The association between social exclusion and health among the immigrant population in Europe: A scoping review

Abstract

Background: Social exclusion refers to dynamic processes that prevent people from participating across the cultural, economic, political and social dimensions in society. There is scarce evidence on the adverse health effects of SE among immigrants.

Objective: To summarize existing literature on the relationship between social exclusion and health outcomes in the immigrant population in Europe.

Methods: A scoping review was conducted. Quantitative articles that analyzed SE as a multidimensional concept but also in each of its dimensions were included.

Results: A total of nine studies analyzed the multidimensionality social exclusion (SE) and its association with health outcomes among the immigrant population in Europe. Besides, 26 studies analyzed factors related to the social, economic and cultural dimensions of SE and their associations with immigrants' health. Social was analyzed including different factors of social exclusion at once. Thus, interactions were found between the economic, cultural and social factors in their associations with poor mental health and mental health. Other studies, analyzed structural indicators of SE based on country level integration policies. This review also found SE factors such as material deprivation, precarious working conditions, discrimination, and low social support are associated with immigrants' poor mental and self-rated health.

Conclusions: Further research would be needed to analyze multidimensional considering the cultural and political dimensions that remain less studied.

Contribution: The paper is the first one in summarizing existent evidence on the association between social exclusion and immigrants' health. It contributes to identify knowledge gaps for further research

Keywords: *Social exclusion; Integration; Immigrants; Health; Europe*

This is an appropriate publication for Demographic Research because it summarizes existing evidence about topic of interests of the journal: migration, health. It also brings information for Policy makers.

1. Introduction

The concept of social exclusion (SE) is increasingly used in the analysis of complex mechanisms and processes that enable individuals and households to be part of their society, going beyond the reductionist economic view that associates SE to lack or insufficient income, opening the perspective to other dimensions (Camacho, 2015; A. van Bergen, Hoff, Schreurs, van Loon, & Hemert, 2017). According to the WHO Commission on Social Determinants of Health (CSHD), SE consists in dynamic, multidimensional processes driven by unequal power relationships, that operate along and interact across the cultural, economic, political and social dimensions - and at different levels including individual, household, group, community, country and global.

Given the complexity of the concept, there are not a single set of indicators to measure social exclusion. However, the interaction between multiple exclusionary processes makes explicit the links between SE factors and the Social Determinants of Health (SDOH) (Popay, Escorel, Hernández, & Johnston, 2008; A. van Bergen et al., 2017; A. P. L. van Bergen, Hoff, Ameijden, & van Hemert, 2014), these are the social, economic and environmental conditions in which people are born, grow, live, work and age that influence health of individuals and populations (Commission on Social Determinants of Health, 2008). Thus, not only SDOH such as material deprivation, poor housing, few social contacts, and discrimination, have negative impacts on health, but also the experience of being excluded might lead to poor health through

psychosocial stress mechanisms (Marmot & Wilkinson, 2006; Popay et al., 2008; A. van Bergen et al., 2017).

Furthermore, SE is considered a significant factor in the causation of avoidable and unfair differences in health – the so called health inequalities-. The causal direction from social exclusion to health inequities is multidirectional and mutually reinforcing in feedback loops (Good Gringrich, 2015; Knowledge Network on Social Exclusion, 2005; Silver, 2007), as poor physical and mental health, in turn, can be a barrier to social and economic participation (A. van Bergen et al., 2017). Also, the cumulative exposure to social exclusion is linked to the life-course model proposed by the SDOH approach, as each linkage between the social exclusion dimensions deepens a person's negative experience and the depth of social exclusion is reinforced through the life cycle(Popay et al., 2008).

Further, social exclusion is not the converse of social inclusion; both are dynamic processes that can exist together (United Nations, 2008). Hence, there are very few people who are excluded in all dimensions at once (Galabuzi & Teelucksingh, 2010; Silver, 2007). Indeed, there are many more people who are socially excluded in some respects, and it is virtually impossible for human beings to exist totally outside societal influences.

In the case of immigrants, their lives are shaped by the Social Determinants of Migrant's Health (SDOMH) along with the migratory phases: in their homelands, during the migration journey, in destination countries, and the return (Conference on Social Determinants of Migrant Health Bellagio Conference Center Rockefeller Foundation, 2014). Immigrants are more vulnerable to SE as they suffer from certain types of discrimination, higher levels of unemployment, precarious jobs, differential access to housing, limitations in the access to

public services, and political and social participation (OECD/European Union, 2015); which are in itself SDOMH.

Even though migration is an emerging and increasingly social, political and public health issue, very few studies applied the lens of social determinants of health to understand immigrants' experiences (Castaneda et al., 2015; OECD/European Union, 2015). Also, the empirical evidence on social exclusion in the EU is still scarce (A. P. L. van Bergen et al., 2019). Thus, in this study, a scoping review of the literature was conducted, using the WHO definition of SE and its four dimension classification as a framework.

There are two aims of this literature review. First, to summarize existing literature on the relationship between multidimensional social exclusion and health outcomes in the immigrant population in Europe. The second aim is to synthesize evidence on the associations between social exclusion factors, in each one of its dimensions, and health outcomes among the immigrant population in Europe. This study will contribute to identify knowledge gaps in the field and suggest a research agenda.

2. Methods

2.1 Study design

This review is based on frameworks developed for conducting systematic scoping reviews (Armstrong & al, 2011; Peter, 2015) and followed the PRISMA-P (Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols) guidelines (Liberati et al., 2009). The scoping methodology was chosen because this type of review is of particular use when a body of literature has not yet been comprehensively reviewed or exhibits a broad or heterogeneous nature not amenable to a more accurate systematic review (Armstrong & al, 2011; Peter, 2015). Scoping reviews do not aim to produce a critically appraised and synthesized result

to a particular question, and instead aim to identify and map the available evidence. Thus, an assessment of methodological limitations or risk of bias of the evidence included is generally not performed (Munn et al., 2018). The different stages of this review were as follows.

2.1.1. Stage 1. Identification of the review questions

There were two review questions:

1. What is known in the literature about the association between multidimensional social exclusion and health among the immigrant population in Europe?.

2. What is known in the literature about the associations between social exclusion factors in each one of its dimensions -the economic, social, cultural and political- and health among the immigrant population in Europe?.

These questions were established based on the PECO (Population, Exposure, Comparison, Groups, and Outcome) criteria for standard systematic reviews. As often happens in scoping reviews, these questions were broad, and the definition of the comparison group was flexible (Armstrong & al, 2011; Peter, 2015). Therefore, the populations were socially excluded vs non-excluded individuals, economically active (aged 18 to 65 years) foreign-born individuals residing in Europe. In the same way, the exposure definition was flexible according to the multidimensional concept of social exclusion as a whole concept or by the presence of one, two or more of its dimensions. The outcome was health.

2.1.2. Stage 2. Identification of Relevant Searching

Electronic PubMed/Medline, EMBASE and Scopus databases were searched systematically; Google Scholar was also used to find grey literature. The literature search was conducted between March 2018 and March 2019 (last updated in November 2019).

The search strategy in PubMed to answer the first review question was conducted in advanced research option as follows: “social exclusion” OR “social inclusion” AND health. The limits established were: 10 years 2008-2019 (last updated in November 2019); languages: Spanish and English; article type: journal article; text availability: full text; age: 19 and more years. This search strategy was translated in EMBASE.

In Google Scholar, the search strategy was conducted using the advanced search as follows: with all the words: social exclusion AND health AND immigrants; the word occurs in the title: (allintitle: "social exclusion" OR “social inclusion” AND health), date range: between 2008 and 2019 (last updated November 2019).

The PubMed search strategy to answer the second question was conducted in blocks as follows: BLOCK A: Immigrants; BLOCK B: economic distress OR unemployment OR poverty; BLOCK C: social support; BLOCK D: discrimination; BLOCK E: political participation OR citizenship; BLOCK F: health. The limits were established as follows: 10 years 2009-2019 (last updated in July 2019); languages: Spanish, Portuguese and English; article type: journal article; text availability: full text; age: 19 and more years.

2.1.3. Stage 3. Screening- Inclusion Criteria

Two authors independently reviewed all articles and abstracts and the following inclusion criteria were applied: a) articles analyzing multidimensional social exclusion (SE) or at least two dimensions of its dimensions at once (first review question); b) articles analyzing SE factors related to each one of its dimensions (second review question); c) articles analyzing SE factors related to the Social Determinants of Health; d) studies written in English, Portuguese or Spanish; e) articles focused on the general immigrant population, as other vulnerable groups such as drugs abusers or mentally ill individuals might be socially excluded as a consequence of their

health conditions, being this reverse causal directionality beyond the aim and the analysis of this review; f) articles focused on economically active individuals aged 18 to 65 years, this age constraint was a strategy for avoiding age influence on health outcomes; g) quantitative studies; h) studies using data from Europe.

The exclusion criteria were: a) inaccessible articles; b) qualitative studies; c) articles that did not include health outcomes; d) articles that did not include the target populations; e) systematic review articles; f) articles that were the authors' opinions, comments, editorials, letters or conferences reports.

2.1.4. Stage 4. Scoping: Extracting and charting the results

A total of 474 articles were identified to answer the first review question: 180 through Pubmed/Medline, 127 through EMBASE and 167 through Google Scholar. This number was reduced to 33 after excluding duplicates and applying the inclusion criteria upon reviewing the titles and abstracts. Afterward, the articles were screened in full-text. Finally, a total of nine articles were included. It was found that five studies analyzed the multidimensionality of social exclusion (SE), and four studies analyzed two or more dimensions of SE at once. Out of them, three studies used data from the European Social Survey (waves 2006 and 2012); one study used data from the European Union Survey on Living Conditions (2011); one study used secondary survey data from the Netherlands and four studies used data from health surveys in Spain (2006 and 2012). Regarding population, six studies analyzed health inequalities between immigrant and native populations and three studies analyzed adverse health outcomes in the immigrant population. All of them were cross-sectional studies and five studies stratified the analysis by sex. Besides, four studies used a structural indicator for social exclusion/integration of

immigrants (Borrell, Palencia, Bartoll, Ikram, & Malmusi, 2015; Levecque & Van Rossem, 2014; Malmusi, 2015; Malmusi, Palencia, Ikram, Kunst, & Borrell, 2017).

A total of 727 articles were identified to answer the second question. This number was reduced to 117 after applying the inclusion criteria upon reviewing the titles and abstracts. Finally, a total of 26 articles were included. All the studies used secondary data: sixteen studies from Spain, three studies from Sweden, three studies from Germany, one from Portugal, two studies from Italy and one study used data from the European Union Statistics on Income and Living Conditions. Regarding the design, twenty-four studies used a cross-sectional design, and two used a longitudinal design. Regarding population sixteen studies included immigrant and native populations to study health inequalities, ten studies included immigrant population.

Both screening processes are presented in a PRISMA flow diagram in figure 1. The information extracted from the studies was summarized, and relevant information was charted using the following column headings: lead author and publication year; aim; design and type of data; sample size and study population; independent variables; outcome variables; and conclusions. In another table, the main results were also summarized for each health outcome (Tables 1 to 4).

3. Description of Studies

3.1 The association between multidimensional social exclusion and immigrants' health in Europe

Only five studies analyzed the multidimensionality social exclusion (SE) and its association with health outcomes among the immigrant population in Europe. Out of them, four studies analyzed structural indicators of social exclusion/ integration based on country immigrant integration policies. Besides, four studies analyzed social exclusion factors related to at least

two of its dimensions at once. Details of these studies are presented below; the main characteristics are summarized in tables 1 and 2.

Van de Beek (2017) investigated the association between experiences of social exclusion and self-reported depressive symptoms and psychotic experiences among Moroccan-Dutch immigrants. The authors created sum scores for the social exclusion variables: social defeat, perceived discrimination, and social support and analyzed the association with health outcomes through linear regression; adjusting the models by demographics (age, gender, migrant status, and education). The study found that perceived discrimination and social defeat were significantly associated with psychotic experiences and social defeat was related to depressive symptoms. Social support and higher education were associated with less depressive symptoms and psychotic experiences.

Malmusi (2017) analyzed whether country integration policy models were related to inequalities by immigrant status in depressive symptoms in Europe. This study was based on data from 17 countries in the sixth wave of the European Social Survey (2012). Countries were grouped into three integration policy regimes (inclusive, assimilationist, and exclusionist), according to the Migrant Integration Policy Index (MIPEX). The MIPEX comprises 38 indicators of the labor market, education, health, political participation, access to nationality, family reunion, permanent residence, and anti-discrimination policies. The study found that in all integration regimes, immigrants report significantly more depressive symptoms than non-immigrants. Besides, financial strain explained all the associations in inclusive countries, most of it in assimilationist countries, but only a small part in exclusionist countries. Thus, the findings revealed that inequalities are larger in countries with more restrictive policies and those integration policies in the host country shape immigrants' health.

