



Article

Inequalities in health and health behaviours between couple and lone mothers before and during the financial crisis in Spain (2003–2012)



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ABSTRACT

Lone mothers report worse health and adopt more risky health behaviours than couple mothers, as largely documented in several European countries, but not deeply in Spain. The primary aim of this study was to identify the possible existence of inequalities in health and health behaviours between couple and lone mothers in Spain by occupational social class and employment status. A second aim was to explore whether any inequalities were influenced by the economic crisis beginning in 2008, analysing changes in inequalities between 2003–2004 and 2011–2012.

Two waves of the cross-sectional Spanish National Health Survey data were used. Analyses were restricted to mothers aged 16–64 years, with at least one child aged 18 years or younger. The sample consisted of 2982 mothers in 2003–2004 and 3070 in 2011–2012, representing more than 80% of couple mothers. Two health outcomes and two health behaviour measurements were used. Robust Poisson regression was run to estimate inequalities between couple and lone mothers, calculating prevalence ratios adjusted by age and stratified by social class and employment status.

We found inequalities in health and health behaviours between couple and lone mothers in Spain amongst the manual social class, with lone mothers reporting a more than 30% higher prevalence of poor self-perceived health and being smoker in both time points of study compared with couple mothers. Furthermore, lone mothers were at 50% higher risk of having at least one selected chronic condition and 86% higher probability of sleeping less than 6 hours/day in 2011–2012. This study could not confirm that inequalities between couple and lone mothers changed in Spain during the study period, although some patterns were noticeable. Inequalities pointed towards an increase amongst mothers in the manual social class with paid employment, while inequalities amongst unemployed mothers (both manual and non-manual social class) pointed towards a decrease.

1. Background

Lone mothers are one of the most disadvantaged groups from both the social and the health perspective (Whitehead, Burström, & Diderichsen, 2000). They are at higher risk of poverty, unemployment and social exclusion (Di Nella, Almeda Samaranch, & Ortiz Monera, 2014; Fritzell & Burström, 2006; Whitehead et al., 2000), and they show worse health outcomes than couple mothers, as largely documented in several European countries (Burström et al., 2010; Fritzell

et al., 2012; Rousou, Kouta, Middleton, & Karanikola, 2013; Whitehead et al., 2000). Changes in health inequalities between couple and lone mothers have also been studied across Europe (Burström, Diderichsen, Shouls, & Whitehead, 1999; Fritzell & Burström, 2006; Fritzell, Ringbäck Weitof, Fritzell, & Burström, 2007). However, no scientific studies have focused on Spanish lone mothers or analysed changes in inequalities during a period of financial crisis.

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1.1. Spanish socioeconomic and political context

Although the one-parent family model is still less widespread in Spain than in most other European countries, the number of households constituted by this type of family model has increased by roughly threefold in the last 20 years (European Commission, 2018). This phenomenon could be related to the lower marriage rate, the higher divorce rate and the increasing number of births outside marriage. Another factor is the progressive incorporation of women into the labour market in the last few decades. Paid work provides economic empowerment, thus improving the balance of power between men and women and providing women with better chances to end a relationship through separation or divorce. In addition, employment enables economically independent women to be lone mothers without having a stable partner (Artazcoz et al., 2014). These are lone mothers by choice, who are probably in an advantaged socioeconomic position and have the financial resources to decide to have a child without a partner. However, employment may also increase the difficulty of balancing work and family life, especially if family support policies are scarce, as in Spain, where state welfare policies are less developed than in other European countries, and social protection is largely based on family support. In addition, when there is limited co-responsibility from the welfare state, the ability to maintain a family, especially for lone mothers, will depend on their socioeconomic position or social class and their own resources.

According to Korpi, Spain is considered to have a 'traditional family policy model' characterised by supporting the father as the main breadwinner and encouraging the mother to stay at home to care for children (Korpi, 2000). It consists of a solidarity model, with high levels of family support and low levels of social protection for children and families. The welfare state only intervenes to tackle highly critical situations and the nuclear and extended family is expected to provide support in childcare (Korpi, 2000). Korpi's description of Spain as a 'traditional family policy model' is exemplified by expenditure on social protection. In Spain in 2014, the total expenditure on social protection per inhabitant in terms of purchasing power standard (PPS)² per inhabitant was almost 2000 PPS lower than the European Union average (6177.0 versus 7912.8), and was much lower than in countries with more developed welfare states such as Sweden (9856.1) or Norway (12123.0). Considering only the expenditure on social benefits for families and children, Spain spent 318.0 PPS *per capita*, while the European average was more than double this figure (652.2) (European Commission, 2018). Although Korpi's model was described many years ago (Korpi, 2000), the welfare state has not expanded in Spain in recent years. This can be partly attributed to the financial crisis in the country since the second quarter of 2008 and the consequent cuts in social services (Bacigalupe, Shahidi, Muntaner, Martín, & Borrell, 2016).

Socioeconomic and political context influence the pathways for the generation of health inequalities amongst different social groups (Diderichsen, Evans, & Whitehead, 2001; Whitehead et al., 2000). The unemployment rate for both men and women has increased during the Spanish economic crisis. While in 2007, before the economic crisis, the total unemployment rate in Spain was 8.2%; in 2009, after the starting of the economic crisis, this figure reached 17.9%, experiencing the higher rate in 2013 (26.1%). In addition, unemployment rate has been persistently higher amongst Spanish women in comparison to men, either before (2007: 8.6% vs 6.4%) or during the economic crisis (2013:

26.7% vs 25.6%) (European Commission, 2018). Initially, the construction sector was more affected by the economic crisis, what generated an increase in the unemployment rate amongst men, but then, the increase in the unemployment rate within the service sector affected women to a greater extent (Instituto Nacional de Estadística, 2018). In Spain, part-time jobs are usually precarious and mainly related to the service sector. Most of jobs in Spain are full-time jobs (70.5%), with differences between men (79.6%) and women (59.3%) (Servicio Público de Empleo Estatal, 2011). However, part-time jobs show the opposite situation, while amongst men the proportion of part-time jobs is of 19.7%, for women is of 39.2% (Servicio Público de Empleo Estatal, 2011). In addition, the social protection system in Spain only provides coverage to the 77.4% of people who are unemployed (Servicio Público de Empleo Estatal, 2011). Furthermore, in 2013, 46.4% of Spanish workers earned less than €1000 per month, being younger workers the most affected by these low salaries, illustrating the impact that the economic crisis has had on working conditions in Spain (Eurofound, 2015).

