

# Immigration and Health: Heterogenous patterns in Spain

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SALUT



*"Knowledge is the evolution of the infinite" The Golden Number  
To my Granny and Parents*



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*“...passengers spread out through nature and the jungle of unknown men, merci, as the delirious train penetrates a new country, eradicating frontiers, spasibo, joined with the sharp-cusped volcanoes, frost and fire, thanks, yes, gracias, ...”*—Pablo Neruda, *Ode to gratitude*

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## Abstract

**Objective:** To compare health status (sub-study 1), sleep health (sub-study 2) and health care use (sub-study 3) between the Spanish population and immigrants from the seven leading countries in terms of number of immigrants; to examine whether differences are accounted for by socio-economic characteristics, and to determine whether the patterns of associations differ by gender.

**Methods:** Cross-sectional study using data from the 2006 Spanish National Health Survey (n=29,476). A sample of individuals from Spain and the seven countries with most immigrants in Spain (Argentina, Bolivia, Colombia, Ecuador, Peru, Romania and Morocco) was selected. For the first sub-study those aged 20-64 years (n=20,731) were elected and for second and third sub-studies individuals aged 16-64 years (n=22,224).

**Main results:** In both sexes, people from Bolivia had poorer health outcomes, above all Bolivian males (fully adjusted ORs = 4.84, 95% CI= 2.47-9.48 for self-perceived health status and 8.81 95% CI= 4.41-17.62). Conversely, people from Argentina and Colombia had the best health outcomes, in some cases better than Spanish people. Regarding insomnia symptoms and non-restorative sleep (NRS), in both sexes, people from Bolivia had a higher prevalence of insomnia symptoms and NRS. Conversely, people from Ecuador, Morocco and Romania had less insomnia symptoms and NRS than Spaniards. No differences were found between Spaniards and Colombians, Peruvians and most Argentinians. Regarding health care use, Romanian men were less likely to use health care at all levels. Women from Argentina, Bolivia and Ecuador reported a lower use of primary health care, whereas Peruvian women had a higher use than Spanish women. Among females, there were no differences in emergency visits or hospitalizations. Bolivian men reported higher hospitalization rates, Ecuadorians had lower hospitalization and Argentinian men reported more emergency visits.

**Conclusions:** In Spain there is heterogeneity in the relationship between immigration and health, sleep quality and health care use in Spain, which depends on the specific country of birth and gender.





## Resumen

**Objetivo:** Comparar el estado de salud (subestudio 1), la salud del sueño (subestudio 2) y el uso de servicios sanitarios (subestudio 3) entre la población nacida en España y población inmigrante procedente de los siete países que aportaban mayor número de inmigrantes; examinar si las diferencias se explican por las características socio-económicas, y determinar si los patrones de asociación difieren por género.

**Métodos:** Estudio transversal con datos de la Encuesta Nacional de Salud de 2006 (n=29.476). Se seleccionaron las personas nacidas en España y las nacidas en los siete países con mayor número de inmigrantes en España (Argentina, Bolivia, Colombia, Ecuador, Perú, Rumania y Marruecos). Para el primer subestudio se seleccionaron personas de 20 a 64 años (n=20731) y para el segundo y tercer sub-estudio los individuos de 16 a 64 años (n = 22.224).

**Resultados principales:** En ambos sexos, las personas de Bolivia tuvieron peores resultados de salud, sobre todo los hombres de Bolivia (OR ajustado plenamente = 4,84, IC = 2,47-9,48 95% para el estado de salud percibido y 8,81 IC = 4,41-17,62 95%). Por el contrario, las personas de Argentina y Colombia tuvieron los mejores resultados en salud, en algunos casos mejor que los españoles. En cuanto a los síntomas de insomnio y sueño no reparador, en ambos sexos, la gente de Bolivia tenía una mayor prevalencia de síntomas de insomnio y sueño no reparador. Por el contrario, la gente de Ecuador, Marruecos y Rumanía tuvieron menos síntomas de insomnio y sueño no reparador que los españoles. No se encontraron diferencias entre españoles y colombianos, peruanos y la mayoría de los argentinos. En cuanto al uso de servicios sanitarios, los hombres rumanos utilizaron menos los servicios sanitarios en todos los niveles. Las mujeres de Argentina, Bolivia y Ecuador hicieron un menor uso de la atención primaria de la salud, mientras que las mujeres peruanas tuvieron un uso mayor que las mujeres españolas. Entre las mujeres, no hubo diferencias en las consultas de urgencia u hospitalizaciones. Los hombres bolivianos reportaron mayores tasas de hospitalización y uso de urgencias, los ecuatorianos tuvieron menos ingresos hospitalarios y más visitas a la atención primaria y los argentinos hicieron un mayor uso de las urgencias.

**Conclusiones:** En España existe heterogeneidad en la relación entre la inmigración, la percepción de la salud, salud mental, los síntomas de insomnio, SNR y el uso de servicios sanitarios, que depende del país concreto de nacimiento y de diferencias de género.



## **Preface**

Over the last years Spain has become one of the largest countries in the European Union with the highest percentages of immigrant population. This increasing diversity poses great opportunities and challenges, especially with regards to immigrant's health status, health behaviour and health services use. Yet, migrants and ethnic minorities represent one of the vulnerable groups as they enter in the new environment and the culture of the host countries.

There are limited research on immigrants' health, health behaviour and health service use, with existing studies focusing on specific health problems among immigrant's in the host countries. To our knowledge no previous studies has examined differences of health status, sleep health and health care use between immigrant and non-immigrant groups taking into account the heterogeneity of the immigrant population and gender differences. This thesis is written from a cross-national perspective and its purpose is to provide a major understanding of the social factors which determine the health outcomes of the foreign born living in Spain. These tools of knowledge will hopefully lead to a more culturally sensitive and targeted health interventions. In addition, it is hoped that ethnic disparities reported in this dissertation will encourage hypotheses that will be notably testable by the health and medical research community to push forward the frontiers of knowledge.

This dissertation consists of the following sections: First, we will consider the background that embraces the migration phenomena, the contextual framework, the legal aspect of migration and the impact on health and health care. The next section is the justification of the dissertation followed by the objectives and then the methods. The next part relates to the results of the three studies that comprise the thesis. Finally, we pose a global discussion and the conclusions.

In writing this thesis, I have quoted several sentences and statements that inspired me from various researchers, writers, sociologists, and intellectuals for whom I am greatly indebted.



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# 1. Introduction

*“..at night, lying on my mat, I was giving form to my dreams: which route to take, the sea or the desert...”-Antonio Lozano, My name is Suleimán.*

## 1.1. Migration as an historical phenomena

Throughout history the dynamism of human movement have built social and economic networks. Thereby, the complex architecture for which these mobile and flexible currents of human beings flow, have allowed a way for exchange and development. Thus, the interaction and global integration of different cultures means, not only a challenge, but also an opportunity for both, the sending countries and those of destination.

### a) The early migration

The history of human migration started in Africa some 150,000 to 200,000 years ago. (Goldin et al. 2012) Over such a long time, many people left Africa to populate the rest of the world, and others certainly returned part of an enormous population movement that must have taken place through many millennia of alternating ice ages and interglacial warm periods.(Curtin 1995)

After moving beyond Africa, the development of long-distance trade was enable by innovations in transportations and technology.(Goldin et al. 2012) Early merchants and traders were responsible for establishing roads, sea routes and communications networks that set the stage for increasing cross-cultural contact between civilizations.(Bentley 1993) Through the development of the agrarian civilizations and emergence of the first states and empires, borders were porous, and cross-cultural encounters were intermittent but far from uncommon. (Goldin et al. 2012)

Around 1000, immigration began to shift from a pattern of divergence or separate development of civilizations, toward a pattern of global convergence.(Goldin et al. 2012) However, growing commercialization created a tension within many civilizations between people who increasingly self-identified as “homogeneous” and the migrant traders, Labourers, and moneylenders on whom the economy relied.(Goldin et al. 2012) The strangers that populated major cities were sometimes looked upon with mistrust and dislike, but they were rarely driven out because of the essential services they provided by connecting cities to the world trading network.(Goldin et al. 2012)

The pace of trade and cross-cultural contact in the Mediterranean drove convergence toward similar commercial practices in both Muslim and Christian ports.(Goldin et al. 2012) While Europeans would be the first to open up the Atlantic route to the Americas, in the early fifteenth century the Chinese first established contact over the Indian and Pacific Oceans.(Goldin et al. 2012)

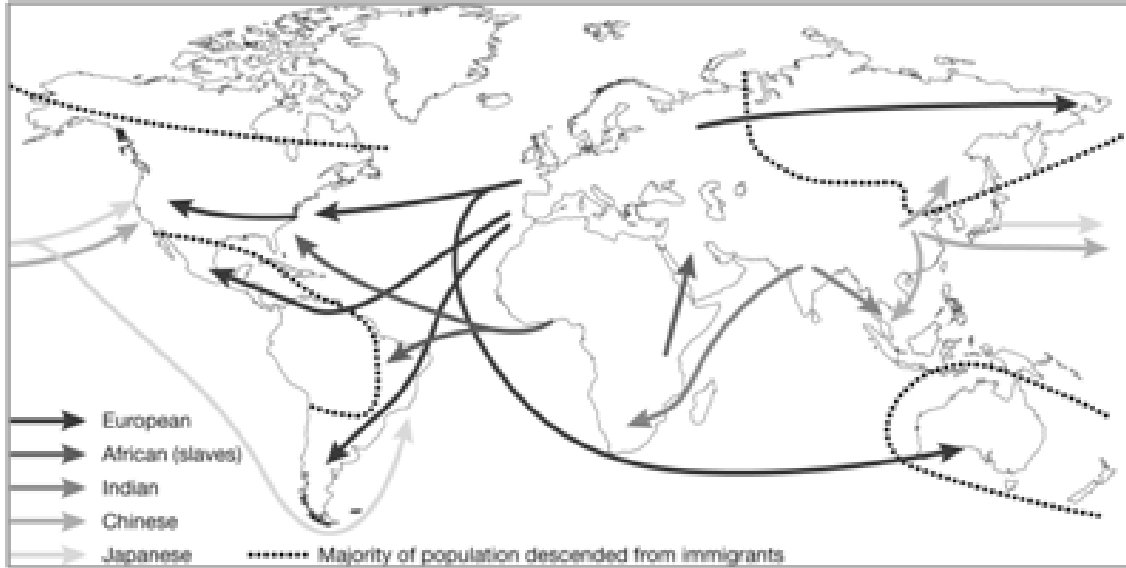
### b) The international migration

The modern history of international migration can be divided into four periods. During the mercantile period, from about 1500 to 1800, world immigration was dominated by flows out of Europe and arise from processes of colonization and economic growth under

mercantile capitalism.(Massey 2008)

Over the course of 300 years, Europeans came to inhabit large portions of the Americas, Africa, Asia, and Oceania (Cohen 1995).[Figure 1]

**Figure 1 World migration routes since 1700.**



Source: Edkins, J and Zehfuss, M. *Global politics: a new introduction*. Routledge, 2013.

During this period, emigrants generally fell into four classes: a relatively large number of agrarian settlers, a smaller number of administrators and artisans, an even smaller number of entrepreneurs who founded plantations to produce raw materials for Europe’s growing mercantilist economies, and in a few cases, convict migrants sent to penal colonies overseas.(Massey 2008) Although the number of Europeans involved in plantation production was small, this sector had profound effects on the demographic history of the Americas. Given preindustrial technologies, the plantations they built required large amounts of cheap labour, a demand met partially by indentured workers from East Asia. (Cohen 1995) The most important source of plantation labour, however, was the forced migration of African slaves.(Curtin 1972; Palmer 1992) Africans were being captured and transported in chains to the Caribbean, Brazil and North America to working to produce cotton, coffee, sugar, tobacco, indigo, gold and silver for emerging world market.(Klein 2010) Chattel slavery became a key component of an increasingly global economy. Slaves were another “commodity” bought and sold by specialized traders and transported over great distances.(Goldin et al. 2012).[ Figure 2]

**Figure 2. Slave trade out of Africa, 1500-1900**



Source: Eltis, D., and Richardson, D. *The Trans-Atlantic Slave Trade Database Voyages: "Introductory Maps"*. Emory University: Digital Library Research Initiative, 2010.

African slaves were increasingly transported across Africa and to the Middle East, Russia, around the Indian Ocean, and to China and the Pacific Rim.(Goldin et al. 2012) Over three centuries, somewhere in excess of 10 million African slaves were imported into the Americas and, together with the European colonists and the diseases they inflicted upon the continent's aboriginal peoples, they radically transformed the racial and ethnic composition of the New World.(Massey 2008)

The second was the industrial period which began early in the 19th Century and stemmed from industrial development in Europe and the spread of capitalism to former colonies in the New World. (Massey 2008) The period from 1800 to 1929 represents the first period of economic globalization, characterized by massive flows of capital, raw materials, and goods back and forth between Europe, the Americas, Asia, and the Pacific.(Massey 2008) A doctrine of economic liberalism prevailed in the new, global economy: it was believed that people, goods, and capital should be free to move where they produce the highest returns.(Goldin et al. 2012) In 1889, the International Emigration Conference defended the freedom of movement as a natural right: "We affirm the right of the individual to the fundamental liberty accorded to him by every civilized nation to come and go and to dispose of his person and his destinies as he pleases".(Brinley 1961)

The period between 1840 and 1914 is referred as the "age of mass migration" because it was associated with the expanding global economy and the rapid increase in free mobility during this time.(Hatton & Williamson 1998) Moreover, structural transformations overtook successive European nations as they industrialized and were incorporated into the global trading regime. The United States by itself absorbed around 60% of Europe's

total outflow, and another 25% of the emigrants were scattered among Argentina, Australia, Canada, and New Zealand.(Massey 2008)

The dramatic international population movements of the nineteenth century were gradually eclipsed as war, nationalism and increasingly effective state bureaucracies led to the introduction of new restrictions on migration.(Goldin et al. 2012) States introduced quotas, passports and tighter border restrictions in attempts to “manage” migratory flows.(Hatton & Williamson 2005) Large-scale emigration from Europe faltered with the outbreak of World War I, which brought European emigration to an abrupt halt and ushered in a four-decade period of limited migration.(Massey 2008) Managed migration meant that states tried to control how many people entered the country, where they came from, and what rights and resources they could access. Political issues of national security, culture, language, and race became as influential for immigration policies and migrant flows as the economic forces that had been dominant throughout the nineteenth century.(Goldin et al. 2012) New political constituencies, including trade unions, formed to defend the right of existing workers, at times at the expense of foreign or migrant workers.(Goldin et al. 2012) As states increasingly allocated citizenship rights on the basis of nationality, belonging to a state become necessary to be officially recognized and able to move, work and live. The modern state system elevated the importance of the individual’s national identity, and it created new problems for those whose status was unclear.(Goldin et al. 2012) Migration flows were also affected by the Great Depression, the Second World War, and the rise of autarkic economic nationalism in both Europe and the Americas.(Massey 2008)

As the European economy began to recover in the 1950s, the demand for foreign labour picked up again.(Goldin et al. 2012) Refugees, displaced peoples, and returnees from the colonies ended up providing the labour needed for reconstruction.(Sassen & Sassen 1999) Decolonization coupled with economic recovery in Europe also prompted the large-scale migration of white colonials and “non-White auxiliars”.(Hoerder 2002) From 1945 to 1973, between 5.5 and 8.5 million migrants moved to Italy, Britain, France, Belgium, and the Netherlands from their respective colonies.(Goldin et al. 2012) Metropolitan populations saw no reason to have their taxes allocated to the support of settler and planter “returnees”; mixed-origin families and their children faced racism; “coloured” auxiliaries often ended up in camps or substandard housing.(Hoerder 2002)

In the middle 1960s there was a resurgence of large-scale international migration. As a result of a high international mobility without precedents throughout much of the world, the migrant population worldwide started increasing rapidly as percentage of the total world population.(Massey 2008) These migrants were changing the demographic composition of these countries into multi-ethnic societies.(Goldin et al. 2012) This new era of post-industrial migration also constituted a sharp break with the past; rather than being dominated by outflows from Europe to a handful of settler societies, immigration became truly global in scope as the number and variety of both sending and receiving countries increased. (Massey 2008)

The global supply of immigrants shifted from Europe to developing countries. The variety of destination countries also grew.(Massey 2008) In addition to traditional immigrant-receiving nations in Oceania and the Americas, countries throughout Western Europe now attracted significant numbers of immigrants, notably: Germany, France, Belgium, Switzerland, Sweden, and the Netherlands.(Cohen 1995) Accelerating cross-border

movements of goods, services, ideas, and capital converted the regions of the world into an interdependent and interconnected community.(Goldin et al. 2012)

During the 1970s, even long-time countries of emigration such as Italy, Spain, and Portugal began receiving immigrants from the Middle East and Africa;(Cohen 1995) and after the rapid escalation of oil prices in 1973 several less developed but capital-rich nations in the Persian Gulf also began to sponsor massive labour migration as well. (Birks & Sinclair 1980)

By the 1980s, international migration spread into Asia, not just to Japan but also to newly industrialized countries such as Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand.(Cohen 1995)

Globalization sets in motion economic and social forces that are shaping the structures and networks that impact upon the migration decision. Moreover, the competition for skilled labour, growing income inequality, and the opening of emerging economies are introducing new risks, opportunities, and networks, as well as political and social change. (Goldin et al. 2012) Together, these transformations have helped to turn this period into another “age of migration”.(Castles & Miller 2009)

People generally move in the context of unusual circumstances for example rapid social and economic change, economic or political distress, or the availability of new opportunities that make the prospects of migration attractive, despite its inherent costs and risks.(Massey 2008) The migration decision is nested within a broader set of family considerations, social networks, and political and economic conditions.(Goldin et al. 2012) Migration does not usually begin and end with one choice, however it involves a sequence of decisions that are influenced by the changing values and goals of the migrant response to his or her conditions. Social networks, timing, context, history, risk, and opportunity all influence the migration decision.(Collinson 2009)

## **1.2. International Migration Theories**

At present, there is no single, coherent theory of international migration, only a fragmented set of theories that have developed largely in isolation from one another, sometimes but not always segmented by disciplinary boundaries.(Massey 2008) Current patterns and trends in immigration, however, suggest that a full understanding of contemporary migratory processes will not be achieved by relying on the tools of one discipline alone, or by focusing on a single level of analysis. Rather, their complex, multifaceted nature requires a sophisticated theory that incorporates a variety of perspectives, levels, and assumptions.(Massey 2008)

### **a) The macro theory**

The neoclassical theory understands migration to be driven by differences in returns to labour across markets.(Kurekova 2010) The model was originally developed to explain migration in the process of economic development.(Harris & Todaro 1970; Hicks 1932; Lewis 2008) According to this theory, international migration is caused by geographic differences in the supply of and demand for labour. Countries with a large endowment of labour relative to capital have a low equilibrium market wage, while countries with a limited endowment of labour relative to capital are characterized by a high market wage,



as depicted graphically by the familiar interaction of labour supply and demand curves. The resulting differential in wages causes workers from the low-wage country to move to the high-wage country (see figure 3). (Massey 2008)

Related to the neoclassical theory is the push-pull framework which continues to emphasize the economic context of the flow of workers.(Bauer & Zimmermann 1999) Individual choices and social networks are created within the context of macro-level structures, demographic, economic, and political conditions that exert “push” and “pull” forces. Demographic, political and economic conditions in sending and receiving countries function like battery poles, receiving their charge from a variety of sources.(Goldin et al. 2012) Push-pull factors introduce relational aspects into thinking about migration and compose dyadic frames in which migration flows are studied empirically. As push and pull factors are largely a mirror-image of each other, the framework has been criticized for its inability to determine dominant factors.(De Haas 2010)

The simple and compelling explanation of international migration offered by neoclassical macroeconomics has strongly shaped public thinking and has provided the intellectual basis for much immigration policy.(Massey et al. 1993) However, it has been viewed as mechanically reducing migration determinants, ignoring market imperfections, homogenizing migrants and migrant societies and being ahistorical and static. It generally ignores the effects of home and host states and leaves out the importance of politics and policies, which are only considered as distortion factors or additional migration costs. (Kurekova 2010)

#### **b) The micro theory**

In this scheme, the human capital theory enriches the neoclassical framework by incorporating the socio-demographic characteristics of the individual as an important determinant of migration at the micro-level.(Sjaastad 1962; Bauer & Zimmermann 1999) Thus, individual rational actors decide to migrate because a cost-benefit calculation leads them to expect a positive net return, usually monetary, from movement. International migration is conceptualized as a form of investment in human capital.(Massey et al. 1993) People choose to move to where they can be most productive, given their skills; but before they can capture the higher wages associated with greater labour productivity they must undertake certain investments, which include the material costs of traveling, the costs of maintenance while moving and looking for work, the effort involved in learning a new language and culture, the difficulty experienced in adapting to a new labour market, and the psychological costs of cutting old ties and forging new ones.(Massey et al. 1993)

#### **c) The new economics of migration theory**

Regarding this new theory, migration decisions are not made by isolated individual actors, but by larger units of related people- typically families or households in which people act collectively, not only to maximize expected income, but also to minimize risks and to loosen constraints associated with a variety of market failures, apart from those in the labour market (see table 1). This theory shift the focus of migration research from individual independence to mutual interdependence.(Stark 1991) Hence, migration in the absence of meaningful wage differentials or the absence of migration in the presence of wage differentials, does not imply irrationality but rather compels us to consider a set of other variables related to relative deprivation (a household performing relatively worse

to other households will be readier to send a member abroad) and risk-aversion and risk-minimization of household income.(Stark 2003; Stark 1991)

Unlike individuals, households are in a position to control risks to their economic well-being by diversifying the allocation of household resources, such as family labour. (Massey et al. 1993) While some family members can be assigned economic activities in the local economy, others may be sent to work in foreign labour markets where wages and employment conditions are negatively correlated or weakly correlated with those in the local area. In the event that local economic conditions deteriorate and activities there fail to bring in sufficient income, the household can rely on migrant remittances for support.(Massey et al. 1993) In addition, remittances play an important and integral part in the new economics of migration research as they directly support the concept of household interconnectedness and the diversification of risk while analytically connecting the empirical study of the causes and consequences of migration.(Taylor 1999)

#### **d) World systems theory**

The world system theory (Wallerstein 2011) links the determinants of migration to structural change in world markets and views migration as a function of globalization with the increased interdependence of economies and the emergence of new forms of production. (Sassen 1990; Skeldon 1997; Silver 2003; Massey et al. 1993) The theory presents capital and labour mobility as interconnected, that is to say, while migration is a natural outgrowth of the disruptions and dislocations that inevitably occur in capitalist development and can be observed historically, the theory also brings in global political and economic inequalities.(Kurekova 2010)

Conceptually similar to migration systems theory is the concept of cumulative causation. (Myrdal 1971) It argues that migration is a self-perpetuating and self-sustaining phenomenon and identifies factors that contribute to this dynamic. The most important factors are networks but also a culture of migration, a perverse distribution of human capital and the stigmatization of jobs generally performed by migrant.(Arango 2000; Massey et al. 1999) With the accelerating globalization of the last two decades, the above concepts have been further developed into the theory of transnational migration which conceptualizes the existence of transnational social spaces. It emphasizes multiple forms of migrant embedding who stay connected and actively participate in both home and host country political, economic, social and cultural environments. (Faist 2000; Hollifield & Brettell 2000; Portes 2001)

#### **e) Dual labour market theory**

Dual labour market theory argues that international migration stems from the intrinsic labour demands of modern industrial societies.(Massey et al. 1993) Also, international migration is caused by a permanent demand for immigrant labour that is inherent to the economic structure of developed nations.(Piore 1980) Moreover, immigration is not caused by push factors in sending countries (low wages or high unemployment), but by pull factors in receiving countries (a chronic and unavoidable need for foreign workers). (Piore 1980) In addition, migration becomes desirable and necessary to fill the jobs, policy choices in the form of active recruitment efforts follow the needs of the market. (Kurekova 2010) The theory also provides an intelligent explanation for the coexistence

of chronic labour demand for foreign nationals alongside structural unemployment in receiving countries.(Arango 2000)

#### **f) The network theory**

Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin. They increase the likelihood of international movement because they lower the costs and risks of movement and increase the expected net returns to migration.(Massey et al. 1993) Network theory is closely affiliated to another approach known as migration systems theory.(Mabogunje 1970) This theory, suggest that migration alters the social, cultural, economic, and institutional conditions at both the sending and receiving ends and that it forms an entire developmental space within which migration processes operate.(Kurekova 2010) Furthermore, it stresses that migration restructures the entire societal developmental context of the concrete spaces in which it takes place, both at the receiving and at the sending end.(De Haas 2010)

Explaining the causes of migration, transnational migration research describes a new reality in the modus of migrating and integrating into host societies by proposing an emergence of dense networks across political borders created by migrants in search of economic and social advancement. Concepts of transnational migration have important implications for understanding forms of adaptation among ‘transnational’ migrants as well as the effects of migration on sending and receiving countries.(Kurekova 2010)

Table 1, summarizes different critiques that have been raised towards each theoretical approach and the concepts and variables that they propose for analyzing causes or perpetuation of migration (Kurekova 2010). [Table 1] Table 1. Summary of migration theories.

