

National Heart, Lung, and Blood Institute

Hearts N' Parks Y2K

Research and Evaluation Report

February 2000

I. Executive Summary

Hearts N' Parks Y2K was a pilot program conducted by the National Heart, Lung, and Blood Institute (NHLBI) in collaboration with the National Recreation and Parks Association (NRPA) and North Carolina State University. The goal of the program was to integrate nutrition education and physical activities into community recreation programs. Youth and adult (senior) programs were conducted. Twelve parks and recreation departments in North Carolina participated in the pilot during the summer of 1999. Size of the programs ranged from 9 to more than 1,000 participants. Secondary goals of the program included professional development for park and recreation personnel, as well as a test of *Hearts N' Parks* processes and procedures.

Three types of research efforts were undertaken to evaluate the program. Data were collected from participants at the 12 sites, at the beginning of the program (pretest) and after completion of the program (posttest). After completion of the program, telephone interviews were conducted with site personnel. Finally, at a conference in Charlotte, North Carolina, in November, a roundtable discussion was held with site personnel.

Data were collected from adult and youth participants. All sites except one eventually collected some participant data. These data were analyzed by Prospect Associates in December 1999. Youth programs were generally successful, with most showing some improvement in nutrition knowledge and behavioral intentions to eat a healthier diet at posttest. One site, Mecklenburg, showed improvement in actual healthy eating behavior among children. The adult programs were somewhat less successful, although improvements were seen at nearly all the sites on some variables.

Several issues of concern were noted. First, the sites did not always use the tests in the recommended way, and those that did not, tended to show less positive results. Second, one of the tests (Fitchek) for children proved to be very difficult to complete. Finally, Mecklenburg (the site with the largest number of participants) also had the greatest difficulty collecting reliable data.

Results from the telephone interviews and the roundtable discussion demonstrated that personnel liked the program and were happy to have been part of it. All sites said they would like to do the program again. Three things were identified as needing improvement. Some of the sites found that the program cost them additional money. In addition, site personnel noted that they needed support and additional training in obtaining partners and in working with the media to promote the program.

II. Introduction

Project Overview

Hearts N' Parks Y2K was a pilot program conducted by the National Heart, Lung, and Blood Institute (NHLBI) in collaboration with the National Recreation and Park Association (NRPA), North Carolina State University, and Southern Connecticut State University. The primary goal of the program was to integrate physical activity and heart-healthy eating into community recreation programs. The program was implemented in 12 communities representing urban, suburban, and rural areas throughout the state of North Carolina during the summer of 1999. The communities involved were Albemarle, Fletcher, Garner, Greenville, Hickory, Madison-Mayodan, Mecklenburg County, Raleigh, Roanoke Rapids, Smithfield, Winston-Salem, and Wilson. Youth and adult programs were conducted. Every site, except Smithfield, elected to do youth programs, whereas only eight sites elected to do adult programs. All adult programs were targeted at senior citizens. Fletcher, Greenville, Raleigh, and Wilson did not do adult programs. The size of the programs ranged from 9 participants in Smithfield to more than 1,000 in Mecklenburg County. Most programs had between 20 and 40 participants.

To kick off the *Hearts N' Parks Y2K* program, 2 training sessions were held with park and recreation representatives from the 12 communities. The initial training was conducted in March 1999 when NRPA provided park and recreation personnel with an overview of the program and the outcomes to be measured, the assessment tools, intervention ideas including those related to mass media activities, and follow-up activities. Another training session was held in May, just before the launch of the summer programs, to provide detailed information on outcome measures, follow-up, and technical support.

Each community was provided with a choice of educational materials developed by the NHLBI that covered topics such as high blood pressure, cholesterol, body weight, physical activity, and heart-healthy eating. Special materials targeting African Americans and Hispanics were also available. In addition, specific programs such as JumpSTART Afterschool (in English and Spanish), the CATCH materials, and the Sports Guide were offered to the communities.

A media kit was also provided to the sites to help establish and maintain relationships with local media to promote the program. The kit, which uses the NHLBI cardiovascular education program brand "Keep the Beat/Be Good to Your Heart," included a sample press release, background pieces on heart-healthy eating and regular physical activity, and tips to help enlist the support and involvement of local media.

Site Descriptions

Each of the 12 sites involved in the *Hearts N' Parks Y2K* project developed its own programs and on the basis of its own interests and resources, decided independently whether to do youth and/or adult programs. As a result, the programs varied considerably across the 12 sites. Each site's programs are described briefly below.

- The *Albemarle* Parks and Recreation Department conducted both adult and youth programs. For adults, Albemarle teamed with the local hospital, Stanley Memorial, to develop the 1-month "Walk About" program for adults in the community, with approximately 35

participants. Specific activities included walks around the county with health education professionals, screenings for blood pressure and blood glucose, stress management seminars, and strength training. For children, healthy snacks and health-related materials were incorporated into existing summer day camps. This program was 3 weeks long and included 35 participants. Physical activity was encouraged with participation in soccer, tennis, and swimming.

- The Town of *Fletcher* Parks and Recreation Department conducted a youth program with 25 participants. The department partnered with local organizations and agencies to give day camp participants the opportunity to hear from individuals with expertise on diet and exercise and how these components affect a heart-healthy lifestyle. The focus of this program was to excite and educate children about heart healthy eating and exercise. Healthy snacks and physical activity were also incorporated into the 4-week program.
- The *Garner* Parks and Recreation Department sponsored both senior (adult) and youth programs. The senior fitness program was called “Keep the Beat...Circle Yourself in Health.” It lasted 5 weeks and included 12 participants. Participants kept a journal of their involvement and received credit for prizes as an incentive to “keep the beat” toward a healthier lifestyle. The 8-week youth program focused on fitness and how to read food labels during a week at Camp Geko, a summer day camp for children. Other programs for children included the Mite Instructional Basketball Program developed for 5- to 8-year-olds.
- The *Greenville* Parks and Recreation Department conducted a youth program with approximately 40 participants, where they concentrated on building the strength, agility, and flexibility of program participants (ages 9 to 12 years) in the 5-week summer day camp program. Fun, physical play, and fitness testing were the key components of this program.
- The *Hickory* Parks and Recreation Department began a youth and adult program with a total of 75 participants. However, due to unforeseen circumstances, the program was not completed, and no participant data was received from this site.
- The *Madison-Mayodan* Recreation Department conducted both youth and adult programs, each lasting approximately 10-weeks. In the programs for children (3 programs with approximately 10 children each), called “Keep the Beat,” participants met with staff from the Madison-Mayodan Recreation Department once a week to learn about exercise and proper nutrition. With input from the participants, the staff combined familiar and new activities in the program schedule so that the youth had a wide variety of activities to incorporate into their individual activity plan. The 2 senior programs (with 15 and 11 participants) exposed adults to nutrition and heart-healthy activities. The recreation department took an existing senior exercise program that met twice a week, added another day to the program, and focused on health education in addition to exercise. Participants were asked to keep a fitness log and to exercise on their own in addition to the scheduled program. The health department conducted cholesterol, blood sugar, blood pressure, and body fat screenings for the program participants.
- The *Mecklenburg* County Park and Recreation Department in Charlotte, North Carolina, was a large site, with many adult and youth programs, all of them ranging in duration from 8 to

10 weeks. The “Walk for Life” senior walking program began on July 1, 1999. This program culminated with a mall walk, in which participants tested their endurance by walking from Charlotte to the local outlet mall. A nutritional lunch program was also coordinated with the walking program to provide education on healthy eating. Although the adult programs were part of *Hearts N’ Parks*, no data was ever received from these programs. For the 2,000 youths involved in summer day camp programs, the department focused on the health benefits of participating in lifelong sports like tennis. As part of their activities, the youths participated in a healthy lunch program that challenged them to “go around the world in 80 days.” Unfortunately, complete data was received from only about half of the youth programs at Mecklenburg.

