INTERSECTIONAL RACE-BY-GENDER DISPARITIES IN PREVENTIVE HEALTH PRACTICES AMONG U.S. ADULTS

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ABSTRACT

A growing body of research has called for consideration of intersectional identities when studying health disparities. We use recently collected data from the American's Changing Lives study to explore race-by-gender differences in utilization of a wide array of preventive health practices and services. We also examine the extent to which measures of socioeconomic status, health insurance and health status explain differences between white and black men and women. Preliminary results suggest the presence of both "main effects" disparities, such as lower use of daily aspirin for heart health among women than men, but higher daily vitamin use among women, as well as "intersectional" disparities, such as the low dental care use of African American men compared to all other groups, the vulnerability of foregoing prescription medications for cost reasons among African American women, or the relative advantages for white women in terms of olive oil and fried food consumption.

INTRODUCTION

Social disparities in health are pervasive and resilient in the United States, despite changes in burdens of disease and in medical care developments (House, Lepkowski, Kinney, Mero, Kessler, and Herzog 1994; Link and Phelan 1995). Some of the most important social dividing lines in the U.S. context manifest in racial/ethnic and gender differences in health. While much has been learned about the nature and causes of disparities in multiple dimensions of health, most extant studies have considered a single social identity at a time when characterizing disparity. For example, many studies have considered racial/ethnic disparities (Smedley, Stith, and Nelson 2009; Williams and Jackson 2005) while others have focused on gender disparities or differences (Bird and Rieker 1999; Gorman and Read 2006). However, a growing body of research in the social and health sciences has shown the importance of considering intersectional identities – in this case, considering African American women and White men distinct from other race-gender groups, rather than considering the net effect of race or gender on their own. Moreover, the bulk of the evidence supporting the importance of considering intersectional identities has focused on health outcomes themselves (Cummings and Braboy Jackson 2008; Warner and Brown 2011). To build on this burgeoning literature, we analyze instead a range of health practices and preventive medical care that prevent or identify disease, or that conversely may cause or exacerbate health conditions.

Social scientists have begun to theorize about the need for intersectional analysis of health disparities (Bowleg 2012; Hankivsky 2012; Hankivsky and Christoffersen 2008; Iyer, Sen, and Ostlin 2008). Intersectional approaches can solve some key problems arising in literature that focuses on gradients in health based on a single social characteristics or the independent impact of several social identities. Such prior studies may have missed ways that social identities interact with each other to create multiplicative, rather than additive differences in well-being (Bowleg 2008), and may have mischaracterized the primacy of statuses over others. An intersectional approach might also help researchers to clarify specific cultural and structural explanations for disparities because these more detailed categorizations allow investigation of the contexts that African American men, for example, uniquely inhabit in the social landscape, distinctively from white men or African American women.

A growing number of studies have emerged to support this call for more intersectional approaches to health disparities. For example, Hinze, Lin, and Andersson (2012) undertake an intersectional analysis of self-rated health, social ties, and morbidity, and determine that complex interactions between race, gender, and education influence the health and well-being of older Black women. Williams and colleagues (2012) explore an intersectional framework in examining lung cancer incidence and mortality and demonstrate that complex social structures and processes impact race-by-gender-by-socioeconomic status groups differently. Braboy Jackson and Williams (2006) apply an intersectional analysis to health disparities among middle class African Americans, demonstrating how disadvantaged statuses can alter the expected benefits of additional material resources on access to social support and exposure to violence. Grollman (2012; 2014) considered interactions between disadvantaged statuses, discrimination, and health outcomes and found that multiply- disadvantaged young adults and adults were more likely to experience depression, poorer physical health, and functional limitations. These disparities were partially mediated by experiencing multiple forms of discrimination; differences among groups defined intersectionally were significant where differences among groups organized along single statuses were not.

