Self-rated health inequalities in the intersection of gender and social class in Spain: exploring contributions of material and psychosocial factors

Núria Pedrós Barnils

Universitat Politècnica de Catalunya

Eva Eurenium

Umeå Universitet

Per E Gustafsson (✉ per.e.gustafsson@umu.se)

Umeå University <https://orcid.org/0000-0002-3972-5362>

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Abstract

Background Inequalities in health across social class, gender and regional context in Spain are well-known; however, there is a lack of research examining how these dimensions of inequality interact. This study explores self-rated health (SRH) inequalities across intersectional positions of gender, social class and region, and the contribution of material and psychosocial factors to these inequalities.

Methods Participants were drawn from the cross-sectional 2015 National Living Conditions Survey of Spanish residents aged 19-88 years (N=27,215; 77% response rate). Eight intersectional positions were formed by combining dichotomous variables of gender, social class and regional development. Poisson regression was used to estimate intersectional inequalities in SRH as prevalence ratios, and the contributions of material and psychosocial factors.

Results Women in manual social class from low development regions reported the worst SRH. Inequalities by the interaction of social class and regional development were best explained by the joint contributions of material and psychosocial factors, while gender inequalities among non-manual social class were better explained by material factors alone.

Conclusions The results illustrate the complexity of interacting inequalities in health and their underpinnings in Spain. Local and national policies that take this complexity into account are needed to broadly improve equity in health in Spain.

Background

It is widely recognised that there are unacceptable social inequalities in health among different population groups, which potentially could be reduced through equity promoting policies and inclusive interventions¹. These notions are embraced by The Commission to Reduce Social Inequalities in Health in Spain².

Social inequalities in health are however, a complex and pervasive phenomenon present across multiple dimensions. For example, gender inequalities are found in phenomenon such as women having longer life expectancy than men but poorer health when it comes to chronic illnesses, mental health or self-rated health^{3,4}. Social class inequalities are widely studied^{5,6} showing that individuals in lower socioeconomic positions have higher risk of morbidity and earlier mortality than those in higher socioeconomic positions. Individual's health status can also differ depending on geographical contexts, as illustrated by regional inequalities within countries^{7,8}.

Policies towards equity in health traditionally understand, describe and analyse such multiple social inequalities as separate and disentangled phenomena. However, more recent perspectives⁹ acknowledge the interwoven nature of social inequalities, the influencing context, and the non-uniform effects this may have on population's health. For example, health status may not equate to the simple sum of individual's experiences of multiple disadvantages, as would be suggested from a so-called 'additive approach'¹⁰. The perspective of intersectionality, which takes into account such complexity, has therefore been advocated in public health research¹¹. Diverse quantitative examples in population health research^{11,12} demonstrate how intersectional approaches taking combinations of disadvantages into account – a 'multiplicative approach' – as promising for providing more precise evidence for designing interventions and strategies towards equity in health⁹. Following these recommendations, intersectional approaches have recently begun to be applied more broadly in quantitative equity in health research^{13,14,15,16}.

Spain is a socio-democratic country divided in Autonomous Communities. Public policies in education, health and welfare are delivered by the Communities creating, in some cases, unfair disadvantages in terms of health and social welfare across them¹⁷. For example, Montiel¹⁸ encountered indicators of mental health disparities across Autonomous Communities and Nolasco¹⁹ found that higher risk of death was associated to Spanish regions with higher levels of deprivation, especially among men. Gender and social class inequalities also affect the health status of the Spanish population. A report of the Spanish Government showed that only 55% of women in the lowest social class reported good health, compared to 85% of men in the highest social class²⁰. Moreover, Aguilar-Palacio²¹ found that individuals with low education level had a greater risk of poor self-rated health (SRH) than those with high level. The largest risk of poor SRH among women was found in Andalucia, Canarias, Galicia and Murcia, illustrating interaction among different axes of inequality in shaping population patterns of health.