In another study Malmusi (2015), explored the relationship of country-level integration policy with immigrants' health status in Europe, using data from the 2011 European Union Survey on Income and Living Conditions in 14 countries. The countries were grouped according to the MIPEX, described before, into multicultural, exclusionist, and assimilationist countries. The results showed that compared with multicultural countries, immigrants report worse health in exclusionist and assimilationist countries. Health inequalities between immigrants and natives were also higher in exclusionist countries. The authors concluded that immigrants in 'exclusionist' countries experience poorer socioeconomic and health outcomes.

Borrell (2015) analyzed the association between perceived group discrimination (PGD) and health outcomes -self-reported health, symptoms of depression, and limitation of activity - among immigrants in Europe, including first and second generations of immigrants and using data from the 2012- European Social Survey. Besides PGD the authors also included the MIPEX, classifying countries into inclusive, assimilationist, exclusionist countries. Controlling variables were age, sex, citizenship, educational level, marital, and activity. The results found associations between perceived group discrimination and health outcomes in first-generation immigrants. In inclusive countries, PGD was associated with depression in both men and women, and limitation of activity among women. In assimilationist countries, perceived discrimination was associated with all health outcomes except poor self-perceived health among men.

Levecque and Van Rossem (2014) investigated whether immigrants in Europe are at higher risk for depression compared to the native population and whether the association between migration and depression depends on different forms of migrant integration. Data from the European Social Survey 2006/2007 was used. Migrant integration was analyzed from the individual level (low educational level, financial difficulties, being out of the labor market,

ethnic minority status, and discrimination) to the national level (the country migrant integration policy). They included first- and second-generation immigrants from European and non EU origin and aged ⩾ 15 years. Control variables were gender, age, partner relationship, social support, and welfare state regime. The authors found that natives and second-generation migrants do not differ significantly in their risk profile for depression. First-generation migrants showed higher levels of depression, with those from Non-EU origin to be the worst off. The higher risk for depression was attributable to experienced barriers to socioeconomic integration and processes of discrimination.

Four studies analyzed social exclusion factors related to at least two of its dimensions at once. Thus, Rivera (2016), in a recent study, aimed to empirically demonstrate that mental health of immigrants in Spain deteriorates the longer they are resident in the country. The authors analyzed individual social support and economic factors such as employment status and type of work. Results showed that immigrants who have been residing for less than ten years in Spain appear to have better mental health compared to the national population. They found that individual perceived social support has a positive relationship with better levels of mental health among those who are married and those who have a work contract in the host country.

Gostens and Malmusi (2015) analyzed health inequalities between immigrants born in the middle- or low-income countries and natives in Spain in the context of the financial crisis. The study analyzed trends using two cross-sectional National Health Surveys (2006 and 2012). They analyzed factors such as age, gender, year of arrival and social class, educational level, employment status, social support, and overcrowding. Interactions among the social and economic indicators were found. For instance, in 2006 immigrant women presented worse mental health than Spanish women, but this association was attenuated when overcrowding was

added to the logistic model and disappeared when social support was also introduced. Also, the probability of poor self-rated health in immigrant women compared to native women was greater in 2012 than in 2006, with a significant interaction when overcrowding and social support were also introduced.

Rodriguez-Alvarez (2014) analyzed health inequalities between native and immigrant populations (from China, Latin America, the Maghreb, and Senegal) in the Basque Country, Spain. These mediating determinants included sociodemographic factors, low social support, perceived discrimination, and migratory status factors such as length of stay, permit of residence, and Spanish comprehension. The authors found that immigrants had poorer self-perceived health than natives, regardless of age. These differences could be explained by the lower educational level, worse employment status, lower social support, and perceived discrimination among immigrants, both in men and women.

Gil-González (2014), analyzed perceived racism and other forms of discrimination and their effect on the health of the immigrant and Spanish populations, using data from the 2006 - Spanish Health Interview Survey (SHIS). They found that the immigrant population shows a greater prevalence of perceived racism when compared with the native Spanish population. Also, for both the Spanish and immigrant populations, those who perceived more racism had low levels of social support. Racism and other forms of discrimination were associated with poor mental health, injuries, and the consumption of psychotropics.

3.2. Studies that analyzed indicators related to social exclusion dimensions and their associations with immigrant's health in Europe

A total of 26 studies analyzed factors or indicators from different dimensions of social exclusion, which were in itself social determinants of health. Details of these studies are presented below; the main characteristics are summarized in tables 3 and 4.

3.2.1. The Economic Dimension of Social Exclusion

3.2.1.1. Employment and Working Conditions

Employment and working conditions are key social determinants of health and contribute to health inequalities through pathways such as social and material deprivation, imposing limitations on workers' personal life such as in their capacity to plan for their future (Benach, Vives, Amable, & Muntaner, 2014; Dunlavy & Rostila, 2013). Evidence has shown that non-European origin is associated with a higher disadvantage in finding employment not only among first-generation but also among second-generation immigrants (Heggebo, 2017). Cross-sectional and longitudinal research in the immigrant population in Europe have linked unemployment with poor SRH and poor mental health, also showed that immigrants suffer more from unemployment than natives (Aichberger et al., 2012; Leopold, Leopold, & Lechner, 2017; Petrelli et al., 2017; Robert, Martinez, Garcia, Benavides, & Ronda, 2014). Conversely, poor health has been associated with high unemployment probability; although immigrants or descendants with poor health have not been particularly likely to be unemployed, suggesting not be a "double disadvantage" (Heggebo, 2017).

This review found that immigrants face an elevated risk for precarious employment and working conditions such as temporary jobs, long working hours, lower wages, lack of safety protection, self-exposure to occupational health risks (Benach et al., 2015; Borrell et al., 2008;

Ronda et al., 2013; Sole & Rodriguez, 2010; Sousa et al., 2010). Moreover, those with higher levels of employment precariousness were women (Benach et al., 2015; Borrell et al., 2008; Cayuela, Malmusi, Lopez-Jacob, Gotsens, & Ronda, 2015; Malmusi, Borrell, & Benach, 2010; Ronda et al., 2013), young (aged 16-24 years), manual workers, and undocumented immigrants (Sousa et al., 2010). When compared to natives, immigrants have reported having higher exposure to physical demands (Cayuela et al., 2015), higher percentages of temporary, verbal or no contract (Cayuela et al., 2015; Malmusi, 2009; Sousa et al., 2010), and sickness presentism (Malmusi et al., 2010).

Working conditions such as perceived job insecurity, temporary employment (atypical, contingent, or nonstandard), and long working hours were associated with adverse health outcomes (Benach et al., 2014; Teixeira & Dias, 2018). Research on immigrant population mainly from Spain showed the association between precarious employment conditions and poor physical and mental health (Benach et al., 2015; Borrell et al., 2008; Cayuela et al., 2015; Malmusi, 2009; Malmusi et al., 2010; Robert et al., 2014; Sousa et al., 2010), especially among settled immigrant women when they are compared to native women (Cayuela et al., 2015; Malmusi, 2015).

3.2.2. The Social Dimension of Social Exclusion

3.2.2.1. Social support and social capital

Immigrant status was directly associated with lack of social support (Salinero-Fort et al., 2011); also immigrants have a shorter network size and lower social support than natives (Bennet & Lindstrom, 2017; Gotsens et al., 2015; Rodriguez et al., 2009; Salinero-Fort et al., 2012; Stoyanova & Díaz Serrano, 2013). Besides, high levels of social capital were associated with good mental health (Rivera et al., 2016; Stoyanova & Díaz Serrano, 2013), and good physical

health among immigrants (Salinero-Fort, Jimenez-Garcia, de Burgos-Lunar, Chico-Moraleja, & Gomez-Campelo, 2015). On the other hand, perceived loneliness was related to poor perceived mental and physical health (Stoyanova & Díaz Serrano, 2013).

Besides, social capital contributes to health inequalities between immigrants and natives (Johnson, Rostila, Svensson, & Engstrom, 2017; Rodriguez et al., 2009; Salinero-Fort et al., 2012). Salinero-Fort (2012) found that good self-reported health was associated with being men, being Spanish-born, and having considerable social support. A recent study by Jonhson (2017) analyzed the mediation of social capital indicators -bonding, bridging and linking social capital- on psychological distress, among natives and immigrants in Sweden. They found that indicators of social capital mediate this association for immigrant men and women. While bonding social capital showed the greatest mediatory role among three social capital indicators, adding them together had the strongest explanatory effect.

Rodriguez Alvarez (2009) found that differences in Health-Related Quality of Life (HRQoL) between Moroccans and the native population in the Basque Country in Spain, were attenuated when variables of social support were included in the multivariate regression models. It was found also, that low social support and dissatisfaction with social life increased the risk of low HRQoL scores as well as the presence of anxiety and depression symptoms.

3.2.3. The Cultural dimension of Social Exclusion

3.2.3.1. Discrimination

The evidence show a high prevalence of discrimination among immigrants (Gil-González et al., 2014; Rodríguez Álvarez & al, 2014), especially from low-income countries (Agudelo-Suárez, 2011; Borrell et al., 2010). Discrimination was associated with poor self-rated health (Agudelo-Suárez, 2011; Borrell et al., 2010; Borrell et al., 2015; Rodriguez-Alvarez, Gonzalez-

Rabago, Borrell, & Lanborena, 2017; Schunck, Reiss, & Razum, 2015), and poor mental health (Agudelo-Suárez, 2011; Borrell et al., 2010; Borrell et al., 2015; Gil-González et al., 2014; Schunck et al., 2015). Moreover, discrimination is an important factor that contributes to health inequalities (Schunck et al., 2015; Sevillano, Basabe, Bobowik, & Aierdi, 2014). Some studies have found that the association between discrimination and health varies according to the place of origin (Rodriguez-Alvarez et al., 2017; Sevillano et al., 2014).

Rodriguez-Alvarez (2017) examined the effect of perceived discrimination on self-rated health among immigrant population in the Basque Country, Spain. Even though the low prevalence of perceived discrimination, the authors have found that immigrants perceiving discrimination were more likely to report poor self-rated health than those who did not report to be discriminated. This consistent association did not change after controlling by age, gender, educational attainment, and region of origin.

Sevillano (2014), analyzed ethnicity and perceived discrimination as key variables accounting for differences in self-reported physical and mental health in the immigrant and native populations in the Basque Country, Spain. They included socioeconomic predictors such as income level, educational level, type of occupation, documented vs. not documented status, marital status, and length of residence. They found that perceived discrimination was the best predictor of physical and mental health among immigrants (controlling for sociodemographic variables). African men, Bolivian women, and women without legal status had the poorest self-rated mental health.

4. Discussion and Conclusions

The studies measuring multidimensional social exclusion in association with immigrants' health in Europe are still scarce. However, this review revealed that social exclusion could be

measured by analyzing different factors of social exclusion at once among the immigrant (Borrell et al., 2015; Gil-González et al., 2014; Gotsens et al., 2015; Levecque & Van Rossem, 2014; Malmusi, 2015; Malmusi et al., 2017; Rivera et al., 2016; Rodríguez Álvarez & al, 2014; van de Beek et al., 2017). Thus, interactions were found between the economic, cultural and social factors in their associations with poor mental health (Teixeira & Dias, 2018; van de Beek et al., 2017), and mental health (Gil-González et al., 2014; Levecque & Van Rossem, 2014).

Other studies, analyzed structural indicators of social exclusion; it was found that country level immigrant integration policies are associated to health inequalities between immigrant and native populations (Levecque & Van Rossem, 2014; Malmusi, 2015; Malmusi et al., 2017) and poor physical and mental health outcomes among the immigrant population (Borrell et al., 2015) in Europe.

This review also found that social exclusion factors such as: material deprivation, not having a work contract, having precarious working conditions, having financial difficulties, being unemployed, perceiving discrimination, and having low social support are associated with immigrants' poor mental health (Borrell et al., 2015; Rivera et al., 2016; Robert et al., 2014; van de Beek et al., 2017), and poor self-rated health (Agudelo-Suarez et al., 2009; Sousa et al., 2010). These factors are also associated with health inequalities in mental health (Benach et al., 2015; Cayuela et al., 2015; Johnson et al., 2017; Levecque & Van Rossem, 2014; Malmusi et al., 2017; Rodriguez et al., 2009; Stoyanova & Díaz Serrano, 2013), self-rated health (Benach et al., 2015; Cayuela et al., 2015; Loi & Mhairi Hale, 2019; Petrelli et al., 2017; Rodriguez-Alvarez et al., 2017; Rodríguez Álvarez & al, 2014; Salinero-Fort et al., 2012; Stoyanova & Díaz Serrano, 2013), and poor well-being (Leopold et al., 2017; Schunck et al., 2015; Sevillano et al., 2014).

In addition, evidence show that mental health becomes worse in immigrants than in their native counterparts considering the length of residence in Europe (Gotsens et al., 2015; Johnson et al., 2017; Loi & Mhairi Hale, 2019; Rivera et al., 2016; Salinero-Fort et al., 2012). The financial crisis that was set in 2008, was also identified as a significant risk factor for poor mental health in immigrants, especially for those undocumented and who lacked social security (Agudelo-Suarez et al., 2013; Gotsens et al., 2015; Robert et al., 2014).

