The effects of an urban renewal project on health and health inequalities: A quasi-experimental study in Barcelona

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ABSTRACT

In the last decade, the Neighbourhoods Law in Catalonia (Spain) funded municipalities that presented urban renewal projects within disadvantaged neighbourhoods, focusing on physical, social and economic improvements. The objective of the study was to evaluate the effects of this law on the health and health inequalities of residents in the intervened neighbourhoods in the city of Barcelona.

METHODS

A quasi-experimental pre and post design was used to compare adult residents in five intervened neighbourhoods to eight non-intervened comparison neighbourhoods with similar socioeconomic characteristics. The Barcelona Health Survey was used for studying self-rated and mental health in pre (2001, 2006) and post (2011) years. Poisson regression models stratified by sex, were used to compute prevalence ratios comparing 2011 with 2006, and later stratified by social class, to study health inequalities.

RESULTS

The intervened neighbourhoods had a significant decrease in poor self-rated health in both sexes while no significant changes occurred in the comparison group. When stratified by social class, a significant improvement was observed in poor self-rated health in the manual group of the intervened neighbourhoods in both sexes, resulting in a decrease in self-rated health inequalities. Similar results were observed in poor mental health of women while in men in both neighbourhood groups, absolute inequalities in mental health tended to increase.

CONCLUSIONS

The Neighbourhoods Law had a positive effect on self-rated health and seems to prevent poor mental health increases, in both sexes and especially among manual social classes.

What is already known on this subject.

- The built environment has an effect on health and health inequalities.
- The Neighbourhoods Law, a large scale urban renewal intervention in Barcelona, has shown potential beneficial changes for residents' wellbeing through a complimentary qualitative evaluation.
- Quasi-experimental designs are recommended to evaluate social interventions.

What this study adds.

- In areas intervened by the Neighbourhoods Law, self-rated health improved amongst residents of both sexes and especially manual social classes.
- The Neighbourhoods Law appears to mitigate the increase in poor mental health observed in men in the comparison group.

INTRODUCTION

Urban renewal projects aim to provide improvements in physical infrastructure, economical gains and social integration[1, 2]. In Europe, Barcelona is a leading city in urban renewal efforts including the restructuring of its waterfront in the 1980's for the Olympic bid, and the revitalization of its traditionally poor inner-city district, the Ciutat Vella. In 2004 the regional government of Catalonia presented the Neighbourhoods Law *(Llei de Barris*), one of the largest urban renewal policies in Europe[3]. The law invited neighbourhoods, especially those with poorer physical infrastructure, and higher unemployed, immigrants or "at risk" populations, to submit plans for revitalization. Neighborhoods were provided 50% of the funding for projects proposed (15-20 million Euros) over the 4 years program period, if selected. Although projects were prioritized to address emerging needs in each neighbourhood, all projects fell within the areas (examples within brackets) of: public space (creation of parks), rehabilitation (building reform), equipment (community centers), new technologies (solar panels), sustainability (energy efficiency), gender equality (programs for women), social programs (community events) and accessibility(street repairs)[3]. By 2011, about 148 neighbourhoods had benefited with an inversion of approximately 2 billion Euros. However, in 2012, the program was suspended by the newly-elected conservative coalition. In Barcelona, with 1.65 million inhabitants, 12 neighbourhoods have participated resulting in about 10% of the population being affected by the projects. The law mainly focuses on infrastructural changes to upgrade physical and institutional structures necessary for a functioning city, but two complementary programs were also introduced focusing on health[4] and employment[5] in specific sub-populations.

In the past, evaluations of urban renewal projects have focused on economics, transportation and housing improvements while overlooking their effects on health and health inequalities[6, 7]. Those that have considered health have tended to focus on smaller scale interventions such as impacts on asthma in children through housing renewal[8], accessibility to resources after transportation improvements[6], and increases in physical activity through the creation of green spaces[9]. Despite recent efforts looking at the effects of urban renewal on various health outcomes, there

continues to be limited evidence due to evaluations using inadequate health indicators, short-term follow up periods and a reliance on simple and linear quantitative analyses not suited for complex interventions[10, 11]. However, although the research on health effects of urban renewal effects is sparse, its potential benefits are indicated by the established link between urban planning and health through the improvement of both social and physical environments[12, 13]. Frameworks such as Borrell et al.'s (2013), *Determinants of health inequalities in cities of Europe*, explain how physical and social environments influence the determinants of health across social groups[13]; while others like Northridge and Freeman (2011) propose pathways between urban planning and health equity through *better access to materials and other resources* throughout the neighbourhood, *improvements in physical and social environment*, and *increase resources and political power*[14].