**Tabla 1. Sumary of migration theories**

<b>Theory</b>	<b>Subjects of analysis</b>	<b>Level of analysis</b>	<b>Pet variables</b>	<b>Critique</b>
<b>Neoclassical theory of migration</b>	Determinants of migration	Macro Micro	Wage and income differentials Probability of employment	Mechanically reduces migration determinants exclusion of politics and policies. Assumes linearity unable to explain differential migration, why people do not move, or why migration ceases before wages differentials equalize. Ignores market imperfections. Homogenization of migrants and societies. Static perspective.
<b>Human capital theory of migration</b>		Micro	Wages, economic benefits affected by individual characteristics	<b>Overly optimistic (functionalist) view migration is not always a voluntary process to maximize gains.</b>
<b>New economics theory of migration</b>	Determinants of migration	Micro Mezzo	Wages and income distribution (relative deprivation) Institutional failures credit market, labor market deficiencies	Critique of the neoclassical theory rather than a theory in its own right. Sending side bias. Limited applicability difficult to isolate the effect of market imperfections and risk in migration decisions from other income and employment variables
<b>World system theory (historical-structural approaches)</b>		Macro: global international processes	Structural changes induced by the flow of capital	<b>Only applicable at the global level. Explanation formulated Exante, cannot be empirically tested.</b>
<b>Dual labor market theory</b>	Perpetuation of migration and/or directionality of flows	Macro: Nation state Mezzo	Labor demand Bifurcation of labor markets FDI State immigration policies and recruitment efforts	Receiving state bias excludes push factors, formal recruitment practices overemphasized. Unable to account for differential immigration rates in different advanced economies with similar economic structures. Distinction between primary and secondary sector is usually arbitrary which leads to instability in empirical estimates.
<b>Network theory</b>		Mezzo Macro	<b>Networks, diaspora</b> Developmental space	<b>Conceptual framework rather than a theory.</b> Purely descriptive.
<b>Transnational migration</b>		Transnational level	Transnational social spaces	<b>Novelty of the concepts has been questioned. Research within this paradigm usually selects on dependent variable.</b>

Source: Kurekova L, *Theories of migration: Critical review in the context of the EU East-West flows, CARIMAS*, Robert Schuman Centre for Advanced Studies, San Domenico di Fiesole (FI): European University Institute, 2010.

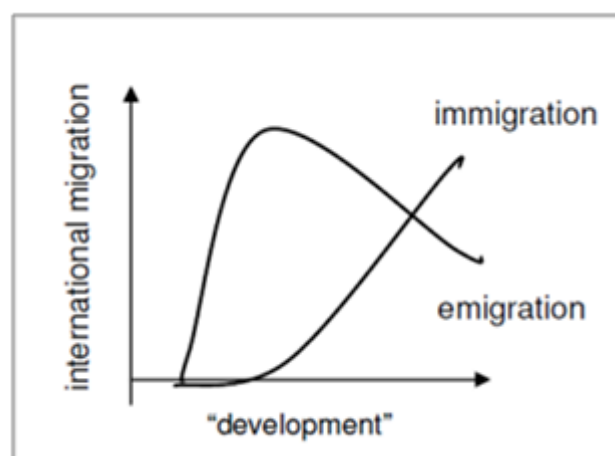
### 1.3. Migration factors

The characteristics of migration can envelope up three principles: the individual agency of a migrant, the social dynamics of migration processes, and political and economic structures. (Castles 2004) Migration processes are shaped by a range of interacting factors at the micro, meso and macro levels.(Goldin et al. 2012) At the micro-level, migration is a choice, albeit a constrained one. To the extent that potential migrants are free to choose, their decision is a cost/benefit calculation that takes stock of both the promise of migration and its psychological and financial risks.(Haug 2008) At the meso-level, networks and social capital inform the decision to migrate, lower barriers, and facilitate cross-border mobility for certain individuals and groups. Individual choices and social networks are created within the context of macro-level structures: demographic, economic, and political conditions that exert “push” and “pull” forces.(Goldin et al. 2012)

#### a) The micro-level

The decision to move is made at the individual or household level, when the risk and uncertainty of migration is weighed against the opportunities and benefits it promises. However, migrants move to be closer to their families, pursue education, widen their prospects, or escape political or social constraints.(Goldin et al. 2012) Moreover, the migration decision is not always made at an individual level. A potential migrant consults and coordinates with a group of non-migrants, typically, a family and shares the costs and benefits with them.(Stark & Bloom 1985) Migration can be part of a “livelihood strategy” for families to diversify sources of income, and not just to pursuit of personal gain.(Collinson 2009) In addition, migration flows between two countries are the product of aggregated individual moves undertaken in response to individual cost/benefit calculations of this sort (Massey et al. 1993).

**Figure 3. Ideal typical migration trajectories of migration system and decline**



Source: de Haas H, *Migration system formation and decline. Working Paper 19, International Migration Institute, Oxford, 2009.*

At a general level, the migration transition from sending country to receiving country takes on the form of a “migration hump” that follows rising wage levels.(Martin 2004)

As real wages increase, more people can assume the costs and risks of migration, but as a wage gap closes, migration rates proceed to fall again (Goldin et al. 2012).

The factors influencing a migration decision can also depend on the history of migration within one's family or community. The first people to migrate are often single and young, have fewer family obligations at home, and are those more prone to take risks in response to wage differentials between countries.(Goldin et al. 2012) After members of a family or community have become established abroad, the successive movement of people may be motivated by a desire to be close family, friends, or a community.(Goldin et al. 2012) The goals and values influencing individual decision-making depend on the factors aside from wage differentials. In fact, for many it is difficult to know with any degree of certainty whether migration will improve their lives. (Martin & Taylor 2001)

#### **b) The meso-level**

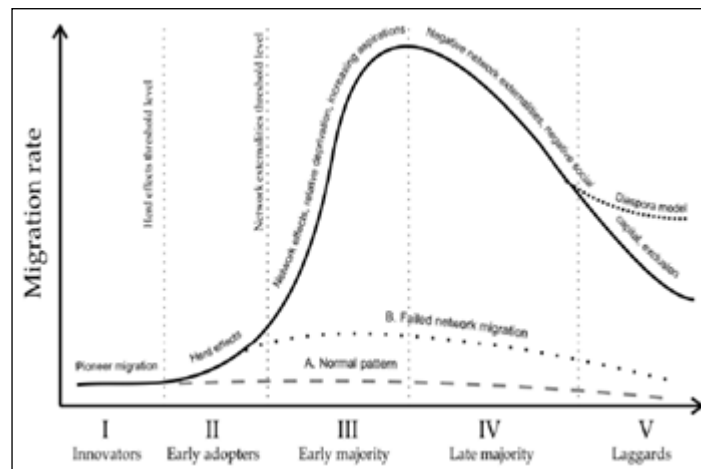
The conversion of potential migration into actual migration requires networks and systems, which transmit information, finance, accommodation, and job prospects from destination country to the source country. Meso-level analysis draws attention to the social capital, relationships, and intermediaries that connect potential migrants with opportunities in the destination countries.(Goldin et al. 2012) Thus, the effective units of migration are sets of people linked by acquaintance, kinship and work experience.(Yans-McLaughlin 1990) Furthermore, while wage differences and individual cost/benefit analyses may create conditions for migration, it is the insertion of people into migration networks that explains why some migrate and others do not, and why migration flows endure over time between particular countries or particular communities.(Portes & Böröcz 1989)

As developing countries increasingly adopt market-based economic systems and integrate into the global economy, the migration process accelerates, first from rural to urban areas, and then overseas.(Goldin et al. 2012) Traditional and agrarian societies are destabilized by the development of market economy, and people displaced from their livelihoods seek out wage labour, often cities. They take on dirty and dangerous jobs that local workers disdain. After entering the modern economy, people's perceptions, lifestyle, and worldviews change. They can be exposed to cosmopolitan values, consumer habits, and transnational networks.(Goldin et al. 2012)

In the first phase of the migration process, micro-level determinants may be particularly important; those willing to shoulder more risk that is to say, the "pioneer" or "bridgehead" migrants will seek out opportunities to migrate overseas.(Borjas & Bronars 1990)

Then the movement of migrants produces a "herd effect": a stream of migrants emerges between a source country, undergoing economic development, and a destination country with higher wages. This migration flow eventually becomes self-sustaining, and as migrants maintain contact with family and friends at home, they create a "network effect" that increases the rate of migration even further. Over time and as migrant communities grow, networks can diminish in their significance as the connection between settled migrants and new arrivals from "home" weakens.(Goldin et al. 2012) Networks may eventually be used to discourage further migration if competition for migrant jobs in the destination country

**Figure 4. The relationship between development and migration.**



Source: de Haas, H. Migration system formation and decline. Working Paper 19, International Migration Institute, Oxford, 2009.

Networks play critical roles at two stages. The first stage involves institutional networks, which assist migration in areas where social networks are not sufficiently well developed to facilitate cross-border movement (Massey & Taylor 2004).[Figure 4]

At the second stage, social networks connect family and friends between source and destination countries. They continued to channel the movement of people long after economic justification for migration has diminished (Portes & DeWind 2004).

**c) The macro-level**

Certain conditions, such as immigration policy, provide opportunities or constraints to the choices available to potential migrants. (Faist 2000) Government policies shape the opportunity structure within which migration decisions are taken and social networks develop, but they face limits in their ability to fully control cross-border movement. The presence of social networks and other structural factors, such as economic and demographic conditions, exert pressure on the borders of receiving countries that cannot be entirely managed by raising and lowering barriers to migration(Goldin et al. 2012). Restrictive immigration policies are accompanied by the entry of undocumented migrants who find their way into the country despite or because of the restrictions, often through illicit means. These restrictive policies also have unintended humanitarian and economic consequences(Goldin et al. 2012).

## **2. Thesis conceptual framework**

Several theories mentioned before have contributed with important key concepts that help shape the knowledge of the complex structure of the migratory phenomenon and the factors that concern the health of immigrant people. Thus, a recent conceptual framework (Acevedo-Garcia et al. 2012) has been developed for understanding immigrant health from a cross-national perspective that is, one that explicitly and systematically considers the possible influences of both the sending and receiving countries on immigrant health from a social epidemiological perspective.(Acevedo-Garcia et al. 2012) In this thesis I embrace this cross-national framework for research on immigrant health.

### **2.1. Definitions**

Before this framework is examined we will set the basis of this thesis by starting to define several concepts that will appear along the dissertation.

Though, migration is of concern to a number of bodies, including governments of both sending and receiving countries, police and border authorities, governmental and non-governmental organizations, migrants themselves.(Perruchoud 2004) Yet, at the international level, no universally accepted definition of migrant exists. Thus, the international organization for migration define the term migrant that is usually understood to cover all cases where the decision to migrate is taken freely by the individual concerned for reasons of “personal convenience” and without intervention of an external compelling factor.(Perruchoud 2004) This term therefore applies to persons, and family members, moving to another country or region to better their material or social conditions and improve the prospect for themselves or their family. (Perruchoud 2004)

For practical purposes we will use the term immigrant that is define as a person who comes to a country where it has not born to set his residence, with a temporary or permanent intention, and with independence of holding a legal register and the income of the country of birth.(Malmusi & Jansà i Lopez del Vallado 2007) Although, along the text other references for the term immigrant could appear (Urquia & Gagnon 2011).

#### **a) Social inequalities in health**

Inequality and equality are dimensional concepts, simply referring to measurable quantities. Inequity and equity, on the other hand, are political concepts, expressing a moral commitment to social justice.(Kawachi et al. 2002)

Social inequalities refer to health disparities, within and between countries, that are judged to be unfair, unjust, avoidable, and unnecessary (meaning: are neither inevitable nor unremediable) and that systematically burden populations rendered vulnerable by underlying social structures and political, economic, and legal institutions.(Krieger 2001; Dahlgren & Whitehead 1991; Kawachi et al. 2002) Health inequality is the generic term used to designate differences, variations, and disparities in the health achievements of individuals and groups. (Kawachi et al. 2002)

Moreover, some studies revealed that health inequalities can be reduced if the appropriate public social and health interventions and policies are endeavoured. (Whitehead & Dahlgren 2006) Thus, there are some models that explain the causes or factors that determine



inequalities in health. For example, one of the most exhaustive models is based on the on Solar and Irwin (Solar & Irwin 2010) and Navarro (Navarro 2004), and adapted by the Commission to Reduce Social Inequalities in Health in Spain, this conceptual framework is an important groundwork to define interventions as well as public health and social policies adapted to reduce the desigualdades in health. (CRDSS-E 2011)

**b) The social determinants of health**

The social determinants of health are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels.(Solar & Irwin 2010) They refer to both specific features of and pathways by which societal conditions affect health and that potentially can be altered by informed action.(Berkman & Kawachi 2000; Marmot & Wilkinson 2006) Social epidemiology proposes to identify societal characteristics that affect the pattern of disease and health distribution in a society and to understand its mechanisms (Berkman & Kawachi 2000) [Table 2]

**Table 2. Examples of sociocultural factors in social epidemiology.**

Social Class
Gender
Race/ethnicity
Discrimination
Social Network
Social Capital
Income distribution
Social Policy

*Source: Honjo, K. Social epidemiology: Definition, history, and research examples. Environ Health Prev Med. 2004*

Social determinants of health in sending countries affect immigrant health before migration, after migration, and over the lifecourse. The effect of social determinants on health may vary by a country’s level of economic development.(Acevedo-Garcia et al. 2012) In addition, individual level and socioeconomic contextual factors interact to influence the health of immigrants upon arrival in destination countries. Scholars on immigration have argued that immigrant adaptation is shaped by the context of reception, including economic opportunities for upward mobility and racial discrimination.(Viruell-Fuentes 2007; Viruell-Fuentes 2011)

**c) Social class**

The social epidemiology and the sociology of the health consider the social class to be an axis of social stratification of great relevancy to explain the origin of the social inequalities in health, along with others as gender and ethnicity.(Higgs & Scambler 1998)

Social class refers to social groups arising from interdependent economic relationships among people. (Williams 1985; Krieger et al. 1997; Lynch & Kaplan 2000) These relationships are determined by a society's forms of property, ownership, and labour, and their connections through production, distribution, and consumption of goods, services, and information. Social class is thus premised upon people's structural location within the economy as employers, employees, self-employed, and unemployed (in both the formal and informal sector), and as owners, or not, of capital, land, or other forms of economic investments. Stated simply, classes like the working class, business owners, and their managerial class exist in relationship to and co-define each other.(Krieger 2001)

Socioeconomic position (SEP), is an aggregate concept that includes both resource-based and prestige-based measures, as linked to both childhood and adult social class position (Krieger et al. 1997; Lynch & Kaplan 2000). Many of the concepts underlying the use of SEP in epidemiological research have their origin in the work of two social theorists, Karl Marx and Max Weber (Galobardes et al. 2006). For Marx, SEP was entirely determined by "social class", whereby an individual is defined by their relation to the "means of production". On the contrary, Weber's theory suggests that society is hierarchically stratified along many dimensions, creating groups whose members share a common market position leading to shared "life chances" (Galobardes et al. 2006). Indicators of SEP, such as education, income and occupation had been used in health research. Yet, there is no single best indicator of SEP suitable for all study aims and applicable at all time points in all settings. For this dissertation we will focus on education. As education is a frequently used indicator in epidemiology and as an SEP indicator has its historical origins in the status domain of Weberian theory, it attempts to capture the knowledge related assets of a person (Galobardes et al. 2006). Furthermore, captures the transition from parents' (received) SEP to adulthood (own) SEP and it is also a strong determinant of future employment and income. It reflects material, intellectual, and other resources of the family of origin, begins at early ages, is influenced by access to and performance in primary and secondary school and reaches final attainment in young adulthood for most people (Galobardes et al. 2006). Hence, it captures the long term influences of both early life circumstances on adult health, as well as the influence of adult resources on health (Galobardes et al. 2006).

The migration scope cannot be understood independently of social class and gender, as all three are key intertwined mechanisms of power relations in society.(Anthias 2001) For example a study conducted in Europe showed that health status in each ethnic group was influenced not only by ethnic and cultural background but also by the migratory experiences of each group.(Sundquist 1995).

Moreover, though ethnic health inequalities are substantial, a recent study on socioeconomic differences between ethnic groups, suggest that socioeconomic variables need to be comparable across ethnic groups as measures of SEP and indicators of health outcomes (Fischbacher et al. 2014). Also, it observed that there was wide socioeconomic variation between groups. Further, across groups, SEP measures were inconsistently associated with cardio vascular disease, hospitalization or death, with effect size and direction of effect after adjustment varying across ethnic groups (Fischbacher et al. 2014).

#### **d) Gender**

Gender refers to a social construct regarding culture-bound conventions, roles, and behaviours for, as well as relationships between and among, women and men and boys and girls that determine gender inequalities in power and access over resources and the a gender division of work.(Essed 1996)

Gender roles vary across a continuum and both gender relationships and biological expressions of gender vary within and across societies, typically in relation to social divisions premised on power and authority (for example, class, race/ethnicity, nationality, religion).(Krieger 2001) Moreover, gender changes over time. We are born male or female (sex), but we learn to act in masculine and/or feminine ways (gender).(Wood 2012)

Gender is a social, symbolic construct that varies across cultures, over time within a given culture, over the course of individuals' life spans, and in relation to the other gender. (Wood 2012) Furthermore, gender is learned. From infancy on, we are encouraged to learn how to embody the gender that society prescribes for us. Although individuals learn gender and embody it, gender is not strictly personal. Rather, gender grows out of cultural ideas that stipulate the social meaning and expectation of each sex.(Wood 2012)

In addition, gender is a key constitutive element of immigration. Hence, patterns of labour incorporation, globalization, religious practice and values, ethnic enclave businesses, citizenship, sexuality, and ethnic identity are interrogated in ways that reveal how gender is incorporated into a myriad of daily operations and institutional political and economic structures. Studies show that gender organizes a number of immigrant practices, beliefs, and institutions.(Hondagneu-Sotelo & Cranford 2006) For instance, Focusing on Latino immigrant political identity and practice in the United States (U.S.) and building on the research of earlier feminist inquiries that suggests that immigrant men shift their orientation to their home countries and to the prospect of return migration as they lose status in the U. S.(Hondagneu-Sotelo & Cranford 2006) A study reveals that immigrant women are more likely than immigrant men to participate in community organizations that interface with U.S. institutions. (Jones-Correa 1998)

#### **e) Life-course perspective**

Refers to how health status at any given age, for a given birth cohort, reflects not only contemporary conditions but embodiment of prior living circumstances, in utero onwards. (Davey Smith et al. 2001; Barker 1998; Kuh & Shlomo 2004) Hence, immigrants' childhood socioeconomic conditions in sending countries and age at migration may influence the health of adult immigrants in receiving countries.(Acevedo-Garcia et al. 2012) Furthermore, infectious or environmental exposures in sending countries may develop into active disease in destination countries. Besides, the effects of exposure to the stressors of migration and discrimination in the receiving country may accumulate across the life-course to produce negative health effects among immigrants. (Viruell-Fuentes 2007)

#### **f) Race**

By historical and common usage the group (sub-species in traditional scientific use) a person belongs to as a result of a mix of physical features such as skin colour and hair texture, which reflect ancestry and geographical origins, as identified by others or, increasingly, as self-identified. The importance of social factors in the creation and perpetuation

of racial categories has led to the concept broadening to include a common social and political heritage, making its use similar to ethnicity. Race and ethnicity are increasingly used as synonyms causing some confusion and leading to the hybrid terms race/ethnicity. (Raj Bhopal & Bhopal 2004).

On the other hand, racism has restricted socioeconomic attainment for members of minority groups. By determining access to educational and employment opportunities, segregation has been a key mechanism by which racial inequality has been created and reinforced. It is generally recognized that there are large racial differences in socio-economic status (SES), and health researchers routinely adjust for SES when examining the race–health association. However, SES is not just a confounder of racial differences in health but part of the causal pathway by which race affects health. Race is an antecedent and determinant of SES, and racial differences in SES reflect, in part, the successful implementation of discriminatory policies premised on the inferiority of certain racial groups. (Williams 1999)

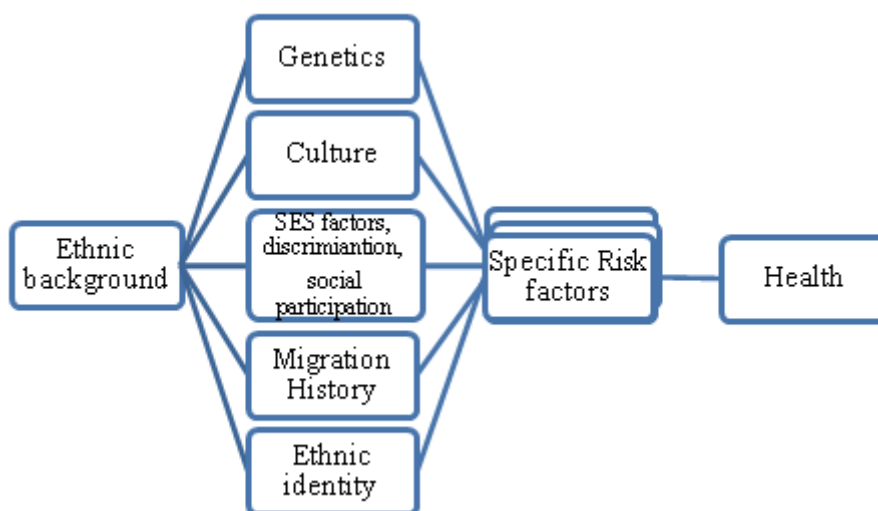
A growing body of research also suggests that in addition to its effects on health indirectly through socioeconomic position, exposure to racism and discrimination can also more directly adversely affect health. (Williams 1999)

Moreover, racial differences in health importantly reflect the impact of the social environment and the cumulation of adversity across multiple domains. Efforts to improve the health of racial minority group members and reduce racial disparities in health may have to be equally comprehensive in the implementation of strategies that address the fundamental underlying causes of these disparities. (Williams 1999)

#### **g) Ethnicity**

Ethnicity refers to the social group a person belongs to, and either identifies with or is identified with by others, as a result of a mix of cultural and other factors including language, diet, religion, ancestry, and physical features traditionally associated with race. Increasingly, the concept is being used synonymously with race but the trend is pragmatic rather than scientific. (Raj Bhopal & Bhopal 2004).

**Figure 5. Characteristics of ethnic groups that play a role in the interpretation of ethnic inequalities in health.**



Source: Stronks K, et al. *Being an immigrant implies being unhealthy? A conceptual Model integrating the mechanisms lying behind the association between ethnicity and health. T Soc. Gezondheidsz, 1999.*

Moreover, ethnicity is neither a simple nor a consistent concept. Definitions used encompass a broad range of characteristics, including shared origins and culture, traditions, common sense of identity, language or religious tradition and the links with a particular geographical area. (Aspinall 2001; Senior & Bhopal 1994) In addition, different measures are used to operationalise this concept, including researcher-defined characteristics such as country of birth, and other features as assigned by ethnic groups themselves such as ethnic identity. (Ahdieh & Hahn 1996; Kaplan & Bennett 2003) There are four major categories of problems with the concept of ethnicity in epidemiology:

*Heterogeneity of populations*

The population identified by current methods of defining race or ethnicity are often too diverse to provide useful information. For example in the United Kingdom these populations include White, Indian and Pakistani, which have massive within-group heterogeneity, diminishing the value of ethnic categorization as a mean of delivering culturally appropriate health care, and in understanding the causes of ethnic variations in disease. (Bhopal 2006; Senior & Bhopal 1994). [Figure 5]

*Ambiguity about the research purpose*

Research data cannot easily be collected and presented to achieve simultaneously the needs of aetiological enquiry and health care planning. Most researchers of ethnicity and health have emphasised the potential to understand aetiology rather than to develop health policies and services. Aetiological research emphasises relative excess in different populations, describing patterns of disease with relative risks and odds ratios. Simple counts of cases, rankings of disease frequency, and disease rates are not central to the aetiological approach. None the less, ethnic group can be a key variable for implementing

health policy. (Senior & Bhopal 1994; Bhopal 2006)

### *Ethnocentricity*

Ethnocentricity is the inherent tendency to view one's own culture as the standard against which others are judged. This has implications for all aspects of research on ethnicity and health. It will impinge on the design, aims, and methods of studies and the presentation and interpretation of results, making "value free" observation impossible. (Bhopal 2006)

### *Country of birth*

Since the last decade of the previous century, the use of country of birth criterion is considered to be the most useful basis for the identification of ethnic groups in studies about health and immigration. (Stronks et al. 2009) In this thesis we will use the variable Country of birth as our spinal column to analyze the possible differences we could find on immigrant's health in Spain Regarding this variable, for policy purposes, several monitoring studies were set up to differentiate socio-economic and demographic differences between new ethnic groups and the ethnic Dutch population. These monitoring studies employ mostly data from different registers in the country, which also use the 'country of birth' criteria (Stronks et al. 2009).

