Original Article

Institutions, Incorporation, and Inequality: The Case of Minority Health Inequalities in Europe

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Abstract

Scholars interested in the relationship between social context and health have recently turned attention further "upstream" to understand how political, social, and economic institutions shape the distribution of life chances across contexts. We compare minority health inequalities across 22 European countries ($N = 199,981$) to investigate how two such arrangements—welfare state effort and immigrant incorporation policies—influence the distribution of health and health inequalities. We examine two measures of health from seven waves of the European Social Survey. Results from a series of multilevel mixed-effects models show that minority health inequalities vary across contexts and persist after accounting for socioeconomic differences. Cross-level interaction results show that welfare state effort is associated with better health for all groups but is unrelated to levels of inequality between groups. In contrast, policies aimed at protecting minorities from discrimination correlate with smaller relative health inequalities.

Keywords

immigration, health inequalities, welfare state

Cross-national research has revealed that although social inequalities in health are present worldwide, the degree of health inequality varies across contexts. For instance, researchers have uncovered substantial between-country variation in the magnitude of the relationship between low socioeconomic status (SES) and high morbidity and mortality, as well as cross-national variation in gendered health patterns (Bambra et al. 2009; Doorslaer and Koolman 2004; Elo 2009; Huisman, Lenthe, and Mackenbach 2007; Kunst et al. 2005; Olafsdottir 2017). However, much less is known about the cross-national variability of health outcomes and health inequalities tied to ethnicity, race, or migration status. Although marginalized minority groups often experience earlier mortality and worse overall health relative to majority populations, researchers are only beginning to analyze how common or substantial this association is across groups and contexts (Blom, Huijts, and

Kraaykamp 2016; Levecque and Van Rossem 2015; Malmusi 2015). Large-scale comparison has proven difficult, in part because the boundary-making processes that define, separate, and stratify majority and minority groups differ across societies (Bail 2008; Lamont and Molnár 2002), making data collection and harmonization challenging (Aspinall 2007; Simon 2011).

Mapping variability in health inequalities is important because it allows scholars to shift theoretical focus to upstream factors, such as how macrolevel political, economic, and social conditions shape the

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distribution of more proximate determinants of health and illness (Beckfield and Krieger 2009; Beckfield, Olafsdottir, and Bakhtiari 2013; Olafsdottir and Beckfield 2011; Olafsdottir, Beckfield, and Bakhtiari 2013). This approach pushes the "cause of causes" (Link and Phelan 1995) investigation of health inequalities a step further by interrogating how social determinants and causes of disease are themselves shaped and distributed by broader institutional arrangements. Such institutions—shared ideas that are codified into law and enacted by institutional agents, often at the national level—set the "rules of the game" that organize the political economy and create "winners" and "losers" in social life (Beckfield et al. 2015).

The welfare state is arguably the most influential and important institutional arrangement when it comes to understanding the causes and consequences of social inequality. Health researchers have already paid considerable attention to how the politics and policies of the welfare state play a role in distributing both overall health and inequalities in health across contexts. Welfare state effort has been linked to better population health (Brennenstuhl, Quesnel-Vallée, and McDonough 2012; Chung and Muntaner 2006; Conley and Springer 2001; Lundberg et al. 2008), but research on the association between welfare state effort and health *inequalities* is less conclusive (Bambra and Eikemo 2009; Eikemo, Bambra, et al. 2008; Eikemo, Huisman, et al. 2008; Lundberg et al. 2015), with little attention paid to the relationship between welfare spending and inequalities based on minority status. Although minority groups are often overrepresented in the economically vulnerable populations that typically benefit from welfare effort, there is not enough evidence to conclude whether or how such policies affect the distribution of minority health outcomes.

Beyond the welfare state, it is likely that other institutional arrangements matter for the health patterns of minority groups, particularly, recent immigrants. Because many of the social rights of the welfare state are based on citizenship, it is important to consider the role of policies directed toward immigrant and minority protection and incorporation. Although immigrant or minority groups might be expected to benefit from public services and welfare state effort, restrictive policies may stratify access to such resources and contribute to a larger gradient between groups with and without access. Like welfare state polices, immigrant and minority incorporation policies set "rules of the game" for inclusion in society and distribute access to public and private resources. While this most explicitly occurs along lines of citizenship, such policies may more broadly represent symbolic and social boundaries between groups of citizens (Olafsdottir and Bakhtiari 2015). Cultural and political responses to rising rates of immigration in recent years have highlighted the importance of examining how societies define membership and structure access to public resources. Yet there has been little empirical work on the health consequences of policies related to immigrant or minority incorporation, although initial inquiries in this area suggest exclusionary approaches are associated with worse health outcomes (Bollini et al. 2009; Ikram et al. 2015; Malmusi 2015).

Building on cross-national research linking health and institutional arrangements for minority and immigrant populations (Blom et al. 2016; Ikram et al. 2015; Malmusi 2015), we compare health inequalities between majority and minority groups—measured using three indicators of immigration and minority status—across 22 countries using combined data from seven waves of the European Social Survey (ESS; 2002, 2004, 2006, 2008, 2010, 2012, and 2014). We combine these data with measures of immigration policy from the Migrant Integration Policy Index (MIPEX) and indicators of welfare state effort. We are interested in two related questions. First, how do health and health inequalities based on minority status vary across national contexts in Europe? Second, how are patterns of health and health inequalities shaped by institutions and policies related to welfare state effort and minority incorporation and protection?

BACKGROUND

Minority Health Inequalities across Contexts

Researchers have long been interested in the link between health outcomes and social inequality for ethnic- and racial-minority groups. In the United States, a large body of research has found persistent and pronounced health disparities between black and white populations for as long as records have been available, as well as between-group variation among the nonwhite population (Williams and Sternthal 2010). Although a large portion of the relationship is mediated by racial socioeconomic inequalities in the United States, health and mortality gaps persist at every level of SES, implicating mechanisms such as stress-induced physiological consequences of discrimination in addition to institutional barriers to resources and opportunities (Williams and Mohammed 2013). In this sense, race

or racial inequality has been identified as a "fundamental cause" of health inequalities that stratifies health through a "massive multiplicity" of more proximate linking mechanisms (Lutfey and Freese 2005; Phelan and Link 2015).

It is currently unclear whether similar relationships are generalizable to minority groups in other contexts or how much majority–minority health inequalities vary. Ethnic, racial, and cultural/religious minorities in many societies experience similar conditions that have been found to link racial inequality and poor health, including experiences of discrimination, SES barriers, and institutionalized segregation. However, large-scale comparisons of health inequalities tied to minority status have proven difficult, due to the challenges of disentangling the similarities and differences in social determinants between groups and across contexts. For example, there are some similarities in the relative social position of Muslims in Europe and the black population in the United States, yet there are crucial differences in the configuration of boundaries between the groups and the institutionalization of inequality in each context (Foner 2015).

The challenge of comparing minority health inequalities across contexts becomes more complicated when the population also includes a substantial proportion of international migrants. Numerous studies have found that recent immigrants tend to have better health and mortality outcomes than their native-born counterparts, in some cases despite disproportionately low SES (Antecol and Bedard 2006; Cho et al. 2004; Singh and Miller 2004). This phenomenon, sometimes referred to as the "healthy-immigrant effect" or the "immigrant health paradox," is often tied to selection of healthier individuals during the migration process and often declines or disappears altogether the longer an immigrant has been in the country and with subsequent generations (Ceballos and Palloni 2010; Frisbie, Cho, and Hummer 2001).

