

THE PASSION FOR EATING WELL

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The Dr. Yum Project, founded by Dr. Nimali Fernando, is a non-profit organization committed to facilitating healthy eating for families. The idea was seeded when, working at pediatric clinics, Dr. Fernando witnessed the alarming rise of childhood obesity and observed children experiencing health issues linked to poor dietary habits. In pursuit of the Dr. Yum Project's mission, numerous initiatives have been undertaken, with one of the most significant being the development of the Preschool Food Adventure curriculum. In recent years, this curriculum has achieved considerable success and has been actively promoted to various schools. Dr. Fernando holds an optimistic outlook, believing that a strategic plan has the potential to expand the reach of the Dr. Yum Project, particularly with regard to the Preschool Food Adventure curriculum. She is curious about what such a plan may look like.

INTRODUCTION

As Dr. Nimali Fernando walked into the examination room at her pediatric medicine practice, she could see a nine-year-old girl and two concerned parents. While listening to Sarah's heartbeat, Dr. Fernando asked the parents "What brings you in today?"

"This is embarrassing. Sarah has started wetting the bed and we don't know what to do," they replied.

"How long has this been going on?"

"A couple months"

This struck Dr. Fernando as a bit unusual. Usually, bedwetting problems don't just start up. It isn't unusual during toilet training. But it is a bit odd for such a late onset.

"Well, bedwetting can be caused by a number of things," Dr. Fernando said.

"Has Sarah had any other symptoms?"

“She’s stressed out. But we assumed that was from the bedwetting. And sometimes she has a tummy ache.”

“What about her bowel habits?” Dr. Fernando asked.

“She goes to the bathroom about twice a week, nothing unusual.”

“That’s a little infrequent,” Dr. Fernando responded. “What does she eat?”

“Well, Sarah is a bit of a picky eater. Mostly she’ll only eat pizza, mac and cheese, and chicken nuggets.”

“Have you tried introducing more vegetables into her diet?” Dr. Fernando asked.

“We have, but she won’t eat them,” the parents answered.

This was not the first time Dr. Fernando had a conversation like this. It had become almost routine for a child to come in with some odd symptoms that turned out to be linked to poor diet. As a pediatrician, Dr. Fernando knew how interconnected the body was and how poor eating habits could be reflected in a myriad of ways. But parents always struggled with how to get kids to eat well. “I’ll be right back,” Dr. Fernando said.

When she returned, Dr. Fernando brought with her several of her family recipes. After having this conversation so many times, Dr. Fernando had realized that many parents were willing to add vegetables, if the kid would eat them. The key to unlocking healthy eating was making tasty food. Over the years, Dr. Fernando had collected a number of these, many from her own family traditions, and had learned to keep them on hand for just such an occasion. Parents would often remain slightly skeptical but would come back relieved that their kids actually liked such different foods and were feeling healthier. She quickly earned the nickname “Dr. Yum”.

After having similar conversations again and again with different parents, Dr. Fernando wondered if there was a way to reach parents more proactively about how to introduce vegetables in a kid-friendly diet. A local church, St. George’s, was talking about healthy eating and Dr. Fernando asked if she could teach a cooking class to elementary school age children. Dr. Fernando introduced kids to various ingredients and let them explore them with all of their senses – not just taste. Then by involving the kids in the cooking process, she piqued their curiosity. At the end, the children were all excited to taste the result of their efforts – “pumpkin bites” with pumpkin, oats, and dates. They love the new bites.

Following that class, the parents of one of the children came up to Dr. Fernando to thank her. Their son had been so constipated for so long that he was taking prescription laxatives. But he absolutely loved the new pumpkin bites. He could not seem to get enough of them. And as a result, he wasn't in pain any longer and had stopped taking the laxatives. And the parents were hoping for a similar class geared towards a younger age group so that their other children could take advantage of it. Dr. Fernando knew she needed to reach as many children as she could.

Working with some like-minded friends and a long-distance partnership with a speech pathologist turned childhood eating expert, Dr. Yum started working on a way to develop a curriculum and shift the project from teaching-the-kids to teaching-the-teachers. With that, the Dr. Yum Project was born.

