HHS Public Access

Author manuscript

J Epidemiol Community Health. Author manuscript; available in PMC 2018 April 10.

Published in final edited form as:

J Epidemiol Community Health. 2015 May ; 69(5): 423–431. doi:10.1136/jech-2014-204803.

Political party affiliation, political ideology and mortality

Roman Pabayo[1,2], **Ichiro Kawachi**[2], and **Peter Muennig**[3]

[1]School of Community Health Sciences, University of Nevada, Reno, Reno, Nevada, USA

[2]Department of Social and Behavioral Sciences, Harvard School of Public Health, Boston, Massachusetts, USA

[3]Department of Health Policy and Management, Columbia University Mailman School of Public Health, New York, New York, USA

Abstract

Background—Ecological and cross-sectional studies have indicated that conservative political ideology is associated with better health. Longitudinal analyses of mortality are needed because subjective assessments of ideology may confound subjective assessments of health, particularly in cross-sectional analyses.

Methods—Data were derived from the 2008 General Social Survey-National Death Index data set. Cox proportional analysis models were used to determine whether political party affiliation or political ideology was associated with time to death. Also, we attempted to identify whether self-reported happiness and self-rated health acted as mediators between political beliefs and time to death.

Results—In this analysis of 32 830 participants and a total follow-up time of 498 845 person-years, we find that political party affiliation and political ideology are associated with mortality. However, with the exception of independents (adjusted HR (AHR)=0.93, 95% CI 0.90 to 0.97), political party differences are explained by the participants' underlying sociodemographic characteristics. With respect to ideology, conservatives (AHR=1.06, 95% CI 1.01 to 1.12) and moderates (AHR=1.06, 95% CI 1.01 to 1.11) are at greater risk for mortality during follow-up than liberals.

Correspondence to: Dr Roman Pabayo, Assistant Professor, School of Community Health Sciences, 1664 N. Virginia Street, University of Nevada, Reno/274, Reno, Nevada 89557-0274, USA; rpabayo@unr.edu.

Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/jech-2014-204803).

Contributors RP helped conceive the research question, conducted the statistical analyses, conducted the literature review, was the lead author in drafting the manuscript, and is accountable for all aspects of the work in ensuring that questions related to the integrity of any part of the work are appropriately investigated and resolved. IK conceived the research questions, interpreted findings, helped draft the manuscript and gave final approval of the version of the submitted manuscript. PM is the principal investigator of the General Social Survey-National Death Index data set and provided access to the data, interpreted findings, helped draft the manuscript and provided final approval of the version to be published.

Competing interests None.

Ethics approval Institutional Review Board for the General Social Survey.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Data for the GSS-NDI are available. Please contact PM.

Conclusions—Political party affiliation and political ideology appear to be different predictors of mortality.

INTRODUCTION

Previous studies have claimed that conservative political ideology is associated with better health.[1–6] However, the empirical studies on this topic have been either ecological[4–6] or utilised cross-sectional study data.[1–3] Two ecological studies found a relationship between the proportion of conservative voters in an electorate and lower mortality rates.[56] Investigators postulate that these findings are due to Labour voters being from lower socioeconomic backgrounds while conservative supporters are more likely to be drawn from higher socioeconomic backgrounds.[5] However, such studies may be subject to the ecological fallacy, that is, a correlation between the fraction of conservative voters in an area and a lower mortality rate does not necessarily prove that conservative voters live longer.

Findings from cross-sectional studies conducted in Japan and Europe have reported that individuals expressing a conservative ideology (as compared to liberal ideology)[12] tend to report better self-rated health. In the USA, it has been reported that Republicans are less likely to report poor health in comparison to Democrats.[3] Based on findings from these ecological and cross-sectional studies, researchers have postulated that the association between political beliefs and health is due to differences in socioeconomic characteristics, such as economic deprivation.[5] For example, in the UK, the Labour Party has long been identified with the working class while the Conservative Party has been aligned with the Middle and Upper Classes.[4] In the USA, researchers theorised that political beliefs are a marker for religiosity,[7–9] civic participation[1011] or values that emphasise individual responsibility,[1213] each of which has been shown correlated with a healthier pattern of behaviours (eg, alcohol and tobacco abstinence). Among the cross-sectional studies, researchers have attempted to control for sociodemographic covariates, such as age, sex, socioeconomic status (SES), education, occupation, family income, race, marital status, religious service attendance, that could potentially confound the relationship between political ideology and health outcomes.[23] They found that for each unit increase in the political ideology scale (ie, more conservative) the OR for reporting poor health decreased (OR=0.95, 95% CI 0.94 to 0.96).[2] Similarly, when looking at political party affiliation among a representative sample of American respondents, Republicans, in comparison to Democrats were significantly less likely to report poor health.[3]

Potential mediators between political beliefs and time to death include perceived happiness, religiosity, fundamentalism and self-rated health. Psychological studies have shown a robust relation-ship between being conservative and an increase likelihood of being happy.[1415] Findings from an American survey conducted by the Pew Research Center indicated that 45, 30 and 29% of Republicans, Democrats, and Independents, respectively, reported being very happy.[16] In a recent literature review, consistent findings indicate happiness is predictive of longevity and health.[15] Income, age, education, sex, religiosity, marital status and other demographic differences between Republicans and Democrats[16] might explain why the members who affiliate with the former political party are more likely to report being happy. Also, conservatives are more likely to be religious,[17] which in turn is significantly associated

with better health.[9,18] Similarly, fundamentalism, or a strict adherence to orthodox doctrines, has shown to be related to health.[18,19] Future studies need to identify the role of happiness and religion in the relationship between political beliefs and health.