The combination of the two areas of research suggests that it is simultaneously possible that a minority group in a country may experience social conditions that are deleterious to its average health profile, while new immigrants of that same group may exhibit relatively good health outcomes. This divergent pattern may mask the link between social inequality and health outcomes in intergroup comparisons and make cross-national analysis difficult in countries with high rates of immigration, like many in Europe. We attempt to overcome these issues by considering multiple measures of minority

status and accounting for "acculturation" measures, such as citizenship status and language use.

The Welfare State and Health

Although the link between social determinants and health is well established, the degree of health inequality between groups is sensitive to upstream social conditions and varies across contexts. The politics and policies of the welfare state play a major role in shaping the stratification systems of societies. While early sociological work often focused on how welfare state support shapes labor market inequalities, the growing availability of cross-national health data has allowed researchers to ask more nuanced theoretical and empirical questions about how institutions, and the welfare state in particular, shape patterns of health and health inequalities (Bambra 2006; Beckfield and Krieger 2009; Olafsdottir 2007; Olafsdottir, Bakhtiari, and Barman 2014; Olafsdottir and Beckfield 2011).

As a mediator of market-based inequalities (Esping-Andersen 1990), the welfare state may directly affect health through government involvement in healthcare delivery. Moreover, the broader system of public support, beyond direct healthcare delivery, can shape underlying inequality levels and attenuate the general link between social position and health (Olafsdottir 2007). Theoretically, the welfare state acts as an institutional arrangement that sets the "rules of the game" that organize the political economy and distribute patterns of health and illness (Beckfield et al. 2015; Olafsdottir and Beckfield 2011).

Research on the effects of the welfare state on health has returned mixed results. As expected, evidence suggests that social policies and welfare state effort are beneficial to overall population health (Brennenstuhl et al. 2012; Chung and Muntaner 2006; Conley and Springer 2001; Karim, Eikemo, and Bambra 2010; Navarro et al. 2006). Social democratic regimes, with generous welfare policies and high levels of labor market decommodification, fare best when looking at aggregate levels of mortality, birth outcomes, or self-perceived health (Chung and Muntaner 2006; Lundberg et al. 2008). However, research on the association between welfare generosity and health inequalities is less conclusive (Mackenbach et al. 2008). The hypothesized relationship between lower health inequalities and greater welfare state support is often not found when looking at inequalities based on employment (Bambra and Eikemo 2009), social class (Eikemo,

Huisman, et al. 2008), and gender (Lahelma and Arber 1994; Olafsdottir 2017).

The relationship between welfare state effort and minority health inequalities is even less clear due to a lack of research and available data. Moreover, as immigration to Europe has increased in recent decades, some scholars have asked whether the changing demographic makeup of a nation weakens support for a strong and redistributive welfare state (Brady and Finnigan 2013; Mau and Burkhardt 2009). Questions of citizenship and formalized belonging have become more salient in determining who is entitled to potential benefits. It is also unclear to what extent minorities, and migrants in particular, are able to benefit from institutional sources of social support (Corrigan 2014). Research focusing on health spending has found that greater levels of health expenditures may actually amplify differences between natives and recent migrants, but policies aimed at improving migrants' health may be beneficial for established migrant groups (Blom et al. 2016).

Based on the existing literature, our *welfare state and health hypothesis* predicts that greater levels of spending on general welfare support and/or on health are associated with better overall health. In other words, we expect that migrating to or living in a stronger welfare state will benefit the health of everyone, including migrant and minority populations. As migrants and minority groups are frequently members of vulnerable populations meant to benefit from welfare state social spending, we are also interested in relative health differences between groups. Our *welfare state and health inequalities hypothesis* predicts that greater levels of spending on general welfare support and/or on health are associated with smaller health inequalities between majority and minority populations.

Incorporation and Health Inequalities

As immigration rates have risen in Europe, scholars have sought to understand variation in how societies respond to recent demographic changes and how these differences shape the life chances of minority groups, both new and established. Researchers have documented a general rise in antiforeigner sentiment and in support for right-wing political movements in Europe (Meuleman, Davidov, and Billiet 2009; Schneider 2008; Semyonov, Raijman, and Gorodzeisky 2006) while also noting variability in how markers of religion, ethnicity, nativity, race, or culture serve as the basis for out-group formation across contexts (Bail 2008; Lamont and Molnár

2002). Although citizenship policies have become somewhat similar across the European Union (Stalker 2002), a range of approaches to legally and culturally defining the criteria for belonging persists (Freeman 2004; Koopmans, Michalowski, and Waibel 2012).

These varying institutional approaches to immigrant and minority incorporation may distribute risk factors for disease and resources for maintaining health for some populations. For instance, policies that restrict access to citizenship can create a legal barrier that stratifies access to public services, including healthcare provision. However, much like the welfare state is capable of shaping a broad range of social conditions with consequences for health outcomes, the effects of incorporation policies are not limited to strict barriers to citizenship. The MIPEX dataset (Huddleston et al. 2015) identifies multiple policy arenas that characterize a country's approach to integration. Policies that provide access to education or facilitate labor market participation for immigrants and their children may have long-term effects on SES, with related health implications. Family reunification policies may shape consequential networks of social support. Policies that protect minority groups from discrimination may also be important for understanding the macro-level context of the link between discrimination, stress, and health outcomes.

Recent scholarship calls attention to the importance of state institutions and immigration policy configurations in shaping group boundaries (Bail 2008; Wimmer 2008), facilitating sociopolitical integration and economic success (Alba 2005; Alba and Foner 2014; Bloemraad 2006; Kesler 2006; Mollenkopf and Hochschild 2010), and influencing acculturation patterns (Wimmer and Soehl 2014). In the context of the welfare state literature, these policy configurations determine legal status that shapes access to state resources and support in a host country (Corrigan 2014; Sainsbury 2006).

Yet, the link between such variation in incorporation approaches and health outcomes is understudied. A recent analysis comparing countries grouped by an incorporation typology found that immigrants have worse health in exclusionist countries relative to multicultural and assimilationist regimes (Malmusi 2015). This association was also true of inequalities between immigrants and natives. A meta-analysis of research on birth outcomes found a similar association between positive outcomes and immigrant integration, using naturalization rates as a proxy for integration policies (Bollini et al. 2009). Research on mental health

outcomes using the MIPEX data set, our preferred measure of integration policy, found no association between aggregated integration scores and depression for first- and second-generation migrants (Levecque and Van Rossem 2015).

Our second set of macro variables includes indicators of immigrant integration and antidiscrimination policies as measures of institutionalized inclusiveness. Our *incorporation policy and health inequalities hypothesis* predicts that policy configurations that support incorporation will be associated with lower health inequalities between minority and majority groups.

DATA AND METHODS

Data

We used 22 countries from seven waves of the ESS (2002, 2004, 2006, 2008, 2010, 2012, and 2014) to examine health differences between minority groups and the native majority in Europe. The ESS (European Social Survey 2014) is a cross-national study that was initiated and seed-funded by the European Science Foundation, with the aim of comparing attitudes across European countries. Because the foreign-born population of some countries is a relatively small proportion of the overall population, we pooled the seven ESS rounds for larger samples of immigrants in each country.

