



Health and Wellness Project Evaluation

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Introduction

About a quarter of 2- to 5-year-olds and a third of school-age children in the United States are overweight or obese (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). About a third of preschoolers from low-income families are overweight or obese (Dalenius et al., 2012). About 14% of low-income preschoolers are obese.¹ At 17%, California has one of the highest rates of obesity among low-income preschool-age children (CDC, 2013). Children who are overweight or obese as preschoolers are five times as likely as normal-weight children to be overweight or obese as adults (Whitaker, Wright, Pepe, Seidel, & Dietz, 1997). Obesity is associated with negative physical and mental health consequences. Obesity in children leads to higher incidents of diabetes, heart disease and other chronic conditions that will follow them into adulthood (Pulgaron, 2013). However, with early interventions creating lifestyle habits fostering balanced nutrition and physical activity, obesity can be prevented. In fact, these habits can last a lifetime and protect children against chronic diseases.

Early childhood marks a critical period in human brain development by setting the stage for learning and development of habits that are carried into adulthood. Preschool marks an opportunity for healthy habits to begin. Fostering practices in good nutrition and physical activity within the classroom and making connections with these practices at home can support children's readiness to learn and establish healthy habits that can last a lifetime (Hagan, 2008).

Los Angeles Universal Preschool (LAUP) is well-positioned to make a difference. LAUP is a non-profit organization whose mission is to provide access to quality early childhood education programs for children in Los Angeles County. Since 2004, LAUP's network of preschools has served more than 80,000 children by preparing them for kindergarten. Since the beginning, LAUP has considered health and wellness an important area of focus and provided support and resources to the more than 300 preschool providers in their network. In the last three years LAUP has intensified its support through the RENEW Project, a county-funded obesity prevention project. LAUP's Health and Wellness Project is an extension of the RENEW Project. This report is the evaluation of LAUP's Health and Wellness Project.

Program Description

In 2013, LAUP implemented the Health and Wellness Project (also temporarily known as Fit by 5 LA) with funding from the Kaiser Permanente Community Foundation. Its purpose was to reduce the risk of obesity among preschool-aged children by focusing on interventions using nutrition and physical activity. The project provided training, consultation and resources on the principles of good nutrition and physical activity to preschool providers in LA County. It also offered strategies to incorporate materials into the classroom, and to effectively communicate with and support parents in making positive health-related changes at home. The LAUP Health and Wellness Project focuses on working with preschool providers to promote healthy choices for four-year-old children. The project worked with adults who influence the lives of preschool-aged children the most, namely, administrators, teachers, and parents.

The main objectives of this project were to:

- Support preschool providers in implementing policies supporting good nutrition and regular physical activity practices.
- Support educators in informing and encouraging healthy practices, such as increased physical activity and healthy eating in the classroom and at home.
- Integrate ready-to-use practices encouraging healthy choices in the classroom that are developmentally appropriate in the learning environment.
- Educate parents on how to encourage healthy eating and physical activity and their effects on development.

LAUP providers were invited to complete an application to participate in the project. From the applications, 24 providers, who were in good standing (no compliance violations and compliant with LAUP requirements) and had not participated in RENEW, were selected. Of these 24, 20 participated in the project from start to finish.

¹ Body mass index (BMI) uses height and weight measurements to estimate a person's body fat. A child with a BMI at the 85th and below the 95th percentiles is considered overweight. A child with a BMI at or above the 95th percentile is obese.

The participants were comprised of five family child care providers and 15 center-based providers, which included six preschools run by local school districts.

Participating LAUP preschool providers received focused training on the importance of healthy eating habits and physical activity in the prevention of obesity. Providers selected the priority areas in which they would like to focus on and plan for implementation of policies that encourage these changes at their site. The priority areas sought to work with educators and parents to promote healthy lifestyles that included healthy eating practices, encouraging self-regulation and physical activity.

This project is furthering LAUP's efforts to reduce obesity in preschools. It is similar to the RENEW Project that LAUP implemented in the Fiscal Year 2010-11 as a pilot project and in Fiscal Year 2011-12 as a full project working with 71 preschools. By the end of 2011-12, parents reported that children had increased the frequency of their physical activity.

The Health and Wellness Project has the same goals, objectives and basic program design as RENEW, with some exceptions. The preschools participating in RENEW received targeted support from their Quality Support Coach in addition to LAUP's Health and Wellness Specialist. The Quality Support Coach is a highly qualified early childhood education professional who offers guidance on best preschool practices. While the preschools participating in this current Health and Wellness Project continue to have a coach, they receive all of their support on this project only from LAUP's Health and Wellness Specialist. Another difference is the timing of the project. RENEW was implemented during a fiscal year (school year). The Health and Wellness Project was implemented during a calendar year. As a result, it touched two cohorts of children and their parents across two school years.

Training Sessions

Participating LAUP preschool providers received focused training on the importance of healthy eating habits and physical activity as related to obesity prevention. Separate trainings were conducted with the three target groups: preschool administrators, teachers, and parents. A total of eight training sessions were held for administrators and teachers from March to September 2013.

The first training session focused on policy development and implementation. This training session was held on two different dates in March, and was intended for preschool administrators and FCC owners. During these sessions, administrators and owners developed policy action plans, selecting areas their preschool was committing to work on.

The second training session was held on three different dates in March to allow for participants to attend on the most convenient date. It targeted teachers and focused on classroom practices and policy implementation. The three remaining training sessions intended for teachers covered the following topics:

- Using The Lakeshore™ Be Choosy Be Healthy Kit In The Classroom (resource to promote healthy eating and physical activity)
- Increasing Children's Physical Activity With An Obstacle Course
- Starting A Preschool Garden (attendance was optional)

Parent workshops on healthy eating and physical activity were provided at each participating preschool. They focused on the benefits of healthy eating and physical activity as well as ways to improve nutrition and encourage physical activity. Two workshops were held at each preschool, one in Spring 2013 and one in Fall 2013, for a combined total of 40 workshops.

Resources and Materials

The participating preschools were given a toolkit of resources to help implement the priority areas in nutrition and physical activity. The toolkit was developed during the RENEW project by reviewing readily available resources found on the internet. Resources were collected and reviewed using a set of criteria that included developmental appropriateness, ease of use, and appropriate content focusing on nutrition and physical activity. All of the resources that were considered appropriate were then included in the toolkit and organized according to the project priority areas. In addition, the resources were compiled under the guidance of

RENEW's Health and Wellness Advisory Team.

Resources in the toolkit paralleled key policy guidelines and offered various tools to assist in implementing these policies in the classroom and home environments. A few resources in the toolkit were provided in Spanish for copying and distribution. The toolkit manifested key principles facilitating the development of healthy behaviors in early childhood to prevent obesity, starting in preschool. It also went above and beyond its intended goal and included tips for parents on how to choose and store fruits and vegetables, how to use unit price to compare and save when shopping, and proper handwashing tips.

Figure 1. Teacher Toolkit Content

- Guiding Principles
- Nutrition
 - Meal Planning Guides
 - Portion Control
 - Breakfast
 - Healthy Food Choices
 - Healthy Beverage Choices
 - Tips for Picky Eaters
 - Eating More Fruits, Vegetables
 - Smart Shopping Tips
- Positive Role Modeling
- Nutrition Activities: Getting Kids Involved
- Healthy Choices for Celebrations & Fundraising
- Healthy Recipes for Cooking with Kids
- Physical Activity
 - Classroom Activities
 - Family Activities
- Gardening

Another resource, the "Choosy Kit," was purchased through Lakeshore LLC and distributed to each of the participating sites. These kits were chosen due to their ease in integration within existing classroom lesson plans and curriculum. Little preparation was needed to begin using the kit and, most importantly, the kits were developmentally appropriate and focused on brain development in preschool children.

Figure 2. Choosy Kit Content

- Music CDs with health-enhancing songs
- Inspiring posters
- Picture book to reinforce key ideas
- Play food
- Fruit and veggie beanbags
- Activity scarves
- Wrist ribbons
- Parachute
- Activity balls
- Movement activity mats and cards
- Grocery store activities
- Nutrition and movement activity cards
- Growth chart
- Pocket chart with fruit and veggie sorting cards

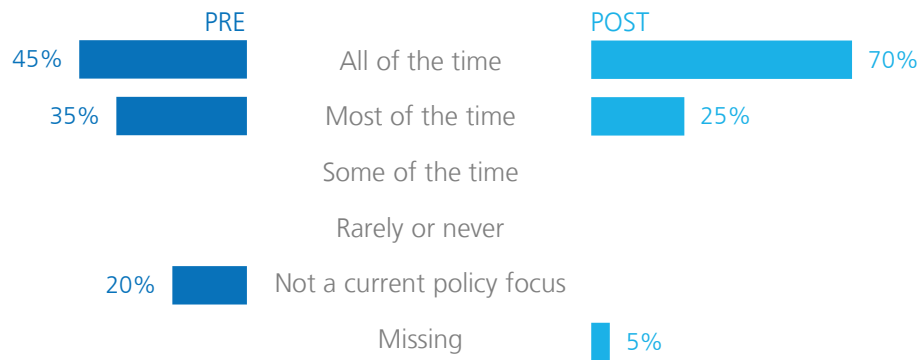
Finding: All providers had a Policy Action Plan by the end of the project, and most had also either updated or put in place a formal Health and Wellness Policy.

