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Are Rural 4-Hers More Connected to Their Communities Than Their Non-4-H Counterparts?

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Promoting Healthy Lifestyles Among Grandparents Raising Grandchildren in Riverside County

Abstract

The project reported here sought to increase healthy eating and physical fitness among grandchildren and grandparents using a two-pronged approach: 1) increased fruit and vegetable consumption and 2) increased physical activity. Families consisting of grandparents and grandchildren met at a community center for eight Saturdays to participate in educational activities to increase their knowledge of the benefits of fruit and vegetable consumption and increased physical activity. Among the families completing the program, desirable changes were observed in both fruit and vegetable consumption and increased physical activity. However, a larger study involving more participants is needed to confirm these results.

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Introduction

Prevention of obesity has risen to the top of the list of U.S. public health priorities (NCHS, CDC, 2004). Although dramatic increases in obesity have been seen in all age groups, obesity is particularly troubling among children (Duderstadt, 2004). Over the past three decades, the obesity rate has more than doubled for preschool children aged 2 to 5 years and adolescents aged 12 to 19 years, and more than tripled for children aged 6 to 11 years (Trowbridge, 2004). This epidemic is occurring in boys and girls in all 50 states, in younger children as well as adolescents, across all socioeconomic strata, and among all ethnic groups. However, specific subgroups, including African Americans, Hispanics, and American Indians, are disproportionately affected (Koplan, Liverman, & Kraak, 2005).

Health practitioners view childhood obesity as an area where the benefits of prevention are great because they reduce the need for treatment later in life (Passehl et al., 2004). Obese children tend to become obese adults, and obesity early in life is predictive of coronary heart disease, hypertension, and diabetes in adulthood (Nicklas, Yang, Baranowski, Zakeri, & Berenson, 2003). While the links between diet and obesity are complex and difficult to clearly delineate, interventions that involve improved eating habits (Spoon, Benedict, Leontos, & Krelle-Zeponi, 1998), and increased physical activity (Cason, Wenrich, & Ly, 2005), while avoiding highly restrictive diets and medications, are favored by healthcare professionals (Robinson & Sirard, 2005).

The obesity epidemic has significant implications for Cooperative State Research, Education, and Extension Service (CSREES) initiatives and programming related to its mission of "a safe, sustainable, competitive U.S. food and fiber system and strong, healthy communities, families, and youth through integrated research, analysis, and education" (Litchfield, Muldoon, Welk, Hallihan, &

Lane, 2005). In recent years, an increasing number of Cooperative Extension programs have targeted childhood obesity, including the University of California program Children and Weight: What Health Professionals Can Do About It (Robinson, 2004). However, programming targeting obesity issues among children being raised by grandparents is limited.

The incidence of childhood obesity in Riverside County, California, is similar to that in many parts of the U.S. The percent of overweight children 0-12 years among low-income families in Riverside County is 14.6%, which is higher than both the national (11%) and the state averages (14.4%). In 2002, in the Corona/Norco area of Riverside County, a community-based coalition named Corona-Norco Children and Weight Coalition (CN-CWC) was formed to address the growing problem of childhood obesity. The coalition is made up of health professionals and community leaders concerned about the unhealthy lifestyles, unhealthy eating habits, and lack of physical activity among children.

The purpose of the coalition was to develop programs within the community to reverse the trend of increasing childhood obesity. During 2003-2004, CN-CWC received funding from General Mills Champions Youth Nutrition and Fitness Grant to start a project for grandchildren being raised by their grandparents. The project was designed to work with both grandchildren and grandparents, and aimed at reducing obesity by a two pronged approach: 1) increasing fruit and vegetable consumption and 2) increasing physical activity.

Methodology

Recruitment efforts were targeted at youth ages 9-12 from households where grandparents are raising grandchildren. Recruited families were asked to fill out an enrollment form and to attend a 2-hour group meeting once a week for 8 weeks.

The group meetings were a combination of goal setting, education, fun activities, and group support. Education and activities were designed to increase understanding of the link between fruit and vegetable consumption, physical activity, and health. Activities were geared toward helping to put knowledge into practice and included food demonstrations, a grocery store tour, taste testing, and a nutrition game. Participants were given free fruits and vegetables to take home every week to encourage consumption. In addition, participants were given pedometers to keep track of their steps and were asked to keep track of their activities for the President's Challenge program. Six families (7 grandparents and 9 grandchildren) successfully completed the project.