Countries were dropped if data were missing for more than four ESS rounds or if data were unavailable at the macro level. The 22 countries we included are Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden, and Switzerland.

Measuring health. We used two indicators of health that have been found to be appropriate for comparative research and are common in studies using ESS data (Von dem Knesebeck, Verde, and Dragano 2006). The first dependent variable is a self-assessment of health. In general, self-assessed measures of health can be powerful predictors of mortality and morbidity (Idler and Benyamini 1997; Schnittker and Bacak 2014) and have been recommended as suitable for comparative research by the World Health Organization (de Bruin, Picavet, and Nossikov 1996). However, there is considerable debate about what, exactly, self-reported health represents and whether it is reliable for between-group comparisons (Quesnel-Vallée 2007). For instance, it

is important to note the likelihood of reporting differences by country and cultural context (Harzing 2006; Jorm and Ryan 2014; Jürges 2007; King et al. 2004) as well as between groups based on age, gender, SES, and ethnic or linguistic background (Bacak and Olafsdottir 2017; Dowd and Todd 2011; Huisman et al. 2007; Jylhä et al. 1998). Although self-assessments of health reflect both personal and shared subjective evaluations of disease, decompositions suggest objective health conditions are the primary influence on self-assessments of health (Hardy, Acciai, and Reyes 2014).

We dichotomized the original five-point response scale, with respondents reporting "fair," "bad," and "very bad" health recoded as 1, and "good" and "very good" coded as 0.[1] Previous research has found comparable results between dichotomized and ordinal analyses of self-rated health questions (Manor, Matthews, and Power 2000), and dichotomizing facilitates a more straightforward comparison across countries, relative to multinomial estimates, particularly when analyzing small subpopulations. In an attempt to account for the remaining variation, including differences in reporting styles and cultural interpretations of objective health measures (Hardy et al. 2014), we used mixed-effect multilevel models that controlled for country-specific clustering and unmeasured heterogeneity. We include a further discussion of both interpretations and limitations of self-assessed measures of health in the final section.

Our second dependent variable, functional limitations due to a health problem, was measured by the following question: "Are you hampered in your daily activities in any way by any longstanding sickness, or disability, infirmity, or mental health problem?" Responses were dichotomized with "yes, a lot" or "yes, to some extent" coded as 1 and compared with respondents having no functional limitations. The correlation coefficient for the two indicators is .51, indicating that they measure distinct dimensions of health.

Measuring minority status. We used three questions from the ESS to compare multiple measures of immigration status and ethnic and racial identity. Our first measure looked specifically at the immigrant population, defined as first- and second-generation migrants from outside the EU-27 member states.

Our second indicator was a measure of ethnic-minority status, based on the following question: "Do you belong to an ethnic minority group in [country]?" This is a more subjective measure that may capture the mutable nature of ethnic identity as

well as possible third-generation-and-beyond minorities who are not recent immigrants.

Our third indicator was a broader category of self-identification based on the following question in the ESS: "Would you describe yourself as being a member of a group that is discriminated against in this country?" We defined discriminated minorities as anyone who answered yes to this question on the basis of ethnicity, race, nationality, language, or religion.

The three indicators of minority status are not mutually exclusive but rather were intended as different approaches to measuring the minority populations of each country.[2] Overall, the overlap between the three categories was relatively small. For example, only 6.5% of immigrants identified as both an ethnic minority and as a member of a discriminated group. The highest correlation among the variables was between the ethnic-minority and discriminated-group measures, with a correlation coefficient of .33.

Individual-level controls. In order to facilitate comparison across a range of contexts, education and income were recoded as relative measures. Surveyors for ESS rounds 1 to 3 relied on 12 fixed income categories that were shown to respondents in each country. In rounds 4 to 7, however, the ESS switched to deciles calculated from country-specific surveys. In order to make the two sets comparable, we recoded each to the category midpoint, with the top income category coded as 150% of the top income level for each country. We then used this recoding to create a relative category, with the top quartile coded as high income, the bottom quartile coded as low income, and the rest coded as the middle reference category. Missing income data were removed using listwise deletion.

Similarly, we created a relative coding for education, with tertiary education coded as high education, less than secondary coded as low education, and the middle level as the reference category. Age was measured in years, and age-squared was included to account for the potential nonlinear effect of aging on health. Gender was measured with a binary variable (0 = male, 1 = female). Marital status was measured as a categorical variable indicating if the respondent was (1) married or in a civil partnership, (2) divorced or separated, or (3) widowed. Respondents who were never married or partnered were used as a reference.

In order to account for possible influences of acculturation or integration, we used citizenship status (coded 1 if respondent was a citizen and 0

otherwise) and language spoken at home (1 if it was the national language of the destination country, 0 otherwise) to capture differences between acculturated and nonacculturated migrants.

Country-level measures. Our first set of macrolevel indicators was proxies for welfare state involvement in health and social provision. We relied on the expenditure approach to operationalize welfare state effort as levels of spending (Bergqvist, Yngwe, and Lundberg 2013; Lundberg et al. 2015). We drew on two spending measures to capture (1) the welfare state's role in providing health services and (2) the overall size of welfare state effort. For the first, we looked at government spending on health as a percentage of gross domestic product (GDP). For the second, we looked at total spending on social protection as a percentage of GDP, a common measure for capturing welfare state effort (Bergqvist et al. 2013). Both were collected from Eurostat.

Our second set of macrolevel indicators measured policies related to the incorporation and protection of immigrants and minorities. We drew on all available waves—2007, 2010, 2012, and 2014—of MIPEX, which assesses and quantifies 148 integration policy indicators in 33 countries around the world, with a particular focus on Europe. The MIPEX data set is one of the most reliable and valid indices for assessing immigrant rights across contexts (Koopmans 2013), and it has been used in multilevel assessments of the effects of immigrant incorporation policies on subjective well-being and mental health outcomes for migrant groups in different destination countries (Hadjar and Backes 2013; Ikram et al. 2015; Malmusi 2015).

One of the advantages of the MIPEX data set over other immigration policy indices was its classification of subindices that measure different components of immigrant incorporation. Policies are classified into one of eight policy arenas—labor market mobility, family reunification, education, political participation, long-term residence, access to nationality, healthcare access, and antidiscrimination protection—and are rated on a scale, with 100 representing highly equal treatment and 0 representing highly unequal treatment. Correlation between the subindices ranges from .15 to .67, suggesting they are relatively independent (Helbling 2013). The rating scales were completed by immigration experts in each country and anonymously double-checked by peer reviewers.[3] We used an average of available waves for each MIPEX indicator in the analysis.

In addition, GDP per capita (divided by \$1,000 for interpretability) and a Gini coefficient for income inequality were included. Both measures were collected from Eurostat macrodata and were included to assess possible effects of overall wealth and inequality on health. Our mixed-effects modeling strategy, outlined below, includes country-level intercepts that accounted for unmeasured heterogeneity in country-level average differences in health.