Therefore, the knowledge gaps identified in this review are: a) there is little empirical research on the relationship between social exclusion as a multidimensional construct and health in the immigrant population; b) there is also a scarcity of studies which analyzed several social exclusion factors simultaneously, especially from the Social Determinants of Health approach; b) most of the studies analyzed interactions between the economic dimension (income, employment status, working conditions) and the social dimension (social support). Thus, cultural and political dimensions remain less studied; c) key immigrant integration indicators such as housing conditions, discrimination, citizenship/ naturalization, and unmet health care needs have been less analyzed; d) few studies analyzed structural determinants; e) few studies analyzed social capital indicators such as the interpersonal and institutional trust, as well as political participation; f) further research would be needed to analyze the associations between multidimensional social exclusion and health outcomes, including indicators that capture the multidimensionality of the concept; g) there is also the need for studies segregating the analysis by sex, age, country of origin and the length of residence in the host country.

References

Agudelo-Suárez, A. (2011). The effect of perceived discrimination on the health of immigrant workers in Spain. BMC Public Health, 11(652).

Agudelo-Suarez, A. A., Ronda-Perez, E., Gil-Gonzalez, D., Vives-Cases, C., Garcia, A. M., Garcia-Benavides, F., . . . por el proyecto, I. (2009). [The migratory process, working conditions and health in immigrant workers in Spain (the ITSAL project)]. Gac Sanit, 23 Suppl 1, 115-121. doi: 10.1016/j.gaceta.2009.07.007

Agudelo-Suarez, A. A., Ronda, E., Vazquez-Navarrete, M. L., Garcia, A. M., Martinez, J. M., & Benavides, F. G. (2013). Impact of economic crisis on mental health of migrant workers: what happened with migrants who came to Spain to work? Int J Public Health, 58(4), 627-631. doi: 10.1007/s00038-013-0475-0

Aichberger, M. C., Bromand, Z., Heredia Montesinos, A., Temur-Erman, S., Mundt, A., Heinz, A., . . . Schouler-Ocak, M. (2012). Socio-economic status and emotional distress of female Turkish immigrants and native German women living in Berlin. Eur Psychiatry, 27 Suppl 2, S10-16. doi: 10.1016/S0924-9338(12)75702-4

Armstrong, R., & al, e. (2011). Cochrane Update 'Scoping the scope' of a cochrane review. Journal of Public Health, 33(1), 147 -150.

Benach, J., Julia, M., Tarafa, G., Mir, J., Molinero, E., & Vives, A. (2015). [Multidimensional measurement of precarious employment: social distribution and its

association with health in Catalonia (Spain)]. Gac Sanit, 29(5), 375-378. doi: 10.1016/j.gaceta.2015.04.002

Benach, J., Vives, A., Amable, M., & Muntaner, C. (2014). Precarious Employment: Understanding an Emerging Social Determinant of Health

Bennet, L., & Lindstrom, M. (2017). Self-rated health and social capital in Iraqi immigrants to Sweden: The MEDIM population-based study. Scand J Public Health, 1403494817730997. doi: 10.1177/1403494817730997

Borrell, C., Muntaner, C., Gil-Gonzalez, D., Artazcoz, L., Rodriguez-Sanz, M., Rohlfs, I., . . . Alvarez-Dardet, C. (2010). Perceived discrimination and health by gender, social class, and country of birth in a Southern European country. Prev Med, 50(1-2), 86-92. doi: 10.1016/j.ypmed.2009.10.016

Borrell, C., Muntaner, C., Sola, J., Artazcoz, L., Puigpinos, R., Benach, J., & Noh, S. (2008). Immigration and self-reported health status by social class and gender: the importance of material deprivation, work organisation and household labour. J Epidemiol Community Health, 62(5), e7.

Borrell, C., Palencia, L., Bartoll, X., Ikram, U., & Malmusi, D. (2015). Perceived Discrimination and Health among Immigrants in Europe According to National Integration Policies. Int J Environ Res Public Health, 12(9), 10687-10699. doi: 10.3390/ijerph120910687

Camacho, J. (2015). Social Exclusion Eunomía. Revista en Cultura de la Legalidad, 7, 208-214.

Castaneda, H., Holmes, S. M., Madrigal, D. S., Young, M. E., Beyeler, N., & Quesada, J. (2015). Immigration as a social determinant of health. Annu Rev Public Health, 36, 375-392. doi: 10.1146/annurev-publhealth-032013-182419

Cayuela, A., Malmusi, D., Lopez-Jacob, M. J., Gotsens, M., & Ronda, E. (2015). The Impact of Education and Socioeconomic and Occupational Conditions on Self-Perceived and Mental Health Inequalities Among Immigrants and Native Workers in Spain. J Immigr Minor Health, 17(6), 1906-1910. doi: 10.1007/s10903-015-0219-8

Commission on Social Determinants of Health. (2008). Closing the Gap in a Generation: Health equity through action on the social determinants of health: Final report of the Commission on Social Determinants of Health. Geneva.

Conference on Social Determinants of Migrant Health Bellagio Conference Center Rockefeller Foundation. (2014). The Social Determinants of Migrant Health. A Call for action Retrieved from https://cultureofhealthequity.org/wp-content/uploads/2015/04/Conference-on-Social-Determinants-of-Health-Report-Final-0415.pdf

Dunlavy, A. C., & Rostila, M. (2013). Health inequalities among workers with a foreign background in Sweden: do working conditions matter? Int J Environ Res Public Health, 10(7), 2871-2887. doi: 10.3390/ijerph10072871

Galabuzi, G. E., & Teelucksingh, C. (2010). Social Cohesion, Social Exclusion, and Social Capital Deparment of Citizenship and Immigration Canada.

Gil-González, D., Vives, C., Borrell, C., Agudelo Suarez, A. A., Davó-Blanes, M. C., Miralles, J., & Álvarez-Dardet, C. A. (2014). Racism, Other Discriminations and Effects on Health J Immigrant Minority Health, 16, 301-309.

Good Gringrich, L. (2015). The Empirical Measurement of a Theoretical Concept: Tracing Social Exclusion among Racial Minority and Migrant Groups in Canada. Social Inclusion, 3(4), 98-11.

Gotsens, M., Malmusi, D., Villarroel, N., Vives-Cases, C., Garcia-Subirats, I., Hernando, C., & Borrell, C. (2015). Health inequality between immigrants and natives in Spain: the loss of the healthy immigrant effect in times of economic crisis. Eur J Public Health, 25(6), 923-929. doi: 10.1093/eurpub/ckv126

Heggebo, K. (2017). Are immigrants and descendants with ill health more prone to unemployment? Evidence from 18 European countries. Ethn Health, 22(4), 402-424. doi: 10.1080/13557858.2016.1246426

Johnson, C. M., Rostila, M., Svensson, A. C., & Engstrom, K. (2017). The role of social capital in explaining mental health inequalities between immigrants and Swedish-born: a population-based cross-sectional study. BMC Public Health, 17(1), 117. doi: 10.1186/s12889-016-3955-3

Knowledge Network on Social Exclusion. (2005). Commission on the Social Determinants of Health Regional Consultation. Presentation. In World Health Organization (Ed.).

Leopold, L., Leopold, T., & Lechner, C. M. (2017). Do Immigrants Suffer More From Job Loss? Unemployment and Subjective Well-being in Germany. Demography, 54(1), 231-257. doi: 10.1007/s13524-016-0539-x

Levecque, K., & Van Rossem, R. (2014). Depression in Europe: does migrant integration have mental health payoffs? A cross-national comparison of 20 European countries. Ethnicity & Health. doi: 10.1080/13557858.2014.883369

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P., . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. PLoS Med, 6(7), e1000100. doi: 10.1371/journal.pmed.1000100

Loi, S., & Mhairi Hale, J. (2019). Migrant health convergence and the role of material deprivation. Demographic research, 40, 933-962. doi:DOI: 10.4054/DemRes.2019.40.32

Malmusi, D. (2009). The migratory process, working conditions and health in immigrant workers in Spain (the ITSAL project). Gac Sanit, 23(1), 115-121.

Malmusi, D. (2015). Immigrants' health and health inequality by type of integration policies in European countries. Eur J Public Health, 25(2), 293-299. doi: 10.1093/eurpub/cku156

Malmusi, D., Borrell, C., & Benach, J. (2010). Migration-related health inequalities: showing the complex interactions between gender, social class and place of origin. Soc Sci Med, 71(9), 1610-1619. doi: 10.1016/j.socscimed.2010.07.043

Malmusi, D., Palencia, L., Ikram, U. Z., Kunst, A. E., & Borrell, C. (2017). Inequalities by immigrant status in depressive symptoms in Europe: the role of integration policy regimes. Soc Psychiatry Psychiatr Epidemiol, 52(4), 391-398. doi: 10.1007/s00127-017-1348-2

Marmot, M., & Wilkinson, R. (2006). The Social Determinants of Health (Second ed.): Oxford University Press.

Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Med Res Methodol, 18(1), 143. doi: 10.1186/s12874-018-0611-x

OECD/European Union. (2015). Indicators of Immigrant Integration 2015 SettlIng In. Paris.

Peter, M. e. a. (2015). Guidance for conducting systematic scoping reviews. Int J Evid Based Healthc, 13, 141-146.

Petrelli, A., Di Napoli, A., Rossi, A., Costanzo, G., Mirisola, C., & Gargiulo, L. (2017). The variation in the health status of immigrants and Italians during the global crisis and the role of socioeconomic factors. Int J Equity Health, 16(1), 98. doi: 10.1186/s12939-017-0596-9

Popay, J., Escorel, S., Hernández, M., & Johnston, H. (2008). SEKN Final Report February 2008. Understanding and Tackling Social Exclusion.Final Report to the WHO Commission on Social Determinants of Health From the Social Exclusion Knowledge Network

February 2008.

Rivera, B., Casal, B., & Currais, L. (2016). The Healthy Immigrant Effect on Mental Health: Determinants and Implications for Mental Health Policy in Spain. Adm Policy Ment Health, 43(4), 616-627. doi: 10.1007/s10488-015-0668-3

Robert, G., Martinez, J. M., Garcia, A. M., Benavides, F. G., & Ronda, E. (2014). From the boom to the crisis: changes in employment conditions of immigrants in Spain and their effects on mental health. Eur J Public Health, 24(3), 404-409. doi: 10.1093/eurpub/cku020

Rodriguez-Alvarez, E., Gonzalez-Rabago, Y., Borrell, L. N., & Lanborena, N. (2017). Perceived discrimination and self-rated health in the immigrant population of the Basque Country, Spain. Gac Sanit, 31(5), 390-395. doi: 10.1016/j.gaceta.2016.12.014

Rodríguez Álvarez, E., & al, e. (2014). Inmigración y salud: desigualdades entre la población autóctona e inmigrante en el País Vasco. Gac Sanit, 28(4), 274-280.

Rodriguez, E., Lamborena, N., Errami, M., Rodríguez, A., Pereda, C., Vallejo de la Hoz, G., & Moreno, G. (2009). Relationship between migrant status and social support and quality of life in Moroccans in the Basque Country (Spain). Gac Sanit. 2009, 1, 29-37.

Ronda, E., Agudelo-Suarez, A. A., Garcia, A. M., Lopez-Jacob, M. J., Ruiz-Frutos, C., & Benavides, F. G. (2013). Differences in exposure to occupational health risks in Spanish and

foreign-born workers in Spain (ITSAL Project). J Immigr Minor Health, 15(1), 164-171. doi: 10.1007/s10903-012-9664-9

Salinero-Fort, M. A., del Otero-Sanz, L., Martin-Madrazo, C., de Burgos-Lunar, C., Chico-Moraleja, R. M., Rodes-Soldevila, B., . . . Group, M. (2011). The relationship between social support and self-reported health status in immigrants: an adjusted analysis in the Madrid Cross Sectional Study. BMC Fam Pract, 12, 46. doi: 10.1186/1471-2296-12-46

Salinero-Fort, M. A., Jimenez-Garcia, R., de Burgos-Lunar, C., Chico-Moraleja, R. M., & Gomez-Campelo, P. (2015). Common mental disorders in primary health care: differences between Latin American-born and Spanish-born residents in Madrid, Spain. Soc Psychiatry Psychiatr Epidemiol, 50(3), 429-443. doi: 10.1007/s00127-014-0962-5

Salinero-Fort, M. A., Jimenez-Garcia, R., del Otero-Sanz, L., de Burgos-Lunar, C., Chico-Moraleja, R. M., Martin-Madrazo, C., . . . Immigration, G. (2012). Self-reported health status in primary health care: the influence of immigration and other associated factors. PLoS One, 7(6), e38462. doi: 10.1371/journal.pone.0038462

Schunck, R., Reiss, K., & Razum, O. (2015). Pathways between perceived discrimination and health among immigrants: Evidence from a large national panel survey in Germany. Ethn. Health 20, 493-510.

