

Effect of Nutrition and Physical Activity Training with Mexican Americans

Debra M. Harris

*Nutrition Network for Healthy, Active Families
California State University, Fresno*

Abstract

Health related behaviors are of concern in the Mexican American community because of the prevalence of disease, such as diabetes, hypertension and cancer. Poor nutrition and a lack of physical activity are behaviors which contribute to these diseases. Training regarding health related behaviors associated with nutrition and physical activity was attended by 11 individuals from low income areas who were Mexican American. Results indicate most did understand the importance of diet and exercise in controlling these diseases. Most were motivated to change their eating and exercise habits as a result of the training they attended.

Comportamientos relacionados con la salud son de gran preocupación en la comunidad Mexicana por la alta ocurrencia de enfermedades como diabetes, hipertensión y cáncer. Pobre nutrición y la falta de actividad física son ejemplos de comportamientos responsables por estas enfermedades. Once individuos de áreas de bajo ingreso que eran Mexicanos Americanos atendieron un entrenamiento referente a comportamientos relacionados con la salud que son asociados con la nutrición y actividad física. Los resultados indican que la mayoría entendieron la importancia de la dieta y ejercicios para controlar estas enfermedades. La mayoría de ellos fueron motivados a cambiar sus hábitos de comer y ejercicios como resultado del entrenamiento que asistieron.

© 2003 Californian Journal of Health Promotion. All rights reserved.

Keywords: nutrition, physical activity, Mexican Americans, health behavior

Introduction

A national perspective of the behaviors associated with nutrition and physical activity paints a picture of many Americans suffering from chronic diseases due to these behaviors. Chronic diseases are responsible for seven of every ten deaths in the general public. These diseases include heart disease, cancer, hypertension, and diabetes (CDC, 1999). Yearly, chronic diseases account for more than 60% of medical costs in the United States. In 1995, the total economic cost of obesity alone was more than \$99 billion. Body Mass Index (BMI) is a measurement that estimates overweight and obesity. A BMI can be calculated by dividing one's height (in meters) by weight (kilograms). Overweight and obesity occurs when a person eats more food (calories) than they expend (physical activity). Using the

BMI, an overweight adult is one who has a BMI over 25 but less than 30. An estimate of obesity is 30 or higher (U.S. Department of Agriculture, 2000). About 30% of adults in the United States are 30 pounds or more over the recommended ideal body weight. Almost 25% of children aged six to seventeen years are considered overweight. The percentage of young people who are seriously overweight has more than doubled in the last 30 years (CDC, 1999).

Nutrition is important to the wellbeing of an individual. The American Dietetic Association's position is that to choose from a wide variety of foods is important to promoting health and to reduce the risk of chronic health problems (ADA, 1991, 2001). The United States Department of Agriculture (USDA) developed the Food Pyramid which is divided into five

major food groups including grain products, vegetables, fruits, lean and low-fat foods, and fats (oils) and sweets. As shown on the Food Pyramid, the number of servings from each of the food groups that are needed each day consists of 6-11 servings of grains, 3-5 servings of milk/ yogurt/ cheeses, 2-3 servings of meat / poultry / fish/ eggs/ nuts, and sparing servings of fats / oils / sweets (USDA, 2000).

Physical activity is another health-related behavior that affects an individual's health. More than 60% of adults do not engage in levels of physical activity necessary to provide health benefits. More than one fourth are not active at all during their leisure time. About one-third of 12 to 21 year olds do not engage in regular vigorous physical activity. A drop from 42% to 27% has occurred in physical education participation among high school students (CDC, 1999). As people enter adolescence, their activity level decreases. Forming physical exercise habits early in life is essential to preserving these behaviors as people age (Aarts, Paulussen, Schaalma, 1997).

Healthy eating and physical activity must be combined to combat obesity (Bar-Or, 1998), and reduce chronic diseases. Heart disease, cancer, diabetes and other chronic illnesses are preventable with healthy eating and physical activity. With health-related technology increasing an individual's lifespan, it is not if we will longer, it is how well will we live. To illustrate how serious a problem this is, the U.S. Department of Health and Human Services, the nation's leading health agency, released the report entitled *Healthy People 2010*. In this report, the central goals were to increase quality and years of healthy life (US DHHS, 2000).

A U.S. State perspective of the behaviors associated with nutrition and physical activity sharpens the picture to illustrate how Californians are suffering from chronic diseases. In California, between 1989 and 1997, health perceptions, knowledge and behaviors of the state's adult population were tracked. These findings indicated that poor diet and physical inactivity were highly prevalent among Californians. The state's rates of overweight

and obesity increased 25%. Approximately, only 15% of adults exercised three or more times a week and 20% reported no leisure time physical activity (California Cancer Registry, 1998).

