Research and Professional Briefs

Sex Differences in Dieting Trends, Eating Habits, and Nutrition Beliefs of a Group of Midwestern College Students

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ABSTRACT

The influence of sex on dietary trends, eating habits, and nutrition self-assessment and beliefs of a group of college students at a large Midwestern university was investigated. A questionnaire was completed by 105 male and 181 female undergraduate students. Men had significantly higher ($P<0.0001$) height, weight, and body mass index values. Significantly higher percentages of women than men had tried a low-fat diet ($P=0.0075$) and a low-carbohydrate diet ($P=0.0285$). Significantly lower percentages of women than men had never tried a diet ($P=0.0173$). Significantly higher percentages of women than men reported gaining nutrition knowledge from family ($P=0.0033$) and magazines/newspapers ($P=0.0345$). Significantly higher percentages of women than men agreed that they had too much sugar in their diets ($P=0.0157$), that it is important to limit carbohydrate consumption ($P=0.0077$), that it is important to limit the amount of fat consumed to lose weight ($P=0.0194$), and that they needed to lose weight ($P<0.0001$). It is important to eat a variety of foods for good health according to 94.4% of subjects. Sex differences existed in these college students with regard to anthropometric measurements, certain choices of diets, some sources of nutrition knowledge, and some nutrition beliefs.

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One of the focus areas for *Healthy People 2010* is nutrition and overweight, with the goal of promoting health and reducing chronic disease associated with diet and weight (1). About 66% of adults in the United States in 1999 to 2002 were overweight or obese (2). Improving accessibility of nutrition information, education, counseling, and related services was suggested as being fundamental to achieving the 2010 objectives (1). The poor health profile, including poor diets, of 18- to 24-year-old adults is of concern because they will soon enter the age range of high chronic disease burden (3). Health educators need to promote positive nutrition practices (4).

Various factors determine college students' selection of food. Among them are a shortage of time (5), convenience, cost (6), taste (6,7), health (5,7), physical and social environment (5), and weight control (8). Eating habits tend to become worse during college (9) and young adulthood (3). College students often do not meet dietary recommendations for the consumption of nutrients (10). The typical college student diet is high in fat (11,12) and sodium and low in fruits and vegetables (10,11). Fast food is often consumed (8,9).

Young women typically desire to lose weight; young men typically want to gain weight (13). Women are more likely than men to diet or try other weight-loss practices (14). If men do attempt weight loss, they typically try exercise rather than dieting (13). A group of college women who had dieted has been reported to have distorted perceptions of their "fatness" (15). Fifty-three percent of adults aged 25 years or older included in a 2002 American Dietetic Association survey (16) indicated that obesity, or being severely overweight, was a food-related issue of greatest concern.

Little research has been published that compares diet choices by sex. Sex difference in the types of diets chosen and the satisfaction with these diets may exist. The purpose of this study was to assess sex differences in dieting trends and nutrition self-assessment and beliefs of a group of college students at a large, Midwestern university.

METHODS

A 21-item questionnaire was developed that assessed self-reported anthropometric measurements, use of specific diets (eg, Atkins, Weight Watchers, low-fat, low-carbohydrate, South Beach, vegetarian, other, and none), sources of nutrition knowledge, individuals with whom the respondent typically eats meals (ie, family member[s], friend[s], roommate[s], coworker[s], self, or other[s]) and where he or she usually eats (ie, home, university cafeteria, dorm room, restaurant, fast food, or other), as well as nutrition self-assessment and beliefs of college students. Four registered dietitians reviewed the questionnaire for content validity. Following our univer-

