

アメリカ合衆国に於ける大学生の肥満化に影響する要因

Factors Affecting Obesity of College Students in the United States

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抄 録

アメリカでは、大学生の多くが脂肪分が多く栄養分の少ない食べ物を好む。このような食品を多くとることにより、肥満になるリスクをとまなう。四千四百万人以上のアメリカ人が肥満とみなされる現状で、この問題に環境、習慣、そして心理的な要因がどのように影響しているかを理解するのは重要な事である。アメリカの大学生の場合はこれに付け加えてライフスタイルが大きな影響を及ぼしていると思われる。ここでは、大学生の生活習慣と食生活に関する様々な文献を比較し、肥満との関係、そして栄養学を学ぶことがどのような影響を与えるかを検討した。

Abstract

In the United States, college students are famous for selecting high fat and low energy foods. One of the biggest health risks associated with a diet composed primarily of high fat and low energy foods is obesity. With more than 44 million Americans considered obese, it is important to understand the environmental, behavioral, and psychological processes that are at work in contributing to this problem. In the case of college students in the United States, lifestyle choices may be one of the biggest factors contributing to obesity in this population. This paper reviews the literature relating to the problem of obesity in the United States, the role of lifestyle and dietary practices of college students as they relate to this problem, and whether or not nutrition education might be an effective tool in combating this problem.

Key words: college students, obesity, lifestyle, nutrition education

Introduction:

In the United States, college students are famous for selecting high fat and low energy foods (McArthur, Rosenberg, Grady, & Howard, 2002). Unfortunately, these choices often tend to be less than nutrient dense (Franciscy, McArthur, & Holbert, 2004). The food choices made by American college students tend to be influenced by their environment, culture, and demographics. The health risks associated with the dietary practices and the nutritional status of college students in the United States are ones that could be called cause for concern (Binger, 1999; Marietta, Welshimer, & Anderson, 1999). In considering the eating habits of college students in the United States it is important to take into consideration the types of foods that they consume and the patterns in their lifestyles that may lead to the choices that they make in selecting what they consume.

The Problem of Obesity:

One of the biggest health risks associated with a diet composed primarily of high fat and low energy foods is obesity. According to the United States Food and Drug Administration (FDA, 2002) since 1980, obesity has doubled for adults and tripled among adolescents in the United States. In 2004 the National Center for Health Statistics of the Centers for Disease Control and Prevention (NCHS) in that country provided representative data indicating 66% of adults over age 20 were overweight while 32% were obese. In 1999, the figures were 63% of men and 55% of women overweight and 21% of men and 27% of women obese (Must, Spadano, Coakley, Field, Colditz, & Dietz, 1999). It is of interest to note that the obesity prevalence has increased more sharply than the overweight prevalence (NCHS, 2004).

With more than 44 million Americans considered obese it is important to understand that both behavioral and psychological processes are at work in contributing to this problem (Barlow & Dietz, 1998). Obesity can be attributed to genetics, hormones, and metabolism, along with a myriad of psychobiological, cultural, and social factors (Sigman-Grant, 2002). Often in the case of college students in the United States, lifestyle choices may be one of the biggest factors contributing to obesity in this population. New social eating patterns coupled with the fact that many may tend to eat more meals prepared outside of the house than when they lived with their families can lead excessive caloric intake.

The Role of Lifestyle and Dietary Practices in the Health of College Students in the United States:

Lifestyle and dietary practices play a significant role in the health and well-being of college students (Joindes et al., 2002). Parental preferences for certain foods and modeling of eating behaviors influence as well as limit food variety and acceptance (Birch & Fisher, 1998). Home, peer, and the college environment can all contribute to the lifestyle and dietary practices of college students (Strauss, 2000).

Eating is a pleasurable pastime and college students tend to choose foods that they prefer and ignore the ones they do not (Birch, 1999). Preferences drive what we eat and the most preferred tastes are sweet and salty. These preferences have helped to contribute to the problem of obesity because foods with these tastes tend to be dense in calories (Prentice & Jebb, 2003).

Compounding this problem is the fact that more and more Americans are spending up to half of their food budgets on meals prepared outside of the house (Peniston & Litchfield, 2004). A survey of 180 adult restaurant customers has shown that bigger restaurant portion sizes are also responsible for increased caloric intake (Diliberti et al., 2004). Habitually eating at fast food restaurants is associated with both weight gain and the risk of diabetes (NHLBL, 2004).