Quantitative evaluations adopting quasi experimental designs with comparison groups are adequate for natural experiments and a better understanding of indicators addressed by the intervention and appropriate for the post-intervention period[7, 15-17]. The Neighbourhoods Law is an opportunity to conduct such an experiment to study the effects of an urban renewal program in Southern Europe. Barcelona, like other major cities, has higher levels of mortality and morbidity rates in the inner-city areas, which often include the most deprived neighbourhoods, compared to the rest of the city[18-20]. Moreover, the current economic crisis resulting in record unemployment rates and inflation in the costs of living will probably have detrimental effects on the health inequality gap[21].

The objective of the study was to evaluate the effects of the Neighbourhoods Law on the health of residents of intervened neighbourhoods in the city of Barcelona and on the social class inequalities in health within these neighbourhoods. This study forms part a mixed-method evaluation whose qualitative section of the evaluation used concept mapping to better understand the perception of changes that had occurred in the neighbourhood in recent years and their effects on the overall well-being of residents[22].

METHODS

Design, study population and sources of information

A pre and post-intervention quasi-experimental design was used, analyzing cross sectional data for 2001, 2006 and 2011, for differences in health and health inequalities between a group of neighbourhoods intervened by the Neighbourhoods Law and a comparison group of non-intervened neighbourhoods. The intervention group consisted of all Barcelona neighbourhoods (N=5) that participated between the years 2004 to 2011. Table 1 provides information on the expenditure across the eight areas of improvement by the Neighbourhoods Law, the establishment of the complementary programs and the 2011 population for each neighbourhood.

Table 1. Total amount and distribution of expenditures of the Neighbourhoods Law in five intervened Barcelona neighbourhoods.

	Roquetes (2004-2010)	**Santa Caterina (2004-2009)**	**Poble Sec (2005-2010)**	**Ciutat Meridiana (2006-2011)**	**Trinitat Vella (2006-2011)**
Program cost	11,054,445Eur	14,616,000Eur	16,915,500Eur	18,042,000Eur	17,442,986
Projects					
Public space	41.2%	14.0%	58.7%	62.8%	30.8%
Rehabilitation	17.5%	10.3%	8.3%	10.0%	10.3%
Equipment	27.3%	66.0%	17.0%	18.8%	27.9%
New Technologies	0.5%	-	0.7%	2.8%	1.5%
Sustainability	2.8%	3.1%	1.9%	1.7%	1.7%
Gender equality	4.3%	-	1.8%	0.4%	1.7%
Social programs	3.5%	6.6%	2.1%	2.1%	14.0%
Accessibility	2.9%	-	9.6%	1.6%	12.0%
Complementary Programs					
Employment in Neighbourhoods	Yes	Yes	Yes	Yes	Yes
Health in Neighbourhoods	Yes	Yes	Yes	Yes	No
Total Population in 2011	15 987	22 410	40 547	10 874	10 385

Source: DPTOP 2009 and Ajuntament de Barcelona 2013.

To obtain the comparison group, a cluster analysis of the 38 Barcelona neighbourhoods, defined by the City of Barcelona, was completed based on the 5 socioeconomic indicators developed by the MEDEA project[23] extracted from the 2001 Census: the percentages of manual workers and temporary workers over the total working population, unemployed over the economically active population, and low education over the total adult population (16 and over) and over the total young adults (ages 16 to 29). The majority of neighbourhoods intervened by the law fell within the first 2 of 5 clusters as expected since the law targeted deprived

neighbourhoods. The eight neighbourhoods within those 2 clusters that were not intervened by the law up to 2011 were used as comparison neighbourhoods. Furthermore, both intervened and comparison neighbourhoods were located in the same 5 of 10 districts.

