Impact of a Culturally Appropriate Nutrition Intervention on Latinos in Central Ohio

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ABSTRACT

This study evaluates the effectiveness of a community based nutrition intervention for low-income Latinos in central Ohio. The Healthy Latino Families Program (HLFP) included healthy cooking and nutrition classes, and aerobic workouts for 20 weeks. In order to measure dietary intake improvements, a 22-item Spanish version food behavior checklist was administered to 53 Latino families before and after participation. Bi-variate analyses indicated a significant improvement for most items. Consumption of fruit per day increased for adults ($p<0.001$) and both adults and children reported eating more varieties of fruits ($p<0.01$). Three times as many adults began using food labels to select foods ($p=0.0001$) and the number of adults and children choosing low-fat food increased ($p<0.01$). The number of adults and children consuming soft drinks was cut in half ($p<0.01$). Our findings show that the intervention improved self reported food behavior in adults and children of this population. Future research should evaluate similar intervention programs for effectiveness, and incorporate more incentives to attend weekly classes. Funded by: the Ohio Commission on Minorities Health, the Department of Human Nutrition, and Centro Esperanza Latina.

INTRODUCTION

Within the realm of health and nutrition Hispanics have in the past been referred to as the "silent or invisible minority", due to the dearth of studies specific to the population (1). Thankfully times have changed, and the number of studies and publications about this population has greatly increased. However, the growth of research about this population cannot match the unprecedented growth of the population itself.

From 1990 the Latino population grew from 21.9 million and 9% of the total to 35 million, and 12.5% of the population (1, 2). This represents a 61% increase in the Latino population, while the general population increased only 13%. (2). According to the 2004 census, 41.3 million Latinos reside in the United States and make up approximately 13% of the total population- the largest and fastest growing minority group (3). The term Latino includes any person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race (3)

There are documented disparities in Latino health, access to health care, and high rates of nutrition related diseases in the Latino population (4, 5, 6). There are also documented cultural differences that affect health behaviors, specifically within community nutrition and for Latinos (7). With all this in mind, the program and analysis detailed here aims to augment the growing field of research to promote Latino health in the United States.

LITERATURE REVIEW

Latinos are individuals who were born in any Latin American country; including Puerto Rico. This population group also includes those individuals born in the USA who are of Latin-American descent as well as individuals and families who have been in the US for centuries whose ancestry is Spaniard. This diversity of backgrounds means that each Latino will have a unique personal history and culture that impacts their health and eating behaviors.

Acculturation is the phenomenon of adjusting to and the adoption of the customs of a new culture, as typical of immigrants in a new country. The term "dietary acculturation" has been used to describe the process of adopting the food behaviors of the host culture (8). Studies have shown that higher degrees of acculturation in the United States correspond to decreased consumption of fruits and vegetables and increases in consumption of fat (9). Existing research recommends that dietitians and health care professionals encourage Latinos to maintain their healthy eating habits in regards to fruit and vegetable consumption, while adjusting to the new culture (9).

The Latino community in the United States is an underserved population, due in large part to the number of Latinos who are undocumented and not entitled to federal programs. It is the fastest growing segment of the total population and the largest immigration group, projected to become one-third of the total population in the next 100 years, Latino health is a national concern (10). Latinos make up 13% of the United States population- currently the largest minority group in the US- and suffer a disproportionately large percentage of nutrition-related diseases (11). Ten percent of

white Americans report being in poor health, whereas 17% of Hispanics report poor health (12). Minority health is a great concern for the United States Department of Health and Human Services which developed along with the Healthy People 2010 guidelines, an initiative called "Eliminating Racial and Ethnic Disparities in Health" (13).

Latinos currently comprise 13% of the population in the United States, or about 41.3 million persons and make up the largest minority group (3, 6, 11). The Latin American population suffers from a number of nutrition related diseases, such as obesity, cardiovascular disease, and diabetes (11). With acculturation, Latinos become more obese. After five years in the United States the percentage of obesity among Latinos is 14.5% (14). After ten years the number increases to 21%, and the number continues to increase to 24.2% at 15 or more years of residence in the US (14).

According to the National Diabetes Education Program, 2.5 million Hispanics over the age of 20 have been diagnosed as diabetic (15). This comprises 9.5% of the Hispanic population, but there is no information of how many undiagnosed diabetics there are. In addition, Mexican Americans are 1.7 times as likely as non-Hispanics of similar age to be diabetic (15).

The American Heart Association lists the top causes of death for Latinos to include heart disease and stroke at number one, cancer at number two, and diabetes as number four. Poor nutrition is a risk factor for each of these diseases, and among Latinos 18 years or older 7.7% have heart disease, 4.5% have coronary heart disease, 19% have hypertension, and 2.2% have had a stroke (16). Cardiovascular disease remains the number one cause of death for both Latino and non-Latino populations, but research indicates that the cardiovascular disease profiles of Latinos are considerably worse than

their non-Latino counterparts even though incidence of disease is proportionately equal (17, 18).

Health in Columbus, Ohio

The leading causes of death among the people of Franklin County are heart disease, cancers, stroke, chronic lower respiratory disease, and diabetes (19). To reduce these illnesses a variety of solutions have been posed, among them community interventions (20) For example, the Columbus Public Health Department has an impressive directory of services including Minority Health and Women Infants and Children services listed in English, Spanish, and Somali. These steps to reach high risk population are important, but not enough. The need for nutrition education is clear, but generalized public campaigns are not enough (21).

The Columbus Public Health Department published a report that listed the following as barriers to healthy eating for persons in low income areas: small corner stores that have limited selection and higher prices than supermarkets, lack of transportation to food resources, inconvenient store hours, easy access to fast food restaurants, and schools that provide easy access to soda and vending machines (19). Latinos face these barriers as well, according to the 2002 Census data 21.8% of Latinos live in poverty (22). For all these limitations a community nutrition education intervention is essential.