When the demographic factors of individuals from economically disadvantaged groups and individuals from the Mexican American population are added to this picture, it illustrates how Mexican Americans living in poverty are suffering from chronic diseases. Mexican Americans are twice as likely to die from diabetes, have higher rates of hypertension, and are more overweight than are those of other ethnic groups (Clark, 1997; US DHHS, 2000). The highest increases in overweight and obesity were found among low income Hispanic adults (California Department of Health Services, 1999). In addition, Mexican Americans reported decreasing leisure time physical activity (California Cancer Registry, 1998).

Income and education are factors associated with poverty and with health disparities. People who are among those of the highest poverty rates and the least education have more health problems. Education and literacy are related. Almost half of all adults in the United States read at the two lowest levels of proficiency (Macario, 1998). Lower income, less education, and lower literacy result in a lack of access to health care, limited affordable health insurance, a limited understanding of the role healthy behaviors play in disease and/or an inability to understand health-related information necessary to adopt healthier lifestyles (U.S. DHHS, 2000; Lantz, House, Lepkowski, Williams, Mero, Chen, 1998; Macario, 1998). Socioeconomic factors, including income and education, have been shown to be inversely associated with mortality due to chronic disease. This means that the lower an individual's income, the higher their risk of mortality. Lower socioeconomic status individuals are more likely to lead sedentary lifestyles and be overweight (Lantz et al., 1998).

Other contributing factors to the health of Mexican Americans are their food influences and acculturation. Cultural food influences from

Mexican Americans include refined flour tortillas made with lard which contributes fat without the benefit of whole grains. On a positive note, food items including salsa, rice and beans are also consumed by Mexican Americans, contributing essential nutrients and fiber to the daily diet (Block, Norris, Mandel, DiSogra, 1995). However, acculturation can have a negative influence on the eating patterns of new immigrants. Eating American fast foods can result in an increase of fat, and decrease the consumption of whole grains, fruits, and vegetables (Block et al., 1995).

The purpose of this study is to report the findings of a university-based nutrition and physical activity training program with a group of Mexican Americans who live in a socio-economically disadvantaged area of the San Joaquin Valley of Central California. The training program was meant to increase the knowledge of participants. Through this knowledge, it was hoped that changes in their health-related eating behaviors and physical exercise would result.

Method

A collaborative partnership was established between a federally funded university-based health education program and a state funded community development program (California Nutrition Network for Healthy, Active Families, 2001). The goals of these two programs complemented each other with regard to their purpose and to the target population the programs were intended to reach.

The objective of the university-based health education program was to increase nutrition and physical activity knowledge with individuals from low socioeconomic, ethnically diverse groups, with particular emphasis on Mexican Americans. Specifically, this interdisciplinary curriculum and resource material promoted the consumption of five fruits and vegetables a day, 30 minutes of moderate physical activity a day for adults, and 60 minutes of vigorous physical activity a day for children. This goal represented positive behavior changes related to diet and physical activity, which in turn would effect diseases.

The objective of the state-funded community development program was to empower community members to access services to meet their unique needs. The community development program was located in a part of the San Joaquin Valley where many of the residents are recipients or are eligible to receive food stamps or are households living at not higher than 185% of the Federal Poverty Level. It is also primarily made up of Mexican Americans, many of whom are migrant workers.

Participants

A total of 11 members of the community attended five training sessions specifically advertised as training in "Nutrition and Physical Activity". Of the 11 participants, 91% (n=10) were female and 9% (n=1) was male. The mean age was 29 years. All participants were Mexican Americans who lived within the service area of the community development program. Fifty five percent (n=6) had less than a high school education, while 45% (n=5) had earned a high school education. None of the participants possessed any college credit. Ninety one percent (n=10) preferred English as their primary language and 9% (n=1) preferred Spanish. A Spanish interpreter was used during the training session where Spanish was preferred. Fifty five percent (n=6) of the participants were experiencing some type of chronic illness associated with diet and exercise, specifically diabetes and hypertension. Forty five percent (n=5) of participants were concerned that they could have diabetes or hypertension due to their family members suffering with these diseases. Therefore, all participants were either currently suffering from or were concerned that they would suffer from diabetes or hypertension.