Sevillano, V., Basabe, N., Bobowik, M., & Aierdi, X. (2014). Health-related quality of life, ethnicity and perceived discrimination among immigrants and natives in Spain. Ethn Health, 19(2), 178-197. doi: 10.1080/13557858.2013.797569

Silver, H. (2007). Social Exclusion. In G. Ritzer (Ed.), The Blackwell Encyclopedia of Sociology (pp. 4419-4421). Oxford: Blackwell Publishing.

Sole, M., & Rodriguez, M. (2010). [Disparities in the effect of working conditions on health between immigrant and native-born populations in Spain]. Gac Sanit, 24(2), 145-150. doi: 10.1016/j.gaceta.2009.10.006

Sousa, E., Agudelo-Suarez, A., Benavides, F. G., Schenker, M., Garcia, A. M., Benach, J., . . . project, I. (2010). Immigration, work and health in Spain: the influence of legal status and employment contract on reported health indicators. Int J Public Health, 55(5), 443-451. doi: 10.1007/s00038-010-0141-8

Stoyanova, A., & Díaz Serrano, L. (2013). Disentangling the link between health and social capital: A comparison of immigrant and native-born populations in Spain WORKING PAPERS Collecció "DOCUMENTS DE TREBALL DEL DEPARTAMENT D'ECONOMIA - CREIP". Reus: Universitat Rovira i Virgili. Departament d'Economia.

Teixeira, A. F., & Dias, S. F. (2018). Labor market integration, immigration experience, and psychological distress in a multi-ethnic sample of immigrants residing in Portugal. Ethn Health, 23(1), 81-96. doi: 10.1080/13557858.2016.1246421

United Nations. (2008). Final Report of the Expert Group Meeting on Creating an Inclusive Society: Practical Strategies to Promote Social Integration. Paris: Division for Social Policy and Development United Nations Department of Economic and Social Affairs.

van Bergen, A., Hoff, S. J. M., Schreurs, H., van Loon, A., & Hemert, A. (2017). Social Exclusion Index-for Health Surveys (SEI-HS): a prospective nationwide study to extend and validate a multidimensional social exclusion questionnaire. BMC Public Health, 17(253). doi: DOI 10.1186/s12889-017-4175-1

van Bergen, A. P. L., Hoff, S. J. M., Ameijden, E. J. C., & van Hemert, A. M. (2014). Measuring Social Exclusion in Routine Public Health Surveys: Construction of a Multidimensional Instrument. PLoS ONE 9(5): e98680. doi:10.1371/journal.pone.0098680.

van Bergen, A. P. L., Wolf, J., Badou, M., de Wilde-Schutten, K., W, I. J., Schreurs, H., . . . van Hemert, A. M. (2019). The association between social exclusion or inclusion and health in EU and OECD countries: a systematic review. Eur J Public Health, 29(3), 575-582. doi: 10.1093/eurpub/cky143

van de Beek, M. H., van der Krieke, L., Schoevers, R. A., & Veling, W. (2017). Social exclusion and psychopathology in an online cohort of Moroccan-Dutch migrants: Results of the MEDINA-study. PLoS One, 12(7), e0179827. doi: 10.1371/journal.pone.0179827

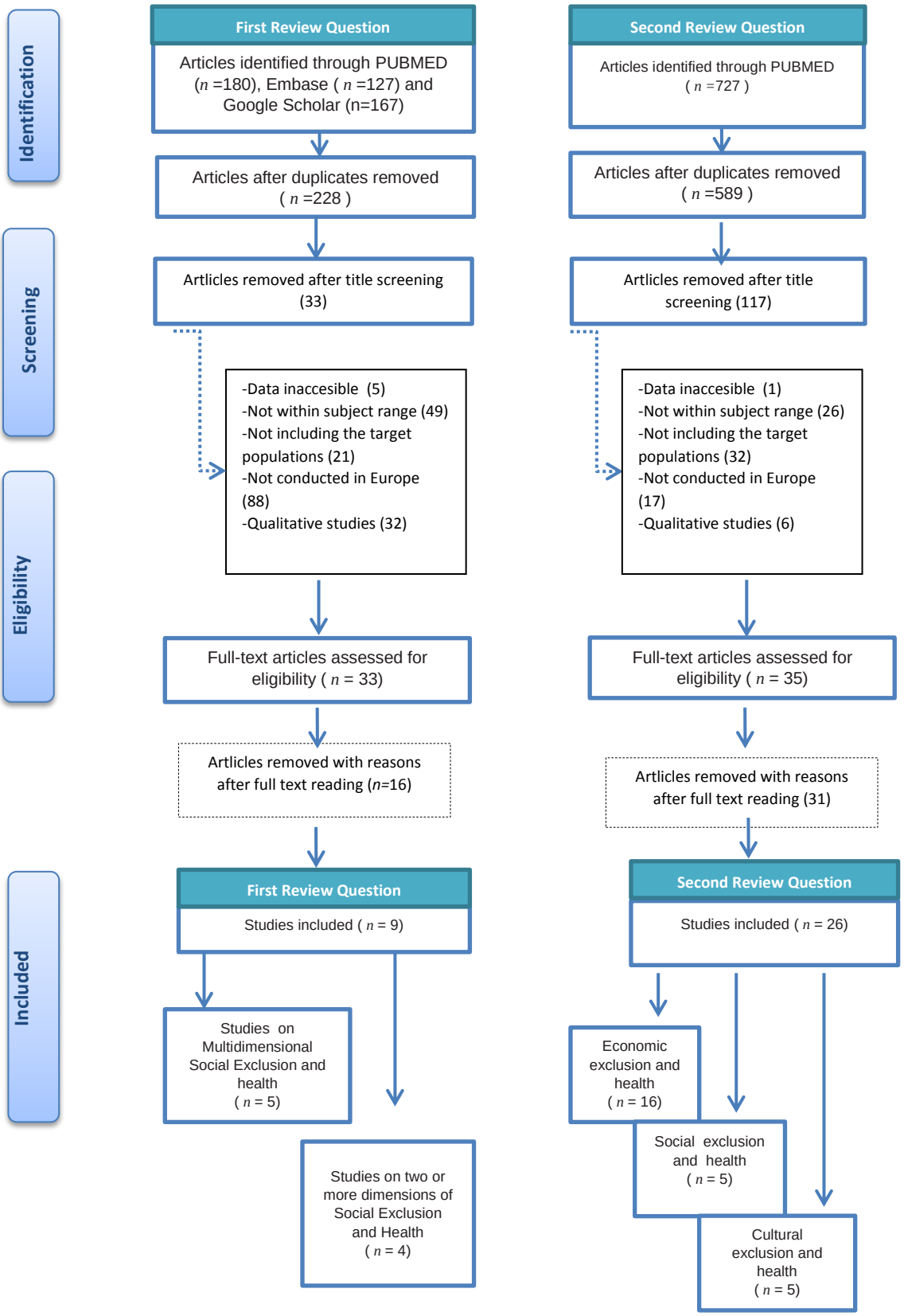

Fig1. PRISMA chart of the Scoping Review

Appendix A: Scoping Review Summarizing Tables

Table 1. Studies on multidimensional social exclusion and health outcomes among the immigrant population in Europe							
First Author and year	**Aim**	**Design and Data**	**Sample Size and Study Population**	**Independent Variables related SDH and SE Dimensions**	**Outcome Variables**	**Analysis and measures**	**Conclusions**
Studies using multidimensional indicators of social exclusion							
van de Beek, M. (2017)	To investigate the association between experiences of social exclusion and self-reported depressive symptoms and psychotic experiences in Moroccan-Dutch migrants.	A cross-sectional study using an online survey (2012-2014).	Immigrant Population (The Netherlands) A convenience sample of 267 Moroccan-Dutch migrants. Aged 18-57 years.	-Perceived discrimination - Social defeat - Social Support - Sociodemographics: age, gender, first and second generation status, level of education, previous mental healthcare.	-Depressive symptoms -Psychotic experiences	Logistic regression anyalises :linear regression, multivariate linear regression,	There were high levels of psychopathology in the sample. Suggesting that part of this young ethnic minority population might not get adequate mental healthcare. As this population was reached through internet, the online environment may offer a setting for intervention, to increase resilience towards social exclusion.
Malmusi, D. (2017)	Aims to study whether country integration policy models were related to inequalities by immigrant. status in depressive symptoms in Europe	Cross-sectional study using data from 17 countries in the sixth wave of the European Social Survey (2012)	Immigrant and Native Populations (The EU) A sample of non-immigrants, N= 28,333, and immigrants N =2041	-Country classification (contextual indicator): three integration policy regimes (inclusive, assimilationist, and exclusionist). -Adjusting variables: age, sex, and education level, then sequentially by citizenship, perceived discrimination, and socio-economic variables	Depressive symptoms were assessed with the eight-item version of the Center for Epidemiologic Studies Depression scale.	Linear regression	Across most European countries, immigrants seem to experience more depressive symptoms than the population born in the country, mostly reflecting their poorer socio-economic situation. Inequalities are larger in countries with more restrictive policies.

Malmusi, D. (2015)	To explore the relationship of country-level integration policy with immigrants' health status in Europe.	Cross-sectional study with data from the 2011 European Union Survey on Income and Living Conditions in 14 countries.	Immigrant and Native Population (Spain) People born in the country (natives, n = 177 300) or outside the European Union with >10 years of residence (immigrants, n = 7088). Aged 16 years and older.	-Policy Index (contextual indicator): "multicultural' (highest scores: UK, Italy, Spain, Netherlands, Sweden, Belgium, Portugal, Norway, Finland), 'exclusionist' (lowest scores: Austria, Denmark) and 'assimilationist' (high or low depending on the dimension: France, Switzerland, Luxembourg). -adjusting by age, educational level, occupation social class, the economic situation of the household (household income, material deprivation, ability to make ends meet, living in an overcrowded household) -citizenship status	-self-rated health	*Analysis Stratified by sex Robust Poisson regression models (PR).	Immigrants in 'exclusionist' countries experience poorer socio-economic and health outcomes. Future studies should confirm whether and how integration policy models could make a difference on migrants' health.
Borrell, C. (2015)	To analyse the association between perceived discrimination and health outcomes among first and second generation immigrants from low-income countries living in Europe, while accounting for sex and the national policy on immigration.	Cross-sectional study, based on the 2012 European Social Survey.	Immigrant Population (The EU) A sample of 1271 men and 1335 women from low-income countries aged ≥15 years in 18 European countries.	-Perceived group discrimination -Immigrant background (First and Second generation) -National immigrant integration policy(contextual indicator). Other variables: Age, sex, citizenship, educational level (primary or less, lower secondary, upper secondary and tertiary), marital status (married/cohabiting, separated/divorced/widowed, never married), activity (paid work, studying, unemployed, retired or disabled, housework, others).	-Self-reported health -Symptoms of depression -Limitation of activity	*Analysis stratified by sex. Robust Poisson regression models were fitted to obtain PR.	Perceived group discrimination is associated with poor health outcomes in first generation immigrants from low-income countries who live in European countries, but not among their descendants. These associations are more important in assimilationist countries than in the others.

Levecque, K. (2014)	First, to assess whether migrants in Europe are at higher risk for depression compared to the native population. Second, to assess whether the association between migration and depression is dependent on different forms of migrant integration. Migrant integration is looked at both from the individual and from the national level.	Cross-sectional study based on data for 20 countries in the European Social Survey 2006/2007	Immigrant and Native Population (The EU) (N = 37,076 individuals aged 15 or more)	-first- and second-generation migrants, ((EU) or non-EU origin) -barriers to integration (low educational level, financial difficulties, being out of the labor market, ethnic minority status, discrimination), -the host country environment (national migrant integration policy). Control by gender, age, partner relationship, social support, and welfare state regime	-Depression (Epidemiologic Depression Scale)	-Hierarchical linear regression	In Europe, first-generation EU and non-EU migrants experience higher levels of depression. Second-generation migrants and natives show similar risk profiles.
Studies analizing indicators from at least two dimensions of social exclusion at once							
Rivera, B. (2015)	To provide empirical evidence to demonstrate that the mental health of immigrants in Spain deteriorates the longer they are resident in the country.	Cross-sectional study, using data from the National Survey of Health of Spain 2011–2012.	Immigrant Population (Spain) 1478 individuals who were born abroad and had come to Spain when they were 15 years of age or older.	.Time of residence in Spain .region of origin -Individual social capital -Socio-demographics: age, sex, education levels, employment status, family characteristics, and type of work undertaken	-Mental health (GHQ)	Negative binomial model (NB model), In which the variance/mean ratio is linear on the latter. Coefficient (SE) Marginal effects (SE)	The need for further research is especially true in the case of the immigrant population's mental health in Spain because there is scant evidence available on their situation.

