

Health inequality gap in immigrant versus local children in Chile

Brechas de desigualdad en salud en niños migrantes versus locales en Chile

Baltica Cabieses^a, Macarena Chepo^b, Marcela Oyarte^c, Niina Markkula^d,
Patricia Bustos^e, Víctor Pedrero^f, Iris Delgado^g

^aSocial studies in health research programme, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; Visiting scholar University of York. Social epidemiologist, PhD

^bSocial studies in health research programme, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; Community health specialist, MSc(c)

^cSocial studies in health research programme, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; Biostatistician, MSc(c)

^dSocial studies in health research programme, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; MD, PhD

^eHealth department, Servicio de Salud Metropolitano Occidente, kinesióloga, MSc(c)

^fSocial studies in health research programme, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; Nurse, psychometrist, MSc

^gCentre of Epidemiology and Health Policy, CEPS, Facultad de Medicina Clínica Alemana Universidad del Desarrollo; Mathematician, MSc, PhD(c)

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Abstract

Introduction: Children and young international migrants face different health challenges compared with the local population, particularly if they live in insecure environments or adverse social conditions. This study seeks to identify gaps in health outcomes of children between immigrant and local population in Chile. **Methods:** This study analyses data from three sources: (i) *Born in Chile:* Electronic records of antenatal visits from all municipal antenatal clinics of Recoleta in 2012; (ii) *Growing up in Chile:* Population survey “National Socioeconomic Characterization” (CASEN) from 2013 and (iii) *Getting sick in Chile:* Data of all hospital discharges in 2012, provided by the department of statistics and health information (DEIS) of the Ministry of Health. **Results:** (i) *Born in Chile:* Immigrants more frequently have psychosocial risk (62.3% vs 50.1% in Chileans) and enter later into the program (63.1% vs 33.4% enter later than 14 weeks of pregnancy). All birth outcomes were better among immigrants (e.g. caesarean sections rates: 24.2% immigrants vs % Chileans). (ii) *Growing up in Chile:* A higher proportion of migrant children is outside the school system and lives in multidimensional poverty (40% immigrants vs 23.2% Chileans). (iii) *Getting sick in Chile:* Injuries and other external causes were more frequent cause of hospitalisation among migrants (23.6%) than the local population (16.7%) aged between 7 and 14 years. **Conclusions:** Addressing the needs of the children in Chile, regardless of their immigration status, is an ethical, legal and moral imperative.

Keywords:
Inequality;
Emigration and
immigration;
Child;
Health status

Introduction

In 2015, 244 millions of international immigrants in the world were recorded, 41% more than in 2000¹. It has been estimated that 37 million of those immigrants are younger than 20 years old, and most of them live in developing countries². Recently, it has been recognized that the migratory condition can be an indicator of social vulnerability or social inequality in health inside of a country^{1-4,9,10} and that specific migratory variable, that can be modified or anticipate, can be of great importance in this process⁸. The main factor that affect the health of international migrants are work conditions, cultural barriers, access and use of health services, previous conditions of their country of origin, residence time in the destination country (associated with phenomena of assimilation and acculturation), social processes of integration /exclusion and experiences of stigma and discrimination¹¹⁻¹³.

The last childhood report of the United Nations 2016 (The State of the World's Children 2016: A fair chance for every child) presents crucial information about the importance of being born and to grow up in a familiar, community and sociocultural environment, and also permanent, safe and healthy growth opportunities³. Children and young international migrants face different challenges in health, in comparison with the local population, specifically if they confront insecure environments or unfavorable social conditions. Challenges, such as the lack of access to medical attention and social services, also the exposure to an insecure neighborhood or to contaminants are known factors of risk for their health⁴. In addition, the immigration process is a source of many factors of psychosocial stress. Whether it is forced or voluntary, migrations imply the separation from their family and culture. Insecure work conditions and other challenges without the support network and a habitual social capital expose them to higher levels of anxiety and challenges them to deal with social integration. Forced migration, resulting from a conflict, the economic insecurity o natural disasters, worsen the risks of mental health of international migrants, including children⁵⁻⁷.

These risk factors result in adverse outcomes for the health of international migrant children. According to the datum in the literature, children born from mothers with a history of migration have a higher incidence of fetal death, neonatal mortality, premature delivery and low birthweight⁸⁻¹¹. The status of physical health of migrant children after birth has been studied less accurately; however, there is evidence of a higher prevalence of dental caries, some infectious diseases^{10,12} and obesity¹³. Mental health problems and psychosocial integrity problems have also been reported^{14,15}. It is important to recognize that various studies have been

focused in the mental health of this group, but it has been difficult to obtain conclusive results due to the different methodologies of study, definitions, and context of the international migrants among the studied countries¹⁶.

