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Debate on Social Capital

ECONOMIC INEQUALITY, WORKING-CLASS POWER, SOCIAL CAPITAL, AND CAUSE-SPECIFIC MORTALITY IN WEALTHY COUNTRIES

Carles Muntaner, John W. Lynch, Marianne Hillemeier, Ju Hee Lee, Richard David, Joan Benach, and Carme Borrell

This study tests two propositions from Navarro's critique of the social capital literature: that social capital's importance has been exaggerated and that class-related political factors, absent from social epidemiology and public health, might be key determinants of population health. The authors estimate cross-sectional associations between economic inequality, working-class power, and social capital and life expectancy, self-rated health, low birth weight, and age- and cause-specific mortality in 16 wealthy countries. Of all the health outcomes, the five variables related to birth and infant survival and nonintentional injuries had the most consistent association with economic inequality and working-class power (in particular with strength of the welfare state) and, less so, with social capital indicators. Rates of low birth weight and infant deaths from all causes were lower in countries with more "left" (e.g., socialist, social democratic, labor) votes, more left members of parliament, more years of social democratic government, more women in government, and various indicators of strength of the welfare state, as well as low economic inequality, as measured in a variety of ways. Similar associations were observed for injury mortality, underscoring the crucial role of unions and labor parties in promoting workplace safety. Overall, social capital shows weaker associations with population health indicators than do economic inequality and working-class power. The popularity of social capital and exclusion of class-related political and welfare state indicators does not seem to be justified on empirical grounds.

Vicente Navarro's critique of social capital (1) contributes new arguments to previous critiques of this concept in epidemiology and public health (2–5). Earlier critiques have indeed missed important points raised by Navarro. First, the

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communitarian version of social capital has been a running theme in the political rhetoric of many recent U.S. presidencies, not just the New Democrat and 2001 Republican administrations. Second, Navarro correctly points to Putnam's neglect of class conflict in his analysis of the Progressive era. Thus, contrary to Putnam's view of Progressive era reformers as enlightened social capitalists, these reformers favored federal egalitarian social policies and, influenced by socialism, understood "communitarianism" and states' rights as causes of class inequality (1). As Navarro stresses, contemporary social capital research points to social policies that are just the opposite of the Progressive era's. Third, Navarro makes a poignant call for abandoning the term "social capital" altogether. Indeed, terms such as "social cohesion" or "social integration" capture the same communitarian referent (e.g., norms of trust and reciprocity among the members of a community) without bringing the confusion generated by the term "social capital" (2–5). Like our recent critique of Putnam's *Bowling Alone* (5), Navarro's critique clearly points out the inherent contradiction in "social capital" terminology and theory: "the clear contradiction between [Putnam's] desire for togetherness on the one hand and his call for the competitiveness that capitalism forces on its adherents on the other." And, "To see solidarity as a means of getting more capital in order to become more competitive is to fail to understand the history of class struggle in this or any other country" (1).

Here we provide some initial empirical support for the critique of social capital developed by Navarro. Our aim is to show that social capital, as understood within the communitarian tradition, has weaker associations with major causes of death than do indicators of economic inequality, including exploitation, and working-class power, including indicators of welfare-state strength. To test this hypothesis we build on previous analyses by Lynch and colleagues (6) on income inequality and psychosocial factors at the national level among wealthy countries. Previous research has not considered a wide array of economic and political indicators (5). Thus, we use indicators of working-class power and welfare-state strength that are available for wealthy countries.

METHODS

Countries

We used the 16 countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and United States) from Wave III (1989–92) of the Luxembourg Income Study (LIS), included in Lynch and colleagues' study (6), due to the completeness of the LIS data and the wealth of these countries. Consistent with the literature, our goal was to assess whether class inequality, working-class power, and social capital are associated with population health in wealthy, capitalist, liberal democratic countries.

Measures of Social Capital

The 1990–91 wave of the World Values Survey (WVS), based on face-to-face interviews of nationally representative samples in 43 countries, was a source of social capital indicators (7). All measures were weighted to generate valid national estimates. "Distrust" was assessed with a single question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Two indicators referred to a wide range of civic organizations (e.g., religious, educational/cultural, political, local community, third world development/human rights, conservation/environmental, professional, youth, recreation, women's, peace, animal rights, health-related). "Belonging to organizations" refers to the mean number of organizations to which survey respondents belonged. "Volunteering" refers to performing unpaid work. Mean perceptions of "control" were ascertained with a question on how much "freedom of choice and control you feel you have over the way your life turns out."

We obtained three indicators of corruption, the "bribery payers index" (BPI), "unfair business practices," and the "corruption perception index" (CPI), from the Transparency International Bribe Payers Survey (8). This survey is based on in-depth interviews with private-sector leaders in 14 emerging market economies during the period 1997-99. The BPI is an effort to measure supply-side bribery, the likelihood of bribe payment by companies of leading exporting states. It is based on the question, "In the business sectors with which you are familiar, please indicate whether companies from the following countries are very likely, quite likely, or unlikely to pay bribes to win or retain business in this country." "Unfair business practices" was ascertained with the question, "In the business sectors with which you are familiar, are there other means by which some governments gain unfair business advantages for their companies?" The CPI also ranks the countries in terms of the degree to which corruption is perceived to exist among public officials and politicians. It is a composite index based on 17 different polls from 10 different institutions.

Measures of Economic Inequality

As measures of class inequality we included indicators of rate of exploitation (or rate of surplus value) and income inequality (understood by some scholars as a measure of secondary exploitation; 9).

Rate of Exploitation. Class exploitation is defined by two forms of social relations: (*a*) an economic relation (exploiters' appropriation of the fruits of labor of the exploited); and (*b*) a political relation, domination (i.e., the exclusion of the exploited from ownership and control of productive resources by the exploiters, usually by means of property rights or physical force, to allow (*a*) to occur). We use the rate of surplus value (or rate of exploitation) for the decade of the 1980s

(10). The computation is similar to the ratio of total value added in the manufacturing sector to wages and salaries in the manufacturing sector. As total value added includes wages and salaries, this quantity is subtracted from the total value added before computing the ratio. Thus, since the World Bank tables list wages and salaries as percentage of value added (WSPVA), the rate of exploitation is calculated as (1 – WSPVA)/WSPVA (9).

Income Inequality. As measures of income inequality we used the Gini coefficient, based on household disposable income (ranging from 0 to 1, higher values indicating greater inequality), and the ratios of the 90th and 50th income percentiles to the 10th income percentile, obtained from the LIS (designated 90/10 and 50/10).

Other Economic Indicators. Indicators of economic growth for the periods 1960–73 and 1979–89, unemployment for 1960–73, and household poverty rate for 1994 were obtained from the Comparative Welfare States Dataset (11).