Much research has focused on describing and analysing inequalities in health by social class in Spain. People belonging to disadvantaged social classes have shown worse living and working conditions, which translates into poor health (Comisión para Reducir las Desigualdades Sociales en Salud en España, 2012). The negative impact of unemployment on overall health and mental health has also been studied in the Spanish working-age population, this impact being particularly high for the long-term unemployed (Urbanos-Garrido & Lopez-Valcarcel, 2015). In addition, the psychological effects of unemployment have been aggravated by the economic crisis (Urbanos-Garrido & Lopez-Valcarcel, 2015). When economic conditions worsen, health also deteriorates. In times of economic crisis, a deterioration in health and an increase in health inequalities is expected, especially amongst more disadvantaged groups (Bacigalupe & Escolar-Pujolar, 2014). The rise in social inequalities in health during crises could be explained by increasing social inequality and poverty, greater job insecurity and higher unemployment rates.

1.2. Lone mothers: a disadvantaged group

Lone mothers, considered as those mothers not living together with a partner, are one of the most disadvantaged social groups in many countries (Rousou et al., 2013). They are at higher risk of poverty and are more frequently unemployed than couple mothers (Fritzell & Burström, 2006; Whitehead et al., 2000). From a health perspective, lone mothers show worse health outcomes than those mothers who are either married or living with a partner (couple mothers). They report worse self-perceived health (Burström et al., 2010; Fritzell et al., 2012; Lahelma, Arber, Kivela, & Roos, 2002) and experience more limiting long-standing illnesses (Fritzell et al., 2007). Lone mothers also have more mental health problems (Bull & Mittelmark, 2009; Dziak, Janzen, & Muhajarine, 2010) and often adopt risky health behaviours. Poverty and unemployment influence mothers' living conditions and what choices they make in life, both in relation to standard of living and health behaviours (Fritzell et al., 2007). Lone mothers are more frequently smokers, and more often indicate drug or alcohol abuse in comparison to couple mothers (Fritzell et al., 2012, 2007; Sperlich, Maina, & Noeres, 2013).

These inequalities could be partially explained by the socioeconomic disadvantage, financial hardship and lack of social support possibly experienced by lone mothers (Bull & Mittelmark, 2009; Rousou et al., 2013). Separated or divorced lone mothers could receive child support from ex-partners, helping them to face lone motherhood. However, many lone mothers are the main providers and experience an increased risk of poverty since they may rely on a single income (Fritzell & Burström, 2006; Fritzell et al., 2007). Lone mothers are also the main carers, since there may not be co-responsibility from a partner in the domestic sphere. Therefore, as the sole providers and carers in

² The purchasing power standard (PPS) is an artificial currency unit. Prices are different across countries, so different amounts of national currency units are needed for the same goods and services according to the country. However, one PPS allows to buy the same amount of goods and services in each country making it possible to compare the total expenditure on social protection or the expenditure on social benefits for families and children, across different European countries.

the household, lone mothers may depend on support systems from the welfare state to a greater extent than couple mothers (Fritzell & Burström, 2006; Fritzell et al., 2007). Public policies in Spain are still too focused on heterosexual couples, with only one breadwinner, and based on the sexual division of work. This reinforces the difficulties of balancing personal time, paid and unpaid work time and family time (Almeda & Di Nella, 2011).

Several studies on health inequalities between couple and lone mothers have been published in different European countries concerning different types of welfare regimes (Berkman et al., 2015; Burström et al., 2010; Roos, Burström, Saastamoinen, & Lahelma, 2005; Van de Velde, Bambra, Van der Bracht, Eikemo, & Bracke, 2014). Some of them have also considered changes in inequalities in times of economic downturn (Burström et al., 1999; Fritzell & Burström, 2006; Fritzell et al., 2007). However, no published scientific studies have focused on mothers living in Spain, except for a report by Reynolds et al. in the context of the EUROTHINE Project (Reynolds, Rueda, & Lahoz, 2007). They observed small differences in health outcomes between lone mothers-household heads and couple mothers, probably influenced by an overrepresentation of lone mothers in the higher socioeconomic positions. Large differences between couple and lone mothers of lower socioeconomic positions were found in contrast to small or inexistent inequalities between lone and couple mothers with more socioeconomic resources (Reynolds et al., 2007). In addition, inequalities between lone mothers-household heads and lone mothers-non-household heads were found in part due to differences in the age distribution, the level of responsibility of maintaining the household and the degree in which they receive support from other member in the household (Reynolds et al., 2007). Considering the emergence of the economic crisis in Spain in 2008 and the consequent increase in unemployment rate, it would be interesting to explore whether these inequalities have changed taking into account not only the occupational social class, but also the employment status. Therefore, the primary aim of the present study was to determine the possible existence of inequalities in health and health behaviours between couple and lone mothers in Spain, by occupational social class and employment status. A second objective was to explore whether any inequalities were influenced by the economic crisis beginning in 2008, analysing changes in inequalities between 2003–2004 and 2011–2012.

2. Methods

2.1. Study design and sample

A comparative study was undertaken analysing data from two waves of the Spanish National Health Survey, taking place respectively in 2003–2004 (before the financial crisis) and 2011–2012 (during the crisis). This survey is a cross-sectional nationwide survey that examines a representative sample of the Spanish non-institutionalised population. The survey provides self-reported information on health status, morbidity, health behaviours and use of healthcare services, including sociodemographic data. The sampling method consisted of a stratified sampling in three stages. First stage units were the census sections. Second stage units were the main family homes. Third stage units were selected considering the list of people in the household, since in each family home one adult was selected and one child in case there were any. It achieved a sample size of 21650 adults in 2003–2004 and 26502 adults in 2011–2012. The global response rate was 67% in 2003–2004 and 71% in 2011–2012, although those households with no response were replaced. Therefore, the total effective sample was 98% and 89% of the theoretical sample in 2003–2004 and 2011–2012, respectively. More details of the methodology of the survey are described elsewhere (Instituto Nacional de Estadística, 2017). No consent statement from participants was necessary since all microdata were anonymised and openly available online.