For this investigation we use the term political beliefs to capture political ideology (conservatism vs liberalism) and political party affiliation (Republicans vs Democrats). Political beliefs might be a comprehensive marker for latent attitudes, values and beliefs that might promote health.[2] Liberalism might be a marker for beliefs in equality and conservatism might be a marker for fundamentalism. Also, political beliefs might be a marker for racist beliefs. These covariates should also be included in analysis identifying the relationship between political beliefs and health.

Previous studies have not distinguished between an individual's political party affiliation and an individual's political ideology. However, there are various factors, other than political ideology, that can influence political party affiliation. US State of residence, family tradition and religious beliefs could plausibly play a role in political party affiliation somewhat independent of one's personal ideology. Thus, an examination of how political beliefs are associated with health needs to examine political party affiliation and political ideology separately. Also, social epidemiologists argue that beliefs can influence health differentially across groups. Therefore, effect modification by gender and SES should be tested.[20] Since researchers have observed a gradient where certain sociodemographic groups, namely women and those from lower SES backgrounds, have differential access to power and resources, the association between political beliefs and mortality potentially are greater among these groups in comparison to men and those from higher SES backgrounds, respectively.[20]

The objective of this study is to determine whether political party affiliation and political ideological beliefs are predictive of time to death while accounting for several sociodemographic and economic characteristics measured at baseline. We investigate the relationship between political ideology and political party affiliation and time to death among a population-based and representative sample of adults within the USA. We extend previous studies describing the relationship between political beliefs and health outcomes by employing a prospective design that uses time to death as an outcome and by exploring potential media-tors of this relationship. Also, given the results of earlier studies, we hypothesise that conservatives and Republicans are more likely to report being happier, perceive better self-rated health, and therefore less likely to experience mortality during follow-up in comparison to liberals and Democrats, respectively.

METHODS

Sample and design

Data for this investigation come from the General Social Survey (GSS), a representative sample of non-institutionalised US adults aged 18 and older, linked to the US National Death Index (NDI).[21] The GSS is an annual study of opinions and attitudes among the US public collected by the National Opinion Research Center (NORC) at the University of Chicago.[21] Interviews were conducted in person and involve a core set of questions asked

every year. Different people were included each year, so the survey is not a panel design. In the present study, we linked the 32 830 respondents from 1976 until 2008 to the US NDI, thereby enabling us to examine prospectively the relation between political ideology/party affiliation and subsequent risk of mortality. Models were prespecified. Ethical approval was obtained from the Institutional Review Board for the GSS.

Measures

The GSS includes information on age, gender, race/ethnicity, household income, region in which the respondent resides (Census Bureau 9), and whether they live in an urban, suburban, or rural setting. Religious affiliation was also included (Protestant, Catholic, Jewish, Eastern or Other).

Our main exposure of interest was political party beliefs, which was assessed by political party affiliation and political ideology. Respondents were asked “Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?” Response options included (1) Strong Democrat, (2) Not Strong Democrat, (3) Independent Near Democrat, (4) Independent, (5) Independent Near Republican, (6) Not Strong Republican, (7) Strong Republican or (8) other party. Respondents were categorised into Democrat (1 and 2), Independent (3, 4, and 5), Republican (6 and 7) or other (8). To test the robustness of political party affiliation, we also categorised this variable as Democrat (1, 2 and 3), Independent (4), Republican (5, 6, and 7) or other (8). Similar findings were obtained but were not presented. For political ideology, participants were then asked “We hear a lot of talk these days about liberals and conservatives. I’m going to show you a seven-point scale on which the political views that people might hold.” Response options included (1) Extremely Liberal, (2) Liberal, (3) Slightly Liberal, (4) Moderate, (5) Slightly Conservative, (6) Conservative, (7) Extremely Conservative or (8) other. Participants were categorised into Liberal (1 and 2), Moderate (3, 4 and 5), Conservative (6 and 7) or other (8 or missing). Similarly, we categorised political ideology as Liberal (1, 2, and 3), Moderate (4), Conservative (5, 6, and 7) or other (8 or missing). Again, findings were similar and therefore are not presented here. The correlation between political party affiliation and political ideology was moderate to weak (Pearson r=0.30).

