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Health inequalities in Argentina and Italy: A comparative analysis of the relation between socio-economic and perceived health conditions

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ABSTRACT

In the literature there is a lack of investigation on health inequalities in South America and their differences with respect to those in the developed countries. Since Italy has recorded similar economic trends in recent years and has some similarities with Argentina, we decided to use the Mediterranean country for comparative purposes. Our hypothesis was that, beyond structural differences, health inequalities present similar patterns in these two countries characterized by a capitalist economy. Social groups in advantaged educational and occupational positions exhibit better health than disadvantaged groups. We present some descriptive statistics on the overall situation in the two countries, and we then analyse data stemming from two surveys that collected individual information on social conditions and health statuses (OASD from 2010 to 2015, and "Multiscopo – Health condition and use of health services", ISTAT 2013). The findings show that Argentina and Italy have different levels of wellbeing, mortality rates, and health services. But relative disparities in health seem very similar, confirming the hypothesis of Marmot (2017) about the general form of health inequalities. Manual and precarious workers (in particular unemployed persons) present systematically worse perceived health with respect to higher social classes.

1. The role of socioeconomic conditions on health inequalities

Investigation of the sources of heterogeneity in the population's health is a central topic in social and political sciences. In different ways, health is the main outcome of the impact of social conditions on individual lives. Health is "embedded" in human bodies through many socio-economic disadvantages that individuals cumulate during their lives (Marmot, 2017; Cullati et. al. 2014; DiPrete & Eirich, 2006; Spencer & Logan, 2002; Willson, Shuey, & Elder, 2007).

Many scholars explain variability in health by applying structuralist theories. In these approaches, people in deprived or vulnerable social positions have a higher propensity to live and work in worse conditions which increase the chances of poor health due to stress, morbidity and mortality (Bartley, 2003; Drever, Daran, & Whitehead, 2004; Marmot, 2013; Phelan, Link, & Tehranifar, 2010; WHO, 2013; Wilkinson & Marmot, 2003). In particular, these theories pay most attention to socio-economic factors associated with social position (levels of education, labour market organization and material resources such as income, job environment and general working conditions).

This perspective assumes that individuals occupying different "social positions" are differently exposed to physical deterioration (toxic agents, poor housing conditions or dangerous jobs) as well as psychological attrition (stress due to economic worries, unemployment, excessive workload, repetitive tasks, lack of job autonomy). These factors are considered to be important etiological causes of a wide group of illnesses (Cassel, 1976; Cohen, Janicki-Deverts, & Miller, 2007; Navarro, 1986; Phelan et al., 2010; Siegrist & Marmot, 2004).

The influence of the individual's socioeconomic position on his/her health is frequently not direct; rather, it is the product of intermediary factors: material conditions, such as the quality of housing, psychosocial circumstances, including stress and behaviors such as smoking or poor diet. This model incorporates the health system as another social determinant, because, on the one hand, the deterioration or improvement of health status has a feedback effect on socioeconomic status,

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https://doi.org/10.1016/j.rssm.2018.04.004 Received 8 January 2018; Received in revised form 5 March 2018; Accepted 13 April 2018 Available online xxx 0276-5624/ © 2018. and on the other hand, the health sector plays an important role in promoting and coordinating action policies on social determinants.

Thus, according to a large body of scientific literature, social position is a decisive factor in determining health conditions. The notion can be operationalized in different ways. However, the most frequently used dimensions are income, occupational status, and educational level. It should also be noted that all these dimensions are closely correlated; we now briefly present the characteristics of each of them.

A large number of scholars tend to investigate inequality by employing income (often in quintiles or deciles) as the only proxy for the social position of individuals. However, income is not able to reveal the dynamics which produce and reproduce the disadvantages that shape social stratification in terms of both material and symbolic advantages, and also, in more specific terms, health status (Goldthorpe, 2010). In particular, to use income (or one-dimensional status scales) would highlight the gradient between the worst socio-economic and health position, but it would prevent recognition of the different levels of inequality attributable to the occupational group and educational life course related to power hierarchy and cultural resources.

Classifying the occupational position in the labour market requires identifying a group of individuals and families that occupy a similar position within the power relations underlying the social division of labour and the market position, and within the related relational and distributive inequalities. Operationally, individuals are classified according to the typical work situation that differentiates them in the relationship of ownership and authority in which they are placed (Erikson & Goldthorpe, 1992). Let us therefore look at some hypotheses about the ways in which power relationships that undergo disparities in labour market would affect health. These explanations are not mutually exclusive, one does not negate the other, but they accentuate different ways in which belonging to one class rather than another may result in a deterioration in the class members' health. By re-adopting the distinction proposed by Bartley (2004) we can briefly consider three main explanatory models: A. the psycho-social explanation; B. the materialistic explanation; C. the accumulation of disadvantages.

A) The basic principle of the psycho-social explanation, which is the one most frequently adduced by scholars, is that the social positions undergo a more systemic stress state, as defined by Aneshensel (1992), so as to produce a weakening of immune defenses and lesser psychological protection from risk behaviors (Cohen et al., 2007). One of the first scholars to advocate this approach was Karasek (1979), who defined job strain as the tension between job demands and decision-making autonomy (job decision latitude/control). High stress results in a high workload associated with poor decision-making autonomy. According to Wilkinson (2002), the hierarchy of power and the existence of inequality systems increase the stress load to the disadvantage of lower social positions. Therefore, membership of a disadvantaged class should be considered a real health risk factor: "We needed to theorize social status as a psychosocial risk factor, and the biology tells us that this means theorizing it as a source of chronic stress "(Wilkinson, 2002: 539).

In regard to the psycho-social explanation, to be mentioned in particular is Siegrist's approach (Siegrist, 1999; Siegrist, 2000), which focuses on the imbalance between efforts and rewards. This approach is inspired by Homans' theory of exchange, for which a person's way of acting is influenced by past experiences, that is to say, how it was rewarded earlier. The "usure du travail" would result in a deficit in the balance of 'reciprocity'. In other words, people frustrated with their social roles in terms of the ability to obtain material, symbolic and relational resources (work income, family roles, self-esteem, etc.) suffer from a social reward deficit. Disfigurement would cause so much distress and suffering as to affect the efficiency of the neurobiological system through a high and persistent state of stress.