Measures of Working Class Power

Political variables included voter turnout in general elections, as percentage of electorate voting, 1994; authoritarian legacy of the political regime, 1994; years of social democratic government, 1946–80; years of Christian democratic government, 1946–80; union density, 1994, as percentage of the labor force; social pact, 1994—a scale of 1 to 4 measures the pact between labor and capital; number of industrial disputes involving 1,000 or more workers, 1994; proportion of workers involved in labor disputes, 1994; left votes, as percentage of total votes for left parties (socialist, social democratic, and labor), 1994; and left seats, as percentage of parliamentary seats needed to have a majority, 1994). Measures of strength of the welfare state included women in government, 1991, as percentage of elected seats in national governments occupied by women; social security expenditures, 1994, as percentage of GDP; redistributive effect of the state, as percentage reduction in income inequality due to direct taxation and transfers; and total public medical care, 1960, 1970, 1980, 1990, as percentage of the population with medical care covered by public funds. All variables were obtained from the Comparative Welfare States Dataset (11).

Measures of Cause of Death

The health indicators were those used by Lynch and colleagues (6) in a previous analysis of income inequality, the psychosocial environment, and health in wealthy countries. We obtained life expectancy at birth (1991–93) from the World Health Organization's Statistical Information System (WHOSIS; 12) and mortality rates from age- and sex-specific numbers of deaths and total population

counts from the WHO Mortality Data Base (13). All-cause death rates are standardized in five-year age groupings by means of the new European Standard populations for males and females. We obtained rates for age groups <1, 1–14, 15–44, 45–64, and 65+, and for all ages combined. Standardized mortality rates were also calculated for specific causes of death, following ICD-9 basic tabulation list codes: coronary heart disease, 27; stroke, 29; lung cancer, 101; breast cancer, 113; prostate cancer 124; diabetes, 181; infectious diseases, 01–07; chronic obstructive pulmonary disease (COPD), 323, 324, and 325; cirrhosis, 347; unintended injury, E47 through E53; suicide plus deaths undetermined whether accidental or suicide, E54 and E560; and homicide, E55. We calculated mortality rates for 1989–92 for all countries except Germany (1990–92). Rates of low birth weight (<2,500 grams), obtained from WHOSIS, were available for 1991–93 for all countries except Canada and the United States (1989–90). Low birth weight data were not available for the Netherlands. We obtained self-rated poor health data from the WVS; this refers to the percentage of the population reporting "fair, poor, or very poor" health. Health outcomes were assessed from pooled rates for the years detailed above, with the exception of self-rated health that originated on the point prevalence for the 1990–91 wave of the WVS survey.

Statistical Analyses

We calculated Pearson correlation coefficient associations between social capital, economic inequality, working-class power, and population health indicators. Analyses were weighted by population size and adjusted for gross domestic product (GDP/capita), using the Penn World Tables (14).

RESULTS

Overall, the economic inequality and working-class power variables tested here had a high degree of correlation with the various indicators of population health. A certain number of statistically significant associations would be expected if this large number of correlation coefficients were calculated on a collection of random numbers, but many fewer than we actually observed. Tables 1 through 4 (pages 634–649) contain more than 1,500 correlations, so, by chance alone, more than 75 values of r would be expected at levels beyond the $\alpha = 0.05$ level. In the tables, however, rather than about 5 percent of the correlations being beyond the 5 percent cutoff, between 11 and 40 percent of the correlations are above the cutoff, depending on which construct indicators (social capital, economic inequality, working-class power) we examined. The highest percentage of significant correlations was found for economic inequality (40 percent) and the lowest for social capital (11 percent) indicators, although within each group some particular measures were strongly correlated with health indicators. The social capital group was weak overall, but the variable "unfair business practices" was

Table 1

Correlation between health variables and income inequality, adjusted for gross domestic product per capita and weighted by population size

	Gini coefficient, 1989–92[a] (N = 16)	Household income inequality, 1990–91[b] (N = 13)	90/10 percentile[c] (N = 15)	50/10 percentile[c] (N = 15)	Economic growth[d] 1960–73 (N = 12)	Economic growth[d] 1979–89 (N = 12)	Unemployment, 1960–73[d] (N = 12)	Household poverty rate, % total[e] (N = 13)	Rate of surplus value, 1970s[f] (N = 14)
Women									
Mortality by age, yr									
<1	0.69**	0.74***	0.79***	0.77**	–0.11	0.12	–0.05	0.68*	0.48
1–14	0.53*	0.76**	0.59*	0.57*	–0.34	–0.52	0.42	0.68*	0.58*
15–44	0.46	0.59*	0.54*	0.55*	–0.17	–0.56	0.65*	0.50	0.32
45–64	0.35	0.49	0.28	0.20	–0.84**	0.13	–0.41	0.59*	0.64*
>65	–0.41	–0.20	–0.50	–0.57*	–0.62*	0.56	–0.80**	–0.11	0.45
All ages	–0.28	–0.06	–0.36	–0.44	–0.71*	0.47	–0.72*	0.03	0.54
Mortality by cause									
Diabetes mellitus	–0.21	–0.08	–0.17	–0.20	0.47	0.48	–0.36	–0.14	0.05
Lung cancer	0.65**	0.73**	0.62*	0.56*	–0.83**	0.28	–0.45	0.82**	0.78**
Stomach cancer	–0.65**	–0.61*	–0.70**	–0.72**	0.36	0.69*	–0.54	–0.60*	–0.22
Breast cancer	0.04	–0.06	–0.11	–0.18	–0.73*	0.01	–0.68*	0.07	0.13
Coronary heart disease	0.03	0.19	–0.07	–0.13	–0.78**	0.50	–0.54	0.33	0.56
Stroke	–0.46	–0.28	–0.52	–0.60*	–0.31	0.79**	–0.81**	–0.21	0.29
COPD	0.63*	0.75**	0.59*	0.51	–0.80**	0.16	–0.49	0.82**	0.78**
Infectious disease	0.50	0.62*	0.62*	0.64*	–0.05	–0.69*	0.74**	0.52	0.24
Cirrhosis	–0.31	–0.39	–0.30	–0.29	0.70*	0.21	0.21	–0.48	–0.28
Unintentional injury, by age									
<1	0.48	0.41	0.53*	0.56*	0.23	–0.61*	0.90***	0.29	0.06
1–14	0.35	0.54	0.45	0.46	0.03	–0.66*	0.76**	0.45	0.35
15–44	0.44	0.55	0.58*	0.60*	0.34	–0.49	0.90***	0.44	0.26
45–64	0.23	0.16	0.35	0.42	0.40	–0.38	0.92***	0.07	–0.22
>65	–0.35	–0.71**	–0.36	–0.27	0.79**	–0.32	0.65*	–0.76**	–0.90***
Suicide	–0.49	–0.62*	–0.50	–0.44	0.18	–0.61*	0.53	–0.62*	–0.63*
Homicide	0.66**	0.85***	0.80***	0.79***	–0.22	–0.08	0.39	0.77**	0.56*
Life expectancy	0.04	–0.19	0.13	0.22	0.78**	–0.35	0.65*	–0.29	–0.62*
Low birthweight (both sexes)	0.79*** (N = 15)	0.90*** (N = 12)	0.83*** (N = 14)	0.78** (N = 14)	–0.54 (N = 11)	–0.08 (N = 11)	–0.07 (N = 11)	0.87*** (N = 12)	0.71** (N = 13)
Self-rated poor health (both sexes)	–0.46 (N = 14)	–0.44 (N = 13)	–0.49 (N = 13)	–0.50 (N = 13)	0.72* (N = 12)	0.07 (N = 12)	0.26 (N = 12)	–0.51 (N = 13)	–0.20 (N = 12)

