this question: In general, would you say your health is ... excellent, very good, good, fair or poor? For the purpose of the analysis, we make a dichotomous variable where excellent, very good, good are defined as good and fair and poor as poor.

Mental health is also measured by a self-reported response. At Wave 1, the question was: Since you came to Canada, have you had any emotional or mental problems (possible answers: yes-no - refusal - not known). While changes in mental health are important during the early years following migration, few studies simultaneously offer a variety of indicators on health and migration.

We have based on Berry's definition of acculturation strategy to assess acculturation level of immigrants. Using questions on importance of learning host country values and traditions and on importance of maintaining origin culture, we construct a four-scale variable with integration, assimilation, separation and marginalisation modalities. Finally, we also controlled for both pre and post migration variables.

Analysis: After describing the sample, we looked at changes in mental and general health across the three waves based on cross tables. We conducted logistic regressions to analyze the effect of acculturation strategies on immigrant's health. First we described what happens at wave 1, and then we looked at the effect of acculturation strategies early in the installation (wave 1) on later waves (2 and 3) of the survey. The used of a logistic regression analysis fits the needs of our research question because the two dependent variables of interest are categorical. To perform a binary logistic regression we used the dichotomous variable of overall health status. The variable on the state of mental health was collected on a dichotomous scale. Finally we generated a variable on changes of acculturation within time to evaluate its effect on mental and general health changes through time. The logistic regression analysis to calculate the probability of being less healthy (which will be estimated in our work) from a vector of independent variables is given by the equation: $P_i=1/(1+e^{\alpha+\beta X_i})$. In this summary, we present association effects at wave 1 between acculturation and health and analyze the predicting effects of acculturation strategies at wave 1 on health at wave 3.

Preliminary Results: The table 1 below show associative effects of acculturation on mental and general health (Model 1 and 2). Compared to integration separation strategy increased the probability of reporting mental health problem (OR=1.71; p<0,05) while for

Table 1 : Estimated effects of acculturation on having mental health problem (wave 1 and 3) and being in general good health (wave 1 and 3), Odds Ratio (OR) are reported.

Outcomes$^\$$ Variables	Model 1 Mental Health (All, wave 1)	Model 2 General health (All, wave 1)	Model 3 Mental Health (Male, wave3)	Model 4 Mental Health (Female, Wave 3)	Model 5 General health (Male, wave3)	Model 6 General health (Female, Wave 3)
Intercept	0.01** (0.00)	188.23** (119.29)	0.03** (.01)	0.16** (0.05)	65.73** (45.22)	14.05** (7.49)
Acculturation (ref. Separation)						
Assimilation	0.88 (0.13)	0.74 (0.13)	1.07 (0.11)	1.05 (0.11)	1.20 (0.25)	0.94 (0.15)
Séparation	1.71* (0.35)	0.61*(0.14)	1.18 (0.24)	0.92 (0.13)	0.77 (0.24)	1.20 (0.26)
Marginalisation	1.00 (0.32)	0.53*(0.16)	1.20 (0.29)	1.25 (0.26)	0.50* (0.17)	0.92 (.28)
Sexe (ref. Male)						
Female	1.59** (0.16)	0.61** (0.08)	-	-	-	-
Language spoken at home (ref. English)						
French	0.60 (0.22)	1.91 (1.09)	1.01 (0.24)	1.56* (0.34)	1.54 (0.83)	0.50 (0.19)
Other	1.12 (0.19)	0.74 018)	1.07 (0.13)	1.29* (0.14)	0.82 (0.20)	0.75 (0.15)
Province ref. British Colombia						
Ontario	0.62** (0.08)	1.51* (0.24)	1.71** (0.20)	1.50** (0.14)	1.47* (0.26)	1.80** (0.23)
Quebec	0.47** (0.08)	0.96 (0.21)	1.14 (0.18)	0.98 (0.13)	1.18 (0.30)	2.08** (0.43)
Others	0.70* (0.11)	1.53* (0.32)	1.95** (0.27)	1.22 (0.15)	1.51 (0.35)	1.70* (0.29)
Marital status (ref. union)						
Not in union	1.20 (0.17)	0.77 (0.13)	1.03 (0.12)	0.93 (0.09)	0.77 (0.18)	1.17 (0.18)
Age (ref. aged 15-24)						
aged 25-34	1.91** (0.37)	0.68 (0.17)	1.28 (0.20)	1.18 (0.14)	0.54 (0.17)	0.40** (0.09)
aged 35-44	2.03** (0.42)	0.41** (0.10)	1.17 (0.20)	1.15 (0.14)	0.29** (0.10)	0.20** (0.04)
aged 45-54	1.57* (0.37)	0.24** (0.06)	1.41 (.27)	1.32 (0.19)	0.21** (0.07)	0.12** (.03)
aged 55-64	1.02 (0.35)	0.19** (0.05)	1.00 (.26)	0.74 (0.14)	0.11** (0.04)	0.14** (0.04)
aged 65+	0.70 (0.38)	0.16** (.05)	1.42 (.46)	0.89 (0.22)	0.08** (0.04)	0.10** (0.03)
Financial status ref. more than enough money						
Enough money	1.38 (0.34)	0.57 (0.19)	1.82* (0.33)	1.08 (0.14)	1.17 (0.34)	1.03 (0.22)
Less than enough	3.39** (0.84)	0.37** (0.13)	2.67** (0.49)	1.31 (0.18)	0.69 (0.20)	0.79 (0.18)

*p<0.05 **p<0.001 ; Standard errors in brackets ; $ All estimated OR in models are adjusted for the following premigration variables (Immigration class ; visible minority status ; education ; family/friends in Canada)

general health both separation and marginalization lowered the probability of being in good health.

When coming to between waves effects (Model 3-6) we found that effect are not the same for women and for men. Marginalization significantly decrease of 50% the probability of being in overall good health for men, but no effect is found among women. Moreover, as no effect had been found across waves in the relationship of acculturation to mental health, we conclude to an immediate effect between these variables. More analysis are conducted in the paper to reveal the way of which acculturation affect health status over time. Acquiring norms, values and habits of host country should be more monitored early after immigrants' arrival to Canada, especially in health area.

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