For this study, a subsample was selected of all mothers aged 16–64

years, with at least one child aged 18 years or younger cohabiting in the same household. The overall study population included 2951 mothers in 2003–2004 and 2698 in 2011–2012 (weighted subsample: 2982 and 3070, respectively). Lone mothers who were not household heads were then excluded, because of their different sociodemographic characteristics and the very small sample size. Analyses stratified by social class were restricted to those mothers without missing values in this variable, while analyses stratified by social class and employment status were also restricted to those who were employed, unemployed or housewives.

2.2. Health outcomes and health behaviours

Four outcome measurements were used: two health outcomes and two health behaviours.

2.2.1. Self-perceived health

This variable has been demonstrated to be a reliable measure of objective health, as well as a good predictor of mortality (Idler & Benyamini, 1997). The respondents were asked whether they assess their health as ‘very good’, ‘good’, ‘fair’, ‘poor’ or ‘very poor’. The three latter categories were combined to yield a measure of ‘poor self-perceived health’.

2.2.2. Selected chronic conditions

The questionnaire listed a wide range of illnesses and participants were asked whether they have suffered any in the last 12 months, according to a medical diagnosis. This variable was constructed by selecting diabetes, peptic ulcer, heart diseases and bronchitis, taking into account the analyses conducted by Rius et al. which confirmed the association between comorbidity and the risk of death based on a comorbidity index (Rius et al., 2004). Illnesses were selected according to their inclusion in the work of Rius et al. and considering if these illnesses were listed in both waves of the Spanish National Health Survey analysed in this study (2003–2004 and 2011–2012) (Instituto Nacional de Estadística, 2017). If the answer was affirmative to any of these questions, the respondent was considered to have ‘at least one selected chronic condition’.

2.2.3. Smoking behaviour

Participants were asked whether they currently smoke, with the category of ‘smokers’ both daily and non-daily smokers. Although self-reported smoking tends to underestimate smoking status, both have been shown to have a satisfactory correlation (Gorber, Schofield-Hurwitz, Hardt, Levasseur, & Tremblay, 2009).

2.2.4. Sleeping pattern

This variable was constructed by asking the respondents how many hours they usually sleep per day. No clear cut-off point was found for categorisation in the existing literature, and so participants were divided into those sleeping ‘6 or more hours/day’ and those sleeping ‘less than 6 hours/day’ (Alvarez & Ayas, 2004).

2.3. Type of motherhood: main explanatory variable

A ‘couple mother’ was defined as a mother who was either married or cohabiting with a partner. A ‘lone mother-household head’ did not cohabit with a partner and was the reference person, meaning that she was the household member who most regularly (not occasionally) contributed to the household budget to cover expenses. A ‘lone mother-non-household head’ did not cohabit with a partner and was not the head of the household, since the main breadwinner in the household could be other relatives such as her parents.

2.4. Sociodemographic variables

Age was considered a categorical variable in the descriptive analysis (mothers aged 16–34 and 35–64 years) and as an independent continuous variable for robust Poisson regression analyses.

Occupational social class, assigned according to current or most recent occupation (Fritzell & Burström, 2006), was collapsed into ‘non-manual social class’ and ‘manual social class’ with a widely used Spanish adaptation of the British classification system (Domingo-Salvany et al., 2013; Domingo-Salvany & Marcos Alonso, 1989).

Employment status was based on a person’s current main activity. ‘Employed’, ‘unemployed’, ‘housewives’ and ‘other situations’ were distinguished. ‘Employed’ included women in paid employment, while ‘unemployed’ referred to those women who were not in paid employment but in active employment search. The category of ‘housewives’ represented all those women whose main activity was housework and ‘other situations’ included those who had retired or had taken early retirement, were studying and unable to work or who could not be classified into the other categories. This category included women who, without exercising any paid activity and who were not self-employed, received income from renting a property and/or from other investments; women temporarily deprived of their freedom, and those who, without exercising economic activity, received public or private assistance.

Age was the adjustment variable, while occupational social class and employment status were stratification variables.

2.5. Statistical analyses

First, a bivariate analysis was carried out to test for differences amongst the three types of motherhood in sociodemographic and outcome variables in both 2003–2004 and 2011–2012. Chi-square tests with corresponding p-values were used. To estimate inequalities in health and health behaviours between lone and couple mothers, age-adjusted prevalence ratios (aPR) with 95% confident intervals (95% CI) were calculated using robust Poisson regression, stratified first by occupational social class, and then by both occupational social class and employment status. Poisson regression models with robust variance are based on the Huber sandwich estimator implemented in the statistical software Stata®. This variance estimator has shown to be correct and robust in different experimental situations such as in the use of different values of prevalence (low, moderate or high prevalence) or estimating several models (crude and adjusted) (Barros & Hirakata, 2003; Espelt, Mari-Dell’Olmo, Penelo, & Bosque-Prous, 2016). Interaction terms between motherhood type and survey year were included to identify possible changes in inequalities in health and health behaviours between couple and lone mothers between the two time periods. Significant interaction would indicate that the associations between type of motherhood and outcome measures changed during the study years. Sampling weights were applied in all the calculations to achieve population representativeness. All analyses were performed using Stata® v.13.

3. Results

3.1. General description of the population

The sociodemographic characteristics of the three types of mothers are shown in Table 1. In both periods (2003–2004 and 2011–2012), the distribution showed the same pattern, with a higher proportion of couple mothers (around 84%) than lone mothers overall (around 16%). Differences between the two groups of lone mothers were observed over time, with a decrease in the proportion of lone mothers-household heads (from 14.4% to 12.1%), and an increase in lone mothers-non-household heads (from 1.7% to 3.7%).