The Commission on Social Determinants of Health of the World Health Organization²² proposed a framework whereby intermediary, structural social and economic determinants unequally affect health and wellbeing. Structural social and economic determinants are built upon the socioeconomic and political context and upon the individual social position. Intermediary determinants comprise material circumstances, psychosocial processes and behaviours and biological factors²³. Many studies have assessed the intermediary determinants of health in relation to social positions of gender or social class^{24,25}, but less so their contribution to intersectional inequalities in health. A Spanish

example demonstrates contribution of intermediary determinants, including material factors, on the intersection between gender and social class and its effects on SRH²⁶. Nevertheless, very little is known about the contribution of material and psychosocial factors on SRH in the intersection between gender, social class and region in Spain.

The aims of this study are therefore to (1) explore how intersectional social positions of social class, gender and region are reflected in population patterns of SRH among Spanish adults, and (2) examine the contribution of intermediary social processes material and psychosocial factors to these inequalities in SRH. To illustrate the added value of using an intersectionality-informed multiplicative approach, these questions will also be addressed from a conventional additive approach where gender, social class and regional inequalities in health are approached separately.

Methods

Study population and sample

The study population (N = 27,215) comprised respondents of the 2015 cross-sectional Living Conditions Survey 'Encuesta de Condiciones de Vida'²⁷. The survey provides a snapshot of material conditions and psychosocial factors along the Spanish population through individual questionnaires administered in home-based face-to-face interviews in 2015.

Stratified random sampling was used to collect information from the non-institutionalised adult population aged 19–88 years. The sampling frame allowed the derivation of survey sampling weights, which were used in this analysis to aid generalization of the results to the target population. The average response rate was 77%²⁸. After excluding records with incomplete data on the study variables a sample of 22,456 individuals was available for analysis.

Variables

The dependent variable self-rated health (SRH) was derived from the following question: Would you say that your overall health is either: very good, good, fair, poor or very poor? The answers were dichotomized into either good health (good or very good coded as 0) or poor health (fair, poor or very poor coded as 1).

SRH is a common measure of an individual's well-being and health status and has been shown to be a valid and reliable indicator of morbidity and early mortality²⁹, and that displays social inequalities^{30, 31}.

The three binary variables of social positions were social class (manual or non-manual), gender (man or woman) and development regions (high or low). Social class was coded according to the Spanish adaptation of the British Registrar General classification, based on the International Standard Classification of Occupation 2008^{32, 33}, with manual class comprising the III-V groups and the non-manual I-III groups of the British Registrar General classification. Gender was self-reported in the Living Conditions Survey with two options; woman or man. Regional development was derived from the Inequality-adjusted Human Development Index (IHDI) for each Autonomous Community and Autonomous city in Spain in 2010³⁴. Those with the highest IHDI were considered high development regions and those with the lowest IHDI were considered low development regions.

The three social position variables were combined to form eight intersectional social positions: Men Non-manual social class High development regions (MNH); Women Non-manual social class High development regions (WNH); Men Non-manual social class in Low development regions (MNL); Women Non-manual social class in Low development region (WNL); Men Manual social class in High development region (MMH); Women Manual social class in High development regions (WMH); Men Manual social class in Low development region (MML); and Women Manual social class in Low development regions (WML).

Variables potentially reflecting social processes underpinning intersectional inequalities in SRH were identified in the Living Conditions Survey. The three material factors material standards of living, employment conditions, and residential environment and the two psychosocial factors social support and social participation were selected.

For material standards of living the following nine binary items were selected and summed up into an index: having holidays at least one week a year away from home; a mobile phone; a television; a computer; access to internet; a washing machine; a car; a private shower, and spending discretionary money weekly on oneself. The index was dichotomised and when four or more items were lacking it was labelled Material scarcity³⁵.

Employment conditions was indicated by two items: employment status (wage worker full time, wage worker partial time, self-worker full time, self-worker partial time, student, retired, permanent incapable to work, household worker, other type of economic inactivity), and type of

contract (employer, self-employed, permanent wage, temporary wage, and familiar help). Unstable employment index was defined when employment status was student, retired, permanent incapable to work, household worker or other type of economic inactivity and when type of contract was temporary wage or familiar help.

Residential environment was based on two yes/no questions: existence of delinquency problems and existence of vandalism in the respondent's residential area. Insecure residential area was defined among those with at least one 'yes' answer.

Social support was based on two yes/no questions: if the respondent had family or friends who they could ask for help and if the respondent had someone to talk to about personal issues. Poor social support was defined among those with at least one 'no' answer.