WHAT IS DR. YUM PROJECT?

The Dr. Yum Project is a non-profit organization founded by Dr. Nimali Fernando to help families make healthy eating easier. Having grown up in a Sri Lankan-American family with a tradition of cooking at home, Dr. Fernando knew the value of healthy cooking. After experimenting with a few small-scale initiatives, she decided that rather than advising parents reactively about eating problems, she would try to reach parents and children proactively. Dr. Fernando initiated the Dr. Yum website (<https://www.doctoryum.org>) in 2011 as a recipe site and started to offer a few after school classes. In 2014, she officially established the Dr. Yum Project as a 501 (c) (3) non-profit organization.

The Dr. Yum Project has a clear mission: to help families and communities overcome the various barriers that can prevent them from eating well. These barriers can include misconceptions that healthy food is expensive, unappetizing, and time-consuming to prepare. Additionally, people may lack familiarity with fruits, vegetables, and other whole foods, as well as basic cooking skills and access to cooking tools and equipment. These barriers can be compounded by factors such as decreased food access, homelessness, and food and housing insecurity. In addition, nutrition myths and a lack of nutrition education in many medical professionals' training programs can exacerbate the problem.

The Dr. Yum Project adheres to the values of providing cooking and nutrition education with compassion, prioritizing healthy eating, having fun exploring food, building community awareness and empowerment, and social justice and equal access to health, wellness, and nutrition.

The Dr. Yum Project's website and curricula are primarily in English, with some components translated into Spanish. The Dr. Yum Project is committed to serving communities of all ages, races, and socio-economic backgrounds. They believe that it takes an entire community to raise happy and healthy eaters, and their website provides resources for family members, teachers, physicians, community leaders, and others. To serve as a resource for nutrition and food education for local and national physicians and other healthcare providers, the Dr. Yum team actively engages with them at annual meetings such as the American Academy of Pediatrics, American Speech-Language-Hearing Association, and the Academy of Nutrition and Dietetics' Food & Nutrition Conference & Expo. Dr Yum also has several local, national and international medical partners.

The Dr. Yum Project is managed by a dedicated staff and a small volunteer board (TABLE 1), with new staff recruited regularly through job search websites and personal connections.

The Dr. Yum Project is active on social media platforms such as Instagram, Facebook and Twitter and on average puts more than 18 posts each week (TABLE 2).

Funding for the Dr. Yum Project comes from grants, fundraising events, individual donations, and the preschool curriculum sales. Additionally, the Dr. Yum Project has a \$25,000 line of credit from PNC to purchase inventory as needed.

SERVICES OF DR. YUM PROJECT

The Dr. Yum Project offers a variety of resources and services. The organization's website features over 200 original recipes, many of which include nutrition information and how-to videos, making healthy cooking accessible to everyone (See TABLE 3 for more information on the website's viewers). Additionally, the organization offers a personalized meal-planning tool called meal•o•matic that enables users to design personalized meals based on their dietary needs and ingredients they have on hand, making meal planning more convenient and less stressful.

The Dr. Yum Project also offers a wide variety of courses. Initially, their focus was on teaching people how to cook using more fruits, vegetables, and whole foods. However, they have now shifted their focus to teaching parenting strategies for raising healthy, happy eaters. Before the Covid-19 pandemic, Dr. Yum Project conducted in-person classes at their physical location in Spotsylvania, Virginia. Following the pandemic, they expanded their offerings to include online classes.

Another service of the Dr. Yum Project is developing curricula such as Preschool Food Adventure curriculum that helps children and their families learn to cook and eat fresh fruits and vegetables.

THE PRESCHOOL FOOD ADVENTURE CURRICULUM

The Preschool Food Adventure is an interactive curriculum that introduces preschoolers to the joy of eating fruits and vegetables. The development of this curriculum serves two objectives. Firstly, it aims to facilitate the achievement of the mission of the Dr. Yum Project by reaching as many families, children and teachers as possible. Secondly, it seeks to generate funding for the organization's broader programs.