All administrators developed and submitted their Policy Action Plans to the Health and Wellness Specialist. The pre- to post-analysis also shows that less than half (45%) had formal Health and Wellness Policies in place at the start of the project. By the end of the project, most administrators (89%) reported having a Health and Wellness Policy in place. Of those that had policies, 70% educated their preschool parents on their policies.

Finding: About 80% of administrators indicated that all adults at their preschools served as positive role models to encourage healthy relationships with food and model self-regulation and moderation during school hours “most” or “all of the time” on the pre- and post-checklist.

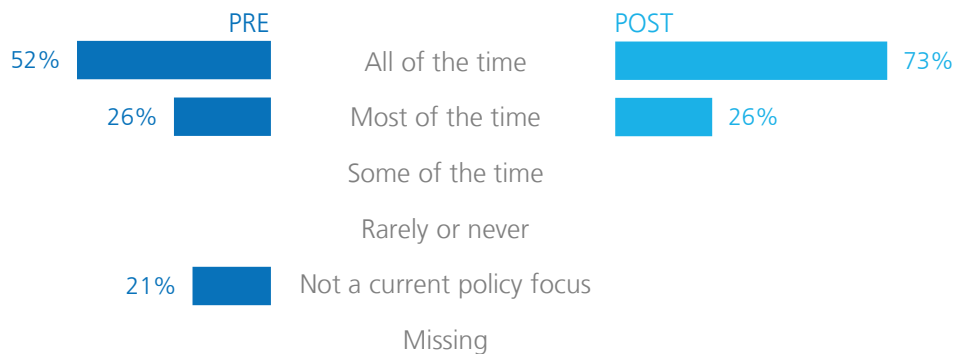
The remaining 20% indicated that having adults serve as role models and model self-regulation was not a current policy they were focusing on in the initial checklist. However, by the end of the project, these preschools had implemented these policies and were practicing them “most” or “all of the time.” Another 20% of administrators increased the frequency of practicing both of the policies.

Figure 3. Significant Increase in Staff Modeling Healthy Relationships With Food



Note: Change in respondents’ pre- and post- responses is significant ($Z=-2.360$, $p=.018$, Wilcoxon signed rank test). Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Figure 4. Significant Increase in Staff Role Modeling of Self-Regulation



Note: Change in respondents’ pre- and post- responses is significant ($Z=-2.008$, $p=.048$, Wilcoxon signed rank test). Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Administrators were asked how often teachers acted as positive role models by actively participating with children in age-appropriate and culturally sensitive physical activities. Most administrators (90%) indicated that teachers served as role models for physical activity “most” or “all of the time.” By the end of the project, all preschools had teachers serving as physical activity role models. A Wilcoxon signed rank test showed a

Statistically significant increase in the frequency of teachers actively participating in physical activities, in 37% of preschools ($p < 0.05$).

Figure 5. Significant Increase in Teachers Acting as Physical Activity Role Models



Note: Change in respondents' pre- and post- responses is significant ($Z = -2.714$, $p = .007$, Wilcoxon signed rank test).
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Finding: There were mixed results for the objective of increasing the percentage of providers who engage in culturally appropriate practices.

Administrators were asked about the frequency with which their centers used culturally appropriate practices around the sharing of resources with parents, encouraging parents to serve healthier foods and beverages at home, and having learning materials and activities in the preschools' indoor and outdoor environments that can be used to educate about the benefits of healthy food and beverage choices. The frequency with which each activity was practiced from the start of the project to the end increased overall. However, only two areas resulted in statistically significant changes. Providers went from using strategies encouraging parents to serve healthier foods and beverages at home "some of the time" to "all of the time." Similarly, providers' use of learning materials and activities in preschool environments increased from "most of the time" to "all of the time."

Table 1. Frequency of Culturally Appropriate Policies

Culturally Appropriate Practice	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
Culturally appropriate resources are shared with parents.	4.0	4.5	0.5
Culturally appropriate strategies are in place to encourage parents to incorporate a variety of healthy food and beverages in menus at home.	3.5	5.0	1.5 ^a
Age-appropriate and culturally sensitive learning materials and activities are used in the preschool environments to educate about/reinforce the benefits of healthy food and beverage choices as part of a healthy diet.	4.0	5.0	1.0 ^b

On a scale of 1 to 5; where 1=Not a current policy focus, 2=Rarely or never to 5=All of the time

^a Change in individual respondents' pre- and post- responses is significant ($Z = -2.863$, $p = .004$, Wilcoxon signed rank test).

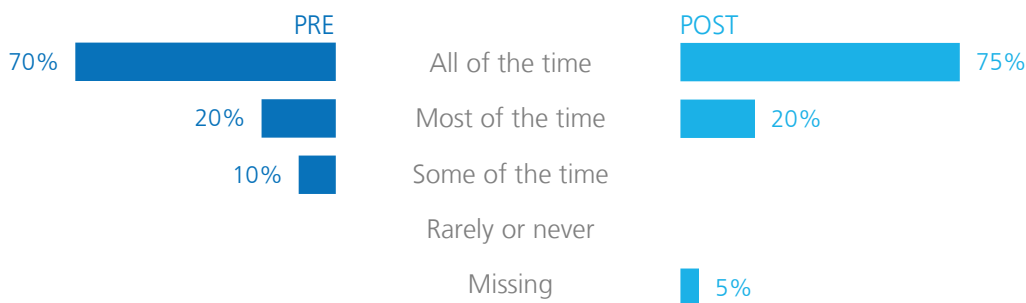
^b Change in individual respondents' pre- and post- responses is significant ($Z = -2.887$, $p = .004$, Wilcoxon signed rank test).

Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Finding: Administrators were asked how often physical activity was incorporated into their daily routines. All preschools reported that they provided a minimum of 30 to 44 minutes of physical activity each day, both at the start and end of the project.

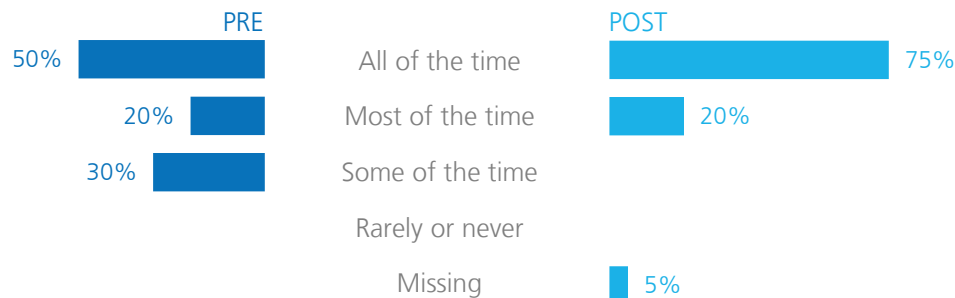
Administrators were also asked about the frequency of their practices of the following items: 1) instructional time is planned to work with individual children’s physical abilities, 2) instructional time is planned to build connections with moving and learning, and 3) instructional time creates a balance between physical and sedentary activities. Administrators indicated that the frequency with which each of these activities was practiced increased. The latter two had the largest increases. Almost half of administrators (45%) indicated they increased the frequency of building connections with moving and learning and creating a balance between physical and sedentary activities.

Figure 6. Use of Instructional Time in Activities Planned for Individual Children’s Physical Abilities



Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Figure 7. Significant Increase in Use of Instructional Time in Activities Planned to Build Connections with Moving and Learning



Note: Change in respondents’ pre- and post- responses is significant ($Z=-2.077$, $p=.038$, Wilcoxon signed rank test).
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Figure 8. Significant Increase in Use of Instructional Time in Activities Planned to Balance Between Physical and Sedentary Activities



Note: Change in respondents’ pre- and post- responses is significant ($Z=-2.521, p=.021$, Wilcoxon signed rank test).
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Finding: Overall, there was little change in the frequency with which preschools implemented nutrition policies and practices.

Policies and practices that did increase somewhat in frequency included: training staff and volunteers on their food and beverage policies, serving low-fat milk or nonfat milk, serving no more than 4 ounces of 100% fruit juice, and using menus that adhere to the USDA guidelines. Those that did not change include: the availability of water and including a variety of fresh fruits, vegetables, whole grains and healthy beverages in the children’s meals or snacks. Pre- and post-data showed that all the participating preschools made water available to children all of the time. Similarly, all provided children with a variety of healthy foods and beverages “most” or “all of the time” at the start and end of the project.