Analysis

We began by building multilevel mixed-effects models to examine relationships between our indicators of minority status and the two health outcome measures.[4] Because our outcome variables were binary, our general Level 1 equation for the ith respondent in the jth country can be expressed as

$$\text{Prob}(\text{Poor health}_{ij} = 1 \mid \beta_j) = f_{ij}.$$
$$\log[f_{ij} / (1 - f_{ij})] = \eta_{ij} = \beta_{0j} + \dots \beta X_{ij}.$$

Each coefficient (β) was calculated as a function of an intercept (γ), possible Level 2 predictors (W), and, if the intercept or slopes were allowed to vary, an error term (u) representing the deviation of the group slopes/intercepts. For example, the overall intercept equation is

$$\beta_{0j} = \gamma_{00} + \gamma_{01} W_j + u_{0j}.$$

Each model included dummy variables for the survey year and was calculated with individual-level design weights, which were computed as the normed inverse of inclusion probabilities.

Turning to country-level variation, we calculated individual-country health inequalities—the predicted difference between groups—for each of our indicators of minority-group status as a way of mapping variation in health inequalities across contexts. Inequalities were calculated as differences in the predicted probability of reporting poor health or activity limitations between the majority and minority group, along with the 95% confidence interval calculated using the delta method (Xu and Long 2005).

Finally, to assess the relationship between institutional context and health inequalities, we estimated additional multilevel models in which the variable of interest was a cross-level interaction between our indicators of welfare state and immigration policy and our indicators of minority status. Because of the limited statistical power related to the country-level sample size, we included only one macrolevel indicator at a time.

RESULTS

Individual-level Results

We began our analysis by looking at the relative health differences between migrants/minorities and the native-born majority, and the individual-level determinants of those differences. Table 1 presents the initial results of multilevel models for each indicator of minority status and self-reported health. Table 2 presents similar models with activity limitations as the dependent variable. The baseline model for each set of indicators included only the minority variable, age, gender, marital status, and dummies for the ESS survey round. Although there are some differences between the measures, the overall findings suggest (1) minorities and migrants are significantly more likely to report poor health and activity limitations in the pooled sample, and (2) the size of difference between minority and majority groups varies significantly across countries. We refer to the difference in health outcomes between minority and majority groups as the group "health inequality," and our subsequent models attempt to explain the magnitude and variation of these coefficients.

Model 2 in each table controls for socioeconomic factors. Although accounting for socioeconomic position reduced the effect size for each indicator of minority health inequalities, they remained significant in all models. Overall, socioeconomic differences accounted for only a portion of the variation in minority health inequalities across countries. For instance, the proportional reduction in unexplained variance across countries for functional limitations was 47% for ethnic-minority groups. Socioeconomic variables accounted for much less between-country variation for all other combinations of minority status and health indicator, and they failed to account for the overall fixed effect of minority status on health. Although the results show that minority and migrant groups report poorer health in part because they are more likely to be socioeconomically disadvantaged, the remaining variance suggests migrant and minority health inequalities are not exclusively a product of income, education, and employment inequalities.

In Model 3, the acculturation variables explain additional between-country variation. However, the combined individual-level predictors failed to fully account for either the relative difference in health

Table 1. Effects of Individual-level Variables on Poor Self-rated Health Differences for Immigrants, Ethnic Minorities, and Discriminated Groups (European Social Survey 2002–2014, $N = 199,981$).

| Variable	Immigrants			Ethnic Minorities			Discriminated Groups		
	Base	SES	Acculturation	Base	SES	Acculturation	Base	SES	Acculturation
Immigrant	1.22*** [1.14, 1.31]	1.20*** [1.13, 1.28]	1.19*** [1.12, 1.27]						
Ethnic minority				1.44*** [1.33, 1.54]	1.29*** [1.17, 1.40]	1.24*** [1.12, 1.35]			
Discriminated group							1.74*** [1.63, 1.85]		
Unemployed		1.20* [1.15, 1.24]	1.20* [1.15, 1.24]		1.20* [1.16, 1.25]	1.20* [1.16, 1.25]		1.20* [1.15, 1.24]	1.19* [1.15, 1.24]
Income (reference = middle)									
Low income		1.50*** [1.47, 1.52]	1.50*** [1.47, 1.52]		1.50*** [1.47, 1.53]	1.50*** [1.47, 1.52]		1.50*** [1.47, 1.52]	1.49*** [1.47, 1.52]
High income		.72*** [.69, .75]	.72*** [.69, .75]		.72*** [.69, .75]	.72*** [.69, .75]		.72*** [.69, .75]	.72*** [.69, .75]
Education (reference = middle)									
Low education		1.35*** [1.32, 1.39]	1.35*** [1.31, 1.38]		1.35*** [1.32, 1.39]	1.35*** [1.31, 1.38]		1.35*** [1.31, 1.39]	1.34*** [1.31, 1.38]
High education		.63*** [.61, .66]	.64*** [.61, .66]		.64*** [.61, .66]	.64*** [.61, .66]		.64*** [.61, .66]	.64*** [.61, .66]
Citizen			1.06 [.99, 1.12]			1.02 [.96, 1.08]			.99 [.93, 1.05]
Language			.91*** [.85, .96]			.87*** [.82, .93]			.87*** [.82, .92]
Variance components									
Immigrant	.03	.02	.02						
Ethnic minority				.04	.05	.06			
Discriminated group							.04	.05	.06
Proportional reduction		.26	.07		—	—		—	—

Note: Table shows odds ratios with 95% confidence intervals in brackets. All models include controls for age, age-squared, gender, marital status, and survey year. SES = socioeconomic status.
*$p < .05$, **$p < .01$, ***$p < .001$ (two-tailed test).

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Table 2. Effects of Individual-level Variables on Activity Limitation Differences for Immigrants, Ethnic Minorities, and Discriminated Groups (European Social Survey 2000–2014, N = 199,981).

Variable	Immigrants			Ethnic Minorities			Discriminated Groups		
	Base	SES	Acculturation	Base	SES	Acculturation	Base	SES	Acculturation
Immigrant	1.09* [1.02, 1.16]	1.07* [1.01, 1.13]	1.10*** [1.04, 1.16]						
Ethnic minority				1.31*** [1.21, 1.40]	1.19*** [1.12, 1.27]	1.22*** [1.14, 1.30]			
Discriminated group							1.72*** [1.61, 1.82]	1.57*** [1.47, 1.67]	1.59*** [1.50, 1.69]
Unemployed		1.06* [1.01, 1.11]	1.06* [1.01, 1.11]		1.06* [1.01, 1.11]	1.06* [1.01, 1.11]		1.05* [1.00, 1.10]	1.05* [1.00, 1.10]
Income (reference = middle)									
Low income		1.43*** [1.41, 1.46]	1.43*** [1.41, 1.46]		1.43*** [1.40, 1.46]	1.43*** [1.41, 1.46]		1.43*** [1.40, 1.45]	1.43*** [1.40, 1.46]
High income		.76*** [.73, .80]	.76*** [.73, .79]		.76*** [.73, .80]	.76*** [.73, .80]		.77*** [.73, .80]	.76*** [.73, .80]
Education (reference = middle)									
Low education		1.32*** [1.28, 1.36]	1.32*** [1.29, 1.36]		1.32*** [1.28, 1.35]	1.32*** [1.28, 1.35]		1.32*** [1.28, 1.35]	1.32*** [1.28, 1.35]
High education		.74*** [.71, .76]	.74*** [.71, .76]		.74*** [.71, .76]	.74*** [.71, .77]		.73*** [.71, .76]	.74*** [.71, .76]
Citizen			1.18*** [1.11, 1.25]			1.18*** [1.11, 1.25]			1.18*** [1.11, 1.24]
Language			.96 [.90, 1.01]			.97 [.91, 1.02]			.96 [.91, 1.01]
Variance components									
Immigrant	.02	.01	.01						
Ethnic minority				.03	.02	.02			
Discriminated group							.04	.03	.03
Proportional reduction		.29	.10		.47	.00		.19	.12