The highest proportion of young participants, unemployed mothers

and those from the manual social class was observed amongst lone mothers-non-household heads. The proportion of mothers in the manual social class decreased for couple mothers (from 61.9% to 56.7%) between the two data points and increased for lone mothers-household heads (from 46.6% to 58.4%) and lone mothers-non-household heads (from 72.2% to 84.7%). A high proportion of lone mothers-household heads were employed in 2003–2004 (81.1%) compared with couple mothers (47.2%). Unemployment rates increased in 2011–2012 for the three groups of mothers, and to a greater extent for lone mothers, both household heads (from 8.6% to 24.0%) and non-household heads (from 15.7% to 43.6%).

Some differences were noted amongst lone mothers. While approximately 20% of lone mothers-household heads were young in both 2003–2004 and 2011–2012, this figure reached 60–70% for lone mothers-non-household heads. Most lone mothers-non-household heads belonged to the manual social class both in 2003–2004 (72.2%) and 2011–2012 (84.7%), in a proportion around 25% points higher than lone mothers-household heads (46.6% and 58.4%, respectively in 2003–2004 and 2011–2012). Finally, lone mothers-non-household heads were also more frequently unemployed and were housewives, showing large differences in employment rate, especially in 2011–2012, when almost 70% of lone mothers-household heads were employed compared with approximately 30% of lone mothers-non-household heads.

3.2. Health and health behaviours

The prevalence of poor health outcomes and health behaviours is shown in Table 2. For both time periods, the prevalence was mostly higher amongst lone mothers-household heads, except for the prevalence of smoking, which was highest amongst lone mothers-non-household heads. Compared with the first study period, the prevalence of poor self-perceived health was lower for couple mothers and lone mothers-household heads in 2011–2012, but not for lone mothers-non-household heads. The proportion of mothers having at least one selected chronic condition and sleeping less than 6 hours/day was higher in 2011–2012 than in 2003–2004 for all three groups of mothers. In addition, for the latter period, the prevalence of smokers was lower in all groups of mothers, with lone mothers-non-household heads showing higher differences in prevalence between 2003–2004 and 2011–2012 (from 78.1% to 42.3%). However, it should be noticed that most of the results are not statistically significant.

3.3. Inequalities in health and health behaviours between couple and lone mothers: Interaction amongst social classes

Different patterns of inequalities in health and health behaviours were found between couple and lone mothers-household heads in Spain, depending on occupational social class, since statistically significant results were found amongst the manual social class, but not amongst the non-manual social class (Table 3). From now on, when describing results for lone mothers, we will be referring to lone mothers-household heads, unless otherwise specified. Analyses stratified by occupational social class are presented below.

Amongst mothers belonging to the manual social class, lone mothers showed statistically significant worse health outcomes and health behaviours than couple mothers. In 2003–2004, lone mothers reported a 30% higher prevalence of poor self-perceived health (aPR = 1.33; 95% CI = 1.06–1.66) and being smokers (aPR = 1.30; 95% CI = 1.08–1.57) compared with couple mothers. Comparing the two time points of study, changes in inequalities between lone and couple mothers were not observed amongst the manual social class in 2011–2012 (aPR = 1.36; 95% CI = 1.05–1.77, for self-perceived health; and aPR = 1.34; 95% CI = 1.08–1.66, for smoking behaviour). On the other hand, having at least one selected chronic condition and sleeping less than 6 hours/day showed a higher increase in inequalities between lone and

Table 1

General description of the study population, by type of motherhood: Spanish Health Survey, 2003–2004 and 2011–2012.

	Survey year 2003–2004, %				SURVEY YEAR 2011–2012, %			
	Couple mothers (n = 2502)	Lone mothers-household heads (n = 429)	Lone mothers-non-household heads (n = 51)	p-value	Couple mothers (n = 2586)	Lone mothers-household heads (n = 370)	Lone mothers-non-household heads (n = 114)	p-value
Age groups (years)								
16–34	28.1	19.5	60.1	< 0.001	24.7	23.0	68.4	< 0.001
35–64	71.9	80.5	39.9		75.3	77.0	31.6	
Employment status								
Employed	47.2	81.1	68.3	< 0.001	57.7	67.5	33.8	< 0.001
Unemployed	11.3	8.6	15.7		18.9	24.0	43.6	
Housewife	39.9	6.5	10.2		21.8	3.8	14.9	
Other situations ^a	1.6	3.8	5.8		1.6	4.7	7.7	
Occupational social class								
Non-manual	37.7	50.8	27.8	< 0.001	42.2	35.0	13.4	< 0.001
Manual	61.9	46.6	72.2		56.7	58.4	84.7	
Missing values	0.4	2.5	0.0		1.1	6.5	1.9	

^a This category includes mothers who were retired or had taken early retirement, were studying and unable to work or who could not be classified into the other categories, especially, women who, without exercising any salaried activity and who were not self-employed, received income from property rents and/or from other investments; women temporarily deprived of their freedom; and those who, without exercising economic activity, received public or private assistance.

couple mothers amongst the manual social group. During the first time period, lone mothers had almost the same risk of having at least one selected condition (aPR = 1.04; 95% CI = 0.62–1.76) but were at 50% higher risk in 2011–2012 (aPR = 1.51; 95% CI = 1.04–2.20) compared with couple mothers. Similarly, the higher probability amongst lone mothers of sleeping less than 6 hours/day increased from 65% (aPR = 1.65; 95% CI = 1.03–2.64) to 86% (aPR = 1.86; 95% CI = 1.12–3.08). However, changes in inequalities were not statistically significant (p-value for interaction terms between type of motherhood and survey year > 0.05).