Table 2. Implementation of Nutrition Policies

Nutrition Policies	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
Staff and volunteers are trained on the provider's food and beverage policies in addition to the state and federal regulations.	5.0	5.0	0.0
Low-fat/ nonfat milk is served during snack or mealtime.	5.0	5.0	0.0

On a scale of 1 to 5; where 1=Not a current policy focus, 2=Rarely or never to 5=All of the time
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Table 3. Frequency of Nutrition Practices

Nutrition Practices	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
No more than 4 oz. of 100% fruit juice is served during snack or mealtime.	5.0	5.0	0.0
Drinking water is available.	4.0	4.0	0.0
Menus adhere to the USDA guidelines.	4.0	4.0	0.0
All meals and snacks provided include a variety of fresh fruits, vegetables, whole grains and healthy beverages.	4.0	4.0	0.0

On a scale of 1 to 5; where 1=Not a current policy focus, 2=Rarely or never to 5=All of the time
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Finding: There was little change in the frequency with which providers informed parents about nutrition and physical activity policies and guidelines.

For example, most providers reported at both time points that they informed parents about their food and beverage policies “three or more times per year.” Similarly, most providers informed parents about the state and federal nutrition guidelines “two times per year.” By the end of the project, more providers indicated that they educated parents “about the role of physical activity in developing motor skills, building connections with moving and learning, and promoting positive habits toward physical activity.” Also, more preschools gave parents resources and strategies to encourage increases in children’s physical activity levels. There was a significant increase in the number of providers who educated parents on the effects of healthy food and beverages on brain development. At the start of the project, more than half indicated they provided this information “rarely or never” or “once a year,” whereas by the end of the project, most (65%) reported providing this information “three or more times per year.”

Table 4. Frequency of Parent Training Practices

Parent Training Practices	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
Parents are informed about provider's food and beverage policies.	4.0	4.0	0.0
Parents are informed about the state and federal nutrition guidelines for four-year-olds.	3.0	3.0	0.0
Parents are educated on the benefits of healthy food and beverage choices on brain development.	2.0	4.0	2.0 ^a
Parents are educated about the role of physical activity in developing motor skills, building connections with moving and learning, and promoting positive habits toward physical activity.	3.0	4.0	1.0
Parents receive resources and strategies to support children's physical activity levels to meet the recommended 120 minutes per day.	2.5	4.0	1.5

^a Change in individual respondents’ pre- and post- responses is significant ($Z=-2.658, p=.008$, Wilcoxon signed rank test). On a scale of 1 to 4; where 1=Rarely or never to 4=Three or more times per year
 Source: Nutrition and Physical Activity Checklist, March 2013 and November 2013.

Finding: The results of a pre- and post- survey showed an increase in teachers’ knowledge of the USDA’s recommended portions of fruits and vegetables, the type of milk preschoolers should consume, and the daily amount of time children should engage in physical activity.

However, there was a decrease in correct responses for the portion of servings that should be whole grains.

Table 5. Correct Identification of the Nutrition and Physical Activity Recommendations

Nutritional and Physical Activity Recommendations	PRE	POST	Change PRE-POST
Fruits and vegetables	61%	73%	12%
Whole grains	39%	18%	-21%
Type of milk	55%	86%	32% ^b
Daily amount of physical activity	16%	43%	27% ^c

^b Change in respondents’ pre- and post- responses is significant ($Z=-2.828, p=.005$, Wilcoxon signed rank test).

^c Change in respondents’ pre- and post- responses is significant ($Z=-2.657, p=.008$, Wilcoxon signed rank test).

Source: Teacher Pre-Survey, March 2013 and Teacher Post-Survey, November 2013.

The teachers were asked to identify healthy food options, including optimal breakfast to fuel the brain as well as healthy fruit, vegetable and protein choices. There were no significant changes in the food items selected from the pre- to post-survey. This is partially due to having correctly selected the healthy items and not selecting the unhealthy items on the pre-survey. However, there were some small increases in the percent of teachers selecting the following healthy items: waffle with peanut butter (19%) for breakfast, frozen pineapple (14%) as a healthy fruit, steamed green beans (14%) as a healthy vegetable, and pinto beans (18%) and tofu (14%) as sources of protein.

The teachers were asked on the pre- and post- survey how much they agreed or disagreed with seven statements on their knowledge about nutrition and physical activity. These statements included the key role nutrition plays in children’s brain development, nutrition and physical activity strategies, and the importance of Health and Wellness policies. The results showed that the change in the teachers’ rating of their knowledge increased from “agree” to “strongly agree” on all statements. These changes were statistically significant.

Table 6. Ratings of Teachers’ Knowledge of Nutrition and Physical Activity

Teachers’ Knowledge	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
I can state the recommendations for offering water to preschool children.	3.0	4.0	1.0 ^a
I know about the types of foods and beverages that enhance children’s brain development.	3.0	4.0	1.0 ^b
I can explain the reasons for offering children a variety of fruits and vegetables.	3.0	4.0	1.0 ^c
I can state some strategies for incorporating a variety of fruits and vegetables into the meals and snacks served to children in preschool.	3.0	4.0	1.0 ^d
I can list some strategies for incorporating physical activity within daily routines.	3.0	4.0	1.0 ^e
I can list a few reasons why having a Health and Wellness policy at my preschool is important.	3.0	4.0	1.0 ^f
I can list a few reasons why it is important to keep parents informed about our preschool’s Health and Wellness policy.	3.0	4.0	1.0 ^g

On a scale of 1 to 4; where 1=Strongly disagree and 4=Strongly agree.

^a Change in individual respondents’ pre- and post- responses is significant (Z=-2.812, p=.005, Wilcoxon signed rank test).

^b Change in individual respondents’ pre- and post- responses is significant (Z=-3.357, p=.001, Wilcoxon signed rank test).

^c Change in individual respondents’ pre- and post- responses is significant (Z=-2.887, p=.004, Wilcoxon signed rank test).

^d Change in individual respondents’ pre- and post- responses is significant (Z=-3.125, p=.002, Wilcoxon signed rank test).

^e Change in individual respondents’ pre- and post- responses is significant (Z=-2.657, p=.008, Wilcoxon signed rank test).

^f Change in individual respondents’ pre- and post- responses is significant (Z=-2.840, p=.005, Wilcoxon signed rank test).

^g Change in individual respondents’ pre- and post- responses is significant (Z=-3.357, p=.001, Wilcoxon signed rank test).

Source: Teacher Pre-Survey, March 2013 and Teacher Post-Survey, November 2013.

Finding: Most teachers indicated on the pre- and post- survey that their preschools engaged in the best practices identified for improving nutrition and increasing physical activity.

Some increases were seen on the post-survey in the following areas: encouraging teachers to modify their physical activities to accommodate children with limited mobility or disabilities, sharing culturally appropriate resources and strategies to encourage parents to incorporate a variety of healthy foods and beverages (including more fresh fruits, vegetables, and whole grains), educating parents about the benefits of physical activity related to child development, encouraging parents to support their children in being physically active at home, and providing ideas to parents about how they can support their children in being physically active at home. These changes, however, were not statistically significant.

Table 7. Teachers' Preschool Practices Around Nutrition and Physical Activity

Practices	PRE	POST	Change PRE-POST
Encourage staff to exhibit healthier behaviors.	100%	100%	0%
Policy for appropriate handwashing technique.	100%	100%	0%
Encourage parents to bring healthy food and snacks, including more fresh fruits, vegetables, and whole grains, for their children.	79%	79%	0%
Educate parents about the benefits of healthy food and beverage choices.	100%	100%	0%
Share culturally appropriate resources and strategies to encourage parents to incorporate a variety of healthy food and beverages.	82%	100%	18%
Encourage teachers to incorporate physical activity through the learning experiences to create a balance between physical and sedentary activities.	100%	100%	0%
Encourage teachers to include modified teacher-led physical activities to accommodate children with limited mobility or physical disability.	77%	96%	19%
Educate parents about the benefits of physical activity related to child development.	86%	96%	10%
Encourage parents to support their children in being physically active at home.	82%	96%	14%
Provide ideas to parents about how they can support their children in being physically active at home.	82%	96%	14%

Source: Teacher Pre-Survey, March 2013 and Teacher Post-Survey, November 2013.

Teachers were also asked how often they engaged in the best practices for improving nutrition and increasing physical activity. Most teachers indicated that they practiced these strategies “somewhat often” or “very often” at both time points. However, there were statistically significant increases in the frequency with which teachers incorporated physical activity in the learning experiences to balance physical and sedentary activities, and were encouraged to modify their physical activities to accommodate children with limited mobility or disability.