Note: Table shows odds ratios with 95% confidence intervals in brackets. All models include controls for age, age-squared, gender, marital status, and survey year. SES = socioeconomic status.
*p < .05, **p < .01, ***p < .001 (two-tailed test).
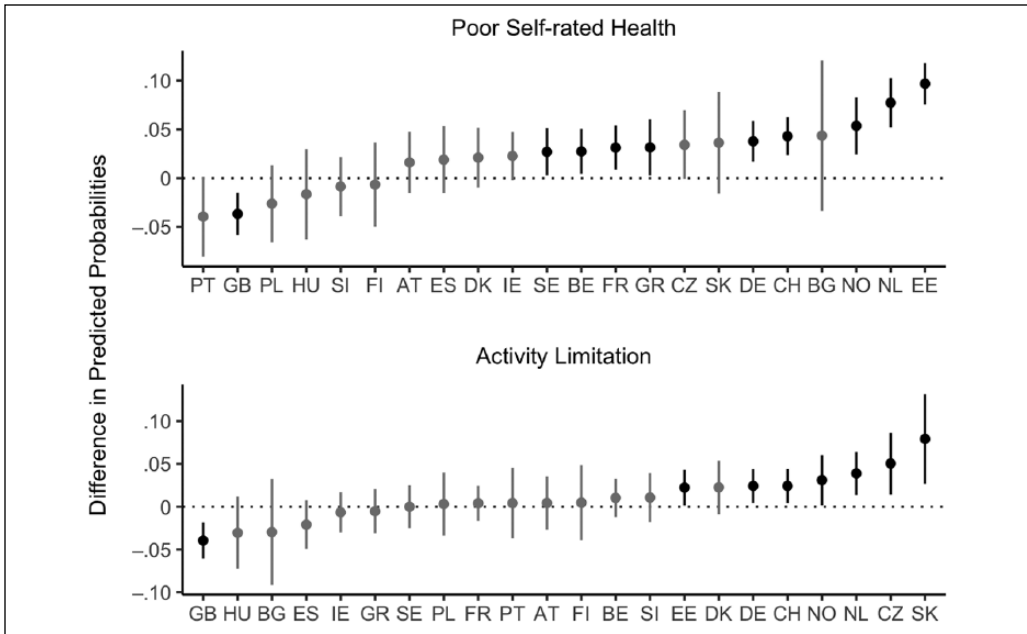
Figure 1. Difference in Predicted Probability of Poor Health for Immigrants and Natives.
Note: Countries included: Austria (AT), Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Great Britain (GB), Greece (GR), Hungary (HU), Ireland (IE), the Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Sweden (SE), Slovenia (SI), Slovakia (SK), Spain (ES), and Switzerland (CH). Results indicate the difference in predicted probability of poor health outcomes for first- and second-generation immigrants relative to all other native-born residents of each country.

outcomes between minority and majority groups or cross-national differences. It is also worth noting that although acculturation variables explained a portion of the variance, the odds ratios greater than one in Table 2 suggest citizens are more likely to report activity limitations than noncitizens. This is important for two reasons. First, it generally supports the pattern found in the immigrant health literature in which noncitizens, who are more likely to be newer immigrants, tend to report better health than their native-born counterparts. Second, it suggests any relationship between integration policy and health patterns is not likely due to citizenship status alone.

Country-level Results

The remaining analysis was concerned with illustrating and explaining cross-national variation in health inequalities between minority and majority groups. Figure 1 shows differences in the predicted probability of reporting poor health and activity limitations between the native majority and immigrants, along with 95% confidence intervals. These coefficients, along with those in Figures 2 and 3, are based on

logistic regression models for each country that controlled only for age and age-squared, in order to provide a descriptive comparison that accounts for possible age differences among populations. The results for self-rated health show variation in the health inequality across countries, ranging from significantly negative in Great Britain (indicating a healthier immigrant population) to significantly positive in Belgium, Switzerland, Germany, Greece, Estonia, France, the Netherlands, Norway, and Sweden. It is worth noting that these results did not take into account country of origin and other characteristics of the migrant populations.

Figures 2 and 3 show similar differences for ethnic minorities and groups reporting discrimination. In both cases, health differences more frequently indicate poorer health for ethnic minorities than for immigrants. Unlike the immigrant–native comparison, in no countries do ethnic minorities or discriminated groups report better health than their majority counterparts. Groups experiencing discrimination report worse self-rated health and high rates of activity limitations in nearly all countries.