The Barcelona Health Surveys (BHS) for 2001, 2006 and 2011 were used to derive data for the study. In all surveys the sample was representative of age, sex and district for the entire population of Barcelona. As the sample was not representative at neighbourhood level, it was important to join several neighbourhoods to obtain a representation for both neighbourhood groups. Furthermore, the BHS has maintained data collection and methodology techniques constant across all years in order to preserve comparability of results from one year to another[24]. Although some neighbourhoods were selected for the program in 2004 or 2005, it was not until 2006 when projects began. Therefore, we included this year as baseline data and interpretations focus then on the 2006 and 2011 years with 2001 serving as a second reference point to assess the pre-intervention trend. In addition, the 2006 BHS was a collaboration between regional and municipal efforts. Addresses of respondents were unavailable from the regional data collection making it impossible to geocode by neighbourhoods and thus resulting in a smaller sample. Adult participants (15 years or older) who lived in one of the two neighbourhood groups and had responses for all outcomes, were included in the study.

In order to address concerns regarding differential population turnover in neighbourhoods, the analysis was repeated excluding subjects from the 2011 survey who had lived less than 5 years in the neighbourhoods studied based on the survey question for this variable (N=1370). Since no significant differences were noted, the study concluded with the entire population to not lose further statistical power.

Variables

Dependent: Self-rated health and mental health

Several studies have shown *self-rated health* status as an indicator of health status that considers perceptions of quality of life, presence of disease and usage of health

services, and is valid, reliable and sensible to (short-term) changes [25, 26]. Data for this measure was taken from the survey question "*In general, how would you say your health is (1) Excellent, (2) Very Good, (3) Good, (4) Fair, (5) Poor"?* Categories were grouped to form two categories *Good* (excellent, very good, and good) and *Poor* self-rated health (fair and poor).

Mental health was studied using the Goldberg GHQ-12 scale. This scale helps the examination of the distribution of symptoms mainly associated with anxiety and depression in the general population while acting as a screening instrument to detect risk of various mental disorders[27, 28]. Scoring was based on answers to a minimum of 7 of 12 questions including: *loss of sleep over worry*; *feeling of constantly being under strain*; and *losing self-confidence in yourself*. *Poor* mental health was based on a score of 3 or more while anything less was considered as *good* mental health[28].

Independent: Socio-demographic characteristics

Information on age, sex, and social class were obtained directly from the surveys. Social class, the independent variable used to study health inequalities, was derived from occupation according to Spanish adaptations of the British Registrar General classification based on the National Classification of Occupations 1994 and 2011[29,30] and grouped into 2 categories: *non-manual* including managerial and senior technical staff, free professionals, intermediate occupations, managers in commerce and skilled non manual workers; and a *manual* including skilled, partly skilled and unskilled manual workers. Previously employed individuals were classified based on their last occupation, and never employed individuals were assigned the occupation of the head of the household.

Statistical analyses

First, for each survey year, we described and compared socio-demographic characteristics (sex, age, social class and employment status) between the intervened and comparison groups using a chi-square test (Table 2).

Trends in age-standardized prevalence of poor self-rated health and poor mental health, by neighbourhood group were estimated for men and women (Figure 1). Then, for each dependent variable, trends in prevalence ratios between years (PR_{year}), using 2006 as reference, by neighbourhood group were directly estimated through Poisson regression robust models. All PR values provided within the figures are derived from the comparison between 2006 and 2011. Furthermore, the analysis was stratified by social class in order to compare trends in prevalence between manual and non-manual social classes (Table 3).

Finally, derived from this regression model, for each year and neighbourhood group, socioeconomic health inequalities were estimated using both absolute (change in %) and relative (PR_{class}) differences in prevalence between manual and non-manual classes (Figure 2).

A p-value of <0.05 was considered statistically significant. All analyses were conducted using STATA SE 10.0 statistical software and no weights were used, as the study does not aim to gather estimates at the city level.

RESULTS

Comparing socio-demographic characteristics between the intervened and comparison groups for each survey year (Table 2), there was approximately an equal representation of women and men, while the majority of individuals were aged 35 to 64 years, manual workers, and employed. In 2011, unemployment increased by almost three times compared to 2006. The P-values indicate no significant differences between neighbourhood groups and each characteristic except for age in women for 2006.

Table 2: Comparison of population characteristics by neighbourhood group and sex for each year.