Table 8. Frequency of Teachers' Practices

Frequency of Practices	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
Model healthy behaviors such as consuming healthy food choices, drinking water, and handwashing throughout your contact with the children you serve.	4.0	4.0	0.0
Use appropriate handwashing techniques throughout the day.	4.0	4.0	0.0
Encourage parents to bring healthy food and snacks, including more fresh fruits, vegetables, and whole grains, for their children.	4.0	4.0	0.0
Educate parents about the benefits of healthy food and beverage choices.	3.0	3.0	0.0
Share culturally appropriate resources and strategies with parents to encourage them to incorporate a variety of healthy food and beverages.	3.0	3.0	0.0
Incorporate physical activity through the learning experiences to create a balance between physical and sedentary activities.	4.0	4.0	0.0 ^a
Encourage teachers to include modified teacher-led physical activities to accommodate children with limited mobility or physical disability.	4.0	4.0	0.0 ^b
Educate parents about the benefits of physical activity related to child development.	3.0	3.0	0.0
Encourage parents to support their children in being physically active at home.	3.0	3.0	0.0
Provide parents with ideas about how they can support their children in being physically active at home.	3.0	3.0	0.0

On a scale of 1 to 4; where 1=Never and 4=Very often.

^a Change in individual respondents' pre- and post- responses is significant ($Z=-2.449$, $p=.014$, Wilcoxon signed rank test).

^b Change in individual respondents' pre- and post- responses is significant ($Z=-2.209$, $p=.027$, Wilcoxon signed rank test).

Source: Teacher Pre-Survey, March 2013 and Teacher Post-Survey, November 2013.

Finding: Overall, the teachers provided positive feedback on the RENEW training and materials.

All indicated that the Resource Kit was "helpful" or "very helpful." All had implemented activities that they had learned from the training and found these activities "easy" or "very easy" to implement. Teachers found the Choosy Kits (60%) and Resource Kit (31%) to be the most useful activities. Most (68%) did not encounter any challenges in implementing their preschool's Health and Wellness Policy. The challenges some faced included the lack of flexibility in the daily schedule (18%), the limited time to plan and prepare for activities (23%), and difficulty with getting children to try new foods (5%).

Finding: Overall, most parents on the pre- and post-surveys correctly identified what promotes healthy brain development.

The majority of parents believe that physical activity and sleep are essential for healthy brain development. Pre- to post-survey analysis showed a significant increase in the percent of parents who agreed that these were essential. About half of parents indicated that spinach, tuna fish and eggs are key foods for healthy brain development. Less than 11% of parents incorrectly believed that Capri Sun, chocolate milk and fruit cocktail in

syrup promoted healthy brain development.

Table 9. Parents' Identification of the Keys for Healthy Brain Development

Keys for Healthy Brain Development	PRE	POST	Change PRE-POST
Physical movement	88.2%	92.4%	4.2% ^a
Sleep	86.0%	91.9%	5.9% ^b
Spinach	65.9%	67.5%	1.6%
Tuna fish	54.1%	57.4%	3.3%
Eggs	48.5%	53.5%	5.0%
Chocolate milk	8.7%	10.9%	2.2%
Fruit cocktail in syrup	5.7%	7.2%	1.5%
Capri Sun drink	0.7%	0.7%	0.0%

^a Change is significant at $p=.033$, McNemar Test.

^b Change is significant at $p=.002$, McNemar Test.

Source: Parent Pre-Survey, March 2013 and Parent Post-Survey, November 2013.

Parents were given eight statements that focused on nutrition and their ability to help their child increase healthy behaviors. Parents were asked to indicate how much they agreed or disagreed with the statements. At least 90% of parents "agreed" or "strongly agreed" with six out of the eight statements. At the post-survey, there were significant changes observed in the following items. More parents "agreed" or "strongly agreed" that what a child eats affects his/her ability to learn and focus as well as his/her behavior and mood. More parents also expressed more confidence in their knowledge of which foods and beverages are healthier, and about how to encourage their child to be more physically active. Not only did a greater percent of parents agree with these statements, but more "strongly agreed" with the statements. Although a significant change was not observed, more parents also indicated more confidence in their ability to offer their children more healthy foods and fewer unhealthy foods and beverages.

More than 60% of parents on the pre- and post-survey did not believe that children should clean their plate. Almost 80% of parents "agreed" or "strongly agreed" that grains were the most important ingredient to fuel the brain. While grains or carbohydrates are important fuel for the brain, protein is actually the most important.

Table 10. Parents' Beliefs and Knowledge Around Nutrition and Physical Activity

Beliefs	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
What a child eats affects his/her ability to learn and focus.	2.0	1.0	-1.0 ^a
I know which foods and beverages are healthier for my child.	2.0	1.0	-1.0 ^b
Grains (carbohydrates) are the most important ingredients to fuel the brain in the morning.	2.0	2.0	0.0
What my child eats can affect his/her behavior and mood.	2.0	1.0	-1.0 ^c
Specific foods have a greater impact on brain development than others.	2.0	1.0	-1.0 ^d
Parents should have their children clean their plate.	3.0	3.0	0.0
I can offer my child more healthy foods and fewer unhealthy foods and beverages at home.	2.0	1.0	-1.0
I know how to encourage my child to be more physically active.	2.0	1.0	-1.0 ^e

On a scale of 1 to 4; where 1= Strongly disagree and 4=Strongly agree.

^a Change in individual respondents' pre- and post- responses is significant (Z=-4.827, p=.000, Wilcoxon signed rank test).

^b Change in individual respondents' pre- and post- responses is significant (Z=-3.859, p=.000, Wilcoxon signed rank test).

^c Change in individual respondents' pre- and post- responses is significant (Z=-4.554, p=.000, Wilcoxon signed rank test).

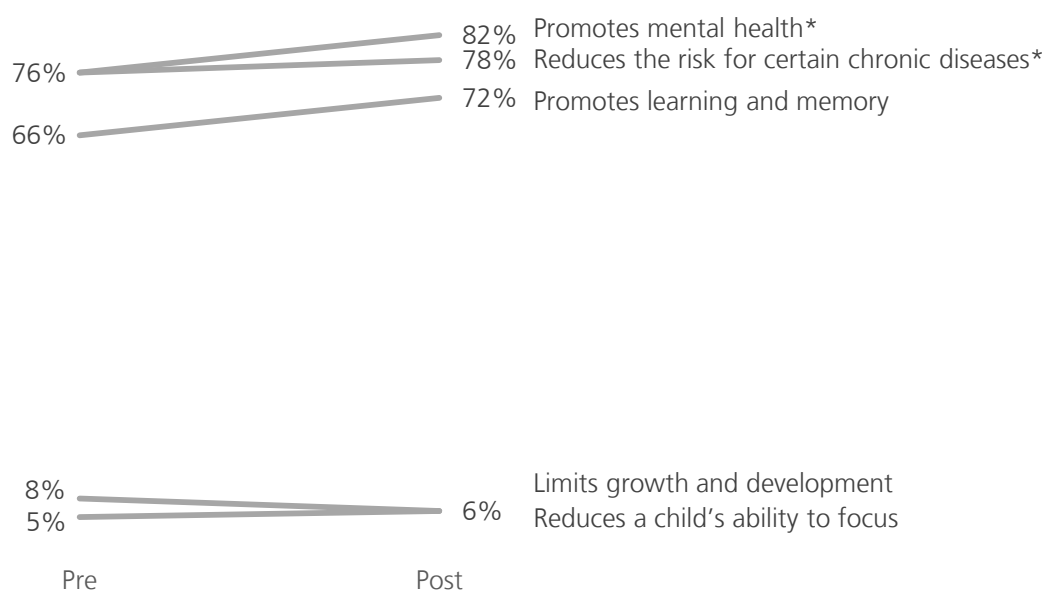
^d Change in individual respondents' pre- and post- responses is significant (Z=-2.176, p=.030, Wilcoxon signed rank test).

^e Change in individual respondents' pre- and post- responses is significant (Z=-2.555, p=.011, Wilcoxon signed rank test).

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Most parents thought that physical activity affects young children in the following ways: promotes mental health; promotes learning and memory; and reduces the risk for certain chronic diseases. The pre- to post-survey analysis using a McNemar Test revealed two significant differences. At the post-survey, more parents understood that physical activity promotes mental health (p=.014) and reduces the risk for certain chronic diseases (p=.025), showing an increase in knowledge. The few parents (5%-8%) who mistakenly believed that physical activity limits growth and development and reduces a child's ability to focus had little to no change from the pre- to post-survey.

Figure 9. Parents' Beliefs about the Effects of Physical Activity on Young Children



*Change is significant at p<.05.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

By the post-survey, only 19% of parents were aware of the recommendation of 120 minutes of physical activity for preschool age children. However, the pre- to post-survey analysis showed that there was a small increase in the percentage of parents who were now aware of the 120 minute recommendation. There was also a shift away from the belief that physical activity is recommended for only 30 minutes a day. A Wilcoxon signed rank test showed that these findings were statistically significant ($Z=-2.230, p=.026$).