Vital status of the GSS respondents was ascertained through December 31, 2008 from the NDI. The validity of mortality records from the NDI has proven to be very high. For example, of the 9271 GSS records to have a vital status of ‘deceased’, 99.84% were linked to underlying cause of death.[21]

Potential mediators include happiness, self-rated health and religious fundamentalism. To measure happiness, participants were asked: “Taken all together, how would you say things are these days-would you say that you are: *very happy, pretty happy, or not happy.* To measure self-rated health, respondents were asked: “Would you say your own health, in general, is *excellent, good, fair, or poor*.” To measure religious fundamentalism, respondents were asked, “How fundamentalist are you currently?” *fundamentalist, moderate, or liberal?*

Potential mediators such as perception of inequality and relations with African-Americans were chosen. However, since the questions used to assess these measures were not

consistently asked at every time point of the GSS, subsamples of the GSS-NDI were conducted in a subanalysis (see online supplementary appendix-1).

Statistical analysis

We modelled time to death in Cox proportional hazard regressions. First, analyses were conducted separately to determine the crude relationship between the main exposures: political party affiliation and political ideology and time to death hazard. Next, individual-level demographic variables were added to regression models: sex, education, religious affiliation, age, household income and marital status were added to the models. In the third set of models we introduced controls for region of residence, urban/rurality (rural, urban and suburban) and cohort (year of survey conducted) were added. Finally, self-reported happiness and self-rated health were included in the models to test for mediation. Analyses were then stratified by income and then by cohort (before 1990s and after 1990s) to determine if the association between political party affiliation and political ideology and time to death differed across subgroups. The beginning of the 1990s was chosen as a cut-point because it corresponds roughly to the midpoint of the study. Also, the early 1990s represents a major political shift, in response to the ideological polarisation during the Reagan and Post-Reagan era, in which southern Democrats switched to the Republican party.[2223] We also tested political party affiliation by sex and political ideology by sex interaction terms to determine whether the effect of these variables differed between men and women. Since the participants were clustered within regions, the assumption that individuals are independent from each other could not be made. Therefore, we conducted clustered survival analysis, using the SAS PROC PHREG procedure (SAS Institute, Cary, North Carolina, USA) with the robust sandwich estimate option. Also, for all analyses, sampling weights were applied in order to get representative HR estimates that may be generalised to the US adult population.

To determine whether happiness and self-rated health acted as mediators between political party affiliation and political ideology and time to death, we applied the Baron and Kenny method to test mediation (see online supplementary appendix-2).[24]

RESULTS

Overview

The sample characteristics are shown in table 1. More than half the sample was female and a majority was white. Of the sample, 36.4%, 27.2%, 35.1% and 1.2% identified as being Democrat, Republican, Independent, or a member of another party. With regards to political ideology, 23.8%, 31.3% and 34.5% identified themselves as liberal, conservative, and moderate, respectively.

The total follow-up time was 498 845 person-years. Total cumulative incidence of death during follow-up was 28.2% (n=9271). When stratified by political party affiliation, the cumulative incidence of death among Democrats, Republicans Independents, and those affiliated with other parties, was 32.8% (n=3965), 28.3% (n=2482), 23.6% (n=2686) and 22.5% (n=88), respectively. When stratified by political ideology, the cumulative incidence

of death among liberals, conservatives, moderates, and those with missing political beliefs, was 24.5% (n=1938), 29.6% (n=3000), 29.6% (n=3349), and 28.4% (n=984). The mortality rate of the total sample was 0.019 deaths per person-year.

Influence of political party on mortality

Results of the crude survival analyses are shown in tables 2 and 3. Compared with Democrats, Republicans (crude HR=0.88; 95% CI 0.83 to 0.94), Independents (HR=0.70; 95% CI 0.68 to 0.72), and those affiliated with other parties (HR=0.76; 95% CI 0.62 to 0.92) were significantly less likely to die during follow-up (table 2). Our findings changed when we controlled for individual level demographics. Specially, in comparison to Democrats, independents (adjusted HR=0.93 95% CI 0.90 to 0.97) were significantly less likely to die during follow-up, but there were otherwise no differences between Democrats and the other parties. These findings are independent of the influence of region, setting and cohort variables.

Influence of ideology on mortality

When looking at political ideology as the main exposure in unadjusted analyses, in comparison to liberals, conservatives (HR=1.26; 95% CI 1.17 to 1.36), moderates (HR=1.22; 95% CI 1.14 to 1.32), and those who did not choose a political ideology (HR=1.40; 95% CI 1.31 to 1.50), were significantly more likely to die during follow-up. When we controlled for individual-level demographics findings were attenuated. In comparison to liberals, conservatives (adjusted HR=1.06; 95% CI 1.01 to 1.12) and moderates (HR=1.06; 95% CI 1.01 to 1.10) were significantly more likely to die during follow-up. As in the party affiliation analysis, our results remained the same when region, setting and cohort were added to the models.

Stratified analyses

After stratifying by SES, political party affiliation and political ideology were not associated with mortality among high and medium SES respondents. Among respondents from low socio-economic backgrounds, in comparison to liberals, conservatives were more likely to die during follow-up (HR=1.08, 95% CI 0.99 to 1.92) but the results were marginally significant.

Results differed across cohorts when we stratified by cohort (before 1990 vs after 1990). Among the cohorts followed before 1990, political party affiliation was not associated with mortality during follow-up. However, in comparison to liberals, conservatives were more likely to die during follow-up (AHR=1.07, 95% CI 1.01 to 1.14). Among those followed after 1990, independents were significantly less likely to die during follow-up, in comparison to Democrats. However, in comparison to liberals, only moderates were significantly more likely to die during follow-up (AHR=1.09, 95% CI 1.02 to 1.17).

