Getting Children Involved in Cooking: A Preschool Nutrition Curriculum

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The Dr. Yum Project in collaboration with Duke University

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Introduction

Between 1999-2016, the sharpest rise in childhood obesity occurred in children aged 2-5 (NHANES). Sixty-four percent of U.S. children aged 3 to 5 years are being cared for weekly in non-parental care arrangements, such as child care centers, family child care homes, pre-kindergarten, and Head Start classrooms. These programs are potentially prime venues for introducing ideas about healthy eating to children and providing strategies for parents to continue the education at home. This approach is particularly vital given the worsening health indices of very young children.

Methods

Doctor Yum's Preschool Food Adventure is an interactive curriculum co-authored by a Pediatrician and a Pediatric Feeding Specialist (SLP) designed to introduce preschoolers to seasonal produce and simple culinary skills. Children prepare nutritious recipes providing them with a multi-sensory, cognitive, and developmental experience with nutritious whole foods. Nutrition information is woven into these experiences using playful cartoon characters.

Since its inception in Central Virginia, the number of schools (Head Start, etc.) has grown in 5 years from 8 to 24 schools and 8 to 45 individual classrooms, encompassing preschools and daycares across a spectrum of socio-economic backgrounds and inclusive of children with special needs. Teachers are provided live training and materials along with insight into creating a healthy classroom culture with an awareness of the problem of childhood obesity and picky eating. Parents are informed of key program concepts using a Parent Manual, monthly recipes, feedback sheets, and electronic newsletters with tips on how to raise healthy, happy eaters.

In 2016-17, parents (N=163) completed a survey of feeding attitudes and behaviors that included the Fussiness and Enjoyment of Food subscales of the Child Eating Behaviour Questionnaire (Wardle et al., 2001). Data was collected from parents in the first and last month of the 2016-17 academic year after 9 lessons were completed. In 2017-18 a subset of these questions was also asked of teachers (N=390) for each of the students in their classrooms.

Results

Teacher Survey Items My student…..	Mean Difference Score	95% Confidence Interval
loves food.	-0.17*	(-0.28 to -0.06)
is interested in food.	-0.18*	(-0.28 to -0.07)
refuses to eat food at first.	-0.17*	(-0.28 to -0.07)
enjoys tasting new foods.	-0.38**	(-0.49 to -0.27)
enjoys a wide variety of foods.	-0.33**	(-0.44 to -0.21)
looks forward to mealtimes.	-0.14*	(-0.25 to -0.03)
enjoys eating.	-0.13*	(-0.24 to -0.02)
is interested in tasting food she hasn't tasted before.	-0.40**	(-0.52 to -0.28)
decides that s/he doesn't like a food even without tasting it.	-0.35**	(-0.47 to -0.23)

Pre- and post-test measures of teachers' responses to survey questions concerning student attitudes towards food were compared using paired-samples t tests. An asterisk (*) next to mean difference scores indicate significance when p < .05. Double asterisks (**) next to mean difference scores indicate significance when p < 0.001

Parent Survey item or scale	Mean difference score	95% Confidence Interval
My child looks forward to mealtimes.	-0.13	(-0.29 to 0.02)
It is important to offer fruits and/or vegetables to my child.	-0.09	(-0.22 to 0.04)
It is important to involve my child/children in preparing meals.	-0.13*	(-0.26 to -0.01)
It is important that my child is offered water between meals.	-0.08	(-0.19 to 0.04)
It is important to teach my child about different types of fruits and vegetables.	-0.09	(-0.21 to 0.03)
If my child will not eat a new fruit or vegetable, it is important to offer it multiple times.	-0.08	(-0.23 to 0.06)
I offered fresh fruit or vegetables to my child as a snack between meals.	-0.15	(-0.33 to 0.03)
If my child wanted a drink between meals, I offered water.	-0.07	(-0.21 to 0.06)
My child helped me to prepare meals.	-0.05	(-0.23 to 0.13)
Enjoyment of Food Scale	-0.40	(-0.86 to 0.06)
Fussiness scale	0.20	(-0.47 to 0.86)

Pre- and post-test measures of parents' responses to survey questions concerning their child/ children's attitudes towards food and their own behaviors with their child/children during mealtimes were compared using paired-samples t tests. An asterisk next to mean difference scores indicate significance when p < .05

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Teacher Testimonial

"Proper nutrition has always been a focus of our Head Start program. Dr. Yum offers our students the opportunity to explore and taste fresh produce. It is designed to engage all of the senses while allowing the children to participate at their comfort level. Our students have treasured the opportunity to take part in creating a recipe they can enjoy from start to finish, including chopping fruits and vegetables! I genuinely believe that if our students are exposed to fresh food early in life at Head Start through this program, it can have a ripple effect that can benefit them and their families well into their future. " –Laura Dove – Curriculum Manager, Fredericksburg Regional Head Start.

Discussion

This pragmatic intervention has had a 562% increase in uptake since its initiation with inclusion of daycares, family home providers, cooperative and private schools, classrooms serving children with special needs, and Head Start Classrooms.

Introducing children to fruits and vegetables with a sensory-based curriculum and including them in meal preparation may increase their enjoyment of healthy foods. Helping children to acquire skills and providing sensory experiences increases the palatability and visual appeal of whole foods. Future research should explore the downstream effects of children's culinary involvement on healthy eating behaviors and weight regulation.