(Table continues on next page.)

Table 1 (Cont'd.)

	Gini coefficient, 1989–92[a] (N = 16)	Household income inequality, 1990–91[b] (N = 13)	90/10 percentile[c] (N = 15)	50/10 percentile[c] (N = 15)	Economic growth[d]		Unemployment, 1960–73[d] (N = 12)	Household poverty rate, % total[e] (N = 13)	Rate of surplus value, 1970s[f] (N = 14)
					1960–73 (N = 12)	1979–89 (N = 12)			
Men									
Mortality by age, yr									
<1	0.74**	0.71*	0.81***	0.80***	–0.17	–0.09	0.05	0.64*	0.36
1–14	0.60*	0.81**	0.68**	0.66*	–0.29	–0.40	0.41	0.73**	0.60*
15–44	0.45	0.54	0.57*	0.60*	0.27	–0.33	0.87***	0.42	0.22
45–64	0.09	0.11	0.06	0.05	–0.20	–0.19	0.56	0.07	0.18
>65	–0.47	–0.33	–0.57*	–0.64*	–0.64*	0.39	–0.79**	–0.23	0.20
All ages	–0.26	–0.11	–0.34	–0.40	–0.63*	0.20	–0.30	–0.06	0.37
Mortality by cause									
Diabetes mellitus	–0.05	0.07	–0.03	–0.06	0.34	0.58	–0.45	0.03	0.18
Lung cancer	0.21	0.17	0.16	0.10	–0.20	0.02	–0.44	0.19	0.12
Stomach cancer	–0.57*	–0.57	–0.64*	–0.68**	0.24	0.70*	–0.63*	–0.55	–0.20
Prostate cancer	–0.16	–0.14	–0.17	–0.15	–0.41	–0.45	0.06	–0.07	–0.15
Coronary heart disease	–0.04	0.10	–0.14	–0.20	–0.79**	0.48	–0.57	0.25	0.46
Stroke	–0.56*	–0.46	–0.62*	–0.67**	–0.08	0.81**	–0.71*	–0.41	0.03
COPD	0.12	0.30	0.02	–0.08	–0.66*	0.26	–0.77**	0.39	0.63*
Infectious disease	0.47	0.62*	0.60*	0.63*	0.02	–0.65*	0.73*	0.52	0.28
Cirrhosis	–0.32	–0.35	–0.29	–0.27	0.80**	0.06	0.46	–0.45	–0.25
Unintentional injury, by age									
<1	0.46	0.39	0.52	0.54*	0.30	–0.62*	0.90***	0.26	0.01
1–14	0.49	0.71**	0.59*	0.57*	–0.03	–0.41	0.69*	0.63*	0.54
15–44	0.34	0.48	0.49	0.51	0.54	–0.29	0.87***	0.36	0.23
45–64	0.07	0.10	0.23	0.30	0.57	–0.09	0.85**	0.01	–0.19
>65	–0.20	–0.47	–0.12	–0.01	0.77**	–0.30	0.76**	–0.55	–0.81***
Suicide	–0.28	–0.40	–0.26	–0.19	0.16	–0.44	0.71*	–0.40	–0.44
Homicide	0.65**	0.79**	0.78***	0.78**	–0.06	0.14	0.21	0.71**	0.47
Life expectancy	–0.11	–0.31	–0.09	–0.04	0.48	0.13	–0.19	–0.30	–0.52

[a]LIS Web site, June 20, 2000; data published in Lynch et al. (6).
[b]L. Mishel, J. Bernstein, and J. Schmitt, *State of Working America*, Economic Policy Institute, Washington, 1999.
[c]LIS Web site, September 11, 2000.
[d]Huber, Ragin, and Stephens (11).
[e]J. Smeeding, *Financial Poverty in Developed Countries*, LIS, 1997.
[f]Boswell and Dixon (9).
*$P < .05$; **$P < .01$; ***$P < .001$.

Table 2

Correlation between health variables and social capital variables, adjusted for gross domestic product per capita and weighted by population size

	Distrust, 1989–92[a] (N = 14)	Belonging to organizations, 1989–92[a] (N = 13)	Volunteering, 1989–92[a] (N = 12)	Control, 1989–92[a] (N = 14)	Bribery payers index, 1999[b] (N = 12)	Unfair business practices, 1999[b] (N = 12)	Corruption perception index, 1999[b] (N = 16)
Women							
Mortality by age, yr							
<1	0.07	–0.21	0.25	0.14	–0.54	0.73*	–0.63*
1–14	0.12	0.13	0.23	0.32	–0.10	0.66*	–0.09
15–44	0.36	–0.10	0.05	0.10	–0.26	0.81**	–0.19
45–64	–0.33	0.24	–0.31	0.40	0.26	0.37	0.36
>65	–0.33	0.19	–0.59	0.28	0.21	–0.19	0.32
All ages	–0.33	0.20	–0.59	0.33	0.21	–0.05	0.33
Mortality by cause							
Diabetes mellitus	–0.08	–0.04	–0.13	–0.02	–0.57	0.03	–0.56*
Lung cancer	–0.44	0.17	0.53	0.54	0.30	0.28	0.27
Stomach cancer	0.01	–0.14	–0.59	–0.15	–0.29	–0.32	0.19
Breast cancer	–0.21	0.37	–0.23	–0.10	0.52	–0.37	0.44
Coronary heart disease	–0.61*	0.30	–0.14	0.63*	0.59	–0.13	0.67**
Stroke	–0.29	0.02	–0.55	0.23	0.02	–0.27	0.11
COPD	–0.32	0.18	0.13	0.42	0.27	0.32	0.20
Infectious disease	0.26	0.02	0.33	0.11	–0.19	0.70*	–0.19
Cirrhosis	0.50	–0.58*	–0.66*	–0.37	–0.80**	0.19	–0.69**
Unintentional injury, by age							
<1	0.63*	–0.33	0.10	–0.15	–0.39	0.70*	–0.34
1–14	0.21	0.02	0.30	0.23	–0.01	0.51	–0.03
15–44	0.34	–0.28	0.37	0.18	–0.31	0.60*	–0.35
45–64	0.42	–0.31	0.42	–0.09	–0.33	0.49	–0.24
>65	0.53	–0.33	–0.25	–0.78**	–0.38	–0.16	–0.27
Suicide	0.34	–0.04	–0.38	–0.45	0.18	–0.25	0.28
Homicide	–0.03	–0.01	0.40	0.37	–0.32	0.82**	–0.29
Life expectancy	0.45	–0.33	0.41	–0.44	–0.32	–0.06	–0.41
Low birthweight (both sexes)	0.07 (N = 13)	0.13 (N = 12)	0.22 (N = 11)	0.22 (N = 13)	–0.24 (N = 11)	0.81** (N = 11)	–0.31 (N = 15)
Self-rated poor health (both sexes)	0.47 (N = 14)	–0.36 (N = 13)	–0.80** (N = 12)	–0.29 (N = 14)	–0.48 (N = 11)	0.01 (N = 11)	–0.36 (N = 14)