Gotsens, M., Malmusi, D. (2015)	To analyse health inequalities between immigrants born in the middle- or low-income countries and natives in Spain, in 2006 and 2012, taking into account gender, year of arrival and socioeconomic exposures.	Study of trends using two cross-sections, the 2006 and 2012 editions of the Spanish National Health Survey,	Immigrant and Native Populations (Spain) Residents in Spain aged 15–64 years (20 810 natives and 2950 immigrants in 2006, 14 291 natives and 2448 immigrants in 2012.	-Main independent variable: Immigrant status -Year of arrival Adjustment variables: -Age -Educational level -employment status -social class -social support -overcrowding	-Fair/poor self-rated health -poor mental health -chronic activity limitation -use of psychotropic drugs	*Analysis stratified by sex Robust Poisson regression models (PR).	Between 2006 and 2012, immigrants who arrived in Spain before 2006 appeared to worsen their health status when compared with natives. The loss of the healthy immigrant effect in the context of a worse impact of the economic crisis on immigrants appears as a potential explanation. Employment, social protection and re-universalization of health care would prevent further deterioration of immigrants' health status.
Rodriguez-Álvarez, E. (2014)	To analyze health inequalities between native and immigrant populations in the Basque Country (Spain) moreover, the role of several mediating determinants in explaining these differences.	Cross-sectional study, Data used from the 2007 Basque Health Survey (for natives) and the 2009 Basque Health Survey for Immigrants.	Immigrant and Native Population (Spain) A sample of 4,270 natives and 745 immigrants from China, Latin America, the Maghreb, and Senegal. Aged 18-64.	Main independent variable: -Place of birth Adjusting variables: -Socio-demographic variables and migratory status (length of stay, permit of residence, Spanish comprehension, educational level, and employment situation) -Low Social Support -Perceived discrimination	-Poor self-perceived health.	*Analysis stratified by sex Logistic regression to estimate ORs (crude and adjusted).	The results show the need to continue monitoring social and health inequalities between the native and immigrant populations, as well as to support the policies that improve the socioeconomic conditions of immigrants.

Gil-González, D. (2014)	(1) To study the prevalence and probability of perceived racism and other forms of discrimination on the immigrant and Spanish populations within different public spheres; (2) to show the effect of perceived racism and other forms of discrimination on the health of the migrant population residing in Spain.	Cross-sectional study using data from the Spanish Health Interview Survey (SHIS) (2006)	Immigrant and Native Populations Spain 29,476 individuals i> 16 years	-Exposure to racism (Perceived racism) -Exposure to other types of discrimination (based on sex social class, religion, and sexual orientation) -Explicative variables: Age, Employment Status Marital Status, Level of education, Country of Origin, Social Class, Social Support.	-Self-perceived health -Mental Health -Hypertension -Consumption of antidepressants and stimulants -Having had an injury -Unmet need for medical care -Smoking status	*Analysis Stratified by sex The Breslow-day Homogeneity of Risks test. a p-value of 0.014. Multivariate logistic regression analyses, aOR, and CI95%. Health-related problems attributable to perceived racism was calculated using the attributable population proportion (PAP) expressed in percentages.	For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism. Racism affects men's health, while racism with other forms of discrimination affects women's health. Half of the reported cases of poor mental health in foreign men are attributed to racism, while most cases of injury in foreign women are attributed to racism together with other forms of discrimination.

Table 2. Results of the studies on multidimensional social exclusion and health outcomes among the immigrant population in Europe

First Author	Outcome Variables	Results
Studies using multidimensional indicators of Social Exclusion		
van de Beek, M. (2017)	Depression symptoms Psychotic experiences	Out of the 267 participants; 87% were female. 27% of the sample has received mental healthcare in the past. Over 50% of these people screened positive for depressive symptoms and psychotic experiences. Perceived discrimination and social defeat were significantly associated with psychotic experiences and social defeat was associated with depressive symptoms. Social support and higher education were associated with less depressive symptoms and psychotic experiences.
Malmusi, D. (2017)	Depressive symptoms	In all integration regimes, immigrants report signifcantly more depressive symptoms than non-immigrants. The gap is the largest in exclusionist countries (immigrants score 1.16, 95% CI 0.65–1.68, points higher than nonimmigrants in the depression scale), followed by assimilationist countries (0.85 and 0.57–1.13) and inclusive countries (0.60 and 0.36–0.84). Financial strain explains all the associations in inclusive countries, most of it in assimilationist countries, but only a small part in exclusionist countries.
Malmusi, D. (2015)	Self-reported health	Compared with multicultural countries, immigrants report worse health in exclusionist countries (age-adjusted PR, 95% CI: men 1.78, 1.49–2.12; women 1.58, 1.37–1.82; fully adjusted, men 1.78, 1.50–2.11; women 1.47, 1.26–1.70) and assimilationist countries (age adjusted, men 1.21, 1.03–1.41; women 1.21, 1.06–1.39; fully adjusted, men 1.19, 1.02–1.40; women 1.22, 1.07–1.40). Health inequalities between immigrants and natives were also highest in exclusionist countries, where they persisted even after adjusting for differences in socio-economic situation.
Borrell, C. (2015)	Poor-self perceived health Depression	The study found significant associations between perceived group discrimination and health outcomes in first generation immigrants: poor self-perceived health in women (PR 1.31, 95% CI 1.04–1.66 in the full multivariate model); depression in both men (PR 1.55, 95% CI 1.16–2.07 in the full. Multivariate model) and women (PR 1.47, 95% CI 1.15–1.89 in the full multivariate model); and limitation of activity in men (PR 1.49, 95% CI 1.13–1.98 in the full multivariate model) and women (PR 1.51, 95% CI 1.08–2.11 in the full multivariate model). In inclusive countries, the multivariate models show a positive association between perceived discrimination and depression, among both men and women, and limitation of activity among women. In assimilationist countries, perceived discrimination was associated with all health outcomes except poor self-perceived health among men. For example, in the multivariate model, the PR for depression was 2.23 in men (95% CI 1.27–3.92) and 1.87 in women (95% CI 1.23–2.84). In exclusionist countries, perceived discrimination was associated with poor self-perceived health among women.
Levecque, K.(2014)	Depression	Natives and second-generation migrants do not differ significantly in their risk profile for depression. First-generation migrants show higher levels of depression, with those born outside of Europe to be the worst off. This higher risk for depression is not attributable to ethnic minority status but is mainly due to experienced barriers to socioeconomic integration and processes of discrimination. A country's national policy on migrant integration shows not to soften the depressing effect of being a first generation migrant nor does it have indirect beneficial health effects by reducing barriers to integration.
Studies analizing indicators from at least two dimensions of social exclusion at once		
Rivera, B. (2015)	Mental health	Immigrants who reside less than 10 years in Spain appear to be in a better state of mental health than that observed for the national population. The level of mental health declines for immigrants who have spent more than 10 years in Spain. Studying health disparities

		in the foreign population and its evolution is relevant to ensure the population's access to health services and care. Individual perceived the social support has a positive relationship with the mental health indicator. There are better levels of mental health among those who are married and have a work contract in the host country.
Gotsens, M., Malmusi, D. (2015)	-Fair/poor self-rated health -poor mental health -chronic activity limitation -use of psychotropic drugs	Inequalities in poor self-rated health between immigrants and natives tend to increase among women (age-adjusted PR2006 = 1.39; 95% CI: 1.24–1.56, PR2012 = 1.56; 95% CI: 1.33–1.82). Among men, there is a new onset of inequalities in poor mental health (PR2006 = 1.10; 95% CI: 0.86–1.40, PR2012 = 1.34; 95% CI: 1.06–1.69) and an equalization of the previously lower use of psychotropic drugs (PR2006 = 0.22; 95% CI: 0.11–0.43, PR2012 = 1.20; 95% CI: 0.73–2.01).
Rodriguez-Álvarez, E. (2014)	Poor self-perceived health	Immigrants had poorer perceived health than natives in the Basque Country, regardless of age. These differences could be explained by the lower educational level (primary education: OR 2,20; 95%CI 1,56-3,09, secondary education: OR1,49; 95% CI 1,10-2,03), worse employment status (unemployment: OR 1,50; 95%CI 1,20-1,88), lower social support (OR 3,86; 95%CI 2,82-5,29), and perceived discrimination among immigrants (OR 3,77; 95% CI 1,78-7,95), both in men and women. After adjustment for all the variables, health status was better among men from China (OR 0.18;95% CI 0.04-0.91) and Maghreb (OR 0.26; 95% CI 0.08-0.91) and Latin American women (OR 0.36; 95% CI 0.14-0.92) than in the native population.
Gil-González, D. (2014)	-Poor mental health -Use of psychotropics	Health problems attributable to racism through the population attributable proportion (PAP). Immigrants perceived more racism than Spaniards in the workplace (ORM = 48.1; 95 % CI 28.2–82.2) and receiving health care (ORW = 48.3; 95 % CI 24.7–94.4). Racism and other forms of discrimination were associated with poor mental health (ORM = 5.6; 95 % CI 3.9–8.2; ORW = 7.3; 95 % CI 4.1–13.0) and injury (ORW = 30.6; 95 % CI 13.6–68.7). It is attributed to perceived racism the 80.1 % of consumption of psychotropics (M), and to racism with other forms of discrimination the 52.3 % of cases of injury (W). Racism plays a role as a health determinant. For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism.

Table 3. Studies analyzing indicators related to social exclusion dimensions and their associations with immigrant's health in Europe

The Economic Dimension of Social Exclusion							
First Author and year	**Aim**	**Design and Data**	**Sample Size and Study Population**	**Independent Variables related SDH and SE Dimensions**	**Outcome Variables**	**Analyses and measures**	**Conclusions**
Loi, S. (2019)	To examine how material deprivation, a measure of relative disadvantage that includes elements of SES and social exclusion, interacts with duration of stay to affect immigrants' health convergence.	A cross-sectional study based on the Italian module of the European Statistics on Income and Living Conditions (2009)	Immigrant and Native Populations Italy	-Immigrant status -Duration of stay (based on the year of immigration, and coded in 5-year groups (0–4, 5–9, 10–14, or 15+ years) -Material deprivation Controlers: age, age (18–34; 35–49; 50–64), gender, marital status, education, and Italian area of residence (North, Centre, South/Islands)	1) Global Activity Limitation Indicator (2) Self-reported Chronic Morbidity (3) Self-Rated Health (SRH).	Multivariate logistic regression and interactions	The paper contributes to a better understanding of the role of social exclusion – measured as material deprivation – on the immigrant–native health convergence.
Heggebø, K.(2017)	To examine whether immigrants and descendants with ill health are particularly prone to unemployment during an economic downturn in Europe.	A cross-sectional study based on The European Union Statistics on Income and Living Conditions (EU-SILC) 2011.	Immigrant Population (The EU) The sample size varies from 2736 (Norway) to 21,237 (Italy), but is typically around 4–7000 in each country.	-Chronic illness -Self-perceived health -Immigrant status (born-country and descendant from a foreign-born mother) -Age, education level, being married, gender.	-Unemployment	Ordinary least square (OLS) regression analysis.	Both minority status and ill health are associated with high unemployment probability in Europe. However, there does not seem to exist a 'double disadvantage' for immigrants and descendants with ill health, which is in line with a human capital perspective on how employers evaluate potential employees. Both a non-native-sounding name and bad health status are interpreted as a risk factor, but there is no reason to expect ill health to lower the productivity level more if the applicant is a descendant or immigrant.

Petrelli, A. (2017)	To investigate variation of self-perceived health status in Italians and immigrants during the economic global crisis, focusing on demographic and socioeconomic factors	A cross-sectional design based on the national sample of multipurpose surveys "Health conditions and use of health services" (2005 and 2013) conducted by the Italian National Institute of Statistics (ISTAT).	Immigrant and Native populations Italy People aged between 18 and 64 (in 2013 n = 72.476 and in 2005 n = 80.661), which represents a population of 37,290,440 people resident in Italy (33,900,000 Italians and 3,390,440 immigrants) in 2013, and of 36,852,745 (35,040,000 Italians and 1,812,745 immigrants) in 2005.	-Immigrant Status (Foreigner/Native) -age group (18–34, 35–49, 50–64), level of education (high, medium, low), employment (yes/not), self-perceived economic resources (excellent/adequate, scarce/insufficient), smoking habits (never smoked, former smoker, smoker), body mass index (normal weight, underweight, overweight/obese).	-Self-perception health (based on a Physical and Mental Health Index)	Log-binomial regression models. Prevalence rate ratios (PR).	The findings support the hypothesis that economic global crisis could have negatively affected health status, particularly mental health, of Italians and immigrants. Furthermore, results suggest socioeconomic inequalities increase, in economic resources availability dimension. In a context of public health resources' limitation due to financial crisis, policy decision makers and health service managers must face the challenge of equity in health.
Leopold, L. (2017)	The study asks whether immigrants suffer more from unemployment than German natives.	Study based on longitudinal data from the German Socio-Economic Panel Study (1990-2014).	Immigrant and Native Populations Germany N = 34,767 persons aged 20 to 64; N = 210,930 person-years).	-Unemployment (more than a year) -Pre-unemployment characteristics -Immigrant Status -Traditional gender roles (house labour, provider) -Homeownership -Household income, size of the living unit, quality of housing.	-Subjective well-being	Fixed-effects models to trace within-person change in subjective well-being across the transition from	Immigrants in Germany suffer more from unemployment than German natives. Findings direct attention to immigrant men as a particularly vulnerable group. Future research is needed to explore whether, and to what extent, the effects of job loss among immigrant men extend to other outcomes, and to other individuals.