Nutrition Interventions

Racial and ethnic minorities who face these barriers to food are in addition at a distinct disadvantage in terms of health. Studies show that barriers to health care exist for Latinos as a group, such as linguistic, cultural, and socioeconomic limitations (23). These

barriers to informational support may place Latinos at increased risk for obesity and cardiovascular disease (6). Thus, as the Latino population grows, the necessity for culture specific and language appropriate programs increases as well.

According to the American Dietetic Association, "Numerous studies have shown that the combination of proper nutrition and regular physical activity is the most effective intervention for weight loss and maintenance of weight loss" (24). Effective culturally competent interventions must include the previously cited components as well as the following- appropriate language, targeting specific habits, and consideration of the subjects' culture (1).

There is a need for culturally appropriate nutrition interventions in Ohio, and throughout the nation evidenced in many different studies. A meta analysis of 92 studies regarding efficacy of behavioral dietary interventions to modify cancer risk was done by the Agency for Healthcare Research and Quality (AHRQ). The AHRQ found that "very few studies were appropriately designed or reported their findings to permit interpretation of the evidence for the efficacy of interventions by subgroup, particularly low-income or ethnic groups (25). In their analysis of programs in existence, the AHRQ found that programs which employed "interaction with food" were among the most effective (25).

In a baseline analysis of participants in the Cholesterol Screening and Education Project in New England, funded by the National Institute of Health, Gans et al found differences in food behaviors by ethnic group (26). Hispanics (n=1,425) were more likely than whites (n=7,817) and blacks (n=561) to eat fruits and vegetables as desserts, and as a means to avoid fat (26). Hispanics along with blacks were more likely to fry foods than whites however, and Hispanics were the least likely group to use nutrition

facts labels (26). The authors suggested that differences in existing food behaviors among ethnic groups must be acknowledged and incorporated into interventions, and that such culturally appropriate interventions should be further researched (26).

Alternatively, Kumanyika et al suggest that given the limited information regarding nutrition interventions for minority groups there is nothing to prove that methods used in other groups or settings would not work (27). Past studies have examined the effects of culturally adapted and appropriate intervention programs for Latino families, and suggest that further research and intervention studies are necessary (6, 25, 28, 29, 31, 32, 33, 34).

Food Behavior Checklist

The Food Behavior Checklist (FBC) was developed and validated using low-income, English speaking participants of Food Stamp Nutrition Education Program. The developers narrowed an original 39 questions to 22 questions using serum carotenoids and multiple 24 hour recalls to validate the checklist (35). Fruit and vegetable questions (questions one through nine) are positively correlated with serum carotenoids, vitamins A and C, beta carotene, folate, dietary fiber, and servings of fruit and vegetables (35). Dairy items (questions ten and eleven) are positively associated with vitamin A, riboflavin, calcium, and serving of dairy (35).

Questions 12 through 16 are fat and cholesterol intake items which are positively correlated with energy, fat, saturated fat and cholesterol except for questions 13 (During the past week did you have fish?) and 15 (Do you take the skin off chicken?) which are negatively correlated (33). Questions 17 through 20 are diet quality items and are positively correlated with serum carotenoids, vitamin and mineral intake, fiber, and

servings of fruit and vegetables (35). The final two questions are food security items and are positively correlated with servings of fruit and vegetables and negatively correlated with fat intake (35).

Separate from these studies of our FBC, a Meta analysis of brief surveys with six to sixteen fruit and vegetable related questions examined whether such tools could be used to monitor fruit and vegetable intake in varying populations (36). The authors found that such instruments do monitor fruit and vegetable consumption trends in a given population and over time (36). The Food Behavior Checklist (FBC) was not among the instruments reviewed in this study but does contain eight fruit and vegetable questions, and fits the inclusion criteria of this study.

The FBC used in this study has been further validated for use in low-income groups, as well as for different ethnic groups (37). The tool is easy to administer and requires low respondent burden (37). The FBC has also been examined for sensitivity to change (37). Given its validation and sensitivity the FBC is an ideal instrument to measure changes in self-reported food behaviors in the study population.

There is a precedent for adapting an existing assessment tool to Spanish due to the lack of available tools for the Spanish speaking population (38). Also, programmers emphasize educating the Hispanic population, rather than developing tools to assess it (38). The results of this work will enable programmers in Columbus, Ohio to make changes necessary to obtain continued funding and provide the framework for an evaluation protocol to measure program effectiveness.

Objective of this study is:

1. to improve the health status of participants and analyze the

intervention using the Food Behavior Checklist to facilitate more effective programs for Latinos in the future.

METHODS

Participants

The HLFP was administered in Columbus, Ohio by Centro Esperanza Latino (CEL), a community based program, in conjunction with the OSU Department of Human Nutrition and OSU Extension. The program was conducted at the Vida Abundante Church located on the west side of Columbus in a high Latino population area. Families in this study were recruited by CEL and data was collected from 53 household food preparers and their youngest child over the age of five at both the pre and post intervention assessment. Participants were 81% Mexican, 19% other, with average length of residence in the United States of 6.4 years. Spanish was mainly spoken in the home in 98% of households and 2% reported speaking Spanish and English equally. Average education level among participants was 10 years; 77% studied in Mexico, 6% studied in Europe, and 17% studied in other locations. Among all participants in this study, 9.44% of reported a monthly income of less than $1001, 60.38% reported a monthly income of $1001-$1500 per month, and 30.19% reported monthly income greater than $1500.