## **2.2. The conceptual framework**

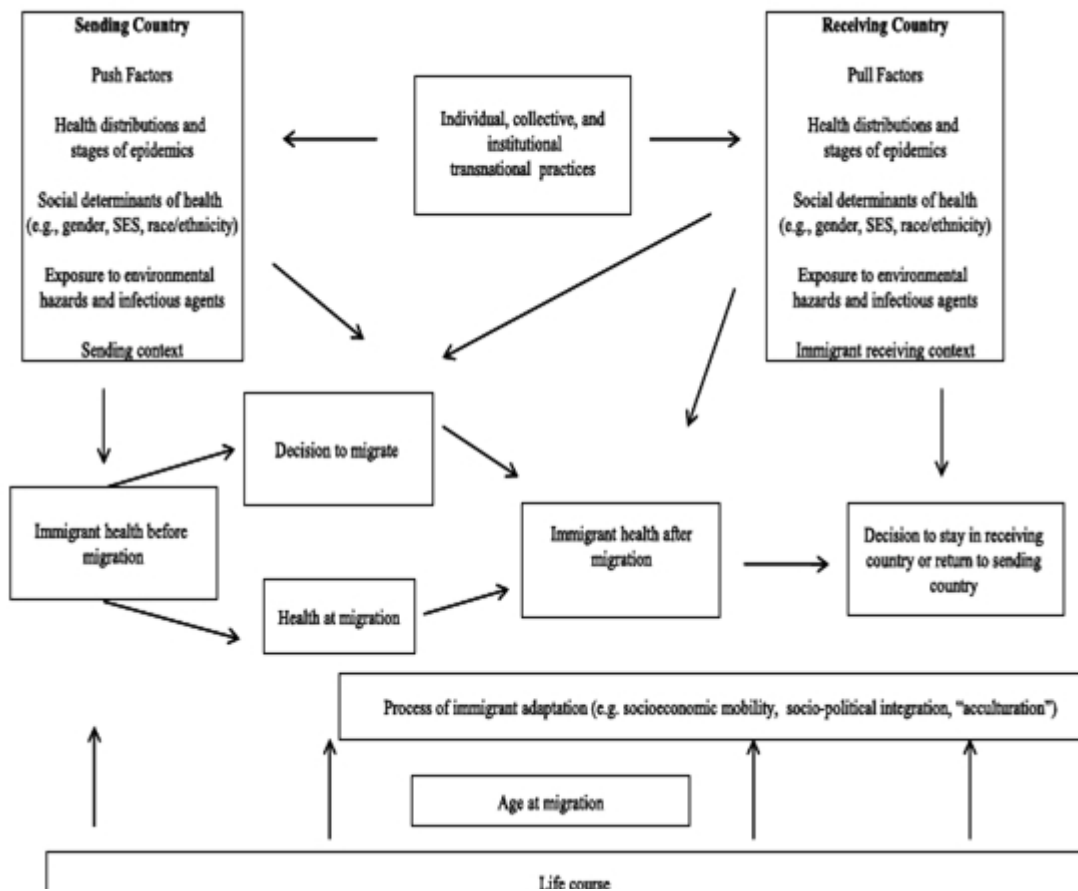
This thesis is based on the cross-national framework for research on immigrant health. The term "cross-national" refers to influences on health outcomes that derive from immigrants' sending and receiving contexts and from the immigration process. (Acevedo-Garcia et al. 2012) The health of non-immigrants is primarily influenced by the societies they live in, while the health of immigrants (as well as their families and communities of origin) is embedded in both sending and receiving societies. Sending-country factors may influence immigrant health before and after immigration, along the lifecourse, alone or in combination with receiving-country (i.e., country of destination) factors. The influence of cross-national factors may operate differently depending on the aetiology of specific outcomes (i.e., infectious versus chronic disease), critical exposure periods, and age at migration [Figure 6] (Acevedo-Garcia et al. 2012). Moreover, living and working conditions in the host country can affect health status.

It has been criticized that most research on immigration and health status claims that differences between immigrants are primarily accounted for socioeconomic status (SES). It then emerges that when SES is controlled for, the correlation between ill-health and ethnicity disappears. The usual conclusion is that SES has created a spurious association between ethnicity and ill-health, i.e. that it is a confounder in the relation between them, and that this has happened because SES and ethnicity are correlated with each other. The influence of ethnicity can then be regarded as an artefact and ignored. However, a basic rule in statistics is that a confounder may not lie on the causal path between an independent and dependent variable. Yet, SES is a mediator factor between immigration or ethnicity and health status, in other words, being a migrant or a member of an ethnic minority leads to ill-health by lowering one's socioeconomic status. There are many ways in which this could happen: discrimination may lower one's chances of getting a good job, education or housing; legislation may deny one's group many rights and privileges (for

example, if one is an undocumented migrant); one may experience linguistic and cultural barriers; and one's social capital may be reduced if one moves to a new country in which one's own social 'currency' is worthless.(Ingleby 2012) Employment status,(Scheppers et al. 2006) family characteristics, (Iwashyna & Christakis 2003) and social support(Leet al. 2004) may be other mediator factors. Additionally, health status may be a mediator factor for health care use. In order to better understand the role of these mediator factors the use of hierarchical models based on conceptual frameworks has been recommended. (Victora et al. 1997)

Although many previous studies have adjusted the analysis for sex, therefore assuming that the relationship between immigration and health status is similar for both sexes, the gender division of the society may affect in different ways the immigrations process of men and women, from the living conditions in the country of birth and the reasons why they decide to migrate, to their working and living conditions in the host country. Therefore, in order to capture the potential gender differences, the intersection between migration and gender should be considered and the analysis should be separated by sex. (Shields 2008)

**Figure 6. Conceptual framework for the analysis of immigration and health.**



Source: Acevedo-García D, Sanchez-Vaznaugh EV, Viruell-Fuentes E, Almeida J. Integrating social epidemiology into immigrant health research: A cross-national framework. *Soc Sci Med*, 2012.

### 3. The context: immigration in Spain

*“...conditioned from birth to look towards somewhere else, eternally convinced that real lives happened in that somewhere else...”- Chimamanda Ngozi Adichie, Americanah*

Spain has become one of the main destinations of migration as for the demographic reasons, joins the linguistic and cultural attraction for Latin America, and the proximity to Africa. (Combelles & García-Algar 2004) In the last decade, the Spanish population growth has been influenced by a marked increase in the number of foreign residents. In the period between January 1st 1999 and January 1st 2009, the population in Spain increased by six million persons (precisely 6,025,345)<sup>1</sup>, whilst the foreign population with residence permit (based on data as at December 31st of the previous year) increased by nearly four million (3,753,852 residents more). This means that 62.30% of the total population growth can be attributed to foreigners with residence permit or registration certificate in force. In 2007, the 40% came from Latin America, 33% from other countries of the European Union, 17% from Africa, and less than 5% and from Asia and the non-European Union countries (IOÉ Colectivo et al. 2010).

Recent data published by the permanent observatory of immigration in Spain (Ministerio de Empleo y Seguridad Social 2013), showed that the number of foreigners with residence permit in effect on December 31, 2013 stood at 4,943,627. From which, 2,691,177 corresponds to the Community Regime<sup>1</sup>, (54.44%) and, 2,252,450 of the General Regime<sup>2</sup>. The number of foreigners in General Regime involves 45.56% of all foreign residents. However, compared to the previous quarter, there has been a drop in 39,653 foreigners in this regime. The most pronounced interannual variations have been observed in the nationals of Ecuador, Colombia, Peru and Bolivia, with decreases of 31,853; 29,477; 17,055 and 13,972 respectively (Ministerio de Empleo y Seguridad Social 2013).

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<sup>1</sup>Community Regime: Applies to both national EU citizens from countries of the European Union and other States party to the Agreement on the European Economic Area (Iceland, Liechtenstein and Norway) and Switzerland-Confederation.

<sup>2</sup>General Regime: It is that which applies to nationals of third countries, unless they qualify for Community Regime for being relatives of citizens community. These foreigners are issued a residence card.



Yet, the country with the largest nationality remains Morocco, with a total of 750,442 foreign residents in General Regime, 33.3% of all foreigners in this regime. Ecuador followed with 201,811 and 180,844 China [Table 3], the country that has experienced the highest growth, the 4.70% annual variation (Ministerio de Empleo y Seguridad Social 2013).

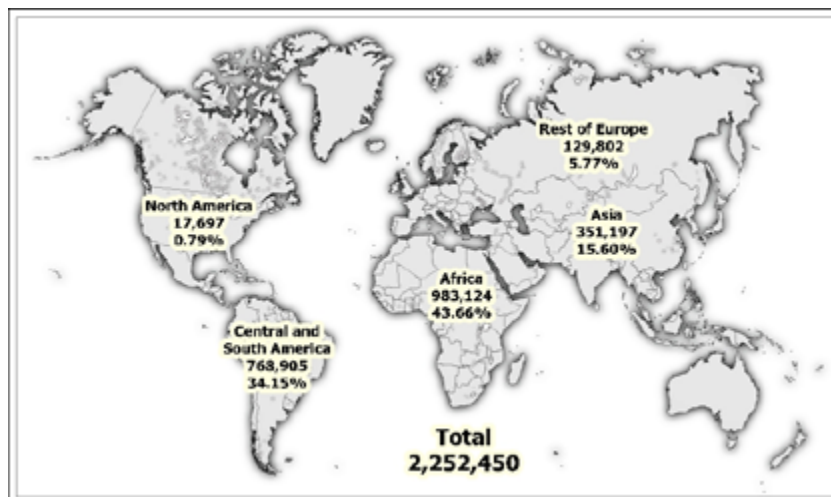
**Table 3. . Main nationalities by country of origin in Spain, 2013**

Foreigners in General Regime, Main Nationalities 31-12-2013		
Nationalities	(N) Total	(%) Percentage
Morocco	750,442	33.33%
Ecuador	201,811	8.96%
China	180,844	8.03%
Colombia	122,217	5.43%
Bolivia	121,767	5.41%
Ukraine	74,713	3.32%
Percu	70,713	3.12%

*Source: Extranjeros Residentes en España a 31 de Enero de 2013, Principales Resultados. Observatorio Permanente de la Inmigración. Ministerio de Empleo y Seguridad Social, 2013 (Modified).*

Nevertheless, in the case of Latin American countries with the sharpest drops, which are due mainly to access to Spanish nationality, the effect was greater in 2012 and 2013, the Intensive Plan file processing Nationality observed (Ministerio de Empleo y Seguridad Social 2013).

**Figure 7. Foreigners in the General Regime by geographic area, 2013.**



Source: *Extranjeros Residentes en España a 31 de Enero de 2013, Principales Resultados*. Observatorio Permanente de la Inmigración. Ministerio de Empleo y Seguridad Social, 2013(Modified).

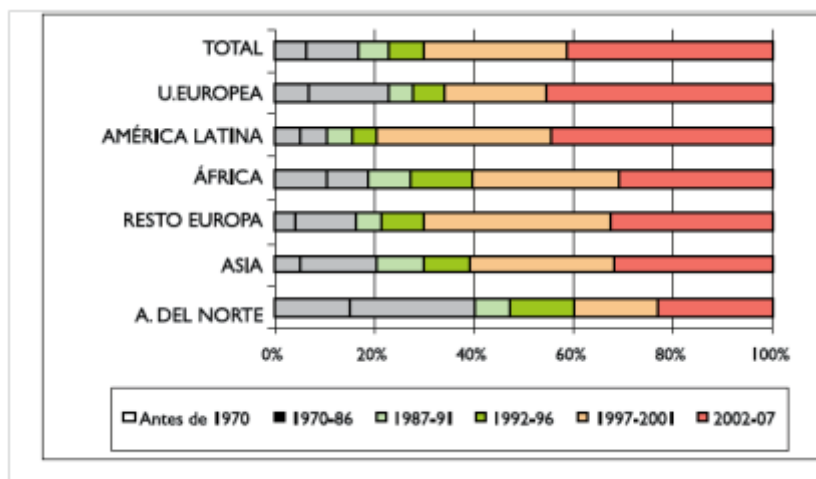
Nationals from African countries amounted to a total of 983,124, the 43.7% of all residents in Spain. The leading countries are Morocco, with 750 442, i.e. 76.33% of the residents from this continent; follow too far: Algeria, Senegal, Nigeria and Mali with 53,939; 49,529; 27,968 and 21,486 respectively (Ministerio de Empleo y Seguridad Social 2013). In the case of the countries from Central and South America, the number of foreign residents was 768,905, 34.2% of the scheme. Ecuador, Colombia and Bolivia, all with more than one hundred thousand residents, were the three countries of this continent with the largest presence in Spain, with 201,811; 122,217 and 121,767 respectively. They were followed by Peru, Argentina, Paraguay and Dominican Republic, with 70,328; 42,401; 40,509 and 40,240 respectively.

The Asian continent was in third place [Figure 7], with 351,197 foreigners, i.e. 15.6% of all residents in this regime. Highlights include nationals of China, Pakistan, India and the Philippines with total of 180,844; 67,096; 31.045 and 26.938 respectively (Ministerio de Empleo y Seguridad Social 2013).

### 3.1. Time of arrival to Spain

There are two significant periods of immigration in Spain in 1997-2001 and 2002-2007. (Reher et al. 2008) 41.2% of the immigrant population arrived in Spain in the period 2002-2006, 29% and in the period from 1997 to 2001. 17% (760,000 individuals) of the immigrant population arrived before 1986 [Figure 8], year of the first legislation on immigration, in the frame of the Spanish revenue to the Economic European Community. Other 590,000 did it throughout the decade 1987-1996.(IOÉ Colectivo et al. 2010)

**Figure 8. Period of arrival by geographical region, Spain.**



Source: Colectivo, IOÉ Fernández, Fernández M. Encuesta Nacional de Inmigrantes 2007: el mercado de trabajo y las redes sociales de los inmigrantes. Miniterio de trabajo e inmigración, 2010.

Regarding the country of birth people from Ecuador and Bolivia were based almost exclusively in the decade 1997-2006 (94% and 97%, respectively) and Ecuadorians especially in the period 1997-2001 (58%) and the second in 2002-2006 (85%). In the case of Colombia 7% of people arrived between 1987 and 1996 and the majority (89%) arrived in the last decade. Instead, immigrants from Argentina arrived in the last decade (47% between 2002 and 2006), while 17% did so before 1987. Most immigrants from Africa (60%) established during the last decade, 19% arrived before 1987 and 21% in the period 1987-1996. In this case there are significant differences between Morocco and the rest of the continent. 20% of immigrants from Morocco were established before 1987 and 22% between 1987-1996, so in 2006 42% had more than 10 years of residence in Spain, a figure that reaches only 34% of the rest of the African immigration.(IOÉ Colectivo et al. 2010) that represent the highest percentages of “newcomers”.

### 3.2. Demographic characteristic of the immigrant population

#### *Sex composition*

Overall there is a slightly female predominance among immigrants, since 52.2% of the

total are women. This primacy is mainly due to the contribution of people from Latin America (54% are women) and to a lesser extent, the rest of Europe (52%). In contrast, other contingents show masculine dominance, especially those from Africa (66%) and Asia (61%), but also the European Union (52%) and North America (56%).

Colombia (59%), Bolivia (54%) and Ecuador (52%) are the countries with the higher proportion of women. Male dominance is recorded between people from Morocco (64%), the United Kingdom and Romania (54%), Peru, France and Argentina well over 50%, hovering around the ensemble mean of immigration (52%). (IOÉ Colectivo et al. 2010)

#### *Age Composition*

Analyses refer to the data provided by the 2007 National immigrant survey.(IOÉ Colectivo et al. 2010) Among immigrants from Romania there are almost no people over 50 years old (5%) while 80% is younger than 40 years old. The age structure of Latin Americans shows the younger profile: two thirds of immigrants are between 16 and 40 years old and only 15% have 50 or more years old. People from Bolivia, are the youngest (82% are under 40 years old and 51% are less than 30 years old). Argentina is one of the Latin American countries with longer presence in Spain. On average: 47% of this group is over 40 years old and 26% is 50 or older. Peruvians are the group of major age (41 % overcomes 40 years old), followed by the Colombians (64 % has less than 40 years old) and finally the Ecuadorians, of more recent arrival and minor average age (77 % has less than 40 years).

The African emigration presents a structure clearly unbalanced depending on the sex. 61 % of the immigrants are less than 40 years; though the group 50 years or older reaches the maximum level between all the non-European Countries, together with the Europeans of out of the EU (19 %), which denotes the existence of ancient migrations, especially those from Morocco. The profiles of the populations of the rest of Europe and of Asia more than 60 % are younger than 40 years old and the major ones of 50 years old suppose 17 %. (IOÉ Colectivo et al. 2010)

#### *Education*

Most immigrants (59%) have completed studies of first and second cycle of the secondary education, 17% have higher education studies and only 23% belong to the group of primary education or no education. (Reher et al. 2008) Among the Spanish population, figures indicate a greater presence in the segment with primary education or less (38%) followed by secondary level education (48%) and tertiary (14%). Among the European Union the proportion of people that do not reach the primary education is 16% for women and 15% for men. In contrast, the overall average is slightly higher at the tertiary level, with a slight percentage among women (23% and 22%, respectively). Among the people from Latin America there are more people with no studies (19%), followed by people with secondary level (59%) and a similar proportion with tertiary education (22%) than among the European Community. Among the Latin American countries Ecuadorians (31% men, 28% women) have a lower educational level, followed by those from Argentina (16% and 12%, respectively), Bolivia (16% and 20%, respectively) and Colombia (20% and 17%, respectively) and finally people from Peru (5% and 8%, respectively).

As for the tertiary educational level, first we find people from Peru (35 % the men, 28 %

the women) and Argentina (28 % and 37 %). Then those from Bolivia and Colombia the percentages place concerning 15 %, with slightly differences between sexes, and for those from Ecuador about 10 %, with difference in favour of the women. People from Africa is the one that presents the lower profile of studies and the situation of women is slightly worse than that of the men: 35 % of the males and 37 % of the women have primary or low studies, only 14 % and 11 %, respectively, reach the tertiary educational level. The educational level of the Moroccan immigrants is lowest (40% for men and women with primary educational level). (IOÉ Colectivo et al. 2010)

#### *Marital status*

Data show a higher proportion of singles among immigrants from the Andean countries and the rest of Latin America, with weights slightly higher in men (52%) than in women (48%). Conversely, people from Africa have a low proportion of single people (37% of men and 23% of women). This group has the higher proportion of married people, 60% of immigrants. In addition, the separated-divorced proportion is also lower in the case of Africans, whereas among women of the countries Andean, the proportion (10%) doubles that of men of the same origin. There are, therefore, different patterns between men and women within a same country, but also among groups by country of origin. (Reher et al. 2008)

#### *Socio-economic structures in the country of origin:*

The African immigrants have the higher percentage of people, employed at the agricultural sector (20 %), followed by the Latin-American (that register percentages lower than 5 %). Among the Latin Americans, about 60% are in the sector services. African and European emigrants should be that in major relative measure (about 15 %) employed at the sector of the construction.(Reher et al. 2008)

Regarding the labour participation in the moment of migration, 54 % had an employment, 19% were unemployed but had worked before and 27 % had never worked in a paid work. Those with no labour experience were especially the youngest people, who came from France, Morocco, Asia, the sub-Saharan Africa and Germany. Those who did not have an employment in the moment of migration but had labour experience stand out women, from the United Kingdom, Bolivia, Colombia, Germany and Romania. The most habitual employment between the men of Romania was the construction followed by the industry and the trade.(IOÉ Colectivo et al. 2010) Males from Colombia, Ecuador and Argentina were employed for the most part at trade, industry and construction (the Argentineans slightly more in industry) and the Ecuadorians, besides, in the agriculture. Those people born in Peru were more likely to be employed in industry, trade and transport and those of Bolivia in construction, trade and transport. Finally, people from Morocco were mostly employed in construction, agriculture and trade, the rest of African born in trade, agriculture and construction.(IOÉ Colectivo et al. 2010)

Regarding women, those from Romania had employments in industry, trade and the hotel and catering business. Those born in Ecuador, Colombia and Bolivia were more likely to be employed in the sector of trade, industry, education and health; those from Peru in trade, education and health, and those from Argentina in education, health, trade and services. Women born in Morocco were employed in industry, trade and other services; those of the rest of Africa in trade, education, health and industry. (IOÉ Colectivo et al. 2010)

### 3.3. Once in Spain

The reasons for the immigrants for choosing Spain are various and include motivations related to the labour nature (to look for employment or to improve employment), relatives (regrouping), economic (to improve quality of life), political or religious pursuit, and preference for the Spanish climate or retirement, among others. Moreover there are specific preferences according to the country of origin.(IOÉ Colectivo et al. 2010)

The more frequent motivation for coming to Spain are familiar reasons. This situation is added, especially by Moroccans about 40% and Argentineans 33 %. Second, an important group is the one that came in search of better work opportunities, because they were unemployed or because they were trying to reach an occupation in better conditions. This group, includes almost 62 % of the immigrants, those born in Bolivia, Romania and Ecuador (more than 90 %), Colombia, Peru, Morocco and the rest of Africa (more than 70 %).(IOÉ Colectivo et al. 2010) Other group came to Spain on the occasion of a work movement; in this case it can be a question of a more or less temporary stay but also of a migration with vocation of permanency, beyond the continuity of the labour link. Stand out the people from North America (16 %), Peru (11 %), Argentina, United Kingdom, Germany and France (8 %). Another group valued that Spain would offer a better quality of life (40 %, especially British born, Colombians, Romanians, Ecuadorians or Bolivians) or an affordable life cost (14 %, for the most part British born and Ecuadorians). (IOÉ Colectivo et al. 2010)

Moreover, the existence of social transnational nets is an important factor in the life of the immigrated population. The proportion with this “effect of attraction” was higher among people born in Peru and Ecuador (more than 70 %), in Colombia, Romania and Bolivia (more than 60 %); and people from Asia and Morocco also overcome the average.(IOÉ Colectivo et al. 2010)

In addition, the familiar networks have played a fundamental paper in the reception of the immigration from Latin America (Peru, Bolivia and Ecuador) and Africa (Morocco), though Colombians, Argentineans and sub-Saharan Africans rested also in a significant way on networks of friendship, probably because they were possessing fewer relatives in Spain.(IOÉ Colectivo et al. 2010)

#### *Working situation*

The socio structure not only reflects the position but also the role played by immigrants in the Spanish economy. The arrival of immigrants responds to labour demand for certain jobs, which despite its important economic development of the country are not covered by the population native. (Reher et al. 2008) However, immigrants in Spain are disposed to work in jobs and under conditions that the locals usually reject. (Calavita 2006)

The workers' distribution in the structure of the labour market according to the origin of the immigrants has important differences. The first profile corresponds to those busy persons proceeding from the developed countries. More than one third of this population recovers managerial and professional charges, which contrasts notably with the low weight that the rest of the groups have occupied this socio-labour situation. The second pattern is represented by the African, Andean and immigrants from the rest of Europe which offer

in many aspects a distribution of socio-labour very similar categories. This way so, about the half of all occupied with these three groups of immigrants working on handicrafts manuals that do not need qualification. (Reher et al. 2008)

The third pattern of socio-labour distribution corresponds to the immigrants of the Latin-American non Andean countries. It is possible to say that this group is “to half a way” between the original ones of the developed countries and other zones of origin. The weight of the non-qualified workers and hard-working qualified manual people, in this group, is high that in case of the developed countries, but it does not reach levels that assimilate the rest of origins. (Reher et al. 2008)

Regarding country of origin, the highest rates of labour force participation correspond to migrants from Bolivia, Ecuador and Romania, followed by those from Peru and Colombia. The rates of occupation stand out between people from Romania, Colombia, Bolivia and Ecuador; the unemployment also is high among these groups, primarily among people from Morocco. The stagnation, on the other hand, stands out in case of the migrants of the United Kingdom, Germany and North America (pensioners), Portugal, Morocco, Asia and Argentina (domestic work). (IOÉ Colectivo et al. 2010)

Regarding their first work in Spain, among people from the European Union those born in Romania work initially in construction and agriculture (80 %) and those from Portugal in construction and industry (63 %). On the other hand, those from France worked in industry, hotel and catering business and construction (60 %), those from Germany in hotel and catering business and trade (42 %) and those from the United Kingdom in hotel and catering business, education and health (40 %). As for the men of Latin America, born in Bolivia and Ecuador they are concentrated in construction and agriculture (about 60 %), those from Colombia in construction, as well as those from Morocco and those from the rest of Africa (about 60 %). Men from the not community Europe worked primarily in construction and hotel and catering business (50 %), those from Peru in services to companies, construction and trade (50 %) and those from Argentina in hotel and catering business, construction and industry (57 %). Among the Africans a profile of initial insertion in the agriculture and the construction predominates. (IOÉ Colectivo et al. 2010)

### **3.4. Spanish legal framework:**

The Spanish economy has been formed by a set of historical circumstances, especially by the Franco regime. From Franco's death in 1975, the Spanish economy has experienced expansions and periodic recessions, especially in the period between 1986 and 1990, in which there were created more than two million new employments, more than in no other European country. And the economy has continued his expansion till recently, with the number of employments increasing in 24,2 % between 1996 and 2001.(Calavita 2006) The development of the economy has largely depended on the services sector, hotels, tourism and construction. Dependence on these sectors have made the economy structurally weak and, over the years, it has been created a growing gap in productivity when compared to the rest of the European economy.(Cabrales n.d.) This economic situation has led to the demand for unskilled workers in those sectors and others, such seize agriculture, which offers seasonal employment, and domestic services for whom the immigrant la-

bour fits perfectly in this type of employments.(López Sala 2013)

#### **a) Immigration law in Spain**

Spain passed its first immigration law (Boletín Oficial del Estado 1985) in 1985 and had subsequently made numerous reforms, revisions and changes. Its purpose was to guarantee immigrant's right and assure their integration in the host society. (Calavita 2006)

However, the actual content systematically marginalizes immigrants and circumscribes their rights. Actually, the Spanish immigrant legislation generated irregularities between the majority of the immigrant community. That is to say, the law created the immigrant's legal category and consistently it generated the category of "illegal".(Jabardo 1995) Indeed, before the Spanish immigrant legislation there was no policies on immigration in Spain, and therefore there were no irregular immigrants.(Calavita 2006) The Law produced "irregularity" in a subtle form, as the product of a great variety of factors that are superposed, the most important of which it is the temporary nature and quota of the legal status. (Calavita 2006)

As Spain economy took off and joined the emerging European Community in 1986, the economic importance of Third World immigrants increased at the same moment that Spain was pressured by its European neighbours to control its borders, which had become the southern gate to the new fortress Europe that was dismantled with internal barriers and increased the pressure to control people that crossed its borders, which had a heavier impact on flows coming from Africa, yet land and air borders were less tightly maintained, making it relatively easy for immigrants from other parts of the world, particularly Latin America, to enter the territory.(López Sala 2013) The consequence was a series of contradictory policies. Indeed, rather than controlling the number of immigrants entering Spain, these laws focus primarily on defining levels of social and economic inclusion/exclusion. Broadly, the legislation was based on the principle that the flow of third world immigrants should be controlled, or at least administered.