Recruitment Efforts

Recruitment proved to be more difficult than anticipated, and we had to delay the project start date from early January 2004 to mid February 2004. We expanded outreach and launched major efforts in recruiting grandparents raising grandchildren families by seeking assistance from various agencies. Flyers and announcements were distributed at several community meetings and locations, including doctor offices in Corona-Norco area. Almost 170 flyers were mailed out to families on the mailing list provided by the Grandparents Raising Grandchildren Task Force, an entity under the Riverside County Office on Aging.

Recruitment Results

Twenty-six families were initially recruited. However, only 14 families filled out the enrollment form and only nine families (11 grandparents and 13 grandchildren) showed up for the first group meeting. It was difficult for grandparents raising grandchildren families to commit to a long-term project such as this one. Several grandparents had grandchildren older or younger than the targeted age group, and we were unable to accommodate them. A few grandparents had lost custody of their grandchildren during the waiting period prior to the start of the project. Others had work conflicts or health issues. Two grandparents cited distance as the barrier to their participation. At the time the project started, gasoline prices went up dramatically, and this may have contributed to the change in their decision to participate.

Participant Demographics

Tables 1-4 show the age, gender, and ethnicity of the nine families (11 grandparents and 13 grandchildren) that came to the first group meeting. The majority of the children (84%) were in the 9-12 age group. There were 38% male and 61% female in the grandchildren group. Their ethnicities were 46% White, 15% Black, 15% American Indian, 23% Hispanic, and 0% Asian. The majority of the grandparents (91%) were in the 50-69 age group. There were 18% male and 82% female in the grandparents group. Their ethnicities were 82% White, 9% Black, 0% American Indian, 9% Hispanic, and 0% Asian.

All families were low income. About 55% received federal assistance, and 44% were below 150% poverty level. When asked whether they ran out of food before the end of the month, 72% answered "sometimes" or "always." Grandchildren participating in this project had been living for a relatively long time with their grandparents (4-12 years), and in most cases grandparents were their legal guardians.

Table 1.

Age of Youth

Age	Number	Percent
7	1	8%
8	1	8%
9	4	31%
10	0	0%
11	2	15%
12	5	38%
Total	13	100%

Table 2.
Youth Gender and Ethnicity

Ethnicity	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
White	3	23%	3	23%	6	46%
Black	0	0%	2	15%	2	15%
American Indian	0	0%	2	15%	2	15%
Hispanic	2	15%	1	8%	3	23%
Asian	0	0%	0	0%	0	0%
Total	5	38%	8	61%	13	99%

Table 3.
Adult Age

Age	Number	Percent
<50	1	9%
50-59	6	55%
60-69	4	36%
>69	0	0%
Total	11	100%

Table 4.
Adult Gender and Ethnicity

Ethnicity	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
White	2	18%	7	64%	9	82%
African American	0	0%	1	9%	1	9%
Native American	0	0%	0	0%	0	0%
Hispanic	0	0%	1	9%	1	9%
Asian	0	0%	0	0%	0	0%
Total	2	18%	9	82%	11	100%

Program Activities

At the first group meeting, participants were asked to sign a consent form and a photo release form. They were informed of the goals and the expected outcomes of the project. Each participant was given a pedometer and was asked to keep track of the steps and the time spent doing physical activity for President's Challenge Program. The incentive for this effort was \$50 toward a smoothie maker for grandparents or \$50 toward walking shoes for grandchildren, to be awarded at the end of 8 weeks.

Participants used the scorecard from the 5 A Day "Be Active" Program (Riverside County Health Nutrition Services) to keep track of their steps or hours of physical activity. Small incentives (socks, jump ropes, balls, hula hoops, Frisbees, 3 lb. Weights, etc.) were given weekly when participants turned in their scorecards. Topics covered included 5-A-Day, the Food Guide Pyramid, reading food labels, phytochemicals, etc. Information was communicated using mini-lectures interspersed with audience participation activities. Sometimes participants brought other family members to the group meeting.

Project Results

Baseline Knowledge

A total of 11 grandparents and 12 grandchildren filled out the survey at the start of the project. The majority of grandparents (91%) and grandchildren (83%) indicated that they had seen the food guide pyramid. (This project was conducted in 2004, before the introduction of MyPyramid). However, only a few participants (18% grandparents and 8% grandchildren) knew that the grains group was the food group they should eat the most of each day. More participants (73% grandparents and 67% grandchildren) knew that fats and sweets group is the group they should eat fewest each day. A high number of participants (82% grandparents and 50% grandchildren) had knowledge of the recommended minimum number of daily servings of fruits and vegetables. However, the high number is likely to be due to the mentioning of 5 A Day during program introduction.