Besides the differences in the factors of risk and the state of health, the use of health services in migrant families can differ from the local population. The reasons for this are diverse and include, for example, different patterns of disease, different ways of accessing the health system, economic and social variability, and the partial or total healthcare coverage. In fact, systematic reviews have reported a reduced use of the prenatal health services between pregnant immigrants^{8,17}. There are few studies of the use of health services by international migrant children. In Switzerland, children of migrant families have a significant major use of the hospital services and of intensive care than local population¹⁰. In Spain, a study made in 2009 showed that children from migrant families had, significantly, less chronic diseases, while the perceived state of health, according to the auto-evaluation of the parents or keeper, was worse if both parents were immigrants¹⁸. Differences in the use of sanitary services between immigrant children and locals can be analyzed by other socioeconomic factors, such as poverty and ethnic origin¹⁹⁻²¹.

According to the international evidence, health issues and the use of health services by migrants children can be summarized in: (i) the difficult access and the unfamiliarity with the new health care system, (ii) language barriers, (iii) differences in the expectations and perceived needs by this migrants, (iv) differences in the payment capacities of health-related costs and (v) cultural differences of the definitions of diseases and the expected treatments. The few available studies of migrant children indicate that language barriers²² and the expectations of parents regarding the health system⁶ are particularly relevant. Concerning this last topic, a qualitative study of Polish families in Scotland shows that migrant parent's concerns about the health services are likely to affect their beliefs and child behaviors²³.

The purpose of this study is to identify the existing gaps in results of childhood health (up to 14 years) between the international migrant population and the Chilean population, based on three available sources of quantitative information: (i) *Born in Chile*: Datum of a prenatal consultation obtained from 4 primary health center in the commune of Recoleta (2012), (ii) *Growing up in Chile*: Datum of a population survey CASEN 2013 and (iii) *Getting sick in Chile*: hospital discharges datum in 2012. It is expected that this study will contribute with unpublished evidence of the difference between the health of migrant children and

Chilean children, in favor of a more inclusive society and more respectful of diversity, as well as a health system more cautious of the compliance of the international declarations regarding the healthcare for children.

Methodology

An analytical quantitative study focused on comparing the differences of access, use of services and result of international migrant's health versus children born in Chile. This study is part of the objectives of the project Fondecyt 11130042 "Developing Public Health Intelligence in Primary Care for International Immigrants in Chile: A Multi-Methods Study" (2013-2017), whose purpose is to create new knowledge about life conditions, access to health services and results of international migrant's health in Chile (approval from the Ethics Committee of the Faculty of Medicine UDD and the Ethics Committee of Conicyt).

1. Born in Chile: Quantitative datum of prenatal consultation 2012

The quantitative datum of the prenatal consultation was obtained from anonymous electronic registers of female users of all CESFAM of municipal administration of the commune of Recoleta, during 2012 (Cristo Vive was excluded since it depends on a foundation). Said registers belong to a database of the Chile Crece Contigo program, complemented with the register of each attendant of the CESFAM program for women. This database contains socio-demographic antecedents, obstetric antecedents, and maternal morbidity, as well as variables related to the actual pregnancy control and to the final result of the birth. To analyze the database, women with health benefits that assisted with newborns, woman with more than 70% of their observations in blank and women with multiple pregnancies were excluded, reaching a database for the analysis of 1,272 cases, of which 11,012 were Chilean and 260 (20.4%) were international migrants. This database was handed in anonymized by the Department of Health of the Municipality of Recoleta.

Through measurements of frequencies, sociodemographic characteristics, use of prenatal controls, risk factors in the result of pregnancy and birth, including co-morbidities and biopsychosocial risk (EPSA questionnaire), both in immigrant population (who possesses a nationality other than Chilean) and in Chilean population were described. In addition, comparisons between said populations were made at 95% confidence (T-test and Fisher's exact test, according to the number of observations, and Chi-square test).

2. Growing up in Chile: Quantitative datum from population survey CASEN 2013

An anonymous population survey "Caracterización Socioeconómica Nacional" (CASEN), developed by the Ministry of Social Development every 2-3 years and can be download from the internet by free. It measures the socioeconomic status of every household in the country and it represents residents in private homes in 324 communes of 15 regions in the country, excluding around 15 communes that are hard to access and institutionalized persons. This survey used a stratified probability sampling¹⁹. By 2013, this survey had 66,725 surveyed households, corresponding to the information of 212,346 Chileans, 3,555 immigrants and 2,590 persons who preferred not to report their migratory status (lost datum and excluded datum from this analysis). Using factors of expansion for the population representation, those represent 16,689,377 Chileans and 354,581 immigrants (96.6% and 2.1%, respectively). According to CASEN 2013 datum, there are 4,718,494 children and teen under 18 in Chile, out of that 1.4% are migrants and a 1.2% of the cases were not possible to determine their nationality. In this database, people who said that their mother did not live in Chile at the moment of their birth (first generation immigrants) are considered immigrants.