Social participation was derived from ten items referred to participation in activities the past year such as having: gone to the cinema; gone to the theatre; visited cultural places; gone to sport events; participated in voluntary activities, and participated in political activities; as well as frequency of meeting friends, contacting family members, contacting friends, and participating in social media. Lack of social participation was defined as a negative response to seven or more items.

Statistical analysis

Descriptive statistics comprised frequencies of SRH, age, and explanatory variables across social positions and eight intersectional social positions.

Two different sets of analysis were undertaken to address the aims, all using of multivariate Poisson regressions to estimate prevalence ratios (PR)³⁶ with SRH as the outcome and social positions as main exposures. The first set of analysis included the three indicators of social positions as mutually adjusted independent variables (corresponding to an additive approach). The second instead utilized the indicator of eight intersectional social positions according to an intersectionality-informed multiplicative approach – with the best-off group (men in non-manual social class from high development regions) as the reference category. For each of the two approaches, four models were created. Model A was adjusted only by age, Model B was adjusted for age and all psychosocial factors, Model C was adjusted for age and material factors, and Model D was adjusted for all factors together. The explained fraction (EF) of each social position and intersectional social position was calculated after every adjusted model versus the crude model given the following equation: $((PR_A - PR_B) * 100 / (PR_A - 1))$.

A complete case analysis was conducted when missing data existed, such as for 4,580 subjects without classifiable social class as nothing was stated in their occupational status. Out of these, 47% were born 1990–1998 and were therefore students or unemployed young adults. All analyses were carried out with the Stata version 14 statistical package.

Results

Socio-demographic characteristics of the samples

The sample analysed in this study comprised of 14,565 adults in the manual class and 7,891 in the non-manual class; 11,080 women and 11,376 men; and 11,461 people living in high development regions and 10,995 in low development regions (*Table 1*).

Out of these, 40% of the respondents in high development regions were non-manual workers while in low development regions 30% were non-manual workers. Gender was homogenously distributed by region, but when it comes to social class men tended to belong to manual class more often than women did (68% v 61%).

Intersectional inequalities in material and psychosocial disadvantages

The distribution of material and psychosocial factors displayed distinctive inequalities between, but also within, the indicators of class, gender and regional development (*Table 1; Figure 1*).

Firstly, considering the three indicators one by one, the largest inequalities were found for social class for which manual class consistently displayed more material and psychosocial disadvantages as compared to non-manual social class. There were eight times higher frequency of material scarcity and more than double the frequency of unstable employment, poor social support and lack of social participation, but with fairly similar prevalence of insecure residential area. Women reported unstable employment 80% more often than men, with the other indicators displaying smaller inequalities (<20% relative difference). The disadvantages for women were material scarcity and insecure residential area and the corresponding for men were social support and social participation. Low development regions reported disadvantages more often (30-90%) than high development regions, except for insecure residential area which was slightly more common in privileged regions.

Secondly, distribution of material and psychosocial factors across intersectional social positions revealed more complex patterns of inequalities not discernible through single indicator inequalities. For example, although the triply disadvantaged group (women in manual class from low development regions) reported 10 times higher material scarcity than the 8 times difference between manual and non-manual social class (*Table 1; Figure 1a*); it also reported 12 times higher unstable employment than the triply advantaged group (men in non-manual class from high development regions) compared to the moderate 2-3 times higher within each social position (*Table 1; Figure 1b*). This illustrates how the magnitude of the intersectional inequalities cannot be monotonously predicted from single inequalities, but depended on life conditions.

The complexity become even more apparent when considering intersectional groups with mixed position of advantage and disadvantage; further illustrating the heterogeneity in life conditions not only between, but also within, the crude categories captured by the single indicators. For example, the intersectional position with the overall lowest material scarcity was women and not men, in non-manual occupations and high development regions. Moreover, whereas material scarcity, as noted above, was clearly patterned by social class, women in manual class from low development regions reported twofold material scarcity as men in manual class from high development regions (*Table 1; Figure 1a*). Additionally, the small relative advantage of women as a group when it comes to psychosocial resources was restricted only to non-manual class (*Table 1; Figure 1d; Figure 1e*).