Although this was an initial step at mapping variation, there are interesting findings from the
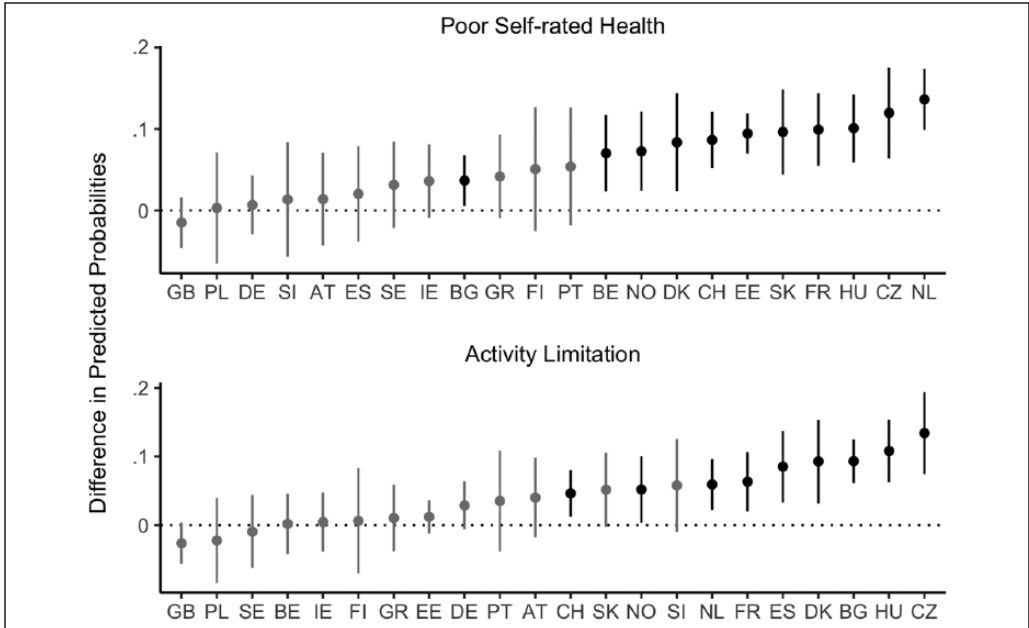
Figure 2. Difference in Predicted Probability of Poor Health for Ethnic Minorities.
Note: Results indicate the difference in predicted probability of poor health outcomes for ethnic minorities relative to all other residents of each country.
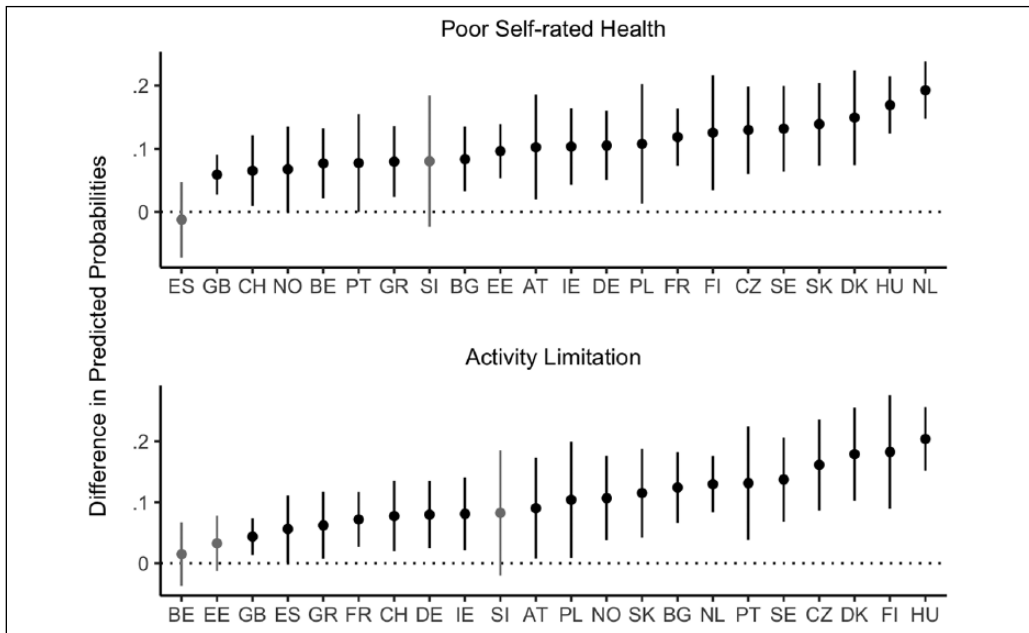
Figure 3. Difference in Predicted Probability of Poor Health for Discriminated Groups.
Note: Results indicate the difference in predicted probability of poor health outcomes for individuals reporting discrimination relative to all other residents of each country.

combined results. First, there was a great deal of variation across countries in the magnitude of health inequalities, with many countries reporting no significant differences between minority and majority groups. Given the dearth of data and research on minority health inequalities across contexts, mapping this variability opens up new potential research questions and avenues of exploration. Second, there were differences in the inequality patterns for self-reported health and activity limitations. For instance, while Belgium had significantly positive self-reported health gradients for each minority indicator, its results for activity limitations were small and nonsignificant. While this may be due in part to differences in the underlying conditions measured by each dependent variable, it may also suggest differences in perceived versus actual health inequality, with implications for relative versus absolute comparisons of difference. Finally, these figures suggest minority status does matter more for health in some societies. France, for instance, has relatively large positive coefficients for almost every measure of health and minority status, whereas Great Britain has smaller inequalities.

The final step of our analysis addressed our core research questions about the institutional factors associated with cross-national variation in health inequalities. Tables 3 and 4 describe the relationships between each health inequality measure (after controlling for age, gender, marital status, and survey year) and macrolevel indicators of societal context.

Looking first at self-rated health, total welfare state effort was significantly associated with lower odds of reporting poor health for three of the six models, suggesting individuals (both minority and majority groups) are healthier in stronger welfare states. This is consistent with previous research. The overall probability of poor self-reported health in a country at the 25th percentile of welfare state effort in our sample (roughly 19% of GDP, similar to levels in Ireland) was .39, whereas the probability decreased to .29 at the 75th percentile (roughly 28% of GDP, similar to levels in the Netherlands).

However, there was little support for the welfare-state-and-health-inequalities hypothesis. Most results suggested a positive but nonsignificant relationship. The exception was the results for discriminated groups in Table 3, which implies the health benefits of living in a generous welfare state may be less substantial for groups experiencing discrimination. In other words, the relative gap between the majority and minority groups in generous welfare states may be larger, rather than smaller as hypothesized. This is consistent with recent research that found overall healthcare spending may amplify health gaps between immigrants and natives in Europe (Blom et al. 2016). There was a similar pattern when looking at self-reported health and GDP per capita for immigrants and ethnic minorities.

There was stronger evidence that state efforts to reduce discrimination against minorities and facilitate immigrant incorporation may have an effect on health inequalities. Countries with antidiscrimination policies had lower native–immigrant inequalities for both self-rated health and activity limitations. In countries considered to have "unfavorable" policies according to the MIPEX index, scores around 30 on the index, the probability of poor self-rated health for immigrants was .39, compared to .30 for the native-born population. In countries at the high end of the index, where states have more policies in place to promote equality or protect individuals from discrimination, the relative difference between the two groups was negligible. For comparison, the average difference in the predicted probability of poor health between respondents who were employed and unemployed in our baseline model (.34 vs. .38) was smaller than the gap between migrants and the native majority at the low end of the MIPEX scale.

Figure 4 illustrates this relationship between antidiscrimination policies and the predicted probabilities of self-reported health and activity limitations for immigrant groups and the native-born population. The plot shows a pattern of lower relative health inequalities, for both measures, as countries adopt more policies aimed at preventing discrimination against minority groups.

The other MIPEX associations returned mixed results. Although policies facilitating access to healthcare and political participation for immigrants were associated with better overall outcomes in the self-rated health models, they were not significantly associated with relative group inequalities. Policies facilitating family reunification were associated with higher rates of poor self-rated health. This may indicate a reduced "selection effect" when there are fewer barriers to migration or residence, and it highlights the value of considering various dimensions of immigration policies.

DISCUSSION

Decades of research from medical sociology, social demography, and social epidemiology shows that many minority populations—defined as immigrants

Table 3. Relationship between Macrolevel Indicators and Poor Self-rated Health by Minority Status.