B) The materialistic explanation attaches importance to the material living conditions of the members of the lower classes. They rely on lower income and wealth resources, so that they have de facto limited access to resources that can safeguard their health: for example, they may lack money to pay for medicines or health care, or they may live in inadequate housing without heating or drinking water or a sewerage system; or more trivially they may lack the daily caloric intake required for a healthy life. The role of the materialist explanation is particularly evident in health inequalities in international comparisons, for example when comparing rates and different causes of infant mortality in particularly disadvantaged nations, such as sub-Saharan or less developed countries, compared to the most industrially advanced ones (WHO, 2015). Another aspect to which the materialist explanation attaches great importance is the higher exposure of disadvantaged class members to unhealthy environments, as exemplified by workers in certain industrial sectors such as construction, where employees are most exposed to work accidents (Karjalainen & Niederlaender, 2004).

C) The third explanation refers to the model of the life course (Sarti & Zella 2016; Cullati, Rousseaux, Gabadinho, Courvoisier, & Burton-Jeangros, 2014; Kuh & Ben-shomo, 1997) and takes into account the fact that being located at the bottom of the social hierarchy produces initial disadvantages that accumulate over time (disadvantages that may be already present during pregnancy, Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003; Tucker-Drob, Rhemtulla, Harden, Turkheimer, & Fask, 2011). More than an alternative to the two previous hypotheses, this one attempts to shed light on the processes that produce and reproduce inequalities in health. In this regard it should be noted that the selection effects cannot be aprioristic, so that subjects who are less likely to develop worse health conditions (anxiety, lack of self-esteem, various illnesses, etc.) are also those that most easily ascend the social leadership scale to occupy top positions. From the point of view of empirical evidence, however, it should be noted that such selection effects are considered modest (Aittomäki, Martikainen, Laaksonen, Lahelma, & Rahkonen, 2012; Mulatu & Schooler, 2002).

Another fundamental dimension of socioeconomic stratification is education, which is a reliable predictor of health and is closely associated with wellbeing, unhealthy lifestyle, morbidity, and mortality (Dupre, 2008; Eikemo, Huisman, Bambra, & Kunst, 2008; Ross & Mirowsky, 1999; Kitigawa & Hauser, 1973; Ross & Wu, 1996). Education is such a good predictor that models using education as control variable see a weakening of the effects of the occupational class. Explanations of the role of education in health partially overlap with those of the occupational position (they are also closely linked). Highly-educated individuals tend to obtain better employment (healthier, less stressful, more autonomous) (Della Bella et al. 2011; Brunner & Marmot, 2006; Wilkinson & Marmot, 2003); they earn more; they can afford better housing and living standards (such as more physical activity, better diet, etc.) (De Irala-Estévez et al., 2000; Mancino, Lin, & Ballenger n, 2004; Mclaren, 2007); they can count on more valuable social relations (with doctors or informed people). Moreover, more cultural resources furnish better knowledge of medicine and easier use of healthcare services, including preventive medicine (Herzlich & Adam, 1994). Unfortunately, only expensive longitudinal data (panel surveys) enable the study of life courses dynamically.

With this theoretical frame in mind, in what follows we investigate the social inequalities in health in Argentina and Italy. We first consider the general difference in several aggregated health indicators in the two countries. We then detail the health inequalities using data from individual surveys that enable account to be taken of specific socio-economic statuses based on occupational and educational conditions and the associated health statuses.

Argentina and Italy are modern countries with different levels of industrialization, educational attainment, wellbeing, mortality and health care. But the general organization of society is quite similar: they are democratic countries with capitalist economies. Moreover, the two countries have a cultural proximity, since a large number of Argentinians have Italian forebears, and, more importantly, they have experienced a similar macroeconomic trend in recent years. The two economies were hit hard by the global crisis that began in 2007 in the USA, with a relative impoverishment of wealth per capita.

In this regard, it is interesting to compare the pattern of social inequalities in health in the two countries, which have similar labour market organizations but different levels of wealth. More in general, they may be used as a case study of the structural differences between South American and European societies.

2. A general comparison of health in Argentina and Italy

The global economic crisis that spread from the United States in 2007 impacted more strongly on Italy than Argentina: in particular, the official rate of total unemployment in Italy rose from 6.1 in 2007 to 11.9 in 2015, whilst in Argentina it remained quite stable at about 7% (source: World Bank). It should also be noted that Argentina had already suffered a more dramatic economic downturn in early 2000 (Dalle, 2017; Sandleris & Wright, 2014). More particularly as regards the South American context, most Latin American societies have been marked by underdevelopment and severe inequalities. In the mid-twentieth century, Argentinian society seemed to illustrate an alternative: high urbanization, full employment, universal healthcare and education, advanced intermediate industrialization and an extensive middle class - a relatively integrated society with moderate inequality and much social mobility. But this society changed dramatically, having to abandon its longed-for future of progress. Indeed, particularly at the end of the twentieth century, in the context of neoliberal structural reforms (Collins, McCartney, & Garnham, 2015), Argentinian society could not avoid the trap of underdevelopment: economic liberalization, trade openness and financial flexibilization resulted in instability, rising unemployment, poverty and social marginality, with deteriorating public health, education and social protection. These processes produced a society marked by profound inequalities, internal conflicts and social unrest, a cycle that produced the economic, social and political crisis of 2001-2002, the most severe in Argentina's modern history. In contrast, the first decade of the 21st century, helped by a favourable international context, proved that some economic, occupational, social, political and institutional recovery was possible. But this period did not last long: the economy stagnated, and society's structural fragmentation became evident once again. In 2015, Argentinian society presented several different layers of marginalized, poor and excluded segments.

However, in recent years Italy and Argentina have exhibited a similar trend in economic evolution: both countries have suffered an economic recession, with a stagnation of per capita wealth with respect to the leading economies, such as the United States and Germany.¹ In Argentina, per capita GDP (PPP constant 2011 international in US dollars) from 2007 to 2015 remained under 20 thousand dollars; in the same period in Italy it decreased from 39 to 34 thousand dollars (source: World-Bank).

Whilst the recent economic evolution is similar in Argentina and Italy, the two countries present markedly different levels of wellbeing. Health indicators show clearly different standards in life expectancy and health care, reproducing the wide dissimilarities between Europe and Southern America. WHO statistics help to describe the general health situations of the two countries.² In Italy life expectancy at birth in 2012 was 83, whilst in Argentina it was 76; life expectancy at age 60 was 25 in Italy and 21 in Argentina. Moreover, life expectancy in good health was 73 in Italy and 67 in Argentina. The increase in life expectancy at birth over the period of 2000–2012 was 3 years for Italy and 2 for Argentina. In 2013 the under-five mortality rate (per 1000 live births) was 4 in Italy and 13 in Argentina.