In the analysis, they did estimations of the sociodemographic profile of the migrant and Chilean population (measures of key trends and dispersion or proportions according to the variable) and comparison between said populations at 98% confidence, taking into account the complex design of the sample.

3. Getting sick in Chile: Quantitative datum of hospital discharges 2012

The analysis of hospital discharges provides information, such as morbidity, use, supply, demand, and quality of the health care services²⁵. From the point of view of access and use of health services, the obtained indicators from hospital discharges (HD) are important to recognize and adjust the health services to the needs of different population's subgroups²⁶. The database of the hospital discharges in 2012, provided by the Department of Statistics and Health Information, Ministry of Health, contains information about gender, age, nationality, residence and health insurances, along with information of the hospitalization, such as diagnosis, discharge status or death, surgical interventions, days of hospitalization and information of the installation where the HD was emitted. In this database, persons whose nationality was different from Chilean were considered immigrants. It is important to mention that the analysis unit of this database of hospital discharges 2012 is the discharge itself, not the patient. It is worth pointing out that there might be more than

one discharge per person, which is common in persons with chronic and severe conditions. Although, this is highly unlikely in the case of a result of a birth.

They estimated frequency measurements, with a test of comparison of proportion with a significance level of 0.05%, for the hospital characteristics (discharge status, surgical intervention, and diagnosis, according to the ICD-10) and sociodemographic of the hospital discharges, by migratory conditions and age.

Results

1. Born in Chile

From the female users of the Chile Crece Contigo (ChCC) program, of all CESFAM of the commune of Recoleta during 2013, 20.4% (n = 260) were female international migrant, and most of them (80.8%) were from Peru, followed by Colombia (4.5%), Haiti, Bolivia, Dominican Republic, Argentina, and Ecuador. The average age was slightly higher in immigrant women than in Chilean women (27 and 26, respectively). From Chilean women that assisted to the program, 20.1% (203 cases) were younger than 19, a number that is almost twice the percentage of immigrant women in the same situation, 10.8% (28 cases). The number of married immigrant women or with a partner, in comparison with Chilean women, is higher (68.5% and 54.7%), they also report that they have a higher level of secondary education or higher education than Chilean women. 28,8% of female immigrant did not have health insurance, only 0.8% of Chilean women did not have health insurance (p < 0.001).

There were no differences of importance in parity

of immigrant and Chilean woman. On the contrary, it is possible to observe that 29% (n = 76) of immigrant reported one or more abortion in their life, while Chilean women have a percentage of 18% (n = 188).

There were no important differences in the rates of derivations to the secondary level among immigrant and Chilean women (Table 1). High blood pressure was slightly more common in the migrant population, while gestational diabetes was more common in Chilean woman. Immigrant showed a higher proportion of biopsychosocial risk (immigrant, 62.3%, and Chilean, 50.1%), although, there is a bigger proportion of Chilean woman in a severe risk (immigrant, 2.7%, and Chilean, 8.3%). It is possible to observe a higher percentage of immigrant women with depression than Chilean woman, although this difference was not statistically significant.

A late admission to the program was more common in pregnant migrants, after 14 weeks of pregnancy (33.4% in Chilean women and 63.1% in an immigrant woman) (Table 2). This difference remained even after the stratification, to determine if women started their controls in CESFAM or if they were transferred from another center.

On the other hand, at the end of the pregnancy, 4.3% of women were transferred to another center and only 10.9% did not go to their controls after the birth. Immigrant women have significantly better results at birth, less premature births, fewer newborns with low weight and cesarean births or forceps (Figure 1). This remained even after stratifying by age, referral to High-risk pathological obstetrics clinic (COPAR), late access to maternal consultation and biopsychosocial risks.

Table 1. Proportion of risk factors for the development or termination of pregnancy in women users of the Chile Grows with you program, CESFAM Recoleta 2012, according to migratory condition

