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ATTITUDES AND BELIEFS AFFECT FREQUENCY OF EATING OUT IN THE LOWER MISSISSIPPI DELTA

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Abstract: Attitudes and beliefs reflecting cultural values can have a positive or negative influence on eating behaviors. Eating out may negatively affect diet quality through increased fat intake and larger portion sizes. In a representative sample of the Lower Mississippi Delta (LMD) consisting of 1601 African Americans (AA) and Caucasian (C) adults, the aim was to show that the frequency of eating out was lower among residents having a better attitude toward diet in addition to ethnic and socioeconomic differences. A comparison of those who thought it was important to (1) restrict salt (2) eat fruits and vegetables, (3) consume adequate fiber, (4) eat a variety of foods, (5) eat 2 servings of dairy daily (6) maintain a healthy weight, and (7) exercise regularly to those who did not. Those who thought it was important to eat plenty of fruits and vegetables ($P< 0.001$) ate out less often. Those who also thought that it was important to consume adequate fiber ($P<0.005$) also ate out less often, in addition to those who thought it was important to eat 2 servings of dairy daily ($P <0.05$) and have fruit for dessert ($P<0.007$). Using regression modeling with frequency of eating out as the outcome, religiosity, income, education, ethnicity, gender, food security, knowledge, and age as independent variables, the data showed that all but religiosity, food security and education were significant. Being younger, Caucasian or male or having a lower income or better healthy eating attitude resulted in eating out more. Previous research found diet to be poorer in those with lower income and education, and those residing in food insecure households. This suggests that income, age, ethnicity, and healthy

eating perspective are important predictors of how often people eat out. Sensitivity to the beliefs and attitudes is important when planning effective nutrition interventions.

Keywords: eating out; rural; attitudes and beliefs

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Personal and environmental factors influence eating behaviors and ultimately nutrient intake (National Dairy Council, 2005). Eating out is an important part of daily life in the United States. Food consumed away from home is at an all-time high and growing. The trend in buying prepared food has gained further impetus from the growing number of restaurants offering take-out and delivery services. The number of meals purchased from a restaurant per person increased by 27% between 1984-2004 (Keystone Forum Report, 2006). Time, convenience and value are the major determinants of Americans' choice when they eat out and concerns about healthy foods have now moved up to fourth place from number five in 2004 (Malone & Bland-Campbell, 2005). Annual online surveys to discover Americans' away from home dining habits and nutritional preferences indicated a rising health awareness among the population, increasing from 50 percent concerned about nutrition in 2004 to 54 percent in 2005. Additionally, quick and easy meals and the financial value of larger portions continue to be prime motivators (vendingmarketwatch, 2009).

As income increases, consumers eat away from home more frequently and spend a greater proportion of their food dollar on meals away from home (National Restaurant Association, 2006; Keystone Forum Report, 2005). Socioeconomic differences in healthy lifestyles are associated with difference in attitudes to health (Wardle, 2003). Gender also influences diet. More women than men are pursuing nutritionally sound diet. Women are more likely than men to pursue healthier menu selections (Malone & Bland-Campbell, 2005).

Results from the Bureau of Labor Statistics Consumer Expenditure Survey found that income, education, age, and ethnicity are important predictors of the probability of eating out. Region of residence also plays a role, with Westerners being least likely and Midwesterners being most likely to purchase meals away from home. Similarly, Northeasterners are about as likely as Southerners to purchase, meals away from home. Additionally, degree of urbanization plays a role, with rural families less likely to purchase meals away from home. This may be due to fewer and less accessible restaurants in rural areas than urban areas (Paulin, 2000).

Frequency of eating at fast-food restaurants has been positively associated with fair/poor self-rated health, weak belief in a diet-cancer relationship, low self-efficacy for healthy eating, weight dissatisfaction, and perceived difficulties of preparing healthy meals and ordering healthy foods in restaurants (Satia, Galanko, & Siega-Riz, 2004). Satia et al., (2004) found that frequency of eating at fast-food restaurants did not differ significantly by sex, education, smoking, ability to purchase healthy foods or knowledge of the Food Guide Pyramid.

The objectives of this study were to examine the influence of attitudes, beliefs, and dietary habits on frequency of eating out by rural adults in the Lower Mississippi Delta (LMD); to determine if the frequency of eating out is influenced by diet and health beliefs; and examine cultural and socioeconomic differences in eating out practices. Two hypotheses were tested 1) frequency of eating out is positively associated with diet and health beliefs and practices and 2) cultural and socioeconomic differences influence diet and health beliefs and eating out frequency.