The main causes of death are the same: ischaemic heart diseases and stroke. But in Argentina relatively more frequent are acute respiratory infections with respect to Italy, where instead deaths are more frequently due to cancers and cardiovascular diseases. It should also be noted that differences in the causes of death suggest a diverse impact of health care. In this regard, the most recent empirical evidence reported by *The Lancet* is that: "Performance on the HAQ Index [³] and individual causes [of death] showed distinct patterns by region and level of development, yet substantial heterogeneities emerged for several causes, including cancers in highest-SDI countries; chronic kidney disease, diabetes, diarrhoeal diseases, and lower respiratory infections among middle-SDI countries." (Barber et al., 2017, 231).

In 2012, the percentage of GDP dedicated to total expenditure on health care was 9.3% in Italy, whilst in Argentina it was only 5%.

As regards unhealthy lifestyles, the prevalence of obesity (aged 20 +) is higher in Argentina, about 30% against 20% in Italy, while tobacco use (aged 15 +) is slightly higher in Italy, about 19% against 16% in Argentina.

In the European context, health inequalities in Italy are quite similar to those of the other Mediterranean countries, and they are lower than those of Scandinavian countries and far inferior to those of eastern European countries. Some explanatory hypotheses concern good lifestyles (Mediterranean diet), the presence of widespread familial welfare provision, and a universalist public health system: these factors seem to protect disadvantaged Italians, or to reduce the disparities in health, better than in some other European countries. However, health inequalities are also substantial in Italy.

For example, Table 1 shows the differences in life expectancy considering the educational level (source ISTAT). An Italian male without qualifications has 5,2 years less of life expectancy than one with a degree. For females the difference is about 2,7 years.

As regards Argentina, the Survey on Utilization and Expenditure on Health Services (2012) reports that, in 2010, 14% of the population stated that their health was regular, bad or very bad. 38.5% said that their health was good, while the remaining 47.5% said that it was very good or excellent. Slightly less than half of the people surveyed, 46.8%, declared that a doctor had diagnosed a chronic disease. The perception and diagnosis worsened as the age of the people surveyed increased. Good perception increased with the level of education, while the diagnosis of chronic diseases decreased. A similar pattern is observed by level of family income and social class.

Two thirds of the interviewees had a system of health protection. In all health services, including the use and purchase of medicines, women predominated, as did the older age group (60 years and over). In general, utilization was less among respondents with lower educational levels, although not markedly so, with the exception of medical consultation and the use of medicines, cases in which the lowest income quintile tended to predominate.

Evaluation of the state of health according to the diagnosis of chronic diseases, visits to the doctor and self-perception of health,

¹ From 2007 to 2010 per capita GDP (PPP constant 2011 international in US dollars) increased from 51 to 52 thousand dollars in USA, and from 40 to 44 thousand dollars in Germany (source: World Bank).

² http://www.who.int/countries/en/.

³ The HAQ Index is a comparative measure (from 0 to 100) that summarizes the level of healthcare quality and access.

Life expectancy at birth and at age 65, per level of education and gender (source: ISTAT 2012).

	Males	Fer	nales	
	At birth	Age 65	At birth	Age 65
Without title ^a	77.2	17.8	83.2	21.6
Primary	79.4	18.6	84.6	22.1
Secondary	80.9	19.2	85.3	22.5
Tertiary	82.4	20.0	85.9	22.9

^a Primary schooling not completed.

shows that the chances of a bad state of health are linked more to women and to the elderly. Nevertheless, the chances of suffering bad health decrease as the educational level and the socioeconomic status increase.

Data from the Barometer of the Argentine Social Debt (ASDO, 2011–2017) allow account to be made of social protection systems and resources that have an impact on the unequal ways in which individuals manage to cover their health care and care needs (Salvia, Poy, & Vera, 2015). The results reported suggest that the heterogeneity and social inequality that prevail in Argentina are reproduced in both the general health conditions of individuals and communities and in the system that serves them. Moreover, different health and illness states are presented for each social stratum and a completely fragmented and disconnected system that serves heterogeneous sub-populations (also considering the socioeconomic stratification and other forms of ethnic, social or cultural discrimination).

3. Hypothesis

On considering the empirical evidence, Marmot (2017) stressed that the high-income and middle-income countries tend to have similar pathways in health heterogeneity construction. The World Bank has classified Italy as "High income class" and Argentina as "Upper middle income class". Italy is defined as a post-industrialized country with a relatively high level of advanced tertiary activities, whilst Argentina is defined as an early de-industrialized country (Rodrik, 2016). The level of wealth is quite different, and it is likely that health inequalities replicate this feature.

Our hypothesis is that, despite differences in absolute wealth, the hierarchical organization of the labour market and the general economic structure is quite similar in the two countries, so that the gradient between health and socio-economic conditions, in relative terms, is analogous. As discussed in the first section, scholars maintain that the determinants of health inequalities lie mainly in the socioeconomic structure, also affecting the intermediating reproduction processes of the health disparities (such as constant stress, material deprivation, life course accumulation of disadvantage, and cultural capital deficit). We conjecture that social groups with educational and occupational advantages associated with more material and immaterial resources (higher income, better job prestige, job autonomy, etc.) tend to have better health than social groups in worse situations (unemployment, vulnerable or marginal jobs, etc.).

4. Data and methods: the construction of comparable dataset and indicators

To describe health inequalities in Argentina and Italy at an individual level, we needed to identify empirical indicators of social conditions and health statuses.

We used as the measure of individual health the perceived health declared by Argentinian and Italian interviewees in two important national surveys. The socio-epidemiological literature stresses that self-assessed health is a reliable measure of, and a good proxy for, real health conditions (Drever et al., 2004; Idler & Benyamini, 1997; Johnson & Wolinsky, 1993; Jylhä, 2009). It acts as a latent construct that mixes the personal experience of acute and chronic symptoms, and different situations of psycho-physical status, such as fatigue, backache and headaches. Empirical studies emphasise that self-reported health is also associated with clinical observations, such as physician examinations and presence of morbidity, and it predicts the mortality net of chronic and acute diseases, physical disability and health behaviours. Moreover, health self-assessment is suggested for comparative purposes by the WHO; and in fact it is present in all individual surveys on health topics.