All grandparents and 75% of grandchildren knew that what you eat can increase your disease risk. The same number of grandparents and grandchildren also believed that overweight people are more likely to have health problems. But only 36% of grandparents and 33% of grandchildren believed that underweight people are more likely to have health problems than appropriate weight people.

The majority of grandparents (82%) believed that most people their age think eating fruits and vegetables every day is a very good thing to do. However, when asked about their family's opinion, only 45% of grandparents thought people in their family believe eating fruits and vegetable every day is a very good thing to do. The results were just the opposite for grandchildren. Only 50% of grandchildren believed that most people their age think eating fruits and vegetables every day is a very good thing to do. But more children (67%) thought people in their family believe eating fruits and vegetables everyday is a very good thing to do.

Baseline Fruit and Vegetable Consumption

Participants were asked to estimate their fruit and vegetable consumption during the past week. Eighty percent of grandparents and 62% of grandchildren reported that they consumed 100% fruit juices, like orange juice, apple juice, or grape juice, less than three times during the last 7 days. About the same numbers of grandparents (82%) and grandchildren (62%) consumed fruit less than once per day. Seventy-three percent of grandparents and 80% of grandchildren ate a green salad less than 3 times during the past seven days. Sixty-four percent of grandparents and 60% of grandchildren ate other vegetables like carrots less than once per day.

When asked whether they ate two or more servings of vegetables at their main meal, only 27% of grandparents answered "Always." Ten percent of grandparents said they always eat fruit or vegetables as snacks. Twenty percent of grandparents always used Nutrition Facts on the food label to help choose foods.

Baseline Physical Activity

The majority of grandparents (80%) watched 3+ hours of television on an average day. Less than half (42%) of grandchildren reported that they watched 3+ hours of television on an average day. When asked how many days during the past week they spent at least 20 minutes doing aerobic exercise, 82% of grandparents and 33% of grandchildren said 3 days or less, and more than half (55%) of grandparents said 1 day or less. A larger number of grandparents but a lower number of grandchildren participated in anaerobic activity. About 54% of grandparents and 59% of grandchildren said they spent 3 days or less during the past week doing a minimum of 30 minutes of anaerobic activity. Almost all of grandparents did not do any strength training during the past week. About 91% grandparents said they spent 0-1 day on strength training during the past week. About half of grandchildren reported that they spent 3 days or less on strength training.

Sixty-three percent of grandparents and 42% of grandchildren said they rarely or never exercise with their family. Fifty-five percent of grandparents and 67% of grandchildren said their families encourage them to exercise often or every day.

Need for Change

The baseline survey established that there was a great need for change in health and nutrition habits of grandparents raising grandchildren. Although these families recognized the food guide pyramid and knew that they need to limit consumption of fats and sweets, they did not understand

how the food guide pyramid works.

The majority of the families were not using Nutrition Facts information on the food labels when they shop for foods. The baseline fruit and vegetable consumption shows that these families are consistent with national data of not getting enough fruits and vegetables as recommended by health experts. The majority of the families were not physically active. Program impact was evaluated based on seven grandparents and nine grandchildren who completed the project. Only participants with matched pre/post tests are evaluated.

Impact on Fruit and Vegetable Consumption

Table 5 shows a comparison of frequency of fruit and vegetable consumption during the past week. The percentage of grandchildren and grandparents who showed improvement in fruit and vegetable consumption varies from 17% to 67%. More than 50% of grandparents showed improvement toward the following desired behaviors: eat more fruits, eat more green salad, eat less French fries, and eat two or more servings of vegetables at their main meal. About 40-50% of grandparents ate more vegetables like carrots and ate more fruit or vegetables as snacks after they completed the project.

The greatest improvement in grandchildren is their consumption of green salad. Almost 70% of grandchildren showed improvement in the frequency of green salad consumption. Over 40% of grandchildren showed improvement toward the following desired behaviors: eat more fruits, eat two or more servings of vegetables at their main meal, and eat fruit or vegetables as snacks.