It is also important to take a step back from health outcomes and explore the preventive practices and care that may shape differential rates of disease for race-gender groups. We take a broad view of preventive practices because this could reveal otherwise unrecognized differences across groups or patterns of difference across multiple outcomes that represent a larger overall burden for some. Outcomes in this analysis range from commonly-studied “health behaviors” that occur outside the medical encounter including smoking, alcohol use and diet, as well as practices including vitamin or aspirin use. We also explore preventive services received often in health care settings, including checks on cholesterol levels and other basic checks, cancer screenings, and flu shots, as well as considering foregone medical care or prescription medications. Some previous studies have examined health behaviors and preventive practices. For example, Courtenay and colleagues (2002) examined health beliefs and behaviors among college students and found main effects of gender – such that men were more likely to behave in a risky fashion –

as well as main effects of ethnicity, but only dietary beliefs and behaviors showed intersectional patterns of difference.

Many of the studies that have taken an intersectional approach examined the intersection of gender or race with socioeconomic status (SES). SES is a fundamental cause of health that implies an array of resources to enable bearers access to healthy lifestyles and environments as well as medical care and treatment (House et al. 1994; Link and Phelan 1995). The experience of being a racial minority or a woman may be very different for high-SES versus lower-SES individuals. For example, Ananthakrishnan and colleagues (2007) found that even among Medicare beneficiaries, there were some income-by-ethnicity differences in colon cancer screening. SES resources are differentially distributed across race-gender groups in the United States, so may help to explain differences in preventive practices across these groups. An SES resource like education could also differentially assist some groups more than others, such as when highly educated white Americans live in better-resourced neighborhoods and communities and have access to better health care advice than similarly-educated black Americans. In this study we view SES as an essential mediator and/or moderator of the association between race-gender identity and preventive practices. We also explore a range of key resources associated with – but distinct from – standard indicators like education and income, such as insurance type.

While the growing evidence base is compelling, past studies of intersectional differences have often examined a particular health outcome, or have not directly studied key race-by-gender group differences that are highly salient in the U.S. context – the gaps between African American women, African American men, non-Hispanic white women, and non-Hispanic white men. Studies of preventive practices have often been limited to particularistic samples and/or have explored only a specific domain or indicator, leaving room for more representative samples and broader consideration of outcomes. We use recently collected data from respondents in the American's Changing Lives study to explore race-gender differences in utilization of a wide array of preventive health practices and services. Better characterizing differences across pairwise comparisons of these four groups and focusing on a wide array of outcomes allows us to more completely characterize the patterning of disparities and could point to particular social mechanisms.

METHODS

Data

The American's Changing Lives (ACL) study began in 1986 with a national face-to-face survey of 3617 adults ages 25 and up in the continental U.S., with African Americans and people aged 60 and over over-sampled at twice the rate of the others. Face-to-face re-interviews were conducted in 1989 with 83% (n=2867) of survivors, and survivors since baseline have been re-interviewed by telephone, and where necessary face-to-face, in 1994 (83%), 2001/02 (74%), and 2011/12 (81%). Our analytic sample includes the 1,325 respondents interviewed in 2011/12, as this is the wave in which most questions about preventive services and practices were asked. We did not include interviews conducted with a proxy responder (about 100 cases) as some answers reported by another person may not be accurate, and proxy reporters were not asked all questions that respondents were asked. Analyses use data from multiple survey waves, and survey weights that make the sample representative of the U.S. population in 1986.

Measures

We include measures of an array of preventive practices, coded such that we identified those who had not received the service or practiced the behavior. To capture often-studied health behaviors, *alcohol use* is measured using items that ask whether respondents "…ever drink alcoholic beverages such as beer, wine, or liquor" and if yes, "During the last month, on how many days did you drink beer, wine or liquor," and if more than "none," "On days that you drink, how many cans or bottles of beer, glasses of wine, or drinks of liquor do you usually have?" Using this information, we created an indicator of the number of drinks per month the respondent reported, ranging from zero to 90 or more. *BMI* categories are calculated from self-reported height and weight of the respondent. A *physical activity* scale score is calculated using items that asked how often does the respondent: "typically work in the garden or yard," "take walks," and "other than taking walks, how often do you engage in active sports or exercise – often, sometimes, rarely, or never?" A score was created and divided into quintiles, with higher scores indicating more physical activity. *Current smoker status* was ascertained using several items that asked: "Have you smoked more than 100 cigarettes in your lifetime," and if yes, "do you smoke cigarettes now?" Those who currently smoked at interview were coded as current smokers, and all others were coded as not current smokers.

