

Awareness, Use, and Perceptions of Low Carbohydrate Diets and Nutritional Recommendations

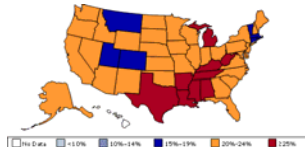
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Introduction

- During the past two decades, there has been a dramatic increase in obesity in the US.
- The data shown in the map below, collected through the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), demonstrate the prevalence of obesity in the US in 2004.



- In 2004, 7 states had obesity prevalence rates of 15–19 percent; 33 states had rates of 20–24 percent; and 9 states had rates more than 25 percent.

- Amid this epidemic, low carbohydrate diets such as the Atkins Diet and the South Beach diet have received considerable attention in the media in 2005



- Furthermore, the current federal nutrition policy document, the Dietary Guidelines for Americans 2005, replaced the 2000 guidelines. In addition, a new food pyramid for consumers replaced the older 1992 Food Guide Pyramid.



Purpose

- Our analyses examine:
 - public awareness, use, and perceptions of low carbohydrate diets.
 - sociodemographic and key communication correlates of public awareness, use, and perceptions of low carbohydrate diets.
 - the association of awareness, use and perceptions of low carbohydrate diets with behavioral responses to nutritional recommendations.

Method

Data
hints How Americans find and use cancer information
 Health Information National Trends Survey

Data were from the 2005 Health Information National Trends Survey (HINTS). Data collection occurred Feb-July 2005. HINTS evaluates public knowledge, attitudes, and behaviors relevant to health communication.

Measures

Outcome Variables:

- Awareness, use, and perceptions of low carbohydrate diets:

EB-12. Are you aware of low carbohydrate, high protein diets such as the Atkins Diet, the Zone, Sugar Busters, or the South Beach Diet?
 EB12AwareLowCarb
 YES 1
 NO 2 (ROR EB-1)

EB-13. Have you tried a low carbohydrate, high protein diet in the past 12 months?
 EB13TriedLowCarb
 YES 1
 NO 2

EB-15. Do you think that a low carbohydrate, high protein diet is a healthy way to lose weight?
 EB15UseLowCarbHealthy
 YES 1
 NO 2

Predictor Variables:

- Attention, behavior, and attitudes regarding nutrition recommendations:

EB-17. Think about the last time you heard a new recommendation about (nutritional/physical activity or exercise). Which of the following things did you do in response to the new recommendation?
 EB17ChangeBehavior
 EB17ChangeBehavior
 I changed what I do. 1
 I did not change what I do, or I wanted to get more information. 2
 I did not change what I do, or I wanted to get more information. 3

EB-16. How much do you agree or disagree with the following statement? "There are so many different recommendations about (nutritional/physical activity or exercise) that it's hard to know which ones to follow. Would you say you ..."
 EB16TotallyDisagree
 EB16SomewhatDisagree
 EB16SomewhatAgree
 EB16TotallyAgree
 strongly agree 1
 somewhat agree 2
 somewhat disagree 3
 strongly disagree 4

Sources and attention to nutrition information:

EB-21. Thinking about the past 12 months only, how much have you heard about (nutritional/physical activity or exercise) and cancer (FILL SOURCE)? Would you say a lot, some, a little or not at all? (How about from [FILL SOURCE])?

[ASK IN RANDOM ORDER.]	HICOMP	ALOT	SOME	ALITTLE	NOTATALL
a. on television?	EB21TV	1	2	3	4
b. in newspapers	EB21Newspaper	1	2	3	4
c. in magazines	EB21Magazine	1	2	3	4
d. on the Internet	EB21Internet	1	2	3	4
e. from a doctor or other health care professional?	EB21HealthCare	1	2	3	4

Sociodemographic variables:

- sex, age, education, income, race/ethnicity

Data Analyses

SAS and SUDAAN were used to estimate appropriate standard errors of point estimates for the complex survey data. All data were weighted to provide representative estimates to the adult U.S. population.

Descriptive analyses were conducted for all variables.

Chi-Square and Pearson Correlation were conducted to examine bivariate associations between outcome and "predictor" variables.

Three multivariate logistic regression models were conducted to predict awareness, use, and perceptions of low carbohydrate diets. Variables significantly associated (at p<.05) with outcome variables in bivariate analyses were included in the models. Response categories for some variables were collapsed to avoid over-parameterizing the models.