- The *Raleigh* Parks and Recreation Department conducted two youth programs, each 8-weeks long. The summer Youth Basketball League, a joint venture of the Raleigh Police Department and the Raleigh Parks and Recreation Department, gave approximately 25 teens the opportunity to learn about health and fitness while having fun. Raleigh’s Learning All Summer through Education and Recreation (LASER) Summer Day Camp included educational components that linked recreation to education and included approximately 20 children. The children were encouraged to pack healthy lunches and were provided with healthy snacks at camp.
- The *Roanoke Rapids* Park and Recreation Department conducted both youth and adult programs. The youth program taught the basics of nutrition to 4- to 6 year-olds in its FLIP (Fun for Little Interested People) camp. The program lasted 1-week, with approximately 12 participants per week, and ran for a total of 8 weeks. In the department’s aquacise program for seniors, members met three times a week to practice water aerobics accompanied by music. This program is ongoing and serves 15 to 25 participants per week.
- The *Smithfield* Parks and Recreation Department established a partnership with the Johnston County Health Department and Looking Good Fitness Center to provide a 6-week senior exercise program for nine participants. The Health Department conducted blood pressure, cholesterol, and body composition screenings for all program participants. Throughout the program, participants gained knowledge in the areas of health, fitness, and nutrition.
- The *Wilson* Parks and Recreation Department conducted a youth program in which healthy eating and playing sports to help build a strong and healthy body were emphasized. Children participated in sports such as basketball and tennis and learned skills they could take into adulthood to continue being physically active. Healthy snacks were provided to emphasize the importance of healthy eating in building strong bodies. The program lasted 6 weeks and included approximately 40 children.
- The *Winston-Salem* Parks and Recreation Department conducted a youth and adult program. The 4-week youth program with 9- to 14-year-olds presented a healthy heart program designed to change the youths’ attitudes and behaviors regarding nutrition and the importance of eating healthy. Educational sessions were held, and healthy snacks were provided, with the goal of helping to transfer patterns of healthy eating from the program to the home environment. The youth program included approximately 35 participants. The Winston-Salem Parks and Recreation Department partnered with a local hospital to provide

blood pressure and cholesterol checks for adults in the “Healthy Striders” walking program. This program was 4 weeks long and included approximately 40 participants.

Report Format

As part of the overall project goal to evaluate the *Hearts N’ Parks Y2K* program, as well as to provide information for a future resource guide, several research efforts were undertaken. These included pre- and post testing of program participants, a phone interview with site personnel, and a roundtable discussion with site personnel held at the annual North Carolina Recreation and Park Society conference in Charlotte, North Carolina, in November 1999. Separate reports have been written summarizing results from the phone interviews and roundtable discussion. However, for the purpose of discussion and conclusions, the results of these research efforts will be summarized in this report. In addition, the methodology and results of the participant pre- and posttests will be presented in detail. Finally, the report will end with conclusions and recommendations drawn from all research efforts.

III. Participant Survey Data

Methodology

Before the start of the *Hearts N' Parks Y2K* program at the 12 sites, pre- and posttest surveys were distributed at the training sessions. Two types of tests were available, one for youth programs and one for adult programs (see Appendix A). Each of the sites independently decided which type of program it would like to conduct. Instructions on how to administer the tests were given verbally and in written form to site personnel by NRPA. One copy of each type of test packet was given to the sites, depending on which of the programs they were planning to conduct. Sites were responsible for making copies of the tests.

It should be noted that although recommendations were made regarding the specific tests to be given as pre- and posttests, some sites did not follow the recommendations. Variations in the tests given are shown in the tables describing each site's results.

Youth Data

In addition to collecting age and gender information from the children, the youth packets contained the following pre- and posttests.

Pretest:

1. Fitcheck. This test measures the time children spent engaged in various types of physical activities, as well as sitting down watching TV and movies, playing video games and using a computer. The *Fitscore* represents 1 point for every 15 minutes of physical activity, whereas the *Sitscore* represents time in hours. Thus, to make these two scores comparable, the *Fitscore* must be divided by 4.
2. Which food is better for your health (14 questions). For each question, the children circle one of two foods that they think is better for their health. One variable (*Health*) was computed from these 14 questions by counting up the number of correct choices. Scores are expressed in percentages and represent a child's knowledge of healthy eating.
3. What would you do (13 questions). For each question, the children circle one of two foods that they would eat if they had to choose just one. One variable (*Youdo*) was computed from these 13 questions by counting up the number of correct choices. Scores are expressed in percentages and represent a child's behavioral intentions to make the correct food choice.
4. What foods do you eat most of the time (14 questions). For each question, the children circle one of two foods that they eat most often. One variable (*Eat*) was computed from these 14 questions by counting up the number of correct choices. Scores are expressed in percentages and represents a child's actual eating behavior.

Posttest:

1. Things I learned and did this summer. This test presented children with 24 physical activities. For each activity, children were asked if they 1) learned it this summer, 2) got better at it this summer, and 3) would like to play it again. Three variables were computed (*Learned, Gotbetter, Again*) by counting up the number of activities that the children checked for each type of question.
2. Three tests from pretest were repeated at posttest. These were Which food is better for your health, What would you do, and What foods do you eat most of the time. Variables were computed in the same manner as at pretest.

Data Limitations

Before discussion of test results, limitations to the data should be noted because these impact the conclusions that can be drawn from the data analyses.

- As previously stated, there was some variation in the tests administered by the individual sites. This seriously limited the type of aggregate data analyses that could be conducted with the data.
- There was no consistent measure of physical activity at pre- and posttest for youth or adults. Because of this, only changes in food knowledge, intention, and behavior can be discussed.
- Several sites did not complete the *Fitcheck* test because the children found it too difficult. In addition, during data entry and data analyses, Prospect noted that many of the forms were incorrectly completed. Because these were excluded from the data analyses, the *Fitscore* and *Sitscore* variables are analyzed with a much smaller sample than the other variables.
- There was some question about the age-appropriateness of the youth tests. The youth programs served children from ages 4 to 17. For very young children (5-year-olds), the tests were probably too difficult. Yet for 12- or 13-year-olds, they were probably too easy.
- Data from the largest site, Mecklenburg County, was in generally poor shape, and some of it was lost in transit. As a result, approximately half of the youth data from this site was excluded from data analyses.
- Finally, because the tests were given at the sites with no supervision or overall control, there is probably considerable variation across sites in the reliability of the information. Thus, any conclusions drawn from the data analyses must be considered tentative, at best. In addition, no causal relationships can be drawn, even if significant changes were found from pre- to posttest.