We also asked about preventive checkups and screenings. Respondents were asked whether in the last two years they had their *blood pressure* checked, and whether they had blood tests to see what their *blood sugar* level and *cholesterol* levels were. They were also asked whether in the last two years they had a "…screening test for colon cancer such as a colonoscopy, sigmoidoscopy, or a test for blood in [their] stool called a fecal occult blood test." Those who said no were asked if they had "… a colonoscopy in the last 5-10 years" and we coded as having received a *colon cancer screening* those who responded affirmatively to either item. Women were asked if they had "… a *mammogram*, or x-ray of the breast in the last two years." Preventive medical care utilization was ascertained with items asking if respondents had a teeth cleaning or *dental* check up and an eye examination in the last two years. We also asked if in the past twelve months respondents "…postpone[d] or [did] not get some health care or surgery" or "postpone[d] filling or [did] not get a prescription for medicine when [they] needed it because of lack of insurance or worries about money" to measure *foregone medical care* and *foregone prescription medication*.

Other preventive practices were measured by asking respondents whether in the past two years they received a *flu shot*, whether they "take an aspirin every day to prevent heart problems or stroke," and whether they "…take a multivitamin every day (or almost every day)?" Dietary practices were measured with an array of items. Respondents were asked how many servings of *fruit or vegetables* they usually eat in a day – five or more servings, 3-4 servings, 1-2 servings, or no servings, and based on the distribution of responses we recoded to separate those who reported eating 3 or more servings from those who reported eating 2 or less servings. We also asked how many days in a week respondents ate: *red meat*, such as beef or pork or products made from them such as hamburgers, hot dogs, bacon or sausages; *fish* or seafood that has not been deep fried; *olive oil*; *whole grain breads or cereals*; and *fried foods*. Answer choices for these dietary items were: almost every day, most days, some days, and rarely or never. We dichotomized each according to the distribution in the sample as follows: red meat (high = most days or more), fish (low = rarely or never), olive oil (low = rarely or never), whole grains (low = some days or less), and fried foods (high = some days or more).

We also adjust for baseline characteristics in including age group (25-39, 40-54 or 55 years or older), gender and race (non-Hispanic white males, non-Hispanic white females, African American males, African American females), education (less than 12 years, 12-15 year, or 16 or more years at baseline), and household income in 1986 dollars (0-12,499, 12,500-34,999, or 35,000 or more dollars). We adjust for 2011/12 characteristics with indicators of health insurance status (using several items to identify public, private or no insurance coverage) and functional limitations (using a conventional scale of activities of daily living).

Analytic Approach

We present gender-and-race group disparities in all preventive practices outcomes in two regression models. We generated indicator variables for all four groups, rather than including main effects for race and gender and an interaction term. The first model adjusts only for age group, and the second additionally adjusts for education and household income at baseline, and insurance coverage and functional limitations in 2011/12, the same wave at which outcomes are measured. Comparison of these models shows the role of some basic differences in SES and health in explaining race-gender group differences. We present tests for significant differences across each comparison. In the regression models, non-Hispanic white women are the referent category to which all other groups are compared, and these differences are noted in a first column in the results tables. Using post-estimation tests we also consider the other potential significant differences, and present any significant pair-wise comparison differences in a second column in the results tables.

PRELIMINARY RESULTS

Preliminary regression findings are displayed in Tables 1 through 7. The age-adjusted model is presented first, followed by the fully-adjusted model, and tests for significance of group comparisons are presented after the relevant model.