Intersectional inequalities in SRH

Descriptive patterns indicating complex inequalities between intersectional positions were also found when it comes to SRH (*Figure 2*). For example, whereas all manual workers' intersectional positions displayed higher frequencies of poor SRH than all non-manual positions, there was considerable heterogeneity especially within manual groups, with prevalence ranging between 30% frequency for men in high development regions to 40% for women in low development regions. The most advantageous position was women in non-manual social class from high development regions, while the most disadvantageous position was women in manual social class from low development regions. Differences between gender and regional development were larger among those in manual classes than non-manual classes.

Role of material and psychosocial factors in gender, social class and regional inequalities

Poisson regression analyses were carried out to estimate social inequalities in SRH by social positions of gender, social class and regional development,

The additive approach revealed that social class inequalities was the most remarkable inequality indicator, amounting to 61% higher prevalence of poor SRH among manual compared to non-manual social class. Minor but significant inequalities were found for gender and development regions. As indicated by the explained fraction (EF), psychosocial and material factors partially, but not completely, explained these inequalities. Psychosocial factors (Model B) explained about a fourth of the large class inequalities (EF=26%) and the smaller regional inequalities (EF=26%) in SRH but not substantially gender inequalities (EF=-5%). Material factors (Model C), had a greater relative importance for gender (EF=36%) than social class (EF=17%) or regional (EF=19%) inequalities. As a result, all factors together (Model D) explained a larger portion of social class (EF=34%) and regional inequalities (EF=36%) but less of gender inequalities (EF=23%). All inequality estimates remained statistically significant ($p < 0.001$) even after full adjustment (see *Table 2*).

Analysing the inequalities according to a contrasting multiplicative approach the reference category was the best-off intersectional position after adjusting by age (the triply advantaged group men in non-manual social class in high development regions) (see *Table 3*).

The multiplicative approach showed cumulative effects of disadvantages. Whereas the additive approach estimated a 61% higher prevalence of poor SRH among social class groups (Model A) (see *Table 2*), intersectional social positions revealed up to 111% higher prevalence of poor SRH for manual social class women from low development regions compared to the reference group. Moreover, there was heterogeneity in prevalence ratios; ranging from 1 (reference) to 1.25 within the intersectional non-manual social class groups, and between 1.61 and 2.11 among intersectional manual social class groups (Model A) (see *Table 3*).

Discrepancies between the additive and multiplicative approach were also evident when it comes to the effect on the estimates when taking the indicators of social processes into account. Overall, psychosocial factors (Model B) explained inequalities mostly involving those intersectional social positions which had a higher relative frequency in both psychosocial factors (see *Table 3*); $EF_{WML}=24\%$; $EF_{MML}=28\%$; $EF_{MMH}=24\%$. Specifically the increased gender inequality when taking psychosocial factors into account in the additive approach (EF=-5%) (see *Table 2*) was only evident for women in non-manual social class from high development regions ($EF_{WNH}=-25\%$) (see *Table 3*). Moreover

the sizeable explanation by psychosocial indicator of social class (EF=26%) and regional (EF=26%) inequalities (see *Table 2*) were in the multiplicative approach comparable only for the specific intersectional position of men in manual social class from low development regions (EF_{MML}=28%) (see *Table 3*).

Whereas material factors explained a large portion of the overall gender inequalities (EF=36%) (see *Table 2*) the multiplicative approach showed their importance differed markedly for intersectional social positions within the same gender; from 12.5% to 21.4% for women and from 1.5% to 16.6% for men. A similar variation in explanatory power reflecting the intersectional inequalities was seen when adjusting for material factors: prevalence ratios for non-manual class groups ranged from 1.03 to 1.22 while prevalence ratios for manual class groups ranged from 1.54 to 1.86 (see *Table 3*).

The full model (Model D) involved the greatest explanatory fractions for all intersectional positions except for women of non-manual class which were better explained by material factors only (EF_{WNH}= 41%; EF_{WNL}=12%) (Model C) and men from non-manual class and low development regions which were better explained by psychological factors only (EF_{MNL}= 17%) (Model B) (see *Table 3*). Among all intersectional inequalities, the prevalence ratios of manual class groups decreased the most when adjusting by all factors (Model D). However, the considerable explanatory fractions for social class (EF=34%) and regional (EF=36%) inequalities (see *Table 2*) were only seen for manual social class from low development regions (EF_{MML}=36%; EF_{WML}=36%), (see *Table 3*).