For robustness checks of the analysis we used another perceived index based on the psychological conditions of the respondent in the last four weeks. This was an index in seven degrees (septiles) based on two latent factors, estimated separately for Argentina and Italy. We applied a factorial analysis to extract two standardized factors from a battery of seven comparable items (see Table 2 for details). Although the items were not exactly the same but semantically very similar, in our opinion the latent factor would be able to capture the information of the respondents' psychological conditions. We used this index as a metric variable, a proxy measure of the relative distribution of psychological distress in the two samples examined.

All analyses on the Argentinian sample used data from the 2013 OASD (Observatory of the Argentine Social Debt), a nationwide probability sample of 5766 adults residing in Argentina aged 18 years and older. Participants were selected by multistage cluster random sampling based on urban agglomeration, housing conditions, and socio-economic status. In the first stage, demographic criteria were used to select the urban agglomerations (by geographic region and size). Then, stratified random sampling was used in conjunction with a variable radius plot, with probability proportional to the size of the population aged 18 years and older. At the third stage, random systematic sampling was used to select households within the radius plot. A trained interviewer visited the households, and individuals were invited to participate from each of them, randomly selected through a quota system of age and sex. A total of 5636 individuals (46.4% men and 53.6% women) participated in the survey. For this analysis, all responses were weighted to reflect each subgroup's actual proportion in the overall Argentine population. The protocol was approved by an Institutional Review Board at Pontificia Universidad Católica Argentina, and all participating subjects provided oral informed consent.

With the aim of increasing the number of observations, we used the Argentinian surveys from 2010 to 2015 for a total of 33,910 valid cases.

For Italy, the survey most similar to the OASD is the "Multiscopo -Health conditions and use of health services" conducted by ISTAT (Institute National of Statistics) in 2013. The questionnaire of the survey collected information about socio-demographic characteristics, occupational condition, health conditions and use of health services. The sample had a double stratified design: sampled at the first level were municipalities, and within them households were randomly selected. All members of the households were interviewed.

In the Argentinian survey only persons older than 17 years old were interviewed. But in both surveys we selected individuals aged between 30 and 60 years. We excluded individuals younger than 30 because they might not have finished school, causing a problem of heterogeneity in the attribution of education level. At the same time, we did not select individuals older than 60 because of problems of selection (Beckett, 2000; Willson et al., 2007).

Comparing the two surveys posed two main problems. The first was the sample design; the second was operationalization of the relevant indicators.

Harmonization of indicators.

Indicator	Questions in questionnaires		Harmonization	Variables in the comparable dataset
	Argentina	Italy		
Perceived health of the respondent	"In general, what is your state of health?" 0 "No problems", 1 "Some problems", 2 "Chronic or serious" problems"	"How is your health in general?", From 1 ("Very good") to 5 ("Very bad").	For ITALY: From 1 to 3 = "Good". From 4 to 5 = "Not good" For ARGENTINA: 0 ="Good" From 1 to 2 = "Not good"	0 Good, 1 Not good
Psychological conditions in the last 4 weeks	Tired without reason: Agitated, Hopeless, Restless or impatient, Depressed, Everything requires effort, So sad that nothing can cheer me up, (1 always, 2 many times, 3 sometimes, 4 few times, 5 never)	 Tired, 2.Calm, Downhearted or discouraged, Very agitated, 5.Exhausted, Full of energy, 7.So sad that nothing can cheer me up (1 always, 2 almost always, 3 a lot of time, 4 sometimes, 5 almost never, 6 never) 	Two standardized latent factors were calculated separately for Italy and Argentina with factorial analysis on the basis of the seven original indicators. Only one factor was higher than one eigenvalue in both countries. For Italy the factor explained 56.8% of the variance, whilst for Argentina the factor explained 57.2%.	A psychological stress index in septiles, from 1 to 7, was calculated separately in the two countries; where 1 was the worst condition, and 7 the best.
Social class on the basis of occupational conditions in the household	"Socio-economic status of the household" 1 Middle class, professionals, 2 Middle class, no professionals, 3 Integrated working class, 4 Marginal class	"Higher occupational position in the households" ^a 0 Professionals, 1 Entrepreneurs, 2 White collar, 3 Petite bourgeoisie (small business? owners), 4 Working class, 5 Retired, 6 Unemployed, 9 Other condition	For ITALY: 0 = Professionals, From 1 to 2 = Middle class, From 3 to 4 = Working class, 6 = Marginal class, 5 and 9 = Missing cases, For ARGENTINA: As originals	1 High-Middle class, Professionals, 2 Middle class, no professionals, 3 Working class (stable jobs), 4 Marginal class (unemployed and precarious job conditions)
Education of the respondent	"Highest qualification obtained" 0 Without qualification, (<7 yrs of educ.), 1 Primary level, (7 < 12 yrs of educ.), 2 Secondary level, (12 < 17 yrs of educ.), 3 Universitary level (17 + yrs of educ.)	"Highest qualification obtained" 0 Without qualification, (<5 yrs of educ.), 1 Primary level, (<8 yrs od educ.), 2 Secondary level, (13 < 18 yrs of educ.), 3 Universitary level (18 + yrs of educ.)	For ITALY and ARGENTINA: (0 = 0) (1 = 1) (2 = 2) (3 = 3)	0 Without qualification (0), 1 Primary level (I), 2 Secondary level (II), 3 Tertiary level (III)

a The higher occupational position in the household is based on the best occupational position among the members of the household, considering the following order: 1) professionals, 2) entrepreneurs, 3) white collar, 4) self-employed, 5) working class, 6) unemployed.

The first problem was solved by randomly selecting in the Italian dataset only one member per household. This selection made the Italian sample structurally equal to the Argentinian sample. At the end of this data cleaning procedure we kept 29,041 valid cases for Italy and 17,898 for Argentina. The second problem was more complicated because the questions of the questionnaire were in some cases different. In particular, there were problematic differences in the classifications of socio-economic conditions, educational qualifications, and health status. After theoretical reflection, and some empirical checks, we found a satisfactory harmonization of the indicators. The resulting classifications of the variable are shown in the last column of Table 2.