In the interest of saving space for this extended abstract, here we summarize the preliminary findings in Table 8. Overall, women report lower physical activity than men, though this is explained by SES and health differences, but they are also more likely to not take daily aspirin for heart health, even net of those factors. At the same time, men are less likely than women to take a daily multivitamin. African Americans have higher BMI percentiles than non-Hispanic whites in our sample, but they are also less likely to report not having had a recent cholesterol or blood sugar test.

In addition to these “main effects” of identities, we find that an intersectional approach that considers race-by-gender identity groups adds meaningfully to results we might obtain if we included these as two separate identity indicators. White women are least likely to report no recent dental care, and are least likely to report low olive oil use or high fried food consumption. By contrast, black women report the highest BMI percentiles of all groups, are most likely to forego prescription medications for cost reasons (though the association is largely explained by SES and health status), are more likely than white women to report no recent flu shot, and are most likely of all groups to report low whole grains consumption. Non-Hispanic white men report the highest alcohol use and are the most likely to report low olive oil use, while black men are most likely of all groups to report not having a recent dental visit.

These results give us incentive to continue the analysis. For the PAA meetings we will explore the following additional analytic steps, among others.

1. Preventive practices may "bundle" in interesting ways for individuals, so we will explore the clustering of these outcomes in addition to considering them one at a time. We will explore the clustering of different practices and experiences using latent class analytic approaches.
2. ACL respondents reported at each of five survey waves on an array of socioeconomic status indicators like assets and employment histories, as well as occupational characteristics, and have also reported on their marital standing and caregiving responsibilities. These histories may be important explanatory factors in understanding race-gender group differences.
3. We can also take advantage of rich measures of social support and family- and dependent-related strain that may help us to understand how interpersonal relationships shape preventive practices and disparities therein.
4. We will test measures of health shocks and diagnosis of new conditions to better understand how these threats to health may help explain preventive practices, as well as looking at race-specific stressor exposure such as racial discrimination, to see if they help to account for patterns of unequal outcomes.
5. We have linked ACL respondents to their Dartmouth Health Atlas regions and will consider adding indicators of location-based characteristics or resources relevant to preventive health practices.

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Table 1. Predictors of alcohol use, body mass index category, physical activity scale score, and current smoking status

	Drinks/month			Drinks/month			BMI category			BMI category			Physical Activity			Physical Activity			Current Smoker			Current Smoker		
	Coeff/SE	WF	other	Coeff/SE	WF	other	Coeff/SE	WF	other	Coeff/SE	WF	other	Coeff/SE	WF	other	Coeff/SE	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	-0.283	***		-0.002			0.017			0.093			-0.248	***		-0.244	*		0.612	*		0.405	**	
	0.069			0.103			0.068			0.103			0.075			0.108			0.384,0.974			0.214,0.768		
55+ years	-0.653	***		-0.261			-0.679	***		-0.688	***		-0.758	***		-0.531	***		0.177	**		0.101	***	
	0.110			0.134			0.109			0.135			0.120			0.141			0.059,0.531			0.031,0.328		
Black male	-0.073	no	WM**	0.042	no	WM*	0.208	no	no	0.219	no	no	0.171	no	no	0.211	no	no	1.065	no	no	0.856	no	no
	0.161			0.157			0.159			0.158			0.176			0.166			0.605,1.875			0.475,1.545		
Black female	-0.411	**	WM**	-0.205	no	WM**	0.568	***	WM**	0.526	***	WM*	-0.230	no	WM**	0.013	no	no	1.248	no	no	0.980	no	no
	0.138			0.137			0.136			0.137			0.151			0.144			0.769,2.026			0.586,1.640		
White male	0.500	***	BM**, BF**	0.428	***	BM*, BF*	0.095	no	BF**	0.141	*	BF*	0.252	***	BF**	0.118	0.084	no	0.974	no	no	1.167	no	no
	0.065			0.065			0.065			0.065			0.071			0.068			0.628,1.511			0.744,1.829		
12-15 yrs education				0.322	***					-0.128						0.208	*					0.773		
				0.097						0.098						0.102						0.421,1.417		
16+ yrs education				0.357	**					-0.263	*					0.343	**					0.220	***	
				0.113						0.114						0.119						0.096,0.506		
$12,500-34,999				0.092						0.215	*					-0.049						1.340		
				0.108						0.109						0.114						0.763,2.352		
$35,000+				0.375	***					0.228	*					-0.010						1.022		
				0.111						0.111						0.116						0.541,1.929		
public insurance				0.332	**					0.175						-0.085						0.597		
				0.102						0.102						0.107						0.328,1.083		
no insurance				0.441	**					0.012						-0.210						1.034		
				0.149						0.150						0.157						0.483,2.213		
Functional limitations				-0.082	*					0.167	***					-0.445	***					1.008		
				0.034						0.034						0.036						0.826,1.230		
Constant	2.041	***		1.360	***		3.744	***		3.329	***		3.258	***		3.787	***					N/A		
	0.050			0.152			0.049			0.152			0.054			0.160								
N	1305			1305			1305			1305			1305			1305			1305			1305		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 2. Predictors of lack of blood pressure, cholesterol or blood sugar checks.