		2001				2006				2011			
		Intervened		Comparison		Intervened		Comparison		Intervened		Comparison	
		Women N=521	Men N=449	Women N=943	Men N=879	Women N=135	Men N=139	Women N=244	Men N=260	Women N=206	Men N=192	Women N=439	Men N=384
Age													
	15-34 years	31.7%	35.4%	29.4%	34.7%	23.0%	28.1%	30.7%	35.8%	30.6%	26.6%	28.5%	32.6%
	35-64 years	46.1%	48.6%	44.2%	45.4%	53.3%	51.8%	37.7%	47.7%	44.7%	50.0%	50.1%	46.9%

65+ years	22.3%	16.0%	26.4%	19.9%	23.7%	20.1%	31.6%	16.5%	24.8%	23.4%	21.4%	20.6%
P-value	0.207	0.214			0.013*	0.272			0.412	0.324		
Social Class												
Manual	62.2%	59.0%	62.3%	57.3%	63.0%	64.0%	59.8%	61.2%	57.3%	57.8%	50.3%	58.9%
Non-manual	34.0%	40.1%	32.9%	41.5%	35.6%	35.3%	37.3%	38.1%	35.0%	39.1%	40.3%	37.5%
NA	3.8%	1.0%	4.9%	1.1%	1.5%	0.7%	2.9%	0.8%	7.8%	3.1%	9.3%	3.7%
P-value	0.629	0.792			0.633	0.853			0.256	0.902		
Employment Status												
Employed	40.3%	63.0%	39.5%	57.0%	43.7%	66.9%	52.5%	68.9%	41.8%	51.0%	49.4%	52.3%
Unemployed	4.4%	4.7%	4.5%	6.5%	6.7%	2.9%	3.7%	5.4%	13.1%	14.1%	11.2%	14.6%
House worker	30.3%	0	31.4%	0.2%	25.2%	0	18.0%	0	17.0%	0	15.0%	0
Retired	14.2%	19.6%	14.4%	22.5%	15.6%	23.7%	18.4%	19.2%	15.1%	24.5%	15.0%	24.5%
Student	9.6%	8.2%	7.6%	9.0%	3.0%	4.3%	4.1%	5.0%	7.8%	5.2%	6.6%	5.2%
Other	1.2%	4.5%	2.7%	4.8%	5.9%	2.2%	3.3%	1.5%	5.3%	5.2%	2.7%	3.4%
P-value	0.379	0.312			0.200	0.647			0.358	0.889		

NA: not available. *P-value from chi-square test comparing intervened and comparison group within each year and sex.

Trends in the prevalence of poor self-rated health and poor mental health were compared for each neighbourhood group by sex (Figure 1). Prevalence ratios between 2011 and 2006 are also provided.

From Figure 1, in the intervened group, poor self-rated health decreased significantly between 2006 and 2011 with prevalence ratios of PR_{year}=0.74 (95% CI: 0.56-0.97) in women and $PR_{year=}$0.53 (95%CI: 0.36-0.78) in men. On the contrary, no significant changes were observed in the comparison groups for either sex.

Poor mental health increased significantly in men in the comparison neighbourhoods with a PR_{year}=1.93 (95%CI: 1.23-3.01) while there was no significant change in women. Within the intervened group, among women a break in the pre-intervention upward trend in poor mental health is observed, while it continued to gradually increase in men, all changes being non-significant.

In Table 3, the data were further stratified by social class in order to study the trends of poor self-rated health and poor mental health in each social class.

Table 3. Trends in age-standardized prevalence (PR_{year}) of poor self-rated health and poor mental health in women and men by social class and neighbourhood group.

	Poor self-rated health			***Poor mental health***		
	2001	**2006**	**2011**	**2001**	**2006**	**2011**
WOMEN						
Intervened Neighbourhood						