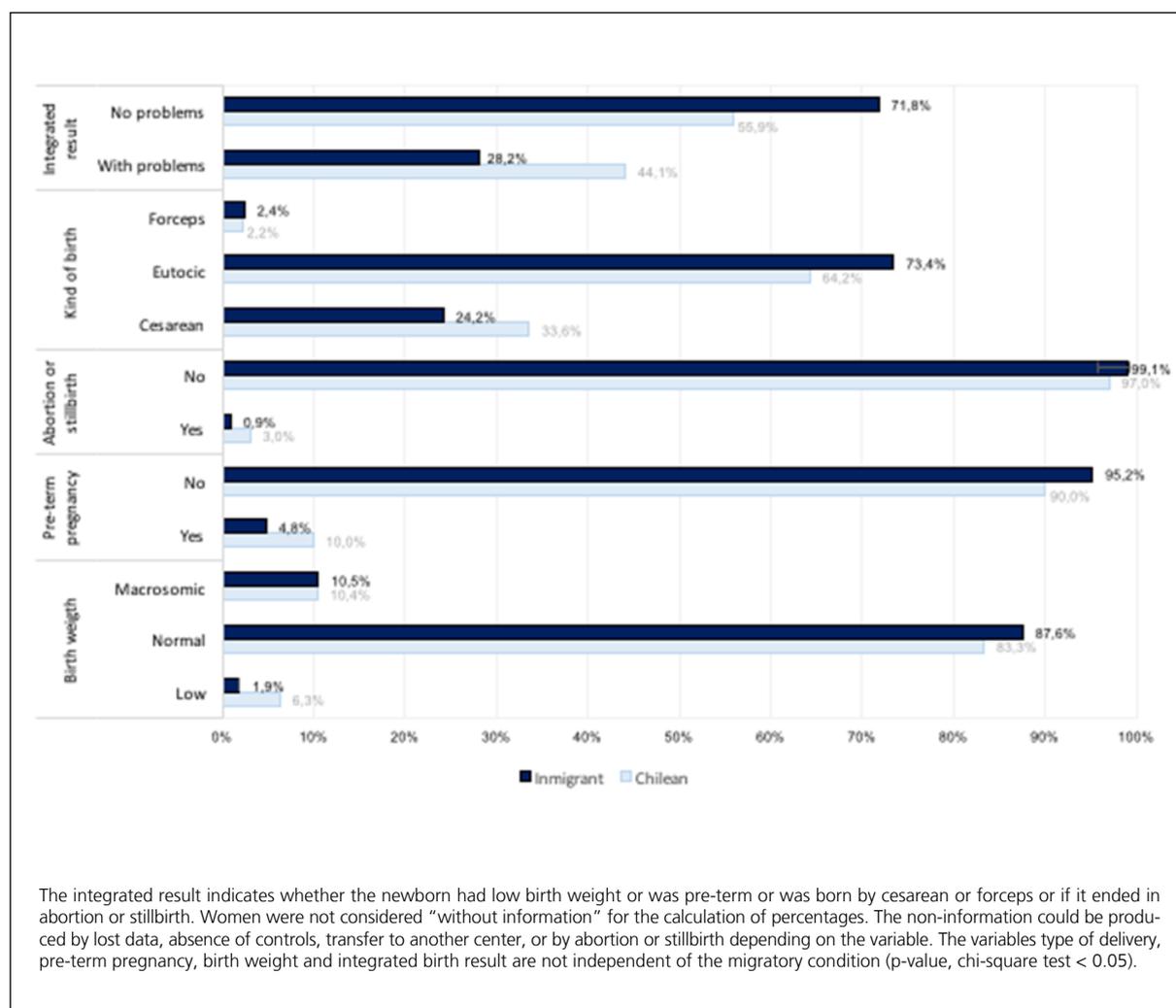
	Immigrant, % (n = 1,012)	Chilean, % (n = 260)	P value
Referred to high risk	41.2	43.4	-2.2 (0.516)
With depressive symptoms	32.3	29.7	2.6 (0.428)
With psychosocial risk	62.3	50.1	12.2 (< 0.00)
Severe	2.7	8.3	-5.6 (< 0.00)
Moderate	22.3	15.1	7.2 (0.011)
Low	37.3	26.7	10.6 (0.001)
Non planned pregnancy	66.5	61.4	5.1 (0.117)
Morbidities			
Hipertension	3.8	2.9	0.9 (0.452)
Diabetes mellitus	0.0	1.5	-1.5 (0.051)*
Dyslipidemias	0.0	0.3	-0.3 (1.000)*
Other conditions	15.4	21.4	-6.0 (0.019)

The differences in biopsychosocial risk and presence of other diseases are statistically significant, with a significance of 0.05.

*Corresponds to the p-value of Fisher's exact test.

Table 2. Use of antenatal program of pregnant women members of the Chile Grows with you program, at the commune of Recoleta during the year 2012, according to the migratory condition

	Immigrant (n = 1,012)	Chilean (n = 260)	P value
Initiates antenatal care after week 14			
Yes	63.1%	33.4%	29.7 (< 0.00)
No	36.9%	66.6%	-29.7 (< 0.00)
Number of antenatal controls			
1	6.2%	7.6%	-1.4 (0.394)
2	4.6%	6.2%	-1.6 (0.285)
3	8.5%	5.4%	3.1 (0.105)
4	5.4%	5.4%	0.0 (0.975)
5	7.3%	7.3%	0.0 (0.998)
6	10.4%	9.3%	1.1 (0.602)
7 or more	55.4%	55.3%	0.1 (0.966)
No data	2.3%	3.5%	-1.2 (0.293)

**Figure 1.** Use of the Chile Grows with you program, of four primary care facilities at the commune of Recoleta during the year 2012, according to the migratory condition.