	noBPcheck			noBPcheck			nocholcheck			nocholcheck			nosugarcheck			nosugarcheck		
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	0.816			1.591			0.577	*		0.729			0.525	*		0.825		
	0.374,1.777			0.594,4.256			0.341,0.977			0.317,1.675			0.317,0.872			0.388,1.754		
55+ years	0.153	*		0.272			0.612			0.726			0.506			0.731		
	0.035,0.668			0.053,1.389			0.293,1.278			0.275,1.917			0.235,1.089			0.286,1.872		
Black male	0.496	no	no	0.320	0.091	no	0.960	no	no	0.662	no	no	0.531	no	no	0.354	*	WM*
	0.143,1.718			0.085,1.202			0.461,2.002			0.287,1.529			0.226,1.249			0.141,0.892		
Black female	0.621	no	no	0.462	no	no	0.489	*	WM*	0.348	**	WM**	0.598	0.080	no	0.480	*	WM*
	0.235,1.641			0.153,1.390			0.275,0.867			0.181,0.668			0.336,1.063			0.244,0.946		
White male	0.488	no	no	0.496	no	no	1.082	no	BF*	1.168	no	BF**	1.004	no	no	1.056	no	BM*, BF*
	0.197,1.209			0.201,1.227			0.675,1.735			0.707,1.930			0.639,1.577			0.658,1.694		
12-15 yrs education				0.736						0.571						0.676		
				0.294,1.840						0.318,1.027						0.368,1.244		
16+ yrs education				0.294						0.326	**					0.417	*	
				0.073,1.185						0.156,0.682						0.200,0.868		
$12,500-34,999				1.204						1.154						1.555		
				0.446,3.251						0.588,2.267						0.763,3.167		
$35,000+				0.755						0.911						0.967		
				0.262,2.173						0.446,1.862						0.457,2.046		
public insurance				1.022						0.848						1.160		
				0.367,2.847						0.372,1.934						0.551,2.444		
no insurance				11.541	***					8.302	***					9.011	***	
				4.086,32.599						3.511,19.629						3.967,20.470		
Functional limitations				0.889						0.844						0.872		
				0.627,1.258						0.668,1.067						0.685,1.110		
N	1305			1305			1298			1298			1291			1291		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 3. Predictors of lack of colon cancer screening or mammogram (among women only).