In addition, the per capita consumption of soft drinks in the United States has increased 500% in the past 50 years (USDA, 2006). Several prospective health problems are associated with high consumption of sweetened drinks, including dental cavities, diabetes, and obesity that can be attributed to the additional calories (USDA, 2006).

Television viewing has also been found to be a link to obesity (Jonides et al., 2002). The connection between television viewing and obesity has been studied by Dietz & Gortmaker (1985) for more than 25 years. Other studies, Coon, Goldberg, Rodgers, and Tucker (2001), and The California Research Bureau (2001), have also concluded that television greatly decreases activity while promoting eating while watching and a susceptibility to food choices promoted by advertising and the media.

Coon et al. (2001) surveyed 91 parent-child pairs to examine the presence of television during meals and children's food consumption habits to evaluate the impact of food advertising on food choices. They found extensive television watching was associated with increased daily consumption of high fat and caloric foods and beverages and a decrease in the consumption of fruits and vegetables.

The California Research Bureau (2001) study of 285 people, including 126 adults and

152 children of either Latino, African American, Anglo, or Cambodian decent, who participated in focus groups held in boys and girls clubs, churches and community centers, found television to be a powerful influence in shaping children's food choices.

While media advertising can have a positive effect on eating behaviors and encourage physical activity (Nestle & Jacobson, 2000), advertising has also been found to promote eating, influence food choices and fast food consumption. The National Health and Nutrition Examination Survey (2004) which included over 16,000 participants from across the United States, conducted from 1963 through 2002, found the prevalence of overweight children and adolescents across sex, age, race, ethnicity, income, and education level has been steadily increasing and is currently at 16% (NCHS, 2004).

Obesity interventions are dependent upon an individual's emotional state, family involvement, eating, and activity habits (Nestle & Jacobson, 2000). In order for support methods to be helpful, they need to engage people who do not want to control their weight. However, this might be difficult in light of the fact that in a poll of more than 2,000 American parents surveyed recently as part of the National Poll on Children's Health (Boodman, 2008), 40 percent of youths ages 6 to 11 whose parents described them as "about right" were actually obese. There seems to be a disparity in the United States between awareness of what constitutes obesity and in the ability to recognize it. Therefore in terms of obesity, behavioral change interventions need to focus not only on obesity prevention programs but on obesity awareness as well (Robinson, 2001).

Poor nutrition habits begun early in life will carry over into the college years where students have even more freedom of choice in areas of food and beverage consumption. One of the health risks facing college students in the United States is obesity. The college lifestyle is one factor that contributes to the obesity problem as many students may not even be aware of the consequences of health risks such as diabetes, heart disease, high blood pressure, stroke, or cancer.

In a study of 16,884 overweight and obese adults 25 years of age, excess weight has been found to increase the prevalence of several chronic diseases such as cardiovascular disease, diabetes, hypertension, stroke, and cancer (Must et al., 1999). High fat diets and sedentary physical activity practices can be blamed in part for the obesity problem. Marr (2004, p.258) "points to physical inactivity as the primary culprit in weight gain." The National Heart, Lung, and Blood Institute's (2004) dietary assessment study of 3,031 black and white American 18-30 year olds concluded that eating at fast food restaurants is also associated with increased weight gain and diabetes.

Colic-Baric et al. (2003) examined the dietary habits of 2,075 Croatian university

students. They found marked behavioral differences between males and females. Men tended to eat more fast foods and calorie dense foods than did females. DeBate et al. (2001) also found U.S. college populations, regardless of race or gender, were at risk for health problems due to lifestyle behaviors and disregard or lack of nutrition education during college.

Peng and Kue (1994) investigated the effects of attitude and knowledge of 554 college students' basic and fast food nutrition habits and found that 25% of the students sampled preferred to eat fast food. This result was related to where a student lived, whether at home, in an apartment, on-campus housing, alone, or with family and friends, as well as their knowledge about fast food.

The Role of Nutrition Education Programs:

Nutrition education can be an effective tool in preventing obesity (Sigman-Grant, 2002). Child and adolescent food and nutrition programs can positively affect the eating habits of children (Evers, 1998). Children and adolescents need the chance to develop good eating habits, therefore, the home and schools are pivotal in helping them to develop proper eating patterns (Gleason & Suitor, 2001). When given healthy choices, children and adolescents tend to choose good foods. However, more often than not it seems that exposure to adequate nutrition education is not up to par (Evers, 1998)

It seems that little research has been done concerning how nutrition intervention programs influence the eating habits of college aged students. Colic-Baric et al. (2003) studied the dietary habits of university students and found that nutrition education and physical activity positively influenced their dietary habits. Hertzler et al. (1995) found that college students tended to have a diet high in fat content. Nielsen, et al. (2002) looked at food location trends of U.S. college students and found that this group tended to excessively patronize fast-food restaurants. The Committee on School Health (2004) found that excessive soft drink consumption in secondary schools has led to an increased energy intake among young people in the United States.