Individual Site Results

Before beginning data analyses, a determination was made on the quality of the data sent by each of the sites. This information was needed to decide what statistical tests would be appropriate to analyze the data. The use of tracking numbers or other identifiers (e.g., initials) for individual participants so that pre- and posttests scores could be linked was the defining characteristic of data quality. Seven sites used some tracking system. These were Albemarle, Fletcher, Madison-Mayodan, Raleigh, Roanoke Rapids, Winston-Salem, and Wilson. Matched-

pairs tests of significance were used for these sites. The advantage of using matched-pairs tests is increased ability (power) to detect significant relationships if they exist. Two sites did not use tracking numbers (Mecklenburg County and Greenville), and independent statistical tests were used to analyze data from these sites. One site (Garner) did not submit any posttests. Its pretest results are reported in Table 1 but otherwise excluded from analyses.

Table 1 shows the variable scores by site as well as the difference between pre- and posttest scores. Although not all sites demonstrated *significant* improvement in most tests, note that most saw some improvement. Several of the larger sites (Mecklenburg, Raleigh, Roanoke, and Wilson) showed significant improvement in some of the tests. Greenville was the only site to demonstrate a consistent decrease at posttest. This result is difficult to explain because Greenville did not use a tracking system from pre- to posttest. It is possible that different individuals took the pre- and posttest, and this might explain the drop in scores. Significance tests were not conducted on the data from Madison-Mayodan because of the small sample size.

Two sites (Raleigh and Winston-Salem) used the *Fitcheck* test at pre- and posttest. However, both of the sites demonstrated a non-significant decrease in *Fitscores*. Again, it is difficult to say why this is the case, but it does suggest that this test may not be an appropriate longitudinal measure of activity levels.

Aggregate Results

An examination of the data showed that most sites had data on three variables (*Health*, *Youdo*, and *Eat*). Data from all sites that used a tracking system were combined on these variables and analyzed using matched-pairs significance tests. Two variables, *Health* and *Youdo*, showed significant improvements at posttest; that is, participants in the youth programs demonstrated greater knowledge of healthy eating and increased intention to eat healthier at posttest than at pretest. The *Eat* variable, indicating actual behavior, was not significantly improved at posttest, although there was some improvement. Individually, only Raleigh demonstrated significant improvement on this variable. These results are not unexpected. The literature in behavior change in many fields shows that knowledge, attitudes, beliefs, and intentions are always easier to change than actual behavior.

Data from the two sites that did not use a tracking system (Greenville and Mecklenburg) were also put together and analyzed using independent significance tests. Interestingly, these two sites demonstrated significant improvement in *Health*, *Youdo*, and *Eat*. This indicates that these children showed greater knowledge of healthy eating, displayed increased intention to eat healthy, and reported actually eating a healthier diet. It should be noted, however, that these results are solely the result of the significant improvements at Mecklenburg.

Figure 1 depicts the aggregate pre- and posttest scores for *Health*, *Youdo*, and *Eat*. Note that although all three variables show an increase, only *Health* and *Youdo* are significantly different.

Table 1. Youth Data Results by Site and Total

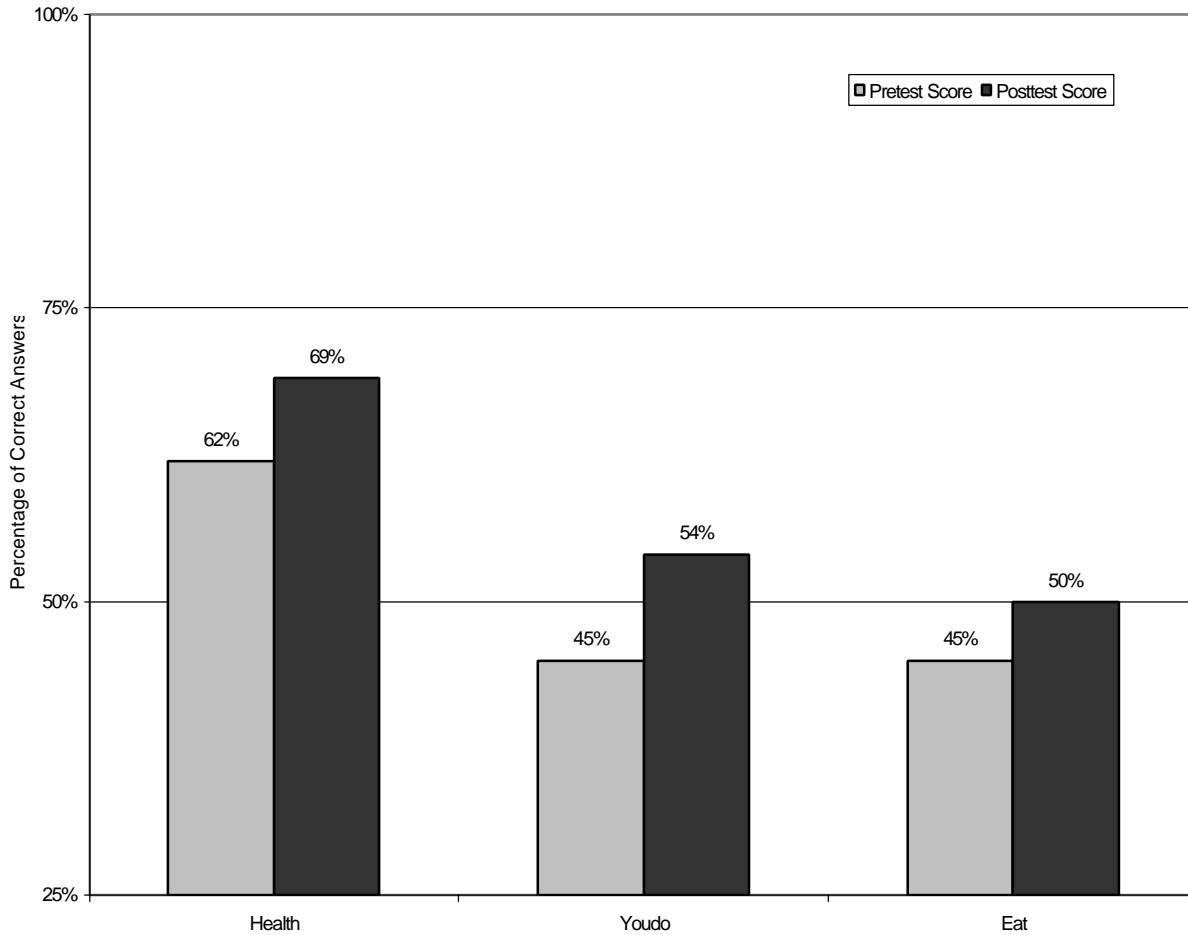
Site	Sample	Variable	Pretest Score	Posttest Score	Change	Test
Albemarle	31 participants; 25 girls	Health	73%	75%	+2%	NS
		Youdo	40%	44%	+4%	NS
		Eat	35%	40%	+5%	NS
Fletcher	26 participants; 14 girls	Fitscore	18.3			
		Sitscore	15.0			
		Health	64%	74%	+10%	NS
		Youdo	45%	50%	+5%	NS
		Eat	41%	35%	-6%	NS
		Learned		3.35		
		Gotbetter		5.20		
Garner	41 participants; 26 girls	Health	35%			
		Youdo	50%			
		Eat	37%			
Greenville	74 participants; 45 girls	Health	65%	59%	-6%	NS
		Youdo	52%	44%	-8%	NS
		Eat	51%	48%	-3%	NS
Madison	10 participants; 2 girls	Fitscore	42.8			
		Sitscore	21.3			
		Health	77%	88%	+11%	N/A
		Youdo	48%	55%	+7%	N/A
		Eat	44%	52%	+8%	N/A
		Learned		.38		
		Gotbetter		8.63		
Mecklenburg	817 participants; 416 girls	Fitscore	73.95			
		Sitscore	33.81			
		Health	62%	69%	+7%	*
		Youdo	45%	55%	+10%	*
		Eat	45%	51%	+6%	*
		Learned		4.33		
		Gotbetter		6.64		
		Again		7.93		