When stratified by gender, we find that women who identify as independent (HR=0.93, 95% CI 0.89 to 0.96) were significantly less likely to die during follow-up relative to women who identify as Democrats. Among men, political party affiliation was not associated with mortality. In contrast to political party affiliation, there is no linkage between political

ideology and mortality among women. However, among men, being conservative (HR=1.10, 95% CI 1.02 to 1.18) was associated with a greater risk for dying in comparison to liberals.

Mediation analyses

Happiness and self-rated health did not attenuate the relationship between either the political ideology or political party affiliation variables and time to death, and therefore did not mediate the relationship (table 4). With respect to party affiliation, in comparison to Democrats, Republicans (OR=1.38, 95% CI 1.30 to 1.46) were significantly more likely to report being very happy. Likewise, with respect to political ideology, in comparison to Liberals, Conservatives were significantly more likely to report being happy (OR=1.39, 95% CI 1.30 to 1.48). Republicans (OR=1.28, 95% CI 1.21 to 1.35), independents (OR=1.16, 95% CI 1.10 to 1.12) and those affiliated with other parties (OR=1.35, 95% CI 1.10 to 1.66) were also significantly more likely to report their health to be excellent or good in comparison to Democrats or those with ‘other’ political beliefs.

In comparison to those who rated their health to be excellent, those who reported their health to be good, fair and poor were at greater risk for mortality. Although these results indicate that happiness and self-rated health could potentially act as mediators between political beliefs and time to death results from the adjusted models indicate otherwise. More results from the subanalyses can be found in online supplementary appendix-3.

DISCUSSION

We explored whether political party affiliations or political ideologies were associated with a greater risk of mortality during follow-up in the USA. We used a large, nationally-representative study with long-term follow-up that is rich in demographic, behavioural, and attitudinal variables, and contains both a measure of self-rated health and a measure of mortality. Previous work has been conducted in this area, but was more exploratory as those studies did not have both subjective measures coupled with long-term prospective mortality follow-up.

Although researchers argue that the association between political party affiliation and political ideology, and health is explained by sociodemographic characteristics,[12] associations were held when we controlled for these variables. We observed those who identified themselves as being Independents were weakly, but statistically significantly less likely to die during follow-up in comparison to Democrats when controlling for sociodemographic characteristics. When region of residence, setting and cohort were added to the model, no significant changes in the coefficient were observed, suggesting that these area characteristics do not act as confounders. When political ideology was used as the exposure of interest, conservatives and moderates were at greater risk for mortality during follow-up in comparison to liberals. Proposed mediators such as happiness and religious fundamentalism did not explain these results. These findings from an American population-based and representative sample are discordant with previous identified relationships between political ideology and health observed in the USA,[36] Europe[245] and Japan.[1]

There are possible reasons for our unusual findings. The outcome, time to death, might be a more valid measure of health status, in comparison to other measures, such as self-rated health. Since both self-rated health and political beliefs are inherently measures of one's subjective states, the relationship between political beliefs and self-rated health could be confounded by perceptual states. For example, their health states being otherwise identical, liberals may be more or less likely to perceive them-selves as sick than conservatives when in fact their objective measures of health are identical. Furthermore, results remained consistent even when self-rated health was included in the models. Those who fall ill might plausibly change their political views on partisan issues such as universal healthcare, welfare or disability payments. However, we could not test such mechanisms with the data available. Another possible reason for these findings is that there are potential confounders between political beliefs and time to death that were not included in the analyses.

When analyses were stratified by sex, we found being independent, in comparison to those who affiliated with the Democratic Party, were less likely to die during follow-up among women only. When describing the association between political ideology and mortality, among men only, those who identified as being conservative were significantly more likely to die during follow-up. This indicates that political party affiliation and political ideology might be an important marker for health status among women, while political ideology might be important for men. These differences might be due to the social construct of gender, being a consistent effect modifier with SES or other social determinants such as beliefs or gender norms on health outcomes.[25]

Our results indicate that happiness and self-rated health were not mediators between the relationship between political beliefs and time to death. One reason for this finding is that happiness and self-rated health were collected at baseline, and thus were not time-varying covariates. Therefore, we could not determine if political party ideology and ideology influenced a change in happiness or self-rated health, which could then lead to a change in time to death. Future analyses should include looking at repeated measures of happiness and self-rated health over time so that one may determine whether political beliefs leads to a change in happiness and self-rated health, which thus leads to an increase risk for mortality. Also, other characteristics, such as social cohesion perceived by the individual, might mediate the relationship between political beliefs and health. For example, liberals might be more likely to have stronger ties to those around them and to their community. Social cohesion has shown to be related to behaviours and health outcomes.[2627]

Religious fundamentalism has shown to be related to poor self-rated health.[18] However, our findings indicate that fundamentalism is protective against mortality. Nonetheless, there was no evidence that the association between political party affiliation or political ideology and time to death acted through fundamentalism.