Manual	34,2%	52,8%	35,0%	17,5%	31,5%	22,8%
Non-manual	30,7%	25,8%	20,2%	10,4%	12,7%	16,7%
PR (95% CI) of years in manual	0.71**(0.56 0.91)	ref	0.72*(0.53 0.97)	0.52***(0.35 0.77)	ref	0.73 (0.47 1.14)
PR (95% CI) of years in non-manual	1.14 (0.65 2.00)	ref	0.77 (0.38 1.59)	0.87 (0.37 2.05)	ref	1.68 (0.70 4.03)
Comparison Neighbourhood						
Manual	38,7%	26,1%	28,1%	25,9%	19.6%	19,1%
Non-manual	26,4%	14,4%	24,4%	17,7%	13.1%	16,2%
PR (95% CI) of years in manual	1.38**(1.12 1.70)	ref	1.01 (0.79 1.31)	1.19 (0.86 1.65)	ref	0.93 (0.63 1.39)
PR (95% CI) of years in non-manual	1.73 (0.95 3.17)	ref	1.62 (0.86 3.07)	1.16 (0.68 2.00)	ref	1.01 (0.56 1.82)
MEN						
Intervened Neighbourhood						
Manual	32,6%	40.0%	17,6%	11,8%	10,0%	19,7%
Non-manual	26,1%	13,1%	13,2%	7,9%	14,8%	10,7%
PR (95% CI) of years in manual	0.86 (0.63 1.17)	ref	0.45***(0.29 0.69)	1.30 (0.62 2.72)	ref	1.61 (0.72 3.60)
PR (95% CI) of years in non-manual	1.57 (0.78 3.16)	ref	0.92 (0.40 2.11)	0.58 (0.25 1.35)	ref	0.84 (0.33 2.11)
Comparison Neighbourhood						
Manual	29,1%	23,1%	22,9%	13,5%	11.7%	19,5%
Non-manual	22,5%	18,2%	16,8%	12,4%	5.4%	8,4%
PR (95% CI) of years in manual	1.25 (0.92 1.70)	ref	0.99 (0.69 1.40)	1.16 (0.71 1.90)	ref	1.74*(1.05 2.88)
PR (95% CI) of years in non-manual	1.43 (0.85 2.40)	ref	1.24 (0.69 2.24)	2.38 (0.97 5.83)	ref	1.90 (0.71 5.09)

All values were age adjusted. *p<0.05, **p<0.01, ***p<0.0001.

From 2006 to 2011, poor self-rated health in intervened neighbourhoods decreased significantly in the manual class for both sexes with PR_{year}=0.72 (95% CI: 0.53-0.97) in women and PR_{year}=0.45 (95%CI: 0.29-0.69) in men. No notable differences were seen in non-manual. No significant changes were found in the comparison group.

Poor mental health did not show significant changes. While manual men in both neighbourhood groups had poorer mental health in 2011, this increase was only significant in the comparison group PR_{year}=1.74 (95%CI: 1.05-2.88). In non-manual classes, changes were not significant.

Figure 2 illustrates health inequalities through relative (PR_{class}) and absolute differences in prevalence between manual and non-manual social classes in each neighbourhood group and sex.

Absolute and relative social class inequalities for poor self-rated health tended to decrease in all groups and sexes except for absolute differences in men from comparison neighbourhoods (Figure 2). Within the intervened neighbourhoods, this decrease in social class health inequalities was driven by greater improvements in the manual class (see in Table 3).In the comparison group this was due to the worsening conditions amongst women from the non-manual class. This decrease in social class health inequalities, apparently greater in men from the intervened group, was also observed for poor mental health in women in the intervened group.

Conversely, in both neighbourhood groups, social class inequalities in mental health increased among men, except for relative inequalities in the comparison group (seen in Table 3 and Figure 2).

DISCUSSION

Our results indicate that self-rated health of both women and men has improved in Barcelona neighbourhoods renewed under the Neighbourhoods Law. Improvements were larger in manual social class, resulting in a decrease in social class health inequalities. Mental health has remained stable in renewed neighbourhoods as opposed to its worsening in men in the comparison neighbourhoods.

Although there are variations in the projects carried out under the Neighbourhoods Law, these results are consistent with those studies that indicate improvements in self-rated and mental health due to increased walkability, better transportation, improved social integration and perception of security[6, 31-34]. Furthermore, the results were consistent with the qualitative part of the evaluation which concluded that the majority of projects within the Neighbourhoods Law, especially those focused on improving physical accessibility and establishing community groups, were perceived as important and positive for the wellbeing of residents[22].

In order to better explain our results, we can borrow from existing proposals of pathways between urban planning and health[13, 14].

Improvement of access to materials and services are linked to better health through better distribution of resources once unattainable or inaccessible by all populations, especially in deprived neighbourhoods[6, 14]. The Neighbourhoods Law improved access to materials and other resources in the neighbourhood through various projects including the improvement of community centres which offer various social services and programs, the establishment of employment centres in all 5 neighbourhoods, and the promotion and increased visibility of local businesses[3]. These projects have improved health and health equity in addition to promoting economic growth and social integration.