Table 1. Continued

Site	Sample	Variable	Pretest Score	Posttest Score	Change	Test
Raleigh	103 participants; 71 girls	Fitscore	62.68	53.43	-9.25	NS
		Sitscore	23.86	23.20	-0.66	NS
		Youdo	37%	59%	+22%	*
		Eat	39%	55%	+16%	*
Roanoke	36 participants; 16 girls	Health	52%	79%	+27%	*
Winston-Salem	36 participants; 22 girls	Fitscore	38.81	32.61	-6.2	NS
		Sitscore	31.39	32.15	+0.76	NS
		Health	56%	56%	0	NS
		Youdo	34%	35%	+1%	NS
		Eat	34%	34%	0	NS
Wilson	38 participants; 18 girls	Fitscore	26.74			
		Sitscore	37.07			
		Health	64%	74%	+10%	*
		Youdo	61%	71%	+10%	*
		Eat	66%	62%	-4%	NS
		Learned		5.97		
		Gotbetter		4.45		
Again			12.68			
Total		Fitscore	55.80	40.73	-15.07	NA
		Sitscore	30.62	28.57	-2.05	NA
		Health	62%	69%	+7%	*
		Youdo	45%	54%	+9%	*
		Eat	45%	50%	+5%	NS
		Learned		4.26		NA
		Gotbetter		6.33		NA
Again			8.46		NA	

Note. * Indicates a significant result. NS – Indicates a non-significant result. N/A – no test was conducted. Fitscore – 1 point represents 15 minutes of physical activity. Sitscore – 1 point represents 1 hour of sitting down to watch TV/movies, play video games, or use a computer. Health – % of correct answers representing the child’s knowledge of healthy eating. Youdo – % of correct answers representing the child’s behavioral intentions to make healthy food choices. Eat – % of correct answers representing the child’s actual eating behavior. Learned – number of physical activities the child learned during the summer. Gotbetter – number of physical activities the child got better at during the summer. Again – number of physical activities the child would like to play again.

Figure 1. Youth Data Totals - Health, Youdo & Eat



Adult Data

In addition to basic demographic information (age, gender, education, race, and income), the adult packets contained the following pre- and posttests.

Pretest:

1. **Questions about your health.** This test asked 12 questions that assessed the respondent's overall physical and emotional health. From these questions, eight variables were computed:
 - a. *Overall health (Q1):* a general measure of an individual's physical health.
 - b. *Limited physical activities (Q2,4 &5):* a measure of how much an individual is restricted in his/her physical activities by his/her health.
 - c. *Bodily Pain (Q3):* a measure of how much physical pain an individual experiences.

- e. *Nervousness* (Q7): a measure of how often an individual feels nervous or jittery.
 - f. *Happiness* (Q8 & 10): a measure of how often an individual feels happy, peaceful, or calm.
 - g. *Depressed* (Q9 & 11): a measure of how often an individual feels depressed, blue, or down in the dumps.
 - h. *Health state* (*Good and Poor*; Q12): two variables measuring current health state.
2. Health and nutrition survey. This test consisted of four parts:
- a. *Importance of dietary guidelines and fat/cholesterol knowledge*: an 8-item measure of how important eating a healthy diet is to the individual. Responses were coded from 0=not at all important to 3=very important. Responses to all questions were combined and averaged to create the variable, *Import*.
 - b. *Food and eating habits*: a 10-item measure of healthy eating habits. Responses were coded from 0=seldom/never to 2=usually. Responses to all questions were combined and averaged to create the variable, *Habits*.
 - c. *Actions to control high blood pressure*: a 15-item measure of an individual's knowledge of actions to take to control high blood pressure. Responses were coded as 0=incorrect and 1=correct. Responses to all questions were combined and a percentage of correct response score was computed (*Actions*).
 - d. *Possible causes of high blood pressure*: a 17-item measure of an individual's knowledge of the causes of high blood pressure. Responses were coded as 0=incorrect and 1=correct. Responses to all questions were combined and a percentage of correct response score was computed (*Causes*).

Posttests:

At posttest, tests *a* through *d* from the Health and Nutrition Survey were repeated. Responses were scored in the same manner as at pretest.

Data Limitations

As in the case of the youth data, several limitations to the data impacted the analyses and the results that can be drawn from them.

- Again, there was some variation in the tests administered by the individual sites. This seriously limited the type of aggregate data analyses that could be conducted with the data.
- There was no consistent measure of physical activity at pre- and posttest. Because of this, only changes in nutrition knowledge and behavior can be discussed.
- No data were received from the largest site, Mecklenburg County.
- Finally, because the tests were given at the sites with no supervision or overall control, there is likely to be considerable variation across sites in the reliability of the information. Thus, any conclusions drawn from the data analyses must be considered tentative, at best. In

addition, no causal relationships can be drawn, even if significant changes were found from pre- to posttest.

Individual Site Results

As with the youth data, a determination was made regarding the quality of the data sent by the sites. The data were examined for use of a tracking number or other system to match pre- and posttests. All sites used some type of participant tracking with the adult data. As a result, matched-pairs tests of significance were used for all significance testing. The only sites with enough data to conduct site-specific tests were Albemarle and Winston-Salem. However, data from all sites were combined and examined.

Table 2 shows the variable scores by site. Generally speaking, results from the adult programs were not as positive as results from the youth programs. This may be the result of three things. First, there were fewer adult participants, resulting in reduced power of the statistical tests to detect significant changes. Second, the adult programs tended to be less intensive than the youth programs, resulting in fewer opportunities to change knowledge and behavior. Finally, the attitudes and behaviors of adults are generally more resistant to change than the attitudes and behaviors of children.

On a positive note, all sites, except for Roanoke and Smithfield, demonstrated some improvements. Albemarle showed significant improvement in the importance of following dietary guidelines (*Import*), and Winston-Salem showed significant improvement in the self-reported general health of its participants (*Health*).