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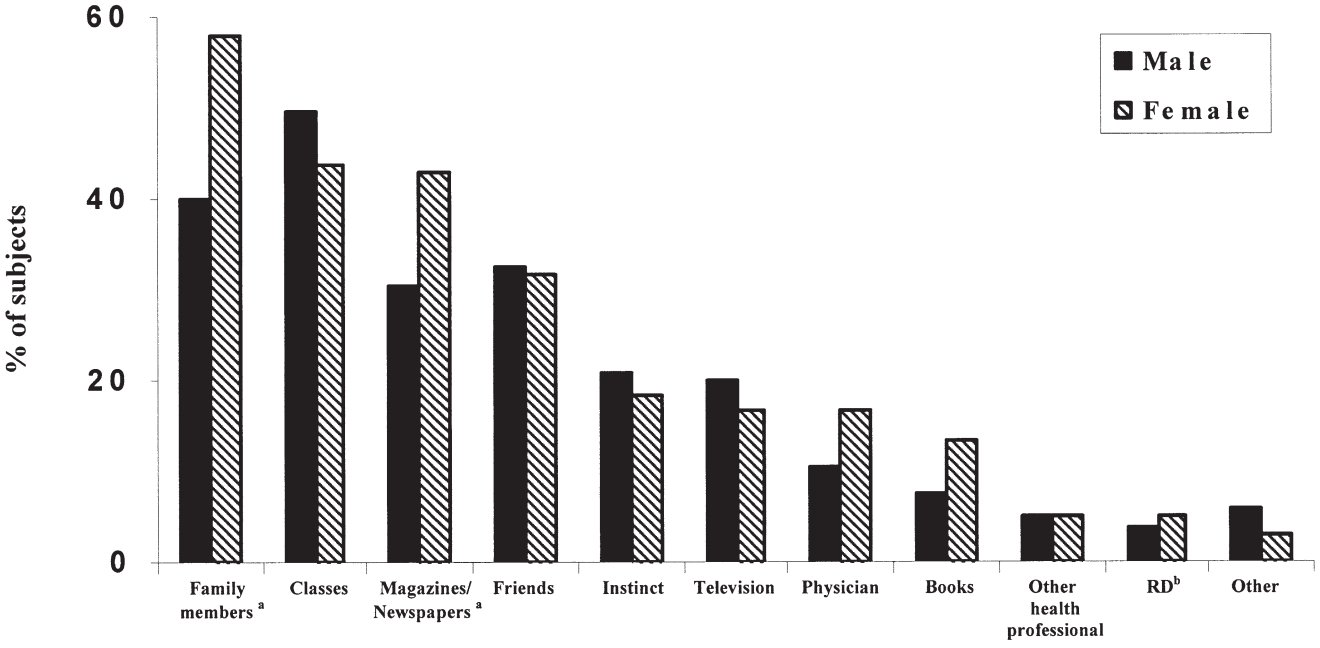

Figure 1. Midwestern university students' sources of nutrition knowledge. Subjects could select as many sources as applied. [a]Significantly larger ($P<0.05$) percentages of women than men reported obtaining most of their nutrition knowledge from this source. [b]RD=registered dietitian.

sity's Institutional Review Board approval, the questionnaire was pilot-tested with 10 undergraduate students to clarify language and response options. Eleven students completed the questionnaire again after 4.5 weeks; responses were the same 78% of the time.

Participants were recruited from an introductory nutrition course during the fourth week of the 2005 spring semester; 100% of eligible students participated and all signed informed consent forms. Each subject's classification and college was obtained from class rosters and compared with that of the university's undergraduate population (17).

The anthropometric data were analyzed by sex using General Linear Models; all other data were analyzed by sex using χ^2 (version 8.02, 2000, SAS Institute, Cary, NC) and are presented as percentages of subjects. Differences were considered significant at $P<0.05$.

RESULTS AND DISCUSSION

Questionnaires were completed by 286 undergraduate students. Subjects included 105 men and 181 women; the percentage of women participating in the study was larger than the percentage of women enrolled at the university (17). The percentage of subjects from most of the university's colleges were similar to those of the university's undergraduates except that higher percentages were from Business Administration and Education and Human Sciences and none from Engineering and Technology (17). Ninety-five percent of subjects took the course to meet their science requirement. Introductory nutrition is one of the choices of courses that students can select to meet or partially meet the science requirement in all colleges except Engineering and Technology. Seventy-three percent of subjects were sophomores and juniors, 19% were seniors, and 8% were freshmen.

Anthropometric Measurements

There was a significant ($P<0.0001$) difference by sex for self-reported heights and weights. The heights for men and women were 71.5±2.8 inches and 65.8±2.9 inches, respectively, and weights were 183.1±30.5 lb and 137.9±23.6 lb, respectively. Body mass index (BMI) values were significantly different ($P<0.0001$) by sex (25.2±3.6 men, 22.4±3.5 women). The mean BMI for men was slightly higher than the 24 reported by others (9,14), whereas that for women was similar. The average BMI for both men and women aged 20 to 29 years, according to the National Health and Nutrition Examination Survey 1999-2002, is 26.6 and 26.8, respectively (18). Based on BMIs (19), 54.8% of male subjects were normal weight, 37.5% were overweight, and 7.7% were obese; 7.4% of women were underweight, 76.7% were normal weight, 12.5% were overweight, and 3.4% were obese. The percentages of overweight and obese students in our study were higher than observed in the 1995 National College Health Risk Behavior Survey (20).

