

## Assessing Whether Americans are Aware of the Nation's Declining Health Ranking

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### Abstract

**Purpose:** Identify the extent Americans are aware of the United States' declining health rankings compared with 16 Western democracies, and assess people's explanation for the U.S. decline.

**Methods:** Participants in a national survey ranked U.S. life expectancy against that of 16 referent countries. Participants indicated whether the U.S. health ranking had risen, fallen or stayed the same since 1985. After being subsequently informed U.S. life expectancy was the lowest of the 16 countries and the U.S. ranking has steadily declined, participants identified which factor best explained the US health disadvantage.

**Results:** Most participants (55.3%) believed U.S. life expectancy was "at or near the top" or "above the middle." They also believed U.S. health rankings have risen or stayed the same since 1985. The misperception of superior U.S. health was most highly correlated with political orientation, with Liberals tending to give the U.S. lower health ranking. Most participants attributed the poor ranking to lifestyle and healthcare-related factors. Social determinants of health and environmental factors were infrequently identified as reasons for the poorer ranking.

**Conclusion:** Americans have a highly inflated perception of the country's health rankings compared with other Western democracies.

**Keywords:** Life expectancy; Global health rankings; Health determinants

### Introduction

In 2013, the National Research Council and Institute of Medicine released a report entitled "U.S. Health in International Perspective: Shorter Lives, Poorer Health" [1]. One objective of the report was to compare U.S. health statistics with those of 16 prosperous Western democracies. Differences in life expectancy and other health indicators were presented. In almost all categories the United States had a substantial health disadvantage when compared with the referent countries. This health disadvantage was observed in both sexes, in almost every age group and in all income categories.

The United States not only had lower than average scores for most indicators but frequently was at or near the bottom of the rankings. When presented as a secular trend, much of the data demonstrated that the United States had not always been the lowest performer. Various factors have been consistently working over the decades to cause the other nations to pull ahead of the United States on many key health indicators. When viewed as a forty-year trend it becomes evident that the health improvement trajectory of other nations is superior to that of the United States, and the health disadvantage gap is widening [2]. The authors of the report recommended a communication campaign to inform American's awareness of the growing health gap. It may be that most Americans are unaware of the declining health ranking of the United States.

The purpose of this study is to determine the extent Americans misperceive the health ranking of the United States compared with other prosperous Western democracies. Level of agreement with selected potential reasons for the health-ranking differential will be explored. The role of demographic variables and political orientation on the results will also be considered. This study will provide a benchmark to assess the effectiveness of future efforts to create awareness of the health disadvantage. It may motivate adoption of health policies that address the health disadvantage in the United States.

### Methods

#### Comparison countries

The Office of Behavioral and Social Science Research of the National Institutes of Health (NIH) requested the National Research Council and Institute of Medicine to conduct a study to better understand health differences that might exist among high income countries. The assembled research task force selected 16 nations as "peer countries" because they were deemed to be comparable with the United States. Three criteria that determined which nations were selected included: (1) high levels of economic development for a sustained period of time, (2) a sufficiently large population to ensure stable estimates, and (3) the availability of quality data from the Human Mortality Database for the time period of 2006- 2008. Comparable countries selected for inclusion in the analysis were Australia, Austria, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Portugal, Spain,

Sweden, Switzerland, the Netherlands, and the United Kingdom. A variety of health statistic comparisons were made between the United States and these referent countries. For most issues the United States was at or near the bottom of the list. This was true both for mortality indicators, most cause-specific mortality rates, prevalence of many risk factors and morbidity statistics [1].

The United States had the lowest life expectancy for males and the second lowest life expectancy for females of the 17 countries [2]. The United States had the highest infant [3] and second highest childhood mortality rates for ages 1-19 [4].

Analysis for mortality rates across the age spectrum showed that the United States ranking for either sex was never better than 15 out of 17 for any age below 75 [5]. For most age groupings the United States had the worst health rankings in the span between birth and age 55 [6]. The results demonstrated that, for both men and women, U.S. citizens have the lowest probability of surviving to age 50 of any country, as well as the lowest future life expectancy for people alive at age 50 [2]. However, for those alive at age 75, their future life expectancy was longer than the average of other nations [7].