Some non-statistically significant patterns were observed between couple and lone mothers belonging to the non-manual social class. On the one hand, lone mothers showed a higher risk of poor health behaviours than couple mothers. They were approximately 25% more likely to be smokers both in 2003–2004 (aPR = 1.26; 95% CI = 1.00–1.59) and in 2011–2012 (aPR = 1.23; 95% CI = 0.95–1.58). They were also more likely to sleep less than 6 hours/day, showing different patterns between the two time periods. While lone mothers belonging to the non-manual social class were 50% more likely to sleep less than 6 hours/day than couple mothers in 2003–2004 (aPR = 1.48; 95% CI = 0.67–3.24), this risk was less than 10% higher in 2011–2012 (aPR = 1.08; 95% CI = 0.54–2.17). However, lone mothers did not show a higher risk for adverse health outcomes both in 2003–2004 and 2011–2012. Compared with couple mothers, lone mothers reported better self-perceived health in 2003–2004 (aPR = 0.79; 95% CI = 0.56–1.13; no differences in 2011–2012) and a lower risk of having at least one selected chronic condition in 2011–2012 (aPR = 0.59; 95% CI = 0.32–1.07; no differences in 2003–2004).

Table 2

Prevalence of poor health outcomes and health behaviours, by type of motherhood: Spanish Health Survey, 2003–2004 and 2011–2012.

	Survey year 2003–2004, %				Survey year 2011–2012, %			
	Couple mothers (n = 2502)	Lone mothers-household heads (n = 429)	Lone mothers-non-household heads (n = 51)	p-value	Couple mothers (n = 2586)	Lone mothers-household heads (n = 370)	Lone mothers-non-household heads (n = 114)	p-value
Poor self-perceived health	26.4	28.8	14.8	0.215	20.3	27.5	19.1	0.055
At least one selected chronic condition	7.1	7.4	3.8	0.677	11.6	14.5	17.3	0.228
Smoker	35.4	42.7	78.1	< 0.001	29.5	39.1	42.3	0.004
Sleeping less than 6 hours/day	6.0	9.1	7.6	0.186	6.3	11.0	11.0	0.024

Table 3

Associations between type of motherhood and poor health outcomes and health behaviours, by occupational social class: Spanish Health Survey, 2003–2004 and 2011–2012. Changes in inequalities between couple and lone mothers-household heads.

	Non-manual social class					Manual social class				
	2003–2004 (n = 1162)		2011–2012 (n = 1221)		p-value inter	2003–2004 (n = 1748)		2011–2012 (n = 1683)		p-value inter
	%	aPR (95% CI)	%	aPR (95% CI)		%	aPR (95% CI)	%	aPR (95% CI)	
Poor self-perceived health										
Couple mothers	20.9	1.00	14.9	1.00		29.5	1.00	24.6	1.00	
Lone mothers-household heads	17.0	0.79 (0.56–1.13)	15.2	1.00 (0.66–1.52)	0.408	42.2	1.33 (1.06–1.66) [†]	34.0	1.36 (1.05–1.77) [†]	0.883
At least one selected chronic condition										
Couple mothers	5.5	1.00	10.4	1.00		7.8	1.00	12.7	1.00	
Lone mothers-household heads	5.6	1.00 (0.52–1.91)	6.2	0.59 (0.32–1.07)	0.243	8.9	1.04 (0.62–1.76)	19.5	1.51 (1.04–2.20) [†]	0.253
Smoker										
Couple mothers	29.5	1.00	27.3	1.00		39.2	1.00	31.2	1.00	
Lone mothers-household heads	37.3	1.26 (1.00–1.59)	33.5	1.23 (0.95–1.58)	0.879	49.4	1.30 (1.08–1.57) ^{**}	41.3	1.34 (1.08–1.66) ^{**}	0.862
Sleeping less than 6 hours/day										
Couple mothers	3.2	1.00	5.4	1.00		7.8	1.00	7.0	1.00	
Lone mothers-household heads	4.8	1.48 (0.67–3.24)	5.9	1.08 (0.54–2.17)	0.559	14.0	1.65 (1.03–2.64) [†]	13.3	1.86 (1.12–3.08) [†]	0.735

%: prevalence (in percentage) of health and health behaviours for couple mothers and lone mothers-household heads. aPR (95% CI): age-adjusted prevalence ratio amongst lone mothers-household heads compared to couple mothers (95% confidence interval). p-value inter: p-value for the interaction between type of motherhood and survey year.

* p-value < 0.05

** p-value < 0.01

outcome analysed. On the other hand, inequalities between unemployed lone and couple mothers, from both non-manual and manual social classes, showed a non-significant decrease over time for all outcomes. Amongst housewives, inequalities in health between lone and couple mothers increased mostly for health outcomes and decreased for health behaviours (except for sleeping less than 6 hours/day amongst mothers from the manual social class). Finally, inequalities in smoking behaviour between lone and couple mothers showed a non-significant decrease amongst unemployed mothers and housewives (both the non-manual and manual social class), while a non-significant increase was observed amongst employed mothers from the manual social class.

4. Discussion

The main results of this study show that inequalities in health and health behaviours between couple and lone mothers could exist in Spain, especially for those belonging to manual social class. Changes in inequalities between 2003–2004 and 2011–2012 could not be confirmed, although some patterns were detected.

4.1. Differences in sociodemographic characteristics

The proportion of lone mothers-household heads decreased, while that of lone mothers-non-household heads increased. An explanation for this finding could be that, in economic downturns, a serious option for many lone mothers to avoid child poverty is to return to the parental home and receive financial support from their families to make ends meet. New lone mothers may also have more frequently felt unable to afford a household in 2011–2012 than in 2003–2004 and so they may have remained in the parental home. Additionally, given the economic difficulties during a crisis, fewer couple mothers may have been able to afford to separate from their partners, due to their economic dependence.

The unemployment rate increased for all three groups of mothers but was especially high for lone mothers, both household heads and non-household heads. This finding highlights the disadvantaged position of lone mothers and could be explained by their greater vulnerability and exposure to unemployment (Artazcoz et al., 2014). Of note, employment was high amongst lone mothers-household heads in

2003–2004 compared with that amongst couple mothers, suggesting the importance of paid employment in providing lone mothers with the economic resources that allow them to become independent. This could also explain the decrease in lone mothers-household heads in 2011–2012 because, if these women are unemployed, they will not be able to afford lone motherhood on their own. Therefore, greater vulnerability to unemployment could be experienced by lone mothers-household heads, who could be more severely affected by the economic crisis, since, as the main breadwinners in the household, they probably need a job to a greater extent. Thus, they are more dependent on social protection policies for families and children, which are scarce in Spain.