Our research question is to compare health inequalities in Argentina and Italy. Thus we have to describe the associations between social groups defined on the basis of occupational and educational conditions and health status. Table 3 shows some differences in the occupational structure in the two countries. The segment of individuals in marginal conditions is about double in Argentina (16% vs. 8%), whilst high-middle class is bigger in Italy (about 10% more). Professionals are slightly more frequent in Argentina (about 12% vs. 8%).

As regards Italian segmentation, we observe a structure quite similar to that of other European countries. In particular, a substantial working and middle class (together about 85%), a smaller higher class, and a marginal class increased in the years of the recent economic downturn due to the growth of unemployment (Sarti & Zella 2016). However, the Argentinian case is more interesting because it is less debated in the international literature.

The data show that Argentina's current social structure is more heterogeneous and unequal than that of Italy. The upper-middle class includes corporate directors, professionals, entrepreneurs, agricultural

Table 3

Descriptive	statistics,	percentages.
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%	Argentina	Italy
Perceived health		
Good	65.2	67.6
Not good	34.8	32.4
Psychological stress index	septiles	septiles
(from 1-worst, to 7-best)		
Gender		
Female	54.3	51.9
Male	45.7	48.1
Education level		
Without qualification (0)	5.5	1.0
Primary level (i)	36.4	40.5
Secondary level (ii)	31.7	42.8
Tertiary level (iii)	26.4	15.7
Social class		
Marginal	16.3	7.6
Working class	39.5	41.7
Middle class	32.6	43.1
High-middle class & Professionals	11.6	7.7
Valid cases	17,876	29,041

producers, and medium-sized traders, as well as skilled technicians and employees of the economy's most dynamic sectors. These social sectors are closely integrated into Western culture, with quality of life and consumption patterns similar to those of the middle classes of southern Europe. Most of these individuals are concentrated in the city of Buenos Aires and adjacent suburbs, the main cities of the central Pam-

pas, and the gated neighbourhoods of provincial capital cities. Next, about a third of the population constitutes a middle or lower-middle stagnant class, a stratum including small business owners, workers and employees with medium or low qualifications, pensioners and some independent professionals. However, they have incomes above the poverty line and some job stability (including, importantly, affiliation through work with the national social security system). Next, another third of the sample consists of members of the working class: the impoverished former middle class, informal workers, unqualified self-employed workers, informal waged workers in micro-enterprises, rural workers or small agricultural producers from peripheral regions. These are the main users of low-quality public services and the run-down infrastructure of public education and health care. They tend to live in depressed suburbs, or in large public housing projects, particularly in Argentina's Northeast and Northwest. Finally, the last stratum comprises the new poor and the excluded. In this group, many households experience severe deprivation, infrastructure deficits and environmental risks. Usually, their income comes from unstable or casual jobs, and from social assistance programs. Also, many people are unemployed. This segment includes youths who have not finished high school, as well as children who suffer severe food insecurity (Quartulli & Salvia, 2014).

Despite the approximation of the classification due to limitations in the information available, the distribution in the table may be compatible with the hypothesis of a higher degree of social inequality in Argentina: the most advantaged and the most disadvantaged classes are bigger than others. The Gini index confirms that effectively Argentina (and all Southern American countries) presents a higher level of inequality in income distribution with respect to Italy. In Italy the index is quite stable, around 35 points during the 2000s; in Argentina it ranges from 50 (in 2004) to circa 42 in recent years (source World Bank).⁴

To intercept simultaneously the relation between occupation and education, we combined the two dimensions to create a classification of fourteen groups (see Table 4). There were few individuals classified as belonging to the middle class without qualifications and professionals without qualifications. They were respectively 69 and 7. Considering their level of education and their number, we treated them as incongruent cases; thus we classified them as working class (without qualifications). The construction of combined groups allowed us to give statistical robustness to the model results because the estimates were based on empirical observed cases and no inference was made on unobserved situations (Verbeek, 2008).

To test our hypothesis about the relation between self-assessed health and socio-economic condition, we needed to control for potential confounders. In this case we had available the age and sex of the interviewees (fundamental confounders of perceived health). Thus we applied a multivariate regression model. Since the dependent variable was dichotomous but not too asymmetric, we applied a binary (OLS) regression model (Hellevik, 2007; King & Zeng, 2001; Wooldridge, 2009). Also in the second model we applied a linear regression model to estimate the associations between socio-economic categories and psychological stress, Estimates associated with social groups can be directly interpreted as probability to declare worse health. In order to give robustness to the analysis, we applied a logistic regression model, which yielded similar results (See Table A1 in Appendix A).

5. Analysis

The results of the analysis are set out in Table 5. As expected, groups in the best socio-economic positions tend to declare better

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Table 4

Description of the socio-economic g	groups ("0"	without	qualification,	"i"	primary,	"ii"	sec-
ondary, "iii" tertiary).							

	Argentina	Italy
Marginal 0	3.2	0.2
Marginal i	9.4	4.6
Marginal ii	2.9	2.3
Marginal iii	0.9	0.5
Working 0	2.3	0.5
Working i	20.4	24.7
Working ii	13.1	15.0
Working iii	4.0	1.6
Middle i	6.3	8.7
Middle ii	14.4	23.7
Middle iii	11.5	10.6
Profess i	0.4	0.5
Profess ii	1.3	3.3
Profess iii	10.0	3.9
Total	100.0	100.0
Valid cases	17,876	29,041

health with respect to other groups, controlling for age and sex. Considering the reference category of professionals with tertiary education, the probability of marginal groups declaring worse health is about 15–20% in Argentina and 9–23% in Italy. The estimated percentage of working-class groups is from 10 to 20% in Argentina and from 7 to 20% in Italy. The middle class has a positive but slight probability of declaring lower self-perceived health: about 2–10% in Argentina and about 1–9% in Italy. Fig. 1 summarizes the results of the analysis. It shows credible intervals which have to be considered as ranges in which there is a high probability of finding the real parameter in the population. The socio-economic gradient in the two countries is strong and similar. In particular, there is an evident difference among the four occupational groups. The differences within groups among different educational levels are also quite clear. In detail, the less educated groups tend to be more likely to declare worse health with respect to other groups.