Perhaps the most disquieting aspect of the report was when the data was presented as a three or four-decade secular trend. For many health indicators measured in 1980, the United States was in the lower middle to middle of the ranking. But when graphed over time, many of the key health indicators showed the 16 comparison countries pulling away from United States and often leaving the U.S. as an outlier [7].

The report noted that life expectancy was still increasing in United States for the years used in the study (2006-2008) but that pace of increase was falling substantially behind that of the comparison countries. The life expectancy gap between United States and the leading nations was so large in 2008 that if the United States maintained the 2006-2008 level life expectancy increase, it would take 40 years to achieve average life expectancy of the peer countries and 50 years to reach the leading peer nation [8]. Since the inter-country report, the United States has experienced three years of no increase in life expectancy [9] and among whites aged 45-54, life expectancy decreased [10].

In order to evaluate the effectiveness of a proposed media campaign to inform people of the poor US health rankings, it would be important to analyze and measure Americans current awareness of the nation's health disadvantage. This study helps to meet that need by benchmarking public awareness of our lower health ranking compared with other prosperous Western democracies.

## Instrumentation

Items included in the questionnaire were based on the Institute of Medicine's report. Respondents were asked to answer questions based on how the United States compared with 16 countries. The countries were selected based on "comparable high-income or 'peer' countries" [1].

The question asked respondents to rank the United States' life expectancy compared to the other countries. Responses were on a five-point scale (U.S. is at or near the bottom, lower than the middle, at or near the middle, above the middle, at or near the top). Another item asked how the United States' ranking had changed during the last 40 years with responses on a 3-point scale (U.S. has moved up, remained about the same, moved down). After completing the health ranking and health trend questions, respondents were informed that the United

States has worse health than the 16 countries and that for most health indicators the gap between the United States and the other countries is getting bigger. Twenty items then asked about the respondent's agreement with reasons that the U.S. has worse health than the comparison countries. These 20 questions were selected to equally represent the five categories of factors the Institute of Medicine proposed might explain the U.S. health disadvantage. These factors included lifestyle, medical care, social determinants of health, built environment and differences in national values. Responses were on a 4-point Likert scale (strongly disagree, disagree, agree, strongly agree). Finally, one summary item asked respondents which of the five groups of health determinant was the most important reason the United States has worse health indicators than the other countries.

Evidence of face validity was obtained through questionnaire review by three public health professors with a background in social determinants of health and the U.S. health care system. The questionnaire was pilot tested with 150 undergraduate students enrolled in an introduction to public health course. Revisions were made to the questionnaire based on the results.

Demographic variables included: gender; ethnicity (Hispanic or Latino); race (white, black or African American, Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska native); age; education; income; marital status. Also asked were political affiliation (Democrat, Republican, Libertarian, Independent, Non-affiliated, other); political orientation (liberal to conservative on a 7 point scale); and their residence geographic region (Southeast, Northeast, Midwest, Southwest, Mountain, Pacific).

## Data collection

Data was gathered from a proprietary online panel. The sample was delimited to U.S. adults, ages 18 years and older. Quotas were established for gender, age, residence geographic region, and political affiliation prior to starting data collection. To ensure quality of data, three attention questions were added throughout the survey. These questions asked them to select a particular response option to a question. In addition, a speed check was used. This was measured as 1/3 the median soft-launch completion time. Those who exceeded the time, indicating they were not answering thoughtfully were automatically terminated. The mean duration for survey completion was 7 minutes. Respondents who completed the survey earned points toward their account with the panel provider. The study was approved by the Institutional Review Board. Completion of the survey implied the respondents consent to participate in the study.

## Statistical techniques

The survey was completed by 834 adults aged 18 years and older. Of 834, 80 were dropped from the analysis because of responses that indicated participants' lack of attention. This left 754 survey respondents for analysis. Data were analyzed using the statistical software package PC-SAS (version 9.4; SAS Institute, Inc., 2014). Counts and percentages were used to describe the data. The chi-square test was used to evaluate bivariate associations and the Mantel-Haenszel chi-square was used to assess differences in trends. Logistic regression was used to evaluate association between political orientation and agreement with selected statements, adjusting for age, sex, race, ethnicity, education, income, marital status, and political affiliation. Test statistics were based on two-sided tests of hypothesis and the 0.05 level of significance.