	Immigrants		Ethnic Minorities		Discriminated Groups	
Variable	OR	CI	OR	CI	OR	CI
Welfare state						
Health						
Intercept	.83*	[.71, .98]	.83*	[.71, .98]	.83*	[.71, .97]
Interaction	1.01	[.95, 1.08]	1.04	[.97, 1.12]	1.08*	[1.01, 1.16]
Total social protection						
Intercept	.94*	[.90, .99]	.94*	[.90, .99]	.94*	[.90, .99]
Interaction	.99	[.98, 1.01]	1.01	[.98, 1.03]	1.02	[1.00, 1.05]
MIPEX						
Labor market mobility						
Intercept	.94	[.83, 1.07]	.95	[.84, 1.07]	.95	[.84, 1.07]
Interaction	1.02	[.98, 1.07]	1.02	[.97, 1.08]	1.02	[.97, 1.08]
Family reunification						
Intercept	1.23**	[1.06, 1.43]	1.23**	[1.06, 1.42]	1.23**	[1.06, 1.42]
Interaction	.96	[.91, 1.02]	.96	[.89, 1.03]	.93	[.87, 1.01]
Access to education						
Intercept	.88	[.78, 1.01]	.89	[.78, 1.01]	.89	[.78, 1.01]
Interaction	1.02	[.97, 1.07]	1.04	[.98, 1.10]	1.03	[.97, 1.09]
Political participation						
Intercept	.88**	[.8, .95]	.88**	[.81, .95]	.88**	[.80, .95]
Interaction	1.01	[.97, 1.05]	1.03	[.99, 1.08]	1.04	[.99, 1.09]
Permanent residence						
Intercept	1.13	[.88, 1.46]	1.13	[.88, 1.46]	1.14	[.88, 1.46]
Interaction	1.00	[.91, 1.09]	.99	[.89, 1.11]	.98	[.88, 1.10]
Naturalization						
Intercept	.93	[.82, 1.06]	.93	[.82, 1.06]	.92	[.81, 1.05]
Interaction	.97	[.93, 1.02]	1.01	[.95, 1.06]	1.04	[.98, 1.10]
Antidiscrimination						
Intercept	1.02	[.89, 1.17]	1.02	[.89, 1.16]	1.01	[.88, 1.16]
Interaction	.95*	[.91, .99]	.96	[.91, 1.02]	1.00	[.95, 1.07]
Healthcare access						
Intercept	.75***	[.67, .84]	.75***	[.67, .84]	.75***	[.67, .84]
Interaction	1.03	[.97, 1.09]	1.07	[1.00, 1.14]	1.06	[.99, 1.14]
Gini						
Intercept	1.03	[.97, 1.10]	1.03	[.97, 1.10]	1.03	[.97, 1.11]
Interaction	.99	[.97, 1.01]	.97	[.95, 1.00]	.95***	[.93, .98]
GDP per capita						
Intercept	.95***	[.93, .96]	.95***	[.93, .96]	.95***	[.93, .96]
Interaction	1.01*	[1.00, 1.02]	1.01*	[1.00, 1.02]	1.01*	[1.00, 1.03]

Note: OR = odds ratio; CI = confidence interval; MIPEX = Migrant Integration Policy Index; GDP = gross domestic product. *Intercept* represents the OR for the main effect of the macrolevel variable; *Interaction* represents the OR for the interaction between the macrolevel variable and the indicator of minority status in the column. ORs for MIPEX variables can be interpreted in relation to a 10-point increase on the MIPEX scale. Data come from the European Social Survey (2000–2014), MIPEX (2007, 2010, 2012, 2014), and Eurostat.
*p < .05, **p < .01, ***p < .001 (two-tailed test).

Table 4. Relationship between Macrolevel Indicators and Activity Limitations by Minority Status.

Variable	Immigrants		Ethnic Minorities		Discriminated Groups	
	OR	CI	OR	CI	OR	CI
Welfare state						
Health						
Intercept	1.02	[.93, 1.12]	1.03	[.93, 1.13]	1.02	[.93, 1.13]
Interaction	1.01	[.96, 1.06]	1.00	[.94, 1.07]	1.01	[.94, 1.09]
Total social protection						
Intercept	1.01	[.98, 1.04]	1.01	[.98, 1.04]	1.01	[.98, 1.04]
Interaction	1.00	[.98, 1.01]	1.00	[.98, 1.02]	1.01	[.99, 1.04]
MIPEX						
Labor market mobility						
Intercept	.99	[.93, 1.06]	.99	[.93, 1.07]	.99	[.93, 1.06]
Interaction	1.00	[.97, 1.04]	1.00	[.96, 1.06]	1.03	[.97, 1.08]
Family reunification						
Intercept	1.03	[.94, 1.13]	1.03	[.94, 1.13]	1.03	[.94, 1.13]
Interaction	.98	[.93, 1.03]	.99	[.93, 1.06]	.99	[.91, 1.07]
Access to education						
Intercept	1.01	[.94, 1.08]	1.01	[.94, 1.1]	1.01	[.94, 1.09]
Interaction	1.01	[.97, 1.06]	.96	[.92, 1.01]	.99	[.94, 1.06]
Political participation						
Intercept	.97	[.92, 1.03]	.98	[.92, 1.03]	.98	[.92, 1.03]
Interaction	1.01	[.98, 1.03]	1.00	[.96, 1.04]	1.03	[.98, 1.08]
Permanent residence						
Intercept	1.06	[.93, 1.21]	1.06	[.92, 1.22]	1.06	[.93, 1.22]
Interaction	.99	[.93, 1.06]	1.01	[.91, 1.11]	1.02	[.91, 1.14]
Naturalization						
Intercept	.99	[.93, 1.07]	1.00	[.93, 1.07]	.99	[.92, 1.07]
Interaction	.99	[.95, 1.03]	.97	[.92, 1.02]	1.01	[.95, 1.07]
Antidiscrimination						
Intercept	1.00	[.93, 1.07]	.99	[.92, 1.07]	.99	[.92, 1.06]
Interaction	.96*	[.93, 1.00]	.98	[.94, 1.04]	1.02	[.96, 1.08]
Healthcare access						
Intercept	.96	[.88, 1.04]	.96	[.88, 1.05]	.96	[.88, 1.04]
Interaction	1.00	[.96, 1.05]	1.02	[.95, 1.08]	1.04	[.97, 1.12]
Gini						
Intercept	.95***	[.92, .97]	.95***	[.92, .97]	.95***	[.92, .97]
Interaction	.97**	[.96, .99]	.98	[.95, 1.00]	.96***	[.93, .98]
GDP per capita						
Intercept	1.00	[.98, 1.01]	1.00	[.98, 1.01]	1.00	[.98, 1.01]
Interaction	1.01	[1.00, 1.02]	1.00	[.99, 1.01]	1.01	[.99, 1.02]

Note: OR = odds ratio; CI = confidence interval; MIPEX = Migrant Integration Policy Index; GDP = gross domestic product. *Intercept* represents the OR for the main effect of the macrolevel variable; *Interaction* represents the OR for the interaction between the macrolevel variable and the indicator of minority status in the column. ORs for MIPEX variables can be interpreted in relation to a 10-point increase on the MIPEX scale. Data come from the European Social Survey (2000–2014), MIPEX (2007, 2010, 2012, 2014), and Eurostat.
*$p < .05$, **$p < .01$, ***$p < .001$ (two-tailed test).
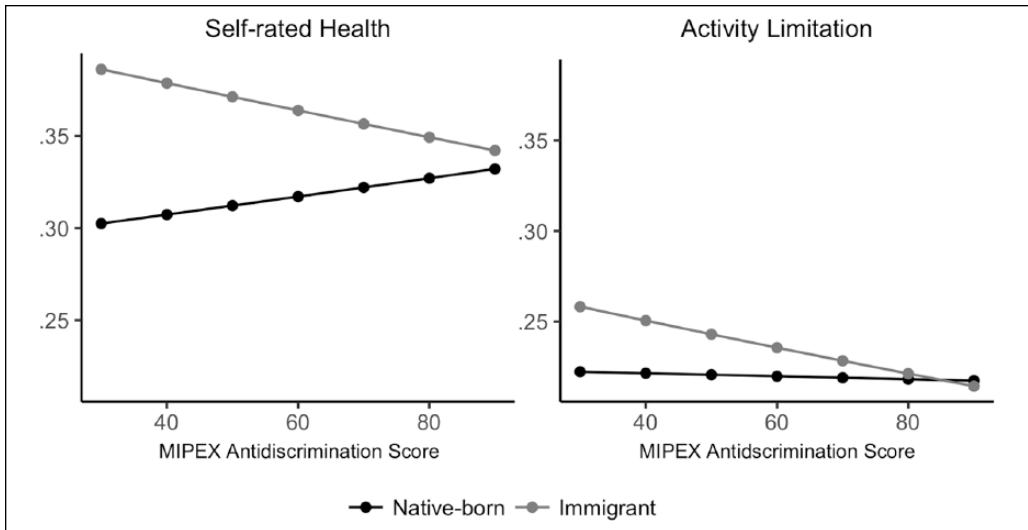
Figure 4. Predicted Probability of Poor Health by Migrant Integration Policy Index (MIPEX) Antidiscrimination Score.