Discussion

This cross-sectional study on Spanish adults is the first of its kind to investigate how intersectional social positions of gender, social class and regional development are reflected in population patterns of SRH, and to examine the contributions of the intermediary social processes material and psychosocial factors to inequalities in SRH.

Our results suggest that women in non-manual social class from high development regions had the most advantageous position when it comes to SRH, while women in manual social class from low development regions had the most disadvantageous position. Multiplicative analysis revealed cumulative albeit not monotonous health effects of multiple disadvantages, as has been found by others¹¹. For example, the largest difference in prevalence ratios of poor SRH was displayed among the intersectional social position women in manual social class from low development regions compared to the reference category (see *Table 3*).

Malmusi²⁶ suggested that individual income contributes importantly to gender inequalities in health. Similarly, we found that unstable employment contributed substantially to gender inequalities in SRH, especially when considering intersectional social positions, which were underpinned by the ubiquitous material disadvantage in the triply disadvantaged group. For example, although material scarcity was clearly patterned by social class, women in manual class in low development regions reported twice as much material scarcity as men in manual class in high development regions did. This emphasizes how inequity in access to material resources plays a widespread role for social inequalities in Spain. Several studies^{6,37,38} have noted that social class inequalities in SRH are related to material factors such as employment situation and material standards of living. In the present study, psychosocial factors explained inequalities to a slightly greater degree than material factors for all manual social class groups, especially those from low development regions. As Iyer³⁹ mentioned, when social positions interact with each other the consequences (e.g. in terms of health) are not necessarily uniform, but instead contingent on the particular setting under study. It is possible that the context and the set of indicators of the present study may have caused this high explanatory value of psychosocial factors among manual social class groups.

Moreover, inequalities within social positions were explained by intermediary factors in a different manner than inequalities in intersectional social positions. As Bauer⁹ have remarked, intersectional multiplicativity is necessary to understand how social processes affect each intersectional social position creating experiences of privilege or discrimination.

Strengths and limitations

One of the study's strengths is the large and rich random population-based sample with rather high participation rate that allows creating intersectional categories with enough statistical power. However, the cross-sectional design limits causal inference. Selection bias might be present since 47% of the participants excluded because of their lack of occupational classification were born between 1990 and 1998.

The fact that the study is based on self-reported survey data may introduce response and common-method bias. Socio-economic context was assessed through Inequality-Adjusted Human Development Index. Other measures that shed the light on oppressing processes could be used in further studies such as: expenditure and allocation of Basic Public Services, or the manner each Autonomous Community applies health related laws (such as Royal Decree Law 16/2012).

Any inference about the relative and joint importance of sets of explanatory factors such as material and psychosocial factors ultimately depend on the specific set of factors included in the analysis. There may be many other factors that could potentially explain SRH inequalities that were not asked in the Living Conditions Survey²⁷. For instance other material conditions such as access to service provision or housing conditions; or other psychosocial indicators such as work demands or negative life events are missing. Likewise, health behaviour factors (e.g. smoking, alcohol consumption or physical activity) are lacking.

Conclusions And Implications For Policy

Using an intersectionality-informed analytical approach, this study illustrates the pervasiveness and entanglement of social inequalities in self-rated health in Spain. It reinforces the notion that different axes of inequality are intertwined and are expressed in complex population patterns of health, which in turn are underpinned by complex social inequities in access to material and psychosocial resources. In order to show power structures that may influence SRH, addressing multi-level interactions may therefore be necessary. Deeper understanding on Spain's public policies and institutional structures is needed in order to disentangle mechanisms underlying social and related health inequalities. Local and national policies are needed, particularly for women in manual social class, in order to improve employment conditions such as access to decent jobs, salaries over the minimum wage, stable working conditions and availability of unemployment benefits in the least developed regions of Spain; as well as creation of health promoting spaces where social participation is encouraged. More studies of this type are required to provide evidence to inform policies that can promote health equity in the Spanish population.