In the early stages of the Dr. Yum Project, Dr. Fernando realized that to reach a broader audience, it would be more effective to teach teachers rather than just children. With the assistance of Melanie Potock, aka Coach Mel, a certified speech language pathologist specialized in pediatric feeding, and owner of My Munch Bug, Dr. Fernando developed a 9-lesson curriculum, each centered around a different recipe. They also hired a local college student and graphic designer to create characters for their lesson plans, making them more engaging and enjoyable for children.

The Dr. Yum Project began promoting their preschool lessons by starting close to home at a local Virginia childhood education conference where they reached out to organizations interested in partnering to pilot test the program. Eight local schools eagerly signed up. Using their feedback, the Dr. Yum team refined and expanded the lesson plans. Word of mouth about the program's success spread, and more schools expressed interest in participating. Eventually, a researcher from Center for Eating Disorders at Duke University learned about the curriculum and became interested to conduct research about it. The results of this study demonstrated positive outcomes regarding students' attitudes toward healthy eating and that the curriculum has been effective in increasing parents' understanding about the importance of cooking with children. The results of this research were presented at the American Academy of Pediatrics and the National Head Start Conference. Following these successful presentations, the curriculum gained national recognition and caught the attention of several childcare organizations. In 2021, a group of 50 Head Start programs in the state of Alabama expressed interest in purchasing the program, marking the first significant large-scale order the curriculum had received.

The latest version of the curriculum consists of 24 lessons that preschool teachers can present once a month over two years. Each lesson is centered around a seasonal fruit or vegetable and introduces its nutritional benefits to preschoolers while

guiding them through an appreciation of the new food using all of their senses. To deepen preschoolers' experience and familiarity with the new food, the curriculum offers many extension activities through art, literacy, movement, music, science, and community connections. As the final step, students work together with a few basic kitchen tools to prepare a simple snack using the featured fruit or vegetable.

Teachers are provided with all the necessary materials and tips on how to use encouraging language, engage preschoolers in enjoying healthy foods, and how to overcome some of the challenges presented by selective eaters, with fun ideas that can be applied to all types of preschoolers. Additionally, the curriculum includes a variety of materials and information for parents to facilitate the continuation of the joyful approach toward healthy eating at home.

The Preschool Food Adventure curriculum is available in three formats: Standard Classroom Kit, Deluxe Classroom Kit, and Professional Package (TABLE 4), each with its own content and pricing.

Preschools or childcare centers that are interested in the curriculum can purchase it through the Dr. Yum's website, and upon doing so, they will receive a password that grants access to teacher training videos and a quiz. At least one teacher is required to complete the video training and pass the quiz before the curriculum can be shipped to the school. Additionally, all staff members who will be involved in teaching the curriculum must complete the training, pass the quiz, and sign a Participating School Agreement before they can participate in the instruction. Each participant will receive a certificate.

Prior to the Alabama order, every purchase of the Preschool Food Adventure curriculum was manually fulfilled one-at-a-time. New instructors were trained either in-person or through live online sessions. The training materials were retrieved from stock, and the kit components were collected. Upon completing the training and passing the required quiz, certificates of completion were generated and emailed to each instructor. However, these processes involved significant manual effort and were not scalable. After the Alabama order, the Dr. Yum Project recognized the need to improve and scale their processes. They recorded all training modules, making them available for asynchronous viewing, as opposed to live sessions. They also hired a new employee to serve as the Preschool Program Manager, responsible for teacher onboarding and order fulfillment. Finally, they worked with a vendor to automate the printing of training certificates.

The Preschool Food Adventure curriculum is designed to be inclusive and adaptable for children of all abilities and can be implemented in various early

childhood care settings, including but not limited to Head Start, Early Head Start, Montessori, Day Care, Preschool, Faith-Based, and Home Centers.

Currently, the curriculum is being used in 78 childcare centers, spanning across 18 states, Canada, and Puerto Rico, with more than 6,000 students in 324 classrooms (TABLE 5).