Finally, there has not been commensurate development of coordinated policy approaches to address the health implications associated with modern migration. Internationally, policy-making on migration has generally been conducted from policy sector "silos" (international aid, security, immigration enforcement, trade, and labour) that rarely include the health sector and which often have different, if not incompatible, goals.(Stuckler & McKee 2008; Pace & Gushulak 2010). However, it will be increasingly important for policy-makers to engage in cross-sector coordination and move beyond narrow protectionist policy approaches, such as migrant-screening, and the simplistic view of migration as a one-way trajectory.(Betts 2010)

Moreover, health policy-making in the context of migration has generally been viewed either in terms of its "threats" to public health or from a rights-based approach that focuses on health hazards faced by individual migrants and the associated service challenges. (World Health Organization 2010) The former lens dates back to medieval quarantine measures and prioritizes public health security and communicable disease control, relying heavily on monitoring and screening (tuberculosis, pandemic flu). The rights-based perspective is more recent and grounded in medical ethics. It recognizes migrants' special vulnerability to, for example, interpersonal and occupational hazards, social exclusion, and discrimination, and the importance of universal access and culturally competent health care services.(Fortier 2010)



## **b) Right to healthcare**

The current immigrant legislation in Spain is the Organic Law 2/2009 on rights and freedoms of the foreigners in Spain and his social integration.(Boletín Oficial del estado 2009) However, the new reform the Royal Decree 16/2012, from April 20, from urgent measurements to guarantee a sustainable National Health System and to improve the quality and safety of its provisions.(Boletín Oficial del estado 2012) has annulled the health card for foreigners who do not have the residence license in effect. Indeed, till now immigrants had right to a health card only if they were registered in a municipality. Moreover, if they lose the residence card they could not be able to renew it. (Red inmigrante 2013)

This fact has an impact on the right to health care and has affected the immigrant population living in Spain. Certainly, the decision of the Spanish Government to withdraw the health card from the immigrants in irregular situation for many non-governmental organizations breaks the beginning of universal and free health for all in Spain (Huber et al. 2008). Furthermore, the right to health care was linked to the possession of the Spanish citizenship or to be registered in the census in Spain. This right happens to be linked now to the situation to be insured or to be beneficiaries of the National Health Service, which means that the person has to demonstrate that has an employment. The difference is substantial. If people had the right for being Spanish and for being residents, everyone had the right; if they have it for being insured or being beneficiaries, they have to check and demonstrate that they have the right. With regard to the condition of being a beneficiary, the determination is assigned to the General Treasury of the National Health Service, which introduces the doubt on if this disposition is concordant with what they determine some by laws in each of the autonomous regions, procedure of range superior to the analyzed Statutory order.(López-Fernández et al. 2012)

The Royal Decree details that foreigners only will be able to access the health care system through the emergency department for serious disease or accident, and only up to the situation of medical discharge (Boletín Oficial del estado 2009). Yet, this decree has brought several controversies. For example, in the Basque Country the Constitutional Court has publicized a judicial decree that supports the decision of the Government of Basque Country to continue providing health care to the irregular immigrants. The plenary session of the Constitutional Court decided to accept the arguments of the Government of Basque Country based on the prejudices in which it would derive the lack of health care of this group, the consequences for the public health and the obstacles that his exclusion would bear for the campaigns of prevention of the spread of certain diseases (Red inmigrante 2013).

The exclusion of the immigrant group in irregular situation shows the change, from an ethical position based on the solidarity and the recognition of basic rights of citizenship to the most disadvantaged, ones. In addition, the negative effects on the health of the immigrant population due to the exclusion of the health care system, the public health and the health management has been studied, and reports an increase of the use of the emergency services and the projection of major costs to medium and long term as consequence of the non- attention (López-Fernández et al. 2012).

This situation not only is affecting the quality of health care among the Spanish population but also is preventing Spain to develop as a country with the adequate health care

services for minority ethnic groups living in Spain. Indeed, while other European countries have already carried serious actions towards the development of culturally tailored interventions in health care, in Spain the health care system still continues treating the immigrant as a figure without definition and in consequence homogeneous. Moreover, it is important to adapt existing interventions for minority ethnic groups (Bhopal 2006).

For example, in Scotland the National Health Service has made numerous attempts to improve health care for ethnic minority groups (Bhopal 2006). Community organizations concerned with the health and welfare of minority ethnic groups in Lothian have worked with services and providers, including the Lothian National Health services and the local government councils, to raise the issues and to improve services. The Commission for Racial Equality published a Guide on Ethnic monitoring for Public Authorities in Scotland in which ethnic monitoring was seen as the process by which an authority maintains an informed view of the extent to which its race equality policy is working. In practice, it means collecting quantitative data by ethnic group. The English National health System (NHS) Ten Point Race Equality Action Plan emphasizes meeting the services needs of people from ethnic minorities, ensuring a greater focus on helping people with chronic diseases and tackling health inequalities. (Bhopal 2006)

Although, efforts are being made to improve the health care of ethnic minorities further work needs to be done. For example, adapted behavioural interventions for preventing coronary heart disease (CHD) among the communities are rare in Europe and North America. This indicates that many individuals in these communities may not be taking preventative action, and that urgent action is needed (Netto et al. 2010). Moreover, in a recent systematic review, five principles for adapting behavioural interventions for minority ethnic communities were identified: use community resources to publicize the intervention and increase accessibility; identify and address barriers to access and participation; develop communication strategies which are sensitive to language use and information requirements; work with cultural or religious values that either promote or hinder behavioural change; and accommodate varying degrees of cultural identification (Netto et al. 2010)

Furthermore, not only in Europe but also in the United States there is a considerable amount of current interest in cultural competency. This interest is stimulated, in part, by the growing racial and ethnic diversity of the United States population. Between, 1995 and 2050 the U.S. population will increase by 50%. Ninety percent of this growth is attributed to the projected increase in ethnic minority groups. As a result, many health professionals are attempting to design culturally competent programs that successfully address the health needs of Blacks, Latinos/Hispanics, Asian/Pacific Islanders, and Native Americans (Boone et al. 2006).

In addition, health promotion strategies and interventions that infuse elements and techniques of cultural competence can potentially accelerate the reduction of well-known health disparities among racial and ethnic Americans (Brach & Fraserirector 2000). Hence, cultural competence extends beyond cultural awareness or sensitivity to include possession of cultural knowledge and respect for different cultural perspectives including the effective use of knowledge and skills in cross-cultural situations. Cultural competence reflects the ability to acquire and use knowledge of health-related beliefs, attitudes, practices, and communication patterns of individuals and their families to improve services, strengthen programs, increase community participation and close gaps in health status

among diverse population groups (Brach & Fraserirector 2000). Moreover, a practical framework for implementation of measures to address racial/ethnic disparities in health and health care had been created (Betancourt et al. 2003). This framework focuses on three umbrella categories of interventions—organizational, structural, and clinical—it becomes clearer how cultural competence initiatives could assist in the elimination of racial/ethnic disparities in medical care (Betancourt et al. 2003). Research has established the important role minority health care professionals play in the delivery of quality care to minority patients. “Organizational cultural competence” efforts—increasing the numbers of underrepresented minorities in the health professions and health care leadership—are important ways to improve both clinical outcomes and the health status of the nation’s vulnerable populations. Similarly, given that the structure of a health care delivery system, and subsequent structural barriers impact minorities in distinct ways, it is clear that only through the development of “structural cultural competence” interventions—innovations in health care system and structure design—that racial/ethnic minorities will be able to truly obtain quality health care (Betancourt et al. 2003). Indeed, a large survey by the Commonwealth Fund found that 22% of Hispanics and 16% of African Americans, as compared to 8% of whites, reported a “major” problem accessing specialty care (Collins et al. 1999). Another study revealed that 46% of Hispanic and 39% of African American adults, compared with 26% of white adults, do not have a regular doctor (Collins et al. 1999). Hence, clinical have to do with the interaction between the health care provider and the patient or family. They occur when socio-cultural differences between patient and provider are not fully accepted, appreciated, explored, or understood. Patients may have very different socio-culturally based health beliefs; medical practices, including use of home remedies; attitudes toward medical care; and levels of trust in doctors and the health care system (Berger 1998). As the country becomes more culturally diverse, health care providers of all ethnic backgrounds are dealing with a greater proportion of patients whose perspectives are different from those taught in the mainstream health care system. Research has shown that provider-patient communication is directly linked to patient satisfaction, adherence, and subsequently, health outcomes (Orth et al. 1987; Stanton 1987; Stiles et al. 1979; Haynes & Sackett 1979).

Thus, when cultural and linguistic barriers in the clinical encounter negatively affect communication and trust, this leads to patient dissatisfaction, poor adherence (to both medications and health promotion/ disease prevention interventions), and poorer health outcomes (Morales et al. 1999; Crane 1997; Hornberger et al. 1997; Phillips et al. 2000; Langer 1999; Betancourt et al. 1999; Brach & Fraserirector 2000). Moreover, when providers fail to take social and cultural factors into account, they may resort to stereotyping, which affects their behavior and decision-making (Van Ryn & Burke 2000). In the worst cases, this may lead to biased or discriminatory treatment of patients based on their race/ethnicity, culture, language proficiency, or social status (Betancourt et al. 2003).

Finally, understanding and managing socio-culturally based variations in health beliefs, values, and behaviors is paramount to the care of racially/ethnically diverse patient populations. “Clinical cultural competence” interventions—educational initiatives that aim to teach providers the key tools and skills to deliver quality care to diverse populations—is the final piece of an emerging field that will directly address racial/ethnic disparities in health and health care (Betancourt et al. 2003).

### **3.5. Health of the immigrant population**

Several studies (McDonald & Kennedy 2004; Kobayashi & Prus 2012; Gee et al. 2004), have consider the notion of the “healthy immigrant effect” which means that although the health of immigrants may be better than that of the native-born population at the time of immigration, that advantage is lost over time (De Maio 2010). However, studies are not conclusive while some research show that immigrants have better health status than native-born others show poor health outcomes (Kandula et al. 2004). Moreover, the majority of migration health research and policy attention has focused on the destination phase (Zimmerman et al. 2011) that is when individuals settle either temporarily or long-term in their intended location, usually describing issues in high-income and migrant-receiving countries and frequently investigating specific diseases, certain ethnic groups, or “the healthy migrant effect” (Newbold & Bruce Newbold 2005). Yet, contemporary mobility is a much more complex process, more accurately viewed as a multistage cycle that can be entered into multiple times, in various ways, and may occur within or across national borders (Zimmerman et al. 2011).

In the destination phase greater attention is paid to non-communicable diseases, mental health, and socioeconomic influences on health. Risk behaviors among migrants appear to change when they are in new settings such as when Japanese migrants to the United States showed that as cultural adaptation became more pronounced, the risk of coronary heart disease began to match that of the host population (Marmot & Syme 1976). Mental health outcomes often appear worse for migrants, displaced populations, and refugees than for native-born populations (Steel et al. 2009). Migrant women may be at greater risk of reproductive health problems and poor pregnancy outcomes, such as pregnancy complications, neonatal morbidity, and infant mortality (Bollini et al. 2009). Asylum-seekers with temporary protection tend to have poorer mental health than refugees who have permanent residency (Momartin et al. 2006) and similarly, low-skilled migrant workers, especially those with irregular status, are at high risk of injury and illness (Ahonen et al. 2007).

Furthermore, several factors may influence the health of the immigrant population, such as those related to the country of origin and cultural backgrounds (such as risk factors in earlier life or lifestyles), factors in the country of destination (such as social class inequalities, with associated behavioral risk factors such as poor diet, smoking or alcohol consumption) and selection effects (such as the “healthy migrant effect”) (Ronellenfitch et al. 2006; Venema et al. 1995).

#### **a) Mental Health**

In addition, a recent study (Bañón González et al. 2013), argued that the immigration per se would not produce an increase in the risk of suffering mental illnesses. Yet, it would depend on the traumatic experiences suffered during the migratory process, factors such as the receptiveness on that of the host society and its systems of integration (social, educational and occupational) and the density of its own ethnicity in the community (for the minor discrimination and isolation, the major feeling of permanency to the group and the major social support) (Bañón González et al. 2013). Also, the authors suggest that in the migratory process there is a temporary sequence where at first, there is a phase of euphoria for coming to the “promised land”, were high expectations raise. Later appears

a psychological crisis (related to the difficulties for the socio-labour integration) (Bañón González et al. 2013). During the process a modification of the levels of stress can occur (increasing in the first two years, then it descends to previous levels). Even so, there is a dependence of the ethnic group and the host country (Bañón González et al. 2013).

Thus, a study conducted in Bizkaia in the north of Spain showed that the prevalence of poor mental health among immigrants duplicated the average prevalence in this region. This situation took place in all regions of Bizkaia, especially in Bilbao (Martín Zurimendi et al. 2013). This circumstance is taken into account especially in the adult health programs primarily in alcoholism programs and other drug-addiction programs. A similar situation happens with the percentage of immigrants that were attended in the Hospital Service of Psychiatry of Galdakao (Martín Zurimendi et al. 2013). Furthermore, a study conducted in the city of Madrid among adolescents observed that the prevalence of depressive symptomatology was higher in women and in immigrants (Pérez 2013). It concluded that the source of depression could be related to the lack of sensitiveness to the diversity, which was translated into major or minor quantity of distrust, hostility and exclusion. (Pérez 2013).

Another study, conducted in the city of Barcelona in Spain showed that 48 % of the immigrant men and 65.7 % of women reported poorer health status, compared to the general population in the same territory (20 % of the men and 29 % of women in the health survey of Barcelona (Pasarín et al. 2002). Also, 52 % of the immigrants reported visiting the doctor in the last month and had higher number of chronic disorders than those of the autochthonous population, as depressions (58 % of the cases), backache in the 33 % and migraine in the 37 %. Regarding mental health, 58 % of the interviewed immigrants presented depressive disorders.

Moreover, a recent study in Spain showed that the prevalence of mental health problems was higher among women (24.6%) than in men (14.7%) (Bones Rocha et al. 2010). The variables associated with an increased prevalence of mental health problems were being separated or divorced, being an immigrant from a developing country (men OR 1.3; women OR 1.5), having little social support (men OR 3.6; women OR 3.3), being unemployed or on sick leave, having chronic diseases, and being restricted or severely restricted in one's daily activities because of a health problem (men OR 7.5; women OR 7.1)

## **b) Occupational health**

In the last years the number of immigrant workers in Spain has rapidly increased. Of 334.976 immigrant workers affiliated to the National Health Service in 1999 the number increased to 1.822.406 in 2006 (Ministerio de Trabajo y Asuntos Sociales 2005). In 2005 a strong increase was experienced due to the decision of the Spanish government to establish an extraordinary process of administrative regularization, which supposed 550.136 new discharges of foreign workers in the system of the Social Security only in this year (Ministerio de Trabajo y Asuntos Sociales 2005). However, in 2012 due to the Spanish economic downturn the affiliation to the Social Security of immigrant population in Spain decreased to 26.961 employed, which is equivalent to -1.56 % (Ministerio de Empleo y Seguridad Social 2012). The balance showed that from the total immigrant affiliates, 1.701.875, 1.059.495 came from countries outside the European Union (Ministerio de Empleo y Seguridad Social 2012).

Regarding occupational health, a study conducted in Spain showed a higher risk of occupational injuries among foreign workers. The differences in risk among economic activities and autonomous communities require more detailed analysis in the industrial activities (López-Jacob et al. 2008). Moreover, the National Working Conditions Survey of 2008, showed that the immigrant workers had major number of work injuries than the Spaniards (Nogareda C et al. 2008). Furthermore, a recent study showed that migrant women in services sector had higher self-reported psycho-social exposures than Spanish women and also in non-service jobs they reported higher exposure to occupational risks than did Spanish women (Ronda et al. 2013). The most prevalent occupational risk factors reported by both men and women were working many hours per day and working many hours standing up (Ronda et al. 2013). Another study conducted in Spain found that immigrant workers with manual jobs and immigrant women were the groups most exposed to psychosocial factor (Font et al. 2012). In addition, another study reported that migrants were more likely to report discrimination in their community and working life, characterized by experiences of racism, mistreatment and precarious working conditions in comparison to the Spanish born population (Agudelo-Suárez et al. 2009). They also, reported limitations in terms of access to the labour market (mainly construction, the hotel and restaurant trade, domestic service and agriculture), and described major difficulties accessing other types of work (for example public administration). They also identified political and legal structural barriers related to social institutions (Agudelo-Suárez et al. 2009). Furthermore, a qualitative study showed that migrants described poor working conditions, low pay and more health hazards (Ahonen et al. 2009). In addition, undocumented workers described poorer conditions than documented workers, which they attributed to their documentation status. Documented participants also felt vulnerable because of their immigrant status. Informants believed that deficient language skills, non-transferability of their education and training and, above all, their immigrant status and economic need left them with little choice but to work under poor conditions (Ahonen et al. 2009). Besides, a cross-sectional study that considered employment conditions and legal statuses showed that contract type is a health determinant in both foreign-born and Spanish-born workers (Sousa et al. 2010).

### **c) Health-related behaviors**

Studies have tested the hypothesis that over time immigrants assimilate certain attitudes and behaviors of the host country's population related to unhealthy habits (Gutiérrez-Fisac et al. 2010). For example, patterns of alcohol consumption vary considerably between societies, cultures and nations. Many factors in society determine patterns of alcohol use such as, for example, religion, social and cultural traditions, availability of beverages and legal restrictions (Heath 1995).

In terms of lifestyle risk factors a study conducted in Europe showed that first-generation immigrants with origins outside northern, eastern and Western Europe had lower rates of alcohol-related disorders compared to the majority population (Hjern & Allebeck 2004). Another study conducted in Spain found that the immigrant population reported significantly less smoking and alcohol consumption and higher percentages of physical activity than that of the Spanish population (Carrasco-Garrido et al. 2007). Another study conducted in the city of Barcelona showed that immigrants from developing countries into Spain currently have lower smoking rates, probably reflecting low female smoking rates

in their societies of origin and that smoking immigrants quit more frequently than nationals (Villalbí et al. 2007).

In addition another study based on the Spanish National Health Survey showed that immigrants have better parameters in relation to lifestyles, but reported a poor self-perceived health status (P. Carrasco-Garrido et al. 2009). However, it should be noticed that these studies analyzed immigrants as a homogeneous group.

A recent study conducted in Madrid found that length of residence of immigrants was not associated with the frequency of obesity (Gutiérrez-Fisac et al. 2010). This study suggested that the positive effect of length of residence on obesity in immigrants could be related to acculturation, a process by which immigrants progressively adopt behaviours and habits typical of the host country (Gutiérrez-Fisac et al. 2010). If particular obesity factors associated with eating (e.g. a high-energy-density diet or one with a high glycaemic index) and physical activity (tendency to sedentarism) are frequent in the host country, the adaptation of immigrants would imply, in some measure, the adoption of these behaviours. Nevertheless, inconsistencies between studies in North America and those in Europe may indicate that immigrant acculturation varies by geographic and cultural setting (Gutiérrez-Fisac et al. 2010).

#### **d) Infectious diseases**

In mobile populations, characteristics and time of acquisition of infections depend on exposure in the original country, during migration, and in the resettlement environment, leading to considerable heterogeneity in presentation (Monge-Maillo et al. 2009). Infectious diseases detected among immigrants can be divided into three groups. These groups are 1) common diseases, such as respiratory, urinary tract, or skin infections, which are not difficult to diagnose and do not constitute a public health risk; 2) communicable diseases, such as tuberculosis (TB), viral hepatitis, sexually transmitted diseases (STDs), or infection with HIV, which are most the serious diseases in terms of the individual and public health, and therefore must always be tested for, even in asymptomatic immigrants; and 3) tropical diseases, such as malaria, filariasis, and infections with intestinal parasites, which require specialized centers for diagnosis and treatment, but fortunately are not easily transmitted in temperate, developed countries (LEZ et al. 2003).

Knowing the length of stay in the host country prior to the first medical consultation is very useful when making a differential diagnosis. Fever, visceromegaly, anemia, malaria, and infections with intestinal helminths are more frequent among newly arrived individuals. Infections with intestinal helminths usually decrease as the length of time in the host country increases (Buchwald et al. 1995; Godue & Gyorkos 1990; Salas et al. 1990). Therefore, in terms of cost-benefits, routine examination for intestinal parasites should be based on the time of arrival in a new country. Conversely, tests for filarial parasites should be conducted in immigrants from endemic areas regardless of their arrival date because the average lives of these parasites can be as long as 10 years (LEZ et al. 2003). A recent study among two mobile immigrant groups (sub-Saharan Africans and Latin Americans) in Spain showed that the most frequent diagnoses were for latent tuberculosis, filariasis, hepatropic virus chronic infection, intestinal parasites and malaria (Monge-Maillo et al. 2009).

A recent study conducted in Barcelona, showed that the prevalence of latent TB infection

was particularly high in sub-Saharan (53.4%) and Eastern Europeans (53.1%) (Manzardo et al. 2008). In addition, a prevalence of 6.4% for latent syphilis infection was observed and the prevalence of HIV infection was extremely heterogeneous in different groups of immigrants, reaching more than 6% in some African countries (Manzardo et al. 2008).

Immigrant populations are extremely heterogeneous and all health programmes designed to detect and cure imported infectious diseases should be aware of specific country and cultural differences and should promote the integration of the immigrants into the local society (Manzardo et al. 2008).

#### **e) Maternal Health**

An important aspect of the relation between the health and migration is the impact of migration on the neonatal morbidity and mortality, and in its influence in the indicators of perinatal health of the host population (Acevedo et al. 2009). The growing number of immigrant women that arrived in Spain is responsible for the increment that is experiencing the birthrate in the country that has passed from 1.16 children by woman in fertile age in 1996 to 1.38 in 2006 (Reher et al. 2008). The number of children from immigrant mothers represented a 16.5% of the total children born in Spain in 2006 (Acevedo et al. 2009). Moreover, the impact of ethnicity is an issue of great interest in obstetric care and outcomes. Although no conclusive data exist on the role of ethnic origin in maternal and fetal outcomes, it is accepted that ethnic origin influences perinatal outcomes (Hernandez-Rivas et al. 2013). However, results are contradictory, which may be related to methodological reasons. For example, a study conducted in Spain that analyzed the differences between frequency of early deliveries, low weight, very low weight and macrosomy between Moroccan, Ecuadorian, Colombian, Romanian and Chinese immigrant women and Spanish women found that Romanian and Moroccan women were the gestation groups with the highest risk (Acevedo et al. 2009).

However, a study conducted in Spain showed different results. This research found that birth weight of children born from immigrant women, was significantly higher than that of children born to Spanish women (Bernis 2005). Moreover, the author suggested that South American women, north Africans and European, contributed the most to the births of immigrants in the year 2000 in Spain, and in all three cases, the weight of their children was significantly greater than that of Spanish women (Bernis 2005).