(Table continues on next page.)

Table 2 (Cont'd.)

	Distrust, 1989–92[a] (N = 14)	Belonging to organizations, 1989–92[a] (N = 13)	Volunteering, 1989–92[a] (N = 12)	Control, 1989–92[a] (N = 14)	Bribery payers index, 1999[b] (N = 12)	Unfair business practices, 1999[b] (N = 12)	Corruption perception index, 1999[b] (N = 16)
Men							
Mortality by age, yr							
<1	0.20	–0.23	0.19	–0.02	–0.54	0.77**	–0.63**
1–14	0.13	0.01	0.23	0.32	–0.19	0.71*	–0.18
15–44	0.39	–0.31	0.23	0.13	–0.49	0.79**	–0.40
45–64	0.41	–0.21	–0.39	–0.05	–0.36	0.67*	–0.08
>65	–0.32	0.34	–0.51	0.11	0.33	–0.33	0.41
All ages	–0.06	0.17	–0.53	0.13	0.05	0.16	0.23
Mortality by cause							
Diabetes mellitus	–0.23	–0.01	–0.02	0.12	–0.47	0.05	–0.47
Lung cancer	–0.07	0.33	0.27	–0.20	–0.08	0.03	–0.23
Stomach cancer	–0.04	–0.07	–0.52	–0.18	–0.27	–0.34	–0.19
Prostate cancer	–0.16	0.48	0.07	–0.003	0.77**	–0.35	0.73**
Coronary heart disease	–0.63*	0.36	–0.11	0.56*	0.63*	–0.21	0.70**
Stroke	–0.15	–0.08	–0.60	0.04	–0.14	–0.26	–0.02
COPD	–0.40	0.41	–0.11	0.34	0.45	–0.18	0.32
Infectious disease	0.30	–0.06	0.24	0.13	–0.20	0.62*	–0.18
Cirrhosis	0.56*	–0.58	–0.71*	–0.31	–0.73*	0.22	–0.60*
Unintentional injury, by age							
<1	0.67*	–0.33	0.13	–0.22	–0.45	0.68*	–0.40
1–14	0.12	–0.04	0.32	0.38	–0.06	0.52	–0.08
15–44	0.33	–0.36	0.33	0.21	–0.42	0.55	–0.42
45–64	0.28	–0.33	0.46	0.06	–0.54	0.51	–0.32
>65	0.47	–0.32	0.11	–0.60*	–0.47	0.04	–0.34
Suicide	0.35	–0.13	–0.08	–0.25	0.18	–0.10	0.28
Homicide	–0.04	–0.07	0.40	0.28	–0.52	0.83**	–0.50
Life expectancy	–0.14	–0.07	0.28	–0.21	0.10	–0.58	–0.09

[a]World Values Survey (7); data published in Lynch et al. (6).
[b]Transparency International (8), October 24, 2001.
$*P < .05$; $**P < .01$; $***P < .001$.

Table 3

Correlation between health variables and political capital variables, adjusted for gross domestic product per capita and weighted by population size

	Voter turnout, 1994[a] (N = 15)	Authoritarian legacy[b] (N = 15)	Years of social democratic government[c] (N = 14)	Years of Christian democratic government[c] (N = 14)	Union density[d] (N = 14)	Social pact[e] (N = 14)	No. of industrial disputes, 1994 (N = 13)	Workers in labor disputes, 1994[f] (N = 12)	Left votes, 1994[g] (N = 15)	Left seats, 1994[h] (N = 15)
Women										
Mortality by age, yr										
<1	−0.48	−0.22	−0.57*	−0.10	−0.42	−0.67*	0.06	0.54	−0.76**	−0.59*
1–14	−0.64*	−0.48	−0.59*	−0.50	−0.88***	−0.70**	0.24	−0.23	−0.60*	−0.55*
15–44	−0.66*	−0.37	−0.42	−0.50	−0.65*	−0.59*	0.41	−0.22	−0.50	−0.57*
45–64	−0.19	0.09	0.35	−0.41	0.04	−0.01	−0.56	−0.47	−0.11	0.15
>65	0.42	0.74**	0.61*	0.26	0.43	0.61*	−0.90***	−0.45	0.53*	0.71**
All ages	0.30	0.66*	0.58*	0.14	0.36	0.51	−0.85***	−0.49	0.43	0.63*
Mortality by cause										
Diabetes mellitus	0.34	0.68**	−0.39	0.73**	−0.10	0.03	−0.09	0.93***	0.07	0.10
Lung cancer	−0.29	−0.29	0.03	−0.59*	−0.14	−0.39	−0.55	−0.30	−0.38	−0.08
Stomach cancer	0.52	0.92***	0.28	0.82***	0.47	0.64*	−0.29	0.46	0.51	0.49
Breast cancer	0.06	0.04	0.55	−0.02	0.45	0.44	−0.66*	−0.55	0.04	0.29
Coronary heart disease	0.17	0.18	0.59*	−0.33	0.29	0.27	−0.74**	−0.74**	0.33	0.59*
Stroke	0.51	0.83***	0.50	0.50	0.49	0.61*	−0.76**	0.04	0.56*	0.71**
COPD	−0.16	−0.19	0.00	−0.44	−0.20	−0.34	−0.51	−0.26	−0.28	0.04
Infectious disease	−0.73**	−0.63*	−0.52	−0.56*	−0.72**	−0.67*	0.50	−0.21	−0.62*	−0.72**
Cirrhosis	0.16	0.62*	−0.29	0.75**	0.04	0.08	0.49	0.75**	0.07	−0.09
Unintentional injury, by age										
<1	−0.62*	−0.51	−0.67*	−0.37	−0.77**	−0.71*	0.85***	0.27	−0.52	−0.73**
1–14	−0.37	−0.63*	−0.57*	−0.54	−0.81***	−0.68*	0.48	−0.39	−0.33	−0.42
15–44	−0.51	−0.64*	−0.72**	−0.44	−0.77**	−0.83***	0.77**	0.23	−0.57*	−0.71**
45–64	−0.51	−0.61*	−0.46	−0.40	−0.38	−0.55	0.71*	0.02	−0.43	−0.64*
>65	−0.12	−0.07	0.08	0.43	0.37	0.33	0.76**	0.49	−0.01	−0.35
Suicide	0.04	−0.02	0.48	−0.01	0.37	0.48	0.36	−0.51	0.38	0.10
Homicide	−0.71**	−0.45	−0.57*	−0.46	−0.66*	−0.75**	0.17	0.19	−0.76**	−0.65*
Life expectancy	−0.18	−0.43	−0.50	0.10	−0.23	−0.31	0.81**	0.58	−0.24	−0.51
Low birthweight (both sexes)	−0.57* (N = 14)	−0.25 (N = 14)	−0.45 (N = 13)	−0.30 (N = 13)	−0.54 (N = 13)	−0.63* (N = 13)	−0.12 (N = 12)	0.12 (N = 12)	−0.72** (N = 14)	−0.48 (N = 14)
Self-rated poor health (both sexes)	0.39 (N = 13)	0.67* (N = 13)	−0.12 (N = 14)	0.66* (N = 14)	−0.03 (N = 14)	0.26 (N = 14)	0.55 (N = 12)	0.38 (N = 11)	0.42 (N = 13)	0.26 (N = 13)

