



Nutrition for Family Living

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September, 2009 Topics

Nutrient Levels are Basically the Same for Organic Foods vs. "Regular"

Factors Affecting Low-income Women's Food Choices and the Perceived Impact of Dietary Intake and Socioeconomic Status on Their Health and Weight

American Heart Association Recommends Limit on Added Sugar Intake

Eating Slowly and Taking Small Bites May Help Prevent Overeating

Nutrient Levels are Basically the Same for Organic Foods vs "Regular"

By Susan Nitzke and Barbara Ingham

A British review of organic and conventionally produced foods examined data from published studies over the past 50 years, at the request of the British government's Food Standards Agency (Dangour AD, Dodhia SK, Hayter A, et al. Nutritional quality of organic foods: a systematic review. *Am J Clin Nutr* 2009;90:680-85, available online: <http://www.ajcn.org/cgi/content/abstract/90/3/680?etoc>). Their conclusion is that there are no important differences in nutrient content between organically and conventionally produced foods. Overall, the levels of vitamin C, phenolic compounds, magnesium, calcium, potassium, zinc and copper were similar, though findings were not always consistent from study to study. Organic crops were found to have higher levels of phosphorus, and conventionally produced crops had higher levels of nitrogen, probably reflecting differences in fertilizing materials/techniques.

Organic produce is grown without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation. Before a product can be labeled "organic," a government-approved certifier inspects the farm where the food is grown to make sure the farmer meets the U.S. Department of Agriculture's organic standards. Companies that handle or process organic food before it reaches the supermarket or restaurant must be certified, too (Source: <http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm114299>).

Keep in mind that organic foods are not always locally grown or produced on small family farms. Now that large companies such as Walmart are selling organic foods, there is an increasing likelihood that consumers will be able to buy organic produce that originated with very large companies, some of which may be overseas.

Although this review article does not support nutritional superiority of organically-produced foods, there may be other reasons for consumers to buy organic foods. The Organic Food Council, a trade association for organic producers, states:

Organic growers use biological and cultural practices as their first line of defense against pests. Methods include crop rotation, the selection of resistant varieties, nutrient and water management, the provision of habitat for the natural enemies of pests, and release of beneficial organisms to protect crops from damage. The only pesticides that are allowed in organic agricultural must be on an approved use, with restricted use. (source:

<http://www.theorganicpages.com/topo/organic/benefits/health.html?fromOta=1&OtaImage=1>)

Implications for Extension Educators

Consumer questions about the potential value of organic food vs. conventionally grown foods have never been simple to answer. Personal decisions are affected by a complicated mix of values and beliefs about the environment, the food system, and agricultural practices. This new study does not change that fact but it should



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help consumers understand that current research does not consistently support claims of superiority for organic foods in terms of nutrient content.

NOTE: A press release on this topic has been prepared for the September 2009 packets of Family Living news releases.



Factors Affecting Low-income Women's Food Choices and the Perceived Impact of Dietary Intake and Socioeconomic Status on Their Health and Weight

By Gayle Coleman

The results of this study provide insight into the factors affecting food choices and health beliefs among low-income women.

Methods

Two researchers conducted fourteen 90-minute focus group interviews with 92 women within a 20 mile radius of the St. Paul, Minnesota area. The women were recruited in low-income neighborhoods at libraries, grocery stores, Special Supplemental Nutrition Program for Women, Infants and Children (WIC) sites, and food shelves/pantries. In addition, one third of the sample was intentionally recruited from homeless shelters.

Tapes of the focus groups were transcribed verbatim and transcripts were coded by the researchers to identify themes and subthemes. Researchers also measured weight and height for each participant, and administered a short questionnaire to collect demographic information and diet/health perceptions.

Results

Forty-seven percent of the women were African-American; 27 percent were Native American; and 13 percent were white. The mean age was 37 years. Over 75 percent of the women were either overweight or obese with an average BMI of 32.9. Average BMI by race/ethnicity was 32.4 for African American, 35.9 for Native American, 31.1 for white and 28.8 for Hispanic.