				-Marital status, religioness Control variables: age, an indicator of periodic changes in well-being associated with economic downturns .		employment into unemployment and over several years of continued unemployment.	
Teixeira, A. (2016)	The study aims at examining how factors relating to immigrants' experience in the host country affect psychological distress (PD). Specifically, the study analyzed the association among socio-economic status (SES), integration in the labor market, specific immigration experience characteristics, and PD in a multiethnic sample of immigrant individuals residing in Lisbon, Portugal	A cross-sectional study based on a healthcare-seeking patterns survey among the immigrant population in Portugal (2009).	Immigrant Population Portugal A sample (n = 1375) consisting of all main immigrant groups residing in Portugal's metropolitan area of Lisbon,	-demographic characteristics: age, gender, region of origin (control variables). - socio-economic status (educational attainment, sufficient income). -labor market variables (having stable employment and employment status). -immigrant experience (number of children, live with a partner or family, length of residence (0 to 2 years, from 3 to 10 years, from 11 to 20 years, and more than 20 years), and irregular migrant status. -health variables : perceptions and experiences accessing healthcare services (language barriers, discrimination, lack of intercultural competences of health providers).	- Psychological distress. It was measured asking the respondents if they usually felt physically tired (F1), psychologically tired (F2), happy (F3), anxious (F4), full of energy (F5) or lonely (F6), since residing in Portugal.	Multivariable linear regression models	The study findings emphasized the importance of labor market integration and access to good quality jobs for immigrants'psychological well-being, as well as the existence of family ties in the host country, intention to reside long term in the host country, and high subjective (physical) health.

Benach, J. (2015)	To show the prevalence of precarious employment in Catalonia (Spain) for the first time and its association with mental and self-rated health, measured with a multidimensional scale.	A cross-sectional study was conducted using data from the II Catalan Working Conditions Survey (2010).	Immigrant and Native Populations Spain 969 salaried workers (746 Spanish workers and 223 foreign-born workers). Aged > 16 and who had worked at least one hour in the previous week.	-Nationality Precariousness employment (Four dimensions: temporality, salary, vulnerability, and exercise of rights)	Self-perceived health Mental health	*Analysis stratified by sex - Regression log-binomial models. Prevalence Ratios PRa and CI95%.	Precarious employment is associated with poor health in the working population. Working conditions surveys should include questions on precarious employment and health indicators, which would allow monitoring and subsequent analyses of health inequalities.
Cayuela, A (2015)	To examine differences between workers related to migrant status, self-perceived and mental health, and to assess their relationship to occupational conditions, educational level, and occupational social class, stratified by sex.	Cross-sectional study. Data from the Spanish National Health Survey (2011/12) was used.	Immigrant and Native Populations Spain 7880 natives and 711 immigrants from low-income countries and residing in Spain for eight years or more.	-Main independent variable: Migratory Status (based on country of birth and length of stay) -Occupational conditions (work related stress, job satisfaction, physical demands, employment conditions) -Educational level, occupational social class based, age.	-self-perceived health -mental health	*Analysis stratified by sex Multivariate logistic regression to estimate ORs (crude and adjusted). Explained Fractions to estimate the influence of each variable and all variables	Migrant status is related to health inequalities among workers but only for women. Settled working immigrant women in Spain face important health inequalities related to self-perceived health and mental health. They are a vulnerable group and are possibly unprotected on questions of working rights. Other occupational and working life factors should be studied further.

						together using the equation EF = [(ORa-1) - (ORb-1)]/(ORa-1)].	
Robert, G. (2014)	To evaluate the influence of changes in employment conditions on the incidence of the poor mental health of immigrant workers in Spain, after a period of 3 years, in the context of economic crisis.	Follow-up survey conducted at two-time points, 2008 and 2011.	Immigrant Population Spain 318 workers in 2008 and 214 in 2011. From Colombia, Ecuador, Morocco, and Romania residing in Spain. Aged < 45 years in 2008.	Legal situation, Acquisition of Spanish nationality, employment contract, social security registration, employment status, working weekly hours, days off, Monthly job net income (in euros)	Mental Health	Separate logistic regression models for each employment path,. aOR, CI95%.	There was an increase in poor mental health among immigrant workers who experienced deterioration in their employment
Dunlavy, A. (2013)	to: (1) describe the distribution of adverse psychosocial and physical working conditions among native and foreign background workers in Sweden; (2) analyze the risk for poor health outcomes among foreign background	A cross-sectional study using data from the 2010 wave of the Swedish Level of Living Survey (LNU) and the Level of Living Survey for Foreign Born Persons and their Children	Immigrant Population Sweden Currently employed adults aged 18–65 (n= 4201).	-Migrant background: Western European, Eastern European, Latin-American, other Non-Western (Asian, African), native background. -Working Conditions :Psychological working conditions (demands and decisions) - Age, sex, occupational class and civil status	-Self-perceived health -Mental distress	Regression models to estimate odds ratios (OR) Explained Fractions were also calculated.	Although adverse working conditions only minimally influenced the excess risk for poor self-rated health and mental distress found among some groups of foreign born workers, the reduction of health inequalities and improvement of working conditions among foreign background populations should remain public health priorities.

	workers compared to that of native workers; and (3) determine if exposure to adverse working conditions may influence associations between health and foreign background status.						
Ronda, E. (2013)	To describe self-reported working exposure in Spanish and foreign-born workers.	A cross-sectional study using data from the ITSAL Project Survey 2008.	Immigrant Population Spain 1,841 foreign-born and 509 Spanish workers from Barcelona, Huelva, Madrid, and Valencia. Aged 20-40 years.	-Main explanatory variable: Migrant status (foreign-born-Spanish-born) -Socio-demographics: Occupation, sex, age, the highest level of education.	-Self-reported working exposure to risks.	*Analysis stratified by sex Multivariate logistic Analysis, aOR, and CI95%.	There is a need to collect occupational health data from migrant workers based on sufficiently large samples of both men and women in working conditions surveys. Some groups of migrant workers may need increased protection regarding some occupational exposures.
Aichberger, M. (2012)	To examine the association of socioeconomic status (SES) and emotional distress in women of Turkish descent and in women of German descent.	A cross-sectional survey study.	Immigrant Population Germany A total of 405 women of German or Turkish descent residing in Berlin	-Unemployment -Socioeconomic Position (level of education, employment status, and income) -	-Emotional distress (Scale)	Multivariate linear regression analyses.	The impact of socioeconomic hardship appears to be complicated by social roles and expectations related to these. Further in-depth study of the complex nature of the interaction of social roles and socioeconomic position in female Turkish immigrants in Germany is needed to better understand differing risk patterns for emotional distress
Solé, M.	To estimate the	Cross-sectional	Immigrant	Working conditions:	Permanent	Probit model,	Working conditions have a strong

(2010)	impact of the working conditions in the probability of acquiring a permanent disability between immigrants and natives in Spain.	study. Continues sample of the 2006 Working lives of the Social Security Survey in Spain.	Population Spain 37,880 immigrants and 681,078 native-born Spanish. 18-65 years.	-Temporary contract, self-employed, Low-skilled job, Years since the first enrolment in the Social Security system, unemployment. -Country of birth, age, gender, educational level,	disability Illness, injuries	Xβ mean.	effect on health, similar to that of other variables, such as education. While immigrants are less likely to suffer a disability than native-born workers, these differences are diluted the longer they stay in Spain. A labor market that relegates immigrants to the riskier jobs can be expected to translate into future health inequalities.
Sousa, E. (2010)	To analyse the relationship of legal status and employment conditions with health indicators in foreign-born and Spanish-born workers in Spain	Cross-sectional study, using data collected between 2008 to 2009 as part of the ITSAL Project (Immigration, work, and health Project)	Immigrant Population Spain 1,849 foreign-born (from Morocco, Ecuador, Romania, and Colombia), and 509 Spanish-born workers. Aged < 40 .	-Legal status/ working situation (Work Permission and type of contract) Adjusting variables: --Employment Conditions (type of contract) -Sex, age, the level of education, a sector of economic activity, monthly income.	-Self-perceived health -Mental Health	* Stratified by sex and length of stay. Logistical regression models to obtain ORa, and IC95%.	Contract type is a health determinant in both foreign-born and Spanish-born workers. This study offers an uncommon exploration of undocumented migration.
Malmusi, D. 2010)	To test empirically the relevance of migrant type classification and to explore the intersections of migration type with gender and social class in the analysis of social inequalities in health status in Catalonia.	Cross-sectional study Data from the Living Conditions Survey, LCS of Catalonia(2006) , and the Health Interview Survey, HIS of Catalonia (2006).	Immigrant and Native Populations Spain 10,408 individuals in the HIS (5086 women and 5322 men and 7107 in the LCS) (3510 women and 3597 men) and aged 25-64.	-Social Class -Migration Type (Place of birth, Length of residence) -Age -Social Class -Material conditions -Employment conditions	-Self-assessment of general health	*Analysis stratified by sex Binomial Logistic Regression to obtain ORs and IC 95%.	Social class and gender inequalities were evident in both health and socio-economic conditions and within both the native and immigrant subgroups. They were mainly limited to those from poor areas, were consistent with their socio-economic deprivation, and apparently more pronounced in manual social classes and especially for women.

Agudelo-Suarez. A. (2009)	To describe the migratory process and health characteristics of the immigrants with work experience in Spain.	Cross-sectional study based on the ITSAL Project Survey 2008.	Immigrant Population Spain 2434 workers (57.4% men) from Colombia, Ecuador, Morocco, and Romania	Migratory process (reasons for migrating, time of residence), legal status and the personal working conditions, health profile, and work and life expectations.	-Self-perceived health (before and after migration) -Absenteeism because of health problems - Work related injuries - Mental Health	Analysis Stratified by Country of origin, legal status, and sex. Chi2	The immigrant workers included in this study had limited opportunities for work and Experienced precarious conditions and social vulnerability. The data varied by country of origin. The special needs of this collective should be taken into account to establish public health policies and strategies
Borrell, C. (2008)	To examine the role of social class and its mediating pathways (i.e., work organization, material deprivation at home and household labor) in the association between migration status and health, as well as whether these associations were modified by social class or gender.	Cross-sectional study The study used data from the 2000 Barcelona Health Interview Survey.	Immigrant and Native Populations Spain 2342 Men (Catalonia 1696, Rest of Spain 565, Foreigners 81) and 1872 Women (Catalonia 1410, Rest of Spain 381, Foreigners 81)	-Migration status -Social class -Work organization (e.g. work arrangement, work environment) -Material deprivation at home (heating, dishwashing machine, someone hired for household labor, and elevator) -Household labour	-Poor Self-reported health status	*Analysis stratified by sex Multiple logistic regression models. ORa,CI95%.	This study has shown that the pattern of perceived health status among immigrant populations varies according to gender and social class. These results have to be taken into account when developing policies addressed at the immigrant population.
Social Dimension of Social Exclusion							

Bennet, L. (2018)	To study self-rated health in relation to social capital, socioeconomic status, lifestyle and comorbidity in immigrants from Iraq and to compare it with the self-rated health of native Swedes.	The study was a cross-sectional population-based study conducted from 2010 to 2012 among citizens of Malmö, Sweden.	Immigrant and Native Populations Sweden 1348 Iraqis and 677 Swedes aged 30–65 years and born in Iraq or Sweden.	- Social Capital: social participation, social anchorage, emotional support, instrumental support. - Education level (high school or less, above high school). - Economic difficulties -Physical activity -Tobacco and alcohol use -Depression -Body mass index -Diabetes -Swedish language knowledge	- Poor self-rated health	Linear and Logistic Regression: OR (IC95%)	Although public health initiatives promoting social capital, socioeconomic status and comorbidity in immigrants are crucial, the excess risk of poor self-rated health in Iraqi women is not fully attributed to known risk factors for self-rated health, but remains to be further explored.
Johnson (2017)	To investigate the following hypotheses: 1) if non-refugees have better mental health than Swedish-born, and refugees experience worse mental health than Swedish-born; 2) if mental health status converges with that of Swedish-born with longer duration of residence; and 3) if social capital mediates the	Cross-sectional study uses baseline data from the Stockholm Public Health Cohort.	Immigrant and Native Populations Sweden 50,498 randomly-selected individuals from Stockholm County in 2002, 2006, and 2010.	-Bonding, bridging, and linking social capital -Sociodemographics	-Psychological distress, using the 12-item General Health Questionnaire.	Logistic Regression (OR, CI95%) and Sobel test .	Social capital explains differences in mental health for some immigrant groups, highlighting its role as a potentially important post-migration factor. Increased investment from policy-makers regarding how social capital can be promoted among new arrivals may be important for preventing psychological distress.