Franciscy et al. (2004) surveyed 205 male undergraduates in the United States in an effort to determine where food information was obtained. They found that the most helpful resources for the respondents in this study were family and friends. Although the majority of the participants were interested in learning more about food purchasing and preparation, nutrition courses apparently were not very effective (Franciscy et al.).

School based nutrition education programs can be effective if nutrition is "fun and

engaging, integrated across the curriculum, home, and community, and emphasizes behavioral change” (Evers, 1998, p. 92). The role of nutrition educators should be to promote an overall lifestyle that includes physical activity, as well as food intake in nutrition education programs (Marr, 2004). Elementary and high schools that offer breakfast and physical education programs see increases in academic test scores, attendance, attention, improved behavior, emotional adjustment and class involvement, and reduced tardiness and absenteeism (California Research Bureau, 2001). No studies could be found to support this for college students.

Conclusion:

Good nutrition is related to the ability to learn, play, grow, and develop (Evers, 1998). Innovative approaches like these need to be adapted to motivate college students in modifying their eating behaviors and stem the tide of obesity that is on the verge of becoming a national health crisis in the United States.

Food preferences, consumption patterns, lifestyle, and the influence of TV have all been shown to have an effect upon obesity. The eating patterns of college students, who are vulnerable to the availability of a variety of fast-food, as well as the time and budget constraints of the college lifestyle tend not to have healthy eating habits. This coupled with a new found independence can conspire to the effect of developing risky eating habits.

Some of the best ways that obesity and its related health risks can be reduced is through education and the modeling of positive eating behaviors. Nutrition education has the potential to guide the eating behaviors of college students and help them to develop healthy patterns that will prevent potential life threatening problems as they get older.

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References:

- Barlow, S., & Dietz, W. (1998). Obesity evaluation and treatment: expert committee recommendations. *Pediatrics*, *102* (3), e29-47.
- Binger, M. (1999). Physical activity and dietary intake among college students. *American Journal of Health Studies*, *71*, 19-22.

- Birch, L. (1999). Factors influencing food intake implications for childhood obesity. Symposium on Childhood Obesity, October 27, 1998, Washington, D.C. Retrieved December 19, 2007, from <http://www.usda.gov/cnpp/Seminars/obesity.PDF>
- Birch, L., & Fisher, J. (1998). Development of eating behaviors among children and adolescence. *Pediatrics*, *101*, 539-549.
- Boodman, S. G. (2008). Many parents can't see own child's obesity. *The Washington Post*, January 16, 2008.
- California Research Bureau, California State Library. (2001). Health problems related to adolescent obesity and a sedentary lifestyle. Retrieved December 19, 2007, from <http://www.cdc.gov/nchs/nhanes.htm> and <http://www.library.ca.gov/html/statseg2a.cfm>
- Colic-Baric, I., Stalic, Z., & Luesic, Z. (2003). Nutritive value of meals, dietary habits and nutritive status in Croatian university students according to gender. *International Journal of Food Sciences and Nutrition*, *54* (6), 473-484.
- Committee on School Health. (2004). Soft drinks in schools. *Pediatrics*, *113* (1), 152-154.
- Coon, K., Goldberg, J., Rogers, B., & Tucker, K. (2001). Relationships between use of television during meals and children's food consumption patterns. *Pediatrics*, *107* (1), p.7.
- Debate, R., Topping, M., & Sargent, R. (2001). Racial and gender differences in weight status and dietary practices among college students. *Adolescence*, *36* (144), 819-834
- Dietz, W., & Gortmaker, S., (1985). Do we fatten out children at the television set? Obesity and television viewing in children and adolescents. *Pediatrics*, *75* (5), 807-812.
- Dilberti, N., Bordi, P., Conklin, M., Liane, S., & Rolls, B. (2004). Increased portion size leads to increased energy intake in a restaurant meal. *Obesity Research*, *12*, 562-568.
- Evers, C. (1998). Child nutrition programs: prevention through education. *Symposium on Childhood Obesity, October, 27, 1998, Washington, D.C.* Retrieved December 19, 2007,