Other possible explanations for our findings include differing cognitive styles and motivation between conservatives and liberals.[28] Liberals have shown to seek cognitive closure, while conservatives tend to be more accepting of simple solutions and unambiguous resolutions.[29] Therefore, liberals might be more dissatisfied with their lives and health since they are more likely to experience negative effects due to rumination and introspection.[30]

Another possible explanation is the differences in the way groups react to social and income inequality.[31] Liberals are more likely to view equality as just and desirable, while conservatives are more likely to accept gaps between the rich and poor.[32] As a result, in societies that have high inequalities, liberals are more likely to be dissatisfied. On the other hand, conservatives are more likely to accept and justify income inequality and are more likely to report being happier in comparison to liberals.[33]

Other researchers argue that political ideology is unlikely to be a causal factor for health, morbidity and mortality.[2] Political beliefs could be seen as markers of latent attitudes, values, and beliefs, such as religiosity, social and civic participation and individual responsibility, which in turn could have positive influences on health.[2] 34 For example, religious involvement has been shown to be protective against mortality.[789] A drawback of focusing solely on the individual is that the social environment is ignored. This simplification ignores the social and contextual factors that shape and interact with individual level factors, such as political beliefs. Social ties, such as the relationships between family, friends, and peers, throughout the lifespan might shape political beliefs. Recent findings indicate that parents who practiced strict child-rearing styles predicted conservative attitudes in those children more than 17 years later.[35] Also, other researchers observed that individuals with right-wing attitudes were more likely to report that their parents had restricted their experiences during childhood and controlled over their choice of friends.[36] In turn, social factors such as social capital, social trust, and group membership have shown to be associated with health and total mortality.[1037]

Strengths of this investigation include utilisation of a large population-based and representative sample of the US population; the assessment of the outcome to death proved to be high in validity; and we were able to use longitudinal analyses. Therefore, we were able to determine if political party affiliation and political ideological beliefs reported at baseline were predictive of time to death. Another strength is that we looked at political beliefs in two separate ways; political party affiliation and political ideology. Political ideology and political party affiliation were weakly correlated, which might indicate differing concepts and thus should be included in analyses separately.

The findings from this investigation need to be interpreted with caution due to limitations. Although the study design was longitudinal, participants were assessed only at baseline. As a result, the potential relationship between time-varying covariates and time to death could not be described because all independent factors were measured at baseline. Therefore, we could not determine whether changes in time-varying predictors, such as beliefs and attitudes, were associated with time to death. More importantly, the association between changes in political party affiliation and political ideology within individuals and their subsequent effect on mortality could not be determined. Another limitation is that area level covariates were not included in the analyses. Future investigations could involve investigating cross-level interactions between political party affiliation or political ideology and state-level characteristics such as political party affiliation of the state of residence. For example, one could identify the association between being a Democrat in a state that is predominantly Republican on risk for mortality.

In conclusion our study suggests that political party affiliation and ideology is related to time to death among a population-based and representative sample of US adults. Further research is required in order to determine the potential role of attitudes, beliefs and behaviours in the relationship between political party affiliation and political ideology with time to death.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding This work was supported by a grant from the National Institute of Health (NIH grant RC2 MD004768). RP is a Canadian Institutes of Health Research postdoctoral fellowship recipient #234617.

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What is already known on this subject

- Conservative political ideology is associated with better health.
- However, most studies that have investigated the relationship between political beliefs and health have utilised the ecological or cross-sectional study design.

What this study adds

- Respondents who indicated that they were Independents were significantly less likely to die during follow-up, in comparison to Democrats.
- Conservatives and Moderates were at greater risk for mortality during follow-up, in comparison to Liberals.

Table 1

Baseline characteristics of participants in the 2008 General Social Survey-National Death Index

Individual level characteristics	Unweighted n	Weighted percentage
Political party affiliation		
Democrat	11 918	36.4
Republican	8912	27.2
Independent	11 495	35.1
Other party	380	1.2
Political ideology		
Liberal	7809	23.8
Conservative	10 299	31.3
Moderate	11 347	34.5
Missing	3411	10.4
Sex		
Male	14 815	45.1
Female	18 050	54.9
Race		
White	26 877	81.8
Black	4524	13.8
Other	1465	4.5
Education		
Less than high school	6854	20.9
High school	17 697	54.0
Junior college	1786	5.4
Bachelor’s degree	4457	13.6
Graduate	1979	6.0
Religious affiliation		
None	3062	9.3
Protestant	19 634	59.7
Catholic	8349	25.4
Jewish	612	1.9
Eastern	114	0.3
Other	1096	3.3
Age, years		
18–20 (ref)	736	2.2
21–30	7122	21.7
31–40	7262	22.1
41–50	6312	19.2
51–60	4615	14.0
61–70	3535	10.8
71–80	2369	7.2
>80	916	2.8

Individual level characteristics	Unweighted n	Weighted percentage
Household income		
Low	4453	16.8
Medium	5740	17.5
High	16 248	49.4
Missing	6425	19.6
Region		
New England (ref)		
Mid Atlantic	4946	15.0
East North Central	5948	18.1
West North Central	2528	7.7
South Atlantic	6196	18.9
East South Central	2402	7.3
West South Central	2944	9
Mountain	1965	6
Pacific	4210	12.8
Setting		
Rural (ref)	4200	12.8
Suburban	8735	26.6
Urban	19 931	60.6

