



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Intergenerational Use of and Attitudes Toward Food Labels in Louisiana

Patricia E. McLean-Meynsse and Jock J. Summers

Results from a random sample of 1,300 households in Louisiana suggest that seniors are the most frequent users of food labels, but they are also more likely to agree that labels are hard to interpret. Consumers in the 18-to-25 age group are more likely to use friends, relatives, and food-company publications as their main sources of nutritional information.

The United States is facing a serious health crisis because of the rising number of overweight and obese citizens. Although the country's obesity problem did not occur overnight, it has now reached epidemic levels. Using data from the National Health and Nutrition Examination 2003–2004 Survey (NHANES), the Centers for Disease Control (CDC) reported that 66.5 percent of adults aged 20 years and older are either overweight or obese, and that 13.9 percent of children between 2 and 5 years old, 18.8 percent of children (6–11 years) and 17 percent of adolescents (12–19 years) are overweight. Consequently, more than 12.5 million children and adolescents aged 2–19 years old were overweight, and more than 66 million adults were obese (32.2 percent of the population). Five percent of adults between 20 and 74 years of age were excessively or morbidly obese (CDC 2006a, 2006b). The NHANES data also suggested that overweight and obesity rates increased from 1999 levels across gender, race, age, and ethnic groups (CDC 2006a, 2006b).

The prevalence of overweight among girls grew from 13.8 percent in 1999 to 16 percent in 2004, while that for boys rose from 14 to 18.2 percent over the same period. A higher percentage of African-American girls were overweight compared to other ethnic groups; 30 percent of Caucasian adults were obese compared to 45 percent of African Americans; adolescents were less likely to be overweight than were children; and younger adults were less likely to be obese than older adults (CDC 2006b). Miech et al. found that associations between the prevalence of overweight adolescents and poverty status dif-

fered by age stratum. For example, there were no statistical differences in overweight and poverty status for 12–14-year-old adolescents. However, wide disparities existed between weight and poverty status among all ethnic groups for adolescents aged 15 to 17 years old (Miech et al. 2006).

Serious health problems have been associated with being overweight or obese. And research suggests that overweight or obese individuals have increased risks for hypertension, high cholesterol, type-2 diabetes, cardiovascular disease, cerebrovascular disease, stroke, gout, sleep apnea, osteoarthritis, gallbladder disease, and some forms of cancer (CDC 2004; Crane et al. 1997; Louisiana Department of Health and Hospitals 2006). Super-sized fries, lack of sleep, and the disdain for exercise have increased U.S. demand for super-sized wheelchairs, hospital beds, and caskets (Lamberg 2006). Overweight children also are more likely to suffer from depression and low self-esteem and to become obese adults. The risks for childhood obesity are linked to parental weight, working status of mothers, and number of hours spent watching television and playing video games, (Adachi-Mejia et al. 2007; Campbell, Crawford, and Ball 2006; Crepinsek and Burstein 2004; Gable, Chang, and Krull 2007; Variyam 2001). Additionally, young girls were more likely to have lower test scores if they were not overweight in kindergarten but became overweight by the end of the third grade (Datar and Sturm 2006).

The situation is no different in Louisiana. Between 1991 and 2004, the state's adult obesity rate grew from 16 to 27 percent, and the percentage of overweight or obese residents rose from 49 to 63 percent (Louisiana Department of Health and Hospitals 2006). More recent information from the *Trust for America's Health* (2007) suggests that the trend is continuing. Louisiana now ranks fourth in the country for obesity in its adult population (28.2

The authors are professor and undergraduate student, respectively, Division of Agricultural Sciences, Southern University, Baton Rouge, Louisiana.

Financial support for the project was provided by the United States Department of Agriculture's Cooperative State Research, Education, and Extension Service, and by Southern University Agricultural Research and Extension Center.

percent) and ninth in terms of overweight youths aged 10–17 (17.2 percent). The report also suggests that about 31.3 percent of adults in the state do not engage in any physical activity, compared to 22 percent at the national level (*Trust for America's Health* 2007).