	effect of immigrant status on psychological distress for different immigrant groups as compared to Swedish-born.						
Stoyanova, A. (2013)	To explore the ways, social relations contribute to health differences between the immigrants and the native-born population of Spain. We also try to reveal differences in the nature of the social networks of foreign-born, as compared to that of the native-born persons.	Individual-level data are coming from the 2006 Spanish Health Survey. Collective indicators come from other official sources in particular from the Spanish National Survey of Immigrants 2007 and the Spanish World Values Survey for 1995, 2000 and 2005	Immigrant and Native Populations Spain 2006 Spanish Health Survey (26,607 Spanish-born and 2,309 immigrant residents aged 16 and over)	Individual characteristics: -Socio-demographic characteristics (household income, age, gender, education, employment status and social class) -health-related behaviors (body mass index, alcohol consumption, smoking behavior and physical activity. -Individual-level social capital:(Possibility to talk with someone about problems, perceived affection, individual's social interaction with family, and friends) -Community level Social Capital (Social trust, social norms, individual's associational activities).	-Auto-perceived health status (GHQ-12) -auto-perceived mental health	Principal component analysis	The results obtained so far point to the relevance of social capital as a Covariate in the health equation, although, the significance varies according to the specific health indicator used. Additionally, and contrary to what is expected, immigrants' social networks seem to be inferior to those of the native-born population in many aspects; and they also affect immigrant's health to a lesser extent. Policy implications of the findings are discussed.
Salinero-Fort, M. (2012)	To compare self-reported health status between Spanish-born and Latin American-born residents,	A cross-sectional study using data from a survey in 15 urban primary health care centers, data	Immigrant and Native Populations Spain 691 Latin American-born, and 903	-Socio-demographic variables (country of birth, age, gender, marital status, occupational status, and monthly income) -psychosocial covariates (social support and stress). -Length of stay	Self-reported health between Spanish-born and Latin American-born.	Logistic regression model to obtain Prevalence Ratios and IC 95%.	Better self-reported health status is associated with being Spanish-born, men, under 34 years old, having an upper middle socioeconomic status, adequate social support, and low stress. Additionally, the length of residence in the host country is seen

	adjusted by the length of residence in the host country; and additionally, to analyze sociodemographic and psychosocial variables associated with a better health status.	collected from 2007 to 2009. .	Spanish-born individuals in in Madrid (Spain).				as a related factor in the self-reported health status of immigrants.
Rodríguez-Alvarez, E.(2009)	To analyze the effect of birth place, migrant status and the modulatory role of social support on health-related quality of life (HRQoL) and the presence of anxiety/depression symptoms.	Cross-sectional study. Data collected in Morocco, and in the Basque Country from the Health Survey in the Basque Country 2002.	Immigrant and Native Populations Spain 2,776 persons: 1,239 Moroccans in Morocco, 149 Moroccans in the Basque Country (Spain) and 1,388 autochthonous individuals. Aged 16-54.	-Social Capital (Duke Scale) - Sex -Age -Educational level	-Health-Related Quality of Life (HRQoL) -Anxiety/ Depression symptoms	Logistic regression to estimate the predictors of HQOL. Hosmer and Lemeshow test-.	Some health indicators are more favorable in Moroccans in the Basque Country than in those living in Morocco, but the frequency of anxiety/depression is higher in Moroccan immigrants. The key factor to understanding social inequalities in health among Moroccan immigrants is social support. Strategies to maintain optimal health in these immigrant collectives should include public policies of social inclusion.
The Cultural Dimension Factors of Social Exclusion							
Rodriguez-Alvarez, E. (2017)	To examine the effect of perceived discrimination and self-rated health among the immigrant	Cross-sectional study based on data from the 2014 Foreign Immigrant Population Survey of the	Immigrant and Native Populations Spain 3456 immigrants	- perceived discrimination -region of origin (Europe, Africa, Latin America and Asia), -age (18-24, 25-34, 35-49, >49 years), -gender -educational attainment (primary or less, secondary and graduate	- self-rated health	Log-binomial regression, PR.	Perceived discrimination shows a consistent relationship with perceived health. Moreover, this association did not depend on the region of origin, age, sex or educational level of immigrants. These results show the need for

	population in the Basque Country, Spain, and determine whether this effect varies according to region of origin, age, sex and education.	Basque Country, Spain.	aged 18 and older residing in the Basque Country.	or higher) - employment status (employed, unemployed and others) -administrative situation (permanent resident, non-permanent resident and irregular resident), -length of stay in the Basque Country (<5, 5-10, >10 years).			implementing inclusive policies to eliminate individual and institutional discrimination and reduce health inequalities between the immigrant and native populations.
Schunck, R. (2015)	To examine pathways between perceived discrimination and health among immigrants in Germany: (1) whether perceptions of discrimination predict self reported mental and physical health (SF-12), or (2) whether poor mental and physical health predict perceptions of discrimination, and (3) whether discrimination affects physical	Cross-sectional study based on data on immigrants come from the German Socio-Economic Panel (SOEP) from the years 2002 to 2010	Immigrant and Native Populations Germany (N = 8,307), a large national panel survey-Aged >17 years.	-Immigrant Status -Perceived discrimination -Socioeconomic position and socio-demographics	-Health measured by SF-12 (Physical and Mental Health)	Random effects (random intercept) and fixed effects regression models have been computed.	In spite of anti-discrimination laws, the health of immigrants in Germany is negatively affected by perceived discrimination. Differential exposure to perceived discrimination may be seen as a mechanism contributing to the emergence of health inequalities in Germany

	health via mental health.						
Gil-González, D. (2014)	(1) To study the prevalence and probability of perceived racism and other forms of discrimination on the immigrant and Spanish populations within different public spheres; (2) to show the effect of perceived racism and other forms of discrimination on the health of the migrant population residing in Spain.	Cross-sectional study using data from the Spanish Health Interview Survey (SHIS) (2006)	Immigrant and Native Populations Spain 29,476 individuals i> 16 years	-Exposure to racism (Perceived racism) -Exposure to other types of discrimination (based on sex social class, religion, and sexual orientation) -Explicative variables: Age, Employment Status Marital Status, Level of education, Country of Origin, Social Class, Social Support.	-Self-perceived health -Mental Health -Hypertension -Consumption of antidepressants and stimulants -Having had an injury -Unmet need for medical care -Smoking status	*Analysis Stratified by sex The Breslow-day Homogeneity of Risks test. a p-value of 0.014. Multivariate logistic regression analyses, aOR, and CI95%. Health-related problems attributable to perceived racism was calculated using the attributable population proportion (PAP) expressed in percentages.	For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism. Racism affects men's health, while racism with other forms of discrimination affects women's health. Half of the reported cases of poor mental health in foreign men are attributed to racism, while most cases of injury in foreign women are attributed to racism together with other forms of discrimination.
Sevillano, V.(2014)	To compare subjective mental and physical health among native Spaniards and immigrant	Cross-sectional study based on data collected between 2009 - 2010 in the Autonomous	Immigrant and Native Populations Spain 1250 foreign-born	-Ethnicity (Country of birth) -Personal Discrimination status -Length of residence -Sociodemographic variables: Age, Income level, Educational level, Type of occupation, Marital status, Legal, mental status.	-Health-related quality of life (Physical health and Mental health)	*Analysis Stratified by sex Hierarchical regression model	Clear differences in health status among natives and immigrants were recorded. The self-selection hypothesis was plausible for physical health of Colombians and Sub-Saharan African men. Acculturation stress could explain poorer mental

	groups, and examine the effects of ethnicity and perceived discrimination (PD) on subjective health in immigrants	Region of the Basque Country of Spain (CAPV)	immigrants, (948 men and 749 women) from Colombia, Bolivia, Romania, Morocco, and Sub-Saharan Africa, and 500 native residents in the CAPV, aged 18 to 65.	Socio-economic status			health in immigrants compared with natives. The association between ethnicity and poor self-reported mental health appears to be partially mediated by discrimination.
Agudelo-Suarez,A. (2011)	To analyse the relationship between immigrants' perceived discrimination and various self-reported health indicators.	Cross-sectional study based on the ITSAL Project Survey 2008 .	Immigrant and Native Populations Spain 2434 workers (57.4% men) from Colombia, Ecuador, Morocco and Romania	-Perceived discrimination due to immigrant status, due to physical appearance, and related to the workplace. -age, educational level, country of birth, length of stay, residence permit, work permit, and self-perceived health status prior to migrate (change or worsening health)	-Self-rated health health (from SRH at country of birth and in Spain) -Mental health	Logistical regression to estimate aOR and CI95%. Population attributable proportion (PAP) in percentages.	Discrimination may constitute a risk factor for health in immigrant workers in Spain and could explain some health inequalities among immigrant populations in Spanish society.

Table14. . Main Results: Studies on The Independent Associations between Social Exclusion Dimensions and Health among immigrants in Europe		
The Economic Dimension of Social Exclusion		
First Autor	**Outcome Variables**	**Results**
Loi, S. (2019)	Self-rated health, chronic morbidity,	Convergence is most dramatic for self-rated health, but the pattern is also reflected in chronic morbidity and activity limitations. The health of immigrants who live in conditions of material deprivation is more similar to natives' health at shorter durations of stay, compared to their not-deprived counterparts.
Heggebø, K.(2017)	Ill-health	The results indicate – as expected – that both ill health and minority status are independently related to higher unemployment likelihood. Immigrants and descendants with ill health, however, are not particularly likely to be unemployed. This finding is robust to a number of sensitivity tests, and the empirical pattern is very similar across the 18 included countries
Petrelli, A. (2017)	Physical Health (PCS) Mental Health (MCS)	Compared with 2005 we observed in 2013 among Italians a significant lower probability of worse PCS (PRR = 0.96 both for males and females), while no differences were observed among immigrants; a higher probability of worse MCS was observed, particularly among men (Italians: PRR = 1.26;95%CI:1.22–1.29; immigrants: PRR = 1.19;95%CI:1.03–1.38). Self-perceived scarce/insufficient economic resources were strongly and significantly associated with worse PCS and MCS for all subgroups. Lower educational level was strongly associated with worse PCS in Italians and slightly associated with worse MCS for all subgroups. Being not employed was associated with worse health status, especially mental health among men.
Leopold, L. (2017)	Subjective well-being	immigrants' average declines in subjective well-being exceeded those of natives. Further analyses revealed gender interactions. Among women, declines were smaller and similar among immigrants and natives. Among men, declines were larger and differed between immigrants and natives. Immigrant men showed the largest declines, amounting to one standard deviation of within-person change over time in subjective well-being. Normative, social, and economic factors did not explain these disproportionate declines.
Teixeira, A. (2016)	Psychological distress (PD)	Variables associated with a decrease in PD are being a male (demographic), being satisfied with their income level (SES), living with the core family and having higher number of children, social isolation, planning to remain for longer periods of time in Portugal (migration project), and whether respondents considered themselves to be in good health condition (subjective health status). Study variables negatively associated with immigrants' PD were job insecurity (labor market), and the perception that health professionals were not willing to understand immigrants during a clinical interaction.
Benach, J. (2015)	Precariousness	High prevalence of precarity of work among the study population (42,6%), higher for women (51,4%) than men (34,1%). They found higher precariousness in youth, immigrants, and manual and less educated workers.
	Poor mental health	In the last quartile of association , mental health is 3 times higher than in the first quartile (RPa: 3,21, IC95%: 2,08-4,95, for men ; RPa: 3,45, IC95%: 2,11-5,65, for women).
	Self-Perceived health	The association is higher in men with differences between the higher quartile (RPa: 2,69, IC95%:1,62-4,49, in men ; RPa: 2,14,