METHODS

Diet habits/opinions, food security, and religiosity were collected in the Foods of Our Delta Study (FOODS 2000). FOODS 2000 was a cross sectional baseline survey that assessed the nutrition and health status of a representative sample of the population three years of age and older in 36 LMD counties in Arkansas, Louisiana and Mississippi. A two-stage stratified cluster-sampling plan was used to assign the 36 Delta NIRI counties to nine strata according to population size, percent of population who are black, and percent living below the federal poverty level. The data were collected between January and June 2000. FOODS 2000 utilized random-digit dialing methodology to identify the sample. The sample includes 1662 adults who completed the Food Availability and Opinion Questionnaire (FAOS) and the Food Security Questionnaire. For analysis in this study, only Caucasians and African Americans 18 years and older were included. LMD subpopulation consisted of 1493 adults. Diet-health related beliefs and 24-hour recall data were obtained in computer assisted telephone interviews (Bogle et al., 2001).

The FAOS asked respondents to indicate how important is it to practice seven health and wellness recommendations 1) Use salt or sodium only in moderation?, 2) Choose a diet with plenty of fruits and vegetables?, 3) Choose a diet with adequate fiber?, 4) Eat a variety of foods?, 5) Eat at least two servings of dairy products daily?, 6) Maintain a healthy weight?, and 7) Exercise regularly? Dietary habits were determined by respondents describing how often they consumed seven healthy foods, 1) Eat light, low-fat, or fat-free cold cuts or luncheon meats instead of regular luncheon meats?, 2) Use skim, fat-free, or 1% milk instead of 2% or whole milk?, 3) Eat light, low-fat, or fat-free cheeses, when you eat cheese?, 4) Eat light, low-fat, or fat-free ice cream, frozen yogurt or sherbet instead of regular ice cream?, 5) Use low-calorie or fat-free salad dressings instead of regular salad dressing?, 6) Have fruit for dessert when you eat dessert?, and 7) Eat fish or chicken or turkey instead of meat? (Meat refers to beef, pork, or lamb).

As a measure or religiosity, respondents were asked "in general, how important is your religion in your day to day life?" A dichotomous variable was constructed (very important and not important). The responses to the 18 item

US Food Security Survey module were used to construct the 12-month food security scale and to classify households into three categories of food security status according to the US food security scale-food secure, food insecure without hunger & food insecurity, and food insecure with hunger (Andrews, Nord, Bickel, & Carlson, 2000; Bickel, Nord, Price Hamilton, & Cook, 2000). For the present analysis, food security status was collapsed to a dichotomous variable (food secure and food insecure) since the three-level variable when cross-tabulated with levels of other variables resulted in few responses in some cells.

The primary dependent analysis variable was based on the question, "During the past week, how many meals did you eat that were not prepared in your home? This includes meals eaten in someone else's home and in restaurants, or brought home from restaurants or stores as carry out."

All analyses were weighted using SUDAAN Software for the Statistical Analysis of Correlated Data, Copyright Research Triangle Institute, February 2005, version 9.0. Descriptive statistics were used to summarize demographic data. Logistic regression modeling was used to investigate which variables influenced eating out. The outcome was eating out (yes/no). Independent variables were demographics and attitudes. Other variables measured included frequency of meals eaten away from home; diet and health attitudes; dietary habits; demographics; religion; and food security.

RESULTS AND DISCUSSION

The demographic profile of the participants is shown in Table 1. Of the 1493 participants, there were 40% who were 25-44 years old, 55% Caucasian, 54% female, 44% (44.88%), (45%) instead of 44% over $30,000 income category, 77% was high school graduates and beyond, 80% was categorized as food secure, and 81% indicating that religion was very important in day to day life.

Results indicated that adults ate an average of 3 meals away from home each week. Table 2 shows the number of meals eaten away from home by demographic characteristics. Differences by age ($P \leq .0001$), race ($P \leq 0.006$), gender ($P \leq 0.001$) and income ($P \leq 0.0001$) were observed. Greater number of meals eaten out were by younger, Caucasian, male, and higher income respondents.

LMD adults who indicated it was not important to practice four of the seven dietary recommendations ate more meals out (Table 3). Respondents who considered it important to use salt or sodium only in moderation ($P \leq 0.023$), choose a diet with plenty of fruits and vegetables ($P \leq 0.001$), choose a diet with adequate fiber ($P \leq 0.0001$), or eat at least two servings of dairy products daily ($P \leq 0.05$) ate out less often.