Because of rising medical costs and research linking diet and health, Congress passed the Nutrition Labeling and Education Act in 1990 to provide consumers with easier access to nutritional information. This Act was different from previous legislation because it regulated nutrition labeling and nutritional claims such as fat-free or low in fat. The new food labels were to provide information on serving size, servings per container, and the amount per serving of calories, total fat, cholesterol, sodium, total carbohydrate, dietary fiber, sugars, protein, and other nutrients (Golan et al. 2000). Nutritional Facts panels were introduced on most processed foods in mid-1994. Consumers therefore had an easily accessible source of nutritional information for more than 13 years, yet overweight and obesity rates have been trending upwards. This suggests that consumers may not be using the labels to make healthier food choices.

Given the tripling in overweight and obesity rates in children and adults over the past 30 years, the difficulty in achieving long-term weight loss, and the increased costs associated with treating diet-related health problems, every step must be explored to avert these rates from rising any further. Our study examines nutritional practices and attitudes among four groups of consumers in Louisiana to determine whether additional strategies are needed to help consumers to make better food choices.

Objectives

The study's objectives are to assess levels of food-label use, attitudes toward food labels, and the sources used for nutritional information by Generation Next (18–25); Generation X (26–40); Baby Boomers (41–60); and Seniors (> 60) in Louisiana.

Data and Procedures

Data were compiled from a random sample of primary grocery shoppers and/or meal preparers in Louisiana's 64 parishes in the fall of 2002. The

survey was conducted by a market research firm and contained 1,300 participants. The comprehensive data set included information on nutritional awareness and knowledge of links between diet and health, use of Nutrition Facts panels in food buying and meal preparation decisions, levels of understanding of food-labeling information, primary sources of nutritional information, perceptions of overall diet and health, food-security issues, and respondents' socioeconomic and demographic characteristics.

This study reports information on how often respondents read food labels (READ), the usefulness of the labeling information (USEFUL), levels of confidence in using labels to choose a healthy diet (CONFIDENT), levels of difficulty in interpreting the labeling information (HARD), respondents' interest in learning more about labels (LEARN), whether labeling information is superior to own knowledge (BETTER), and the main sources of nutritional information for the four age groups. The sources of nutritional information are doctor, nurse, or other health professional (DOCTOR); nutritionist, dietitian, home economist, or extension agent (AGENT); relatives or friends (FRIENDS); radio or television programs (RADIO); newspapers, magazines, or books (PAPER), government or health-organization publications (HEALTH); and food-company publications (FOOD).

For label use and information sources, the response categories are (4) often, (3) sometimes, (2) rarely, and (1) never. The response categories for the other statements are (5) strongly agree, (4) somewhat agree, (3) neutral, (2) somewhat disagree, and (1) strongly disagree. Given the ordinal nature of the response categories, we employed the Kruskal-Wallis (K-W) rank test for differences in mean ranks among the four age groups. Triola (2001) expresses the K-W Rank Test as

$$(1) \quad H = \frac{12}{N(N+1)} \left(\frac{R_1^2}{n_1} + \frac{R_2^2}{n_2} + \cdots + \frac{R_k^2}{n_k} \right) - 3(N+1)$$

where N = total number of observations in all samples combined, K = number of samples, R_1 = sum of ranks for Sample 1, and n_1 = number of observations in Sample 1. For Sample 2, the sum of ranks is R_2 and the number of observations is represented by

n_2 . Similar notations apply to the other samples. If the data have ranks R instead of original values x , Triola (2001) suggests that many components are predetermined, and that the sum of all ranks can be expressed as $N(N+1)/2$. The following expression combines the weighted variances of ranks to produce the test statistic H (Triola 2001):

$$(2) \quad H = \frac{12}{N(N+1)} \sum n_i \left(\bar{R}_i - \bar{R} \right)^2,$$

$$\text{where } \bar{R}_i = \frac{R_i}{n_i} \quad \bar{R} = \frac{\sum R_i}{\sum n_i}.$$

Under the K-W test, the null hypothesis for a particular response category is that the rankings are the same across the age groups. The alternative hypothesis is that at least one of the rankings differs across groups. For large samples, the test statistic can be approximated by the chi-square distribution with $k-1$ degrees of freedom.