Table 2

HRs between political party affiliation and risk for mortality: 2008 General Social Survey-National Death Index

	Crude		Model 1		Model 2		Model 3	
	HR	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**
Political party affiliation								
Democrat (ref)	1.00		1.00		1.00		1.00	
Republican	0.88	(0.83 to 0.94)	0.97	(0.93 to 1.01)	0.97	(0.94 to 1.01)	0.98	(0.95 to 1.02)
Independent	0.70	(0.68 to 0.72)	0.93	(0.90 to 0.97)	0.93	(0.90 to 0.97)	0.94	(0.90 to 0.97)
Other party	0.76	(0.62 to 0.92)	0.99	(0.85 to 1.15)	0.98	(0.85 to 1.14)	0.97	(0.84 to 1.13)
Sex								
Male (ref)			1.00		1.00		1.00	
Female			0.68	(0.65 to 0.71)	0.68	(0.65 to 0.71)	0.68	(0.65 to 0.71)
Race								
White			1.00		1.00		1.00	
Black			1.29	(1.18 to 1.40)	1.28	(1.17 to 1.41)	1.27	(1.15 to 1.40)
Other			1.03	(0.85 to 1.24)	1.02	(0.84 to 1.23)	1.00	(0.83 to 1.21)
Education								
Less than high school (ref)			1.00		1.00		1.00	
High school			0.91	(0.87 to 0.95)	0.90	(0.87 to 0.94)	0.93	(0.89 to 0.97)
Junior college			0.88	(0.77 to 1.00)	0.88	(0.77 to 1.00)	0.91	(0.79 to 1.04)
Bachelor’s degree			0.80	(0.74 to 0.86)	0.80	(0.74 to 0.86)	0.83	(0.77 to 0.91)
Graduate			0.83	(0.75 to 0.91)	0.83	(0.75 to 0.91)	0.87	(0.79 to 0.96)
Religious affiliation								
None (ref)			1.00		1.00		1.00	
Protestant			1.10	(1.01 to 1.19)	1.11	(1.02 to 1.22)	1.12	(1.02 to 1.23)
Catholic			0.99	(0.91 to 1.07)	1.00	(0.90 to 1.11)	1.01	(0.90 to 1.12)
Jewish			0.90	(0.81 to 1.01)	0.91	(0.83 to 1.00)	0.90	(0.81 to 0.99)
Eastern			0.49	(0.22 to 1.07)	0.50	(0.23 to 1.10)	0.49	(0.23 to 1.07)
Other			0.90	(0.79 to 1.03)	0.91	(0.80 to 1.03)	0.92	(0.81 to 1.04)
Age, years								
18–20 (ref)			1.00		1.00		1.00	

	Crude		Model 1		Model 2		Model 3	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
21–30			1.19	(0.86 to 1.63)	1.18	(0.86 to 1.64)	1.17	(0.85 to 1.61)
31–40			1.99	(1.46 to 2.72)	1.99	(1.45 to 2.73)	1.94	(1.41 to 2.68)
41–50			3.15	(2.25 to 4.41)	3.15	(2.25 to 4.41)	3.03	(2.16 to 4.26)
51–60			5.11	(3.60 to 7.27)	5.11	(3.58 to 7.29)	4.85	(3.39 to 6.95)
61–70			8.38	(5.90 to 11.89)	8.40	(5.91 to 11.94)	7.98	(5.59 to 11.40)
71–80			13.00	(8.77 to 19.27)	13.03	(8.77 to 19.35)	12.33	(8.22 to 18.47)
>80			19.03	(12.89 to 28.09)	19.16	(13.02 to 28.19)	18.01	(12.30 to 26.38)
Household income								
Low (ref)			1.00		1.00		1.00	
Medium			0.94	(0.87 to 1.02)	0.94	(0.87 to 1.02)	0.97	(0.89 to 1.05)
High			0.83	(0.79 to 0.88)	0.83	(0.78 to 0.87)	0.86	(0.81 to 0.92)
Missing			1.03	(0.94 to 1.12)	1.03	(0.94 to 1.12)	1.05	(0.96 to 1.15)
Marital status								
Married (ref)			1.00		1.00		1.00	
Divorced			0.96	(0.89 to 1.03)	0.94	(0.88 to 1.02)	0.94	(0.87 to 1.00)
Separated			1.13	(0.99 to 1.29)	1.13	(0.99 to 1.29)	1.10	(0.97 to 1.26)
Widowed			1.16	(1.08 to 1.23)	1.15	(1.08 to 1.23)	1.14	(1.06 to 1.22)
Single			1.07	(1.00 to 1.15)	1.07	(1.00 to 1.15)	1.07	(1.00 to 1.16)
Region								
New England (ref)					1.00		1.00	
Mid-Atlantic					1.06	(1.04 to 1.08)	1.05	(1.04 to 1.07)
East North Central					1.15	(1.13 to 1.18)	1.14	(1.12 to 1.17)
West North Central					0.97	(0.94 to 1.00)	0.97	(0.94 to 0.99)
South Atlantic					1.07	(1.03 to 1.11)	1.06	(1.02 to 1.10)
East South Central					1.05	(1.00 to 1.11)	1.04	(0.98 to 1.10)
West South Central					1.17	(1.12 to 1.21)	1.15	(1.11 to 1.20)
Mountain					1.02	(0.99 to 1.05)	1.03	(1.00 to 1.05)
Pacific					1.16	(1.14 to 1.19)	1.16	(1.13 to 1.18)
Setting								
Rural (ref)					1.00		1.00	