Dietary habits were determined by respondents describing how often they consumed certain healthy foods. Differences were observed in respondents who did not eat light, low-fat, or fat-free ice cream, frozen yogurt or sherbet instead of regular ice cream ($P \leq 0.032$) or have fruit for dessert ($P=0.0066$). In the regression model, consuming light, low-fat , or fat-free cold cuts or luncheon meats ($P \leq 0.3$), skim milk or low-fat milk ($P \leq 0.5$), cheese ($P \leq 0.2$) and fish, chicken or turkey ($P \leq 0.9$) showed no difference (Table 3).

Table 1: *Demographic Characteristics of Adults in the LMD*

Characteristic	Number	Weighted Percentage	Standard Error (SE)
Age			
18 to 24	151	13.08	1.01
25 to 44	573	40.27	1.06
45 to 64	480	31.25	0.87
65 and up	289	15.4	0.81
Race			
Caucasian	745	55.07	0.49
African American	748	44.93	0.49
Gender			
Male	548	45.98	0.45
Female	945	54.02	0.45
Income			
$0-$14,999	480	28.04	1.2
$15,000-$29,999	409	27.08	1.31
$30,000+	604	44.88	1.55
Education			
<High School	354	22.96	1.28
High School +	1139	77.04	1.28
Household Food Security			
Secure	1167	79.61	1.12
Insecure	326	20.39	1.12
Religiosity			
Very Important	1228	80.59	1.06
Not Important	265	19.41	1.06
Total	1493	100	0

In the regression model exercise and healthy weight opinion showed no difference (P≥0.1) with regard to number of meals eaten away from home. Variety opinion showed no difference (P≥.4) and religion (P≥.6) and food security did not make a difference (P≥.2) (Table 4, Table 5).

Table 2: *Summaries of number of meals eaten out by select Demographics*

Variable	Levels	Sample Size	Mean	SE Mean	P-value
Total	Total	1491	3.33	0.097	
Race	White	745	3.77	0.15	0.0058
	Black	746	2.78	0.124	
Sex	M	548	3.84	0.179	0.0095
	F	943	2.89	0.107	
Income	$0-$14,999	479	2.16	0.105	<0.0001
	$15,000-$29,999	408	3.19	0.206	0.0307
	$30,000+	604	4.14	0.153	
Education	< HS	353	2.44	0.235	0.1591
	GE HS	1138	3.59	0.108	
Age	18 to 24	150	4.19	0.369	0.0002
	25 to 44	572	3.41	0.127	0.0002
	45 to 64	480	3.55	0.236	0.0002
	65 and up	289	1.93	0.144	

This study found that eating out is increasing in the LMD. These data are consistent with other findings which reported that Americans are eating out more frequently (National Restaurant Association, 2006; Malone & Bland-Campbell, 2005). LMD adults ate an average of 3.33 meals away from home per week compared to 3-4 times a week for African American females in Tennessee (Hargreaves, Schlundt, & Buchowski, 2002) and currently 5-5.6 meals on average per week for US adults (Malone & Bland-Campbell, 2005; Consumers Insight Magazine, 2006) .

Respondents in this study were younger, Caucasian, male, and had a higher income. Empirical studies have found that households with older members tend to dine less frequently at fast food establishments (Stewart, Noel, Bruhan, Nayga Jr., 2004). Race and education are also significant determinants of how much a household spends away from home. Between 1998 and 2000, when all other variables are set at their mean value, an African American household spent less per person at full-service restaurants than did other households (Stewart, Noel, Bruhan, Nayga Jr., 2004). Today's away-from-home

dining trends are being shaped by Boomers (National Restaurant Association, 2005) and Millennials (Health and Wellness Perspectives, 2005).

A study of African American consumers in New Jersey found that these consumers eat out less frequently compared to the general population and the younger generation behaved no differently than the general population. In terms of food choices and choices for restaurant types, African-American consumers had similar choice to that of the general population, i.e., both groups had similar selections. Similarly, the factors that influenced food away from home behavior of the general population, such as taste-quality of food and ambience, were also common to African-American consumers. Nutritional or healthy food aspect of food eaten away from home was ranked very low among these consumers (Pert & Bhuyan, 2007).