Abbreviations

EF: Explained Fraction; IHD: Inequality-adjusted Human Development Index; MMH: Men Manual social class High development regions; MML: Men Manual social class in Low development region; MNH: Men Manual social class in High development region; MNL: Men Non-manual social class in Low development regions; PR: Prevalence Ratio; SRH: Self-rated health; WMH: Women Manual social class in High development regions; WML: Women Manual social class in Low development regions; WNH: Women Non-manual social class High development regions; WNL: Women Non-manual social class in Low development region.

Declarations

Ethics approval and consent to participate

The study is based on secondary data that is routinely collected and processed by the National Institute of Statistics of Spain (Instituto Nacional de Estadística, INE). All data are published anonymously in its entirety by the INE and are thus publicly and freely available for anyone (see *Availability of data and materials*, below). The activity related to collecting, analysing and distributing the data produced by the INE is governed by the Spanish Law on the Public Statistical Function of 1989 (Ley de la Función Estadística Pública de 1989), and the European Regulation 223/2009 regarding European statistics. All subjects have given their informed consent for the data to be used for research purposes.

Consent for publication

Not applicable.

Availability of data and materials

Datasets are available in a publicly accessible repository. The datasets analysed for this study can be found in the Instituto Nacional de Estadística de España: https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&secc=1254736195153&idp=1254735976608

Competing interests

The authors declared that they have no competing interests.

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Authors' contributions

NP conceived and designed the study with the help of EE. NP acquired the data, and carried out and interpreted the final analysis with guidance from PEG. NP prepared the drafts which were revised critically by EE and PEG. All authors have read and approved the final manuscript and are accountable for its content.

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Tables

Table 1 Age, poor SRH prevalence and percentage of material and psychosocial factors by intersectional social positions

		Social class		Gender		Regional development		Intersectional social positions ¹							
		non-manual	manual	men	women	high	low	MNH	WNH	MNL	WNL	MMH	WMH	MML	WML
Total		7,891	14,565	11,376	11,080	11,461	10,995	2,069	2,503	1,539	1,780	6,655	3,234	4,1113	3,563
(N)															
Age (mean, range)		51.97 (20-88)	55.49 (19-88)	54.53 (19-88)	53.97 (20-88)	54.62 (19-88)	53.88 (19-88)	54.12	50.69	53.98	49.54	55.03	57.50	54.51	55.28
Poor SRH (%)		17.96	34.99	27.94	30.10	26.76	31.34	17.88	16.26	20.60	18.15	30.26	36.61	33.67	39.88
Material factors (%)	Material scarcity	1.80	14.42	9.27	10.72	7.72	12.35	1.79	1.60	1.88	2.02	9.90	13.79	15.24	18.69
	Unstable employment	6.59	16.87	9.56	17.05	9.05	17.64	2.32	7.39	4.35	12.36	8.81	14.90	15.83	28.12
	Insecure residential area	8.97	10.11	9.11	10.33	10.94	8.43	9.18	11.15	6.82	7.53	10.73	12.15	8.49	9.51
Psycho-social factors (%)	Poor social support	2.43	5.60	4.80	4.16	3.96	5.03	2.61	1.96	2.86	2.53	5.20	4.98	6.27	5.78
	Lack of social participation	17.27	42.52	34.89	32.37	29.67	37.79	18.12	14.62	21.12	16.69	38.00	39.30	45.71	46.39

¹The first letter of the intersectional social position is gender (M=Men, W=Women), the second letter is the social class (M=Manual, N=Non-manual) and the third letter is the regional development (H=High, L=Low).

Table 2 Prevalence Ratios for poor SRH by social position adjusted potential mediators by Poisson regression models

