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NUTRITION PROFILE OF COLLEGE STUDENTS

Teresa M. Palmer
Illinois State University

Few people today would question the importance of good nutrition as a major component of a healthy lifestyle. The electronic media and the popular press frequently feature items related to nutrition. Nutrition education is included within most elementary and secondary curricula. Nutrition-related issues are frequent topics of conversation among friends and acquaintances. A tremendous amount of nutritional information is available on food packages. With all of the attention paid to nutrition by the schools, the public, and the press, one might assume that those who appear to be so interested in and informed about nutrition would follow sound nutritional practices. This study was designed to examine the nutritional habits of one segment of the adult population which has been exposed to society's strong awareness of the importance of good nutrition: college students. This segment of our adult population is the most likely to have recently been exposed to nutrition education within the schools.

PURPOSE

The purpose of this study was to develop a nutritional profile for college students to determine to what extent their food choices provid-

ed a nutritionally adequate diet. The RDAs from the USDA Handbook 456 were used as a standard of comparison.

RELATED RESEARCH

A considerable amount of research has been done on the topic of nutrition in general and more specifically on the nutritional habits of young adults. Baecke and Stavern's study [1] of young adults found that the daily average intake of calories by males was about 3000, which they determined was high relative to females, whose daily average intake was 2170.

Ostrum and Labuza, [2] in their analysis of the diets of college students, found that, with the exception of iron for females, the average for most of the nutrients was either close to or above the established RDAs for both males and females. Additionally, they found that students consumed 35.6 percent of their calories as fat, and that a substantial number of both males and females consumed less than 80% of the RDA for calcium.

In their study of female college students, Polley, et. al. [3] found that diets met or exceeded the RDAs for all nutrients except B-6 and iron. The USDA Nationwide Food Consumption Survey for Midwest Women ages 19-34 [4] showed daily consumption below 70% of the RDA for iron, folacin, and zinc. The survey for men of the same age showed no daily food intakes below 70% of the RDA for any nutrient.

Block's research on the validity of dietary assessments [6] concluded that twenty-four hour recalls are valid for group values, although they are not sufficiently valid for individuals. Histories and seven-day records are valid, but are time-consuming and require a great deal of expertise from the interviewer and time from the subject.

PROCEDURES

The subjects for this study were 253 college students enrolled in an upper division (juniors and seniors) consumer economics course. As the course has no pre-requisites and is an elective in the general studies curriculum, the students represent a cross section of the university population. Students were assigned to record all foods and beverages consumed in an average day, and to use a nutrition analysis program (available in the microcomputer laboratory) to analyze their diets. The program allows users to individualize inputs for sex, age, height, weight, special health conditions, and activity level to determine nutritional requirements for each individual user. Students then input their lists of foods consumed and the program analyzes consumption relative to individual needs, and identifies nutritional deficiencies (consumption of less than 70% of RDA) and excesses for 15 nutrients. Additionally, it breaks down the consumption of calories into fats, proteins, and carbohydrates. Individual student nutritional analyses were then aggregated to develop a profile of the nutritional content of the students' diets.

FINDINGS

The results of this study were fairly consistent with the results of Polley, et. al., and contrary to those of Ostrum and Labuza. The results of data analysis (shown in Table 1) show that the average male consumed just over 3400 calories and derived 36% of his calories from fats, 20% from proteins, and 43% from carbohydrates. Females consumed just under 2800 calories with 36% from fats, 19% from proteins, and 45% from carbohydrates. Average calorie consumption for both sexes was higher than had resulted from the Baecke and Stavern study. Both males and females consumed higher percentages of their food energy from fats than the recommended maximum of 30%.

Table 1. Food Energy Consumption by Source.

	Males	Females	Combined
Calories	3403.67	2300.46	2797.56
Fats (%)	36.39	35.33	35.81
Protein (%)	20.34	19.18	19.7
Carbohyd (%)	42.81	47.65	45.47
n =	114	139	253

Table 2 shows that more than 50% of all students were deficient in B-12, folacin, magnesium, and B-6. Zinc, E, iron, A, and calcium also showed up with some frequency as deficiencies. When comparing the deficiencies of males and females, females had higher deficiency frequencies for all nutrients except C and E. More than 50% of females were deficient in B-12, magnesium, zinc, folacin, and B-6, while there were no nutrients for which males recorded a deficiency rate of 50% or over.

Table 2. Nutritional Deficiencies

	MALES % of students w/deficiency	FEMALES % of students w/deficiency	TOTAL % of students w/deficiency
Folacin	42.98	59.71	51.35
B-12	44.74	66.19	55.47
C	15.79	15.11	15.45
E	28.07	22.3	25.19
Magnesium	41.23	64.03	52.63
Zinc	32.46	63.31	47.89
B-6	42.11	58.27	50.19
Phosphorus	4.39	8.63	6.51
A	16.67	22.3	19.49
Calcium	13.16	23.74	18.45

Table 2 (continued)

	MALES % of students w/deficiency	FEMALES % of students w/deficiency	TOTAL % of students w/deficiency
Protein	2.63	3.6	3.12
Thiamin	7.02	10.07	8.55
Riboflavin	4.39	13.67	9.03
Iron	6.14	41.01	23.58
Niacin	1.75	9.35	5.55
N =	114	139	253

CONCLUSIONS AND IMPLICATIONS

If these results are valid for group values, as suggested by Baecke, then clearly there is room for improvement in the nutritional profile of college students. Food energy consumption was high for both males and females which suggests that it is the choice of foods which is a problem, not the quantity. That males on the average consumed over 1100 more calories than females may explain the higher rates of deficiency for females for most nutrients. The high rates of deficiency are particularly alarming, considering that deficiencies were only recorded when consumption was less than 70% of the RDA.

There are strong implications for increasing the effectiveness of nutrition education in elementary and secondary education. Additionally, there seems to be a strong need for continued nutrition education at the college level. The time during which young adults traditionally assume responsibility for their own diets may be a crucial time for increasing awareness and education to encourage the formation of good, healthful eating habits.

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