## Results

Respondents to the questionnaire are presented according to selected demographic variables in Table 1. A slightly higher percentage were males, with a similar representation from each of the age groups. Most were White, non-Hispanic, graduated from high school, had an annual household income of at least \$50,000, and were married. Of the primary political parties, Democrats had the highest representation,

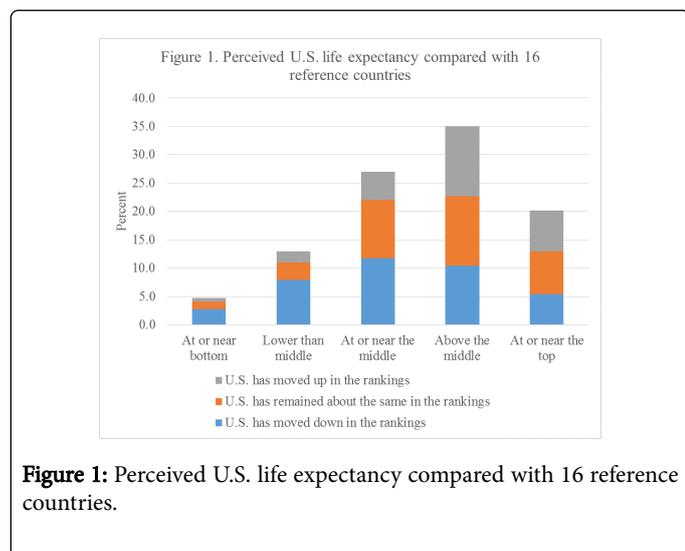
followed by Republicans and then Independents. The percent of respondents who thought the U.S. life expectancy was at or near the top in comparison with the other 16 countries were 20.2. There was no significant difference in this percent across the levels of the variables, with the exception of political orientation, where liberals were less likely to believe that U.S. life expectancy was at or near the top.

Variable	No.	Percentage (%)	U.S. Life Expectancy At or Near the Top (%)	Chi-square p value
<b>Sex</b>				
Male	390	51.7	20.0	0.9103
Female	364	48.3	20.3	
<b>Age</b>				
18-29	159	21.1	19.5	0.9754
30-39	148	19.6	18.9	
40-49	146	19.4	21.9	
50-59	150	19.9	20.0	
60+	151	20.0	20.5	
<b>Race</b>				
White	645	85.5	19.7	0.6315
Black	66	8.8	21.2	
Other	43	5.7	25.6	
<b>Hispanic or Latino</b>				
Yes	67	8.9	20.9	0.8749
No	687	91.1	20.1	
<b>Schooling completed</b>				
<High school	20	2.7	25.0	0.9719
High school	161	21.4	19.9	
1-3 years college/tech	275	36.5	20.0	
College graduate	206	27.3	19.4	
Graduate degree	92	12.2	21.7	
<b>Annual household income</b>				
<\$25,000	145	19.2	19.3	0.9012
\$25,000 to \$49,999	209	27.7	19.6	
\$50,000 to \$74,999	201	26.7	19.4	
\$75,000 to \$99,999	114	15.1	23.7	
\$100,000 or more	85	11.3	20.0	
<b>Marital status</b>				
Married	417	55.3	21.1	0.2043

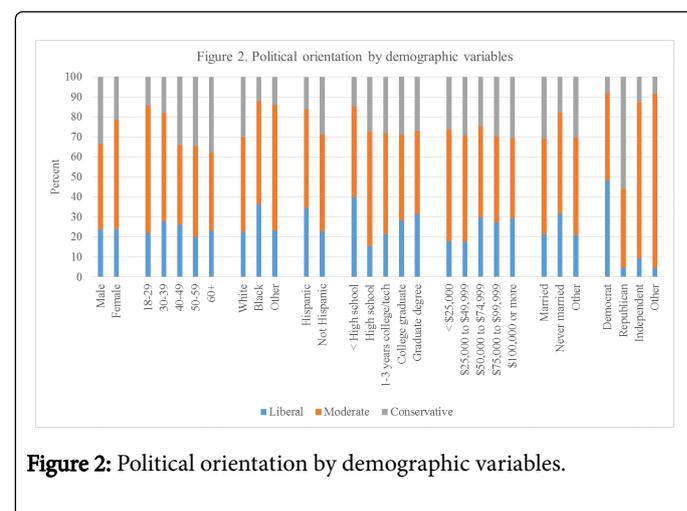
Never married	179	23.7	15.6	
Other	158	21.0	22.8	
<b>Political affiliation</b>				
Democrat	322	42.7	17.4	0.2653
Republican	300	39.8	23.7	
Independent	86	11.4	18.6	
Other	46	6.1	19.6	
<b>Political orientation</b>				
Liberal	179	23.7	14.0	0.0433
Moderate	366	48.5	21.0	
Conservative	209	27.7	23.9	