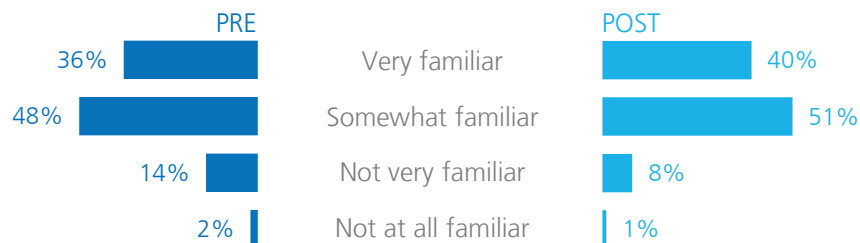
Table 11. Parents’ Beliefs about the Recommended Time for Children’s Physical Activity

Minutes	PRE	POST	Change PRE-POST
30 minutes	22%	17%	-5.1%
60 minutes	42%	43%	1.1%
90 minutes	20%	22%	2.0%
120 minutes	17%	19%	2.0%

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

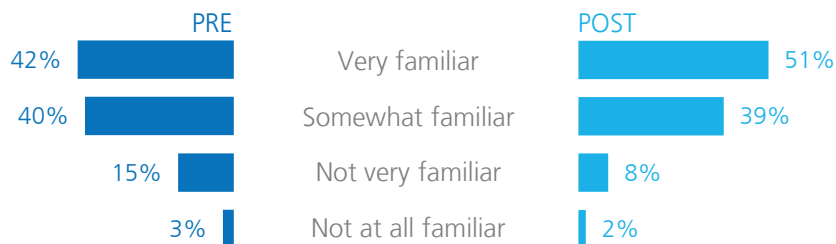
Parents were asked how familiar they were with the nutrition policies/guidelines at their child’s preschool. On the pre-survey, the majority of parents were “somewhat familiar” or “very familiar” with the nutrition policies (84%) and with the policies about the foods that could be shared at holiday and birthday celebrations (82%) at their child’s preschool. On the post-survey, more parents were “somewhat familiar” or “very familiar” with both policies. In addition, more parents seemed to be clearer about the policies on foods that could be shared at celebrations; 51% indicated that they were “very familiar” with the celebrations policies, while 40% were “very familiar” with the nutrition policies.

Figure 10. Significant Increase in Parents’ Familiarity with Nutrition Policies at Child’s Preschool



Note: Change in respondents’ pre- and post- responses is significant ($Z=-3.668, p=.008$, Wilcoxon signed rank test).
Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Figure 11. Significant Increase in Parents’ Familiarity with Policies about Foods for Celebrations at Child’s Preschool



Note: Change in respondents’ pre- and post- responses is significant ($Z=-5.221, p<0.001$, Wilcoxon signed rank test).
Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Finding: Overall, parents reported improvements in the frequency with which children chose to eat fruits and vegetables and drink juice.

Parents were asked about the frequency with which their child made various food and beverage choices. Overall, moderate to high frequencies with which children chose to eat fruits and vegetables and drink juice were reported. Children chose to drink soda less frequently. From the pre- to post-survey, the frequencies with which children drank soda and juice decreased significantly, while the frequency of eating vegetables increased significantly.

Table 12. Children’s Food and Beverage Choices

Children’s Choices	Overall PRE-Median	Overall POST-Median	Overall Change PRE-POST
My child chooses to eat fruit for a snack or as part of a meal.	4.0	4.0	0.0
My child chooses to eat vegetables for a snack or as part of meal.	3.0	4.0	1.0 ^a
My child drinks soda.	2.0	2.0	0.0 ^b
My child drinks juice.	3.0	3.0	0.0 ^c

^a Change in individual respondents’ pre- and post- responses is significant ($Z=-2.086$, $p=.037$, Wilcoxon signed rank test).

^b Change in individual respondents’ pre- and post- responses is significant ($Z=-3.714$, $p=.001$, Wilcoxon signed rank test).

^c Change in individual respondents’ pre- and post- responses is significant ($Z=-5.707$, $p=.001$, Wilcoxon signed rank test).

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

There was a significant difference from the pre- to post- survey in the amount of water that parents reported children consumed. According to parent reports, 35% of children drank the recommended 4 glasses or more of water daily on the pre-survey, and 41% of children drank that same amount on the post-survey.

Parents were asked to identify which foods and beverages their child consumed in the last week on the pre- and post-surveys. On the pre-survey, cereal, noodles/pasta, and whole wheat bread were the most consumed grains. These were among the top four on the post-survey, with white rice ranking higher than whole wheat bread. On the pre- and post-survey, carrots, potatoes and corn were the top vegetables consumed. On the pre-surveys, apples, bananas and grapes were the most consumed fruits. By the post-survey, oranges moved up to replace grapes in the top three fruits. Cheese, yogurt and reduced-fat milk were the most consumed dairy products and milk alternatives at both time points. Similarly, chicken, eggs and beans were the most consumed sources of protein. Water and 100% fruit juice were the most consumed types of drinks. Several beverages, including 100% fruit juice, fruit-flavored drinks, and soft drinks/ soda were each consumed by more children than the recommended low-fat milk and nonfat milk. More children drank reduced-fat milk instead of the recommend low-fat or nonfat milk. Chips and candy were the most consumed type of fats and sweets.

Some statistically significant changes in the foods and beverages consumed were found on the pre- to post-survey analysis. There were increases in the consumption of healthier foods, including whole wheat tortillas, broccoli, carrots, green salad, soy milk, cheese, yogurt and turkey. Increase in turkey consumption may be attributed in part to the post-survey’s timing after the Thanksgiving holiday. Also, more children consumed rolls and “other drinks.” Decreases were found in the consumption of unhealthy foods, such as French fries and candy. However, fewer children ate grapes and peaches. Several of the changes were those encouraged by the parent workshops. However, some were not encouraged. These include the increase in consumption of rolls and “other” drinks and the decrease in consumption of grapes and peaches. Perhaps “other drinks” include sports drinks, diet drinks (e.g. Crystal Light) and vitamin waters, which may be perceived as healthy choices. The significant decrease in the consumption of grapes and peaches was only found among the fall cohort. This indicates that the decrease is likely due to the local growing season of these fruits. Locally grown peaches and grapes are available in the late spring to early fall. By the post-survey, only the more expensive imported peaches and grapes were likely available.

Table 13. Children's Food and Beverage Choices in the Last Week

Grains	Pre	Post	Diff	Vegetables	Pre	Post	Diff	Fruits	Pre	Post	Diff
Bagels	15.7%	15.5%	-0.2%	Broccoli	55.9%	62.9%	7.0% **	Apples	86.7%	87.6%	0.9%
White bread	27.9%	30.8%	2.9%	Brussels sprouts	2.4%	3.7%	1.3%	Bananas	85.8%	86.0%	0.2%
Whole wheat bread	67.2%	64.8%	-2.4%	Carrots	71.8%	77.1%	5.3% *	Berries	38.4%	42.1%	3.7%
Cereal	91.3%	90.0%	-1.3%	Corn	61.1%	65.9%	4.8%	Grapefruit	4.8%	6.8%	2.0%
Oatmeal/grits	31.7%	35.4%	3.7%	French fries	46.7%	39.1%	-7.6% **	Grapes	73.1%	67.9%	-5.2% *
Muffins	10.9%	13.8%	2.9%	Green beans	28.6%	30.8%	2.2%	Melon	34.1%	36.9%	2.8%
Noodles/pasta	69.2%	68.3%	-0.9%	Green salad	39.7%	45.2%	5.5% *	Oranges	72.5%	73.4%	0.9%
White rice	65.3%	65.3%	0.0%	Greens	13.3%	14.6%	1.3%	Peaches	36.7%	28.4%	-8.3% **
Brown rice	22.3%	27.1%	4.8%	Peas	20.5%	22.3%	1.8%	Pears	29.9%	33.0%	3.1%
Rolls	11.4%	19.2%	7.8% **	Potatoes	63.3%	64.6%	1.3%	Other fruit	39.3%	37.1%	-2.2%
Whole wheat tortillas	15.1%	20.3%	5.2% *	Tomatoes	51.3%	53.5%	2.2%	Drink	Pre	Post	Diff
Flour tortillas	33.0%	29.7%	-3.3%	Other vegetables	31.4%	33.4%	2.0%	Fruit-flavored drinks	26.4%	22.1%	-4.3%
Corn tortillas	52.4%	53.3%	0.9%	Meat/ Other Proteins	Pre	Post	Diff	Fruit juice (100%)	80.3%	81.9%	1.6%
Other grains	12.9%	10.3%	-2.6%	Beef/hamburger	55.9%	57.9%	2.0%	Kool-Aid	16.6%	13.5%	-3.1%
Dairy Products	Pre	Post	Diff	Chicken	95.4%	95.2%	-0.2%	Soft drink/Soda	26.0%	23.4%	-2.6%
Whole milk	18.1%	19.7%	1.6%	Cold cuts/lunch meat	33.8%	38.0%	4.2%	Water	95.4%	95.4%	0.0%
2% milk (reduced-fat)	67.2%	65.1%	-2.1%	Beans	61.4%	60.7%	-0.7%	Other drinks	12.4%	19.0%	6.6% **
1% milk (low-fat)	18.1%	18.1%	0.0%	Eggs	81.9%	80.3%	-1.6%	Fats and Sweets	Pre	Post	Diff
Skim milk (non-fat)	2.0%	2.0%	0.0%	Fish	50.0%	48.0%	-2.0%	Cake/cupcakes	36.0%	37.1%	1.1%
Chocolate milk	30.6%	31.0%	0.4%	Nuts/seeds	24.5%	27.7%	3.2%	Candy	45.9%	38.2%	-7.7% **
Soy milk	3.7%	6.3%	2.6% *	Peanut butter	58.3%	53.1%	-5.2% *	Chips	57.4%	57.2%	-0.2%
Flavored soy milk	3.3%	2.8%	-0.5%	Pork	19.7%	21.4%	1.7%	Doughnuts	13.8%	13.3%	-0.5%
Cheese	74.0%	79.9%	5.9% *	Sausage/ bacon	37.8%	37.3%	-0.5%	Pie	6.1%	8.7%	2.6%
Ice cream	49.1%	50.7%	1.6%	Tofu	5.0%	4.8%	-0.2%	Other fats/sweets	9.2%	10.5%	1.3%
Yogurt	70.5%	76.0%	5.5% *	Turkey	40.6%	47.4%	6.8% *				
Other milk/dairy products	9.6%	8.7%	-0.9%	Other meat/proteins	8.3%	7.9%	-0.4%				

*Change is significant at $p < 0.05$, McNemar Test.