(Table continues on next page.)

Table 3 (Cont'd.)

	Voter turnout, 1994[a] (N = 15)	Authoritarian legacy[b] (N = 15)	Years of social democratic government[c] (N = 14)	Years of Christian democratic government[c] (N = 14)	Union density[d] (N = 14)	Social pact[e] (N = 14)	No. of industrial disputes, 1994 (N = 13)	Workers in labor disputes, 1994[f] (N = 12)	Left votes, 1994[g] (N = 15)	Left seats, 1994[h] (N = 15)
Men										
Mortality by age, yr										
<1	−0.54*	−0.31	−0.52	−0.12	−0.37	−0.63*	0.14	0.45	−0.80***	−0.64*
1–14	−0.70**	−0.54*	−0.63*	−0.48	−0.87***	−0.77**	0.29	−0.04	−0.69**	−0.62*
15–44	−0.68**	−0.41	−0.68**	−0.37	−0.74**	−0.75**	0.72**	0.37	−0.57*	−0.73**
45–64	−0.42	0.13	−0.04	−0.15	−0.20	−0.09	0.28	−0.14	−0.18	−0.24
>65	0.40	0.65*	0.72**	0.27	0.57*	0.75**	−0.94***	−0.61*	0.51	0.70**
All ages	0.05	0.52	0.47	0.1	0.26	0.46	−0.57	−0.38	0.25	0.36
Mortality by cause										
Diabetes mellitus	0.32	0.58*	−0.40	0.58*	−0.14	−0.08	−0.17	0.96***	0.02	0.11
Lung cancer	−0.1	−0.01	−0.20	0.23	0.06	−0.03	−0.37	0.21	−0.49	−0.25
Stomach cancer	0.47	0.89***	0.30	0.84***	0.51	0.66*	−0.36	0.53	0.43	0.45
Prostate cancer	−0.02	−0.39	0.60*	−0.48	0.19	0.37	−0.21	−0.88***	0.32	0.27
Coronary heart disease	0.16	0.20	0.68*	−0.29	0.39	0.38	−0.80**	−0.80**	0.34	0.60*
Stroke	0.49	0.90***	0.49	0.64*	0.57*	0.68*	−0.61*	0.25	0.54*	0.63*
COPD	0.31	0.22	0.20	−0.01	0.04	0.14	−0.76**	−0.44	0.14	0.47
Infectious disease	−0.71**	−0.58*	−0.52	−0.51	−0.75**	−0.66*	0.56	−0.17	−0.48	−0.64*
Cirrhosis	0.14	0.52	−0.37	0.60*	−0.15	−0.02	0.69*	0.64*	0.14	−0.08
Unintentional injury, by age										
<1	−0.62*	−0.49	−0.72**	−0.30	−0.77**	−0.70**	0.87***	0.50	−0.54*	−0.76**
1–14	−0.40	−0.70**	−0.67*	−0.53	−0.88***	−0.80***	0.43	−0.17	−0.40	−0.41
15–44	−0.44	−0.46	−0.75**	−0.31	−0.74**	−0.79**	0.81**	0.54	−0.46	−0.66*
45–64	−0.43	−0.34	−0.49	−0.23	−0.37	−0.49	0.65*	0.29	−0.30	−0.54*
>65	−0.29	−0.30	−0.16	0.19	0.13	0.02	0.75**	0.48	−0.19	−0.51
Suicide	−0.18	−0.30	0.29	−0.25	0.20	0.20	0.43	−0.60*	0.18	−0.07
Homicide	−0.65*	−0.26	−0.61*	−0.24	−0.56*	−0.70**	0.13	0.49	−0.80***	−0.68**
Life expectancy	0.27	−0.16	0.01	0.25	0.28	0.10	0.12	0.33	0.10	0.03

Data from Huber, Rain, and Stephens (11).
[a]In each national election, percent of electorate that voted.
[b]Political regime in 1990.
[c]1946–80, in late 1970s.
[d]As percent of labor force, late 1970s.
[e]Scale of 1 to 4, late 1970s.
[f]In thousands; ILO, *Yearbook of Labour Statistics*, various years.
[g]Percent of total votes for left parties.
[h]Percent of total seats in parliament for left parties.
*$P < .05$; **$P < .01$; ***$P < .001$.