Diet Choices

A comparison of the specific diet choices showed few significant differences between men and women in current diets, past diets, and satisfaction with diets. Only 13% of subjects were currently on a diet. A significantly larger ($P<0.05$) percentage of women than men had tried Weight Watchers (6.6% vs 1.0%), low-fat diets (19.3% vs 7.6%), low-carbohydrate diets (15.5% vs 6.7%), and vege-

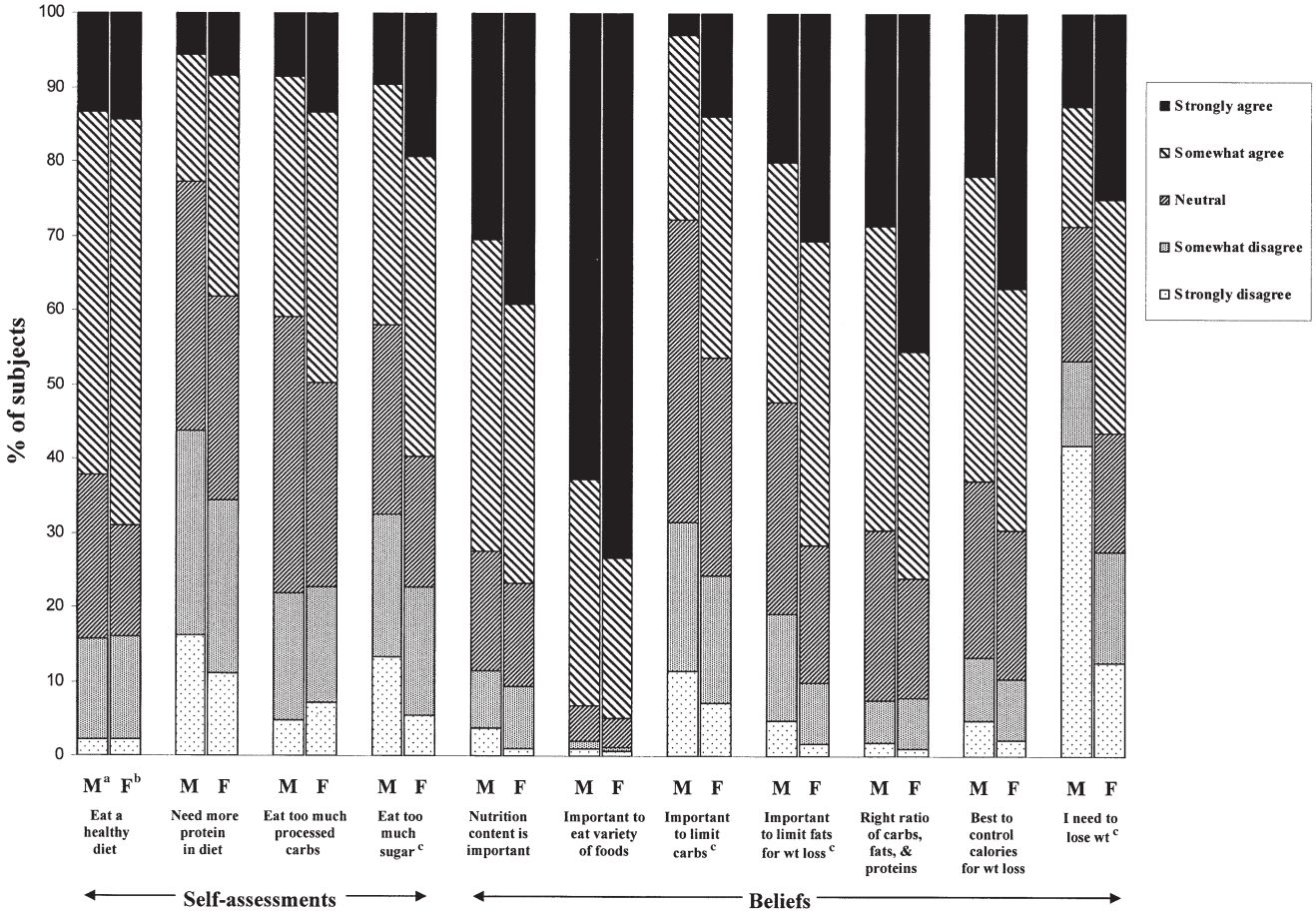

Figure 2. Responses of subjects to nutrition self-assessment and belief statements. [a]M=male. [b]F=female. [c]Response distributions of men and women were significantly different ($P<0.05$).

tarian diets (4.4% vs 0%). A significantly larger ($P<0.05$) percentage of men than women reported having never tried a diet (79.1% vs 65.6%). Only 17% of participants were pleased with the diets tried.