Table 6 and Fig. 2 show the results of the analysis concerning the psychological index. As suggested, this indicator is used to control the previous analysis. The correlation between self-assessed health and psychological stress is well known and quite obvious because the former is a more general proxy for well-being. The results suggest a similar pattern, according to the previous evidence: most disadvantaged social categories present worse psychological conditions, controlling for age and sex. Marginal and working classes without qualifications have similar coefficients in both countries. However, some particularities are not negligible. In general, inequalities in Argentina seem more pronounced, and the differentials with the category of reference are in many cases more intense. Considering the marginal socio-economic categories, it seems that in Italy education plays a more important role in affecting disparities. Within these categories, Italian people with secondary and tertiary educations present less psychological stress. But overall, looking at the other categories, the association between familial socio-economic status and psychological stress seems more influenced by education in Argentina than in Italy: in Italy the differentials for the working and middle classes with respect to the highest class are less important.

6. Conclusions

In this study we have compared the social inequalities in health between Italy and Argentina. The evidence on this topic from Southern America is weak, whilst OECD countries are better known and investigated (Marmot, 2013; WHO, 2013). For example, health inequalities in

⁴ https://data.worldbank.org/indicator/SI.POV.GINI.

Binary regression coefficients of the probability of declaring one's health "Not good" vs. "Good" and standard errors.

	Beta coefficients Argentina		std.err	Beta coefficients Italy		std.err
Marginal 0	0.20	***	0.022	0.23	***	0.064
Marginal I	0.16	***	0.015	0.18	***	0.018
Marginal II	0.10	***	0.023	0.16	***	0.022
Marginal III	0.15	***	0.038	0.09	***	0.039
Working 0	0.20	***	0.025	0.20	***	0.039
Working I	0.10	***	0.013	0.09	***	0.014
Working II	0.08	***	0.014	0.07	***	0.015
Working III	0.10	***	0.020	0.07	***	0.025
Middle I	0.10	***	0.017	0.09	***	0.016
Middle II	0.02	*	0.014	0.05	***	0.014
Middle III	0.04	***	0.015	0.01		0.015
Middle-Professionals I	0.00		0.057	0.02		0.039
Middle-Professionals II	-0.01		0.031	0.01		0.020
Middle-Professionals III	0 ^a			0 ^a		
Intercept	-0.297	***	0.020	-0.294	***	0.020
Age exact	0.014	***	0.000	0.013	***	0.000
Female	-0.098	***	0.007	-0.067	***	0.005
Male	0 ^a			0 ^a		
Valid cases	17,876			29,041		
<i>R-square</i>	0.102			0.068		

Sig. * 0.10 ** 0.05; *** 0.01.

^a Categories of reference.



Fig. 1. Probability of declaring worse health: 90% credible intervals (bayesian, under the assumption of uniform distribution). Category of reference: graduate middle-professionals.

Italy are comparable to those of the other Mediterranean countries, slightly lower than in Scandinavian countries, and significantly lower than in eastern European countries. However, as stressed above, health inequalities are also substantial in Italy.

In this regard, an important research question is whether the pattern of health inequalities is constant among contexts and different social environments (Marmot, 2017). And this issue is at the basis of the comparison between the two countries considered here. The main difficulty in answering this question is the absence of comparable datasets: for example, Argentina is not present in the Health World Survey (WHO). 5

We therefore created a comparable dataset using two important national surveys: EDSA – ODSA from 2010 to 2015, and "Multiscopo – Health condition and use of health services" - ISTAT 2013. The harmonization of indicators in the two surveys is not simple because they are conceived in different terms and with different objectives. The Argentinian survey is about poverty and social condition, while the Italian survey centres on health conditions and care service use.

⁵ www.who.int/healthinfo/survey/en/.

Regression coefficients (OLS) of better psychological condition and standard errors.

	Beta coefficients Argentina		std.err	Beta coefficients Italy		std.err
Marginal 0	-1.33	***	0.094	-1.45	***	0.280
Marginal I	-1.31	***	0.067	-1.06	***	0.079
Marginal II	-1.10	***	0.098	-0.66	***	0.095
Marginal III	-1.00	***	0.167	-0.30	*	0.172
Working 0	-0.89	***	0.107	-0.96	***	0.169
Working I	-0.81	***	0.057	-0.36	***	0.062
Working II	-0.62	***	0.062	-0.23	***	0.065
Working III	-0.33	***	0.086	-0.26	**	0.109
Middle I	-0.68	***	0.075	-0.16	**	0.070
Middle II	-0.41	***	0.060	-0.11	*	0.063
Middle III	-0.24	***	0.063	-0.01		0.068
Middle-Professionals I	-0.77	***	0.248	0.00		0.170
Middle-Professionals II	-0.31	**	0.136	-0.23	***	0.086
Middle-Professionals III	0 ^a			0 ^a		
Intercept	4.932	***	0.087	5.177	***	0.086
Age exact	-0.012	***	0.002	-0.026	***	0.001
Female	0.456	***	0.030	0.510	***	0.023
Male	0 ^a			0 ^a		
Valid cases	17,643			29,040		
<i>R-square</i>	0.056			0.043		

Sig. * 0.10 ** 0.05; *** 0.01.

^a Categories of reference.



Fig. 2. Probability of better psychological condition: 90% credible intervals (bayesian, under the assumption of uniform distribution). Category of reference: Middle-professionals graduated.

However, despite limitations in the harmonization of the indicators, we created some variables that could be used to compare health inequalities in the two countries: self-assessed health, an index of psychological stress, the educational level and the occupational condition. In the first part of this study the descriptive summary of the health context showed that Argentina and Italy have different levels of wellbeing, mortality and health service performance. But in the second part, the specific analyses of the relation between individual health and socio-economic conditions suggested that the pattern of relative inequalities in health seems similar. Disparities in perceived health are substantially the same, exceeding our expectations. Considering the psychological stress index, we observed that in Italy the level of education seems to matter less in working and middle classes, and more in marginal socio-economic categories. Instead, analysis suggests a more intense role of education in Argentina. However, overall, despite limitations in data and analyses, our findings seem to confirm Marmot (2017) hypothesis concerning the general shape of the health inequalities also for Argentina. In particular, marginal and working classes (manual workers, precarious job-holders, unemployed persons, individuals without education) systematically present worse health with respect to middle classes, whilst members of the upper class and professionals occupy the best position in the gradient. To summarize, our results are coherent with the structural theories explaining the reproduction of health inequalities put forward in the first part of this article. Individual socioeconomic statuses based on occupational position and educational attainment seem closely associated with health impairment processes

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(constant stress, material deprivation, life-course accumulation of disadvantages, and cultural capital deficit). In short, individuals in areas of social marginality or vulnerability are more likely to have worse health. In this perspective, the attenuation of health inequalities can be achieved by reducing the disparities due to general social stratification.