Table 2. Adult Data Results by Site

Site	Variable	Pretest Score	Posttest Score	Change	Test
Albemarle	Import	2.31	2.48	+0.17	*
	Habits	1.37	1.44	+0.07	NS
	Actions	78%	79%	+1%	NS
	Causes	40%	43%	+3%	NS
	General Health	3.49			
	Limited Physical Activities	.28			
	Bodily Pain	1.11			
	Limited Social Activities	.21			
	Nervousness	.51			
	Happiness	2.95			
	Depressed	3.91			
	Good Health	2.33			
	Poor Health	1.58			
Garner	Import	2.40	2.52	+0.12	
	Habits	1.37	1.58	+0.21	
	Action	78%	78%	0	
	Causes	38%	38%	0	
	General Health	3.00			
	Limited Physical Activities	.56			
	Bodily Pain	1.58			
	Limited Social Activities	.08			
	Nervousness	.83			
	Happiness	3.55			
	Depressed	.85			
	Good Health	2.43			
	Poor Health	1.51			

Table 2. Continued

Site	Variable	Pretest Score	Posttest Score	Change	Test
Madison	Import	2.77	2.92	+0.15	
	Habits	1.47	1.58	+0.11	
	Actions	84%	84%	0	
	Causes	40%	30%	-10%	
	General Health	3.50			
	Limited Physical Activities	.30			
	Bodily Pain	1.44			
	Limited Social Activities	.00			
	Nervousness	.44			
	Happiness	4.00			
	Depressed	.75			
	Good Health	2.68			
	Poor Health	1.24			
Roanoke	Import	2.55	2.54	-0.01	
	Habits	1.38	1.41	+0.03	
	Actions	75%	71%	-4%	
	Causes	39%	33%	-6%	
	General Health	3.64			
	Limited Physical Activities	.25			
	Bodily Pain	1.59			
	Limited Social Activities	.20			
	Nervousness	.23			
	Happiness	3.52			
	Depressed	.41			
	Good Health	2.45			
	Poor Health	1.62			

Table 2. Continued

Site	Variable	Pretest Score	Posttest Score	Change	Test
Smithfield	Import	2.54			
	Habits	1.56			
	Actions	79%			
	Causes	31%			
	General Health	3.56	3.22	-0.34	
	Limited Physical Activities	.22	.24	+0.02	
	Bodily Pain	1.11	1.45	+0.34	
	Limited Social Activities	.67	.11	-0.56	
	Nervousness	.44	.30	-0.14	
	Happiness	4.10	4.00	-0.1	
	Depressed	.30	.30	0	
	Good Health	4.25	3.77	-0.48	
	Poor Health	1.50	1.45	-0.05	
	Winston-Salem	Import	2.48		
Habits		1.37			
Actions		71%			
Causes		37%			
General Health		3.42	3.89	+0.47	*
Limited Physical Activities		.38	.31	-0.07	NS
Bodily Pain		1.33	.94	-0.39	*
Limited Social Activities		.24	.22	-0.02	NS
Nervousness		.59	.53	-0.06	NS
Happiness		4.00	4.03	+0.03	NS
Depressed		.33	.10	-0.23	NS
Good Health		3.65	3.75	+0.1	NS
Poor Health		1.92	1.55	-0.37	NS

Table 3. Adult Data Results - Total

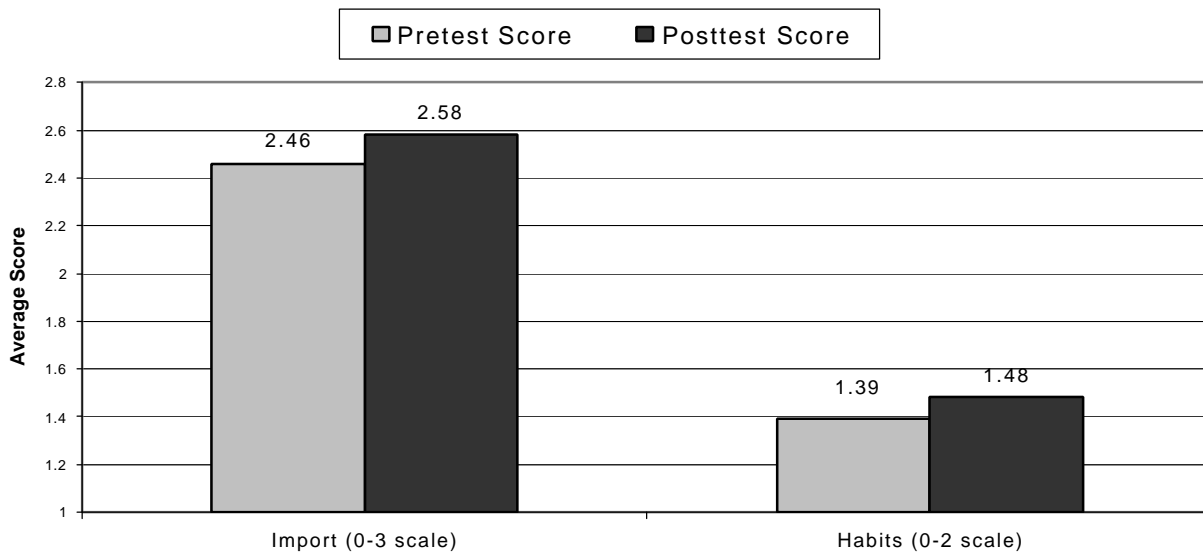
Site	Variable	Pretest Score	Posttest Score	Change	Test
Total	Import	2.46	2.58	+0.12	NS
	Habits	1.39	1.48	+0.09	*
	Actions	76%	78%	+2%	NS
	Causes	38%	37%	-1%	NS
	General Health	3.46	3.81	+0.35	NS
	Limited Physical	.31	.30	-0.01	NS
	Bodily Pain	1.33	1.01	-0.32	NS
	Limited Social	.20	.65	+0.45	NS
	Nervousness	.50	.78	+0.28	NS
	Happiness	3.62	4.02	+0.4	NS
	Depressed	.22	.42	+0.2	NS
	Good Health	3.81	4.08	+0.27	NS
	Poor Health	1.60	1.50	-0.1	NS

Note. * Indicates a significant result. NS – Indicates a non-significant result. Otherwise, significance tests were not conducted because sample sizes were too small. Import – measures the importance of dietary guidelines and fat/cholesterol knowledge on a scale of 0-3 (0=Not at all important, 3=Very important). Habits – measures healthy eating habits on a scale of 0-2 (0=Seldom/never, 2=Usually). Actions – % of correct answers representing knowledge of proper actions to control high blood pressure. Causes – % of correct answers representing knowledge of the causes of high blood pressure. General Health – assessment of physical health measured on a scale of 1-5 (1=Poor, 5=Excellent). Limited Physical – measures how much an individual’s health limits his/her physical activities on a scale of 0-2 (0=Not at all, 1=Limited for 3 months or less, 2=Limited for more than 3 months). Bodily Pain – measures how much physical pain an individual experiences on a scale of 0-5 (0=None, 5=Very Severe). Limited Social – measures how much an individual’s health limits his/her social activities on a scale of 0-5 (0=None, 5=All of the time). Nervousness – measures how often an individual feels nervous on a scale of 0-5 (see previous). Happiness – measures how often an individual feels happy, peaceful or calm on a scale of 0-5 (see previous). Depressed – measures how often an individual feels depressed, blue or down in the dumps on a scale of 0-5 (see previous). Good Health – measures whether and individual feels he/she is in excellent health on a scale of 1-5 (1=Definitely false, 2=Mostly false, 3=Don’t know, 4=Mostly true, 5=Definitely true). Poor Health – measures whether an individual feels bad or ill on a scale of 1-5 (see previous).