**Change is significant at $p < 0.01$, McNemar Test.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Trends in the types of foods and beverages consumed over the course of a week were analyzed to identify changes from the pre- to the post-survey. Three food groupings were created: 1) healthiest foods and beverages, 2) healthy foods and beverages, and 3) unhealthiest foods and beverages. There was a statistically significant difference in the number of the healthiest foods and beverages consumed. Parents reported children were consuming more of the healthiest foods and beverages at the post-survey (M=17.5, SD=5.1) than at the pre-survey (M=17.0, SD=5.1), $t(457) = -2.260, p=.024$.

Table 14. Average Number of Types of Foods and Beverages Consumed by Children

Food Groupings	Number of Items	PRE-Mean	POST-Mean	Change PRE-POST
Healthiest Foods and Beverages	37	17.0	17.5	0.5 ^a
Healthy Foods and Beverages	14	6.3	6.5	0.2
Unhealthiest Foods and Beverages	14	4.1	3.9	-0.2

^a Change is significant at $p<0.05$.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

The vegetable and fruit food groups were also analyzed for changes in reported consumption from the pre- to post-survey. The vegetable food group included all vegetables listed, with the exception of French fries. All fruits listed were included in the fruit group. There was a statistically significant increase in the number of types of vegetables consumed from the post-survey (M=4.7, SD=2.0) to the pre-survey (M=4.4, SD=2.1), $t(457)=-3.782, p<.001$.

Table 15. Average Number of Types of Foods and Beverages Consumed by Children

Food Groupings	Number of Items	PRE-Mean	POST-Mean	Change PRE-POST
Vegetable Food Group	11	4.4	4.7	0.3 ^b
Fruit Food Group	10	5.0	5.0	0.0

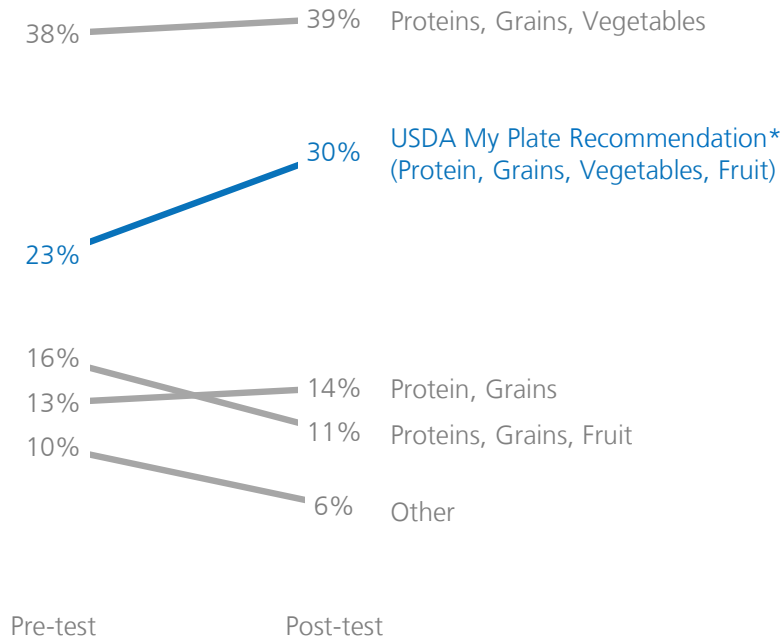
^b Change is significant at $p<0.05$.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

To find out if parents offered their child a diet that conforms to the Dietary Guidelines for Americans and the USDA My Plate guidelines, parents were asked to identify which dinner plate most closely matched what their child ate the night before. The six plates had anywhere from two to four food groups, including protein, grains, vegetables and fruit. The plate that included the four food groups matched the USDA My Plate (with the exception of dairy). Parents were also given the option of "other" and space to provide a written description of the child's dinner. Whenever possible, the "other" responses were recoded into one of the six plates. The responses that remained "other" described a dinner that included only grains or excluded either a grain or protein source. The three plates that showed different proportions of vegetables, protein and grains were grouped together on the chart. As a group, the vegetables, protein and grains plate was the most common response on both the pre- and post-surveys. About a quarter reported their child ate the USDA My Plate on the pre-survey, and almost a third on the post-survey. A McNemar test showed that this increase was statistically significant ($p=.007$) when the USDA My Plate was compared to all the other plates as a group.

Figure 12. Children’s Dinner Menu

The percentage of children eating a dinner matching USDA recommendations rose. Other plates either increased by a very small percent or decreased.



*Change is significant at $p < 0.05$.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Finding: The percentage of children whose parents reported they “always” enjoyed playing active games and/or being active did not meet the program’s target.

Parents were asked to report how frequently their child enjoyed playing active games and/or being active. The majority (96.4%) indicated their child “often” or “always” enjoyed being active at both time points. However, the percent of parents reporting their child “always” enjoyed being active slightly decreased by 5% on the pre- to post-analysis, not meeting the objective of the 8% increase. A Wilcoxon signed rank test was conducted to determine whether there was a difference in the frequency with which children enjoyed being active from the pre- to post-survey. Results showed that there was a difference ($Z = -2.051, p = .040$) and indicates that the frequency with which children enjoyed being active decreased.

Figure 13. Significant Decrease in Percent of Children Who Enjoyed Being Active as Reported by Parents



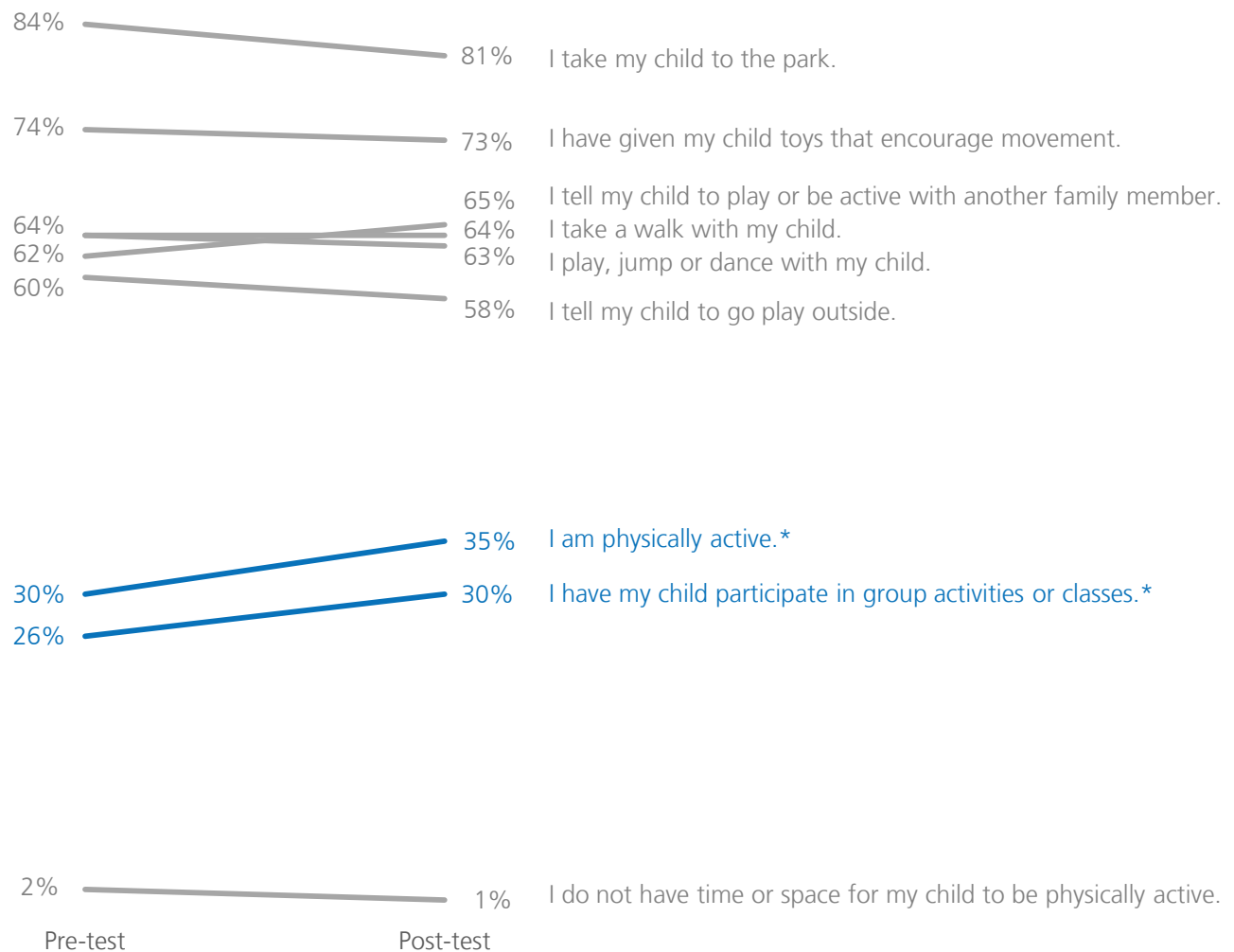
Note: Change is significant at $p < .05$.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Also, parents were asked to indicate how much time their child spent watching TV, on the computer, or playing video games. At both the pre- and post-survey, the majority (83% on pre-survey and 85% on post-survey) reported that their child spent the recommended maximum time of two hours or less watching TV, on the computer, or playing videos. A Wilcoxon signed rank test showed that the amount of screen time among children decreased ($Z=-2.062, p=.039$). More than 28% of children decreased their amount of screen time. This decrease in screen time potentially gives children a little more time to be active.