Regarding clinical characteristics and perinatal outcomes, a recent study found significant ethnic differences in clinical characteristics and perinatal gestational diabetes mellitus (GDM) outcomes in women with GDM in a multi-ethnic population of Barcelona. Latin American women diagnosed with GDM, compared with Caucasians, had a higher prevalence of adverse outcomes, including primary cesarean section, large-for-gestational-age (LGA) infants, neonatal hypoglycemia, lower umbilical cord pH and Apgar score at birth (Hernandez-Rivas et al. 2013).

#### **f) Social determinants of health**

The precarious living and working conditions can adversely affect the health status of immigrants. (Regidor 1997; Regidor et al. 2001; Robredo et al. 2004) Malmusi et al. (Malmusi et al. 2010), that analyzed inequalities in socio-economic determinants and self-assessed health status according to gender, social class and migration type found that



migration-related health inequalities affected both internal and international immigrants, but were mainly limited to those from poor areas; were generally consistent with their socio-economic deprivation; and apparently more pronounced in manual social classes and especially among women. Foreign immigrants from poor countries had the poorest socio-economic situation but relatively better health (especially men with shorter length of residence).

Studies on the social perception of immigrants and ethnic minorities all over the world show that there is a negative representation which often links immigration with criminality, social problems, lack of civic safety and with drug dealing or drug abuse (Aramburu 2002; Gutiérrez 2002; Maneri & Ter Wal 2005; Navas et al. 2004). Indeed, in a study conducted in the city of Valencia about Spaniards perception on two groups of Spanish-born heroin addicts Latin-American immigrants who abuse alcohol, while the former were described with empathy and pity as victims of social problems and drugs, immigrants were seen as intruders, threatening coexistence in the district. (Herzog et al. 2008) The study suggested that these differences in discourse can lead to different social practices and therefore to the marginalisation of immigrants using their alcohol abuse as an argument.

Furthermore, a recent study on self-perceived discrimination and social determinants in Spain found individuals from foreign countries were at greater risk of self-perceived discrimination than Spaniards (Gil-González et al. 2013). Both men and women who originated from low-income countries were more likely than Spaniards to perceive discrimination in various situations, such as seeking work, in a public place and when receiving health care. The study suggested that intersections between social class, country of origin and gender seem to have influenced the distribution of self-perceived discrimination between social groups (Gil-González et al. 2013).

### **3.6. Health care use among immigrants**

#### **a) Spain health system**

The statutory Spanish national health system (SNHS) is universal coverage-wise, almost fully funded from taxes and predominantly within the public sector. Provision is free of charge at the point of delivery, with the exception of pharmaceuticals prescribed to people aged under 65, which entail co-payment of 40% of the retail price (García-Armesto et al. 2010).

After a 25-year transition from a centralized model of legislation, and planning and provision of health services, health competences were totally devolved to the regional level from the end of 2002; this devolution resulted in 17 regional ministries or departments of health with primary jurisdiction over the organization and delivery of health services within their territory, thus health expenditure is mainly determined by the regional administrations (García-Armesto et al. 2010).

The national Ministry of Health and Social Policy (MHSP) is therefore vested with only a limited extent of powers. It has authority over legislation on pharmaceuticals and is the guarantor of the equitable functioning of health services across the country; this last competence includes the definition of the basic benefits basket, the setting of minimum

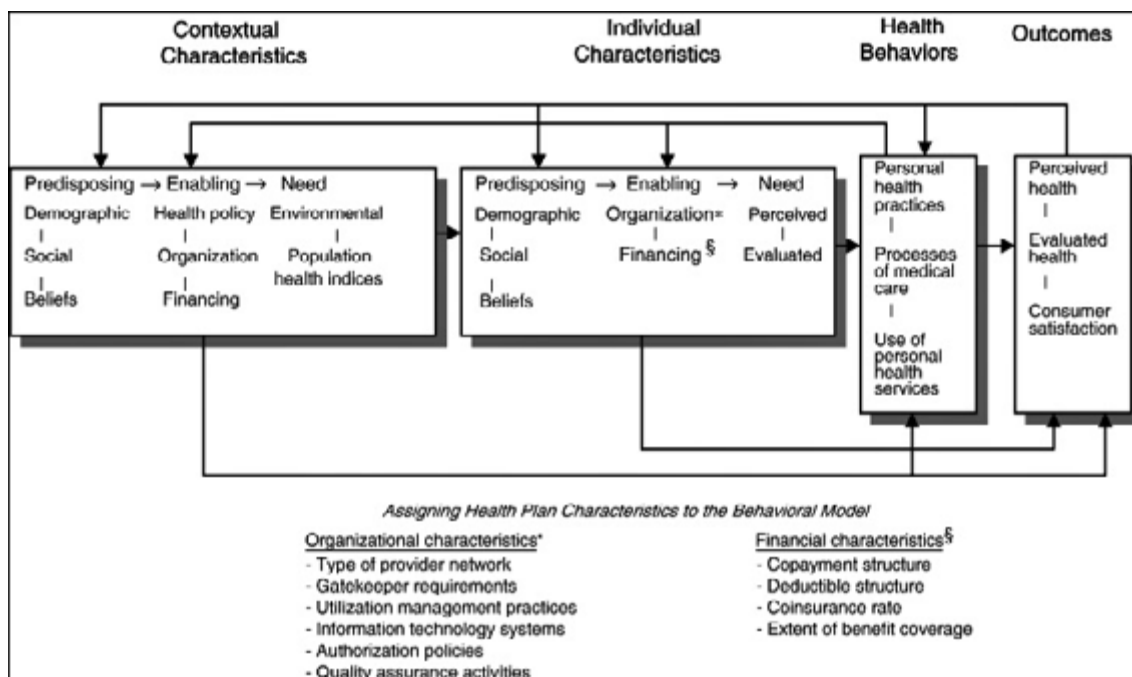
thresholds for services regarding expenditure and quality, and a performance monitoring function (García-Armesto et al. 2010). In essence, the Ministry has the challenging mandate of playing the core role in the coordination of the SNS spread through 17 regional health systems, which are accountable only to the regional parliaments and thus not hierarchically linked to the national level. Indeed, this framing prescribes negotiation, consensus and additional earmarked funding as the key drivers of policy-making within the SNS; most of this dialogue takes place within the Inter-territorial Council of the national health system (CISNS) (García-Armesto et al. 2010).

In addition, it is only recently that the national Ministry has been invested with the responsibility for social policy (traditionally linked to the Ministry of Labour and briefly to the Ministry of Education), with the mandate to implement the brand new National System for Autonomy and Assistance for Situations of Dependency (SAAD) (García-Armesto et al. 2010).

#### **b) Use of health care services**

Access could be considered in terms of whether those who need care get into the health system. However, patients' perceptions and practitioners' evaluations of need may differ. Further, though diverse factors may influence whether an individual enters the medical care system initially, the organization of the system to provide care and the consumer's level of satisfaction with it are apt to determine whether he continues to seek services. The factors that affect the behavioral (utilization) and subjective (satisfaction) outcomes of seeking care may be properties of the individuals themselves or of the medical care system they seek to enter. (Aday & Andersen 1974)

**Figure 9. The Behavioral Model of Health Services Utilization**



Source: Andersen RM, Davidson PL. *Improving Access to Care in America*. In: Andersen RM, Rice TH, Kominski GF, editors. *Changing the U.S. Health Care System*. San Francisco: Jossey-Bass; 2001.

What this phase emphasizes is the dynamic and recursive nature of a health services' use model which includes health status outcomes (Evans & Stoddart 1994; Patrick et al. 1988). This model portrays the multiple influences on health services' use and, subsequently, on health status. It also includes feedback loops showing that outcome, in turn, affects subsequent predisposing factors and perceived need for services as well as health behavior (Andersen 1995). Moreover, this model integrates a broad range of individual and contextual factors found to be associated with health services use and has been well described elsewhere (Andersen & Davidson 2001). [Figure 9]

The increasing proportion of immigrants in Spanish society is placing pressure on the National Health Care System to accommodate the needs of this population group while keeping costs under control (Hernández-Quevedo & Jiménez-Rubio 2009).

The access to the health care services of the immigrant population in Spain is contemplated in the policies of immigration and health. In particular strategies have been developed in three areas: information directed to the immigrants on the paperwork necessary to register and access the healthcare system, on the operation of health services, on the rights and duties of the citizen among others; improvement of the administrative management to facilitate the access to health care, focusing on the acquisition of health card; and empowerment of the figure of the cultural mediator between the health care professional and the immigrant (Burón Pust 2012). However, the access to care services is only possible if the immigrant have a health card, which is hampered by a series of factors mainly related to the requirement of registration and membership of the Social Security and to which the

access is subordinated, and without which the entry to the health system is not guaranteed in spite of being a right (Burón Pust 2012).

In Spain, there are few studies that analyze the access of the immigrant population to health services. For example, a recent study showed that relative to Spaniards, immigrants are less likely to visit a general practitioner (GP) and a specialist doctor, while having a higher probability of using emergency services and, to a lower extent, hospital services (Jiménez-Rubio & Hernández-Quevedo 2011). This study argued that GPs are the entry point to the health system in Spain and suggest that unexplained differences in access to the specialist by the immigrant collective could be attributed to differences in doctor's referral habits according to nationality, or missed appointments that could be due partly, among other things, to the lack of trust of patients in health care services, lower understanding of the functioning of the system, communication problems between doctors and patients or cultural differences in the perception of health status (Jiménez-Rubio & Hernández-Quevedo 2011).

A recent study (Burón Pust 2012), found that there was as a relevant barrier the lack of provision of adapted information; the information that was provided from the sanitary system was insufficient, often only it was obtained to demand and / or when the immigrant already had entered the welfare circuit and was not adapted to the needs of the immigrants, which generates the ignorance so much of the rights of sanitary attention as of the functioning of the services (Burón Pust 2012).

In addition, a previous study (Antón et al. 2010) found that immigrants do not show a higher frequency of visits to GPs or days in hospital and report fewer visits to specialists than Spaniards and they visit emergency rooms with higher frequency than nationals.

Furthermore, a recent study (Hernández-Quevedo & Jiménez-Rubio 2009), show that there are different patterns in the level of health and the medical care use between the national and the foreign population in Spain: while immigrants' self-reported health relative to that of the Spanish population depends upon individual nationality, all immigrants, regardless of their nationality, seem to face barriers of entry to specialized care (Hernández-Quevedo & Jiménez-Rubio 2009).

Moreover, another research (Burón et al. 2008) conducted in Barcelona found that the emergency department utilisation rate among foreign-born residents, was 38% lower than that among Spanish-born residents. Lower utilisation among immigrants was found in all specialties except minor emergency care and gynecology (Burón et al. 2008). Also, the lack of differences in utilisation in these episodes between foreign-born and Spanish-born residents supports the hypothesis that immigrants overcome certain barriers by using the emergency department to access health specialties in preference to other routes (Berra et al. 2004; Bazargan et al. 1998; Walls et al. 2002). However another research (Rué et al. 2008), in Spain found that immigrants from low-income countries used emergency health services more than the Spanish-born population. Differences in utilization patterns were particularly marked for Maghreb men and women and sub-Saharan women (Rué et al. 2008). Moreover, another study (Cots et al. 2007), conducted in Barcelona show that the immigrant population tends to access the health service through the emergency department even more than the Spanish-born population. Consequently, the substantial increase in both immigrants from low and high income countries in the health system has

a multiplying effect on the lack of equilibrium that an increase in demand for emergency services represents for a hospital (Cots et al. 2007).

In terms of the economic impact a recent study (Hernando Arizaleta et al. 2009) conducted in Murcia analyzed the effect of immigration on health services by comparing hospital discharges, case-mix, and economic effects between immigrants and the native population, this study found that hospital utilization and costs per admission and for person-year of insurance were higher in Spaniards than in immigrants (Hernando Arizaleta et al. 2009).

A study (Carrasco-Garrido et al. 2007) conducted in Spain showed that while immigrants register higher percentages of hospitalization compared with the Spanish population, there is no evidence of excess in Spain and inappropriate use of other health-care resources. Indeed, another study (Rivera et al. 2008) shows that the reasons for more frequent hospitalization were related to the needs of a young population that is in good health status (attention gynecological/obstetric care, pediatric and general medicine) and that according to National Health Survey data, resource utilization among immigrants can even be lower than that among the national population. It should be noted that most of these studies categorized immigrant status as a dichotomous variable, without considering the specific country of birth and did not separate the analysis by sex.

## 4. Justification

*“...Once again be the newcomer, an outsider, the one who did not belong...” -Laura Esquivel, Malinche*

Over the last 10 years immigration to Spain from a wide range of countries has increased very rapidly, with the immigrant population growing (Oliva & Pérez 2009). The Spanish census of 2011 places the immigrant population at 5.3 million, representing 11.2 % of the population (INE 2013).

Immigration has been referred as a social determinant of inequalities in health (Starfield 2007). While some studies argued that most immigrants are healthy, others show that they may have been exposed to high-risk situations during the migration process (Malmusi et al. 2010). Moreover, it has been reported that immigrants have an increased risk of reporting poor health status due to structural vulnerability risk factors (social deprivation and job insecurity, cultural and language barriers, and discrimination, among others) in the host country (Borrell et al. 2010; Nielsen et al. 2010).

Despite the importance of this topic, in Spain the knowledge about the differences in health status, health-related behaviors and health care use between immigrants and the Spanish-born population is limited and results are contradictory. Moreover, patterns may differ depending on the health outcome analysed. Although we cannot rule out that these different results are due to actual geographical differences, there are also some methodological reason that could explain them. For example, many studies have measured the immigrant status through a dichotomous variable – immigrant versus autochthonous population – without taking into account that the immigrant population is very heterogeneous. Moreover, in Spain the distribution of immigrants by country of birth significantly differs by autonomous communities, and therefore the category of immigrants has a different meaning depending on the region examined. Finally, although many previous studies have examined the men and women together (P Carrasco-Garrido, Jiménez-García, Hernández Barrera, López de Andrés, et al. 2009; P. Carrasco-Garrido et al. 2009; Hernández-Quevedo & Jiménez-Rubio 2009; Jiménez-Rubio & Hernández-Quevedo 2011), a potential intersection between immigration and health indicators should be considered. (Shields 2008)

## **5. Objectives**

### **5.1. General objective**

To analyse differences in health status, sleep health and health care use between the Spanish population and immigrants from the seven countries with most immigrants in Spain.

### **5.2. Specific objectives**

- To analyse differences in the self-perceived health and mental health status between the Spanish population and immigrants from the seven countries with most immigrants in Spain.
- To analyze the differences in reported patterns of insomnia symptoms and non-restorative sleep (NRS) between people born in Spain and immigrants from the seven countries with most immigrants in Spain.
- To analyze the differences in the patterns of reported use health care services (visits to PC, hospitalization and emergency visits) between people born in Spain and immigrants from the seven countries with most immigrants in Spain.
- To examine whether differences are accounted for by socio-economic position, employment status, family characteristics and social support.
- To determine whether the patterns of association differ between men and women.

## 6. Methods

This part of the dissertation provides a brief outline of the study population included in this thesis. Further methodological details can be found in the methods section of each paper included in the results section of this thesis. Objectives posed above will be addressed separately, in the form of three separate research articles. Common methodological aspects are described in this section.

Data were obtained from the 2006 Spanish National Health Survey (SNHS) (Instituto Nacional de Estadística 2007a), a cross-sectional survey based on a representative sample of the non-institutionalised population of Spain. A sample was selected using a multiple stage random sampling strategy. The first-stage units were census tracts. The second-stage units were family households. The sample size was 29,476. Data were collected through face-to-face interviews at home between June 2006 and June 2007. The response rate was 96.1%, 64.6% of individuals had been selected initially, while the rest were the result of replacements. For the purposes of the first sub-study people aged 20-64 years were selected from Spain and from the seven most represented foreign countries: Argentina, Bolivia, Colombia, Ecuador, Peru (South America), Romania (Eastern European country) and Morocco (African country) [n=20,731]. Yet, due to sample size matter for the second and third sub-study we selected people aged 16-64 years old. [n=22,224].

### Variables

#### *Predictor variable*

Country of birth was the predictor variable and people born in Spain being taken as the reference group. The country of birth has the advantage of being objective and stable, allowing for comparisons over time and between studies. The country of birth classification fits with the element of a common geographical origin or descent in the conceptualisation of ethnicity rather than a conceptualisation in terms of a self-perceived ethnic group (Aspinall 2001). Apart from being the standard in the population register to define the country of origin, country of birth is also considered to be the most useful basis for the identification of ethnic groups in the context of social and demographic, as well as health status and health care (Stronks et al. 2009).

#### *Dependent variables*

In the sub-study 1 two dependent variables were examined. Self-reported health status was obtained by asking the respondents to describe their general health as “very good”, “good”, “fair”, “poor” or “very poor”. This is a broad indicator of health-related well-being (Segovia et al., 1989) and has also proved to be a good predictor of mortality, even better than medical diagnosis (Idler and Benyamini, 1997). The variable was dichotomised by combining the categories “fair”, “poor” and “very poor” to indicate poor perceived health, and the categories “very good” and “good” to indicate good health status. The 12-item version of the General Health Questionnaire (GHQ) was used to assess mental health status. The GHQ is a screening instrument widely used to detect current diagnosable psychiatric disorders. It focuses on breaks in normal functioning rather than on lifelong traits; therefore it covers personality disorders or patterns of adjustment when these are



associated with distress. We used a two-point scoring method, rating a problem as absent (0) or present (1). The responses were summed, and the participants scoring 3 or more were classified as cases (Goldberg, 1978).

In the second sub-study, two dependent variables were used to measure sleep health. Insomnia symptoms (American Psychiatric Association 2000a) were measured with three items: “Do you have trouble falling asleep”, “Do you wake up during the night and have difficulty going back to sleep,” and “Do you wake up too early in the morning and be unable to get back to sleep”, in the previous four weeks from 1 (‘never’) to 5 (‘every day’). The Cronbach’s alpha coefficient was 0.75. We created the variable insomnia symptoms by calculating the mean of the three questions and dichotomizing this variable such that individuals with values above the 75% percentile were considered as having insomnia symptoms, and the remainder as not having insomnia symptoms. NRS is defined as a subjective feeling of being unrefreshed upon awakening, which may be the result of poor quality or unrestful sleep (Vernon et al. 2010; American Psychiatric Association 2000a). It was measured through the question “Do your sleeping hours allow enough rest?” as a dichotomous variable (yes/no).

In the third sub-study, in order to assess health care utilization, three different points of access to the health care system were selected: PC, which represents the gatekeeper to the health care service; hospital use; and emergency services, which represents the backdoor of the health care system. The measure of utilization of PC services was based on the question: “During the last 4 weeks about how many times have you visited the PC services?” For the hospitalizations, the question was: “During the last 12 months, have you had to go into hospital as a patient for at least one night?” Finally for emergency services use, the question was: “how many times in the past 12 months have you visited hospital emergency services? These questions were converted into dichotomous variables (yes/no).

#### *Adjusting variables*

The analysis was adjusted for age and socio-economic position. Socio-economic position was approximated by educational attainment, with three categories: high (university studies, the reference category), medium (secondary school) and low (basic or no education).

#### *Mediator variables*

Participants’ employment status was recorded as employed, unemployed, full-time home-maker, or other. Family characteristics were captured through marital status (single; married, the reference category; cohabiting; or separated/divorced/widowed) and number of children (0, 1,  $\geq 2$ ). Social support was approximated by the mean score of eight statements adapted from the Duke-UNC Functional Social Support Questionnaire (Broadhead et al. 1988a), each on a scale from 1 (“much less than I would like”) to 5 (“as much as I would like”). The questionnaire covers two dimensions of social support: i) access to a confidant or someone with whom to share problems and receive guidance; and ii) affective social support, which refers to emotional support allowing expressions of love, affection, and sympathy, addressed by three questions and scored from 3 to 15 (minimum and maximum affective social support, respectively) (Broadhead et al. 1988a). Cronbach’s alpha coefficients were 0.86 and 0.78 for the confidant

and affective dimensions of social support, respectively. Moreover, in the sub-study about health care use, self-perceived health status was another mediator variable.

#### *Statistical analysis*

First, gender differences by country for all the dependent and independent variables were tested at the bivariate level using the chi-square test for categorical variables, the t-test for age and the Kolmogorov-Smirnov test for the two dimensions of social support. Second, multivariate logistic regression models separated by sex and adjusted for age were fitted following a hierarchical modelling strategy. Adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) were calculated and analyses included the weights derived from the sampling design.

## 7. Results

### 7.1. Sub-study 1

Villarroel N, Artazcoz L. [Heterogeneous patterns of health status among immigrants in Spain](#). Health Place. 2012 Nov; 18(6): 1282-91. DOI: 10.1016/j.healthplace.2012.09.009

## 7.2 Sub-Study 2

Villarroel N, Artazcoz L. Immigration and sleep problems in Spain: Do immigrants get the best sleep? *International Journal of Behavioral Medicine* (under review)

# **Immigration and sleep problems in Spain: Do immigrants get the best sleep?**

*Running title: Immigration and sleep in Spain*

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***Keywords: Immigrants, Spain, sleep disorders, socio-economic factors, gender***

## ABSTRACT

**Background:** Despite its great impact on health, research on sleep health has been a neglected topic in public health. Moreover, little is known about the relationship between sleep health and immigration.

**Purpose:** This study aims to analyze differences in the prevalence of insomnia symptoms and non-restorative sleep (NRS) between people born in Spain and immigrants from the seven countries with most immigrants in Spain.

**Methods:** The data come from the 2006 Spanish National Health Survey (SNHS). The sample was composed of all individuals aged 16-64 years from Spain and the seven countries with most immigrants in Spain [n=22,224].

**Results:** In both sexes, people from Bolivia had a higher prevalence of insomnia symptoms and NRS. Conversely, people from Ecuador, Morocco and Romania had less insomnia symptoms and NRS than Spaniards. No differences were found between Spaniards and Colombians, Peruvians and most Argentinians.

**Conclusions:** Poor living conditions in the country of origin and in the host country, discrimination and culturally-related lifestyles could explain the different patterns of sleep health between Spaniards and Bolivians. The poorer sleep health among Spaniards compared to immigrants from several countries could be related to traditional Spanish schedules and daily routines.

**Keywords:** Immigrants, Spain, sleep disorders, socio-economic factors, gender

## INTRODUCTION

Sleep, until recently, has been a neglected topic in public health (Perry GS, Patil SP 2013). However, poor sleeping patterns are increasingly recognized as an important risk factor for health, with several studies showing an association between sleep disorders and mortality, (Ferrie et al. 2007; Patel et al. 2004; Kim et al. 2013) as well as physical and mental health outcomes (Alvaro et al. 2012; Elwood et al. 2011; Ohayon & Reynolds 2009; Mai & Buysse 2009).

Factors related to sleep problems are receiving increasing attention and researchers are beginning to examine the social correlates of sleep behavior (Arber et al. 2009; Bixler 2009; Lemola et al. 2013). For example, groups with lower socioeconomic status report poor sleep quality (Grandner et al. 2009; Stamatakis et al. 2007). Working conditions and work–family conflict are also associated with sleep complaints (Lallukka et al. 2010). Furthermore, several studies suggest that there are ethnic differences in sleep disorders (Fiorentino et al. 2006; Profant et al. 2002). However, this literature is not entirely consistent, which may be due to the failure to control for social determinants of health. Additionally, although sleep disorders differ between sexes (Arber et al. 2009), many studies have not taken into account the potential gender differences in sleep health. Additionally,

sleep complaints in immigrants have scarcely been studied and the factors involved in altering sleeping patterns are yet to be determined (Hale et al. 2010; Loredó et al. 2010; Vernon et al. 2010). For example, it has been reported that neighborhood disorder, often more prevalent in disadvantaged areas with a high proportion of immigrants, and self-rated physical health is partially mediated by lower sleep quality (Hale et al. 2010). Moreover, there are very few studies about sleep disorders and ethnicity carried out in Europe (Dorková et al. 2010). In Spain immigration is a recent phenomenon and, as far as we are aware, studies of sleep complaints that compare natives and immigrants have not been carried out.

The objectives of this study were to: 1) analyze differences in the prevalence of insomnia symptoms and non-restorative sleep (NRS) between people born in Spain and immigrants from the seven countries with most immigrants in Spain; 2) examine whether these differences are explained by socioeconomic status, employment status, family characteristics or social support; and 3) determine whether these patterns of association differ by gender.

## **METHODS**

### **Study population and data collection**

Data were obtained from the 2006 Spanish National Health Survey (SNHS), a cross-sectional survey based on a representative sample of the non-institutionalized population of Spain. The response rate was 96.1% (64.6% were from the initial random selection, and 31.7% were replacements for those from the initial selection) (Instituto Nacional de Estadística 2007b). For the purposes of this study, we selected individuals aged 16-64 years from Spain and from the seven most represented countries: Argentina, Bolivia, Colombia, Ecuador, Peru (South America), Romania (Eastern Europe) and Morocco (North Africa) [n=22,224].