from <http://www.usda.gov/cnpp/Seminars/obesity.PDF>

- Food and Drug Administration. (2002). Overweight, obesity, threatens U.S. health gains. *FDA Consumer Magazine*. Retrieved December 19, 2007, from http://www.fda.gov/fdac/features/2002/202_fat.html
- Franciscy, D., McArthur, L., & Holbert, D. (2004). College men and their interest in food purchasing and preparation. *Journal of Family and Consumer Sciences*, 96 (2), 28-33.
- Gleason, P. & Suitor, C. (2001). *Children's diets in the mid 1990's: Dietary intake and its relationship with school meal participation*. U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, Alexandria, VA. Retrieved December 19, 2007, from [http://www.fns.usda.gov/oane/MENU/](http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/ChilDiet.pdf)Published/CNP/FILES/ChilDiet.pdf
- Hertzler, A., Webb, R., Frary, R. (1995). Over consumption of fat by college students: the fast food connection. *Ecology of Food and Nutrition*, 34 (1), 49-57.
- Joindes, L., Buschbacher, V., & Barlow, S. (2002). Management of child and adolescent obesity: psychological, emotional, and behavioral assessment. *Pediatrics*, 110 (1), 215-221.
- Marietta, A., Welshimer, K., & Anderson, S. (1999). Knowledge, attitudes, and behaviors of college students regarding the 1990 Nutrition Labeling and Education Act food labels. *Journal of Nutrition Education & Behavior*, 36 (5), 275-278.
- Marr, L. (2004). Soft drinks, children overweight, and the role of nutrition educators: Let's base our solutions on reality and sound science. *Journal of Nutrition Education & Behavior*, 36 (5), 258-265.
- McArthur, L., Rosenberg, R., Grady, F., & Howard, A. (2002). College students' compliance with Food Guide Pyramid recommendations. *Journal of Family and Consumer Sciences*, 94 (2), 29-38.
- Must, A., Spadano, J., Coakley, E., Field, A., Colditz, G., & Dietz, W. (1999). The disease burden associated with overweight and obesity. *Journal of the American Medical Association*, 282 (16), 256-263.

Association, 282(16), 1523-1529.

National Center for Health Statistics (NCHS; 2004). U. S. Department of Health & Human Services, Centers for Disease Control and Prevention. Prevalence of overweight among children and adolescents: United States, 2003-2004. Retrieved December, 19, 2007, from http://www.cdc.gov/nchs/products/pubs/pubd/hestats/obese03_04/overwght_adult_03.htm

National Heart, Lung, & Blood Institute (NHLBI;2004). Eating at fast-food restaurants more than twice a week is associated with more weight gain and insulin resistance in otherwise healthy young adults. *The Lancet*, 365 (9453).

Nielsen, S., Siega-Riz, A., & Popkin, B. (2002). Trends in food locations and sources among adolescents and young adults. *Preventative Medicine*, 35 (2), 107-113.

Nestle, M., & Jacobson, M. (2000). Halting the obesity epidemic: A public health policy approach. *Public Health Reports*, 115, 134-146.

Peng, T., & Kue, H. (1994). Effects of knowledge and attitude on the basic and fast-food nutrition in junior college students. *Journal of the Chinese Nutrition Society*, 19 (3), 309-318.

Peniston, M., & Litchfield, R. (2004). Nutrition education delivered at the State Fair: Are your portions on proportion? *Journal of Nutrition Education and Behavior*, 36 (5), 275-277.

Prentice, A., & Jebb, S. (2003). Fast Foods energy density and obesity: a possible mechanistic link. *Obesity Reviews*, 4 (4), 187-194.

Robinson, T. (2001). Halting the epidemic of pediatric obesity. *Childhood obesity and the role of California's schools*. CA Legislature. (2001)

Sigman-Grant, M. (2002). A holistic approach to overweight/obesity issues. *Journal of Family and Consumer Sciences*, 94 (4), 13-16.

Strauss, R. (2000). Childhood obesity and self-esteem. *Pediatrics*, 105 (1), 15.

United States Department of Agriculture. (2006). *U.S. food supply nutrients and other food components, 1909-2004; Competitive foods: soft drinks versus milk; In the long run; Soft Drinks and School-Age Children: Trends, Effects, Solutions Paper*. Retrieved, December 19, 2007, from [http://www.ers.usda.gov/Data/Competitive foods/fmn/pdf](http://www.ers.usda.gov/Data/Competitive%20foods/fmn/pdf)