The decision to divide lone mothers into household heads and non-household heads was initially taken to reflect the characteristics of the Spanish ‘traditional family policy model’ and the peculiar dependence of mothers in general and lone mothers in particular on their relatives to take care of their children (Korpi, 2000). However, due to the very small sample size and differences in sociodemographic characteristics, lone mothers-non-household heads were excluded from further analyses.

On the other hand, some specifications on the definition of the occupational social class and employment status should be mentioned. Authors decided to differentiate between those women who are not in paid employment but are in active employment search (unemployed), from those women who are not either in paid employment or in active employment search (housewives). Unemployed women are within the labour market and they might receive some unemployment benefits from the welfare state if they have previously been in paid employment. While housewives are not within the labour market, are not entitled to any unemployment benefits since they have not been in paid employment, and their main activity declared was housework. As different categories of employment status could overlap since both employed and unemployed women usually are housewives too, it is worth-mentioning that this variable was based on the women’s current main activity and always the categories ‘employed’ and ‘unemployed’ prevailed over ‘housewives’. The distinction between unemployed and housewives was also made because an important proportion of housewives was found in our sample since they represent an important part of the women population in Spain, a country characterised by a ‘traditional family policy model’ where the incorporation of women into the labour force is still

Table 4

Associations between type of motherhood and poor health outcomes and health behaviours, by occupational social class and employment status: Spanish Health Survey, 2003–2004 and 2011–2012. Changes in inequalities between couple and lone mothers-household heads.

	Non-manual social class					Manual social class				
	2003–2004 (n = 1143)		2011–2012 (n = 1207)		p-value inter	2003–2004 (n = 1712)		2011–2012 (n = 1655)		p-value inter
	%	aPR (95% CI)	%	aPR (95% CI)		%	aPR (95% CI)	%	aPR (95% CI)	
Poor self-perceived health										
Employed										
Couple mothers	20.0	1.00	12.5	1.00		24.3	1.00	21.2	1.00	
Lone mothers-household heads	17.3	0.82 (0.55–1.20)	12.8	0.96 (0.56–1.64)	0.625	36.8	1.43 (1.04–1.95)*	35.3	1.61 (1.13–2.31)**	0.613
Unemployed										
Couple mothers	14.7	1.00	20.4	1.00		26.8	1.00	26.3	1.00	
Lone mothers-household heads	20.0	1.36 (0.32–5.69)	22.3	1.09 (0.50–2.37)	0.790	41.7	1.37 (0.75–2.50)	27.8	1.07 (0.68–1.68)	0.516
Housewife										
Couple mothers	22.6	1.00	20.7	1.00		32.9	1.00	25.7	1.00	
Lone mothers-household heads	16.4	0.60 (0.08–4.48)	19.6	1.12 (0.19–6.61)	0.650	60.6	1.68 (0.92–3.04)	53.2	2.14 (1.05–4.37)*	0.608
At least one selected chronic condition										
Employed										
Couple mothers	5.0	1.00	9.5	1.00		6.9	1.00	9.9	1.00	
Lone mothers-household heads	5.0	0.99 (0.46–2.13)	4.9	0.51 (0.24–1.10)	0.226	7.6	1.06 (0.51–2.18)	15.9	1.57 (0.89–2.76)	0.403
Unemployed										
Couple mothers	7.6	1.00	15.2	1.00		4.7	1.00	15.1	1.00	
Lone mothers-household heads	11.0	1.51 (0.23–9.98)	10.9	0.78 (0.27–2.29)	0.553	15.3	2.91 (0.86–9.91)	28.3	1.89 (1.09–3.30)*	0.528
Housewife										
Couple mothers	4.9	1.00	11.4	1.00		8.9	1.00	13.7	1.00	
Lone mothers-household heads	...a		23.8	2.54 (0.41–15.9)	10.1	10.1	0.97 (0.23–3.42)	16.4	1.30 (0.38–4.41)	0.748
Smoker										
Employed										
Couple mothers	30.4	1.00	27.1	1.00		40.7	1.00	31.8	1.00	
Lone mothers-household heads	35.4	1.16 (0.89–1.51)	32.1	1.18 (0.88–1.59)	0.927	44.9	1.12 (0.87–1.44)	41.9	1.33 (1.00–1.76)*	0.370
Unemployed										
Couple mothers	31.1	1.00	27.5	1.00		51.3	1.00	34.0	1.00	
Lone mothers-household heads	78.0	2.51 (1.43–4.42)	41.3	1.52 (0.87–2.65)	0.218	71.6	1.44 (1.07–1.95)*	42.9	1.26 (0.88–1.81)	0.570
Housewife										
Couple mothers	27.8	1.00	28.5	1.00		34.7	1.00	28.6	1.00	
Lone mothers-household heads	57.9	1.93 (0.73–5.13)	49.5	1.85 (0.68–5.03)	0.954	53.7	1.65 (0.94–2.90)	18.2	0.63 (0.17–2.38)	0.192
Sleeping less than 6 hours/day										
Employed										
Couple mothers	3.2	1.00	5.3	1.00		6.8	1.00	7.8	1.00	
Lone mothers-household heads	3.7	1.11 (0.41–3.04)	5.9	1.08 (0.49–2.42)	0.966	12.0	1.63 (0.89–2.97)	15.8	1.95 (1.05–3.65)*	0.683
Unemployed										
Couple mothers	5.8	1.00	6.8	1.00		9.8	1.00	7.1	1.00	
Lone mothers-household heads	13.9	2.40 (0.38–15.3)	...a			12.8	1.22 (0.33–4.55)	8.8	1.24 (0.45–3.41)	0.989
Housewife										
Couple mothers	2.2	1.00	2.7	1.00		7.7	1.00	5.5	1.00	
Lone mothers-household heads	54.7	18.3 (4.4–76.6)**	19.6	9.49 (1.21–74.3)*	0.622	7.6	0.82 (0.20–3.28)	10.0	2.02 (0.32–12.79)	0.442

%: prevalence (in percentage) of health and health behaviours for couple mothers and lone mothers-household heads. aPR (95% CI): age-adjusted prevalence ratio amongst lone mothers-household heads compared to couple mothers (95% confidence interval). p-value inter: p-value for the interaction between type of motherhood and survey year. *: p-value < 0.05; **: p-value < 0.01.