Empirical Results and Discussion

Based on the age groupings, 13 percent of the respondents are classified as Generation Next (GenNext), 23 percent as Generation X (GenX), 36 percent as Baby Boomers (GenBaby), and 26 percent as seniors (Senior). Two percent of the respondents did not provide age information. The results in Table 1 suggest that there are no statistically significant differences in the rankings for the

frequency of using labels among the four groups of consumers. Although not statistically significant, the mean rankings for label use are lower among the 18–25 and the 26–40 age groups than among older consumers. Compared to other age groups, members of Generation Next and Generation X are least likely to agree that the food-labeling information is useful. Baby Boomers are more confident that they know how to use labels to make better food choices than are other age groups. The younger age groups tend to find food labels easier to interpret, but express some interest in learning more about labels. A lower percentage of consumers in the 18–25 age group agreed with the statement that using foods labels to choose foods was better than relying on their own knowledge about nutrition.

Table 2 shows the rankings for the major sources consumers use for nutritional information. Overall, respondents get their nutritional information from healthcare professionals, friends and relatives, and from government and food-company publications. Radio, television, newspapers, magazines, and books do not statistically significantly influence consumers' rankings of nutritional sources. Thus these sources are not major players in the dissemination of nutritional information to consumers. Older respondents rely more on healthcare professionals for nutritional information than do younger consumers. The main nutritional sources for 18–25-year-old respondents are friends, relatives, and food-company publications.

Table 1. Label Use and Attitudes Toward Food Labeling Information.

Attributes	GenNext (18–25)	GenX (26–40)	GenBaby (41–60)	Senior (>60)	χ^2	P-value
Read	621.41	617.24	646.40	646.99	2.2190	0.5280
Useful	609.27	616.50	670.88	620.20	8.0550**	0.0450
Confident	565.84	618.94	661.83	651.92	11.5210***	0.0090
Hard	589.86	627.09	630.06	676.43	7.4970**	0.0580
Learn	656.84	668.58	608.60	636.97	5.7930	0.1220
Better	601.13	652.44	658.76	609.88	6.7190*	0.0810

Note: (*), (**), and (***) denote statistical significance at the 10-percent, 5-percent, and 1-percent levels of probability, respectively.

Conclusion

Louisiana now ranks fourth in the country in the level of obesity of its adult population (28.2 percent) and ninth in terms of overweight youths aged 10–17 (17.2 percent). About 31.3 percent of adults in the state do not engage in any physical activity, compared to 22 percent at the national level. Several studies have found strong links between watching television and obesity, and that watching television can elevate blood pressure in obese children and teenagers. However, it does not appear that this medium is being used to disseminate nutritional information. Our study suggests that consumers 18–25 years old rank radio and television as their fourth source for nutritional information, and that this group is more likely to rely on relatives, friends, and food-company publications for nutritional information. Given the rising rates of overweight and obesity among Generation Next, every effort should be made to educate these consumers and their parents on how to use food labels to make healthier food choices. Additionally, radio, television, and the Internet also must be used extensively to disseminate the nutritional information to consumers.