Social position	Model A ¹		Model B ¹			Model C ¹			Model D ¹		
	Crude model Adjusted by age		All psychosocial factors		PR reduction (%)	All material factors		PR reduction (%)	All factors		PR reduction (%)
	PR	95% CI	PR	95% CI		PR	95% CI		PR	95% CI	
<i>Gender</i>											
Men	1		1			1			1		
Women	1.11	(1.07 -1.16)	1.12	(1.08 -1.16)	-4.62	1.07	(1.03 - 1.11)	35.93	1.09	(1.05 -1.13)	22.62
	***		***			***			***		
<i>Social class</i>											
Non-manual	1		1			1			1		
Manual	1.61	(1.53 -1.70)	1.45	(1.38 -1.53)	25.88	1.51	(1.44 -1.59)	16.87	1.40	(1.33 - 1.48)	34.31
	***		***			***			***		
<i>Regional development</i>											
High	1		1			1			1		
Low	1.16	(1.12 -1.21)	1.12	(1.08-1.16)	26.22	1.13	(1.09 -1.17)	19.29	1.10	(1.06 - 1.15)	36.07
	***		***			***			***		
<i>Estimates explanatory factors</i>											
Material scarcity							1.308801			1.175691	
Unstable employment							1.220383			1.200083	
Insecure residential area							1.220383			1.194558	
Poor social support					1.444799					1.379725	
Lack of social participation					1.467834					1.418324	

*p-value < 0.05; **p-value < 0.01; *** p-value < 0.001.

¹Model A is the crude model; Model B is adjusted by psychosocial factors; Model C is adjusted by material factors; Model D is adjusted by all factors.

Table 3 Prevalence ratio for poor SRH according to intersectional positions adjusted for potential mediators

Intersectional social positions ¹	Model A ²		Model B ³			Model C ⁴			Model D ⁵		
	Crude adjusted by age		All psychosocial factors		PR reduction	All material factors		PR reduction	All factors		PR reduction
	PR	95% CI	PR	95% CI	(%)	PR	95% CI	(%)	PR	95% CI	(%)
MNH	1		1			1			1		
WNH	1.05	(0.93-1.19)	1.06	(0.94-1.20)	-24.98	1.03	(0.91-1.16)	41.42	1.05	(0.93-1.18)	9.35
MNL	1.17	(1.03-1.32)	1.14	(1.00-1.29)	17.17	1.17	(1.03-1.32)	1.54	1.14	(1.01-1.29)	16.09
	*		*			*			*		
WNL	1.25	(1.09-1.41)	1.24	(1.10-1.41)	2.73	1.22	(1.07-1.39)	12.50	1.22	(1.08-1.39)	11.42
	**		**			**			**		
MMH	1.61	(1.42-1.72)	1.47	(1.33-1.62)	23.85	1.54	(1.40-1.70)	11.84	1.43	(1.30-1.58)	29.54
	***		***			***			***		
WMH	1.79	(1.58-1.92)	1.64	(1.49-1.81)	18.89	1.66	(1.50-1.82)	17.53	1.56	(1.42-1.72)	29.04
	***		***			***			***		
MML	1.84	(1.62-1.96)	1.60	(1.46-1.76)	27.89	1.70	(1.54-1.87)	16.62	1.54	(1.40-1.69)	35.75
	***		***			***			***		
WML	2.11	(1.86-2.24)	1.84	(1.68-2.03)	24.01	1.86	(1.69-2.05)	22.29	1.71	(1.55-1.88)	36.24
	***		***			***			***		
<i>Estimates explanatory factors</i>											
Material scarcity						1.380404			1.260825		
Unstable employment						1.221948			1.178119		
Insecure residential area						1.211625			1.196054		
Poor social support						1.427479			1.453315		
Lack of social participation						1.489386			1.446899		

*p-value < 0.05; **p-value < 0.01; *** p-value < 0.001.

¹The first letter of the intersectional social position is gender (M=Men, W=Women), the second letter is the social class (M=Manual, N=Non-manual) and the third letter is the regional development (H=High, L=Low).

²Model A is the crude model; ³Model B is adjusted by psychosocial factors; ⁴Model C is adjusted by material factors; ⁵Model D is adjusted by all factors.

Figures

Figure 1

Percentage of three material and two psychosocial factors from eight different intersectional social positions¹ 1The first letter of the intersectional social position is gender (M=Men, W=Women), the second letter is the social class (M=Manual, N=Non-manual) and the third letter is the regional development (H=High, L=Low).

Figure 2

Binary SRH outcome¹ by eight different intersectional social positions² among 22,456 Spanish adults. ¹The mean of self-rated health was based of the dichotomised answer 0=good health and 1=poor health. ²The first letter of the intersectional identity is gender (M=Men, W=Women), the second letter is the social class (M=Manual, N=Non-manual) and the third letter is the regional development (H=High, L=Low).