Table 3: *Comparisons of mean number of times eating out*

Contrast	Sample Size	Difference	SE Diff	P-value
Demographics				
Race (White vs Black)	1491	0.99	0.201	<0.0001
Sex: (M vs F)	1491	0.95	0.216	0.0001
Income (Low vs Med)	887	-1.03	0.242	0.0001
Income (Low vs High)	1083	-1.98	0.184	<0.0001
Income (Med vs High)	1012	-0.95	0.255	0.0005
(Important vs Not)				
Use salt in moderation	1491	-0.47	0.2	0.024
Choose fruits and vegetables	1491	-1.29	0.281	<0.0001
Adequate fiber	1491	-0.88	0.203	0.0001
Variety of foods	1491	-0.25	0.28	0.3708
2 servings of dairy daily	1491	-0.62	0.227	0.0084
(Almost Always or Always vs Other)				
Light, low-fat cold cuts/lunch meats	1491	-0.32	0.287	0.28
Skim milk, reduced fat	1491	-0.13	0.183	0.47
Low-fat/fat-free cheeses	1491	-0.43	0.37	0.24
Low-fat/fat-free ice cream/yogurt	1491	-0.49	0.221	0.032
Low-calorie/fat-free salad dressings	1491	-0.73	0.261	0.0066
Fish, chicken, Turkey	1491	-0.03	0.207	0.896
Religiosity (Very Important vs Other)	1491	-0.58	0.281	0.042
Education (Less than HS vs HS+)	1491	-1.15	0.264	0.0001
Food SEC (Food secure vs Food Insecure)	1491	1.1	0.222	<0.0001

These findings suggest that the frequency of eating out was lower in those having a better attitude to diet in addition to ethnic and socioeconomic differences. Socioeconomic differences in healthy lifestyles are associated with differences in attitudes to health. A recent ERS report showed that increase in income will have the greatest impact on the away-from-home market (Stewart, Noel, Bruhan, Nayga Jr., 2004). Frequency of eating at fast-food restaurants was positively associated with fair/poor self-rated health and weak belief in a diet-cancer relationship (Satia, Galanko, & Siega-Riz, 2004). Frequency of eating at fast food restaurants was found to be associated with higher weight and less healthy eating habits (Jeffrey, Baxter, McGuire, & Linde, 2006).

Table 4: *Parameter estimates for model for number of meals eaten out*

Independent Variables	Effect	Beta	SE Beta	T	P-value
Intercept		2.93	0.57	5.15	<0.0001
Race	White	0.6	0.21	2.86	0.0058
	Black	0	0		
Sex	M	0.59	0.22	2.68	0.0095
	F	0	0		
Income	$0-$14,999	-1.16	0.25	-4.58	<0.0001
	$15,000-$29,999	-0.57	0.26	-2.21	0.0307
	$30,000+	0	0		
Diet and Health Opinion Mean		-1.1	0.4	-2.75	0.008
Dietary Habits Mean		-0.43	0.36	-1.19	0.2375
Religiosity	Very Important	0.15	0.29	0.51	0.6112
	Other	0	0		
Education	<HS	-0.43	0.3	-1.43	0.1591
	HS+	0	0		
Age Group	18 to 24	1.69	0.42	4.01	0.0002
	25 to 44	0.9	0.22	4.01	0.0002
	45 to 64	1.11	0.28	3.92	0.0002
	65 and up	0	0		
Food Security	Food Secure	0.27	0.21	1.26	0.2123
	Food Insecure	0	0		

Dietary practices of eating low-fat or fat-free dairy desserts and fruits as desserts were associated with eating out less. A study in North Carolina found that frequency of eating at fast-food restaurants was positively associated with perceived difficulties of preparing healthy meals and ordering healthy foods in restaurants. Respondents did not differ significantly by smoking, ability to

purchase healthy foods or knowledge of the Food Guide Pyramid (Satia, Galanko, & Siega-Riz, 2004). Vegetable intake was inversely related to frequency of reported "fast food" restaurant use in Minnesota adults (Jeffrey, Baxter, McGuire, & Linde, 2006).

Table 5: *ANOVA table for model for number of meals eaten out*

Contrast	DF	Wald F	P-value
RACE	1	8.18	0.0058
SEX	1	7.19	0.0095
Income	2	10.68	0.0001
Diet and Health Opinion Mean	1	7.54	0.008
Dietary Habits Mean	1	1.42	0.2375
Religiosity	1	0.26	0.6112
Education	1	2.03	0.1591
Age Group	3	8.83	0.0001
Food Security	1	1.59	0.2123

CONCLUSIONS

Socioeconomic differences in healthy lifestyle behaviors are associated with differences in eating out frequency. LMD adults who were younger, Caucasian, male or have higher incomes ate out more. LMD adults with a better healthy eating attitude ate out less. Optimal diet and health attitudes influence eating out frequency. Nutrition concerns, demographic trends, rising income levels affect away-from eating. Since the trend of eating out frequently is expected to continue, incorporating knowledge of beliefs and attitudes is important when planning effective nutrition interventions with emphasis on away-from-home foods. It is important to help consumers understand how food consumed away from home contributes to overall nutritional quality of the diet and to learn how to make healthful food and beverage choices when eating away from home. Interventions designed to promote healthy lifestyle behaviors and improve the translation of positive attitudes to dietary choices among LMD adults would be useful.

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