References

- Adachi-Mejia, A.M., M. R. Longacre, J. J. Gibson, M. L. Beach, L. T. Titus-Ernstoff, and M. A. Dalton. 2007. "Children with a TV in Their Bedroom at Higher Risk for Being Overweight." *International Journal of Obesity* 31:644–651.
- Campbell, K. J., D. A. Crawford, and K. Ball. 2006. "Family Food Environment and Dietary Behaviors Likely to Promote Fatness in 5–6 Year-Old Children." *International Journal of Obesity* 30: 1272–1280.
- Centers for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Nutrition & Physical Activity. 2004. "Overweight and Obesity: Health Consequences." <http://www.cdc.gov/nccdphp/dnpa/obesity/consequences.htm>. Accessed June 22, 2004.
- Centers for Disease Control, National Center for Health Statistics. 2006a. "Overweight." <http://www.cdc.gov/nchs/faststats/overwt.htm>. Accessed June 21, 2006.
- Centers for Disease Control, National Center for Health Statistics. 2006b "Obesity is Still a Major Problem." http://www.cdc.gov/nchs/pressroom/06facts/obesity03_04.htm. Accessed June 21, 2006.
- Crane, S. S., M. A. Wojtowycz, T. D. Dye, R. H. Aubry, and R. Artal. 1997. "Association between Pre-Pregnancy Obesity and the Risks of Cesarean Delivery." *Obstetrics and Gynecology* 89(2): 213–216.
- Crepinsek, M. K., and N. Burstein. 2004. *Maternal Employment and Children's Nutrition: Volume II, Other Nutrition-Related Outcomes*. E-FAN-04-006-2, U.S. Department of Agriculture,

Table 2. Rankings for Sources of Nutritional Information.

Attributes	GenNext (18–25)	GenX (26–40)	GenBaby (41–60)	Senior (>60)	χ^2	P-value
Doctor	591.77	591.31	663.86	660.10	12.0570***	0.0070
Agent	599.08	608.90	661.24	644.93	6.4130*	0.0930
Friends	700.27	656.32	658.21	558.31	25.1070***	0.0000
Radio	612.52	629.96	649.28	636.51	1.4960	0.6830
Paper	631.60	639.93	648.17	620.04	1.3390	0.7200
Health	599.97	599.75	664.88	647.39	8.4380**	0.0380
Food	717.51	641.12	652.52	570.63	22.4550***	0.0000

Note: (*), (**), and (***) denote statistical significance at the 10-percent, 5-percent, and 1-percent levels of probability, respectively.

- Economic Research Service.
- Datar A. and R. Sturm. 2006. "Childhood Overweight and Elementary School Outcomes." *International Journal of Obesity* 30:1449–1460.
- Gable, S., Y. Chang, and J. L. Krull. 2007. "Television Watching and Frequency of Family Meals Are Predictive of Overweight, Onset and Persistence in a National Sample of School-Aged Children." *Journal of the American Dietetic Association* 107(1):53–61.
- Golan, E., F. Kuchler, and L. Mitchel, with contributions from C. Greene and A. Jessup. 2000. *Economics of Food Labeling*. U.S. Department of Agriculture, Economic Research Service, Agricultural Economic Report, Number 793.
- Lamberg, L. 2006. "Rx for Obesity: Eat Less, Exercise More, and—Maybe—Get More Sleep." *Journal of the American Medical Association* 295(20):2341–2344.
- Louisiana Department of Health and Hospitals. 2006. *Louisiana Health Report Card 2005*. http://www.dhh.louisiana.gov/offices/publications/pubs-275/health_report_card2005.pdf. Accessed June 21, 2006.
- Meich, R.A., S. K. Kumanyika, N. Stettler, B.G. Link, J.C. Phelan, and V.W. Chang. 2006. "Trends in the Association of Poverty with Overweight among U.S. Adolescents, 1971–2004." *Journal of the American Medical Association* 295(20):2385–2393.
- Triola, M. F. *Elementary Statistics*. 2001. Eighth Edition. Addison Wesley Longman, Inc.
- Trust for America's Health. 2007. "Louisiana Adults 4th Most Obese in Country; Youth 9th Most Overweight." <http://healthyamericans.org/reports/obesity2007/release.php?StateID=LA>. Accessed December 12, 2007.
- Variyam, J. N. 2001. "Overweight Children: Is Parental Nutrition Knowledge a Factor?" *Amber Waves* 24(2):18–22.