2. Growing up in Chile

Most of the infant population in Chile are 7-15 years old, including immigrants; however, the number of immigrant children is significantly higher (49.6% of the total amount of migrant children). In the local populations, differences by gender do not exceed 5 percentage points in any age group, while in the migrant population, the group of children younger than 1 year is strictly formed by males (65.5%). On the other hand, in the group of 1-6 years, there is a higher number of

females (66-65%) (Table 3).

Regarding the level of education, there is a higher proportion of migrant children (79.5%) in the scholar system than Chilean children (64.2%) in the group of 1-6, while in the next groups there are more Chileans the scholar system. The reasons for parents to decide not to send their children to school vary in the age group. Parents in the 1-6 group consider that it is not necessary (Chilean parents: 74% and migrant parents: 57.4%) or they do not trust in the care (mi-

Table 3. Sociodemographic profile of the population of migrant versus Chilean children, CASEN 2013

	Immigrants, n (%) (n = 64,102)		Chileans, n (%) (n = 4,599,675)	
< 1 year				
Sex				
Male	555	(65.5%)	100312	(48.6%)
Female	292	(34.5%)	106147	(51.4%)
Attends to school				
Yes	0	(0.0%)	6384	(3.1%)
No	847	(100.0%)	200075	(96.9%)
Lives in multidimensional poverty				
Yes	11.1%		30.0%	
No	88.9%		70.0%	
1 to 6 years				
Sex				
Male	4891	(33.5%)	724766	(50.6%)
Female	9710	(66.5%)	708900	(49.4%)
Attends to school				
Yes	11618	(79.6%)	919526	(64.2%)
No	2983	(20.4%)	513540	(35.8%)
Lives in multidimensional poverty				
Yes	52.20%		26.20%	
No	47.80%		73.80%	
7 to 14 years				
Sex				
Male	14853	(46.7%)	949393	(50.7%)
Female	16.940	(53.3%)	922081	(49.3%)
Attends to school				
Yes	30044	(94.5%)	1862941	(99.5%)
No	1749	(5.5%)	8533	(0.5%)
Lives in multidimensional poverty				
Yes	38.2%		20.50%	
No	61.8%		79.50%	
15 to 18 years				
Sex				
Male	7833	(46.5%)	564501	(51.9%)
Female	9028	(53.5%)	523575	(48.1%)
Attends to school				
Yes	13550	(80.5%)	923108	(86.9%)
No	3289	(19.5%)	138908	(13.1%)
Lives in multidimensional poverty				
Yes	35.1%		22.6%	
No	64.9%		77.4%	

grant parents: 16% and Chilean parents: 3.4%). In the 7-14 group, the migrant population commonly indicate that “they do not know” or they “will not answer” and Chileans indicate that because of disability. Lastly, in the 15-18 group is because they are looking for a job (41.7%), on the other hand, Chileans indicate that because they already finished their studies (22.5%) and on second place because they are looking for a job (19.7%). Regarding the socioeconomic status, more than 50% of migrant children, between 1 and 6 years, come from multidimensional poor households (i.e. households with 25% or more poor wellbeing indicators), which correspond to double the number of Chileans. This phenomenon still has small variations up to the 15-18 group. Finally, 3.4% of immigrants younger than 7 years were malnourished or in risk of malnourishment (against a 2.3% in Chileans) and 1.7% had overweight or obesity (against 13.8% in Chileans).

3. Getting sick in Chile

During 2012, there were a total of 1,659, 654 of hospital discharges in Chile, and 0.5% corresponded to the international migrant population. From the total number of discharges of children younger than 18, 0.19% were international migrant patients (666 hospital discharges) (Table 4). From the hospital discharges, 46% were children from 15 to 18, while Chileans were only 21.1%.

From the distributions of hospital discharges of migrant patients between ISAPRE (Private system), FONASA (Public system) and no insurance were all similar, around 30%. However, this situation is different in hospital discharges of children younger than 1 (66.2% FONASA, 26.1% ISAPRE and 19.5% without insurance).

Transversally, one of the most common causes of hospital discharges in children younger than 18 was because of diseases of the respiratory system. Migrant children from 7 to 14 showed a higher proportion of hospital discharges due to neoplasm (12.1% against 5.5%) and congenital malformations (9.3% against 4.2%), while immigrants between 1 and 6 had more discharges due to consequences of external causes (23.0% against 12.8%) and children younger than 1 had more discharges due to problems in the prenatal period (54.9% against 40.2%). It is surprising that besides the attention, both in children of 1 and from 7 to 14, the proportion of discharges due to respiratory problems was lower in immigrants than in Chileans (12.7% against 28.9% and 8.6% against 14.2%, respectively). Lastly, it points out that the high percentage of discharges due to pregnancy in females younger than 15 and 18 in both populations (Table 4).