Lastly, parents were asked how they encouraged their child to be physically active. Pre- and post-survey results showed that, on average, parents were doing five out of the eight activities listed to encourage movement. The most common ways parents encouraged their child to be physically active were similar on the pre- and post-surveys. The top ways included taking their child to the park and giving their child toys (e.g. balls, hula hoops, tricycles, etc.) that encourage movement. The results of a McNemar’s test comparing the pre- to post-survey showed statistically significantly more parents are having their child participate in organized group activities or classes (e.g. soccer team, karate, dance class, baseball practice) ($p=.019$) and are serving as role models for their child by becoming physically active themselves ($p=.040$).

Figure 14: Ways Parents Encourage Physical Activity



*Change is significant at $p<0.05$.

Source: Parent Pre-Survey, 2013 and Parent Post-Survey, 2013.

Discussion

The evaluation of the Health and Wellness Project found that preschools and teachers were implementing some of the best policies and practices at the start of the project. Teachers and parents were already somewhat knowledgeable about nutrition and physical activity. Also, most parents reported that their children often or always enjoyed being active and ate a variety of healthy foods. Still, all target groups were able to benefit from the Health and Wellness Project and significant improvements were documented through the pre- and post-surveys.

On the Nutrition and Physical Activity Checklist, administrators indicated the policies and practices their preschools had before and after the Health and Wellness Project. Out of the 20 preschools, 45% had an existing formal Health and Wellness Policy and 44% developed and added a new Health and Wellness Policy to their programs. The pre- to post-analysis found several statistically significant changes, which indicate areas where preschools focused their efforts.

One important change was that staff at the preschools were serving as role models in nutrition and physical activity with more frequency. Specifically, the adults at the preschools serving as positive role models to encourage healthy relationships with food, and modeling self-regulation and moderation during school hours, became policies for all sites and occurred more frequently. The teachers served as role models by participating in physical activities with the children more frequently. In addition, teachers made changes to their instructional time to include more physical activity. By the post-checklist, preschools indicated that instructional time was planned to build connections with moving and learning, and that instructional time created a balance between physical and sedentary activities, more often.

More preschools reported increasing the frequency with which specific policies around culturally appropriate practices were implemented. These included culturally appropriate strategies to encourage parents to incorporate a variety of healthy food and beverages in menus at home, and age-appropriate and culturally sensitive learning materials and activities used in the preschool environments to teach children about the benefits of healthy food and beverage choices.

When it came to providing parent trainings, preschools somewhat increased the frequency with which they informed parents about the role of physical activity in developing motor skills, building connections with moving and learning, and promoting a positive attitude towards physical activity. Some increases in the sharing of resources and strategies to encourage children's physical activity were also found. However, the most significant changes in frequency were found on the topic of educating parents on the benefits of healthy food and beverage choices on brain development.

Among the teachers, the results of the pre- to post-surveys showed several gains in knowledge around nutrition and physical activity recommendations. Significant changes in knowledge include the recommendations for low-fat and nonfat milk and recommended time for physical activity. The percentage of teachers that knew the recommendations for milk rose from 55% to 86%. Although only 43% of the teachers correctly identified 120 minutes as the recommended time for physical activity on the post-survey, this showed an increase of 27% from the pre-survey. Another gap in knowledge seemed to be the recommended portion of a serving of grains that should be whole grains. However, this gap may in fact be due to a misunderstanding of the survey item. Teachers may have misread the survey item and assumed that it was asking about the portion of a child's plate that should be grains. In addition, clear and consistent information about the recommendation should be communicated in the material and during the training and consultation.

Teachers consistently showed significant increases in confidence about their knowledge in the areas of nutrition's role in children's brain development, explaining the reasons for offering children a variety of fruits and vegetables, incorporating nutrition and physical activity strategies, and the importance of health and wellness policies. Teachers improved from "agreeing" with the statements on the pre-survey to "strongly agreeing" on the post-survey.

The majority (77%-100%) of teachers indicated they participated in all of the best practices listed on the pre-survey. By the post-survey, almost all teachers (96%-100%) indicated they participated in all but one of the best practices. Because the majority of the teachers already participated in best practices at the start of the

project, the increase in the percentage of teachers participating in the best practices by the end of the project was not significant. However, some significant changes were made in the frequency with which practices were implemented. By the post-survey, almost all teachers indicated they incorporated physical activity through learning experiences to create a balance between physical and sedentary activities “very often.” Most indicated they were encouraged to modify teacher-led physical activities to accommodate children with limited mobility or physical disability “very often.”

Parents made several statistically significant gains in knowledge about nutrition and physical activity. The changes show an increase in confidence in their knowledge, as is shown by the change in their ratings from “agree” to “strongly agree.” These increases were seen in their knowledge of the specific foods that have a greater impact on brain development, the connections between nutrition and learning and nutrition and behavior, the foods that are healthier, and how to encourage their child to be more physically active.

There were significant increases in the percentage of parents who identified physical movement and sleep as keys to healthy brain development on the post-survey. However, there were no significant changes in the identification of specific foods that are keys to healthy brain development. This may be due to the level of detail involved in the identification of specific foods listed on the survey.

In addition, there were significant increases in the number of parents who identified that physical activity promotes mental health and reduces the risk for certain chronic diseases on the post-survey. More than 75% of parents at both time points knew that physical activity also promotes learning and memory, resulting in no significant change on pre- to post-analysis. However, a small percentage of parents continue to believe that physical activity limits growth and development and reduces a child’s ability to focus. The positive effects of physical activity can be highlighted in parent trainings and by preschool teachers.

Results also showed that parents were more familiar with the preschools’ nutrition guidelines and policies about the foods that can be shared at holiday and birthday celebrations by the post-survey.

Parents and children made several changes in nutritional choices. The changes resulted in statistically significant increases in several areas. They included: drinking more water; eating less candy and French fries (and peaches and grapes); eating more broccoli, whole wheat tortillas, soy milk, cheese, yogurt, and turkey; eating a greater variety of vegetables; and consuming a greater variety of the healthiest foods and beverages. Also, significantly more children ate the USDA recommended dinner when compared to all other dinners.

However, less than a quarter of parents correctly identified the recommended amount of time for which preschoolers should be physically active. Despite the low percentage of parents (19%) correctly identifying the 120 minutes, there was a significant change in the pre- to post-analysis. Parents shifted somewhat from the belief that preschoolers only need 30 minutes to the belief that preschoolers need 60 to 120 minutes.

Parents made changes to the ways they encouraged their children to be physically active. By post-survey, the percentage of parents who had their child participate in group activities or classes increased significantly. Also, the percentage of parents who indicated they served as role models by becoming physically active themselves increased significantly.

Another encouraging change is the percentage of children who decreased the amount of time they spent watching TV, on the computer or playing videos. This decrease in screen time potentially gives children a little more time to be active. However, 15% of children are still spending more than 2 hours on screen time, which is concerning.

Despite the decrease in screen time and increase in children participating in structured group activities, there was a decrease in the frequency with which parents reported that their children enjoyed being active and/or playing active games. Most of this decrease in frequency was from parents reporting that their child “always” enjoys being active to “often” enjoys being active. Children that are often active may still be participating in the recommended amount of physical activity.