The analysis incorporated data from two groups, each conducted in the same year with, different instructors, and different program length. The first group consisted of a 20 week long series taught by volunteers in from the Department of Human Nutrition at The Ohio State University (n=28). The length of the second intervention was reduced to 12 weeks due to participant preference and feasibility (n=25). Study protocol and instruments were reviewed and approved by the OSU Institutional Review Board.

Healthy Latino Families Program (HLFP)

The goal of program was to initiate a line of research regarding recent immigrant Latino population's risk factors for overweight, diabetes, and cardiovascular disease. Thus, data was collected regarding dietary and physical activity habits and attitudes, food security status, body mass index, waist to hip ratio, blood pressure, blood glucose, and cholesterol levels. The aim of HLFP was to improve the health status of participants and analyze the intervention in to facilitate more effective program planning in the future. For this paper, we will only address the changes in dietary behavior.

In accordance with AHRQ recommendations, The Healthy Latino Families Program included healthy cooking classes, which actively involved all participants in the cooking and tasting of foods (25). This program was designed to teach and demonstrate the basic components of healthy lifestyle habits in a culturally appropriate and competent manner. The intervention consisted of nutrition education, healthy cooking, and salsa aerobics classes. Each was offered weekly in Spanish by members of the research team and community volunteers.

The nutrition class was taught in a classroom setting where study participants attended information sessions, watched videos, completed worksheets and logs, and received informational handouts on various topics related to foods and nutrition. The corresponding cooking class for the week reinforced the concepts taught in the nutrition class through demonstration of a recipe that met the week's dietary recommendations. The healthy recipes were based on Latin American cuisine and selected only if they met specific nutritional criteria. The program also included exercise classes in the form of salsa aerobics, to incorporate physical activity as part of a healthy

lifestyle. As the Healthy Latino Families Program is the first program of its kind in Columbus, no specific data exists as to the health status of Latinos in Central Ohio.

Statistical Analysis

Analysis was performed using STATA 8 statistical software (Stata Corporation 4905 Lakeway Drive, College Station, Texas 77845 USA). To examine changes between pre and post intervention dietary intake behaviors, McNemar's χ^2 test was conducted on the dichotomous FBS variable. McNemar's χ^2 tests for discrete variables and t-tests for continuous variables analysis were conducted on individual questions to compare pre and post intervention practices. McNemar's test was used as it is an appropriate test for equality of proportions. Bivariate analysis was done to compare pre and post intervention behavior.

The Food Behavior Checklist (FBC) 22 item survey was used with the majority of the questions in a yes/no format to reduce questionnaire length. Four questions, 12, 17, 21 and 22 were omitted from the survey administered to target children as preliminary analysis found them to be unrelated to food behavior in children, resulting in an 18 item survey for children.

Both adult and child FBC surveys were coded such that affirmative responses were coded 1, and negative responses were coded 0 with the exception of questions 18, 19, 21, and 22 (Do you drink soft drinks, do you buy fruit punch, and food security questions) which were inverted to reflect poor or positive dietary behaviors. Questions four and seven, "How many servings of vegetables (fruits) do you consume each day?" were coded 0 for a response less than three, and 1 for a response equal to or greater than three. Question thirteen "How many times a week do you usually eat food from a fast

food restaurant" was coded 0 for a response greater than or equal to one, 1 for responses less than one. Question fifteen, "If you eat eggs, about how many do you usually eat in a week?" was coded 0 for a response less than one or greater than four, and coded 1 for a response one to four inclusive. Question twenty "Would you describe your diet as excellent, very good, good, fair, or poor?" was coded 0 for a response of "fair" or "poor", and coded 1 for a response of "good, very good, or excellent".

Thus responses were coded zero for poor dietary habits, while healthy eating behaviors were coded one. A Food Behavior Score (FBS) was created from the sum of positive responses. Subsequently, a two-categorical classification was generated as follows:

Adults		*Children*	
Healthy:	11-20	Healthy:	9-18
Unhealthy:	0-10	Unhealthy:	0-9

In addition, three questions were analyzed to determine the exact changes before and after intervention. The total FBS for adults and children were used, as well as question 17 for adults regarding nutrition label use as it was the most significant change. Using χ^2 tables, the number of participants who reported the same behavior pre and post were compared with the number of participants who changed behaviors, in either a positive or negative direction.