Discussion

This is one of the first studies that describe the health of migrant children in Chile, using three sources of quantitative information. Given that the migrant child population grows gradually in Chile, it is important to determine their condition of life and sickness. Even if the available information is limited, it certainly allows to answer some questions and to create a new working hypothesis that could be tested in the future. The studies of the international migrant population are of broad utility for the public health²⁷ by allowing to compare population with different genes and races, and various socio-cultural and political experiences, which at some point will change their social and environmental surrounding, getting used to the host country.

This study shows that a high percentage of pregnant migrant women do not have health insurance, they also start their controls late and have a higher psychosocial risk than Chilean women. Despite this, migrant women have better birth results. Regarding the sociodemographic profile, the higher number of migrant children in multidimensional poverty and the higher percentage of scholars (15-18 years) do not finish their studies significantly stand out. In the hospitalization analysis, it is possible to observe a high percentage of children without health insurance. Regarding the hospital discharges differences between the migrant and Chilean population, those that stand out are respiratory problems, where the proportion in migrants is lower than in Chileans and in traumatism and other external causes, such as neoplasm and congenital malformations, where the proportion in migrants is almost the double of the Chilean population in some age groups.

It is interesting to note that, despite the existence of more pregnancy risk factors in the migrant population (late access and psychosocial risk) and the similar obstetric profile, migrant women have better birth results than Chilean women. Only 24% of the births are by cesarean section (against 34% in Chilean women) and only 28% present a problem (against 44% in Chilean woman). It is important to develop a major research of these paradoxical results that apparent effect of “healthy migrant”, which can be explained by the differences on age, natural selection of healthier migrants that manage to get to Chile or by other social processes of protection of health as a social resource.

It is important to integrate these results from a social perspective of the health. The high proportions, both in pregnant women and immigrant children without health insurance, are alarming because this population has the risk of not being able to access to health services on time, even when Chilean regulations

Table 4. Hospital discharges of patients under 14 years old according to migratory condition, Chile 2012

	< 1 years		1 to 6		7 to 14		15 to 18	
	Chilean (n = 91.081)	Immigrant (n = 71)	Chilean (n = 106.475)	Immigrant (n = 148)	Chilean (n = 77.814)	Immigrant (n = 140)	Chilean (n = 73.568)	Immigrant (n = 307)
Main diagnosis (CIE-10)								
I (infectious and parasitic)	6.2%	2.8%	9.0%	6.8%	4.8%	3.6%	1.7%	2.0%
II (neoplasias)	0.4%	2.8%	4.2%	2.7%	5.5%	12.1%*	2.6%	2.3%
III (of blood and hematopoietic organs)	0.3%	0%	1.1%	0.7%	1.3%	1.4%	0.5%	0%
IV (endocrine, nutritional and metabolic)	0.5%	1.4%	0.9%	0.7%	1.7%	0.7%	1.2%	1.0%
V (mental and behavioral)	0%	0%	0.1%	0.7%	1.7%	3.6%	3.6%	2.6%
VI (nervous system)	1.2%	1.4%	2.8%	0.7%	3.1%	2.1%	1.3%	1.3%
VII (eye and its annexes)	0.2%	1.4%	0.8%	0%	0.8%	0.7%	0.3%	0.3%
VIII (ear and mastoid process)	0.1%	0%	0.9%	0%	1.1%	0.7%	0.3%	0.3%
IX (circulatory)	0.2%	0%	0.6%	1.4%	1.4%	2.1%	1.3%	0%
X (respiratory)	28.9%	12.7%*	35.3%	29.1%	14.2%	8.6%*	4.6%	3.3%
XI (digestive)	2.8%	4.2%	7.2%	5.4%	19.7%	13.6%*	11.6%	6.2%
XII (skin)	0.5%	0%	1.7%	1.4%	2.4%	3.6%	1.6%	0.7%
XIII (musculoskeletal)	0.1%	0%	1.2%	1.4%	3.7%	0%	3.1%	2.6%
XIV (genitourinary system)	3.9%	5.6%	7.6%	8.8%	6.8%	5.0%	5.0%	3.3%
XV (pregnancy, delivery and puerperium)	-	-	-	-	1.8%	2.9%	43.6%	59.9%
XVI (perinatal)	40.2%	54.9%*	-	-	-	-	-	-
XVII (congenital anomalies)	5.8%	4.2%	5.5%	8.1%	4.2%	9.3%*	1.3%	0.3%
XVIII (unclassified anomalies)	3.2%	4.2%	5.7%	4.7%	5.5%	3.6%	2.5%	1.0%
XIX (accidents traumas)	1.9%	2.8%	12.8%	23.0%*	16.7%	23.6%	10.6%	9.4%
XXI (use of healthcare)	3.6%	1.4%	2.4%	4.7%	3.4%	2.9%	3.3%	3.6%
Status at discharge								
Live	98.8%	100.0%	99.8%	99.3%	99.8%	100.0%	99.8%	100.0%
Dead	1.2%	0.0%	0.2%	0.7%	0.2%	0.0%	0.2%	0.0%
Surgery								
Yes	7.0%	7.0%	33.8%	45.3%*	48.5%	59.3%*	42.4%	40.1%
No	93.0%	93.0%	66.2%	54.7%	51.5%	40.7%	57.6%	59.9%
Days of hospitalization								
1	20.6%	25.4%	47.0%	50.7%	46.9%	50.7%	29.7%	22.8%*
2	17.6%	16.9%	14.7%	19.6%	16.7%	12.9%	25.0%	21.8%
3	12.8%	11.3%	11.0%	4.7%*	10.6%	3.6%	18.8%	28.7%*
4 or more	49.0%	46.5%	27.3%	25.0%	25.8%	32.9%	26.4%	26.7%