**Table 1:** Demographic Summary and United States Comparison with the Other 16 Countries in Life Expectancy at or Near the Top

Perceived life expectancy in the United States compared with the 16 reference countries are shown in Figure 1. The percentage of respondents who correctly responded that U.S. life expectancy was “at or near the bottom” was 4.8%. A total of 55.3% believed the U.S. was “at or near the top” or “above the middle” of the ranking. The direction people believed the U.S. was going compared with the 16 reference countries is also shown in the graph. In general, those who rank the U.S. higher are more likely to indicate that the U.S. has moved up in the ranking and those who rank the U.S. lower are more likely to indicate that the U.S. has moved down in the ranking. Only 23% of respondents correctly observed the gap between the US and the other nations has been increasing during the last forty years. When perceived ranking of life expectancy ranking is combined with perceived 40-year trend in relative ranking, only 3.2% correctly observed that the US was “at or near the bottom” and that the life expectancy gap between the US and the other countries is getting larger.



Political orientation was significantly (chi-square  $p < 0.05$ ) associated with each of the demographic variables (Figure 2). A higher percentage of liberals were Black, were Hispanic, had less than a high school degree, were never married, and were Democrat. A higher percentage of moderates were female, younger, other race, lower income, and independent or other political affiliation. A higher percentage of conservatives were male, older, White, non-Hispanic, married or previously married, and Republican.



Perceived life expectancy rankings of the U.S. compared with the 16 reference countries are presented in Table 2. People with liberal political orientation were most likely to rank U.S. life expectancy “at or near the bottom” whereas those with conservative political orientation were most likely to rank U.S. life expectancy “at or near the top.” None of the demographic variables were significantly associated with the ranking of U.S. life expectancy compared with the 16 reference countries. Hence, these variables did not potentially confound the association between political orientation and the ranking of U.S. life expectancy compared with the 16 reference countries.

	At or near the bottom (%)	Lower than the middle (%)	At or near the middle (%)	Above the middle (%)	At or near the top (%)	MH square value	Chi-p-value
Overall	4.8	13.0	27.1	35.0	20.2		
Liberal	8.4 <sup>1</sup>	16.2 <sup>1</sup>	24.6 <sup>1</sup>	36.9 <sup>1</sup>	14.0 <sup>1</sup>	0.0018	
Moderate	4.4 <sup>1</sup>	12.3 <sup>1</sup>	28.4 <sup>1</sup>	33.9 <sup>1</sup>	21.0 <sup>1</sup>		
Conservative	2.4 <sup>1</sup>	11.5 <sup>1</sup>	26.8 <sup>1</sup>	35.4 <sup>1</sup>	23.9 <sup>1</sup>		

<sup>1</sup>Based on 754 respondents

**Table 2:** Ranking of the United States compared with the 16 reference countries in terms of life expectancy (from birth) according to political orientation.

Agreement with 20 potential reasons why the United States has worse health than the 16 comparison countries is presented in Table 3. Agreement with the selected statements range from 58.1% to 96.4%.

Liberals and moderates tended to more likely agree with the statements than conservatives, after adjusting for selected demographic variables.