RESULTS

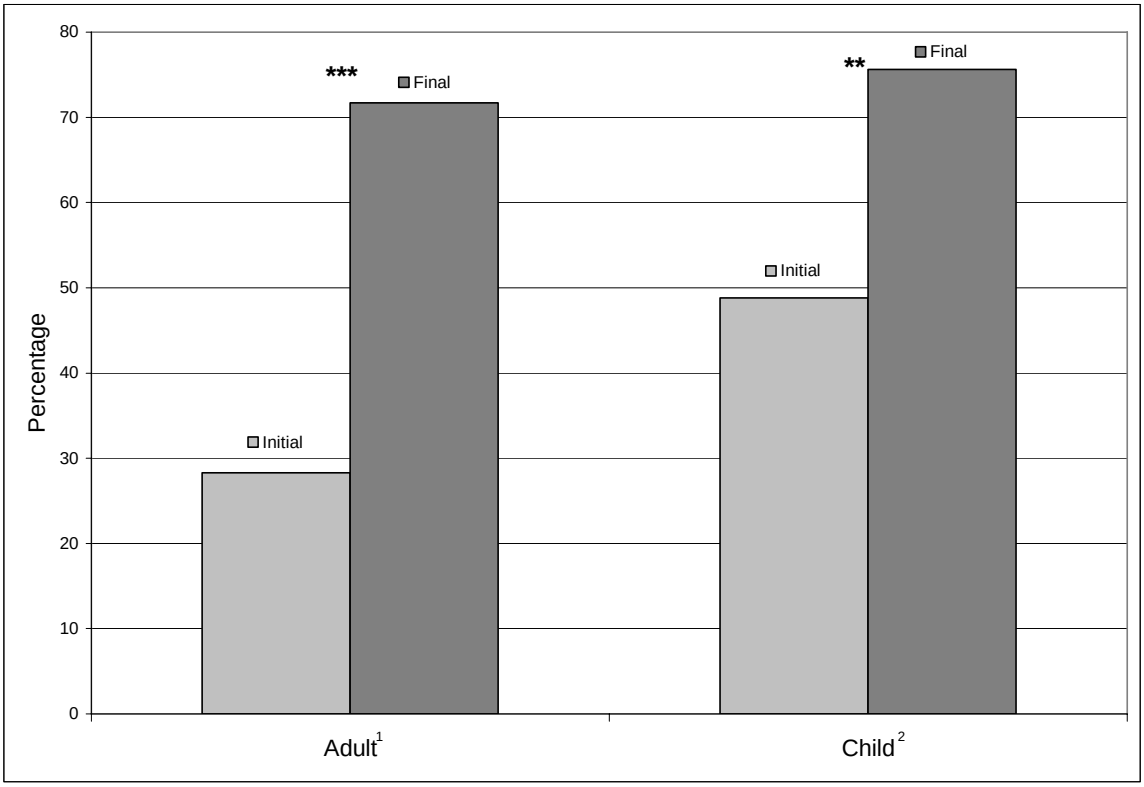
Figure 1 reveals a significant change of percentage in FBS pre and post intervention. Specific changes in adult item behavior are found in Figure 2. Items that were statistically significant include daily consumption of fruit for adults and ($p<.001$) and increase in reported variety of vegetables ($p<.001$). There were also increases in

adult consumption of 2 or more vegetables per day and increases in fruit portions ($p<.05$, $p<.05$). Adults showed a statistically significant increase in raw vegetable intake ($p<.01$). Adults consumed less soda post intervention ($p<.01$). Adults reported purchasing fewer fruit drinks post intervention ($p<.05$). Adults reported greater consumption of low fat instead of high fat foods ($p<.01$). Adults also increased use of nutrition facts labels ($p<.001$), and reported fewer instances of worrying that they would run out of food ($p<.05$). Adults showed a marginally significant increase in perception of diet ($p=.0588$).

The results of the child's Food Behavior Checklist found in Figure 3 show statistically significant changes in daily consumption of fruit for ($p<.05$), and increase in reported variety of vegetables ($p<.05$). Children showed a statistically significant increase in raw vegetable intake ($p<.01$), and consumed less soda post intervention ($p<.01$). Children reported greater consumption of low fat instead of high fat foods ($p<.01$). In addition, children had marginally significant increases in egg intake per week and daily milk consumption ($p=.0833$, $p=.0588$).

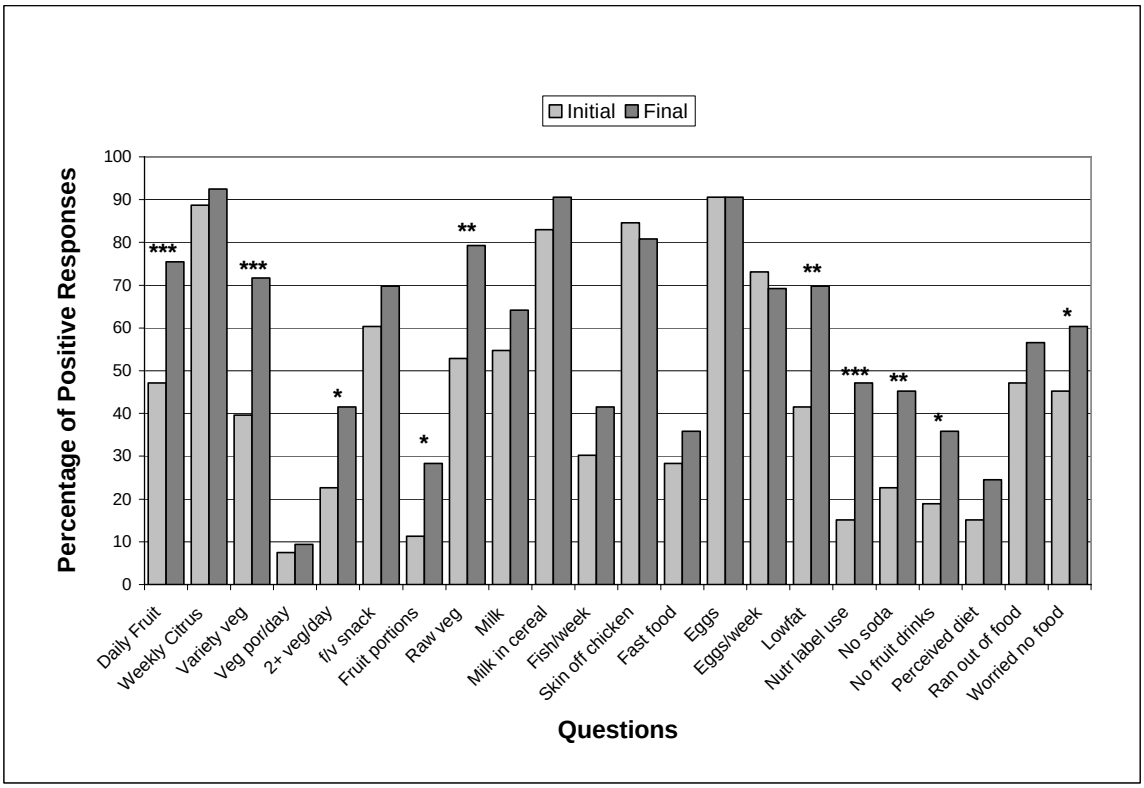
Figures 4-6 demonstrate the changes within nutrition label use, adult FBS and child FBS, respectively. The first set of bars (pre) shows the percentages of participants responding either in the negative or positive prior to intervention. The second set of bars (change) represents the percentage of participants who moved in either direction, positive or negative, after the intervention. The third set of bars (same) demonstrate those participants whose response remained static, and the fourth set (post) represent the percentages of participants responding negatively or positively post intervention.