*p < 0,05

allow the access to health services in an irregular status. Another alarming finding the high rate of traumatism in migrant children is almost 25% of the hospital discharges among children from 1 to 6 years, compared with 13% of Chilean children. This might be related to the higher multidimensional poverty that migrant children experience, including poor living conditions, dangerous or violent neighborhood, the need to leave college and start working, among others.

This study has information from various sources, which increases its efficacy, but it still has some limitations. It is possible that there is bias in the selection of all databases, associated with the way in which the international migrant population is defined and mistakes in the register for the purpose of the analysis. In the analysis of the hospital discharges, it is impossible to clarify if the obtained results effectively reflect the information of the prevalence of morbidities or if they are consequences of a differentiated use of the health services among the migrant and Chilean population. Lastly, some central variables in the relation between migration and health, such as the socioeconomic status and residence time, among others, were unavailable, so it was impossible to elaborate a more detailed analysis.

The world has made great improvements to reduce the infant mortality, to send children to schools and to lift them out of poverty. Principally, the obstacles to getting to these children are not of technical nature, but an issue related to political commitment. Historically, Chile has been making outstanding health efforts in this field; however, we still need to update our definitions and indications, which is our infant population of interest, including the international migrant population, which we do not know much about, that has been increasing during the last years. This study expects to contribute in this topic by generating evidence

of life conditions, life, and hospitalizations of Chilean and migrant Children, and to look after the needs of children in Chile, regardless of their migratory status. It is an ethical, legal and moral imperative. This is the only way to minimize and prevent unfavorable conditions for the healthy development of every person in our country^{30,31}.

Ethical Responsibilities

Human Beings and animals protection: Disclosure the authors state that the procedures were followed according to the Declaration of Helsinki and the World Medical Association regarding human experimentation developed for the medical community.

Data confidentiality: The authors state that they have followed the protocols of their Center and Local regulations on the publication of patient data.

Rights to privacy and informed consent: The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the correspondence author.

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Conflicts of Interest

Authors declare no conflict of interest regarding the present study.

References

1. U. D. Trends in international migration 2015. 2015.
2. UNICEF. International Migrant Children and Adolescents. 2012.
3. UNICEF. Estado Mundial de la Infancia: una oportunidad justa para cada niño. 2016.
4. UNITAR. Migration and Youth: Overcoming Health Challenges. New York: 2011.
5. Migration; IOF. World Migration Report 2015. Migrants and Cities: New Partnerships to Manage Mobility. . Geneva: 2015.
6. Fazel M, Reed RV, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors. *Lancet*. 2012;379(9812):266-82. Epub 2011/08/13.
7. Reed RV, Fazel M, Jones L, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in low-income and middle-income countries: risk and protective factors. *Lancet*. 2012;379(9812):250-65. Epub 2011/08/13.
8. Almeida L, Caldas J, Ayres-de-Campos D, Salcedo-Barrientos D, Dias S. Maternal healthcare in migrants: a systematic review. *Maternal and child health journal*. 2013;17(8):1346-54.
9. Gissler M, Alexander S, MacFarlane A, et al. Stillbirths and infant deaths among migrants in industrialized countries. *Acta obstetrica et gynecologica Scandinavica*. 2009;88(2):134-48. Epub 2008/12/20.
10. Jaeger FN, Hossain M, Kiss L, Zimmerman C. The health of migrant children in Switzerland. *International journal of public health*. 2012;57(4):659-71. Epub 2012/06/16.
11. Gagnon AJ, Zimbeck M, Zeitlin J, et al. Migration to western industrialised countries and perinatal health: a systematic review. *Soc Sci Med*. 2009;69(6):934-46. Epub 2009/08/12.
12. Jaeger FN, Kiss L, Hossain M, Zimmerman C. Migrant-friendly hospitals: a paediatric perspective--improving hospital care for migrant children. *BMC health services research*. 2013;13:389. Epub 2013/10/08.
13. Gualdi-Russo E, Zaccagni L, Manzon VS, Masotti S, Rinaldo N, Khyatti M. Obesity and physical activity in children