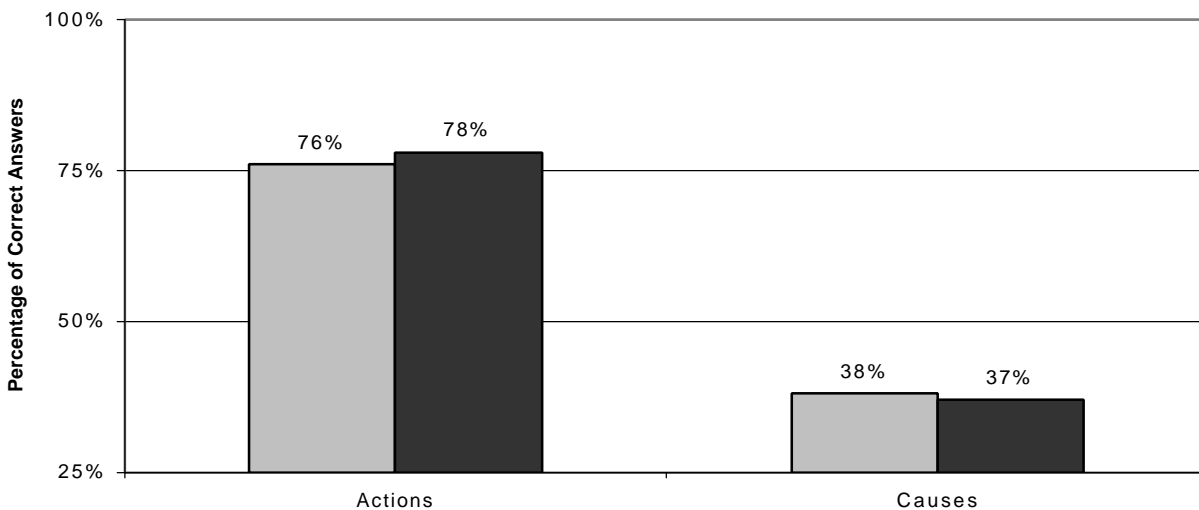
Aggregate Results

Table 3 shows the results of the data analyses on the entire adult sample. The only variable to show significant improvement was *Habits*, indicating that adult participants reported healthier eating habits at posttest than at pretest. Although this is only one variable, it is very encouraging that actual food behavior showed a positive change. In addition, it should be noted that nearly all other variables showed some type of improvement, even though the results were not statistically significant. Figure 2 depict the pre- and posttest scores for *Import*, *Habits*, *Actions*, and *Causes*. Note that only *Habits* shows a significant difference, although some improvement can also be seen in *Import* and *Actions*.

Figure 2. Adult Data Totals - Import & Habits



Adult Data Totals - Actions & Causes



Demographic Information

Table 4 shows the demographic information from all of the sites that submitted data on their participants. At every site, there were more women than men. This was less true at the larger sites (Albemarle and Winston-Salem). Also, most of the participants were white. Education levels varied widely. Roanoke-Rapids and Smithfield both had participants who, on average, had at least some college. Garner participants, on the other hand, generally had less than a high school education. Income levels did not vary as widely across sites, possibly because of the age (retiree) of the participants. However, income levels did correspond to education levels in that Roanoke-Rapids participants had the highest and Garner participants the lowest incomes.

Table 4. Demographic Information for Adult Participants

Site (N)	Males	Females	Age	White	African American	Hispanic	Educ. Level	Income
Albemarle (39)	14	23	3.72	38	1	0	2.45	2.92
Garner (15)	1	10	5.67	9	3	0	1.82	2.08
Madison (10)	0	10	5.60	7	3	0	3.30	2.89
Roanoke (22)	1	20	5.45	20	1	0	3.33	3.15
Smithfield (9)	0	9	5.67	8	1	0	3.33	2.63
Winston-Salem (72)	10	27	5.38	34	2	1	2.80	2.93

Note. Age: 1=under 25, 2=26 to 35, 3=36 to 50, 4=51 to 60, 5=61 to 70, 6=71 to 75, 7=over 75.
 Education Level: 1=0 to 11 years, 2=12 years/HS graduate, 3=1 to 3 years of college, 4=4 years of college/college graduate, 5=Postgraduate. Income Groups: 1=Less than \$10,000, 2=\$10,000 to \$20,000, 3=\$20,000 to \$50,000, 4=Over \$50,000.

IV. Summary of Telephone Interviews With Site Personnel

As part of the overall project goal of developing a Resource Guide to *Hearts N' Parks Y2K*, telephone interviews were conducted with recreation directors, coordinators, supervisors, and program assistants from each community. The specific intent of these interviews was to assess the value of the materials, training, and support provided by the NHLBI and NRPA before program implementation, as well as to learn about what other types of support were received by the sites. Information was also gathered about what support or information the sites needed but did not receive. This input was used to provide additional information for the development and design of the roundtable discussion conducted in November 1999, as well as to improve future program implementation.

One person was interviewed from each of the following sites: Albermarle, Fletcher, Garner, Hickory, Greenville, Raleigh, Roanoke Rapids, Smithfield, and Winston-Salem. Two people were interviewed from Wilson and three people were interviewed from Madison-Mayodan. At the largest site, Mecklenburg County, 4 people were interviewed, resulting in a total of 18 interviews. Interviews were conducted using a semi-structured questionnaire (see Appendix B) that asked what parts of the planning process provided by the NHLBI and NRPA were helpful or not helpful in implementing the program. Interviewees were also asked about what types of support were provided to the program outside of training and orientation by the NHLBI or NRPA and what types of support they needed that they did not receive from any source. In addition, the respondents were asked whether they would repeat the program next year or recommend the program to colleagues based on their experiences this year with the *Hearts N' Parks* program. The length of the interviews varied, but the usual duration was approximately 10 minutes.

Responses for each question in the interview were compiled and synthesized. The following is a summary of the key findings from the interviews. The ideas presented in this section are generally based on responses from several interviewees. Care is taken in presenting the results to give an accurate depiction of the responses. However, the findings are not quantitative in nature and should be interpreted accordingly. As with all qualitative research, although the findings accurately reflect the opinions expressed in the interviews, they should be interpreted as suggestive and directional rather than definitive.