	No colon cancer screening			No colon cancer screening			No Mammogram		No Mammogram	
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	OR/ci95	WF
40-54 years	0.779			0.938			1.170		1.489	
	0.546,1.112			0.570,1.543			0.702,1.950		0.677,3.275	
55+ years	0.913			0.953			3.021	***	3.145	**
	0.591,1.409			0.532,1.707			1.754,5.204		1.402,7.059	
Black male	0.834	no	no	0.669	no	no	N/A		N/A	
	0.483,1.442			0.372,1.201						
Black female	0.911	no	no	0.718	no	no	1.072	no	0.812	no
	0.605,1.371			0.464,1.113			0.659,1.745		0.470,1.404	
White male	0.865	no	no	0.966	no	no			N/A	
	0.617,1.213			0.669,1.395						
12-15 yrs education				0.683					0.775	
				0.428,1.090					0.414,1.453	
16+ yrs education				0.393	**				0.434	
				0.220,0.704					0.180,1.049	
$12,500-34,999				1.240					1.554	
				0.783,1.966					0.802,3.013	
$35,000+				0.761					1.026	
				0.460,1.257					0.490,2.148	
public insurance				1.105					0.866	
				0.682,1.793					0.384,1.956	
no insurance				3.439	***				7.587	***
				1.695,6.980					2.923,19.692	
Functional limitations				1.036					1.171	
				0.880,1.221					0.960,1.428	
N	1300			1300			799		799	

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 4. Predictors of no dental or eye care

	No dental visit			No dental visit			No eye visit			No eye visit		
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	1.273			0.798			0.487	***		0.632		
	0.897,1.806			0.484,1.315			0.332,0.715			0.373,1.072		
55+ years	1.249			0.551			0.566	*		0.666		
	0.799,1.955			0.303,1.002			0.328,0.975			0.346,1.285		
Black male	4.099	***	WM***	3.382	***	BF*, WM**	1.317	no	no	1.097		no
	2.534,6.631			1.914,5.976			0.771,2.251			0.636,1.893		
Black female	2.624	***	WM***	1.538	0.056	BM*	0.899	no	no	0.709		WM*
	1.795,3.837			0.989,2.393			0.592,1.364			0.443,1.134		
White male	1.049	no	BM, BF***	1.511	*	BM**	1.153	no	no	1.284		BF*
	0.730,1.508			1.022,2.233			0.808,1.647			0.886,1.862		
12-15 yrs education				0.381	***					0.876		
				0.242,0.599						0.537,1.426		
16+ yrs education				0.075	***					0.58		
				0.037,0.152						0.312,1.076		
$12,500-34,999				0.799						0.982		
				0.502,1.271						0.584,1.652		
$35,000+				0.492	**					0.637		
				0.291,0.833						0.362,1.120		
public insurance				0.444	**					1.112		
				0.266,0.741						0.672,1.838		
no insurance				2.599	**					5.25	***	
				1.281,5.274						2.664,10.347		
Functional limitations				1.275	**					1.014		
				1.085,1.498						0.846,1.214		
N	1305			1305			1305			1305		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 5. Predictors of foregone medical care and foregone prescription medication

	Foregone medical care			Foregone medical care			Foregone prescription medicati			Foregone prescription medication		
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	0.114	***		0.161	***		0.513	*		0.293	***	
	0.046,0.285			0.060,0.431			0.269,0.980			0.142,0.604		
55+ years	0.123	*		0.133	*		0.465			0.197	*	
	0.023,0.661			0.023,0.786			0.146,1.487			0.056,0.692		
Black male	1.087	no	no	0.869	no	no	1.473	no	no	1.019	no	no
	0.547,2.163			0.399,1.894			0.741,2.929			0.455,2.281		
Black female	0.872	no	no	0.486	0.082	no	2.869	***	WM**	1.736	0.081	no
	0.458,1.657			0.216,1.097			1.681,4.898			0.934,3.225		
White male	0.688	no	no	0.841	no	no	0.883	no	BF**	1.204	no	no
	0.387,1.224			0.457,1.546			0.477,1.635			0.605,2.395		
12-15 yrs education				0.842						0.696		
				0.386,1.836						0.297,1.627		
16+ yrs education				0.504						0.539		
				0.187,1.358						0.168,1.725		
$12,500-34,999				0.649						0.817		
				0.342,1.233						0.410,1.631		
$35,000+				0.677						0.847		
				0.301,1.524						0.350,2.049		
public insurance				1.362						0.248	***	
				0.598,3.100						0.116,0.526		
no insurance				9.828	***					3.243	**	
				3.972,24.318						1.525,6.897		
Functional limitations				1.682	**					1.634	***	
				1.213,2.331						1.270,2.102		
N	1304			1304			1305			1305		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 6. Predictors of lack of flu shot, daily aspirin or multivitamin