Table 4

Correlation between health variables and welfare state, adjusted for gross domestic product per capita and weighted by population size

	Females in government, 1991[a] (N = 16)	Social security expenditures[b] (N = 14)	Redistributive effect of state[c] (N = 14)	Total public medical care[a]			
				1960 (N = 16)	1970 (N = 15)	1980 (N = 16)	1990 (N = 16)
Women							
Mortality by age, yr							
<1	–0.63*	–0.65*	–0.61*	–0.71**	–0.76**	–0.74**	–0.75**
1–14	–0.41	–0.67*	–0.62*	–0.88***	–0.88***	–0.87***	–0.82***
15–44	–0.37	–0.35	–0.34	–0.77***	–0.74**	–0.75**	–0.74**
45–64	–0.19	–0.23	0.10	–0.02	–0.20	–0.30	–0.33
>65	0.43	0.12	0.38	0.41	0.19	0.16	0.16
All ages	0.33	0.04	0.33	0.31	0.09	0.04	0.03
Mortality by cause							
Diabetes mellitus	0.19	–0.21	–0.38	–0.21	–0.33	–0.26	–0.24
Lung cancer	–0.46	–0.56*	–0.26	–0.19	–0.27	–0.33	–0.35
Stomach cancer	0.53*	0.35	0.29	0.50	0.36	0.38	0.38
Breast cancer	–0.12	0.20	0.44	0.55*	0.51	0.37	0.32
Coronary heart disease	0.16	–0.13	0.22	0.29	0.12	0.08	0.07
Stroke	0.44	0.11	0.28	0.48	0.25	0.26	0.27
COPD	–0.51	–0.53	–0.26	–0.21	–0.36	–0.40	–0.42
Infectious disease	–0.38	–0.43	–0.45	–0.87***	–0.77**	–0.78***	–0.75**
Cirrhosis	0.16	0.20	–0.07	0.05	–0.02	0.04	0.05
Unintentional injury, by age							
<1	–0.46	–0.23	–0.42	–0.68**	–0.60*	–0.56*	–0.54*
1–14	–0.30	–0.51	–0.51	–0.83***	–0.73**	–0.68**	–0.63*
15–44	–0.42	–0.57*	–0.65*	–0.87***	–0.76**	–0.65**	–0.59*
45–64	–0.24	–0.13	–0.26	–0.53*	–0.28	–0.24	–0.23
>65	0.18	0.73**	0.41	0.42	0.56*	0.55*	0.50
Suicide	0.39	0.76**	0.67*	0.44	0.54*	0.51	0.49
Homicide	–0.45	–0.68*	–0.63*	–0.92***	–0.93***	–0.92***	–0.91***
Life expectancy	–0.14	0.14	–0.22	–0.14	0.06	0.13	0.15
Low birthweight (both sexes) (N = 13)	–0.71** (N = 15)	–0.63	–0.47	–0.67**	–0.77**	–0.82***	–0.86***
Self-rated poor health (both sexes) (N = 14)	0.29	0.28	0.07	0.13	0.02 (N = 13)	0.09	0.12

(Table continues on next page.)

Table 4 (Cont'd.)

	Females in government, 1991[a] (N = 16)	Social security expenditures[b] (N = 14)	Redistributive effect of state[c] (N = 14)	Total public medical care[a]			
				1960 (N = 16)	1970 (N = 15)	1980 (N = 16)	1990 (N = 16)
Men							
Mortality by age, yr							
<1	−0.73**	−0.52	−0.48	−0.64**	−0.67**	−0.67**	−0.72**
1–14	−0.48	−0.74**	−0.72**	−0.90***	−0.91***	−0.88***	−0.83***
15–44	−0.34	−0.47	−0.60*	−0.85***	−0.81***	−0.72**	−0.68**
45–64	−0.05	0.08	0.11	−0.23	−0.27	−0.33	−0.36
>65	0.43	0.30	0.57*	0.54*	0.39	0.31	0.28
All ages	0.27	0.16	0.40	0.17	0.04	−0.04	−0.07
Mortality by cause							
Diabetes mellitus	0.09	−0.34	−0.47	−0.22	−0.37	−0.37	−0.28
Lung cancer	−0.39	−0.20	−0.06	−0.12	−0.07	−0.07	−0.22
Stomach cancer	0.46	0.35	0.30	0.54*	0.39	0.39	0.38
Prostate cancer	−0.22	0.35	0.50	0.27	0.34	0.28	0.28
Coronary heart disease	0.23	−0.04	0.32	0.39	0.23	0.17	0.15
Stroke	0.50	0.29	0.37	0.55*	0.36	0.36	0.35
COPD	−0.16	−0.35	−0.04	0.06	−0.09	−0.11	−0.12
Infectious disease	−0.33	−0.47	−0.55	−0.81***	−0.74**	−0.71**	−0.65**
Cirrhosis	0.19	0.16	−0.15	−0.07	−0.11	−0.02	0.01
Unintentional injury, by age							
<1	−0.47	−0.22	−0.45	−0.67**	−0.57*	−0.54*	−0.52*
1–14	−0.40	−0.74**	−0.75**	−0.86***	−0.82***	−0.73**	−0.66**
15–44	−0.30	−0.59*	−0.73**	−0.84***	−0.76**	−0.60*	−0.52*
45–64	0.00	−0.20	−0.38	−0.56*	−0.36	−0.29	−0.26
>65	0.11	0.46	0.14	0.06	0.27	0.28	0.26
Suicide	0.23	0.51	0.45	0.21	0.40	0.38	0.37
Homicide	−0.45	−0.66*	−0.65*	−0.86***	−0.90***	−0.89***	−0.90***
Life expectancy	0.06	0.19	0.01	0.35	0.41	0.47	0.47

[a]1993 UNDP report; data published in Lynch et al. (6).
[b]As percent of GDP, late 1970s; Huber, Ragin, and Stephens (11).
[c]As percent reduction of income inequality affected by direct taxes and transfer payments, late 1970s; Huber, Ragin, and Stephens (11).
[d]As percent of population, 1960, 1970, 1980, and 1990; OECD Health Data, 2001.
*$P < .05$; **$P < .01$; ***$P < .001$.

significantly correlated with 31 percent of the health indicators. In other groups even stronger correlations were found: 50/10 percentile correlated with 41 percent of the health outcomes, and both social pact and total public medical care for 1960 correlated with 48 percent of the health outcome variables, although the direction of correlation was not always consistent. Thus, a stronger social pact and public medical care were associated with lower infant and young adult death rates, but with higher—sometimes significantly so—death rates for those over 65 years.

Of all the health outcomes, the five variables related to birth and infant survival had the most consistent association with the economic inequality, working-class power, and social capital variables tested, especially indicators of economic inequality and working-class power (i.e., strength of the welfare state). The low birth weight and infant mortality rates for both males and females were positively correlated with each of the four measures of income inequality (Gini coefficient, household income inequality, 90/10 percentile, and 50/10 percentile). These correlation coefficients reached statistical significance in all 12 of the correlations calculated ($r = 0.69$–0.90). The rates of first-year deaths classified as unintentional (mostly cases of sudden infant death syndrome, SIDS) were also positively correlated with these four income inequality variables. Although all eight values of r were positive, ranging from 0.39 to 0.56, only three of the eight reached the 5 percent significance level for this outcome.