### **Variables**

Country of birth was the main predictor variable, with native Spanish taken as the reference group.

#### *Sleep health outcomes*

### **Insomnia Symptoms**

Insomnia symptoms (American Psychiatric Association 2000a) were measured with three items: “Do you have trouble falling asleep”, “Do you wake up during the night and have difficulty going back to sleep,” and “Do you wake up too early in the morning and be unable to get back to sleep”, in the previous four weeks from 1 (‘never’) to 5 (‘every day’). The Cronbach’s alpha coefficient was 0.75. We created the variable insomnia symptoms by calculating the mean of the three questions and dichotomizing this variable such that individuals with values above the 75% percentile were considered as having insomnia symptoms, and the remainder as not having insomnia symptoms.

## **NRS**

NRS is defined as a subjective feeling of being unrefreshed upon awakening, which may be the result of poor quality or unrestful sleep (Vernon et al. 2010; American Psychiatric Association 2000a). It was measured through the question “Do your sleeping hours allow enough rest?” as a dichotomous variable (yes/no).

## **Covariates**

Socio-economic position was approximated by educational attainment, in three categories: high (university studies, the reference category), medium (secondary school) and low (basic or no education). Participants’ employment status was recorded as employed, unemployed, full-time home-maker, or other. Family characteristics were captured by marital status (single; married, the reference category; cohabiting; or separated/divorced/widowed) and number of children (0, 1,  $\geq 2$ ). Social support was approximated by the mean score of eight statements adapted from the Duke-UNC Functional Social Support Questionnaire (Broadhead et al. 1988b), each on a scale from 1 (“much less than I would like”) to 5 (“as much as I would like”). The questionnaire covers two dimensions of social support: i) access to a confidant or someone with whom to share problems and receive guidance; and ii) affective social support, which refers to emotional support allowing expressions of love, affection, and sympathy, addressed by three questions and scored from 3 to 15 (minimum and maximum affective social support, respectively). Cronbach’s alpha coefficients were 0.86 and 0.78 for the confidant and affective dimensions of social support, respectively.

## **Data analysis**

First, we tested for differences in each dependent and independent variable between sexes stratified by country of birth, using the chi-square test for categorical variables, the t-test for age, and the Kolmogorov-Smirnov test for the two dimensions of social support. Second, we fit sex-stratified multivariate logistic regression models following a four-step hierarchical modeling strategy: model 1 was adjusted for age; model 2 was additionally adjusted for socio-economic position; model 3 was additionally adjusted for employment status; model 4 was additionally adjusted for family characteristics, and confidant and affective social support. Adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) were calculated, and each analysis included weights derived from the sampling design. For the logistic regression models, the number of cases with missing data ranged from 4.9% to 3.8% for insomnia symptoms, and 4.8% to 4.0% for NRS. Subjects with missing data were excluded from the analysis.



## RESULTS

### General description of the population

The results of a general descriptive analysis are shown in Table 1. We observed notable differences in the gender ratio between countries, with a higher percentage of women among immigrants from Ecuador, Bolivia and Colombia, a higher number of males among individuals from Spain and Morocco, and even gender proportions among immigrants from Argentina, Peru and Romania. Women were generally more likely to report sleep disorders and NRS than men, except those from Bolivia. We observed no gender differences in educational attainment among immigrants from Bolivia, Colombia, Morocco or Peru. Compared to men, women from Spain and Argentina had a lower level of education, whereas those from Ecuador and especially Romania had a higher level of education.

The rate of employment was higher among men from all countries, especially those from Morocco, among whom 84.4% and 24.7% of males and females were employed, respectively. Women from Spain, Argentina and Romania enjoyed higher levels of confident social support than men, whereas no gender differences were observed among immigrants from other countries. Men from Ecuador and Peru and women from Romania reported having higher levels of affective social support than members of the opposite sex; no gender differences were found among individuals from the other countries.

[Insert table 1]

### Between-country differences in insomnia symptoms

We observed no significant differences in patterns of insomnia symptoms between males and females (Table 2). Bolivian men and women reported more insomnia symptoms than Spaniards (fully adjusted model, aOR= 4.48, 95% CI=2.33-8.63 for men; aOR= 1.93, 95% CI=1.24-3.00 for women), whereas Romanians, Moroccans and Ecuadorians were less likely to report insomnia symptoms. Argentinean males, but not females, were also less likely to report insomnia symptoms, whereas no significant differences were observed among individuals from Colombia or Peru, compared to Spaniards.

[Insert table 2]

### Between-country differences in NRS

The results of the multivariate logistic regression analyses for NRS were very similar to those for insomnia symptoms (Table 3). The prevalence of NRS among Bolivians of both sexes was higher than among Spaniards. Both men and women born in Ecuador, Morocco and Romania were less likely to report NRS and the prevalence was also lower among Argentinean males. No significant differences in NRS were observed among Argentinean females or among men and women from Colombia and Peru, compared to Spaniards.

[Insert table 3]

## **DISCUSSION**

To our knowledge, this is the first study based on a large and representative sample of the Spanish population that compares sleep problems in Spanish-born individuals to that among immigrants from a range of countries. Moreover, it examines NRS, which despite being part of the defining features of insomnia, has been less studied than other symptoms of primary insomnia (Vernon et al. 2010).

Main findings of this study

The study has produced four main findings: 1) Bolivian immigrants had the highest prevalence of insomnia symptoms and NRS, primarily among men; 2) the prevalence of insomnia symptoms and NRS was lower among people from Ecuador, Morocco and Romania compared to native Spaniards; 3) there were no differences in sleep complaints between Spanish people and Colombians, Peruvians and most Argentineans; and 4) patterns of between-country differences of sleep problems only slightly differed by gender. Moreover, results hardly changed after adjusting for socioeconomic status, employment status, family characteristics and social support.

There are several potential explanations for our findings such as living conditions in the country of origin and in the host country, length of residence in Spain, discrimination, culturally-related lifestyles and acculturation (Acevedo-Garcia et al. 2012).

### **Living conditions in the country of origin**

Our results among Bolivians are consistent with those from a previous study based on the same survey, which found that the prevalence of poor health status and poor mental health was much higher among Bolivians, primarily among males (Villarroel & Artazcoz 2012a). Living conditions in Bolivia are poorer than in other South American countries, such that, for example, it has the lowest Human Development Index (HDI) of all Latin American countries (United Nations Development Programme 2009). According to the 2001 census, 64% of the total population had insufficient income to cover their basic needs, and increasing urban poverty and a lack of opportunities in rural areas promoted migration of the indigenous and rural population (PAHO 2007). Therefore, the current poorer health outcomes of Bolivian immigrants may partially reflect hazardous cumulative socioeconomic exposures experienced in childhood and youth in their own country (Villarroel & Artazcoz 2012a).

### **Living conditions in the host country**

With respect to immigrants from other Latin American countries, Bolivians are the most recently arrived immigrant group in Spain and face more severe barriers imposed by the Spanish legal system, compared to Latin American immigrants who arrived previously. Several studies indicate that the living conditions of Latin American immigrants improve with years of residence in Spain, and that a high proportion of recent Latin American immigrants work in jobs below their level of qualification, but that this proportion decreases

with years of residence (Cacopardo et al. 2006; Tedesco 2008). In Spain, Bolivians are more likely to live in deprived areas with neighborhood disorder that could negatively affect their sleep (Hale, L, Hill, TD, Burdette et al. 2010).

### **Discrimination**

Discrimination in both the origin and host countries is another possible explanation. Ethnic composition varies markedly between the five Latin American countries examined (Central Intelligence Agency 2009). It has been reported that indigenous people are more likely to be disadvantaged and marginalized within their own countries and to have poorer health indicators, including negative emotional states such as reduced self-esteem, self-efficacy and self-control, as well as pessimism, aggression, hyper-vigilance, and rumination (Montenegro & Stephens 2006a). For example, in the sample analyzed in this study, 52% of Bolivian men and women had experienced discrimination in their jobs in previous year, compared to 12.1% and 0% among Argentinean men and women, respectively (results not shown). It has been suggested that exposure to discrimination or racism is a source of stress that can give rise to a range of factors that contribute to ill-health (Paradies 2006; Pascoe & Smart Richman 2009). Moreover, individuals who report discrimination have less stage 4 sleep (deep sleep), and report experiencing greater physical fatigue (Thomas et al. 2006). A study in Hispanic individuals showed that increased levels of perceived racism resulted in increased sleep disorders and depressive symptoms (Steffen & Bowden 2006). In addition to the emotional experience of discrimination, these effects are also the result of poor working and living conditions.

### **Culturally-related lifestyles**

The poorer sleep health among Bolivians could also be explained by the relationship between cultural influences and lifestyle patterns (Voss & Tuin 2008). For instance, 82.6% of Bolivian men in our study had drunk alcohol in the previous two weeks compared to 72.9% among Spanish men. Moreover, 48.9% of males from Bolivia were current smokers, compared to 39.2% among Spanish males. However, no differences in prevalence of alcohol consumption and smoking were observed between women from Bolivia and Spain (results not shown).

Compared to immigrants from Morocco, Ecuador and Romania, a high prevalence of insomnia symptoms and NRS was observed among Spaniards. The prevalence of poor sleep health among Spaniards does not differ substantially from the findings of a previous study, in which the prevalence of insomnia was 17.6% among men and 23.9% among women (Ohayon & Sagales 2010). Spaniards have more dispersed and more nocturnal timetables than individuals from the rest of Europe, so people go to bed later. For example, a study carried out in the European Union showed that Spanish people have more nocturnal habits than the European average, such that 45% of Spaniards go to bed between midnight and 1 am, and 20% go to bed after this time. Spaniards also take a two-hour break during each workday, so that the working population arrives home late, and television programming adapts to these working hours and as a consequence Spanish people go to bed at dawn. Hence, it could be argued that these schedules could affect Spaniards' quality of sleep (Ministerio de Administraciones Públicas & Universidad de Navarra 2005). Migration from Ecuador and Romania is very recent and therefore these groups may maintain the healthy sleeping behaviors of their countries of origin. Conversely, the lack of diffe-

rences in insomnia symptoms and NRS between Spaniards and individuals from Peru and Colombia, as well as most Argentineans, could be explained by a process of acculturation characterized by the adoption of Spanish sleeping behaviors, since these groups have been living in Spain for a longer period of time. This is consistent with studies that report that acculturation to the U.S. lifestyle has led to worse sleep habits in Hispanics (Loredo et al. 2010).

The good sleep health among Moroccans was an unexpected finding. Morocco is a North African country with the lowest HDI among the countries studied (United Nations Development Programme 2009), is the country with the oldest migratory tradition in Spain, and Moroccan immigrants are exposed to a hard discrimination due to several reasons such as the poor relations between the two countries and the racism nurtured for centuries. The general feeling of Moroccan-born people is that Spain treats them worse than other European countries (Furió-Blasco E et al. 2007). However, Moroccans were the only group from an Islamic country that was analyzed in this study and the Quran emphasizes the beneficial effects of sleep and the importance of maintaining diurnal patterns of light and darkness (BaHammam 2011). Also, Islam prohibits drinking alcohol such that the prevalence of alcohol consumption in the two weeks prior to interview was 19.4% and 3.6% among Moroccan men and women, compared to 72.9% and 47% among Spanish men and women, respectively. Similarly, the prevalence of current smoking among Moroccans is lower than among individuals from other countries: 38% and 7.8% among men and women, compared to 39.2% and 30.4% among Spanish men and women, respectively (results not shown).

### **Limitations**

Since this study is based on secondary data, we were unable to determine the processes by which some migration-related factors may have reduced or enhanced risk of poor sleep health. Unfortunately information about time living in Spain was not collected but the immigration phenomenon in Spain is very recent and information about length of residence by countries was available for the contextualization of the results. Although it could be argued that variation in reporting cultural differences could result in bias, it should be noted that five of the seven non-Spanish countries examined are in South America and have similar cultural backgrounds, and yet we have still observed differences in sleep health between them.

### **Conclusions**

Although previous studies have considered Hispanic people as a single category (Baldwin et al. 2010; Loredo et al. 2010), we have observed that in Spain sleep patterns among Latino-Americans differ according to country of birth. Poorer sleep health among Spaniards compared to most recently arrived immigrants and with Moroccans could be related to traditional Spanish schedules and daily routines. The good sleep health of Moroccans, despite the low HDI of their country and their poor living and working conditions in Spain, could be partly related to the Islamic religion. On the other hand, poorer living conditions in both the origin and destination countries, as well as discrimination and less healthy lifestyles could be associated with the poorer sleep health among Bolivians. Acculturation may explain the similar sleep health patterns between Spaniards and immigrants from countries that have been living in Spain for a longer period of time. Future

research is needed on the cultural factors that seem to be related to Spaniards' poorer sleep health. Policies are needed in different areas in order to improve daily routines and schedules that can be harmful to the sleep health of Spaniards.

### **Acknowledgements**

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### **Conflict of interests**

None to declare

**Table 1.** General description of the sample, stratified by sex and country of birth. P-values represent comparison between men and women. Spanish National Health Survey, 2006.

	<b>Spain</b>		<b>Argentina</b>		<b>Bolivia</b>		<b>Colombia</b>	
	Men (N=10,325)	Women (N=9,901)	Men (N=106)	Women (N=105)	Men (N=46)	Women (N=120)	Men (N=112)	Women (N=171)
	Mean age 39, SD.	Mean age 40, SD	Mean age 33, SD	Mean age 37, SD	Mean age 30, SD	Mean age 31, SD	Mean age 34, SD	Mean age 37, SD
	%	%	%	%	%	%	%	%
<b>Sleep health outcomes</b>								
Insomnia symptoms	16.4	27.2 <sup>c</sup>	3.9	28.9 <sup>c</sup>	47.6	35.7	20.5	28.1 <sup>b</sup>
Non-restorative sleep	18.9	28.6 <sup>c</sup>	25.7	23.8	50.0	42.2	21.6	31.4 <sup>c</sup>
<b>Educational level</b>								
Higher	19.9	20.0 <sup>c</sup>	21.5	21.0	21.3	11.7	17.0	18.1 <sup>a</sup>
Medium	49.0	44.8	72.0	58.1	66.0	65.8	51.8	61.4
Lower	31.1	35.2	6.5	21.0	12.8	22.5	31.3	20.5
<b>Employment status</b>								
Working	73.6	50.6 <sup>c</sup>	80.2	58.7 <sup>c</sup>	73.9	82.6 <sup>a</sup>	88.5	75.4
Unemployed	7.4	10.2	16.0	16.3	8.7	5.0	2.7	9.4
Housekeeper	0.1	24.7	-	15.4	-	1.7	-	15.2
Other	18.8	14.6	3.8	9.6	17.4	10.7	8.8	-
<b>Family Characteristics</b>								
<i>Marital status</i>								
Married	53.4	60.7	37.7	51.4	34.8	43.3	42.0	57.0
Cohabiting	7.4	7.2	21.7	29.5	26.1	25.0	24.1	15.1
Single	36.1	25.4	39.6	15.2	30.4	27.5	27.7	17.4
Previously married	3.2	6.8	0.9	3.8	8.7	4.2	6.3	10.5
<i>Number of children</i>								
0	53.3	43.0	58.9	51.4	87.2	56.7 <sup>c</sup>	64.9	29.8
1	20.4	24.0	18.7	20.0	6.4	16.7	18.0	35.7
≥2	26.0	33.0	22.4	28.6	6.4	26.7	17.1	34.5
<b>Social support</b>								
	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%
	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles
Confidant Social Support	25.0 (21.0-25.0)	25.0 (22.0-25.0) <sup>c</sup>	24.0 (20.0-25.0)	23.4 (22.0-25.0) <sup>a</sup>	23.5 (20.6-24.0)	22.0 (18.8-25.0)	22.0 (17.0-25.0)	23.0 (19.0-25.0)
Affective Social Support	15.0 (14.0-15.0)	15.0 (14.0-15.0) <sup>b</sup>	15.0 (14.0-15.0)	15.0 (14.0-15.0)	15.0 (13.0-15.0)	15.0 (12.0-15.0)	14.0 (12.8-15.0)	14.0 (12.0-15.0) <sup>a</sup>

a P<0.05; b P<0.01; c P<0.001.

**Table 1.** General description of the sample, stratified by sex and country of birth. P-values represent comparison between men and women. Spanish National Health Survey, 2006 (continued)

	<b>Ecuador</b>		<b>Morocco</b>		<b>Peru</b>		<b>Romania</b>	
	Men (N=191)	Women (N=220)	Men (N=258)	Women (N=167)	Men (N=59)	Women (N=58)	Men (N=194)	Women (N=192)
	Mean age 32, SD. 8.9	Mean age 34, SD 11.1b	Mean age 33, SD 10.1	Mean age 33, SD 10.9	Mean age 34, SD 10.3	Mean age 39, SD 9.7	Mean age 30, SD 9.9	Mean age 29, SD 7.4c
	%	%	%	%	%	%	%	%
<b>Sleep health outcomes</b>								
Insomnia symptoms	11.5	23.3 <sup>c</sup>	11.3	21.8 <sup>c</sup>	16.9	31.0b	8.6	13.5 <sup>b</sup>
Non-restorative sleep	19.1	28.2 <sup>c</sup>	13.4	14.6	15.0	29.3 <sup>c</sup>	15.5	23.5 <sup>c</sup>
<b>Educational level</b>								
Higher	5.2	8.9	8.1	6.0	22.0	29.8	1.1	13.5 <sup>a</sup>
Medium	57.6	63.6	34.5	38.9	72.9	63.2	68.5	67.7
Lower	37.2	27.6	57.4	55.1	5.1	7.0	30.3	18.8
<b>Employment status</b>								
Working	88.5	67.6 <sup>c</sup>	84.4	24.7 <sup>c</sup>	88.1	86.2 <sup>b</sup>	79.8	73.4 <sup>a</sup>
Unemployed	6.8	7.3	8.2	5.4	-	6.9	13.0	8.3
Housekeeper	-	17.4	-	56.6	-	6.9	-	17.2
Other	4.7	7.8	7.4	13.3	11.9	-	7.3	1.0
<b>Family Characteristics</b>								
<i>Marital status</i>								
Married	48.7	44.3	55.6	70.1 <sup>c</sup>	30.5	58.6	41.5	53.9
Cohabiting	26.2	27.9	2.7	5.4	23.7	13.8	28.0	22.5
Single	23.6	23.3	39.3	19.8	44.1	20.7	27.5	19.4
Previously married	1.6	4.6	2.3	4.8	1.7	6.9	3.1	4.2
<i>Number of children</i>								
0	44.5	31.5 <sup>b</sup>	66.9	38.9 <sup>b</sup>	68.3	37.9 <sup>b</sup>	70.1	50.0 <sup>a</sup>
1	21.5	34.2	11.3	16.8	23.3	22.4	20.1	37.5
≥2	34.0	34.2	21.8	44.3	8.3	39.7	9.8	12.5
<b>Social support</b>								
	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%	median, 25%-75%
	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles	percentiles
Confidant Social Support	22.0 (19.0-25.0)	22.0 (17.0-25.0) <sup>c</sup>	21.0 (18.0-25.0)	22.0 (19.0-25.0)	25.0 (21.0-25.0)	23.2 (19.4-25.0)	23.0 (20.0-25.0)	23.0 (21.0-25.0) <sup>a</sup>
Affective Social Support	14.0 (12.0-15.0)	14.0 (11.0-15.0) <sup>c</sup>	14.0 (12.0-15.0)	14.0 (12.0-15.0)	15.0 (15.0-15.0)	15.0 (12.0-15.0) <sup>c</sup>	14.0 (12.0-15.0)	15.0 (14.0-15.0) <sup>c</sup>

a P<0.05; b P<0.01; c P<0.001.

**Table 2.** Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) for *insomnia symptoms*, stratified by country and sex. Spanish National Health Survey, 2006.

	%	Model 1		%	Model 2		%	Model 3		%	Model 4	
		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI
<b>Men(n=7999)</b>												
<b>Country of birth</b>												
Spain	16.4	1			1			1			1	
Argentina	3.9	0.23	0.08-0.65b		0.23	0.08-0.65b		0.22	0.08-0.62b		0.21	0.07-0.57b
Bolivia	47.6	5.19	2.72-9.89c		5.16	2.69-9.88c		4.94	2.56-9.51c		4.48	2.33-8.63c
Colombia	20.5	1.59	1.00-2.55		1.70	1.06-2.72a		1.53	0.95-2.45		1.26	0.78-2.03
Ecuador	11.5	0.83	0.53-1.32		0.84	0.53-1.33		0.73	0.46-1.17		0.61	0.38-0.97a
Morocco	11.3	0.70	0.45-1.09		0.68	0.44-1.07		0.67	0.43-1.06		0.56	0.36-0.88a
Peru	16.9	1.20	0.61-2.38		1.30	0.66-2.58		1.27	0.64-2.53		1.28	0.64-2.55
Romania	8.6	0.64	0.38-1.07		0.61	0.36-1.02		0.54	0.32-0.91a		0.48	0.28-0.81b
<b>Women(n=11724)</b>												
<b>Country of birth</b>												
Spain	27.2	1			1			1			1	
Argentina	28.9	1.16	0.74-1.86		1.18	0.76-1.86		1.10	0.70-1.73		1.10	0.70-1.73
Bolivia	35.7	2.10	1.36-3.24c		2.16	1.40-3.34c		2.13	1.37-3.29b		1.93	1.24-3.00b
Colombia	28.1	1.18	0.84-1.67		1.24	0.89-1.74		1.16	0.82-1.63		1.03	0.73-1.46
Ecuador	23.3	0.83	0.58-1.18		0.83	0.58-1.17		0.75	0.53-1.07		0.59	0.41-0.86b
Morocco	21.8	0.70	0.43-1.15		0.63	0.38-1.04		0.62	0.37-1.01		0.54	0.33-0.89a
Peru	31.0	1.20	0.68-2.12		1.35	0.76-2.38		1.34	0.75-2.37		1.24	0.69-2.21
Romania	13.5	0.52	0.33-0.80b		0.52	0.34-0.81b		0.45	0.29-0.70c		0.44	0.28-0.68c

**Note:** Model 1, adjusted for age; model 2 adjusted for age and socio-economic position; model 3 adjusted for age, socio-economic positions and employment status; model 4 adjusted for age, socio-economic position, employment status, family characteristics and social support.

a P<0.05.  
b P<0.01.  
c P<0.001.



**Table 3.** Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) for *non-restorative sleep*, stratified by country and sex. Spanish National Health Survey, 2006.

	<b>Model 1</b>			<b>Model 2</b>			<b>Model 3</b>			<b>Model 4</b>		
	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI
<b>Men(n=8005)</b>												
<b>Country of birth</b>												
Spain	18.9	1			1			1			1	
Argentina	25.7	1.50	0.96-2.34		1.43	0.92-2.25		1.38	0.88-2.16		1.30	0.83-2.04
Bolivia	50.0	3.39	1.79-6.43c		3.42	1.81-6.49c		3.20	1.68-6.09c		2.90	1.51-5.59b
Colombia	21.6	1.27	0.81-2.01		1.20	0.76-1.89		1.12	0.71-1.77		0.91	0.57-1.44
Ecuador	19.1	0.77	0.51-1.17		0.73	0.48-1.11		0.64	0.42-0.98a		0.52	0.34-0.80b
Morocco	13.4	0.63	0.42-0.94a		0.60	0.40-0.90a		0.59	0.39-0.88a		0.47	0.31-0.71c
Peru	15.0	0.74	0.36-1.52		0.71	0.35-1.46		0.72	0.35-1.48		0.72	0.35-1.48
Romania	15.5	0.82	0.55-1.23		0.79	0.53-1.19		0.73	0.48-1.09		0.63	0.41-0.95a
<b>Women(n=11697)</b>												
<b>Country of birth</b>												
Spain	28.6	1			1			1			1	
Argentina	23.8	0.82	0.52-1.29		0.81	0.51-1.28		0.78	0.49-1.24		0.78	0.49-1.24
Bolivia	42.2	1.84	1.21-2.80b		1.72	1.13-2.63a		1.79	1.17-2.75b		1.58	1.02-2.43a
Colombia	31.4	1.17	0.84-1.63		1.09	0.78-1.52		0.98	0.70-1.38		0.85	0.60-1.19
Ecuador	28.2	1.11	0.82-1.52		1.04	0.76-1.42		0.92	0.67-1.27		0.69	0.50-0.97a
Morocco	14.6	0.45	0.27-0.77b		0.46	0.27-0.78b		0.43	0.25-0.74b		0.36	0.21-0.62b
Peru	29.3	1.05	0.59-1.86		0.98	0.55-1.74		0.96	0.54-1.70		0.87	0.49-1.55
Romania	23.5	0.81	0.57-1.15		0.75	0.52-1.07		0.68	0.47-0.97a		0.66	0.46-0.94a

**Note:** Model 1, adjusted for age; model 2 adjusted for age and socio-economic position; model 3 adjusted for age, socio-economic positions and employment status; model 4 adjusted for age, socio-economic position, employment status, family characteristics and social support.

a P<0.05.  
b P<0.01.  
c P<0.001..