Average household size was 4.4 persons. Most women were high school graduates (35.6 percent) or had some college/technical school (30 percent.) Approximately 45 percent had annual household incomes of less than \$5000; 23 percent had annual household incomes between \$5000 and \$10,000; and 20 percent had annual household incomes between \$10,000 and \$20,000. Approximately 85 percent received food stamp benefits.

Four major themes emerged from the transcripts: 1) economics of food choice; 2) multiple roles of mother (or female guardians); 3) impact of environmental situation on food choice and eating behavior; and 4) impact of poverty on diet and health. Subthemes under each major theme, differences across ethnicities or residences if they existed, and related points are listed following the major themes.

Economics of food choice

Subthemes of this theme included food stamp usage, employment and usage of other federal food programs.

- *Food stamps.* Most participants were on food stamps and many reported that their benefits did not cover their food needs for the month. Several reported that food stamps covered their food needs for two to three weeks. Many indicated that they were not aware that food stamps were meant as a supplementary source of food. The 16 participants who did not receive food stamps reported barriers to receiving them such as invasion of privacy, not wanting to get involved with the welfare system and the amount of food stamps they would receive not worth the effort to apply. To supplement their food stamp benefits, some participants bought additional food stamps from friends, family and strangers, usually spending 50 cents for each dollar of food stamps purchased. This practice was particularly common with Native American women. Many participants reported using food pantries and soup kitchens to offset not having enough food stamps for the month.
- *Employment.* Approximately 30 percent of the women worked. Some expressed frustration with the trade-off between earned wages and having their food stamp benefits reduced or eliminated.
- *Use of other federal food assistance programs.* Most of the participants' school-age children were eligible for free or reduced-priced school lunch and some reported receiving school breakfast which helped the families save money during the school year. Some participants reported receiving WIC benefits and indicated they especially valued the program for milk.

Multiple roles of mothers (or female guardians) in the household



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Subthemes under this theme included parental attitude, nutrition knowledge and cooking skills. There were no differences found between subgroups for this theme.

- *Parental attitude.* Stress, depression and participants' upbringing affected parental attitude. Participants frequently reported that when food was scarce, children ate first. Some participants reported that if their children said that they were hungry and there was nothing to eat then they felt even more depressed. Some participants reported following mealtime routines and rules similar to those that they experienced growing up and another participant reported avoiding mealtime rules because she did not like being subject to them when she was growing up. One woman stated, "I'm from a traditional family, sit down at the table, finish your plate, and I'm not very traditional, so we kinda eat as needed."
- *Nutrition knowledge.* Participants' nutrition knowledge varied from familiarity with food groups and awareness of the health benefits of fruits, vegetables and lean meats to bogus health claims. However, there was a lot of confusion about nutrition. Some participants were satisfied with their diets but others were frustrated because they could not afford more healthful food items such as lean meats, fresh fruits and vegetables, and organic foods.
- *Cooking skills.* Cooking skills, like nutrition knowledge, varied and ranged from being able to prepare "microwavable stuff" to being able to prepare "full-course meals." There also was a range of interest in cooking. A few participants reported altering their cooking styles, such as baking instead of frying foods, to accommodate family members with health problems.

Environmental situation

Subthemes under this theme included household environment, social environment and food environment.