	noflushot			noflushot			noaspirin			noaspirin			nomultivit~n			nomultivit~n		
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	0.563	***		0.618	*		0.474	***		1.014			0.729	*		0.748		
	0.411,0.772			0.390,0.980			0.349,0.644			0.648,1.588			0.533,0.997			0.477,1.173		
55+ years	0.2	***		0.21	***		0.445	***		0.936			0.756			0.731		
	0.117,0.340			0.110,0.401			0.290,0.684			0.545,1.606			0.491,1.165			0.421,1.269		
Black male	1.26	no	no	1.046	no	no	0.732	no	no	0.792	no	no	1.84	**	no	1.654	*	no
	0.778,2.041			0.626,1.750			0.453,1.183			0.493,1.272			1.159,2.923			1.035,2.644		
Black female	1.766	**	no	1.58	*	no	0.999	no	no	1.145	no	WM*	1.248	no	no	1.087	no	no
	1.211,2.575			1.046,2.386			0.685,1.457			0.760,1.726			0.868,1.793			0.744,1.589		
White male	1.226	no	no	1.314	no	no	0.695	*	no	0.67	*	BF*	1.397	*	no	1.475	*	no
	0.896,1.678			0.950,1.818			0.513,0.943			0.490,0.916			1.031,1.893			1.081,2.012		
12-15 yrs education				0.864						0.859						0.736		
				0.558,1.336						0.562,1.313						0.478,1.133		
16+ yrs education				0.529	*					0.779						0.627		
				0.309,0.905						0.469,1.294						0.375,1.048		
$12,500-34,999				0.884						1.52						0.989		
				0.561,1.393						0.970,2.381						0.631,1.552		
$35,000+				0.557	*					1.292						0.917		
				0.343,0.904						0.802,2.082						0.567,1.481		
public insurance				0.981						2.772	***					0.965		
				0.627,1.534						1.760,4.364						0.618,1.508		
no insurance				2.766	**					2.211	*					2.49	**	
				1.453,5.264						1.139,4.291						1.306,4.750		
Functional limitations				0.786	**					1.011						1.039		
				0.666,0.927						0.867,1.179						0.888,1.216		
N	1305			1305			1304			1304			1301			1301		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 7. Predictors of poor dietary practices.