^a: insufficient number of respondents.

very low in comparison with other European countries (Artazcoz et al., 2014; Korpi, 2000). In addition, it should be noticed that both unemployed and housewives could be assigned to an occupational social class although they were not in paid employment at the time the survey was conducted. This is because occupational social class was defined according to current or most recent occupation. If never occupied, then the occupational social class of the main breadwinner in the household was assigned to the selected mother in our sample. This is the reason why many unemployed mothers and those mothers who are housewives could be assigned to one of the categories of occupational social class. However, this option was not possible for lone mothers-household heads who were unemployed or housewives because they were the main breadwinners in the household.

4.2. Changes in the prevalence of health outcomes and health behaviours

During the economic crisis, the results suggest that self-perceived

health improved, a phenomenon also found by other authors in the same context analysing other populations in Spain (Bacigalupe et al., 2016; Bartoll et al., 2015; Regidor, Barrio, Bravo, & De La Fuente, 2014; Urbanos-Garrido & Lopez-Valcarcel, 2015). Possibly, people might overstate their health perception when comparing themselves with others in worse conditions such as, for example, the unemployed. Moreover, unemployment benefits can be claimed for up to 2 years. Thus, self-perceived health amongst the unemployed in 2011–2012 might still not have worsened by as much as expected (Bartoll et al., 2015).

The decrease in smoking for all groups of mothers suggests that new anti-smoking laws in Spain have had a positive effect. In addition, due to the economic crisis, more disadvantaged mothers may have experienced greater difficulty in being able to afford cigarettes and may have been forced to quit smoking (Bacigalupe et al., 2016). In fact, unemployed lone mothers from both manual and non-manual social classes have shown the greatest decrease in the prevalence of smokers.

The prevalence of sleeping less than 6 hours/day seems to have increased in both couple and lone mothers from both the manual and non-manual social classes who were in paid employment. This could be because balancing family and work forces working mothers to reduce the time spent in personal care (which includes hours of sleep) in order to gain time to care for dependent children (Artazcoz, Borrell, Benach, Cortès, & Rohlf, 2004).

4.3. Inequalities in health and health behaviours: Interactions between type of motherhood, occupational social class and employment status

This study reveals that inequalities in health and health behaviours between couple and lone mothers in Spain could exist for those belonging to the manual social class. Results indicate that lone mothers from the manual social class could be at higher risk of all the health outcomes and health behaviours analysed in this study. However, it does not seem that lone mothers amongst the non-manual social class reported worse health outcomes, suggesting that occupational social class might play an important role in the association between type of motherhood, and health outcomes and health behaviours. Therefore, inequalities between lone and couple mothers might be a matter of socioeconomic position and women's economic ability to cope with motherhood, especially lone motherhood. Lone mothers have been shown to be more exposed to economic strain, which may be even greater amongst those from the manual social class, since lone mothers from the non-manual social class probably have greater purchasing power, preventing them from a higher risk of economic strain (Fritzell & Burström, 2006).

For mothers, having a partner living in the same household may provide affection, emotional support or help with childcare. However, this support could also be provided by the mothers' relatives and friends. This is true for mothers living with a partner, as well as for those who have separated from their partners or chosen lone motherhood. Family and friends may gradually help the lone mother to adapt to her new situation substituting the emotional or practical support no longer provided by the partner. Therefore, social, community and family networks play an important role in providing emotional support and help with childcare. However, it is less likely that family and friends share the financial burdens of raising children to the same extent as a partner. Consequently, the greatest contribution of a partner might be economic, which could explain why lone mothers from the manual social class showed worse results than couple mothers, while lone mothers from the non-manual social class did not show worse health outcomes. Lone mothers with economic resources could pay for domestic services and childcare needs, experiencing fewer difficulties in dealing with lone motherhood. Thus, lone mothers might enjoy the best part of being a mother, eschewing unpleasant tasks such as laundry or cleaning. In contrast, many couple mothers might feel responsible for all the housework in addition to childcare (Korpi, 2000), taking on their partner's housework too, while lone mothers might not feel this pressure, since they do not cohabit with a partner. Another factor is the route into lone motherhood. Some mothers are lone mothers by choice, while a significant proportion are lone mothers as a result of separation, divorce or widowhood. Lone mothers by choice may show different characteristics and it is probable that they are more frequently from the non-manual social class, enjoying social support and good health.

When employment status was analysed in addition to occupational social class, patterns of inequalities remained similar. Amongst the manual social class, lone mothers seem to have a higher risk of poor health outcomes and health behaviours than couple mothers, regardless of whether they were employed, unemployed or housewives. Amongst the non-manual social class in paid employment, lone motherhood seems to confer a protective effect for health although non-statistically significant. Therefore, amongst women in a more advantaged socioeconomic position, lone motherhood seems not to have a negative effect. Once again, these results highlight that inequalities between

couple and lone mothers could be explained by a socioeconomic perspective, indicating that employment status might also play an important role. Paid employment provides more opportunities to lone mothers to become independent and live in their own household as they are the main breadwinners. Likewise, paid employment could provide a buffer against the lack of a partner's financial support.

Despite not showing an interaction between type of motherhood and survey year, some differences in inequalities between 2003–2004 and 2011–2012 deserve discussion. Inequalities in health and health behaviours between lone and couple mothers indicate an increase amongst the manual social class and the employed. Because working conditions can worsen in times of economic crisis, inequalities are not simply a matter of being in paid employment or not, but are rather a matter of working conditions (Dziak et al., 2010). During the time period studied, the implementation of various labour market reforms has increased job precariousness and has weakened worker rights (Bacigalupe et al., 2016; Bartoll et al., 2015; Eurofound, 2015). Worsening of working conditions could affect lone mothers-household heads to a greater extent. For instance, part-time work may have become more scarce, increasing the difficulties of lone mothers in balancing work and family life. This could negatively impact health, although these effects would probably become evident in the long term.

