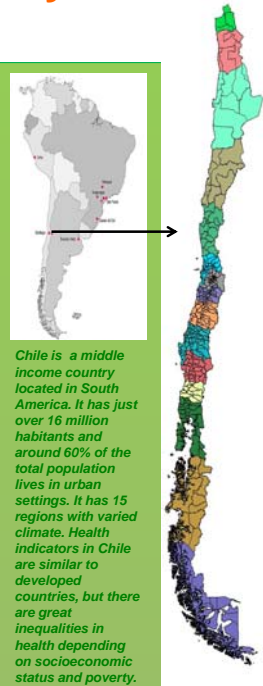# Exploring the health and living standards of those who don't report their migration status in a population-based survey:
The case of Chile

Báltica Cabieses (bcabieses@udd.cl, bbcv500@york.ac.uk)
Kate Pickett, Helena Tunstall and Manuel Espinoza

Chile is a middle income country located in South America. It has just over 16 million habitants and around 60% of the total population lives in urban settings. It has 15 regions with varied climate. Health indicators in Chile are similar to developed countries, but there are great inequalities in health depending on socioeconomic status and poverty.

1 Why study the international immigrant population (IIP) in Chile?

1. Chile has experienced economic stability and growth in recent years, but not all socioeconomic groups have benefited to the same extent.

2. The IIP has also increased rapidly over the last decade and qualitative studies have reported conditions of vulnerability among immigrants.

3. Governmental reports suggest that 2% of the total population in Chile are immigrants, the highest rate since 1952 (2007 data).

4. Survey data on migration status began to be collected in 2006 in the CASEN survey. 1% reported being immigrants and a further 0.7% did not report their migration status in the country.

5. The purpose of this study was to explore living conditions and health of people with *migration status missing values (MS-MV)* and compare them to self-reported immigrants (IIP).

2 How was the study conducted?

1. Design: Cross-sectional analysis of the population-based CASEN survey in 2006 in Chile (268,873 participants from 73,720 households).

2. Comparison groups: international immigrants (n=1877, 1% total sample) and the missing values (n=1577, 0.7% total sample)

3. **Main health outcomes** (dichotomous):
   1. Any disability
   2. Any sickness/injury in the past month
   3. Any cancer/chronic condition in the past year
   4. Any hospitalization/surgery in the past year

4. **Dependent variables**
   1. Demographic factors: age, sex, marital status, geographical location.
   2. Socioeconomic status: SES cluster: 3 ordinal categories in the IIP: low, medium, high; combining income, occupation and education through hierarchical cluster analysis.
   3. Material factors: overcrowding, sanitation, housing quality., and household assets index (HAI).

5. Analysis: Weighted multiple logistic regression models were estimated in STATA 10.0. Interaction effects, adjusted R squares and goodness of fit tests were also explored in each of the final regression models.

3 What are the key findings?

1. Compared to IIP the MS-MV were younger (mean 26 versus 33 years-old) and a higher proportion had children (45% versus 13%), especially among those that belonged to an ethnic minority group (40% versus 11%). They were more likely live in rural areas (9% versus 6%) and in the Southern area of the country (20% versus 13%) than immigrants.

2. The MS-MV group has a 9.2 times higher proportion of adult people with no education (21% versus 2%) and a 2.8 times higher proportion of people with education up to primary level only, compared to the immigrant group (33% versus 18%).

3. Immigrants report a 2.2 times higher mean household income per capita per month (USD$746 versus USD$329) and a higher mean number of household assets than the MS-MV group (comparing the HAI between groups). A higher proportion of people in the MS-MV group live in overcrowded housing compared to immigrants (36% versus 25%).

4. The health of the MS-MV has worse than the IIP for any disability, hospitalization or surgery and emergency attentions (*p<0.05, **p<0.001):

Dimensions	IMMIGRANT POPULATION		MS-MV GROUP	
	% or mean	95% CI	% or mean	95% CI
Any disability**	3.55	2.49-5.02	7.42	5.28-10.33
By age groups:				
<16 years old	2.18	0.74-6.23	1.93	0.90-4.11
16-65 years old**	2.96	1.85-4.72	9.67	6.16-14.86
>65 years old	12.39	7.04-20.90	26.42	15.66-40.97
Any chronic condition or cancer	3.90	2.68-5.63	4.26	2.84-6.34
By age groups:				
<16 years old**	0.003	0.00-0.28	2.15	0.84-5.42
16-65 years old	2.83	1.84-4.33	3.89	2.31-6.49
>65 years old	22.61	11.94-38.63	19.29	9.75-34.99
Any health problem/ accident	10.80	8.70-13.32	14.12	11.21-17.65
By age groups:				
<16 years old	6.92	3.80-12.28	12.63	8.77-17.86
16-65 years old	10.44	8.25-13.13	13.51	9.62-18.66
>65 years old	21.36	11.00-37.38	27.02	14.77-44.16
Any hospitalisation/ surgery**	10.80	8.70-13.32	4.59	3.26-6.42
By age groups:				
<16 years old	2.76	0.67-10.62	3.46	1.85-6.38
16-65 years old	5.92	4.28-8.15	5.08	3.16-8.09
>65 years old	16.03	6.85-33.13	8.24	3.37-18.75
Number of medical attentions	X=2.24	1.81-2.66	X=2.67	1.94-3.40
By age groups:				
<16 years old	1.52	1.15-1.89	2.31	1.53-3.08
16-65 years old	2.19	1.69-2.70	3.27	1.53-3.78
>65 years old	3.19	1.81-4.57	2.66	1.53-3.78
Number of emergency attentions**	X=1.13	1.02-1.25	X=1.40	1.29-1.60
By age groups:				
<16 years old	1.30	0.85-1.74	1.50	1.19-1.81
16-65 years old	1.11	0.98-1.23	1.28	1.05-1.50
>65 years old	1.19	0.76-1.61	1.08	0.88-1.27

5. Age, sex, educational level and household income were factors consistently associated with poor health among the MS-MV and the IIP, but the magnitudes of association were larger in the first group for several health conditions.

4 What does this study add?

1. This study is the first national-representative exploration of the living conditions and health status of people that prefer not to report their migration status in a social survey in Chile.

2. A wide range of both health outcomes and socio-demographic factors were analysed. The MS-MV were significantly younger and living in higher socioeconomic and material deprivation than those that respond that they are immigrants, and their health status was poorer than the IIP.

3. Regardless of their migration status, the MS-MV are a vulnerable group that needs special consideration in Chile.

4. Equity-centred policy interventions in Chile should focus on improving the living standards and protecting the health of those who were categorised into this group, particularly the children.

5 Future research?

1. Improved sampling and recruiting techniques must be considered in surveys in Chile in order to better represent hard to reach populations like undocumented immigrants.

2. Reasons for not wanting to report migration status and further characteristics should be collected in this group, including legal status and employment status.

3. Other relevant factors could be included in the CASEN survey, such as reasons for migrating, changes in legal status, experiences of discrimination, occupational hazards, second and third generation immigrants, and others.

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