Moreover, it should also be noted that these disparities may have been exacerbated by economic stagnation in current years, worsening the situations of marginalized, poor and excluded segments of Argentinian society. About 30% of the Argentinian population can be considered poor, with 6% living in extreme poverty, unable to afford adequate food for their household (Rodriguez Espinola 2017; Salvia et al., 2015).

Ethics approval

Italian data were collected by ISTAT - National Institute of Statistics (Italy) according to the international standards and the Italian legislation (art. 9 del d.lgs. n. 322/89; d.lgs. n. 196/03). More information at: http://www.istat.it/en/privacy.

Argentinian data were collected by Observatorio de la Deuda Social Argentina – UCA (Catholic University of Argentina) according to the Argentinian legislation. More information at:

http://www.uca.edu.ar/index.php/site/index/es/uca/

observatorio-de-la-deuda-social-argentina/encuesta-de-la-deuda-social/ anexo-metodologico-encuesta-deuda-social/.

Uncited reference

Macyntire (2007).

Table A1

Logistic regression coefficients (logit) of the propensity to declare health "Not good" vs "Good" and standard errors.

	Beta coefficients Argentina	Beta coefficients Italy	std.err ARG	std.err ITA
Marginal 0	0.96	1.08	0.173	0.496
Marginal I	0.77	0.91	0.127	0.154
Marginal II	0.53	0.80	0.185	0.184
Marginal III	0.74	0.48	0.304	0.333
Working 0	0.92	0.97	0.194	0.307
Working I	0.50	0.50	0.111	0.129
Working II	0.44	0.36	0.121	0.135
Working III	0.54	0.40	0.164	0.217
Middle I	0.52	0.45	0.141	0.141
Middle II	0.14	0.26	0.121	0.130
Middle III	0.23	0.08	0.126	0.141
Middle-	0.07	0.12	0.467	0.322
Professionals				
I				
Middle-	-0.04	0.06	0.267	0.177
Professionals				
II				
Middle-	0 ^a	0 ^a		
Professionals				
III				
Intercept	-4.261	-4.263	0.107	0.108
Age exact	0.066	0.063	0.002	0.000
Female	-0.482	-0.340	0.034	0.027
Male	0 ^a	0 ^a		
Valid cases	17,876	29,041		
Pseudo R-	0.081	0.057		
square				
(McFadden)				

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Appendix A.

References

- Aittomäki, A., Martikainen, P., Laaksonen, M., Lahelma, E., Rahkonen, O., 2012. Household economic resources, labour-market advantage and health problems–A study on causal relationships using prospective register data. Social Science & Medicine 75 (7), 1303–1310.
- Aneshensel, C.S., 1992. Social stress: Theory and research. Annual Review of Sociology 18, 15–38.
- DellaBella, S., Sarti, S., Lucchini, M., & Bordogna, M. T., Acomparative analysis of inequality in health across Europe, *SociologicalResearch Online*, 16(4), 2011, 1-15.
- Sarti,S., & Zella, S., Changes in the labour market and healthinequalities during the years of the recent economic downturn in Italy. Social Science Research, 57, 2016, 116-132.
- Rodriguez Espínola, S., La salud en poblaciónurbana argentina desde una mirada multidimensional de la pobreza, 2017, CiudadAutónoma de Buenos Aires, Educa.
- Barber, R.M., Fullman, N., Sorensen, R.J., Bollyky, T., McKee, M., Nolte, E., et al., 2017. Healthcare access and quality index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990–2015: A novel analysis from the Global Burden of Disease Study 2015. The Lancet 390 (10091), 231–266.
- Bartley, M., 2003. Commentary: Relating social structure and health. International Journal of Epidemiology 32, 958–960.
- Bartley, M., 2004. Health inequality: An introduction to concepts, theories and methods. Polity Press.
- Beckett, M., 2000. Converging health inequalities in later life: An artifact of mortality selection?. Journal Of Health And Social Behavior 41, 106e.
- Brunner, E., Marmot, M., 2006. Social organization, stress, and health. In: Marmot, M., Wilkinson, R.G. (Eds.), (A cura di) social determinants of health. Oxford University Press, New York, pp. 6–30.
- Cassel, J., 1976. The contribution of the social environment to host resistence. American Journal of Epidemiology 104, 107–123.
- Cohen, S., Janicki-Deverts, D., Miller, G.E., 2007. Psychological stress and disease. JAMA 298 (14), 1685–1687.
- Collins, C., McCartney, G., Garnham, L., 2015. Neoliberalism and health inequalities. Health inequalities: Critical perspectives. 124.
- Cullati, S., Rousseaux, E., Gabadinho, A., Courvoisier, DS., Burton-Jeangros, C., 2014. Factors of change and cumulative factors in self-rated health trajectories: A systematic review. Advances in Life Course Research 19, 14–27.
- Dalle, P., 2017. Climbing up a steeper staircase: Intergenerational class mobility across birth cohorts in Argentina (2003–2010). Research in Social Stratification and Mobility https://doi.org/10.1016/j.rssm.2017.12.002, in press.
- De Irala-Estévez, J., Groth, M., Johansson, L., Oltersdorf, U., Prättälä, R., Martínez-González, M.A., 2000. A systematic review of socio-economic differences in food habits in europe: Consumption of fruit and vegetables. European Journal of Clinical Nutrition 54, 706–714.
- DiPrete, T.A., Eirich, G.M., 2006. Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. Annual Review Of Sociology 32, 271–297.
- Drever, F., Daran, T., Whitehead, M., 2004. Exploring the relation between class, gender, and self rated general health using the new socioeconomic classification. A study using data from 2001 census. Journal of Epidemiology and Community Health 58, 590e.
- Dupre, M.E., 2008. Educational differences in health risks and illness over the life course: A test of cumulative disadvantage theory. Social Science Research 37, e1266.
- Eikemo, T.E., Huisman, M., Bambra, C., Kunst, A.E., 2008. Health inequalities according to educational level in different welfare regimes: A comparison of 23 European countries. Sociology of Health & Illness 30 (No. 4), 565–582. https://doi.org/10.1111/j. 1467-9566.2007.01073.x, ISSN 0141–9889.
- Erikson, R., Goldthorpe, JH., 1992. The Constant flux. Clarendon Press, Oxford.