- of immigrants. *European journal of public health*. 2014;24 Suppl 1:40-6. Epub 2014/08/12.
14. Gualdi-Russo E, Toselli S, Masotti S, Marzouk D, Sundquist K, Sundquist J. Health, growth and psychosocial adaptation of immigrant children. *European journal of public health*. 2014;24 Suppl 1:16-25. Epub 2014/08/12.
 15. Toselli S, Gualdi-Russo E, Marzouk D, Sundquist J, Sundquist K. Psychosocial health among immigrants in central and southern Europe. *European journal of public health*. 2014;24 Suppl 1:26-30. Epub 2014/08/12.
 16. Stevens GW, Vollebergh WA. Mental health in migrant children. *Journal of child psychology and psychiatry, and allied disciplines*. 2008;49(3):276-94. Epub 2007/12/18.
 17. Heaman M, Bayrampour H, Kingston D, Blondel B, Gissler M, Roth C. Migrant women's utilization of prenatal care: a systematic review. *Maternal and child health journal*. 2013;17(5):816-36.
 18. Rivera B, Casal B, Currais L. [Health status and health services' utilization among immigrant children]. *Gaceta sanitaria/SESPAS*. 2009;23 Suppl 1:53-6. Epub 2009/11/26. Estado de salud y frecuentacion de los servicios sanitarios de los menores hijos de inmigrantes.
 19. Guendelman S, Wyn R, Tsai YW. Children of working poor families in California: the effects of insurance status on access and utilization of primary health care. *Journal of health & social policy*. 2002;14(4):1-20. Epub 2002/09/11.
 20. Guendelman S, Schauffler H, Samuels S. Differential access and utilization of health services by immigrant and native-born children in working poor families in California. *Journal of health care for the poor and underserved*. 2002;13(1):12-23. Epub 2002/02/12.
 21. Reidy MF. Health services for immigrant children: opportunities under Title XXI. *Journal of health care for the poor and underserved*. 2000;11(3):276-83. Epub 2000/08/10.
 22. Gulati S, Watt L, Shaw N, et al. Communication and language challenges experienced by Chinese and South Asian immigrant parents of children with cancer in Canada: implications for health services delivery. *Pediatric blood & cancer*. 2012;58(4):572-8. Epub 2011/03/04.
 23. Sime D. 'I think that Polish doctors are better': newly arrived migrant children and their parents experiences and views of health services in Scotland. *Health & place*. 2014;30:86-93. Epub 2014/09/23.
 24. Ministerio de Desarrollo Social. CASEN 2013. Documento metodológico. Santiago, Chile 2013. Available from: www.ministeriodesarrollosocial.gob.cl/casen.
 25. Ministerio de Desarrollo Social. Encuesta de Caracterización Socioeconómica Nacional CASEN 2013. Chile: 2014.
 26. Creswell J. *Philosophical, Paradigm, and Interpretative Frameworks*. In: Creswell J, editor. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Thousand Oaks: Sage; 2007. p. 15-34.
 27. Creswell J. *Five Qualitative Approaches to Inquiry*. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*: Thousand Oaks, Sage; 2007. p. 53-84.
 28. Vasquez A, Cabieses B. Where are vulnerable immigrants located in Chile? A spatial analysis of Census data using an Index of Multiple Deprivation from the last three decades (1992-2012). *Plos One*. 2015:under review.
 29. Luthar S. Resilience in development: A synthesis of research across five decades. In: Cicchetti D, Cohen D, editors. *Developmental Psychopathology: Risk, disorder, and adaptation*. New York: Wiley; 2006. p. 740-95.
 30. Martínez D, Farías A, Vergara N, Vega P. Sección II, Capítulo 3: Vulnerabilidades sociales y consecuencias en salud durante la infancia preescolar y escolar. In: Cabieses B, Bernaldes M, Obach A, Pedrero V, editors. *Vulnerabilidad social y sus efectos en salud en Chile: desde la comprensión del fenómeno hacia la implementación de soluciones*. Santiago: Universidad del Desarrollo; 2016.
 31. Chambers R. *Rural development: putting the last first*. 1st ed. ed. Londres: Longman; 1983.