Table 5.
Changes in Fruit and Vegetable Consumption

During Past 7 Days	Grandparents		Grandchildren	
	% Improved	Number of participants with Matched Pre/Post Tests	% Improved	Number of participants with Matched Pre/Post Tests
How many times did you drink 100% fruit juices, like orange juice, apple juice, or grape juice?	25%	4	17%	6
How many times did you eat fruit?	60%	5	43%	7
How many times did you eat green salad?	60%	5	67%	6
How many times did you eat fried vegetables or French fries?	67%	3	20%	5
How many times did you eat any other vegetables, like carrots?	40%	5	17%	6
Do you eat 2 or more servings of vegetables at your main meal?	60%	5	43%	7
Do you eat fruit or vegetables as snacks?	50%	4	43%	7
When shopping, do you use the Nutrition Facts on the food label to choose foods?	25%	4	29%	7

Impact on Physical Activity

Table 6 is a comparison of television and physical activity practice before and after completion of the project. The percentage of grandparents who watched television for 3 or more hours on an average day decreased from 100% to 60%. However, no change is seen in the percentage of grandchildren who watched TV for 3+ hours per day. More grandparents were doing aerobic

activity as at the end of the project and it appears that some had shifted from anaerobic to aerobic activity. The percentage of grandparents who did at least 20 minutes of aerobic activity per day for 3+ days during the past week increased from 20% to 100%, while the percentage of grandparents who did at least 30 minutes of anaerobic activity per day for 3+ days during the past week decreased slightly from 80% to 60%. More grandparents were doing strength training with the handheld weights given to them. The percentage of grandparents who had no strength training at all during the past week decreased from 100% to 60%. The impact of the project on grandchildren's physical activity level was disappointing.

The last group meeting when the post-test was given happened to follow a week of school break for Easter. Since the grandchildren already completed the 6 weeks of President's Challenge Program and there was no school PE activity, these factors might explain their low physical activity level during the week of post-test evaluation. This underscores the need for organized physical activity program to keep children physically active.

The percentage of grandparents who said they exercised with their family often or almost everyday remained the same before and after the project. However, the percentage of grandparents who said their family encouraged them to exercise often or almost everyday increased from 60% to 100%. The percentage of grandchildren who said they exercised with their family often or almost everyday increased from 62% to 100%. The percentage of grandchildren who said their family encouraged them to exercise often or almost everyday also increased from 75% to 88%. Therefore, this project seems to help the families becoming more supportive of each other in being physically active.

Table 6.
Changes in Physical Activity

Physical Activity Level and TV watching	Grandparents			Grandchildren		
	% Pre	% Post	Number of Participants with Matched Pre/Post Tests	% Pre	% Post	Number of Participants with Matched Pre/Post Tests
Did at least 20 minutes of aerobic activity per day for 3+ days during the past week.	20%	100%	5	75%	25%	8
Did at least 30 minutes of anaerobic activity per day for 3+ days during the past week.	80%	60%	5	50%	38%	8
Had no strength training at all during the past week.	100%	60%	5	25%	12%	8
Watched 3+ hours of TV on an average day during the past week.	100%	60%	5	50%	50%	8
Exercised with family often or almost everyday.	40%	40%	5	62%	100%	8
Their family encouraged them to exercise often or almost everyday.	60%	100%	5	75%	88%	8

Impact on Awareness and Attitude

Grandparents' comments on mid-project and final-project feedback show that this project made an impact on their awareness and attitude about the need for fruit and vegetable consumption and physical activity. One grandparent said "I was made aware of the consequences of poor choices in my diet and how to get more fruits and vegetables into my grandson's diet."

When asked what changes they have made in their diet as a result of this project, grandparents reported that they had diminished the junk food; ate 3-4 fruits daily and ate more vegetables than just 1 or 2 times a day; ate less sugars and starches; ate less fast foods; and considered

fruit/vegetable choices when preparing menu for the week.

When asked what changes they have made in their activity level as a result of this project, grandparents reported that they added exercise and walked more; continued to wear the pedometer and parked at the far end of the parking lots, took the stairs and did more walking; and motivated their family to walk.

When asked whether the project has made any impact on their grandchildren, one grandparent said "Yes, they actually ask for fruits now." Another grandparent said about her grandson "He has been drinking more water daily instead of soda. He eats salads and fruit for lunch at school instead of burgers and fries." Another grandparent said her grandson wanted her to buy mangos and keep 100% fruit juices on hand. In general, the comments were positive and showed that participants were very appreciative of having a project such as this one available to them.

Conclusion

Families of grandparents raising grandchildren are in great need for assistance in making changes in health and nutrition habits, probably more so than traditional families. However, these families have other issues such as custody, etc., to deal with that may not allow them to commit to making lifestyle changes. Programs designed to help grandparents raising grandchildren families in making desirable lifestyle changes should be flexible and long-term.

This project, though small in size, provides preliminary evidence that health and nutrition programs can reach families of grandparents raising grandchildren. A larger study that draws on the lessons learned by this project is needed to more clearly identify the best approaches for assisting grandparents raising grandchildren regarding issues of health and nutrition. This underserved audience could greatly benefit from Cooperative Extension programming.

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