- *Household environment.* This subtheme included facilities for food storage, cooking, dining and the structure of mealtime routines. Storage space and cooking were more often a barrier for women in homeless shelters. However, families in shelters seemed to eat together more often than families with a home base. Home-based participants frequently reported eating meals in the living room or bedroom while watching television. Participants in all living situations reported variations in mealtime structure. Many reported not eating three meals a day. Participants' mealtime rules varied and included whether the family ate together, whether children were encouraged or allowed to talk during meals and whether the television was on.
- *Social environment.* Family and friends often influenced participants' meal patterns. Some participants reported getting food and transportation to grocery stores from their family and friends. Food sharing was discussed more frequently in the Native American community. However, some participants reported that they did not want to share resources because they did not believe the sharing would be reciprocated.
- *Food environment.* Participants reported using both the normal food system such as retail grocery stores and the food safety net system such as food shelves/pantries. Many women in the inner city reported that grocery stores were not easily accessible. The participants reported that neighborhood meat markets and corner stores were more convenient but that these stores offered limited food items and their prices were higher than other grocery stores. Transportation was a major factor in getting around the food environment. Food safety net resources also varied among neighborhoods. Native American participants reported that there were breakfast and lunch programs for children, food shelves/pantries and church meals available in their community.

Impact of poverty on diet and health

The subthemes under this theme included diet-related conditions, quantity versus quality of food, and a disconnect between diet and health.

- *Diet-related conditions.* Except for Native American participants, the vast majority of participants (77 to 100 percent) rated their diets as 'fair' or 'good.' Approximately 80 percent of Native American participants rated their diets as 'poor' or 'fair'. Similarly, although the majority of all participants rated their children's diets as 'fair' or 'good', Native American participants were less likely to rate their children's diets as 'very good' or 'excellent' (16 percent) compared to other racial/ethnic groups (28 to 50 percent). The majority of African Americans (62 percent) and Native Americans (76 percent) rated their health as 'fair' to 'good' whereas the majority of whites (83 percent) and Hispanics (100 percent) rated their health as 'good' to 'very good.' The most frequently cited health concerns among participants were diabetes, hypertension, high cholesterol and overweight/obesity. Approximately 85 percent of all participants rated their children's health as 'good,' 'very good' or 'excellent.' Participants reported that it



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was challenging both financially and emotionally to maintain health and address health concerns. Some indicated that it was nearly impossible to modify their household's diet to accommodate a health concern due to the added cost.

- *Quantity versus quality of food.* Most participants felt that consuming a healthful diet was unrealistic when living on a limited income. They reported the major components of their diets were meat and starches. Most participants indicated that they were more likely to focus on making food stretch rather than focus on the quality of the food. However, a few participants reported that they were able to make healthier food choices by eliminating less healthful and costly choices.
- *Disconnect between diet and health.* Many participants did not seem motivated to consume a healthier diet and did not seem to understand that some diseases have a dietary component. One participant indicated that she would not make changes in her diet until she was diagnosed with a health problem such as high cholesterol. Many participants reported that heredity was more important in determining their weight or health than the type or quantity of food they were consuming

Discussion

The results of this study indicate the complex interplay of attitudes, beliefs, knowledge and the environment on food choices, and potentially, health and obesity. It also gives us some insight into differences in attitudes and beliefs among people from different racial/ethnic groups or living conditions such as families living in homeless shelter facilities.

Implications for Extension Educators: The observed disconnect between diet and health emphasizes the need for education strategies that suit both the context and culture of the learner's environment. By including relevant education strategies, Extension educators can help low-income families understand the relationship between diet and disease, as well as make more healthful food choices on a limited budget.

References:

Dammann KW, Smith C. Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. *J Nutr Educ Behav.* 2009;41:242-253.

Educational Resources:

Money for Food Curriculum, <http://www.uwex.edu/ces/wnep/teach/mff/index.cfm>

Loving Your Family, Feeding Their Future,

https://www.uwex.edu/ces/flp/apps/flrc/tch_res2/resourceDetails.cfm?rid=382



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American Heart Association Recommends Limit on Added Sugar Intake