Results

Sample characteristics

	Total N	%
Gender		
Males	1929	48.1%
Females	3657	51.9%
Age		
18-34	1037	31.0%
35-44	976	20.3%
45 or older	3567	48.7%
Education		
Less than High School	687	14.5%
High School Graduate	2992	62.0%
College Graduate	1696	23.5%
Race/Ethnicity		
Non-Hispanic White	4103	69.9%
Non-Hispanic Black	438	10.0%
Hispanic	496	13.0%
Other	299	7.2%
Income		
Less than \$25,000	1202	24.3%
\$25,000 to <\$50,000	1217	25.4%
\$50,000 to < \$75,000	924	22.0%
\$75,000 or more	1150	28.4%

Awareness, use, and perceptions of low carbohydrate diets:

	Total N	Percent
Aware of low carbohydrate diets	5428	86.6%
Tried low carbohydrate diet during last 12 months	4832	19.4%
Believe low carbohydrate diets are a healthy way to lose weight	4209	33.6%

Awareness, use, and perceptions of low carbohydrate diets:

	% Aware	% Use	% Believe Healthy
Gender			
Males	83.1%	16.5%	37.5%
Females	89.8%	21.9%	30.5%
Age			
18-34	83.9%	14.6%	29.4%
35-44	87.2%	21.9%	33.6%
45 or older	88.1%	21.3%	36.6%
Education			
Less than High School	63.8%	21.8%	53.9%
High School Graduate	88.7%	18.7%	34.1%
College Graduate	96.0%	20.5%	24.2%
Race/Ethnicity			
Non-Hispanic White	93.3%	19.1%	28.4%
Non-Hispanic Black	75.1%	19.4%	46.8%
Hispanic	64.5%	17.6%	52.9%
Other	81.8%	26.1%	40.6%
Income			
Less than \$25,000	75.5%	17.7%	44.4%
\$25,000 to <\$50,000	85.6%	19.0%	34.4%
\$50,000 to < \$75,000	94.5%	22.9%	32.1%
\$75,000 or more	94.0%	21.9%	27.1%

Behavior and attitudes about nutrition recommendations:

	Total N	Percent
Change behavior in response to nutrition recommendations	1739	21.7%
Agree that there are so many recommendations that it is hard to know which to follow	2712	82.0%

Attention to nutrition information:

During the past 12 months exposed to nutrition information via:	Total N	% "a lot" or "some"
Television	1628	63.2%
Newspapers	1510	48.3%
Magazines	1509	61.0%
Internet	1085	39.9%
Healthcare Professional	1658	39.7%

Logistic Regression Models

	Model 1 Aware OR	95% CI	Model 2 Tried OR	95% CI	Model 3 Believe Healthy OR	95% CI
Gender						
Males	1	****	1	****	1	****
Females	1.74	1.14-2.68	1.32	0.88-1.98	0.59	0.36-0.96
Age						
18-34	Variable		1	****	1	****
35-44			1.52	0.79-2.91	2.61	1.29-5.29
45 or older			1.86	1.12-3.11	2.51	1.43-4.40
Education						
< High School (HS)	1	****	Variable		1	****
HS Graduate	3.87	2.20-6.79	not in model		0.27	0.10-0.71
College Graduate	8.07	2.62-24.9	not in model		0.2	0.06-0.62
Race/Ethnicity						
Non-Hispanic White	1	****	Variable		1	****
Non-Hispanic Black	0.29	0.14-0.60	not in model		2.27	0.99-5.23
Hispanic	0.3	0.18-0.51	not in model		1.52	0.58-3.98
Other	0.27	0.10-0.71	not in model		2.93	1.09-7.88
Income						
Treated as continuous	1.08	0.93-1.26	1	0.89-1.13	0.93	0.84-1.03
Change Behavior According to Recommendations						
No	1	****	Variable		1	****
Yes	0.46	0.28-0.78	not in model		2.69	1.65-4.39
Information from Internet:						
Some or a lot	Variable		1	****	Variable	
Not at all or a little	not in model		0.88	0.57-1.36	not in model	
Information from Doctor:						
Some or a lot	Variable		1	****	Variable	
Not at all or a little	not in model		0.6	0.38-0.94	not in model	

Summary and Conclusions

Summary:

Awareness of low carbohydrate (carb) diets in the US population is high (86.6%); key predictors of awareness are:

- Gender - higher awareness among females
- Education - higher awareness with greater education
- Race/ethnicity - lower awareness among racial/ethnic minority groups

Nearly 20% of our sample had tried a low carb diet in the last year; key predictors of use are:

- Age: Increased use with increasing age.
- Respondents who reported that they heard information about nutrition from a doctor "some" or "a lot" were more likely to use a low carb diet.

One third of our sample agreed that low carb diets are a healthy way to lose weight; key predictors of perceived healthfulness are:

- Gender: females perceive these diets as less healthy.
- Age: perceptions in whether these diets were healthy increased with age.
- Education: perceptions in whether these diets were healthy decreased with education.
- Race/ethnicity: greater perceived healthfulness among "other" group.
- Greater perceived healthfulness among respondents who change behavior in response to recommendations.

Conclusions:

Public perceptions of current dietary trends and changing nutrition guidelines have not been systematically explored in a nationally representative sample. Our analyses revealed a high level of awareness of low carb diets, with lower levels of reported use and perceived healthfulness of the diets with interesting differences by sociodemographic characteristics. Data collection for this study occurred when these low carb diets appeared to be at their peak in the media.