Support and Training Provided by the NHLBI and NRPA

Overall, participants valued the support and training provided by the NHLBI and NRPA. Three respondents said that generally everything was helpful in the planning process. In addition, 13 respondents mentioned the materials as being particularly helpful, and a few specifically mentioned materials related to the CATCH program and the fact that the pre- and posttests were already selected for them. Eight respondents noted that the training sessions were very helpful and a few specifically said that they provided direction and laid out specific steps for program implementation. A few also noted that the training sessions provided a method for them to network and share experiences with other park and recreation personnel.

Although almost all of the respondents (16) said either that everything provided was helpful or that they could not think of anything that was not helpful, several made suggestions for

improvement. One respondent wished she could have talked more about the program and suggested it would have been useful to have scheduled biweekly conference calls with the NHLBI or NRPA and other agencies to share problems and stresses. Another suggested that media coverage from a national organization, or even statewide, might have had more impact.

Support from Other Sources

In addition to the training and orientation provided by the NHLBI or NRPA, respondents received support from a variety of other sources. The sources most often cited were other staff (11) including directors and supervisors, hospitals (6), public health departments or cooperative extension services (7), and the community and parents (4).

Almost half of the respondents could not think of other types of support or resources that would have made the program easier to implement or more successful. The remaining respondents suggested support or resources that would make the program easier to implement or more successful, such as additional financial support, earlier planning, and more extensive training. In addition, media support (with help from the NHLBI and NRPA, such as a renowned speaker), support from local business (e.g., fitness facility or spa, donated food), parental support, and more materials for children were mentioned.

Future Implementation

Based on their experiences in 1999, all 18 respondents said they would like to participate in the program again next year. Many said *Hearts N' Parks Y2K* was a good program, valuable, positive, and providing important information. Three respondents said they plan to implement the program on a continuing basis with after-school programs or other programs that are ongoing, such as adult/senior walking programs. Four said they want to start planning earlier and would even like to start planning now for next year.

All 18 respondents said that on the basis of their experience, they would recommend the *Hearts N' Parks Y2K* program to colleagues at other parks or agencies. Respondents felt that they were doing something beneficial and important for the community at large and that *Hearts N' Parks* was a good and effective program with excellent materials. Respondents also thought that the program provided credibility to park and recreation departments, as well as opportunities to build more relationships with the community. It was also thought that the program justifies and creates demand for new park and recreation facilities.

V. Summary of Roundtable Discussion With Site Personnel

In November 1999, a roundtable discussion was conducted by Prospect Associates with staff members from several sites that participated in the *Hearts N' Parks Y2K* program. The discussion took place in conjunction with the annual North Carolina Recreation and Park Society conference in Charlotte, North Carolina. Participation in the discussion was voluntary and was open to any representatives of the sites. One representative from each of the following sites participated in the discussion: Albermarle, Garner, Raleigh, Roanoke-Rapids, Smithfield, and Wilson. Two or more people participated from Fletcher, Madison-Mayodan, Winston-Salem, and Mecklenburg. The participants filled various roles, ranging from program director to camp assistant. In addition, two representatives from a local hospital participated in the discussion.

The following is a summary of the key findings from the discussion. The ideas presented in this report are generally based on responses from several discussion participants. Care is taken in presenting the results to give an accurate depiction of the responses. However, the findings are not quantitative in nature and should be interpreted accordingly. As with all qualitative research, although the findings accurately reflect the opinions expressed in the discussions, they should be interpreted as suggestive and directional rather than definitive.

Program Development and Implementation

Overall, participants agreed that they understood the purpose and meaning of the program. The similarity of *Hearts N' Parks'* goals with those of existing programs created an atmosphere in which it was very easy to implement the related activities and events.

Many of the participants reported that their department was interested in becoming involved in the program because *Hearts N' Parks* offered a means for implementing activities to achieve certain benefits and outcomes. If activities were already in place, as they were at some sites, *Hearts N' Parks* offered them the opportunity to improve the focus of their programs and activities by aligning them with established goals and potential outcomes.

An additional factor that facilitated program development and implementation was the value-added advantage it offered to Healthy Carolinians activities. The statewide promotion of the national Healthy People initiative further amplified activities focused on improving the health of the community.

Outcomes and Benefits of the Hearts N' Parks Program

Participants in the discussion were very excited about the results of their individual activities and events. Every participant considered the program a success because the program not only met their expectations but also provided an impetus for improving existing programs and raised the visibility of prevention and fitness.

Enlisting the support of external partners proved to be a productive and rewarding outcome of their involvement. Based on feedback received from the discussion participants, it was very important to be able to identify tailored benefits to potential partners and to learn to "speak their

language.” They found that a successful strategy was to emphasize both how fortunate they were to be selected and the overall outcomes predicted. Partnerships were solicited based on proposed impacts, which were fulfilled in nearly every case. In selecting partners, it was also important to choose organizations whose goals already were aligned with the mission of *Hearts N’ Parks*. At those sites that already had established external partnerships, involvement in *Hearts N’ Parks* provided a common mission goal and raised visibility and credibility. Each partnership used its expertise but was now more focused in using community centers and building a stronger relationship.

Another beneficial outcome was the energy infused into recruitment into existing programs. Many existing fitness program participants welcomed the renewed energy that *Hearts N’ Parks* offered and did not see the evaluation process as anything “extra.” *Hearts N’ Parks* also provided the impetus for seeking a challenge in recruitment. One site selected high school boy basketball players, and the staff were pleasantly surprised that the boys were more ready to receive information than they expected. However, with this particular group, the survey was tougher to administer since the staff questioned how seriously they took it.

Other appreciated benefits of the program included the materials. In particular, the folders were mentioned several times as an item that meant a great deal to youth participants, who devoured the information provided. Direct feedback from program participants indicated that they wanted more materials, especially small booklets. There was much success with Spanish-language materials (e.g., a recipe book), the IQ test, and CATCH materials. Advertising advice and information were also appreciated.

Barriers to Administration

Two main barriers were discussed: money and time, which contributed to a third barrier, staff resistance. However, despite the dollar and time constraints, participants agreed that the benefits, outcomes, quality of mission, and strong partnerships far outweighed any barriers.

However, the program did have some direct and indirect costs. Many resources were provided, but there were some related direct outlays of money. The program also cost money because more staff members were needed to handle the increased workload created by the new program. One site had raised money through sponsorships, which were relatively easy to obtain since the goals of *Hearts N’ Parks* were good and strongly supported.

There was initial staff resistance at many sites. Directions came from the top down with director support; only after completion of the program were staff members able to recognize the benefits. Since many successful activities were already in place, it was difficult to change the scope of work, because staff resisted “fixing what’s not broken.” Others resisted adding “tests” during the summer, especially for young people. In the end, youths were okay with the surveys, which were incorporated into “discovery time” at camp. A good selling point was the benefit of being involved in a “national thing” and the ability it created to implement other desired programs. Another strategy to overcome staff resistance was helping individuals identify with the benefits of the program, i.e., relating to how they would feel if their child had high blood pressure.

Professional Value

Involvement in *Hearts N' Parks* helped each department, as well as the individuals involved. The programs lent added value to existing activities, taught lifelong skills, and helped prove the fact that change and positive impact can happen. Increased involvement of staff in developing a new program added renewed energy to staff morale and has helped with planning and implementing other programs. Many have already planned other *Hearts N' Parks*-related activities, focusing on the benefits.