Nutrition Knowledge Sources

Participants indicated a wide range of sources of nutrition knowledge (Figure 1). A significantly larger ($P<0.05$) percentage of women than men obtained most of their nutrition knowledge from family members (58.0% vs 40.0%) and magazines/newspapers (43.1% vs 30.5%). The responses to the other information sources were similar by sex. The sources of nutrition information given by respondents aged 25 years and older in the American Dietetic Association's Nutrition & You: Trends survey (16) were: television 72%, magazines 58% (men 50%, significantly different from women 64%), newspapers 33%, radio 18% (men 25%, significantly different from women 13%), family/friends 17%, books (men 9%, significantly different from women 19%), Internet 13%, physicians 12%, work/job 4%, and school 4%. Forty-six percent of students surveyed reported receiving most of their nutrition knowledge from classes. This is higher than the 33.5% reported in 1995 for college students (20). However, our study participants were enrolled in an introductory nutrition class.

Individuals with Whom Respondents Ate and Where They Ate

There were no significant differences by sex as to with whom meals typically were eaten and the places where meals usually were consumed. Sixty-eight percent of students reported eating breakfast alone. Fifty percent reported eating lunch and 49% reported eating dinner with friends. Sixty-four percent ate breakfast, 40% ate lunch, and 58% ate dinner at home. In our university, approximately 76% of undergraduate students live off-campus (21), making it realistic that most students would eat meals at home. Few students reported typically eating lunch (15%) and dinner (9%) at a restaurant or fast-food establishment.

Nutrition Self-Assessments and Beliefs

Several significant differences ($P<0.05$) by sex in responses to the nutrition self-assessment and belief statements were observed (Figure 2). A larger percentage of

women than men agreed/strongly agreed that they ate too much sugar (59.7% vs 41.9%), that it is important to limit carbohydrate consumption (46.4% vs 27.6%), that it is important to limit the amount of fat consumed to lose weight (71.7% vs 52.4%), and that they need to lose weight (57.4% vs 28.6%). These findings are in agreement with reports of women's tendency to hold stronger beliefs related to nutrition than men (22,23). Though men have some sensitivity to body fat, women are much more sensitive (13). Students who desire to lose weight typically consume fewer sweets and believe they should limit those foods even more (24). This may explain why a similar percentage of women expressed a need to lose weight and to consume less sugar.

According to Margetts and colleagues (25) adults classified a healthful diet as one that included more fruits and vegetables, contained less fat, and was balanced. Overall, 66.4% of participants in this study agreed/strongly agreed that they consumed a healthful diet. College women tend to avoid high-fat foods (12,23) and consume more fruits and fiber than men (23). The nutritional quality of diets may differ by sex, but our study showed no significant difference in the perception of healthfulness of diet. A total of 94.4% of participants agreed/strongly agreed that it is important to eat a variety of foods for good health.

Three quarters of participants agreed/strongly agreed that the nutritional content of foods is important and that a right ratio of carbohydrates, fats, and proteins to achieve/maintain health exists. Temperio and colleagues (22) reported that adults tend to believe the sugar and fat contents of a food make it "fattening."

Two thirds of participants agreed/strongly agreed with the statement, "The best method for weight management is to control energy intake." In that these college students had not yet covered energy balance and weight management in the introductory nutrition course, they probably did not have an accurate understanding of weight management and may not know that they lacked this understanding. Many adults do not understand that excess energy intake plays an important role in weight gain (22). This could place them at risk nutritionally, especially if they are using one of the specific dietary regimens.

The subjects were enrolled in a nutrition course primarily to meet their science requirement. They were representative of undergraduate students at this Midwestern university to some degree. Subjects were from only one university. Future research should include a geographically representative population of college students.

CONCLUSIONS

Several sex differences in anthropometric measurements and certain choices of diets, sources of nutritional knowledge, and nutrition were observed in a group of college students. These college men and women seemingly related to some nutrition issues differently. Registered dietitians and other health professionals should take these differences into account when developing nutrition education materials and designing nutrition intervention programs for college students and other young adults.

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