	Crude		Model 1		Model 2		Model 3	
	HR	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**
Suburban					1.06	(0.98 to 1.14)	1.06	(0.99 to 1.14)
Urban					1.01	(0.98 to 1.04)	1.01	(0.98 to 1.05)
Cohort								
1980s (ref)					1.00		1.00	
1990s					1.00	(0.93 to 1.07)	1.00	(0.93 to 1.07)
Happiness								
Very happy (ref)							1.00	
Pretty happy							1.00	(0.96 to 1.05)
Not happy							1.03	(0.97 to 1.10)
Missing							1.15	(0.99 to 1.34)
Self-rated health								
Excellent (ref)							1.00	
Good							1.13	(1.06 to 1.20)
Fair							1.31	(1.21 to 1.42)
Poor							1.70	(1.60 to 1.81)
Missing							1.17	(1.12 to 1.23)

Model 1 controls for sex, race, education, religious affiliation, age, household income and marital status.

Model 2 controls for sex, race, education, religious affiliation, age, household income, and marital status region, setting and cohort.

Model 3 controls for sex, race, education, religious affiliation, age, household income, and marital status region, setting, cohort, happiness and self-rated health.

Table 3

HRs between political party ideology and risk for mortality

	Crude		Model 1		Model 2		Model 3	
	HR	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**
Political ideology								
Liberal (ref)	1.00		1.00		1.00		1.00	
Conservative	1.26	(1.17 to 1.36)	1.06	(1.01 to 1.12)	1.06	(1.01 to 1.12)	1.07	(1.01 to 1.12)
Moderate	1.22	(1.14 to 1.32)	1.06	(1.01 to 1.10)	1.06	(1.01 to 1.11)	1.06	(1.01 to 1.11)
Other	1.40	(1.31 to 1.50)	1.00	(0.92 to 1.09)	1.00	(0.92 to 1.08)	0.96	(0.89 to 1.03)
Sex								
Male (ref)			1.00		1.00		1.00	
Female			0.68	(0.65 to 0.71)	0.68	(0.65 to 0.71)	0.68	(0.66 to 0.71)
Race								
White			1.00		1.00		1.00	
Black			1.32	(1.21 to 1.44)	1.32	(1.20 to 1.44)	1.30	(1.18 to 1.43)
Other			1.04	(0.87 to 1.24)	1.02	(0.85 to 1.23)	1.01	(0.84 to 1.21)
Education								
Less than high school (ref)			1.00		1.00		1.00	
High school			0.90	(0.86 to 0.94)	0.90	(0.86 to 0.94)	0.92	(0.88 to 0.96)
Junior college			0.87	(0.77 to 0.99)	0.87	(0.76 to 1.00)	0.90	(0.79 to 1.03)
Bachelor’s degree			0.80	(0.75 to 0.86)	0.80	(0.75 to 0.87)	0.84	(0.77 to 0.91)
Graduate			0.82	(0.75 to 0.90)	0.83	(0.76 to 0.91)	0.87	(0.79 to 0.96)
Religious affiliation								
None (ref)			1.00		1.00		1.00	
Protestant			1.10	(1.02 to 1.18)	1.11	(1.02 to 1.20)	1.11	(1.02 to 1.22)
Catholic			0.98	(0.91 to 1.06)	1.00	(0.90 to 1.11)	1.01	(0.91 to 1.12)
Jewish			0.91	(0.83 to 1.01)	0.93	(0.85 to 1.01)	0.91	(0.82 to 1.00)
Eastern			0.47	(0.22 to 1.03)	0.49	(0.22 to 1.06)	0.48	(0.22 to 1.03)
Other			0.92	(0.81 to 1.03)	0.92	(0.82 to 1.04)	0.94	(0.83 to 1.05)
Age, years								
18–20 (ref)			1.00		1.00		1.00	