A possible explanation for the lack of statistically significant interaction between type of motherhood and survey year in this study could be the latency period in times of economic crisis. From the second quarter of 2008, the Spanish economy entered a crisis. However, the largest cutbacks in welfare state and public policy expenditure in Spain started in 2010 (Bacigalupe et al., 2016). Thus, insufficient time may have passed since the implementation of the cutbacks, and any changes in inequalities in health and health behaviours will probably be revealed later. Indeed, it is important to distinguish between short- and long-term effects of an economic crisis on health (Bacigalupe et al., 2016). The possible lag between the effect of an economic crisis and changes in health outcomes is not obvious and it is not clear which health outcomes will rapidly be affected by an economic crisis. In addition, for some time, the initial effects of economic crises could be mitigated partly by unemployment benefits and partly by family networks (Regidor et al., 2014). In the Spanish socioeconomic and political context, family support could have acted as a buffer, masking some of the effects of the economic crisis. With women playing an important role as caregivers and the low female participation in the labour market, social protection is largely based on family support, in contrast to a more central role of the state (Artazcoz et al., 2014). Consequently, despite the cutbacks in social policies, mothers in general may have continued to receive family support, protecting especially lone mothers from increased health risks (Berkman et al., 2015).

Despite analysing two fairly different moments in the Spanish socioeconomic and political context, we found non-statistically significant changes in inequalities in health and health behaviours. This seems to highlight that the higher exposure of lone mothers-household heads from the manual social class is not purely arbitrary or is only explained by the economic crisis, but is a structural process. As previously mentioned, the value of a partner to a mother lies mainly in providing financial support, which is less likely to be supplied by family or friends. Other types of support such as affection, emotional support or helping with childcare may be supplied by social, community and family networks. The way in which lone mothers organise the upbringing and care of their children goes beyond the nuclear and extended family, with the community and social networks in which they are involved acquiring a greater role (Di Nella et al., 2014). Good social, community and family networks could mitigate inequalities between couple and lone mothers (Burström et al., 2010). However, a differential characteristic between manual and non-manual social classes and between employed and unemployed mothers, is the ability to pay for some services, such as cleaning and childcare. If the welfare state considered the plurality of family models and redistributed wealth, other types of

motherhood not implying risks for health might be possible, as long as the minimum material needs were covered. Therefore, the socio-economic and political context also plays an important role in generating inequalities between couple and lone mothers (Burström et al., 2010). Lone mothers are at increased risk of social exclusion and some factors that may help to explain their greater precariousness than couple mothers are the lack of family protection policies in the context of welfare regimes (Di Nella et al., 2014).

Finally, other authors have pointed out that inequalities between couple and lone mothers could also be influenced by gender inequalities. The capitalist model of production organised around the sexual division of work underestimates domestic and care work, without considering the importance of this work for the sustainability for the human species (Di Nella et al., 2014). Lone motherhood illustrates the difficulties of balancing personal time, paid and unpaid work time, and family time. Time management policies are one of the central axes for tackling gender inequality and the discrimination of women in society, as they would assign an adequate value to caregiving. It is essential to recognise the importance of caregiving and domestic responsibilities (Almeda & Di Nella, 2011).

4.4. Limitations and strengths

The cross-sectional design of this study does not allow us to draw conclusions on the causality of the associations found. However, considering that lone mothers are a socioeconomically disadvantaged group, it is likely that their excess risk of poor health outcomes and health behaviours is underestimated (Rousou et al., 2013). It is also worth-mentioning that, when analysing self-reported data, there could be differences by socioeconomic factors in misreporting chronic conditions or rating self-perceived health (Dowd, 2012; Mackenbach, Looman, & van der Meer, 1996). In addition, it would have been interesting to study inequalities in mental health between couple and lone mothers, but we were unable to do so because there is no information on this topic in the 2003–2004 data. Moreover, income level is an important factor in understanding inequalities between couple and lone mothers, but comparable data from the two waves of the Spanish National Health Survey were not available. Finally, the main limitation is probably the small sample size that, in addition to the performance of different stratifications, became even smaller in each stratified group. Because of this, results should be interpreted with caution since associations could be unstable. Despite this limitation, authors highlight the value of analysing inequalities in health between couple and lone mothers within different socioeconomic groups, as, for instance, occupational social class and employment status. This is the main strength of this study, which shows the importance of including socioeconomic factors when studying inequalities in health and health behaviours between lone and couple mothers in Spain, as well as in other similar socioeconomic and political contexts, revealing that inequality might not depend simply on the presence or absence of a partner. To further understand inequalities in health and health behaviours between couple and lone mothers in Spain and other similar contexts, as well as to address the impact of the economic crisis in these inequalities, longitudinal data are necessary.

5. Conclusions

Inequalities in health and health behaviours between couple and lone mothers seem to exist in Spain amongst those belonging to the manual social class. Lone mothers-household heads from the manual social class are at higher risk of poor health and health behaviours in comparison to couple mothers (statistically significant results). However, amongst the non-manual social class, lone mothers-household heads report better self-perceived health and are less likely to have at least one selected chronic condition, possibly due to a protective effect of the higher income of the non-manual social class (non-

statistically significant results). Therefore, our results could indicate that, when the minimum material resources are covered, lone mothers are not at higher risk of poor health. The greater vulnerability of lone mothers in comparison with couple mothers is partly because lone mothers have to shoulder the burden of childcare and being the breadwinner largely alone. Therefore, it seems that it is not a matter of having a partner or not, but rather of the lack of financial support available to women to raise their children, in a context where social protection policies for families and children are scarce, as is the case of Spain. Despite some differences in the patterns of inequalities in health and health behaviours between couple and lone mothers over the study period, we cannot confirm that inequalities changed between 2003–2004 and 2011–2012. Possible explanations include the Spanish ‘traditional family policy model’ characterised by strong family solidarity and the latency period between the onset of the crisis and its effect on health outcomes and health behaviours.

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Declaration of interest

The authors declare they have no conflicts of interest.

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