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### **7.3 Sub-Study 3**

Villarroel N, Artazcoz L. Different patterns in health care use among immigrants in Spain  
*(submitted)*

# **Different patterns in health care use among immigrants in Spain**

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## **ABSTRACT**

**Objectives:** This study aims to analyze the differences in the use of primary care (PC), hospital, and emergency services between people born in Spain and immigrants from the seven countries with most immigrants in Spain.

**Methods:** Data were obtained from the 2006 Spanish National Health Survey. The sample was composed of individuals aged 16-64 years from Spain and the seven countries with most immigrants in Spain [n=22,224].

**Results:** Romanian men were less likely to use health care at all levels. Women from Argentina, Bolivia and Ecuador reported a lower use of PC, whereas Peruvian women had a higher use than Spanish women. Among females, there were no differences in emergency visits or hospitalizations. Bolivian men reported more hospitalizations and emergency visits whereas Argentinean men reported more emergency visits.

**Conclusion:** Overall, in Spain, when health care was universal and most immigrants did not have language barriers, the majority of immigrants made less than, or about the same use of health care services as the Spanish population, although patterns differed by health care level, country of birth and gender.

**Keywords:** Immigrants, Spain, health care disparities, socio-economic factors, gender

## INTRODUCTION

Research on health care services use among the immigrant population conducted in Europe has reported contradictory results.(P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009; Norredam et al. 2010; Norredam et al. 2004; Jiménez-Rubio & Hernández-Quevedo 2011; Morris et al. 2005; Pavlic et al. 2007; Sanz et al. 2011; Stronks et al. 2001) These differences can be explained by both differences in health needs, that could be related to the migration process, health status, health-seeking behavior, language barriers, cultural differences, structural integration and time since arrival, as well as to dissimilarities in access to health care services related to particular health care policies.(Scheppers et al. 2006; Norredam et al. 2010) Moreover, other variables such as educational level, employment status, social support, gender or marital status could also have a substantial impact on health care use.(Lee et al. 2004; Iwashyna & Christakis 2003; Pavlic et al. 2007; Morris et al. 2005; Scheppers et al. 2006)

Although we cannot rule out actual differences depending on time and country of study, there are some methodological reasons that could contribute to explain these contradictory results. On one hand, categorization of the migrant population has been mainly based on geographical origin; however, as migrant numbers are often small, some studies end up using broad geographical categories containing heterogeneous populations for pragmatic reasons.(Jiménez Rubio 2008; Antón & de Bustillo 2010; P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009) Moreover, there are few studies that consider the role of social determinants in health care utilization.(Essink-Bot et al. 2013) Additionally, although gender differences have been reported in help-seeking behaviour,(Addis & Mahalik 2003; Galdas et al. 2005) many studies have not stratified the analysis by gender.(Hernández-Quevedo & Jiménez-Rubio 2009; Jiménez-Rubio & Hernández-Quevedo 2011) Finally, though self-reported health status, as a proxy of health care need, has been identified as mediating health care use, many previous studies have not taken into account any measure of health care need.(Lamkaddem et al. 2008; Vargas Bustamante et al. 2009; Pavlic et al. 2007; Scheppers et al. 2006)

Illegal migrants in Europe are, generally, only entitled to emergency care and services for children and pregnant women. However, in 2002, and until 2012, legal changes in Spain made accessible medical cards and free medical care for illegal migrants in similar terms than the legal migrants or the Spanish population (Lopez-Casasnovas et al. 2005). Nonetheless, despite the universal nature of the Spanish health system, dissimilarities have been reported in health care utilization patterns between immigrants and the Spanish population.(Hernández-Quevedo & Jiménez-Rubio 2009; Jiménez-Rubio & Hernández-Quevedo 2011) These inequalities can be related to the need to reduce communication barriers and improve cultural competences of Spanish health professionals to provide care of quality to immigrants.(Terraza-Núñez et al. 2011)

The aims of this study were: 1) To analyze differences in patterns of health care use (visits to PC, hospitalizations and emergency visits), between Spaniards and immigrants from the seven countries with most immigrants in Spain in 2006; 2) to examine whether the differences are explained by self-perceived health status, socio-economic position, family characteristics and social support and 3) to determine whether the patterns of association differ by gender.



## METHODS

### *Study population and data collection*

Data were obtained from the 2006 Spanish National Health Survey (SNHS),(Instituto Nacional de Estadística 2007a) a cross-sectional survey based on a representative sample of the non-institutionalized population of Spain. A sample of 29,476 individuals was selected using a multi-stage random sampling strategy, with census tracts and family households as the first and second-stage units, respectively.(Instituto Nacional de Estadística 2007a) The response rate was 96.1% (64.6% were from the initial random selection, and 31.7% were replacements for those from the initial selection). For the purposes of this study, we selected individuals aged 16–64 years from Spain or from one of the seven most represented countries: Argentina, Bolivia, Colombia, Ecuador, Peru (South America), Romania (Eastern Europe) and Morocco (Africa) [n=22,224].

### Variables

Country of birth was the main predictor variable, with native Spanish taken as the reference group.

### *Health care use*

In order to assess health care utilization, three points of access to the health care system were selected: PC, which represents the gatekeeper to the health care service; hospital use; and emergency services, which represents the backdoor of the health care system. The measure of utilization of PC services was based on the question: “During the last 4 weeks about how many times have you visited the PC services?” For the hospitalizations, the question was: “During the last 12 months, have you had to go into hospital as a patient for at least one night?” Finally for emergency services use, the question was: “how many times in the past 12 months have you visited hospital emergency services? These questions were converted into dichotomous variables (yes/no).

### Covariates

Self-perceived health status was recorded as a variable with five categories: very good, good, fair, poor and very poor. Socio-economic position was approximated by educational attainment, in three categories: high (university studies, the reference category), medium (secondary school) and low (basic or no education). Participants’ employment status was recorded as employed, unemployed, full-time home-maker, or other. Family characteristics were captured by marital status (single; married, the reference category; cohabiting; or separated/divorced/widowed) and number of children (0, 1,  $\geq 2$ ). Social support was approximated by the mean score of eight statements adapted from the Duke-UNC Functional Social Support Questionnaire, each on a scale from 1 (“much less than I would like”) to 5 (“as much as I would like”).(Broadhead et al. 1988a) Cronbach’s alpha coefficients were 0.86 and 0.78 for the confidant and affective dimensions of social support, respectively.

### Data analysis

First, we tested for differences in each dependent and independent variable between sexes

and stratified by country of birth, using the chi-square test for categorical variables, the t-test for age, and the Kolmogorov-Smirnov test for the two dimensions of social support. Second, we fitted sex-stratified multivariate logistic regression models following a five-step hierarchical modeling strategy, successively incorporating additional adjustment variables. Model 1 was adjusted for age; Model 2 was additionally adjusted for self-perceived health status; Model 3 was additionally adjusted for socio-economic position; Model 4 was additionally adjusted for family characteristics; finally in Model 5 adjustment for both confidant and affective social support was included. Adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) were calculated, and all analyses included weights derived from the sampling design. The proportions of cases with missing data for the logistic regression models ranged from 4.0% to 4.9% for PC visits, from 3.7% to 4.7% for hospitalization and from 3.7% to 4.7% for emergency visits. Subjects with missing data were excluded from the analysis.

## RESULTS

### General description of the population

A general description of the population is shown in Table 1. There were notable differences in the gender ratios between countries, with more women among immigrants from Ecuador, Bolivia and Colombia, more men among individuals from Spain and Morocco, and similar gender proportions among immigrants from Argentina, Peru and Romania.

Women from Spain, Morocco and Romania reported higher use of the three types of health services examined. No gender differences were found for people born in Argentina and Bolivia in terms of visits to PC or to emergency services. Among people from Colombia there were no gender differences in visits to the emergency service, whereas among persons from Ecuador there were no gender differences in PC visits. No gender differences were found in Bolivians for hospitalization in the last year. Women were more likely to report poor health status, except among Bolivians for whom no gender differences in health status were observed.

We observed no gender differences in educational attainment among immigrants from Bolivia, Colombia, Morocco or Peru. However, compared to men, women from Spain and Argentina had lower levels of education, whereas those from Ecuador and especially Romania had higher levels of education. The rate of employment was higher among men from all countries.

Women from Spain, Argentina and Romania enjoyed higher levels of confidant social support than men, whereas no gender differences were observed among immigrants from the other countries. Men from Ecuador and Peru and women from Romania reported having higher levels of affective social support than members of the opposite sex; no gender differences were found among individuals from the other countries.

[Insert table 1]

### *Between-country differences in PC visits during the last 4 weeks*

The results of multivariate logistic regression analyses for visits to PC differed as a function of gender and country of birth and hardly changed after adjusting for covariates (Table 2). Men born in Romania were less likely to report visits to PC than Spaniards (fully adjusted model, aOR=0.42, 95%CI=0.25-0.70), whereas those from Ecuador were

more likely to visit PC, although differences were only marginally significant. No differences in reported visits to PC were observed among men from the remaining countries. Among immigrant women, only those born in Peru were more likely to visit PC than Spanish women (fully adjusted model, aOR=3.70, 95% CI=2.12-6.46). Conversely, women from Argentina, Bolivia and Ecuador were less likely to report visits to PC than Spanish women. No differences in reported visits to PC were observed among women born in Colombia, Morocco or Romania.

[Insert Table 2]

#### *Between-country differences in emergency visit in preceding 12 months*

The results of the multivariate logistic regression models for emergency visits differed as a function of gender and country of birth (Table 3). Argentinean males were more likely to report emergency visits than Spaniards (fully adjusted model, aOR=2.49, 95% CI=1.66-3.74). Interestingly, among Bolivian men, odds ratios significantly decreased after adjustment for covariates. Conversely, Romanian men were less likely to report emergency service visits than Spanish-born males (fully adjusted model, aOR=0.55, 95% CI=0.38-0.81). No differences in emergency visits were observed among men from the remaining countries or among women, compared to Spaniards.

#### *Between-country differences in hospitalization in preceding 12 months*

The results of multivariate logistic regression analyses for hospitalization are shown in Table 3. Among men, Bolivians were more likely to report hospitalization than Spaniards (fully adjusted model, aOR= 6.81, 95% CI=3.34-13.91), whereas Ecuadorians were less likely to have been hospitalized than Spaniards (fully adjusted model, aOR= 0.15, 95% CI=0.03-0.65). No differences were observed among women.

[Insert table 3]

## **DISCUSSION**

This study, based on a large representative sample of the Spanish population, examined the differences in health care use among people born in Spain and those living in Spain but born in seven different countries (five South-American countries, Romania and Morocco). Our main findings are: 1) The majority of immigrants made less than, or about the same use of health care services as the Spanish population; 2) among men, a lower use of health care services compared to Spaniards was found among those born in Romania for all health care levels and among Ecuadorians for hospitalizations 3) among women a lower use of PC was found among those born in Argentina, Bolivia and Ecuador, a higher use among Peruvians and no differences were observed with Spaniards for the other two outcomes analyzed; and 4) a consistently higher utilization of health care services compared to Spaniards was only found among men born in Bolivia, who were more likely to use hospitalization and emergency services. Although we did not know the legal status of immigrants, a study carried out in Spain in 2007 found no differences on health services utilization by legal status. (Torres-Cantero et al. 2007)

### *Health care use and country of birth*

Contrary to certain stereotypes that immigrants make excessive use of health care services, our study shows that in general terms, in Spain at the time of the study, when health care access was universal and most immigrants came from Latin-American countries where Spanish is the first language, most immigrants, made less than, or about the same use as the Spanish population.

#### Low use of health care services

Our study found a consistently lower use of health care services among men born in Romania – a non-Spanish-speaking country and the more recently arrived immigrants among the studied countries (Villarroel & Artazcoz 2012b) - for the three outcomes, although differences were not statistically significant for hospitalization. Among women, we found a lower use of PC for those born in Argentina, Bolivia and Ecuador. Although a systematic review (Carmona et al. 2014) reported that the immigrant population in Spain have a similar use of general medical services than the native population, we have found that use of PC depends on gender and country of birth. These contradictory findings could be related to methodological reasons, such as the different categorization of immigrants and the adjustment for sex, instead of the stratification of the analysis, in previous studies carried out in Spain. (Carrasco-Garrido et al. 2007; Jiménez-Rubio & Hernández-Quevedo 2011; Hernández-Quevedo & Jiménez-Rubio 2009; Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009) One possible explanation for the lower utilization of PC among some immigrants is that of their poorer employment conditions and the consequent difficulties for making work schedules compatible with the visiting hours of some health care services. (Calderón-Larrañaga et al. 2011) Further analyses were conducted to examine differences in unmet health need, and we found that prevalence was higher for people born in Peru (men 15.3% and women 10.3%), Bolivia (men 8.7% and women 12.6%), Argentina (men 7.5% and women 9.5%) and Ecuador (men 5.2% and women 16.7%), compared to Spanish born subjects (men 2.9% and women 5.0%). According to our hypothesis, the main reason for unmet health care for the immigrant population was not being able to get time off work (men 14.1% and women 21.7%) while for the Spanish born the main reason was that they had to wait too long (men 32% and women 31.9%) (results not shown).

For newly arrived immigrants unfamiliarity with the host country health system might partly explain the low use of health care services. (Buron et al. 2008) For example, according to 2007 data, most Romanians arrived in the last decade (98%) and 78% in the five preceding years. Ecuadorians and Bolivians arrived almost exclusively during the decade 1997-2006 (94% and 97%, respectively). (I Colectivo et al. 2010) Despite the fact that in Spain health care access was universal and that there were no language barriers for people from South America, differences in cultural factors could mean that while standardized from the legal point of view, it still might not be normalized from the socio-cultural point of view since in several of these countries health care must usually be paid for. (Alcalde-Rabanal et al. 2011; Ledo & Soria 2011) Furthermore, these cultural differences could be related to their health seeking behavior were immigrants prefer to search for comprehensive treatment in culturally comfortable settings. (Lee et al. 2010)

### *High use of health care services*

In our study, Bolivian men reported more hospitalizations and emergency visits – although for this latter variable differences were only marginally significant - compared to Spanish born people. This finding could be related to an insufficient use of PC in these groups since a previous Spanish study showed that Bolivian men had much poorer health outcomes than their Spanish counterparts.(Villarroel & Artazcoz 2012b) On the other hand, of the five Latin-American countries analysed, Bolivia has one of the largest ethnic compositions; the percentage of white people currently being only 5%.(Montenegro & Stephens 2006b) It has been reported in Bolivia there are still large differences in access to health services between different ethnic and socioeconomic groups.(Ledo & Soria 2011)

Our results differ from previous studies reporting that the percentage of immigrants hospitalized was higher than that of the Spanish population, and that the probability among migrants of spending a night in a hospital was higher for Latin Americans.(P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009; Jiménez-Rubio & Hernández-Quevedo 2011) In our study only Bolivian males were more likely to be hospitalized than their Spanish counterparts. Although many previous studies have compared immigrants versus non-immigrants or have aggregated countries from the same region, some of them without disaggregating the analysis by gender,(Buron et al. 2008; P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009; Hernández-Quevedo & Jiménez-Rubio 2009) these findings show the importance of taking into account the heterogeneity of the immigrant populations, even coming from the same region, that is to say, the different countries of origin need to be examined separately.

Although previous studies have found that in Spain immigrants are more likely to use emergency services,(P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009; Hernández-Quevedo & Jiménez-Rubio 2009; Sanz et al. 2011) in our study only Argentinean and Bolivian men reported a higher use of this service. Once again, results depend on gender and country of birth and highlight the importance of examining countries of birth separately.(Villarroel & Artazcoz 2012b) This finding could be related to the longer time of residence for Argentineans, as well as their having recourse to resources that permit them to use a faster health care service.(Sanz et al. 2011) Among Bolivian males, it is more likely to be explained by their insufficient use of PC.

#### The role of gender

Although some previous research conducted in Spain has analysed the use of health services for men and women together,(Hernández-Quevedo & Jiménez-Rubio 2009; Jiménez-Rubio & Hernández-Quevedo 2011; P Carrasco-Garrido, Jiménez-García, Hernández Barrera, de Andrés, et al. 2009; Carrasco-Garrido et al. 2007) many studies have found that men and women differ in regard to access to health care, and use of health services. (Addis & Mahalik 2003; Galdas et al. 2005) Moreover, it has been criticized that in Spain most of these studies lack a gender perspective.(Llácer et al. 2007) Thus, the contribution of gender in our study represents an interesting finding about immigrant's health care services utilization. For example, in most cases women had a higher health care use. These findings are consistent with previous research conducted in other countries reporting that, compared to men, a higher percentage of women use health care services.(Addis & Mahalik 2003; Galdas et al. 2005) The growing body of gender-specific studies highlights a

trend among men of delayed help seeking when they become ill. Social norms of traditional masculinity make help-seeking more difficult because of the inhibition of emotional expressiveness influencing symptoms perception or weakness.

Interesting gender different patterns of health care use were observed among Ecuadorians. Whereas Ecuadorian males reported more visits to PC - although differences were only marginally significant after adjusting for covariates - they were less likely to be hospitalized, which is probably explained by the adequate use of PC that prevents them from being hospitalized. The opposite finding was found among Ecuadorian females, who reported less PC use than Spanish females, but higher hospitalizations, although differences were not significant after adjusting for family characteristics and social support. This finding among women could be related to difficulties get time off work, therefore needing hospitalization when the health problem becomes more serious. Moreover, they suggest the importance of the family and social networks in their health status. However, this is speculative and deserves further research.

#### Limitations

This study has some limitations that need to be considered. First, it is based on a cross-sectional survey and we were unable to determine the processes by which migration-related factors reduced or enhanced differences in the use of health care service. Second, unfortunately information about time living in Spain was not collected but the immigration phenomenon in Spain is very recent and information about length of residence by countries was available for the contextualization of the results. Finally, the sample size of some groups was small.

#### *Conclusions*

This study brings a new dimension to existing research on immigration and the use of health care services in Spain where, when access to health care was universal and immigrants from South America, who were the majority, did not have language barriers, the majority of immigrants made less than, or about the same use of health care services as the Spanish population, although patterns differed by health care level, country of birth and gender. Therefore, the specific country of birth and gender should be taken into account in order to fully understand the heterogeneous patterns in health care utilization between migrants and the autochthonous population.

#### *Conflicts of interest*

None declared.

**Table 1.** General description of the sample, stratified by sex and country of birth. P-values represent comparison between men and women. Spanish National Health Survey, 2006.

	Spain		Argentina		Bolivia		Colombia	
	Men (N=10,325) Mean age 39, SD. 13.1 %	Women (N=9,901) Mean age 40, SD 13.2 %	Men (N=106) Mean age 33, SD 10.7 %	Women (N=105) Mean age 37, SD 11.0 %	Men (N=46) Mean age 30, SD 8.3 %	Women (N=120) Mean age 31, SD 10.4 %	Men (N=112) Mean age 34, SD 10.8 %	Women (N=171) Mean age 37, SD 11.1† %
<b>Health Services use</b>								
Visit to PC service in the last 4 weeks	22.6	31.7‡	23.6	21.0	21.7	20.2	21.4	31.6‡
Hospitalization in preceding 12 months	7.1	9.2‡	4.7	14.4‡	30.4	7.5	7.1	14.0‡
Emergency visit in preceding 12 months	27.5	30.6‡	44.4	38.5	55.3	40.8	38.4	39.8
<b>Health Status</b>								
Very good	22.3	17.9‡	32.7	23.1‡	8.7	24.2	26.8	13.5‡
Good	55.2	50.8	60.7	45.2	41.3	41.7	61.6	49.1
Fair	16.4	24.1	6.6	26.9	43.5	25.9	11.6	30.4
Poor	4.3	5.3	0.0	3.8	6.5	9.2	0.0	6.4
Very poor	1.7	1.9	0.0	1.0	0.0	0.0	0.0	0.6
<b>Educational level</b>								
Higher	19.9	20.0‡	21.5	21.0	21.3	11.7	17.0	18.1*
Medium	49.0	44.8	72.0	58.1	66.0	65.8	51.8	61.4
Lower	31.1	35.2	6.5	21.0	12.8	22.5	31.3	20.5
<b>Employment status</b>								
Working	73.6	50.6 ‡	80.2	58.7‡	73.9	82.6*	88.5	75.4
Unemployed	7.4	10.2	16.0	16.3	8.7	5.0	2.7	9.4
Housekeeper	0.1	24.7	-	15.4	-	1.7	-	15.2
Other	18.8	14.6	3.8	9.6	17.4	10.7	8.8	-
<b>Family Characteristics</b>								
Marital status								
Married	53.4	60.7	37.7	51.4	34.8	43.3	42.0	57.0
Cohabiting	7.4	7.2	21.7	29.5	26.1	25.0	24.1	15.1
Single	36.1	25.4	39.6	15.2	30.4	27.5	27.7	17.4
Previously married	3.2	6.8	0.9	3.8	8.7	4.2	6.3	10.5
<b>Number of children</b>								
0	53.3	43.0	58.9	51.4	87.2	56.7‡	64.9	29.8
1	20.4	24.0	18.7	20.0	6.4	16.7	18.0	35.7
≥2	26.0	33.0	22.4	28.6	6.4	26.7	17.1	34.5
<b>Social support</b>								
	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles
Confidant Social Support	25.0 (21.0-25.0)	25.0 (22.0-25.0) ‡	24.0 (20.0-25.0)	23.4 (22.0-25.0)*	23.5 (20.6-24.0)	22.0 (18.8-25.0)	22.0 (17.0-25.0)	23.0 (19.0-25.0)
Affective Social Support	15.0 (14.0-15.0)	15.0 (14.0-15.0) †	15.0 (14.0-15.0)	15.0 (14.0-15.0)	15.0 (13.0-15.0)	15.0 (13.0-15.0)	14.0 (12.8-15.0)	14.0 (12.0-15.0)*

**Table 1.** General description of the sample, stratified by sex and country of birth. P-values represent comparison between men and women. Spanish National Health Survey, 2006 (continued)

	<b>Ecuador</b>		<b>Morocco</b>		<b>Peru</b>		<b>Romania</b>	
	Men (N=191) Mean age 32, SD. 8.9 %	Women (N=220) Mean age 34, SD 11.1† %	Men (N=258) Mean age 33, SD 10.1 %	Women (N=167) Mean age 33, SD 10.9 %	Men (N=59) Mean age 34, SD 10.3 %	Women (N=58) Mean age 39, SD 9.7 %	Men (N=194) Mean age 30, SD 9.9 %	Women (N=192) Mean age 29, SD 7.4‡ %
<b>Health Services use</b>								
Visit to PC service in the last 4 weeks	26.7	25.3	19.3	31.1‡	15.0	58.6‡	8.9	25.0‡
Hospitalization in preceding 12 months	7.1	15.0‡	7.8	11.4*	5.1	0.0†	2.6	10.4‡
Emergency visit in preceding 12 months	31.8	38.8†	29.8	35.9*	41.7	25.9†	19.1	34.9‡
<b>Health Status</b>								
Very good	19.4	17.4‡	25.7	25.1†	11.7	25.4*	30.4	30.6‡
Good	50.8	40.6	44.0	38.3	60.0	40.7	53.1	38.9
Fair	29.3	35.6	25.3	27.5	28.3	29.3	16.0	29.0
Poor	0.5	5.5	3.5	4.2	0.0	5.2	0.5	1.6
Very poor	0.0	0.9	1.6	4.8	0.0	0.0	0.0	0.0
<b>Educational level</b>								
Higher	5.2	8.9	8.1	6.0	22.0	29.8	1.1	13.5*
Medium	57.6	63.6	34.5	38.9	72.9	63.2	68.5	67.7
Lower	37.2	27.6	57.4	55.1	5.1	7.0	30.3	18.8
<b>Employment status</b>								
Working	88.5	67.6‡	84.4	24.7‡	88.1	86.2†	79.8	73.4*
Unemployed	6.8	7.3	8.2	5.4	-	6.9	13.0	8.3
Housekeeper	-	17.4	-	56.6	-	6.9	-	17.2
Other	4.7	7.8	7.4	13.3	11.9	-	7.3	1.0
<b>Family Characteristics</b>								
Marital status								
Married	48.7	44.3	55.6	70.1‡	30.5	58.6	41.5	53.9
Cohabiting	26.2	27.9	2.7	5.4	23.7	13.8	28.0	22.5
Single	23.6	23.3	39.3	19.8	44.1	20.7	27.5	19.4
Previously married	1.6	4.6	2.3	4.8	1.7	6.9	3.1	4.2
<b>Number of children</b>								
0	44.5	31.5†	66.9	38.9†	68.3	37.9†	70.1	50.0*
1	21.5	34.2	11.3	16.8	23.3	22.4	20.1	37.5
≥2	34.0	34.2	21.8	44.3	8.3	39.7	9.8	12.5
<b>Social support</b>								
	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles	median, 25%-75% percentiles
Confidant Social Support	22.0 (19.0-25.0)	22.0 (17.0-25.0)‡	21.0 (18.0-25.0)	22.0 (19.0-25.0)	25.0 (21.0-25.0)	23.2 (19.4-25.0)	23.0 (20.0-25.0)	23.0 (21.0-25.0)*
Affective Social Support	14.0 (12.0-15.0)	14.0 (11.0-15.0)‡	14.0 (12.0-15.0)	14.0 (12.0-15.0)	15.0 (15.0-15.0)	15.0 (12.0-15.0)‡	14.0 (12.0-15.0)	15.0 (14.0-15.0)‡

\* P<0.05. † P< 0.01. ‡ P<0.001.