Recommendations

The Health and Wellness Project was successful in its efforts to increase knowledge, policies, and practices that encourage healthy nutrition and physical activity among the preschool children. However, there are a few recommendations to consider for future similar projects, and in supporting the preschool providers as they continue to implement practices that increase children's and parents' understanding about the benefits of nutrition and physical activity.

Implementation of the project should follow the school year rather than the calendar year. This project was implemented during a calendar year, from January to December 2013. As a result, the time that teachers and administrators spent working with each cohort of children and providing information to each cohort of parents was limited. In addition, response rates on the parent post-survey may have been affected. When it was time to distribute the parent post-surveys, several administrators indicated that parents had just completed the first one. Particularly in the spring, administrators felt that they did not have sufficient time to implement the changes in policy and practices that they had planned. In order to allow sufficient time to implement the project, the project should be implemented during a school year, from September to June, rather than during a calendar year. This allows the teachers and administrators to work with groups of children and parents for about ten months rather than four or five months. It may also result in more significant changes in the practices among children and parents, as well as in parents' knowledge.

One area that needs additional focus in trainings and workshops is the daily recommended amount of time that preschool-age children should be physically active. This was information that less than half of teachers and 19% of parents correctly identified. It needs more attention during the teacher training and parent workshops, as well as in the resources provided, since getting sufficient amounts of physical activity plays such a critical part in the prevention of obesity.

The gap in knowledge among teachers about the recommended amount of time for physical activity may have occurred for several reasons. Teachers and administrators may have focused only on the amount of physical activity children should be participating in while at preschool for 3.5 hours, not the amount recommended for a child's entire day. These differences may not have been relayed to all the teachers at the preschools. In some cases, the teacher that attended the teacher training and completed the pre-survey did not complete the post-survey. The post-survey was completed by another teacher at the same preschool. In the future, steps should be taken to ensure that the same teachers complete the pre- and post-surveys to accurately reflect the changes in knowledge and practices among the teachers.

Additional recommendations in terms of the evaluation are to review the teacher pre- and post-surveys, and the parent pre- and post-surveys, to ensure that all data points collected are useful and align with the resources provided to teachers and parents. Specifically, some items on the Teacher Survey did not seem to clearly demonstrate changes in knowledge. This includes items about which options are the healthier food choices. Also, data that can be used by the preschools can also be identified and provided to the preschools as a way to continue to engage the preschools and encourage them to continue the policies and practices on their own.

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Appendix A. Evaluation Methods

The purpose of the evaluation is to measure the short-term impact of the Health and Wellness Project on preschool policies, practices and knowledge of the teachers, knowledge of parents of the children attending the preschools, and the children's nutrition and physical activity choices. The results will be used to inform future implementation of the program and evaluation.

The following questions guided the evaluation:

1. Have preschools increased the frequency with which policies and practices that support good nutrition and physical activity are implemented?
 - a. Did preschool administrators develop Policy Action Plans for their site?
 - b. Do the preschools have a formal Health and Wellness Policy by the end of the project?
 - c. How frequently is preschool staff serving as positive role models as it relates to food and nutrition?
 - d. How frequently are teachers serving as positive role models for physical activity?
 - e. Are providers engaging in culturally appropriate practices more frequently?
 - f. Are providers offering sufficient time for physical activity opportunities?
 - g. How often is instructional time planned to work with children's individual abilities?
 - h. How often is instructional time planned to build connections with moving and learning?
 - i. How often are physical and sedentary activities balanced during instructional time?
 - j. How often are staff and volunteers trained on providers' food and beverage policies?
 - k. How often are providers following the USDA guidelines?
 - l. How often do providers inform parents about their food and beverage policies and the state and federal nutrition guidelines?
 - m. How often do providers inform parents about the benefits of healthy food and beverages and physical activity?
 - n. How often do providers inform parents about resources and strategies to encourage children's physical activity?

2. Are preschool teachers more knowledgeable and aware of the policies and principles of good nutrition and physical activity?
 - a. Are more teachers knowledgeable about what the nutritional recommendations are for children?
 - b. Are more teachers knowledgeable about the daily guidelines for physical activity for preschoolers?
 - c. Are more teachers knowledgeable about healthier food options for children?
 - d. Are more teachers knowledgeable about the key role that nutrition plays in children's brain development?
 - e. Are more teachers aware of the nutrition and physical activity strategies that can be incorporated into their preschool?
 - f. Are more teachers aware of the importance of Health and Wellness policies at their preschools?
 - g. Are more teachers implementing good nutrition and physical activity practices?
 - h. Are teachers increasing the frequency with which they are implementing nutrition and physical activity practices?
 - i. Were materials provided helpful/useful to teachers?
 - j. Was the implementation of the program easy for teachers?

3. Are parents more knowledgeable about the principles of good nutrition and physical activity for preschool children?
 - a. Are more parents knowledgeable about the key role that nutrition plays in children's brain development?

- a. Are more parents knowledgeable about the daily guidelines for physical activity for preschoolers?
 - b. Are more parents aware of the nutrition policies/ guidelines at their child's preschool?
 - c. Are more parents knowledgeable about the key principles in a preschooler's diet?
4. Are preschool children making healthier nutrition choices and increasing their activity level?
- a. Are children consuming more healthy foods and drinks and less unhealthy foods and drinks?
 - b. Are more parents offering their children a diet that conforms to the Dietary Guidelines for Americans and USDA's My Plate guidelines?
 - c. Are children increasing the frequency of their physical activity?
 - d. Are children decreasing the amount of screen time (sedentary time)?
 - e. How are parents encouraging children to be physically active?

Data Collection

Pre- and post- quantitative data was collected to evaluate the impact of the Health and Wellness Project. Data was collected via paper surveys from the preschool administrators and teachers and the parents of the preschool children, as these were the groups the program sought to impact. Three data collection tools were used to collect pre- and post- data: 1) Nutrition and Physical Activity Checklist, 2) Teacher Survey and 3) Parent Survey. Each of the data collection tools had been developed and used in the evaluation of RENEW. Some edits were made to the tools based on recommendations from the prior program implementation and evaluation.

Nutrition and Physical Activity Checklist. The purpose of the nutrition and physical activity checklist was to assess compliance with important aspects of health and wellness policies and practices and to measure progress on achieving health and wellness objectives through the Health and Wellness Project. The form is aligned to the project's Nutrition and Physical Activity Policy and all 12 Applied Policy Guidelines were covered with at least one question on the checklist. The checklist was completed by preschool administrators immediately before their first training session in March 2013. At the end of the program (November 2013), the checklist was mailed to administrators. Administrators completed the checklist and returned it to LAUP in the self-addressed envelope provided.

Each of the administrators from the 20 participating preschools was asked to develop a Policy Action Plan, which included a Health and Wellness Policy for their site. Once the plans were submitted to LAUP, the Health and Wellness Specialist reviewed them. In addition, administrators completed the Nutrition and Physical Activity Checklist at the start of the project in March and at the end of the project in November. There was a 100% response rate. On the checklist, administrators rated whether the item was a policy focus and how frequently it was practiced.

Teacher Survey. Pre- and post-surveys were developed to measure changes in knowledge, awareness and practices of teachers who participated in the Health and Wellness Project training. The pre-survey was administered to teachers immediately before the teacher training. The post-survey was mailed to teachers at the end of the program year in November 2013. These were sent out together with the previously mentioned Nutrition and Physical Activity Checklist. Both were returned in the same self-addressed envelope.

The teachers at the participating preschools were asked to complete the pre-survey at the start of the project and the post-survey at the end of the project. The pre-survey was completed at the first teacher training in March 2013. The post-survey was distributed by the administrators who received them via mail in November 2013. The pre-survey was completed by 33 teachers. The post-survey was completed by 22 teachers. Of these 22, only 15 surveys were completed by the same teachers. As a result, pre- and post-surveys were matched initially by teacher, whenever possible, and then by provider. Results are based on the 22 matched surveys.

Parent Survey. The purpose of the parent survey was to assess the eating habits and physical activities of preschool children at home as well as parents' knowledge. Pre- and post-surveys were administered in the spring and fall. The surveys were disseminated and collected by the teachers. The fall cohort of parents completed the pre-survey in March and April 2013 and the post-survey in May 2013. The spring cohort of parents completed the pre-survey in late September to early October 2013 and the post-survey in late November to early December 2013.

The 20 participating preschool providers administered the pre- and post-parent surveys to the spring and fall cohorts of parents. The pre- and post-surveys asked parents about their preschooler's food preferences and physical activity, as well as tested their knowledge in the areas of nutrition and physical activity recommendations. A total of 844 pre-surveys and 666 post-surveys were received. Out of these surveys, 458 of the post-surveys were matched to pre-surveys. Most of the matched surveys were completed in English (78%). The remaining 22% were completed in Spanish.

Limitations

The main limitation of the evaluation was the short time period in between the administration of the parent pre- and post-surveys. Because the program was implemented during a calendar year, parents had a month in between the pre- and post-survey. As a result, the response rate for the post-surveys was lower.