	Crude		Model 1		Model 2		Model 3	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
21–30			1.19	(0.87 to 1.64)	1.19	(0.86 to 1.63)	1.17	(0.85 to 1.60)
31–40			2.01	(1.49 to 2.72)	2.00	(1.48 to 2.72)	1.95	(1.44 to 2.65)
41–50			3.19	(2.30 to 4.43)	3.18	(2.29 to 4.42)	3.05	(2.19 to 4.25)
51–60			5.16	(3.65 to 7.30)	5.15	(3.63 to 7.30)	4.88	(3.44 to 6.93)
61–70			8.48	(6.04 to 11.91)	8.48	(6.03 to 11.93)	8.03	(5.68 to 11.36)
71–80			13.19	(8.94 to 19.47)	13.19	(8.92 to 19.50)	12.46	(8.36 to 18.58)
>80			19.26	(13.15 to 28.21)	19.35	(13.25 to 28.26)	18.19	(12.51 to 26.43)
Household income								
Low (ref)			1.00		1.00		1.00	
Medium			0.94	(0.86 to 1.02)	0.94	(0.87 to 1.01)	0.96	(0.88 to 1.05)
High			0.82	(0.78 to 0.86)	0.82	(0.78 to 0.87)	0.86	(0.81 to 0.91)
Missing			1.02	(0.94 to 1.11)	1.02	(0.94 to 1.12)	1.04	(0.95 to 1.14)
Marital status								
Married (ref)			1.00		1.00		1.00	
Divorced			0.95	(0.89 to 1.01)	0.94	(0.88 to 1.01)	0.93	(0.87 to 0.99)
Separated			1.13	(0.99 to 1.29)	1.13	(0.99 to 1.29)	1.10	(0.97 to 1.26)
Widowed			1.16	(1.08 to 1.23)	1.15	(1.08 to 1.23)	1.14	(1.06 to 1.22)
Single			1.07	(1.00 to 1.15)	1.08	(1.00 to 1.16)	1.08	(1.00 to 1.17)
Region								
New England (ref)					1.00		1.00	
Mid-Atlantic					1.07	(1.05 to 1.08)	1.06	(1.04 to 1.08)
East North Central					1.15	(1.13 to 1.18)	1.14	(1.12 to 1.17)
West North Central					0.97	(0.95 to 1.00)	0.97	(0.95 to 1.00)
South Atlantic					1.08	(1.04 to 1.13)	1.07	(1.03 to 1.11)
East South Central					1.06	(1.01 to 1.12)	1.04	(0.99 to 1.10)
West South Central					1.17	(1.13 to 1.21)	1.16	(1.11 to 1.20)
Mountain					1.02	(1.00 to 1.05)	1.03	(1.00 to 1.06)
Pacific					1.18	(1.15 to 1.21)	1.18	(1.15 to 1.20)
Setting								
Rural (ref)					1.00		1.00	

	Crude		Model 1		Model 2		Model 3	
	HR	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**	**HR**	**95% CI**
Suburban					1.05	(0.98 to 1.12)	1.05	(0.98 to 1.13)
Urban					1.01	(0.98 to 1.04)	1.01	(0.97 to 1.05)
Cohort								
1980s (ref)					1.00		1.00	
1990s					1.00	(0.93 to 1.07)	1.00	(0.93 to 1.06)
Happiness								
Very happy (ref)							1.00	
Pretty happy							1.01	(0.96 to 1.05)
Not happy							1.04	(0.97 to 1.10)
Missing							1.23	(1.06 to 1.43)
Self-rated health								
Excellent (ref)							1.00	
Good							1.13	(1.06 to 1.20)
Fair							1.30	(1.20 to 1.41)
Poor							1.72	(1.61 to 1.83)
Missing							1.18	(1.13 to 1.24)

2008 General Social Survey-National Death Index.

Model 1 controls for sex, race, education, religious affiliation, age, household income and marital status.

Model 2 controls for sex, race, education, religious affiliation, age, household income, and marital status region, setting and cohort.

Model 3 controls for sex, race, education, religious affiliation, age, household income, and marital status region, setting, cohort, happiness and self-rated health.

J Epidemiol Community Health. Author manuscript; available in PMC 2018 April 10.

Table 4

Bivariate analyses of political party affiliation and political ideology and risk for mortality with the potential mediators happiness and self-rated health.

	Happiness Very happy OR 95% CI	Self-rated health Excellent or good OR 95% CI	Mortality HR 95% CI
Political party affiliation			
Democrat (ref)	1.00	1.00	1.00
Republican	1.38 (1.30 to 1.46)	1.28 (1.21 to 1.35)	0.88 (0.83 to 0.94)
Independent	0.96 (0.90 to 1.01)	1.16 (1.10 to 1.22)	0.70 (0.68 to 0.72)
Other party	0.89 (0.70 to 1.11)	1.35 (1.10 to 1.66)	0.76 (0.62 to 0.92)
Political ideology			
Liberal (ref)	1.00	1.00	1.00
Conservative	1.39 (1.30 to 1.48)	0.95 (0.90 to 1.01)	1.26 (1.17 to 1.36)
Moderate	1.05 (0.98 to 1.12)	0.89 (0.84 to 0.95)	1.22 (1.14 to 1.32)
Other	0.52 (0.47 to 0.57)	0.45 (0.41 to 0.48)	1.40 (1.31 to 1.50)
Happiness			
Very happy (ref)			1.00
Pretty happy			0.92 (0.88 to 0.96)
Not happy			1.14 (1.06 to 1.23)
Missing			1.20 (1.07 to 1.35)
Self-rated health			
Excellent (ref)			1.00
Good			1.32 (1.21 to 1.43)
Fair			2.18 (2.00 to 2.37)
Poor			3.95 (3.71 to 4.20)
Missing			1.43 (1.36 to 1.50)

2008 General Social Survey-National Death Index.