Statements	Agree %	Liberal vs. Conservative			Moderate vs. Conservative		
		Odds Ratio	95% LCL	95% UCL	Odds Ratio	95% LCL	95% UCL
Americans' eating habits are less healthy (L)	96.4						
Americans do less physical activity (L)	89.8						
Healthcare in America costs too much money (HC)	87.7	2.0	1.0	3.8			
The American healthcare system is divided and uncoordinated (HC)	81.0	4.6	1.5	13.6	2.0	1.3	3.2
The American healthcare system focuses on treating diseases rather than preventing them (HC)	81.0				1.6	1.1	2.5
Americans have different values about the need to provide public welfare (V)	78.4	3.3	2.0	5.6	2.1	1.4	3.1
Americans have more health problems caused by tobacco (smoking) (L)	77.3						
American cities and towns provide easy access to less healthy food (BE)	76.8						
America has more income inequality (bigger earnings gap between the rich and the poor) (SD)	74.5	8.6	4.8	15.7	2.3	1.5	3.6
Americans have different values about the role of government in solving societal problems (V)	73.5	1.9	1.2	3.1	1.5	1.0	2.1
American children are more likely to be raised by a single parent (SD)	72.7	0.5	0.3	0.8			
Americans have different values about personal freedom of choice (V)	72.5						
Americans have different values about the role corporations should have in setting policies related to healthcare, food, alcohol, tobacco, environmental issues and so forth (V)	71.9	2.5	1.6	3.9	2.2	1.5	3.1
Many Americans do not have access to health care (HC)	68.8	3.6	1.7	7.2	2.0	1.3	3.0
Americans are more likely to practice unsafe sex (L)	66.2						
America has more people living in poverty (SPH)	64.9	2.2	1.4	3.4	1.5	1.0	2.2
American cities are designed in a way that discourages walking and physical activity (BE)	63.0						
American cities and towns provide poor access to healthy foods (BE)	60.6	1.7	1.1	2.7			

America has greater problems with air pollution (BE)	59.0	<b>2.8</b>	<b>1.8</b>	<b>4.3</b>	<b>2.3</b>	<b>1.6</b>	<b>3.3</b>
America has worse public education (SDH)	58.1	<b>1.8</b>	<b>1.2</b>	<b>2.7</b>			

Odds ratios and corresponding confidence intervals were adjusted for age, sex, race, ethnicity, education, income, marital status, and political affiliation; **Bold values** are significant (p<0.05). Non-significant results are not included in the table; Based on 754 respondents; (L)=Lifestyle; (HC)=Healthcare; (BE)=Built Environment; (V)=Values; (SD)=Social Determinant of Health

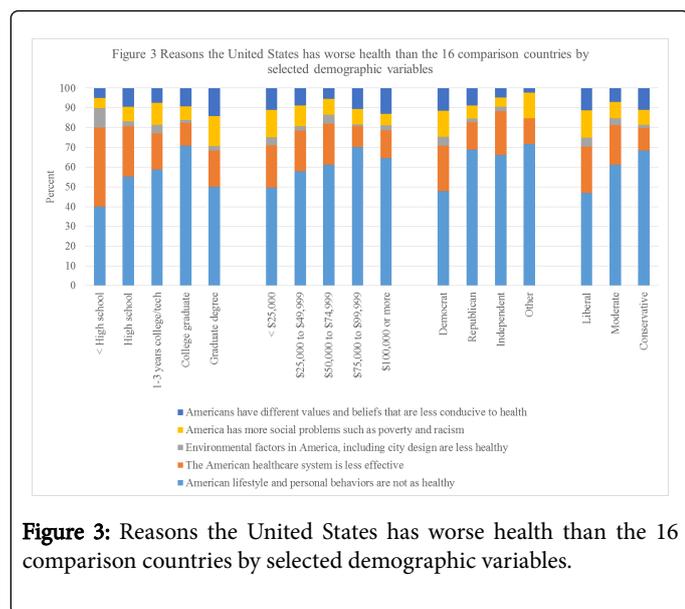
**Table 3:** Reasons the United States has worse health than the 16 comparison countries.

These 20 items were combined into five groups of health determinants identified in The Institute of Medicine Report. Level of agreement with the five group variables are presented for four selected demographic variables in Figure 3, each of which were significant at the 0.05 level. The “American healthcare system being less effective” and “American lifestyle and personal behaviors not being healthy” were the most common reasons given for poorer life expectancy in the U.S. Agreement that the “American healthcare system is less effective” is more common among less educated, in those with lower income, in Democrats and Independents, and in Liberals and Moderates. Agreement that “American lifestyle and personal behaviors are not as healthy” tended to be greater among those with more education, higher income, republicans, and conservatives.

less efficient healthcare system. If public opinion set priorities for improving the nation's health, the focus would be lifestyle education interventions and increasing the provision of healthcare services. By contrast, population health models such as the five-tiered Frieden Health Impact Pyramid, suggests that health education and tertiary clinical interventions are the least effective means for improving population health [11]. The Health Impact Pyramid model postulates that population health is most effectively improved by addressing social determinants of health such as poverty, housing, and education. Recent studies suggest the United States’ poor provision of social services, compared with other countries, is a major explanation for the nation's health deficit [12,13]. The current study found that the public's failure to understand the importance of social health determinants, as well as built environmental factors, are major blind spots that also needs to be addressed.