The welfare-state strength group of variables performed nearly as well as the income inequality group in predicting low birth weight and first-year death rates. For the seven variables in the welfare state section, and the five infant rates (low birth weight; infant mortality rate, male and female; unintentional first-year death, male and female), all 35 correlation coefficients have the expected negative sign and 26 of the 35 (72 percent) reach statistical significance. The economic inequality variables other than unemployment and income inequality also showed some relationship to infant outcomes. Higher rates of economic growth in the 1980s were associated with lower rates of unintentional infant deaths measured in the 1990s. Growth rates from earlier had no effect. Higher poverty rates were significantly associated with higher rates of low birth weight and infant mortality. Political variables also were predictive of infant outcomes, although not as much so as variables in the income inequality and welfare state indicators. First, the direction of effect for almost all the variables in this group was inverse. If we consider "left" governments as traditionally associated with greater family and child supports—closest to the strong "welfare state," which we saw above to be highly correlated with better infant outcomes—then it is counterintuitive to find that both "right" and "left" governments might have a beneficial effect. Not only number of years of social democratic government but also number of years of Christian democratic rule and "authoritarian legacy" all increase as infant adverse outcomes decrease: 100 percent of the r values for infant outcomes with these three variables have negative signs. However, only for social democratic

government are these correlations statistically significant: in 60 percent of the correlations, compared with 0 percent for the other two party types. Moreover, union membership, left votes, and left seats in parliament are also associated with improved infant outcomes—significantly so in 10 of the 15 correlations. Finally, of the five correlations between "social pact" (in large part the policy and program legacy of left political parties holding power) and infant outcomes, all five are significantly associated; stronger social pact was associated with lower rates of infant mortality and low birth weight.

We observed a curious finding with the other two predictor variables in this group: the variables measuring number of strikes and percentage of workers involved in strikes. Adverse infant outcomes tended to increase as these two variables increased (9 of 10 with positive signs for r), but only one pair of correlations reached statistical significance: unintentional deaths of male and female infants were very strongly associated with the number of industrial disputes ($r = 0.87$ ($P < .001$) and $r = 0.85$ ($P < .001$), respectively, for male and female). Interestingly, these same outcomes, unintentional deaths of male and female infants, were also very strongly associated with unemployment, but neither unemployment nor strikes showed any consistent or significant association with low birth weight or overall infant mortality rates.

Variables in the social capital group showed less consistent and significant correlations with the infant outcomes. The strongest association in the group was for unfair business practices, the increase of which was correlated with increasing mortality and low birth weight, with r values ranging from 0.68 ($P < .05$) to 0.81 ($P < .01$). Both male and female infant mortality rates improved with higher CPI. Distrust was positively associated with unintentional infant deaths ($P < .05$ for male and female). The other four variables—organization membership, volunteering, control, and BPI—had no statistically significant associations with infant outcomes.

In summary, the rates of low birth weight and infant deaths from all causes were lower in those countries with more voter turnout, more left votes, more left members of parliament, more years of social democratic government, more women in government, a stronger social pact and various aspects of the welfare state, and low income inequality, as measured in a variety of ways. Strikes and high unemployment have a specific association with infant deaths classed as unintentional, as do high levels of distrust and low unionization rates.

With regard to specific causes of death, death from diabetes mellitus was associated only with indicators of working-class power: authoritarian legacy, years of Christian democratic government, proportion of workers involved in labor disputes. Cancer mortality showed strong associations with economic inequality, including absolute income and rate of exploitation, mostly among women; strong associations with authoritarian legacy and years of Christian democratic government; and moderate associations with social capital indicators

CPI and BPI, among men only. Coronary heart disease mortality showed an inverse association with economic growth in the period 1960–73, moderate associations with years of social democracy and public medical expenditures, strong inverse associations with industrial disputes and proportion of workers involved, and inconsistent associations with social capital indicators (negative with distrust and positive with control and CPI). Stroke and COPD both showed associations with economic inequality, economic growth, and unemployment mostly in the expected direction; stroke showed some associations with political indicators (union density, social pact, left votes, left seats, number of industrial disputes, and proportion of workers involved [inverse]); and both showed no association with social capital indicators.

Death from infectious diseases was associated with economic inequality and unemployment; strongly inversely associated with vote turnout, union density, left seats, and especially public medical expenditures; and with the social capital indicator of unfair business practices.

Death from cirrhosis was associated with economic growth during the period 1960–73, inconsistently associated with four social capital indicators (inversely with belonging to organizations and volunteering, BPI, and CPI and positively with distrust) and positively associated with indicators of years of Christian democratic government, proportion of workers involved in labor disputes, and number of industrial disputes.

Nonintentional injuries for ages 1–64 showed a positive association with economic inequality and, in particular, with unemployment rate; moderate to strong inverse associations with years of social democratic government (Figure 1), union density (Figure 2), social pact, left votes and left seats; positive associations with number of industrial disputes, social security expenditures, redistributive effect of the state, and total public medical care expenditures; and only one association with social capital indicators: unfair business practices associated with fatal injuries among women in the 15–44 age group.

Suicide showed moderate inverse associations with economic inequality and poverty among women and a stronger positive association with unemployment among men (r = .71); an inverse association with the proportion of workers involved in labor disputes; positive associations with social security expenditures and distributive role of the state among women; and basically no association with social capital indicators. Homicide was strongly associated with economic inequality and poverty; was moderately to strongly associated with working-class power (i.e., years of social democracy, union density, social pact, left votes, left seats, social security expenditures, redistributive effect of the state, and public medical expenditures); and, except for unfair business practices, was unrelated to social capital indicators.

Self-rated poor health showed sparse and inconsistent associations with national income, volunteering (inverse), voter turnout, and years of Christian democratic government.

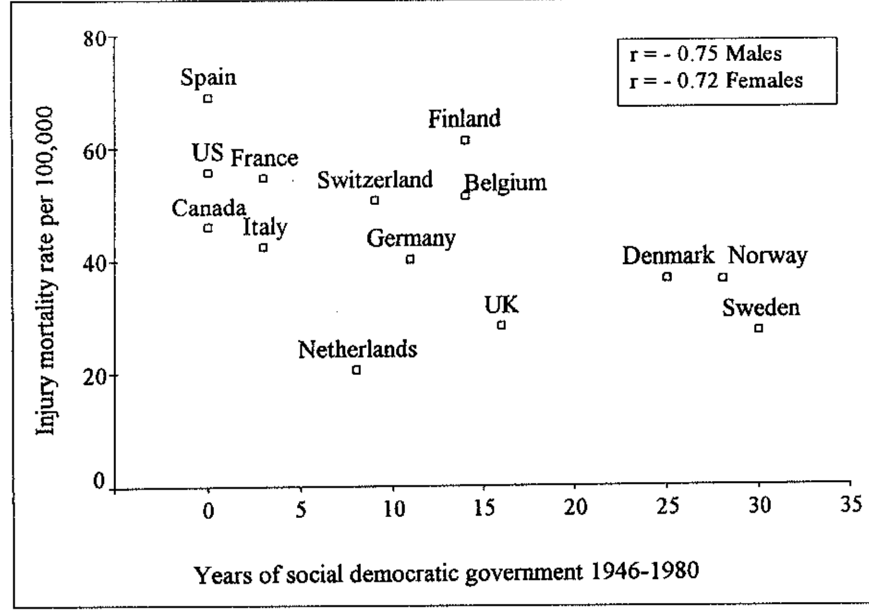

Figure 1. Years of social democratic government, 1946–1980, and male injury mortality rate, 15–44 years.