Goldthorpe, J.H., 2010. Analysing social inequality: A critique of two recent contributions from economics and epidemiology. European Sociological Review 26 (6), 731–744.

- Hellevik, O., 2007. Linear versus logistic regression when the dependent variable is a dichotomy. Quality & Quantity 43 (1), 59–74.
- Herzlich, C., Adam, P., 1994. Sociologie de la maladie et de la médicine. Nathan, Paris.
- Idler, E.L., Benyamini, Y., 1997. Self-rated health and mortality: A review of twenty-seven community studies. Journal Of Health And Social Behavior 38, 21e.

- Johnson, R.J., Wolinsky, F.D., 1993. The structure of health status among older adults: Disease, disability, functional limitation, and perceived health. Journal of Health and Social Behavior 34 (2), 105e.
- Jylhä, M., 2009. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. Social Science & Medicine 69 (3), 307–316.
- Karasek, R., 1979. Job demands, job decision latitude, and mental strain: Implications for job redesign. Administrative Science Quarterly 24, 285–307.
- Karjalainen, A., Niederlaender, E., 2004. Occupational disease in Europe in 2001, in statistics in focus. Population and social conditions 15/2004. EUROSTAT, European Communities, Luxembourg.
- King, G., Zeng, L., 2001. Logistic regression in rare events data. Political Analysis 9 (2), 137–163.
- Kitigawa, E.M., Hauser, P.M., 1973. Differentials mortality in the United States: A study of socioeconomic epidemiology. Harvard University Press, Cambridge, MSS.
- Kuh, D., Ben-shomo, Y., 1997. A life course approach to chronic disease epidemiology. Oxford University Press, Oxford.
- Macyntire, S., 2007. Inequalities in health in Scotland: What are they and what can we do about them?, Occasional paper n.17. october 2007 Medical Research Council.
- Mancino, L., Lin, B.H., Ballenger n, 2004. The role of economics in eating choices and weight outcomes. Agriculture information bulletin n. 791. Economic Research Service (ERS), U.S. Department of agriculture (USDA).
- Marmot, M., 2013. Health inequalities in the EU Final report of a consortium. Consortium lead: Sir Michael Marmot European Commission Directorate-General for Health and Consumershttps://doi.org/10.2772/34426.
- Marmot, M., 2017. The health gap: The challenge of an unequal world: The argument. International Journal of Epidemiology dyx163, https://doi.org/10.1093/ije/dyx163.
- Mclaren, L., 2007. Socioeconomic status and obesity. Epidemiologic Reviews 29, 29–48. https://doi.org/10.1093/epirev/mxm001.
- Mulatu, M.S., Schooler, C., 2002. Casual connections between socio-economic status and health: Reciprocal effects and mediating mechanism. Journal of Health and Social Behavior 43 (no. 1), 22–41.
- Navarro, V., 1986. Crisis, health, and medicine: A social critique. Tavistock, New York.
- Phelan, J., Link, B.G., Tehranifar, P., 2010. Social conditions as fundamental causes of health inequalities: Theory, evidence, and policy implications. Journal of Health and Social Behavior 51, S28–S40.
- Quartulli, D., Salvia, A., 2014. La movilidad y la estratificación socio-ocupacional en la Argentina. Un análisis de las desigualdades de origen. Entramados y Perspectivas 2, 15–42.

- Rodrik, D., 2016. Premature deindustrialization. Journal of Economic Growth 21 (1), 1–33.
- Ross, C.E., Mirowsky, J., 1999. Refining the association between education and health: The effects of quantity, credential, and selectivity. Demography 36 (n.4), 445–460.
- Ross, C.E., Wu, C., 1996. Education, age, and the cumulative advantage in health. Journal of Health and Social Behaviour 37 (No. 1), 104–120.
- Salvia, A., Poy, S., Vera, J., 2015. Social policy and its effects on poverty under different macroeconomic regimes: Argentina, 1992-2012. Desarrollo y Sociedad 76, 165–203.
- Sandleris, G., Wright, M.L., 2014. The costs of financial crises: Resource misallocation, productivity, and welfare in the 2001 argentine crisis. The Scandinavian Journal of Economics 116 (1), 87–127.
- Siegrist, J, 2000. Place, social exchange and health: Proposed sociological framework. Social Science and Medicine 52, 1283–1293.
- Siegrist, J., 1999. A theory of occupational stress. In: Dunham, J. (Ed.), Stress in occupations : Past, present, and future. Whurr Publisher Limited, London.
- Siegrist, J., Marmot, M., 2004. Health inequalities and the psychosocial environment—two scientific challenges. Social Science & Medicine 58 (8), 1463–1473.
- Spencer, N., Logan, S., 2002. Social influences on birth weight.
- Tucker-Drob, E.M., Rhemtulla, M., Harden, K.P., Turkheimer, E., Fask, D., 2011. Emergence of a Gene x socioeconomic Status interaction on infant mental ability between 10 months and 2 years. Psychological Science 22, 125–133.
- Turkheimer, E., Haley, A., Waldron, M., D'Onofrio, B., Gottesman, I.I., 2003. Socioeconomic Status modifies heritability of IQ in Young children. Psychological Science 14, 623–628.
- Verbeek, M., 2008. A guide to modern econometrics. John Wiley & Sons.
- WHO, 2013. Review of social determinants and the health divide in the WHO European region: Final report. WHO Regional Office for Europe.
- WHO, 2015. State of inequality: Reproductive, maternal, newborn and child health. World Health Organization.
- Wilkinson, R., 2002. Commentary: Liberty, fraternity, equality. International Journal of Epidemiology 31, 538–543.
- Wilkinson, R., Marmot, M., 2003. Social determinants of health: The solid facts. World Health Organization, Copenhagen, Denmark.
- Willson, A.E., Shuey, K.M., Elder, G.H., 2007. Cumulative advantage processes as mechanism of inequality in life course health. American Journal Of Sociology 112 (6), 1886e4.
- Wooldridge, J., 2009. In: Desbordes, R., Verardi, V. (Eds.), Introductory econometrics: A modern approach. South-Western, Mason, OH, 181.