By Gayle Coleman and Susan Nitzke

Recently the American Heart Association (AHA) made specific recommendations for Americans to limit their added sugar intake. Data from 2001 to 2004 indicate that the usual intake of added sugars for Americans was 22.2 teaspoons per day. The primary sources of added sugars were soft drinks and other sugar-sweetened beverages. The primary reason for these recommendations is to reduce the intake of empty calories and curb the worldwide pandemic of obesity. However there is some research that suggests an excessive consumption of sugars may be linked with several adverse health conditions such as increased blood triglyceride levels or increases in inflammatory and oxidative stress markers. The AHA recommendations are for women to consume no more than 6 teaspoons (about 100 Calories or 25 grams) of added sugar a day and for men to consume no more than 9 teaspoons (about 150 Calories or 37.5 grams) of added sugar a day. Added sugar is any sugar added to foods such as high fructose corn syrup, other corn sweeteners, honey or molasses as well as white or brown sugar. It does not include the sugar (fructose) naturally present in fruits or the sugar (lactose) naturally present in milk.

Implications for Extension Educators: The current Dietary Guidelines for Americans, issued jointly by the U.S. Department of Agriculture and U.S. Department of Health and Human Services, also encourage Americans to limit their intake of added sugars as well as solid fats. The Dietary Guidelines for Americans emphasize nutrient-rich foods and advise consumers to “choose and prepare foods and beverages with little...added sugars (caloric sweeteners.)” Although the AHA recommendations do not generally conflict with the current Dietary Guidelines, the AHA focuses on health issues related to heart disease and therefore may differ slightly from the Dietary Guidelines that have a broader scope, i.e., “provide science-based advice to promote health and to reduce risk for major chronic diseases through diet and physical activity.”

Source: Johnson RK, Appel LJ, Brand M, Howard B, Lefever M, Lustig RH, Sacks F, Steffen L, Wylie-Rosett J. Dietary Sugars Intake and Cardiovascular Health – A Scientific Statement from the American Heart Association. *Circulation*. August 24, 2009.

Online, <http://circ.ahajournals.org/cgi/content/abstract/CIRCULATIONAHA.109.192627v1>



Eating Slowly and Taking Small Bites May Help Prevent Overeating

By Susan Nitzke

A group of researchers in the Netherlands has conducted a series of studies showing that eating slowly helps decrease overall food intake and that the size of the bite or sip size tends to be greater for the same product when it is ingested in liquid rather than semi-solid form. Their latest study builds on these findings by examining the effects of longer vs. shorter “oral exposure time on food intake. The idea is that with the same amount of calories, a person might feel fuller longer if they have more time to taste, smell and sense the texture of what they’re eating. Seven subjects who had not eaten for at least 3 hours ate chocolate pudding that was put in their mouths through a tube. This experiment was planned to test specific variations of bite size (roughly a teaspoon vs. a tablespoon vs. the subject’s chosen amount) and oral processing times (3 seconds, 9 seconds, or as long as the subject wanted to keep the pudding in his/her mouth before swallowing it) on a daily basis for 7 days. Before and after eating the pudding until they chose to stop eating, subjects rated their hunger, fullness, desire to eat, appetite for something sweet, appetite for something savory, prospective consumption, thirst, and why they stopped eating (at the end of the test sessions). Larger bite sizes and shorter oral processing times both increased food intakes, with bite size having a greater effect than oral processing time. A regression analysis with the data from this study shows that increasing bite size by 1 gram would lead subjects to eat 27 grams more pudding (about 25 calories worth). Fullness scored increased and hunger, desire to eat, appetite for something savory, and prospective consumption scores decreased after eating the pudding, but there were only slight differences in these ratings between bite size and oral processing time conditions.

Implication for Extension Educators. Other studies have shown that adults and older children do not automatically eat fewer calories later in the day to fully compensate for having been overfed at one meal. This new study suggests that taking smaller bites and keeping them in one’s mouth for an extra couple of seconds is one way that people can feel more satisfied without having “extra-large” portion sizes.

Reference

Zijlstra N, de Wijk RA, Mars M, de Graaf C. Effect of bite size and oral processing time of a semisolid food on satiation. *Am J Clin Nutr.* 2009;90:269-75.