DISCUSSION

Our results give support to Navarro's critique of the social capital literature (1), at least with regard to international comparative studies of wealthy countries. To our knowledge, this is the first exploratory study at the national level incorporating a wide array of political variables. Our goal thus was not a specific analysis but to infer patterns of relationships between groups of social and health indicators. Social capital indicators show weaker associations with a variety of health indicators than do economic inequality or political and welfare state indicators (i.e., working-class power). Furthermore, the strongest and most consistent associations with social capital were obtained with unfair business practices and corruption indicators, which tap into institutional social capital. As we have argued elsewhere, institutional social capital, distinct from communitarian social capital, can be easily integrated with social class politics (3). Our results also underscore the unwarranted exclusion of working-class political and welfare state indicators from international health, social epidemiology, health policy, and public health.

The sign reversal of the associations between social indicators and mortality (e.g., in 59 of 65 cases, the sign for associations with infant and 65+ years

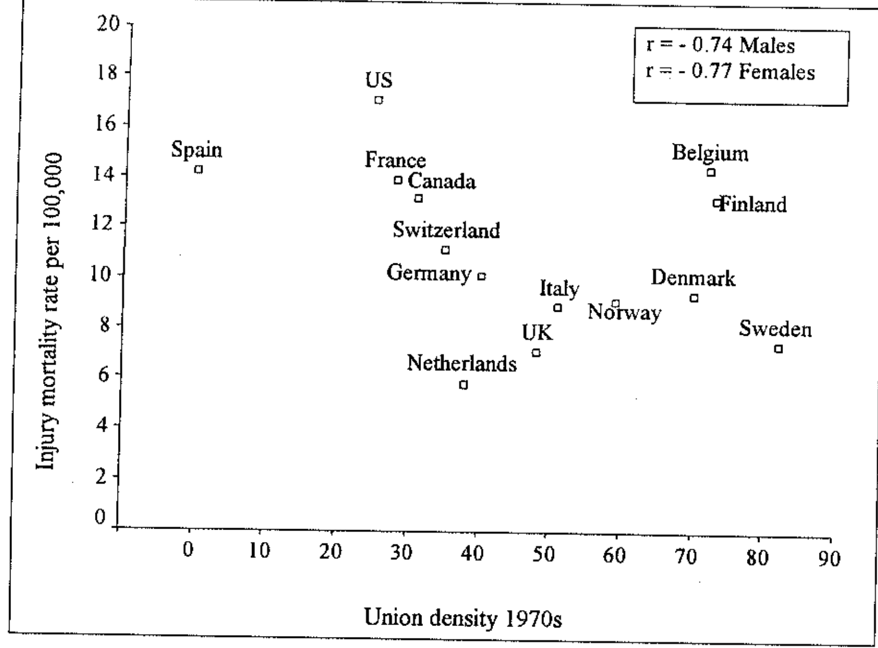

Figure 2. Union density, 1970s, and female injury mortality rate, 15–44 years.

mortality is reversed) replicated the results of an earlier study (6). This reversal could be explained by greater economic inequality and weaker welfare states in countries that also have lower mortality among the 65+ age group (e.g., the United States, France; 6).

Of all the health outcomes, the five variables related to birth and infant survival and nonintentional injuries had the most consistent association with economic inequality and working-class power (in particular, with strength of the welfare state) and, less so, with social capital indicators. Rates of low birth weight and infant deaths from all causes were lower in those countries with more "left" (e.g., socialist, social democratic, labor) votes, more left members of parliament, more years of social democratic government, more women in government, and various indicators of welfare-state strength, as well as low economic inequality, as measured in a variety of ways. Working-class power, as measured by political and welfare state indicators, often yielded associations comparable to those obtained with economic inequality.

With child health outcomes, injury mortality shows the strongest and most consistent associations with working-class power, including both political

indicators (union density, left seats, left votes, number of labor disputes, years of social democratic government) and strength of welfare state indicators. This may reflect the crucial role of strong unions and labor parties in ensuring safety at work or the devastating effect of weak unions and weak working-class parties on protecting workers at the workplace.

Future studies should probe the relationships between political and welfare state variables (working-class power) and health outcomes using techniques that allow for the incorporation of a larger number of variables in the models (pooled regression). Future studies may also develop new political typologies, analyze smaller units such as regions, or improve the measurement of economic inequality (e.g., exploitation including the service sector) and working-class power (e.g., the impact of the nonparliamentary left). Building the explanatory and empirical strength of population health models that incorporate class, race, and gender economics and politics might be necessary to show the limitations of social capital and similar psychosocial models.

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The U.S. Medical Care Business

TAKING CARE OF BUSINESS: HMOs THAT SPEND MORE ON ADMINISTRATION DELIVER LOWER-QUALITY CARE

David U. Himmelstein and Steffie Woolhandler

The authors analyzed health maintenance organizations' administrative costs and quality measures from the National Committee for Quality Assurance's Quality Compass database for the years 1997–2000. HMOs with higher administrative overhead had consistently worse quality scores in univariate analysis. Multivariate analyses controlling for geographic region (all years) and HMO model type (1997 and 1998 analyses only) confirmed that higher administrative costs were associated with lower quality. Excess HMO bureaucracy is not only wasteful but harmful.

In the United States, private health insurers' overhead averages 12 percent of premiums (1), far higher than the overhead costs of national health insurance programs in other nations. We view high administrative costs in the United States as a waste of health care resources—the price of enforcing inequality and extracting profit in health care. Others have a more sanguine view, suggesting that high administrative costs may reflect socially useful activities such as quality-improvement efforts (2).

In this article, we use data from the National Committee for Quality Assurance to examine whether HMOs with higher overhead costs deliver better-quality care.

METHODS

We analyzed data from the National Committee for Quality Assurance's (NCQA) Quality Compass 1997, 1998, 1999, and 2000, including the Health Plan Employer Data and Information Set (HEDIS) and HMO accreditation surveys (3). The data reflect plan characteristics and performance for 1996, 1997, 1998, and 1999, respectively.

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