This does not imply that health cannot be improved by changes in healthcare delivery practices. More attention to evidence-based tertiary prevention interventions are needed. Innovative disease and patient management models such as “Project Leonardo” in southern Italy, demonstrate that healthcare professionals also play an important role in reducing chronic disease rates [14].

A key recommendations made from the Institute of Medicine report was for the creation of an educational outreach campaign that would effectively inform the public of the U.S. health disadvantage. The intent would be to generate a national discussion regarding the causes and consequences of the U.S. health disadvantage. Being aware of the United States’ increasingly lower health ranking might facilitate the adoption of health policies that close the growing gap. We concur that when people better understand and are consistently reminded of the magnitude of the U.S. health disadvantage, the general citizenry and policy makers may be more likely to undergo serious soul-searching regarding how the other nations have better health yet spend far less of their GDP on healthcare. We believe that widespread awareness of the U.S. health disadvantage must precede shifts to policies that more effectively address the non-medical determinants of health.



**Figure 3:** Reasons the United States has worse health than the 16 comparison countries by selected demographic variables.

## Discussion

This study identified two major public misperceptions regarding the nation's health. First is the public's ignorance of the United States' large and growing health disadvantage compared with other Western democracies. Authors of the Institute of Medicine report surmised that people are unaware of the United States' lower health ranking, however, the authors did not know of any studies that confirmed their supposition. This study fills that gap and documents the magnitude of the public's overestimation of the nation's relative health ranking. The second misperception identified in this study deals with the public's explanation for the U.S. growing health disadvantage.

The majority of people, when they were informed of the U.S. health disadvantage, attributed it to an unhealthy lifestyle and, secondarily, to

Future research should determine which messages and methods of presentation most effectively inform citizens of the growing U.S. health disadvantage. It may be more effective to visually present the U.S. health disadvantage as a 40-year trend instead of a contemporary snapshot in time. In a college classroom setting, we present one graph that shows the Western democracies pulling away from the U.S. for life expectancy and juxtapose it with a second graph that shows the U.S. pulling away from the other countries in per capita healthcare spending during the same 40 year time period, students. Requiring students to reconcile these apparently contradictory graphs generates curiosity and leads to a much deeper discussion of what factors really influence health and might explain the nation's health disadvantage.

Some authorities have called for stronger national political leadership to raise the issue of the U.S. health deficit and propose strategies that close the gap [15,16]. They suggest that, like criminal justice reform, reducing healthcare costs and transferring resources to other health determinants, may have the rare potential for bipartisan support in our polarized political environment.

This study suggests that conservatives are less aware of the United States' growing health deficit. When informed of America's declining health rankings, conservatives are more likely to attribute its cause to poor lifestyle while liberals more frequently cite deficiencies in the health care system and social determinants of health as being the underlying cause. Discussing the U.S. health deficit has been conspicuously absent in the 2016 presidential debates. The minimal references given to health by candidates has typically focused only on healthcare reform and ignored the importance of other health determinants. Public health leaders need to make America's declining health ranking and its underlying causes a future campaign issue.

The Institute of Medicine report acknowledges the complexity of precisely determining how much of the nation's health deficit can be attributed to various factors. Whatever the underlying drivers of the growing health disparity between the U.S. and other wealthy nations, they are unlikely to change in the presence of the awareness gap demonstrated in this study among U.S. residents. Urgent and persistent advocacy in this area is needed to engage the public and change public policy to improve health indicators in the U.S. These massive societal misperceptions identified in this study hinder efforts to broaden national health policy beyond the lifestyle-focused and medically-dominated status quo. We concur with the Institute of Medicine recommendation that a major health foundation undertake an educational intervention to inform U.S. citizens of the nation's growing health disadvantage. This study provides a benchmark against which progress can be measured. However, this study also demonstrates how very far we have to go in correcting the massive misperceptions regarding the nation's health.

Regarding study limitations, the collection of data in this study was obtained through a proprietary online survey. Generalization of the study results may be limited to the extent that voluntary online respondents do not totally represent of the entire adult population. However, sample size quotas were established and met for select demographic variables in order to obtain a more representative sample.

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