Instrumentation

A pre-training questionnaire was presented to the participants prior to the training beginning to assess their general knowledge of nutrition and physical activity related knowledge. The Spanish interpreter verbally asked the one participant the questions and the responses were recorded by the educator. These three closed-ended questions required a Yes, Not Sure, or a No answer. The first question asked of the

group was: “Did you know that many chronic diseases (heart disease, certain cancers, hypertension, and diabetes) are due to health behaviors, such as diet and physical activity level?” The second question asked was: “Did you know that only 27% of women and 19% of men were reported to eat the recommended 5 servings of fruits and vegetables daily?” The third question asked was: “Did you know that 60% of adults nationwide do not engage in levels of physical activity necessary to provide health benefits?”

Following the training, participants were asked four closed ended questions requiring a Yes, Not Sure, or a No answer. The first question was “Do you think this information will help you eat healthier?” The second question was: “Do you think this information will help you cook healthier for your family?” The third question was: “Do you think this information will help you be more active?” The fourth question was “Do you think this information will help you encourage your family to be more active?” Following these four closed ended questions, two open ended questions. The first of these open ended questions were: “What did you like about the training?” and “What did you not like about the training?” Each participant was given space to write anything they wanted to.

Training Procedure

All training sessions took place between March 2002 to August 2002. Training sessions were organized similarly for curriculum and materials used. At the beginning of a training session, a

didactic presentation was made regarding information pertaining to healthy eating and age-appropriate physical activity related to chronic diseases. Following this didactic presentation, the health education trainer becomes the facilitator, rather than a lecturer, encouraging group discussion. This facilitated group discussion encouraged attendees to suggest topics related to the material they are specifically interested in. This teaching modality allowed participants to ask questions and share their own “real life” knowledge and experiences (Abusabha, Peacock, Achterbert, 1999). This type of class allowed those with limited literacy to participate in discussions also (Hartman, McCarthy, Park Schuster, Kuski, 1994). During this process, the health education trainer could verbally dispel myths or misinformation that individuals had regarding these three issues. Finally, all participants were provided with a “taste test” of either a strawberry smoothie prepared using a recipe from the cookbook *Discover the Secret – 5 a Day for Better Health* (California Department of Health, 1999) or a vegetable quesadilla prepared from using a recipe from the cookbook *Healthy Latino Recipes* (California Department of Health Services, 1999). The nutritional benefits of these items were discussed. All participants also received a copy of each of these cookbooks for their use and dissemination to their families.

Results

The following results of the pre-training and post-training questionnaires are summarized in Table 1.

Table 1
Results of the Pre-Training and Post-Training Questionnaires

Question	Results
Pre-Training Questions	
“Did you know that many chronic diseases (heart disease, certain cancers, hypertension, and diabetes) are due to unhealthy behaviors, such as diet and physical activity level?”	All participants were aware that chronic diseases are due to unhealthy behaviors.
“Did you know that only 27% of women and 19% of men were reported to eat the recommended five servings of fruits and vegetables daily?”	Fifty five percent (n=6) of the participants did not know that 27% of women and 19% of men did not eat the recommended servings of fruits and vegetables and forty five percent (n=5) of participants did know this.

Question	Results
“Did you know that 60% of adults nationwide do not engage in levels of physical activity necessary to provide health benefits?”	Thirty six percent (n=4) of the participants did not know about the low level of physical activity among most adults, while 64% (n=7) of participants did.
Post-Training Questions	
Open-Ended	
“Do you think this information will help you eat healthier?”	All, or 100% (n=11) thought the information would help them eat healthier.
“Do you think this information will help you cook healthier for your family?”	All, or 100% (n=11) thought the information would help them cook healthier for their family.
“Do you think this information will help you be more active?”	All, or 100% (n=11) thought the information would help them be more active.
“Do you think this information will help you encourage your family to be more active?”	All, or 100% (n=11) thought the information would help them encourage their family to be more active.
Closed-End Questions	
“What did you like about the training?”	“I liked ‘the information and the food’; ‘the fruit smoothie and discussion’; ‘I found the class to be informative’; ‘The cook books that were handed out will be put to use’.”
“What did you not like about the training?”	There were no comments regarding anything that was not liked about the training.

Discussion

This training offered in the San Joaquin Valley indicated that although the participants understood diet and exercise were related to chronic disease, they were not as aware of the number of people not eating fruits and vegetables. This is possibly due to this area of California having a plentiful supply of fruits and vegetables. They were aware of the lack of physical activity which may be based on their own inactivity. Because all responses had positive attitudes toward eating healthy and physical activity following the training sessions, it is hopeful that the participants will be able to change their and their family’s eating behaviors

and physical activity levels. They were surprised at how good the “taste test” item were and wanted to use the other recipes from the cookbooks.

The generalizability of these findings is not possible due to the limited sample. However, this program and this evaluation are a beginning to helping those individuals most vulnerable to change their health related behaviors. Future research is needed to understand the best training techniques to use with this population. Also, research is needed to understand the effects of the training and the longitudinal outcome of such training.