**Table 2.** Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) for *visits to the PC in the last 4 weeks*, stratified by country and sex. Spanish National Health Survey, 2006.

	Model 1			Model 2			Model 3			Model 4			Model 5		
	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI
<i>Men</i>															
<b>Country of birth</b>															
Spain	22.6	1			1			1			1			1	
Argentina	23.6	1.11	0.69-1.79		1.40	0.87-2.26		1.44	0.89-2.32		1.42	0.86-2.29		1.42	0.88-2.29
Bolivia	21.7	1.53	0.74-3.17		0.93	0.44-1.95		0.94	0.45-1.99		0.98	0.46-2.06		0.98	0.46-2.05
Colombia	21.4	1.01	0.63-1.63		1.16	0.72-1.88		1.23	0.76-1.99		1.22	0.75-1.98		1.22	0.75-1.99
Ecuador	26.7	1.62	1.17-2.26†		1.42	1.01-1.99*		1.47	1.05-2.07*		1.41	1.00-1.98		1.41	1.00-1.99
Morocco	19.3	0.83	0.58-1.19		0.72	0.49-1.05		0.75	0.52-1.09		0.76	0.52-1.11		0.77	0.52-1.12
Peru	15.0	0.65	0.31-1.34		0.55	0.26-1.72		0.58	0.27-1.21		0.57	0.27-1.21		0.57	0.27-1.21
Romania	8.9	0.44	0.27-0.74†		0.43	0.26-0.72†		0.42	0.25-0.70‡		0.41	0.25-0.70‡		0.42	0.25-0.70†
<i>Women</i>															
<b>Country of birth</b>															
Spain	31.7	1			1			1			1			1	
Argentina	21.0	0.62	0.39-1.00		0.59	0.36-0.96*		0.60	0.37-0.98*		0.59	0.36-0.97*		0.60	0.36-0.98*
Bolivia	20.2	0.59	0.34-1.01		0.47	0.27-0.83†		0.47	0.27-0.83†		0.47	0.27-0.82†		0.47	0.27-0.82†
Colombia	31.6	1.05	0.75-1.46		0.91	0.64-1.29		0.94	0.66-1.32		0.94	0.66-1.33		0.93	0.66-1.31
Ecuador	25.3	0.84	0.61-1.16		0.68	0.49-0.96*		0.68	0.48-0.96*		0.69	0.49-0.98*		0.67	0.48-0.95*
Morocco	31.1	1.26	0.84-1.89		1.14	0.74-1.75		1.11	0.72-1.70		1.11	0.72-1.71		1.10	0.72-1.68
Peru	58.6	3.10	1.83-5.27‡		3.45	1.99-5.97‡		3.62	2.09-6.32‡		3.73	2.14-6.51‡		3.70	2.12-6.46‡
Romania	25.0	0.90	0.70-1.37		0.93	0.66-1.32		0.95	0.67-1.35		0.89	0.64-1.26		0.89	0.63-1.27

**Table 3.** Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) for *hospitalization in preceding 12 months*, stratified by country and sex. Spanish National Health Survey, 2006.

	Model 1			Model 2			Model 3			Model 4			Model 5		
	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI
<i>Men</i>															
<b>Country of birth</b>															
Spain	7.1	1			1			1			1			1	
Argentina	4.7	0.77	0.30-1.95		1.23	0.48-3.17		1.28	0.49-3.28		1.26	0.49-3.24		1.27	0.49-3.28
Bolivia	30.4	10.34	5.28-20.23‡		6.41	3.14-13.07‡		6.62	3.25-13.50‡		6.73	3.29-15.74‡		6.81	3.34-13.91‡
Colombia	7.1	1.29	0.63-2.66		1.82	0.87-3.80		1.84	0.88-3.85		1.75	0.84-3.68		1.85	0.88-3.89
Ecuador	1.0	0.17	0.04-0.74*		0.15	0.03-0.65*		0.15	0.03-0.63*		0.14	0.03-0.59*		0.15	0.03-0.65*
Morocco	7.8	0.79	0.41-1.51		0.63	0.32-1.23		0.60	0.31-1.19		0.62	0.32-1.21		0.68	0.34-1.34
Peru	5.1	0.85	0.27-2.69		0.81	0.25-2.61		0.87	0.27-2.81		0.83	0.25-2.70		0.81	0.25-2.64
Romania	2.6	0.44	0.17-1.14		0.48	0.18-1.26		0.45	0.17-1.18		0.45	0.17-1.17		0.47	0.18-1.22
<i>Women</i>															
<b>Country of birth</b>															
Spain	9.2	1			1			1			1			1	
Argentina	14.4	1.71	0.99-2.96		1.70	0.97-2.98		1.65	0.94-2.89		1.50	0.85-2.65		1.51	0.85-2.67
Bolivia	7.5	1.00	0.50-2.02		0.83	0.40-1.70		0.82	0.39-1.70		0.75	0.35-1.61		0.76	0.36-1.62
Colombia	14.0	1.63	1.05-2.53*		1.49	0.95-2.34		1.41	0.90-2.23		1.20	0.75-1.90		1.19	0.75-1.90
Ecuador	15.0	1.86	1.27-2.72†		1.63	1.10-2.41*		1.67	1.12-2.48*		1.30	0.86-1.97		1.30	0.85-1.98
Morocco	11.4	1.06	0.57-1.99		0.91	0.48-1.72		0.95	0.50-1.80		0.84	0.44-1.61		0.84	0.44-1.60
Peru	0.0	0.06	0.00-1.66		0.06	0.00-1.59		0.05	0.00-1.46		0.04	0.00-1.20		0.05	0.00-1.31
Romania	10.4	1.15	0.71-1.84		1.12	0.70-1.81		1.09	0.67-1.77		0.92	0.56-1.50		0.92	0.57-1.51

Note: Model 1, adjusted for age; Model 2 adjusted for age and self-perceived health status; Model 3 adjusted for age, self-perceived health status and socio-economic position; Model 4 adjusted for age, self-perceived health status, socio-economic position and family characteristics; Model 5 adjusted for age, self-perceived health status, socio-economic position, family characteristics and social support

\* P<0.05. † P< 0.01. ‡ P<0.001.

**Table 4.** Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) for *emergency visit in preceding 12 months*, stratified by country and sex. Spanish National Health Survey, 2006

	%	Model 1		%	Model 2		%	Model 3		%	Model 4		%	Model 5	
		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI
<i>Men</i>															
<b>Country of birth</b>															
Spain	27.5	1			1			1			1			1	
Argentina	44.3	1.99	1.35-2.97†		2.53	1.68-3.79‡		2.51	1.67-3.77‡		2.45	1.63-3.69‡		2.49	1.66-3.74‡
Bolivia	55.3	3.27	1.72-6.22‡		2.15	1.10-4.24†		2.14	1.08-4.22*		1.96	1.00-3.90		1.99	1.00-3.93
Colombia	38.4	1.34	0.90-2.01		1.51	1.02-2.34*		1.51	1.02-2.31*		1.45	0.95-2.21		1.49	0.97-2.27
Ecuador	31.8	1.23	0.90-1.69		1.09	0.79-1.51		1.10	0.79-1.52		1.03	0.74-1.44		1.05	0.75-1.46
Morocco	29.8	0.89	0.65-1.21		0.76	0.55-1.05		0.77	0.55-1.06		0.74	0.53-1.04		0.75	0.54-1.05
Peru	41.7	1.80	1.07-3.02*		1.68	0.99-2.84		1.67	0.98-2.83		1.63	0.96-2.77		1.63	0.96-2.78
Romania	19.1	0.63	0.43-0.90*		0.61	0.41-0.89*		0.61	0.42-0.89*		0.55	0.37-0.81†		0.55	0.38-0.81†
<i>Women</i>															
<b>Country of birth</b>															
Spain	30.6	1			1			1			1			1	
Argentina	38.5	1.31	0.87-1.96		1.30	0.86-1.92		1.26	0.83-1.92		1.15	0.75-1.76		1.14	0.74-1.75
Bolivia	40.8	1.26	0.83-1.92		1.06	0.68-1.66		1.03	0.66-1.61		0.98	0.63-1.54		0.93	0.59-1.47
Colombia	39.8	1.42	1.04-1.94*		1.29	0.93-1.79		1.23	0.88-1.71		1.16	0.84-1.62		1.12	0.81-1.57
Ecuador	38.8	1.10	0.82-1.48		0.93	0.68-1.26		0.90	0.66-1.23		0.93	0.61-1.19		0.78	0.57-1.07
Morocco	35.9	1.03	0.69-1.53		0.91	0.61-1.37		0.96	0.64-1.46		0.93	0.62-1.42		0.90	0.59-1.37
Peru	25.9	0.77	0.43-1.41		0.77	0.43-1.43		0.72	0.38-1.34		0.71	0.38-1.32		0.68	0.36-1.28
Romania	34.9	0.99	0.73-1.35		0.95	0.69-1.31		0.93	0.67-1.27		0.80	0.58-1.20		0.78	0.57-1.08

Note: Model 1, adjusted for age; Model 2 adjusted for age and self-perceived health status; Model 3 adjusted for age, self-perceived health status and socio-economic position; Model 4 adjusted for age, self-perceived health status, socio-economic position and family characteristics; Model 5 adjusted for age, self-perceived health status, socio-economic position, family characteristics and social support

\* P<0.05. † P< 0.01. ‡ P<0.001.

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## 8. Discussion

*“Recognize yourself in he and she who are not like you and me.”-Carlos Fuentes*

This thesis aimed to move a step forward on the understanding of the relationship between immigration and health taking into account the specific country of birth and the intersection with gender. Moreover, through a hierarchical analysis it provides an insight in the potential mediator effect of socioeconomic status, employment status, family characteristics and social support. It covers three different dimensions of health: 1) health status (self-perceived health status and mental health); 2) health-related behaviors (insomnia symptoms and NRS), and 3) health-care use (PC, hospitalization, and emergency visits. More specific and detailed aspects are discussed in the articles presented in the Results section.

### 8.1. Main Results

#### a) Health status

Migration health addresses the state of physical, mental and social well-being of migrants and mobile populations. The structural inequalities experienced by many migrants have a significant impact on overall health and well-being. Migration health thus goes beyond the traditional management of diseases among mobile populations and is intrinsically linked with the broader social determinants of health and unequal distribution of such determinants. Conditions during the migration process create or increase vulnerabilities to ill health. Different migrant groups face different health challenges (Davies et al. 2009).

While some studies show that immigrants have better health status than people from the host country others observe the opposite (Argeseanu Cunningham et al. 2008; Hyman 2004; Lindström et al. 2001). These contradictory findings can be explained by several factors such as differences in the social, cultural, economic and political context both in the country of birth and in host countries, as well as for methodological reasons.

To date studies have examined the health status of immigrants in Spain as an homogeneous group not taking into account gender differences (P. Carrasco-Garrido et al. 2009; Carrasco-Garrido et al. 2007; Cots et al. 2007; Buron et al. 2008)

The first sub-study examined the differences on perceived health and mental health between country and gender differences on immigrants born in five South-American countries, Romania and Morocco but living in Spain. The results of this study provided evidence that there is a high heterogeneity in the relationship between immigration and health among countries that in most cases were not explained by the socioeconomic variables analyzed in this sub-study (education, employment status, family characteristics or social support).

These findings emphasize the importance in studies about migration and health, of taking into account factors related to social and cultural characteristics of the country of birth and the host country as well as gender, ethnicity and the characteristics of the migration

process. This sub-study provides a baseline for future comparisons. Future studies should be able to improve the understanding of mechanisms that relate immigration to health status, depending on characteristics of the country of birth, the host country, and the migration process, in a context of intersection between gender and immigration, as well as other potential dimensions of social inequalities such as ethnicity.

#### **b) Patterns of insomnia symptoms and NRS**

Population studies show that sleep deprivation and disorders affect many more people worldwide than previously thought (Ferrie et al. 2011). Suffering from a sleep disorder or wakefulness, hinders daily functioning and adversely affecting health and longevity (Colten & Altevogt 2006). The cumulative long-term effects of sleep deprivation and sleep disorders have been associated with a wide range of deleterious health consequences including an increased risk of hypertension, diabetes, obesity, depression, heart attack, and stroke (Colten & Altevogt 2006).

Moreover, sleep problems are likely to increase. The rapid advent of the ‘24/7’ society involving round-the-clock activities and increasing night-time use of TV, internet and mobile phones means adequate uninterrupted sleep may become increasingly compromised. Some data suggest a decline in sleep duration of up to 18 min per night over the past 30 years (Kronholm et al. 2008; Rowshan Ravan et al. 2010). Furthermore, sleep problems are associated with accidents and human errors. By 2020, the number of people killed in motor-vehicle crashes is expected to double to 2.3 million worldwide, of which approximately 230 000–345 000 will be due to sleepiness or fatigue (Pandi-Perumal et al. 2006). Likewise, disturbed sleep has been shown to double the risk of a fatal accident at work over a 20-year period (Åkerstedt et al. 2002).

Research on sleep health has paid little attention to the differences in sleeping patterns in immigrant populations. To our knowledge, this second sub-study is the first national, population-based, comprehensive assessment of reported sleep duration, sleep disturbance and sleep quality between people born in Spain and immigrants from the seven countries with most immigrants in Spain. In addition, this study examines whether sleep duration, sleep disturbance and sleep quality can be explained by socio-economic factors and also if these patterns of association differ by gender. The main contribution of this study that is consistent with the first sub-study is the heterogeneity in the relationship between immigration and sleep health among people born outside Spain.

Studying sleep differences across different ethnic groups is not only important for our understanding of sleep but may lead to the development of new, culturally appropriate interventions (Clever & Bruck 2013). Moreover, a deeper insight into the immigrants’ life situation is needed to identify disadvantages specific to these heterogeneous groups which may reach beyond financial and employment issues. Once more, ethnicity studies are required to identify specific immigrants in need to be a target group of public health interventions to prevent their deterioration in their sleep health status.

Insomnia is the most common sleep disorder affecting millions of people as either a primary or comorbid condition. Insomnia has been defined as both a symptom and a disorder, and this distinction may affect its conceptualization from both research and clinical perspectives (Mai & Buysse 2008). Furthermore, insomnia is a disorder that has far-reaching effects: medical, psychiatric, personal, and societal consequences have all been linked with insomnia. The cost of insomnia can be measured not just in currency,



but also in impaired quality of life from comorbid conditions and impaired interpersonal relationships (Mai & Buysse 2008).

As for NRS this is one of the core symptoms of primary insomnia according to the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association 2000b). NRS is often defined as a subjective feeling of being unrefreshed upon awakening, which may be the result of poor quality or unrestful sleep (Vernon et al. 2010). In addition to being one of the core symptoms of insomnia, recent epidemiological studies have suggested that there may be a population of insomnia patients who do not report difficulty initiating or maintaining sleep, but who do report NRS (Ohayon 2005). However, little has been published about how patients experience or define NRS, and this literature review demonstrated that there is no reliable and valid instrument available in the public domain that is suitable for comprehensively and specifically evaluating NRS symptom severity and treatment response with confidence in research (Vernon et al. 2010).

### **c) Health care use**

As Europe has received new waves of immigrants over recent decades, differences in health care utilization by country of birth could be important in understanding how health care use is likely to be affected in the future (Solé-Auró et al. 2012). In addition, it has given rise to the challenge of maintaining service quality, whilst still meeting the needs of diverse populations of patients. (Kluge et al. 2012)

Some studies argue that emigrants are a selected sample, and a healthy migrant effect has been described, meaning that newly arrived immigrants are healthier than the average (Fennelly 2007; McDonald & Kennedy 2004). However, with time the “healthy migrant effect” may wear off (Williams 1993; Ronellenfitsch et al. 2006), and many immigrants report poor health and increased use of health services (Johansson et al. 2011; Wiking et al. 2004; Sundquist 1995).

Yet, in Spain the available evidence on the existence of disparities in the level of health, or in the consumption of health care resources, for the immigrant population is limited, mainly due to the lack of data for this population group (Quevedo & Rubio 2010). Furthermore, studies are not conclusive since some research show that immigrants register higher percentages of hospitalization (Carrasco-Garrido et al. 2007) and more use of the emergency department (Cots et al. 2007) others show less frequently hospital services (Hernando Arizaleta et al. 2009) and indicate that the utilisation of more specialized health care is lower for immigrant groups (Hernández-Quevedo & Jiménez-Rubio 2009). To date we are not aware of any study conducted in Spain that examines health service use by the specific country of birth and gender based on a Spanish representative sample. The results of the third sub-study about health care use show differences in the gender ratio between countries and likewise the other sub-studies shown in this dissertation our findings show heterogeneous patterns of use of healthcare resources that differ by country of birth and gender.

Future research should explore whether health service is adequate for the health needs of specific population groups. Studies should also obtain detail profiling data on immigrants living in Spain (ethnicity, language, religion etc.), examine which are the barriers to access to the health care services or similarities in the way that immigrants access health care in their countries of origin.

## **8.2. Limitations and strengths**

There are several limitations to our dissertation. The first limitation is related to the cross-sectional design. Longitudinal studies are needed in order to examine temporal changes, especially pre- and post-immigration data and socio-economic circumstances. Thus, we were unable to determine the processes by which migration-related factors reduced or enhanced the risk for different health outcomes. Although it can be argued that the “healthy immigrant effect” could explain the associations, our results do not support this effect, since there is no consistent pattern between time since migration waves and health. Second, unfortunately information about time living in Spain was not collected but the immigration phenomenon in Spain is very recent and information about length of residence by countries was available for the contextualization of the results. Although it could be argued that variation in reporting cultural differences could result in bias, primarily in affecting sub-study 1 and 2, it should be noted that five of the seven non-Spanish countries examined are in South America and have similar cultural backgrounds, and yet we have still observed differences in sleep health between them. Although we examined a large and representative sample, some groups had a small sample size, although the confidence intervals were in most cases narrow. Finally, acculturation and discrimination are associated with drug and alcohol dependency, social support networks, legal and political issues, quality of local health services, income and lifestyle, working conditions and environments, intergenerational conflicts, ethnic supports and coping, continued residence, value history of life, self-esteem, religious affliction, and life satisfaction (Wiking et al. 2004) . These variables were not possible to explore in this thesis.

In spite of these limitations, our study provides a previously unavailable glimpse of the heterogeneity of the immigrant population living in Spain. It highlights that the immigrant population is diverse and that this variation is associated with health status and health service use. We anticipate further insights from the health risk and use of health service profile of immigrants that also differ by gender. Moreover, the Latin American immigrant category itself masks considerable heterogeneity in the health and health service outcome analyzed. Another strength is that the sample is representative of the Spanish population.

## **8.3. Future research and policy considerations**

### **a) Research**

A plethora of scientific literature on immigrant health has suggested significant variations in postmigration health across immigrant groups from a variety of backgrounds. Thus, future research needs to address the experience of immigrants as an heterogeneous group in Spain and assess the extent to which their health needs varies from that of the Spanish population that is also heterogeneous itself.

Studies about migration and health should pay more attention to factors related to social and cultural characteristics of the country of birth and the host country as well as to the intersection between gender and ethnicity and to the characteristics of the migration process. In addition, further research about acculturation and migration related factors associated with health over time are also important. Moreover, a better knowledge base and further scoping studies are required on health status and use of health services by ethnic groups taking into account gender, for valid conclusions to be drawn at the national level

in most European countries (Kluge et al. 2012).

Emphasis should be placed on research that improves services and is fostered by rapid information dissemination to practitioners, training institutions, and to policymakers when it is appropriate. By extension, this implicates the academic journals that must take a more active role in moving the research agenda ahead. Moreover, improved health care services require viable linkages between researchers, practitioners, and policymakers. Finally, the recent and severe economic crisis has dominated both civil society and political debates. Future research should focus on the impact of the economic crisis on immigration, particularly the immigrant unemployment and how the downturn is affecting minority ethnic communities health status in Spain (Spanish National Contact Point of the European Migration Network 2011)

## **b) Social policies**

Ethnic diversity is increasing worldwide primarily as a result of migration linked to globalization of trade and the movement of refugees. This offers formidable challenges in the development of policies and strategies promoting the reduction of inequalities in health and health care (Raj Bhopal & Bhopal 2004). These challenges include:

- Responding to differences in the patterns of disease, and in particular reducing inequalities where this is possible.
- Understanding and responding to varying health behaviours, beliefs and attitudes.
- Ensuring equal opportunities in employment at all stages.
- Delivering health care services sensitive to cultural differences.
- Overcoming personal biases, stereotyped views, individual's racism, and institutional inertia and racism.
- Maintaining high quality communication in the face of language and cultural barriers.

It is important to lend support to immigrants groups with opportunities that give knowledge about the culture, facilitates communication with different authorities, to obtain an employment, and prevents discrimination. Discrimination must also be hindered by legislation and integration into society promoted. Foreign qualifications must be evaluated higher to prevent well educated persons from discrimination in the labour market.

According to figures from the INE, during the fourth quarter of 2011 the unemployment rate in Spain was 22.85%, with the figure being even higher for third-country nationals: 36.83%. The crisis has led to a change in the migration cycle, due to the slowdown in the arrival of immigrants (Spanish National Contact Point of the European Migration Network 2011).

At the same time, the issue of the emigration of Spanish nationals has attracted increasing media coverage. The crisis has also further affected asylum and migration budget items. Cuts have been made to immigrant integration budgets in Spain as shown in the Fund to support the Reception and Integration of Immigrants and Educational Support. In 2011, allocation to this fund decreased by 5% down to € 66.6 million (in 2010 it was € 70 million). These budget cuts affect immigration programmes. Thus policy-makers should take into account how the economic downturn is affecting the health and wellbeing of

minority ethnic communities (Spanish National Contact Point of the European Migration Network 2011).

**c) Health care**

Regarding health care, access to primary health care must be increased in areas where the proportion of immigrants is high. The consulting time when visiting a doctor must be prolonged for immigrant patients and an interpreter always called in when needed. The primary healthcare staff needs more education about the migratory process, different cultures, and the risks of poor health for immigrants. Besides, a need for health education and health promotion in general, targeted at specific deprived and immigrant groups must be performed (Wiking et al. 2004).

## 9. Conclusions

*“...The difference was so extreme that he could not accommodate the two places together in his mind...” -Jhumpa Lahiri, The Lowland*

The purpose of this dissertation was to contribute to the knowledge about the relationship between immigration and health through the observation of patterns that differ by country of birth, even from the same geographic region, and gender.

Overall, research in this area is lacking in Spain, and the research that has been conducted is without conceptual and methodological cohesion. As a step towards advancing this field of study, the analysis using country of birth and gender may contribute to a better understanding of interethnic and intraethnic groups health and health care disparities.

Several conclusions can be drawn from this thesis. First, our findings highlight the importance of understanding immigrant status, and gender in analyzing characteristics of immigrants from different countries. Second, there is a high heterogeneity in the relationship between immigration and health among countries analyzed and even among from the same geographical region. People from Bolivia, particularly men, reported poorer health outcomes compared to Argentineans born. Third, for Spanish born cultural aspects related to daily routines and poorer lifestyles could partly explain the poorer sleep health. Fourth, gender differences were found regarding health care use and also among immigrants born in the same geographical region. Fifth, although studies suggest that immigrants make greater use of emergency service than the Spanish born our findings show that this was only partially true for a small proportion of immigrants but not for all.

Finally, improving the health status of ethnic minority groups is becoming a health priority internationally (Lorant & Bhopal 2011), we encourage researchers, doctors, policy-makers to take into consideration to the next level and start introducing the use of immigration and ethnicity, as well as gender, as it can help in planning health services and sometimes leads to new insights into the causes of disease (Senior & Bhopal 1994).

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## **11. Appendix**



Encuesta Nacional de Salud

Cuestionario de Adultos

Mod. ENS-O6-CA

[Madrid]: Instituto Nacional de Estadística : Ministerio de Sanidad y Consumo, [2006]

[Consulta: 22-09-2015] Disponible a: [http://www.ine.es/metodologia/t15/ens\\_adu06.pdf](http://www.ine.es/metodologia/t15/ens_adu06.pdf)

Encuesta Nacional de Salud

Cuestionario de Hogar

Mod. ENS-06-HG

[Madrid] : Instituto Nacional de Estadística : Ministerio de Sanidad y Consumo, [2006]

[Consulta: 22-09-2015] Disponible a: [http://www.ine.es/metodologia/t15/ens\\_hog06.pdf](http://www.ine.es/metodologia/t15/ens_hog06.pdf)