Figure 1: Comparison of Food Behavior Score Pre and Post



Adult n=53 Child n=41
Significance based on bi-variate analysis
*p value = <.05, ** p value = <.01, *** p value = <.001

Figure 2: Percentage of Adult Positive Responses by Question

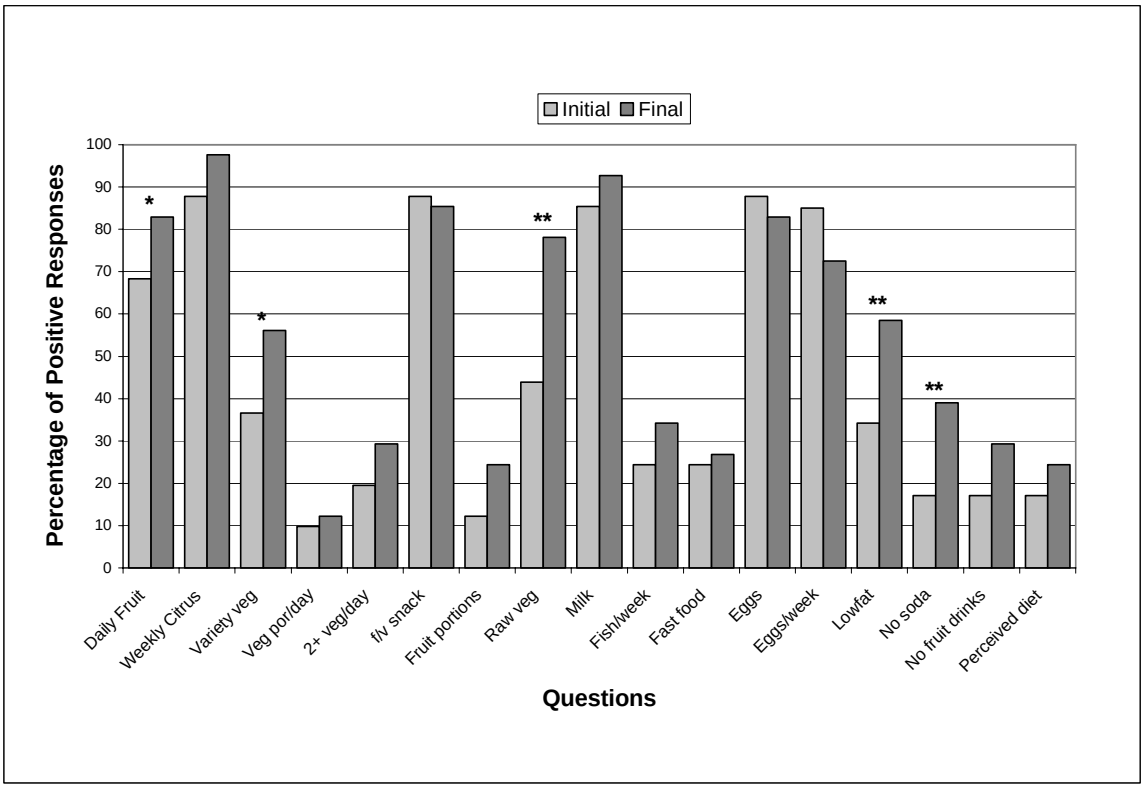


n=53

Significance based on bi-variate analysis

*p value = <.05, ** p value = <.01, *** p value = <.001

Figure 3: Percentage of Child Positive Responses by Question



n=41
Significance based on bi-variate analysis
*p value = <.05, ** p value = <.01, *** p value = <.001