	Low fruit/veg			Low fruit/veg			High red meat			High red meat			Low fish			Low fish			Low olive oil			Low olive oil			Low whole grain			Low whole grain			High fried food			High fried food		
	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other	OR/ci95	WF	other
40-54 years	0.91			0.795			0.904			0.594	*		1.374	*		1.247			1.196			0.952			0.862			0.741			1.24			1.118		
	0.666,1.244			0.501,1.262			0.644,1.270			0.353,0.997			1.013,1.864			0.801,1.940			0.855,1.674			0.602,1.503			0.626,1.189			0.471,1.166			0.908,1.692			0.713,1.752		
55+ years	0.579	*		0.43	**		1.644	*		1.01			1.933	**		1.631			2.936	***		2.077	**		0.414	**		0.322	***		1.146			0.927		
	0.371,0.904			0.242,0.761			1.040,2.596			0.561,1.817			1.273,2.936			0.966,2.754			1.930,4.467			1.211,3.560			0.243,0.705			0.171,0.608			0.757,1.734			0.541,1.589		
Black male	2.306	***	no	2.063	**	no	1.969	**	BF*	1.831	*	BF*, WM*	1.035	no	no	0.93	no	no	2.663	***	no	2.341	***	no	1.287	no	no	1.203	no	no	3.324	***	WM*	2.966	***	no
	1.439,3.695			1.260,3.377			1.186,3.270			1.067,3.144			0.651,1.646			0.581,1.489			1.635,4.338			1.443,3.799			0.804,2.059			0.743,1.947			2.013,5.489			1.775,4.955		
Black female	2.186	***	no	1.815	**	no	0.929	no	BM*, WM***	0.828	no	BM*, WM***	0.843	no	no	0.767	no	no	1.784	**	no	1.376	no	WM**	1.757	**	WM***	1.55	*	WM*	2.1	***	no	1.856	**	no
	1.516,3.153			1.244,2.650			0.586,1.470			0.514,1.334			0.582,1.220			0.521,1.128			1.207,2.636			0.915,2.069			1.212,2.546			1.054,2.279			1.460,3.023			1.277,2.698		
White male	1.923	***	no	2.14	***	no	2.892	***	BF***	3.238	***	BF***, BM*	1.024	no	no	1.099	no	no	2.344	***	no	2.726	***	BF**	0.9	no	BF***	0.964	no	BF*	1.794	***	BM*	1.948	***	no
	1.416,2.613			1.554,2.946			2.100,3.982			2.325,4.510			0.758,1.384			0.806,1.498			1.678,3.275			1.929,3.854			0.649,1.248			0.693,1.341			1.326,2.429			1.424,2.665		
12-15 yrs education				0.609	*					1.05						0.853						0.569	*					0.794						0.743		
				0.397,0.934						0.667,1.653						0.563,1.293						0.363,0.890						0.512,1.230						0.484,1.142		
16+ yrs education				0.513	*					0.681						0.584	*					0.387	***					0.662						0.597	*	
				0.306,0.860						0.394,1.176						0.353,0.966						0.221,0.679						0.389,1.127						0.357,0.998		
$12,500-34,999				1.251						1.229						1.333						0.95						1.07						1.384		
				0.795,1.967						0.749,2.018						0.866,2.051						0.609,1.482						0.690,1.660						0.897,2.135		
$35,000+				0.927						1.496						1.058						0.768						1.012						0.917		
				0.568,1.512						0.902,2.483						0.670,1.672						0.470,1.255						0.632,1.621						0.580,1.449		
public insurance				0.85						0.588	*					0.862						0.811						0.862						0.823		
				0.537,1.344						0.356,0.973						0.555,1.339						0.498,1.320						0.544,1.364						0.528,1.283		
no insurance				1.19						1.158						1.245						0.82						0.953						1.305		
				0.624,2.272						0.587,2.283						0.654,2.367						0.417,1.614						0.490,1.851						0.662,2.570		
Functional limitations				1.133						1.151						1.003						1.126						1.126						1.003		
				0.967,1.327						0.975,1.359						0.861,1.169						0.938,1.352						0.953,1.331						0.861,1.169		
N	1303			1303			1305			1305			1303			1303			1303			1303			1305			1305			1305			1305		

Note: Omitted categories are: 25-39 years old at baseline, White female, < 12 years education, household income <$12,500 in 1986 dollars, private insurance coverage.

Table 8. Summary of results for main effects and intersectional groups

	Health Threatening	Health Enhancing
Women	Lower physical activity in unadjsted model, more likely to not take daily aspirin	Less likely to not take multivitamin
African Americans	Higher BMI	Less likely to report missed cholesterol check or missed blood sugar check
White women		Least likely to go without dentist, least likely to report low olive oil use, least likely to eat fried foods
Black women	Highest BMI, most likely to forego prescriptions (not signficant in full model), more likely than white women (but not others) to miss flu shot, most likely to report low whole grains consumption	
White men	Highest alcohol use, most likely to report low olive oil use	
Black men	Most likely to go without dentist	