The program also gave the departments another avenue to push benefits and educate people about what they do. The involvement of two national organizations—the NHLBI and NRPA—gave the programs credibility with other partners. It was particularly helpful to receive the up front training and have the quantitative data analyses done for them—something they would not normally have the time or expertise to complete on site. Lastly, the selection of North Carolina as a pilot State also provided the opportunity to showcase the State and was a vote of confidence for the departments that were selected.

Lessons Learned

As stated earlier, participants agreed that the *Hearts N' Parks* activities and events were considered successful. As a result of their involvement during summer 1999, they identified several lessons learned that would help their sites achieve even greater success in the future:

- Advertising was a key element: Word of mouth, orientation, and retention once enrolled were important factors in maintaining the programs.
- Young people absorb prevention and nutrition education very easily. However, nutrition education was often difficult to implement at home because parents, who buy the household food, were not yet engaged in the program.
- The sites that experienced the most staff resistance were the ones that felt that they tried to do too much. Good training and taking on small parts of the program would better facilitate accomplishing the program goals.
- Anything you can present to improve the health of the community will most likely achieve buy-in. By taking on more responsibility for education, programs can expand the view of how park and recreation departments help the community.

VI. Conclusions and Recommendations

Summary of Participant Data

In general, the participant data showed improvements at posttest. Overall, youth scores significantly improved for knowledge of healthy eating and intention to eat healthy in the future. Overall, adult scores significantly improved for healthy eating habits. In addition, although some scores did not show statistically significant improvement, there was some improvement in most other variables. In fact, improvement was seen in all posttests that were recommended for administration. Only the tests that the sites independently elected to use as posttests failed to show improvement.

Based on the results of the participant data analysis, several recommendations are made to improve administration and results in the future.

- Both the youth and adult surveys lacked a pre- and posttest measure of physical activity. Only nutrition tests were used. Physical activity and weight diaries are one possibility that might be able to show improvements in physical activity.
- One of the tests for children, the *Fitscore*, should be modified significantly or dropped entirely from the measurements. Most of the children were unable to complete these forms and many that were completed were incorrectly done.
- Age-appropriateness was an issue for the youth tests. The youth programs had participants ranging in age from 4 to 17, and the youth tests (except for the *Fitscore*) were clearly designed for younger children. The adult tests were more appropriate for mature adults or senior citizens. An additional set of materials meant for older children or adolescents may be useful.
- More control in regard to which tests are administered at what time is necessary. Perhaps providing sites with an explanation of why particular tests are used would be valuable. This may encourage the sites to follow program suggestions, rather than put together their own packets. Note that this activity did not seem to yield positive results.
- Size of the program is very important and should be stressed in training. Small sites (fewer than 30 participants), although they may do a good job, will probably not see the improvements in their test scores. Very large sites, on the other hand, probably do not have the time or resources to adequately monitor test administration. Mecklenburg, the largest site, had the most difficult time keeping track of its data and submitted the least reliable data of any site. For sites this large, it may be useful to restrict test administration to selected participants or one or two programs.
- Based on the data analysis and examination of the data quality, programs with approximately 40 participants are probably best. If larger programs are attempted, resources (money, staff) should be specifically committed to the program.

Summary of Telephone Interviews

Overall, the training sessions, materials, and support were very well received and well liked by the respondents. In addition, there was nothing that respondents received that was not helpful. Respondents indicated that they would like to implement the program again next year and would highly recommend it to colleagues. Some respondents were continuing with the program in their fall and after-school programs.

Issues of concern to the respondents were obtaining financial support and donations, obtaining and developing media support, and recruiting partners to be involved in and support the program. Several respondents said they had some financial support but would like additional support, such as healthy food donations. Only a few respondents mentioned having any type of media attention. One person suggested that speakers related to the *Hearts N' Parks* program from the national or State level might be helpful in drawing media attention. Many of the respondents had health department and hospital partners but only a few had businesses as partners.

In addition, planning time was an issue for some respondents. They felt that they could have implemented the program more effectively if planning had started much earlier and that the training was rushed. In fact, several respondents indicated that they are now starting to plan for next summer, suggesting that to be optimally effective *Hearts N' Parks* might be better viewed as an ongoing, year round activity.

Based on these areas of concern by respondents, Prospect recommends the following steps to improve the *Heart N' Parks* program:

- Continued support from the NHLBI and NRPA throughout the year would be helpful to the sites as they attempt to continue their program efforts.
- If the program cannot continue throughout the year, then we suggest that it begin earlier in the year so that more time can be devoted to training and planning.
- Additional information on how to involve businesses and the community as partners would be useful, as would more involvement from the NHLBI or NRPA in enlisting media attention for community programs. These may be areas where site personnel lack experience, and more emphasis during training would be beneficial.

Summary of Roundtable Discussion

Based on their experiences, participants in the discussion confirmed previous research that they would like to participate in the program again next year. Many said *Hearts N' Parks* is a good program, is valuable and positive, and provides good information. All participants said they would recommend the *Hearts N' Parks* program to colleagues at other parks or agencies based on their experiences this year. Respondents felt that they were doing something beneficial and important for the community at large and that *Hearts N' Parks* was a good and effective program with excellent materials.

Overall, the program was very successful but made for a busy time. There were very few insurmountable problems, and most participants expressed interest in looking forward to the

future and finding ways to maintain the program. Overall, participants valued the support and training provided by the NHLBI and NRPA. Throughout the discussion, several ideas for ways that NHLBI and NRPA could help recreation and park programs in the future emerged.

- All agreed that the “status” of being part of a national program with prestigious lead agencies was helpful in accomplishing the desired activities. Keeping the national status would be important for a second year of activities as well as for implementing programs in more States.
- Data analysis support is invaluable. Even preliminary evaluation data provided desirable information and has been helpful in garnering the support of others and proving the value of the programs.
- More materials and other resources would be invaluable. Across the board, participants believed that being provided with more templates would be a strategic support because templates would allow them to generate more activities with minimal effort on the planning stage and move more quickly to implementation.
- Marketing advice and support would lend both credibility and needed expertise. The top-down approach, i.e., through an NHLBI news release, was an effective means that helped during the first summer. Additional information on how to involve businesses and the community as partners would be useful, as would more involvement from the NHLBI or NRPA in enlisting media attention for community programs. These are areas where site personnel lack experience, and special emphasis during training would be beneficial.
- A measurement piece that provides sites with the language of benefits to support programs would make the program easier to implement and possibly more successful. The sites definitely believe in the necessity of the programs, but solid self-assessment tools and methods for identifying potential outcomes in their communities would provide a tremendous value-added benefit to involvement in *Hearts N’ Parks*.

Conclusions

Without question, the pilot of *Heart N’ Parks Y2K* was a success. It met its goals of improving heart-healthy knowledge and behavior among participants, implementing a process for conducting and evaluating the program, and providing professional development for site personnel. Because *Hearts N’ Parks* was a pilot program and a field study, several areas were identified that could be improved for the future. These problem areas and possible solutions are noted throughout the report.