Figure 4: Nutrition Label Use Changes in Adults

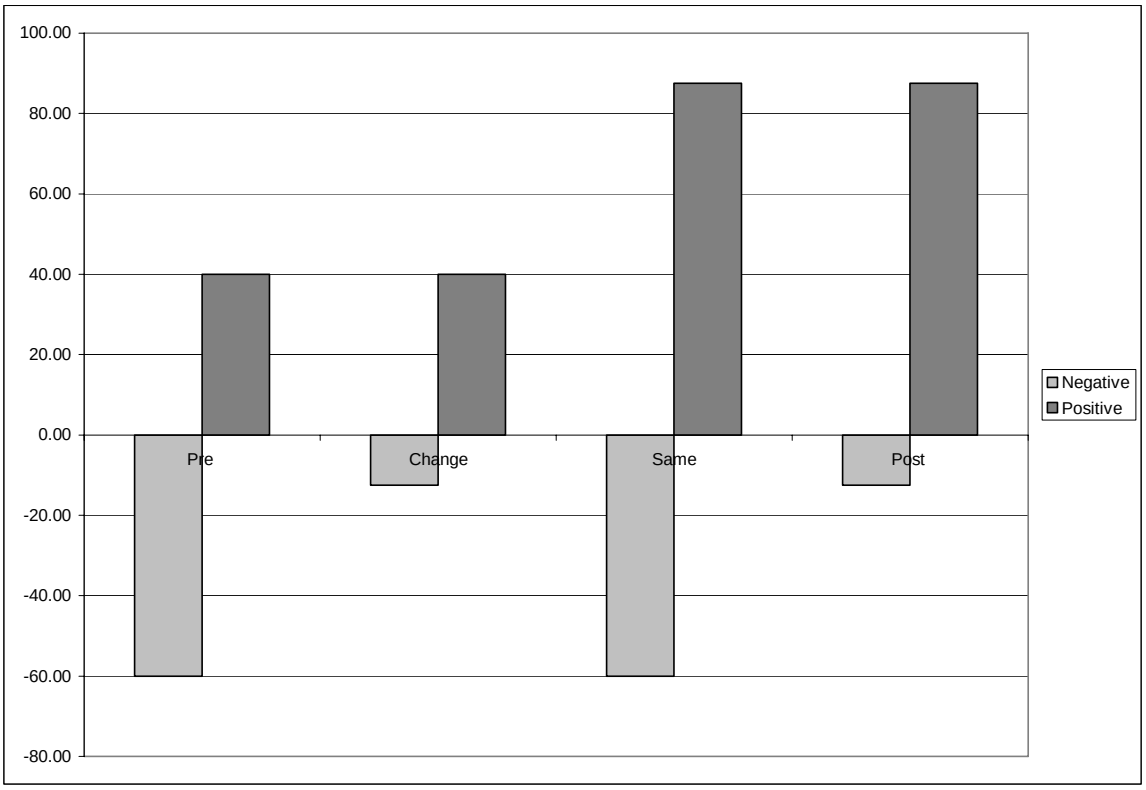


Figure 5: FBS Changes in Adults

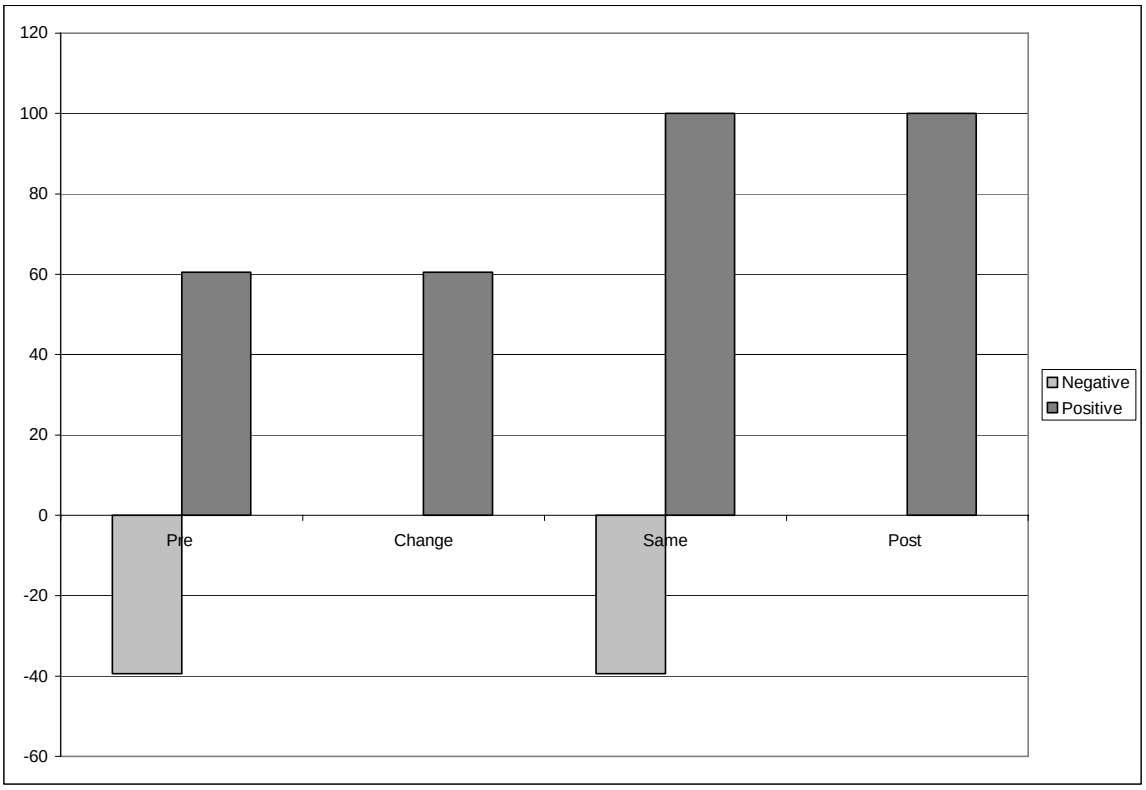
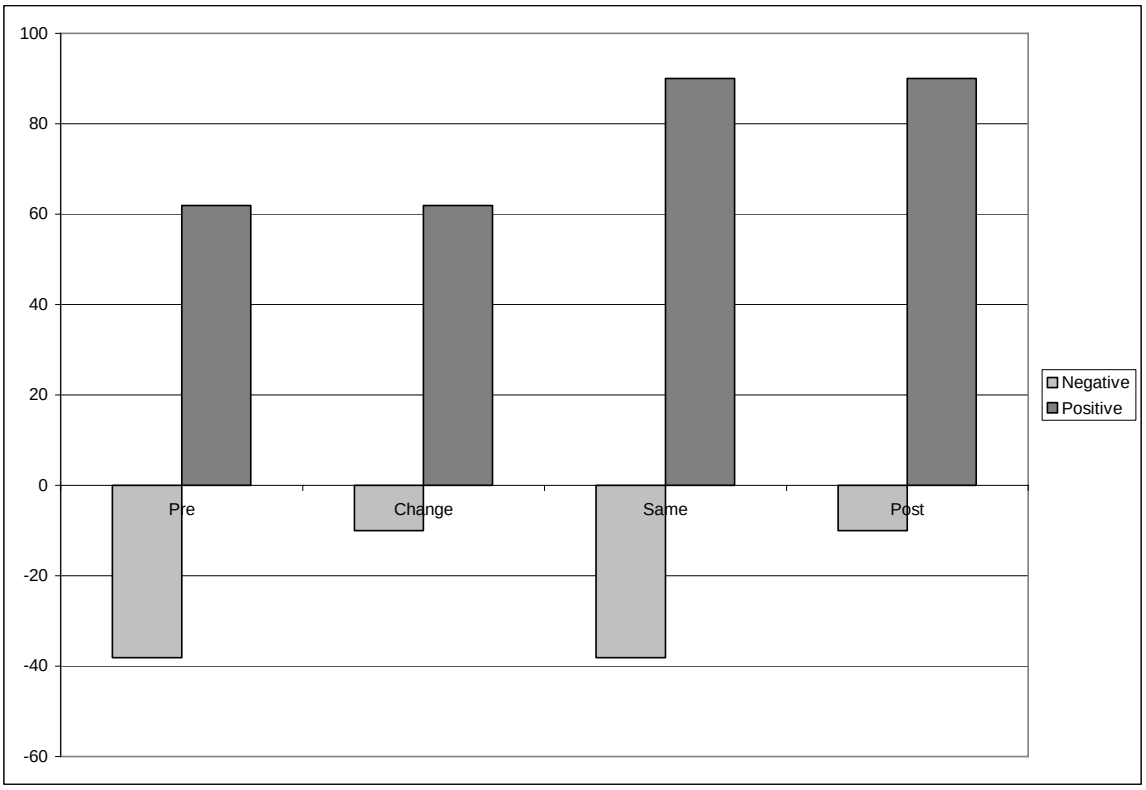