		IC95%: 1,34-3,43, in women).
Cayuela, A. (2015)	Descriptives	For women, a higher proportion of Natives (31.9 %) reported university studies than immigrants (12.9 %), and a smaller proportion of natives reported low education (7.4 %) than immigrants (13.1 %). Regarding occupational social class, 74.7 % of immigrant men and 82 % of immigrant women were manual workers. Immigrants reported more exposure to physical demands (38.3 vs. 24.3 % men; 31.3 vs. 13.7 % women) and higher prevalence of temporary, verbal or no contract than natives. Settled immigrant women have a higher prevalence of poor self-perceived health (34.6 %) and poor mental health (30.1 %) than native women (17.7 % in both health outcomes).
	Poor self-perceived health and Poor mental health	After adjusting for age, occupational social class and the low job the probability that immigrant women have poor self-perceived health was (OR 1.98 95 % CI 1.28, 3.06) and suffer from poor mental health (OR 1.82 95 % CI 1.22, 2.70) was higher than for native women. No statistical differences were found for men. The most influential factor in the relationship between health and migrant status for women workers was an occupational social class (25.0 % for poor self-perceived health and 17.6 % for mental health). Among occupational conditions, job satisfaction accounted for 15.8 % of the difference in self-perceived health. Both together have the highest Explanatory Fraction (Formula used: EF = [(ORa-1) - (ORb-1)]/(ORa-1)]).
Novoa, A. (2015)	Health status and Poor mental health	Foreign-born individuals made up a large proportion of both the DAS (93.7 %) and the HMS (57.9 %), the majority of which came from Central and South America. However, the legal situation of the immigrants differed between the two groups: 43.7 % of the DAS participants were undocumented immigrants compared to 2.1 % of the HMS sample. In Barcelona, people seeking Caritas's help and facing serious housing problems had a much poorer health status than the general population, even when compared to those belonging to the most deprived social classes. For example, 69.4 % of adult participants had poor mental health compared to 11.5 % male and 15.2 % female Barcelona residents. Moreover, housing conditions were associated with poor mental health. In men, they found that overcrowding was associated with better mental health, and hypothesized that it might be due to a social safety network to fall back on in difficult times. Such social support could lead to improved mental health.
Robert, G. (2014)	Poor mental health	There was an increased risk of poor mental health in workers who lost their jobs (OR = 3.62, 95%CI: 1.64–7.96), whose number of working hours increased (OR = 2.35, 95%CI: 1.02–5.44), whose monthly income decreased (OR = 2.75, 95%CI: 1.08–7.00) or who remained within the low-income bracket. This was also the case for people whose legal status (permission for working and residing in Spain) was temporary or permanent compared with those with Spanish nationality (OR = 3.32, 95%CI: 1.15–9.58) or illegal (OR = 17.34, 95%CI: 1.96–153.23). In contrast, a decreased risk was observed among those who attained their registration under Spanish Social Security system (OR = 0.10, 95%CI: 0.02–0.48).
Dunlavy, A. (2013)	Poor self-rated health	Eastern European (OR:95% IC 2.45 ;1.78–3.37) , Latin American OR:95% IC 1.44 ;1.01–2.06)and Other Non-Western workers OR:95% IC 1.79 ;1.33–2.42) had an increased risk of both poor self-rated health and mental distress compared to native Swedish workers. Exposure to adverse working conditions only minimally influenced the risk of poor health.
Ronda, E. (2013)	Descriptives	More than 80 % of all women worked in service sectors. Foreign-born men were employed mainly in manual jobs (75.4 %) Moreover, frequently held temporary contracts, while nearly 30 % of them had no contract. The prevalence of self-reported exposure to occupational health risks for foreign-born workers of both sexes was significantly higher than Spanish-born

		workers for working many hours standing up, working with extreme temperatures and working many hours/day, while foreign-born women also had a higher prevalence of working with cutting objects and heavy objects falling from above.
	Exposure to occupational risks	Foreign-born men in non-services sectors and those in manual occupations perceived exposure to occupational risks with lower prevalence than Spanish workers. Foreign-born women reported a higher prevalence of exposure than Spanish female workers. By occupation, foreign-born female workers were more likely than Spanish workers to report working many hours/day (aOR2.68; 95 % CI 1.06–6.78) and exposure to extreme temperatures (aOR2.19; 95 % CI 1.10–4.38).
Aichberger, M. (2012)	Emotional distress	Unemployment was associated with increased levels of emotional distress in all women, with the highest level of distress in the group of unemployed Turkish women. The overall SES level was related to a greater level of emotional distress in Turkish women, but not in German women (- 3.2, 95%CI - 5.9 – - .5; p=.020 vs. - .8, 95%CI - 2.7 – 1.2; p=.431). Further stratified analyses by relationship status revealed that the association of SES and emotional distress only remained signifi cant among single women.
Solé, M. (2010)	Permanent disability	The prevalence of disabled immigrants (2,41%) is lower tan among Natives (5,48%). However, the probability of permanent disability increases under the risky working condition and health risk. Mathematic models (B coefficient and standard error EE). Immigrants (B- 0,2690, EE 0,1483), affiliated to the Social Security > 7500 days (B -0,0495 EE 0,0043) Temporary employment and low-skilled jobs also have a positive impact. Increases in education reduce the likelihood of disability, even after controlling for the impact of education on the choice of (lower) risk. Females have a greater probability of becoming disabled.
Sousa, E. (2010)	Poor self-rated health	The highest prevalence (33.9%) observed among foreign-born documented females without contracts which had lived in Spain for more than three years. In recent immigrants (time in Spain <3 years) the prevalence was 19% among female foreign-born workers with temporary contracts.
Malmusi, D. (2010)	Poor self-assesed health	Women: Immigrants from Spain-Poor Regions: OR 1.48 (CI 1.19 e1.85) Men :Foreign-poor, long-term residence : O.R. 0.60 (CI 0.38 e0.95) Men: Foreign-poor, short-term residence : O.R. 0.45 (CI 0. 0.29 e0.71)
Agudelo-Suarez, A. (2009)	Poor health	90% percent of the sample was aged < 45 years and most had a secondary education (51%). Most of the people surveyed had migrated for economic and working reasons, and 63% had economic dependents. They were working in jobs that were below their educational level and reported problems concerning the type of contract, salaries, and the length of the working week, which was often more than 40 hours. The immigrants frequently reported general health problems (18%), mental health problems (27%), absence from work due to health problems (48%) and occupational injuries requiring medical care (23%). A 51% of them wanted to stay in Spain, and 48% reported that their expectations of emigration to Spain had been met.
Borrell, C. (2008)	Poor health status	Among 11.7% of men and 14.2% of women. This distribution varied by migration status; 8.8% of men being born in Catalonia, 15.0% born in the rest of Spain and 18.5% born abroad. For women these proportions were 10.6%, 27.0% and 16.0%, respectively. Temporary work was more common among women and particularly among foreign women (40.7%); the percentage of temporary workers was higher among women from the rest of Spain (24.1%) than among their male counterparts (6.9%). We found marked

		gender differences in household labor burden. Women from the rest of Spain declared that they did 21 hours per week. Among men, foreigners presented the poorest health status (fully adjusted odds ratios (OR) 2.16; 95% CI 1.14 to 4.10), whereas among women the poorest health status corresponded to those born in other regions of Spain. There was an interaction between migration and social class among women, with women owners, managers, supervisors or professionals born in other regions of Spain reporting a worse health status than the remaining groups (fully adjusted OR 3.60; 95% CI 1.83 to 7.07)
The Social Dimension of Social Exclusion		
Bennet, L(2018)	Poor-self rated health	Poor self-rated health was identified in 43.9% of Iraqis and 21.9% of native Swedes (p<0.001), with the highest prevalence (55.5%) among Iraqi women. Low social capital was highly prevalent in the immigrants. Female gender showed higher odds of poor self-rated health in Iraqis than in Swedes (OR 1.8, 95% CI 1.4–2.5, $p_{interaction}$=0.024), independent of other risk factors connected to social capital, socioeconomic status, lifestyle or comorbidity.
Johnson (2017)	Psychological distress	The results show that refugees generally had greater odds of psychological distress than non-refugees compared to their respective Swedish-born counterparts. Among immigrant men, both refugees and non-refugees had significantly greater odds of psychological distress than Swedish-born men. Only refugee women in Sweden 10 years or more had significantly greater odds of psychological distress compared to Swedish-born women. The mediation analysis demonstrated that indicators of social capital mediated the association for all immigrant men (except non-refugees in Sweden 3-9 years) and for refugee women in Sweden 10 years or more. While bonding social capital showed the greatest mediatory role among the three social capital types, adding them together had the strongest explanatory effect.
Stoyanova, A. (2013)	Mental health	For both groups, higher income reduces the risk of mental health. For natives age was not significant, while for immigrants the effect is U-shaped. Women are also more prone to mental health problems, though the effect is larger for immigrants. Education is significant only for natives, i.e. less-educated individuals are more likely to be at risk of mental disorder, while social class, approached as the occupation of the household head, has turned out to be not significant in both population groups. Over-weighted/ obese and smokers are more likely to be diagnosed a mental disorder for both immigrants and natives. However, alcohol consumption and a poor physical activity increase this probability only for Spanish-born residents. **All the factors collecting the effect of the individual social capital are statistically significant**, i.e. higher stocks of individual social capital reduce the probability of suffering any mental disorder. However, the associational activities report an unequivocal negative effect on the probability of mental sickness.
	Physical health	The associational activities exert a significant positive effect on the probability of reporting good health for Spanish-born residents.
Salinero-Fort, M. (2012)	Self-reported health	The Spanish-born participants reported a better health status than the Latin America-born participants (79.8%versus 69.3%, p,0.001). Stratified by gender data showed that Compared to men, women had poorer social support (14.8% versus 28.8%, p,0.001), were more frequently single (35.6% versus 43%, p = 0.005), not working (21.8% versus 15.4%, p = 0.046) and with incomes of under 500 euros (14% versus 7.6%, p = 0.006). Different patterns of self-reported health status were observed depending on the length of residence in the host country. The

		proportion of immigrants with a better health status is greater in those who have been in Spain for less than five years compared to those who have stayed longer. Better health status is significantly associated with being men, under 34 years old, being Spanish-born, having monthly incomes of over 1000 euros, and **having considerable social support and low stress**.
	Social support	Differences in perception of social support were found between the two groups analyzed. Spanish-born participants showed better global, emotional, instrumental, social interaction and affective support than Latin American-born participants. As to social network size, the group of Latin American-born participants reported having a smaller network size than those Spanish-born (6.1 and 8.9, respectively), showing a statistically significant difference (p = 0.001).
	Stress	Regarding the percentage of subjects with stress in the sample, Latin American-born participants reported significantly more stress (55.9%) than those Spanish-born (45.6%).
Rodríguez-Alvarez, E.(2009)	Health-Related Quality of Life (HRQoL)	Immigrant status, compared with living in Morocco, was a protective factor in practically all SF-36 dimensions but was also a risk factor for the development of anxiety/depression symptoms. Differences in HRQoL between Moroccans and the autochthonous population in the Basque Country were attenuated when variables of social support were included in the multivariate models. Low social support and dissatisfaction with social life increased the risk of low HRQoL scores and the presence of anxiety/ depression symptoms among Moroccans in the Basque Country
The Cultural Dimension Indicators of Social Exclusion		
Rodriguez-Alvarez, E.(2017)	Self-perceived health	Almost 1 in 10 immigrant adults reports perceiving discrimination. In adjusted analyses, the immigrants perceiving discrimination were almost were 1.92 more likely to rate their health as poor (prevalence ratio: 1.92; 95% CI: 1.44–2.56) than those who did not report discrimination. This association did not vary according to region of origin, age, sex or educational level.
Schunck, R.(2015)	Mental health and Physical health	Perceptions of discrimination affect mental and physical health. The effect of perceived discrimination on physical health is mediated by its effect on mental health. The analyses do not support the notion that mental and physical health predict the subsequent reporting of discrimination. Different immigrant groups are differentially exposed to perceived discrimination.
Gil-González, D. (2014)	-Poor mental health -Use of psychotropics	Health problems attributable to racism through the population attributable proportion (PAP). Immigrants perceived more racism than Spaniards in the workplace (ORM = 48.1; 95 % CI 28.2–82.2) and receiving health care (ORW = 48.3; 95 % CI 24.7–94.4). Racism and other forms of discrimination were associated with poor mental health (ORM = 5.6; 95 % CI 3.9–8.2; ORW = 7.3; 95 % CI 4.1–13.0) and injury (ORW = 30.6; 95 % CI 13.6–68.7). It is attributed to perceived racism the 80.1 % of consumption of psychotropics (M), and to racism with other forms of discrimination the 52.3 % of cases of injury (W). Racism plays a role as a health determinant. For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism.
Sevillano, C. (2014)	Physical health and Mental health	Male immigrants from Colombia and Sub-Saharan Africa showed better physical health than natives, controlling for age and socioeconomic and marital status. The immigrants except for the Colombians had poorer mental health than natives, especially African men and Bolivian women. Socioeconomic status had no impact on these differences. Among immigrants, PD was the best predictor of physical and mental health (controlling for socio-demographic variables). African men, Bolivian women, and women without legal status exhibited the poorest self-rated mental health.

Agudelo Suarez, A. (2011)	Poor self-perceived health	The majority (75.4%) of participants reported at least one type of discrimination. The most frequently reported category of perceived discrimination was due to immigrant status (72%). Workers reporting workplace-related discrimination were more likely to report self-perceived poor health (OR 1.93; 95% CI 1.54-2.42) Workplace related discrimination shows the strongest association with a decline in perceived health (OR 2.20 95% CI 1.73-2.80). Also, 40% of cases reporting worsening in self-perceived health were attributable to discrimination due to immigrant status, 37% of cases were attributable to perceived discrimination related to the workplace and finally 15% of cases were attributable to the perceived discrimination related to the physical appearance.
	Poor mental health	Workers reporting workplace related discrimination were more likely to report poor mental health (OR 2.97; 95% CI 2.45- 3.60). Furthermore, the population reporting discrimination due to immigrant status was more likely to report anxiety (OR 2.16; 95% CI 1.64- 2.83), and more likely to report insomnia (OR 2.15; 95% CI 1.61- 2.86).