References

Aarts, H., Paulussen, T., & Schaalma H. (1997). Physical exercise habit: On the conceptualization and formation of habitual health behaviors. *Health Education Research*, 12, 363-374.

Abusabha, R., Peacock, J., & Achterberg, C. (1999). How to make nutrition education more meaningful through facilitated group discussions. *Journal of the American Dietetic Association*, 99, 72-76.

Alaimo, K., & Olson, C. M. (2001). Food insufficiency, family income, and health in the U. S. preschool and school-aged children. *American Journal of Public Health*, 91, 781-786.

- American Dietetic Association. (2001). Position of the American Dietetic Association: Food fortification and dietary supplements. *Journal of the American Dietetic Association*, 101, 115-125.
- American Dietetic Association. (1991). Position of the American Dietetic Association: Nutrition education of the public. *Journal of the American Dietetic Association*, 91, 611-613.
- Baranowski, T., Medlein, J., Resnico, D., Frank, E., Cullen, D., & Baranowski, J. (2000). Physical activity and nutrition land youth. *Preventive Medicine*, 31, S1-S10.
- Bar-Or, O., Foreyt, J., Bourchard, C., Brownell, K. D., & Dietz, W. H. (1998). Physical activity, genetic, and nutritional considerations in childhood weight management. *Medical Science Sports and Exercise*, 30(1), 2-10.
- Block, G., Norris, J.C., Mandel, R. M., & DiSogra, C. (1995). Sources of energy and six nutrients in diets of low-income Hispanic-American women and their children: Quantitative data from the national health and nutrition examination survey. *Journal of the American Dietetic Association*, 95, 195-208.
- California Department of Health Services. (1999). California dietary practices survey: Overall trends in healthy eating among adults 1989-1997. Sacramento: California.
- California Department of Health Services, Cancer Prevention and Nutrition Section (1999). Healthy Latino Recipes. Sacramento, California.
- California Department of Health Services, Cancer Prevention and Nutrition Section (1999). Discover the secret – 5 a day for better health! Sacramento: California.
- Center for Disease Control and Prevention. (1999). Physical activity and good nutrition: Essential elements for good health. Washington, D. C. Retrieved on March 23, 2003, from <http://www.cdc.gov>
- Clark, D. O. (1997). Physical activity efficacy and effectiveness among older adults and minorities. *Diabetes Care*, 20, 1176-1182.
- Hartman, T. J., McCarthy, P. R., Park, R. J., Schuster, E., & Kuski, L. H. (1994). Focus group responses of potential participants in a nutrition education program for individuals with limited literacy skills. *Journal of American Dietetic Association*, 97, 744-748.
- Lantz, P. M., House, J. S., Lepkowski, J. M., Williams, D. R., Mero, R. P., & Chen, J. (1998). Socioeconomic factors, health behaviors, and mortality: Results from a nationally representative prospective study of US adults. *Journal of the American Medical Association*, 279, 1703-8.
- Macario, E., Emmonds, K. M., Sorensen, G., Hunt, M. K., & Rudd, R. E. (1998). Factors influencing nutrition education for patients with low literacy skills. *Journal of the American Dietetic Association*, 98, 559-564.
- Nutrition Network for Healthy, Active Families at California State University, Fresno. (2000). Course curriculum: Nutrition and physical activity. Retrieved on March 23, 2003, from <http://www.csufresno.edu/ccchhs/NN/default.html>
- U. S. Department of Health and Human Services. (2000, January). Healthy people 2010: Understanding and improving health (Conference Ed.). Retrieved on March 23, 2003, from <http://www.health.gov/healthypeople.gov>.
- U.S. Department of Agriculture (2000). Nutrition and your health: Dietary guidelines for Americans, 2000. Washington, D.C.: U.S. Department of Health and Human Services, Home and Garden Bulletin No. 232.

Acknowledgements

Thank you to members of the Faculty Fellows who support this program: Dr. Sandra Witte, Dr. Sherm Sowby, Dr. Thomas Minnear, and Dr. Michael Coles.

Thank you to the co-director of this project Dr. Kristine Warner for her support.

Much appreciation goes to Jessica Micheletti, at the California Department of Health for her encouragement and assistance.

This California Department of Health program was funded by the U.S. Department of Agriculture.

Author Information

Debra M. Harris
Nutrition Network for Healthy, Active Families
Assistant Professor in Department of Social Work Education
5310 N. Campus Drive
Mail Stop: PH 102
California State University, Fresno 93740-8019
E-Mail: dharris@csufresno.edu