Figure 6: FBS Changes in Children



DISCUSSION

A general improvement in food behaviors following the Healthy Latino Families Program was observed in both adults and children. Fat intake decreased, which coincides with results from the Women's Health Initiative in which post-menopausal women (n=12,430) from 40 clinical centers across the United States participated in a one year series of interventions (28). Classes in the Women's Health Initiative included dietary modification strategies taught by trained nutritionists and designed to decrease fat, while increasing fruit, vegetable, and grain intake. Latinos made up 2.5% of the participant population, and were more likely than other groups to reduce fat intake from milk, cheese, and mixed dishes (28).

Notably fruit and vegetable intakes increased after the HLFP which is consistent with a meta analysis of behavior change post nutrition interventions (25). Researchers reported an average increase in fruit and vegetable consumption across studies of 0.6 servings per day (25). Adults and children in HLFP showed the most dramatic behavior change in fruit and vegetable consumption. This is comparable to Mujeres Felices por ser Saludables (Women Happy to be Healthy), an eight month education program targeted to low-acculturated Latino women (n=254) in Chicago in a high Latino population area, the majority of whom were Mexican American (29). In that study the participants showed statistically significant decreases in reported dietary fat intake ($p<.001$) and improved levels of fiber intake after the intervention, although not at a statistically significant level ($p=0.06$) (30).

The Women's Health Trial: Feasibility Study in Minority Populations (WHTFSMP) consisted of a twelve month program with of 18 education sessions aimed

at reducing kilocalories from fat to 20% and increasing fruits, vegetables, and grains. The study was conducted by the National Cancer Institute in Atlanta Georgia, Birmingham Alabama, and Miami Florida. Results showed that black and Hispanic low-socioeconomic status women (n= 548) increased consumption of fiber, beta carotene and ascorbic acid while decreasing fat intake ($p<.05$) (31). The "unhealthy eating index," which would be comparable to our FBS, was reported to be reduced post intervention (31). Education sessions were given weekly for the first six weeks, biweekly for the second six weeks, and monthly for the remaining nine months. Although our program was not as long in duration as the WHTFSMP, we had comparable results suggesting that a shorter, more cost effective intervention may be just as successful.

The increase in FBS post intervention in the HLFP is comparable to increases in nutrition knowledge reported in the Language for Health Program (32). This intervention took place in the San Diego area and was targeted to recent immigrants participating in English as a second language classes in which the subjects also attended nutrition or stress management classes (control). Ninety percent of the participants (n=732) were Latino. Using self-report surveys the study reported a significant increase in fat avoidance, and nutrition knowledge ($p<.001$) (32).

The Starr County Border Health Initiative, a bilingual education intervention for Mexican Americans with Type 2 diabetes (n=256); demonstrated an increase in diabetes knowledge of 14.4% at three months into the year long study ($p<.05$) (33). The goal of the study was to determine the efficacy of a culturally competent diabetes self management intervention for Mexican Americans in a border town of Texas, where 97.7% of the residents are Mexican American. Like the HLFP, the Starr County

initiative included food preparation, food safety, and food label education as well as exercise. In addition to these, the Starr County initiative taught diabetes education, medications information, hygiene, and family and community support resources. While the focus of the Starr County initiative was on diabetes knowledge and care, diabetes and nutrition are inseparable topics. The demonstrated increase in nutrition related knowledge is related to our increase in FBS following the HLFP intervention, and demonstrates the effectiveness of a language and culturally appropriate intervention.

Klohe-Lehman et al conducted nutrition knowledge tests before and after an eight week intervention. The intervention was administered in both Spanish and English and consisted of dietary, activity, and behavioral change classes. Participants were low income, overweight and obese mothers of young children (n=141), of whom 67% were Hispanic. Klohe-Lehman et al reported a 20% increase in nutrition knowledge post intervention ($p<.05$) (34). These results are similar to our demonstrated increase in FBS post intervention.

The HLFP demonstrated increases in self-reported health food behaviors, particularly fruit and vegetable intake, low fat foods selection, decreases in soda, and increase in nutrition label use to select foods when shopping. The implications of this are exciting, however despite the many positive changes in food behaviors there were many limitations to this intervention.