A large bulk of the project budgets were allocated to the improvement of physical environment where the Neighbourhoods Law repaired sidewalks to promote walkability, installed outdoor escalators and the improved traffic safety through new traffic lights and road repairs throughout the five neighbourhoods, enhancing some of the important factors of the physical environment affecting health and health inequalities[13]. For example, increased physical access throughout the neighbourhood due to the removal of physical barriers, has improved access to food outlets and therefore decreased food insecurity, all connected to better mental and physical health outcomes[22,32,35,36].

Improved social integration has been linked to improved mental health and overall wellbeing through various mechanisms such as an increase in pride, security, and improved perceptions towards the neighbourhood[37, 39].Therefore the creation of public spaces by the Neighbourhoods Law can also contribute to positive social interactions amongst neighbours[38]. Furthermore, the social environment was also addressed by initiatives offering employment programs, the promotion of social networks through community centers and the fomentation of community participation through annual neighbourhood celebrations[3].

Finally, the Neighbourhood Law focused on deprived neighbourhoods consisting mostly of manual class workers. We know individuals from lower socioeconomic positions tend to have worst health outcomes and benefit less from interventions

aimed at the general population compared to those from high socioeconomic positions[39]. However, our results indicate otherwise and the Neighbourhoods Law seems to have reduced health inequalities within the intervened neighbourhoods. Therefore, built environment policies like the Neighbourhoods Law can have additional benefits amongst manual social classes, thus promoting health and health equity across all populations[14, 39]. Conversely, the increase in poor mental health amongst manual men in both neighbourhood groups is consistent with the general trend observed in Spain due to the financial crisis and its effects on unemployment..

Strengths and limitations

As part of an evaluation, the study satisfies the call for more quasi-experimental studies that included non-intervened comparison groups with similarities in socio-demographic characteristics and geographical positioning[7,15]. Although factors including the current economic crisis in Spain can affect the results of our study, this group allowed us to take into account such external factors in order to attribute some of our results to the Neighbourhoods Law.

We do recognize that the intervention consists of a variety of projects, each with their own mechanisms of potential influence on the health of neighbours. However, although this is a limitation for any complex program evaluation, a mixed-method approach can help address such complexities[16]. The results of the qualitative section of this evaluation are consistent with findings from this study and we have identified some of the pathways by which the projects seem to have had an impact on residents' wellbeing in different neighbourhoods and age groups[22].

One of the limitations for studies evaluating urban renewal is the issue of population displacement[40]. This is often difficult to control for especially if the study cohort differs in each time period. Using a question in the 2011 BHS asking if the individual had been living in the neighbourhood for more than 5 years, we ran the analysis excluding residents living less than 5 years in both the intervened and comparison neighbourhoods and noted no significant differences to the models included. However this was only possible for individuals who were residing in the neighbourhood and not

those who had left. Future prospective studies should address this issue in order to gain more information on the health status of those individuals post-intervention.

Another limitation was the short post-intervention time period resulting in restrictions when selecting health outcome variables[16]. While we considered studying other health outcomes related to contextual settings, a longer follow-up period would be required to capture true effects. Therefore, we have focused on outcomes reasonably able to detect more immediate changes in wellbeing, the kind of changes previously detected through the qualitative part of the evaluation[22], such as self-rated health , which has been shown to be sensible to short-term health changes[26], and mental health as measured through GHQ-12 with question referring to *current* mood and mental status[27].

CONCLUSIONS

The Neighbourhoods Law has had positive effects on the self-rated and mental health status of its residents. Furthermore, contrary to the majority of interventions aimed at the general population, the Neighbourhoods Law seems to improve self-rated health across social classes and more specifically the manual class.

Urban renewal projects are complex interventions and require special attention to long follow-up periods and indicator selection in order to better understand their impact on health and health inequalities. Our results will serve as the quantitative analysis to a mixed-method evaluation of the Neighbourhoods Law and contribute to a deeper understanding of the effects of urban renewal on health and health inequalities.

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Figure Legend:

Figure 1. Trends in age-standardized prevalence of poor self-rated health and poor mental health by neighborhood group for women and men.

Figure 2. Relative (PRclass) and absolute (%) differences in poor self-rated health and poor mental health between manual and non-manual social classes by year and neighborhood group in women and men.