Note: Figure represents the association between MIPEX rates of antidiscrimination policies and the predicted probability of poor self-rated health (left panel) and self-reported activity limitations (right panel), based on multilevel logistic regression models presented in Tables 3 and 4.

and ethnic or racial minorities—tend to report poorer health than majority populations when minority status acts as a marker for discrimination or social exclusion. We advance this research by placing these findings in comparative context and developing hypotheses from political and cultural sociology on the incorporation and stratification of minority groups. Our general substantive contributions are to demonstrate the substantial cross-national variability in minority–majority health inequalities and to explain part of that complex variation as a function of institutional arrangements. Specifically, we found that there was a great deal of variation across countries and across health measures that warrants further study.

Consistent with previous literature, we found that welfare state effort is associated with better average health for the population as a whole (Chung and Muntaner 2006; Lundberg et al. 2008; Nelson and Fritzell 2014). However, welfare state effort was generally unrelated to the size of relative inequalities between minority and majority populations. Although theories of the welfare state often lead to predictions of smaller health inequalities in states with greater welfare effort, previous research examining socioeconomic and gender inequalities has returned mixed results that do not firmly support such hypotheses. Similarly, although immigrants and minorities are often overrepresented in

the economically vulnerable populations that, in theory, might benefit from welfare state social policies, we find no empirical support for that hypothesis.

Perhaps the most noteworthy finding was that immigrant health inequalities appear to be smaller in countries with certain policies aimed at equal treatment of immigrants and minorities. Specifically, the MIPEX indicator of policies related to preventing discrimination against minorities was associated with lower health inequalities. This is also consistent with previous studies that have found associations between physical health outcomes and restrictive immigration policies (Blom et al. 2016; Bollini et al. 2009; Ikram et al. 2015; Malmusi 2015), although it differs from research focused on mental health outcomes, which may be influenced by different determinants (Levecque and Van Rossem 2015).

Cross-national comparison has already advanced our understanding of socioeconomic inequalities and health, and our findings suggest a comparative approach can also benefit research on health inequalities tied to ethnicity, race, and immigration status. Such comparative work highlights the links between macrolevel contexts and the distribution of health and illness, and it contributes to theory about the upstream causes of health inequalities. The institutional foundations of health inequality are complex, and it is important to consider both how

societies support their citizens and the processes of defining the criteria for inclusion among the citizenry. Incorporation policies may stratify access to the welfare state, or more broadly indicate patterns of symbolic boundaries in a society, in a way that distributes disease risk and resources for maintaining health for immigrants and ethnic and racial minorities. Considering the downstream effects of such policies—independently and in combination with welfare state measures—may advance our theoretical understanding of the institutional foundations of health and social inequality.

Our quantitative cross-national comparison of minority health inequalities is limited in several ways. Because of the contextual and constructed nature of identity boundaries, operationalizing and comparing ethnic- and racial-minority groups across contexts is inherently challenging. Our use of multiple measures advances the goal of comparability but in doing so sacrifices some specificity. Our dependent variables also have limitations. Although self-assessed measures of health have been recommended to study health in cross-national comparisons (de Bruin et al. 1996; Idler and Benyamini 1997), and have been used to study immigrant and minority health (Nielsen and Krasnik 2010), the potential exists for variation in how health is assessed across cultural or linguistic groups within a country as well as between countries.

One interpretation of our results is that the patterns of our dependent variables represent approximate, but actual, inequalities in physical health. This is the interpretation we favor, in part because of the congruence across our measures of self-reported health and functional limitations. However, it is also possible that the associations reflect patterns in reporting differences, which would have different implications. Other subjective and objective measures of health (e.g., adult and infant mortality rates or prevalence of specific conditions) should be considered for future cross-national research. We also limited our analysis to welfare effort, as measured by spending levels, and did not examine institutional measures of specific social policies and programs, another method of conceptualizing the welfare state that may provide a more comprehensive assessment of welfare state influence on health (Bergqvist et al. 2013; Lundberg et al. 2015).

Finally, our pooled data offer only a cross-sectional look at health status and may not fully account for unmeasured heterogeneity across a few countries. Cross-national analyses of macrolevel

data in Europe are fairly-small-*n* comparisons that can be influenced by small trends or outlier cases. The social forces shaping the welfare state, immigrant incorporation policies, and the dynamics of immigration over time are endogenous, and our cross-sectional study cannot account for this. Although our results control for period effects on overall health, we did not test for temporal changes in health inequalities, and the pooled sample spans the Great Recession and subsequent changes to government spending, migration rates, and immigration policies in many countries. Future research using longitudinal data on a larger number of countries and contexts may be more effective for theoretically and empirically understanding how the welfare state and incorporation policies interact to influence health inequalities over time.

Yet, despite its data and methodological limitations, our work represents an early step toward understanding variation in health inequalities for minority groups across contexts. Our findings underscore the importance of examining inequalities in a cross-national framework, as that could be an important approach for explicating the relationships between institutional context, social inequality, and health outcomes. While such research is valuable for epidemiological and public health purposes, it also addresses classical sociological questions about the causes and consequences of social boundary formation and institutionalized inequality.

SUPPLEMENTAL MATERIAL

Additional supporting information may be found in the online version of this article.

FUNDING

NOTES

1. Results were similar when multilevel ordered logistic regression models were run for the baseline regressions using the original, five-category coding for self-rated health, with a few exceptions. However, the majority of our independent predictors failed the Brant test of the parallel regression assumption, making these models unsuitable for our primary analysis. Sensitivity analyses were conducted for alternative binary codings and multinomial models. However, the relatively small populations of minorities in some countries hindered

model convergence for more limited response categories.

2. Appendix A in the online supplemental material includes a breakdown of the number of respondents in each group, by country.

3. Appendix B in the online supplement provides additional details about each Migrant Integration Policy Index (MIPEX) measure and its subcomponents. The "healthcare access" indicator was added only in the 2014 MIPEX wave. A full list of 148 policy indicators and the rating scale for each is available at http://mipex.eu/methodology.

4. Analysis was done using the lme4 R package.

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