LIMITATIONS

Known barriers to consistent participation for low income Hispanics in community based interventions include lack of transportation, hectic lives, and frequent financial, health, and personal crises (39, 40). Specific limitations participants

encountered in HLFP included lack of transportation, time constraints, 7-day work week, and insufficient incentive to participate, which resulted in poor attendance.

Little pre-intervention cultural competence testing of teaching material ad methods were done. In the future we recommend additional focus groups should be conducted to assure that the intervention meets the perceived needs of the group.

An additional limitation includes the small sample size of both adults and children. In discussing the FBC instrument post assessment, it was discovered that some interviewers interpreted responses such as "sometimes" to mean yes, and others interpreted it as no. A further limitation to the FBC is that it has not been extensively validated in Spanish, although there is a precedent for adapting an existing, validated assessment tool.

Additionally, the final analysis of the FBC included two separate six month interventions, each with a different set of participants and different instructors. Within interventions there was potential for variability in class material as morning and evening classes were offered by different instructors. The interventions occurred at different times of the year which may affect fruit and vegetable purchase, availability of certain foods, and food behaviors.

A final limitation is the observed custom of "simpatia". Simpatia is the cultural expectation or need for smooth interpersonal relations, documented in the Mexican culture (1). Because of this Latinos may be inclined to respond to a question about their health behaviors with the socially desirable response regardless of its verity (29, 1). This acquiescence to avoid potential conflict has been documented among persons of low socio-economic status, the elderly, and those of Mexican ethnicity (41). Our sample fits

the low socio economic status and Mexican ethnicity categories, and it is possible that this cultural norm biased the results post intervention. However, all participants were advised prior to the FBC that there were no "right" or "wrong" answers, and that the investigators were simply interested in their food habits. Even if this cultural norm were present in the study, there was nonetheless a statistically significant increase in knowledge of healthy food habits.

CONCLUSION

Even acknowledging these limitations, statistically significant changes in self reported dietary habits were found in both children and adults following the HLFP intervention. It is important to distinguish between nutrition knowledge and nutrition behavior, and future programming should include a component to more accurately distinguish the two. Also, studies of how culturally competent nutrition interventions affect health status long term need to be conducted. Future programs should continue to employ organized and coordinated strategies to improve nutrition behavior outcomes in the Latino community.

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APPENDIX

Food Behavior Checklist[1]

Mark in the columns on your right your responses to the following questions:

Questions	Yes	No
1. Do you eat more than 1 kind of fruit daily?		
2. During the past week, did you have citrus fruit or citrus juice?		
3. Do you eat more than 1 kind of vegetable a day?		
4. How many servings of vegetables do you eat each day?		
5. Do you eat 2 or more servings of vegetables at your main meal?		
6. Do you eat fruit or vegetables as snacks?		
7. How many servings of fruit do you eat each day?		
8. During the past week, did you have raw vegetables?		
9. Do you drink milk daily?		
10. During the past week, did you have milk as a beverage or on cereal?		
11. During the past week, did you have fish?		
12. Do you take the skin off the chicken?		
13. How many times a week do you usually eat food from a fast foot restaurant?		
14. During the past week, did you have eggs?		
15. If you eat eggs, about how many eggs do you usually eat in a week?		
16. Do you eat low-fat instead of high-fat foods?		
17. When shopping, do you use the Nutrition Facts on the food label to choose foods?		
18. Do you drink regular soft drinks?		
19. Do you buy kool-aid, Gatorade, sunny delight, or other fruit drink/punch?		
20. Would you describe your diet as excellent, very good, good, fair, or poor?		
21. Do you run out of food before the end of the month?		
22. Do you worry whether your food will run out before you can buy more?		

[1] Townsend & et.al. 2003. Selecting items for a food behavior checklist for a limited – resource audience. Journal of Nutrition, Education and Behavior, 35: 69-82.

Lista de comportamiento sobre comidas[2]

Por favor marque en las columnas de la derecha sus respuestas a las siguientes preguntas:

Preguntas	SI	NO
1. Consume usted más de un tipo de frutas diariamente?		
2. Durante la semana pasada, consumió usted jugos cítricos o frutas cítricas?		
3. Consume usted más de un tipo de vegetales al día?		
4. Cuantas porciones de vegetales usted consume cada día?		
5. Consume usted 2 ó más porciones de vegetales en su comida principal?		
6. Consume usted frutas ó vegetales como botana?		
7. Cuantas porciones de fruta consume usted cada día?		
8. Durante la semana pasada, consumió usted vegetales crudos?		
9. Bebe leche diariamente?		
10. Durante la semana pasada, consumió usted leche como bebida o en el cereal?		
11. Durante la semana pasada, consumió usted pescado?		
12. Pela usted o le quita la piel (el cuero) al pollo?		
13. Cuantas veces a la semana usualmente come usted en restaurantes de comida rápida?		
14. Durante la semana pasada, consumió usted huevos?		
15. Si usted consume huevos, cuantos huevos consume en una semana?		
16. La comida que consume es baja en grasa en vez de alta en grasa?		
17. Cuando hace compras, utiliza usted las tablas nutricionales que se encuentran en los empaques de la comida y para escoger sus alimentos?		
18. Consume usted bebidas que contienen gas como pepsicola, cocacola, etc?		
19. Compra usted kool-aid, gatorade, sunny delight, ó otro tipo de bebida/ ponche azucarado?		
20. Describiría su dieta como excelente, muy buena, buena, regular o muy mala?		
21. Se le acaba la comida antes de finalizar el mes?		
22. Se preocupa usted de que se le acaba la comida antes de que usted pueda comprar mas?		

[2] Townsend & et.al. 2003. Selecting items for a food behavior checklist for a limited – resource audience. Journal of Nutrition, Education and Behavior, 35: 69-82.