THE CHILDCARE INDUSTRY

The childcare industry in the United States is both large and fragmented. There are many different types of providers. There are many small, at-home programs typically run by one primary caregiver and employs fewer than 5 employees. There are also larger, center-based childcare centers. Childcare centers enroll more children and employ multiple employees and divide the children into groups and classrooms. These centers are operated by individuals, chains, churches, public schools, or governments and can be either for-profit or nonprofit. None of these providers have a commanding market share. The ten largest for-profit chains including KinderCare, Bright Horizons, Learning Care, Spring Education, Cadence Education, Kids 'R' Kids, have less than 6% market share combined, weighted by the number of children (U.S. Department of the Treasury, 2021).

Childcare in the United States was a \$54.3 billion business in 2021. The industry had been steadily growing due to the demand from a healthy domestic labor market and rising disposable income, with an annual growth rate of 4.6% in the previous three years (Kently Insights, 2022). Although the industry saw a downturn during the Covid-19 pandemic, the childcare industry has rebounded and is expected to grow similarly in the future.

Childcare centers receive funding from two major sources: tuition from parents and government support. The Economic Policy Institute estimates that parents spend roughly \$42 billion on early childcare and education in the U.S., while federal, state, and local governments support childcare with roughly \$34 billion in public funds (Gould & Blair, 2020). Most for-profit childcare facilities operate on thin profit margins of 1% or less and could not survive without government funding. Government funding represents an even higher portion of revenue for nonprofit childcare centers (U.S. Department of the Treasury, 2021). The two largest government funding programs are the Childcare and Development Fund (CCDF) and Head Start.

The CCDF is a partnership between the federal government and states to subsidize childcare for lower income, working parents. It is administered by individual states and can be used both for direct costs and for improving the quality of existing childcare programs. Head Start offers federal funding for programs to promote

school readiness for preschool age children. Head Start particularly focuses on assisting low-income families with health, nutrition, and development of preschool age children. Their programs are administered by local school districts or nonprofit organizations, and often through collaborations called Community Action Partnerships (Childcare.gov, n.d).

Parents prefer childcare centers that are safe, healthy, and encourage learning. Therefore, child care centers with education-focused programs have a competitive edge in the industry. Quality childcare centers offer a variety of educational programs such as learning to read and write, painting, music, creative projects, and physical and outdoor playtime. Quality educational programs have the potential to elevate the star ratings of childcare centers within their respective states. Furthermore, these programs open the pathway for centers to attain accreditation from organizations such as the National Association for the Education of Young Children (NAEYC) which is a mark of quality. Centers with a higher quality educational program and superior qualifications of staff are well-positioned to command premium pricing for their services.

OTHER PRESCHOOL NUTRITION CURRICULA AND PROGRAMS

The number of curricula providers for early childcare centers is numerous. These vary widely, across a range of topics and from a range of providers. Some early childcare centers develop their own in-house curriculum, use available curricula, or partner with educational institutions to develop curricula. These programs can cover a wide variety of topics including communication skills, social skills, literacy programs, and art & fine motor skills. The options are almost limitless. However, there are some programs more similar to the Dr. Yum Project that focus specifically on nutrition. In the following section, we review four such programs.

SMALL BITES NUTRITION EDUCATION CURRICULUM

The Small Bites Nutrition Education curriculum, offered by Common Threads (a nonprofit organization), aims to enhance students' nutrition knowledge, increase vegetable consumption, and diversify their vegetable choices. The curriculum consists of eight lessons that combine nutrition education with knife-free cooking techniques, enabling students to prepare healthy snacks.

The lessons can be taught either in eight one-hour classes or sixteen thirty-minute classes, depending on the class schedule. The program is suitable for both in-school and after-school settings, and lessons can be delivered in-person or virtually. The curriculum is grade-level banded, targeting preschool, elementary, and middle school-aged children. Each lesson is accompanied by an extension activity corresponding to the students' grade level. Grading rubrics are included to ensure consistent and meaningful evaluation of student work.

The Small Bites curriculum is available in different formats and prices:

- The Small Bites In-School Time kit is priced at \$25 and includes handbooks for PreK-2nd grade, 3rd-5th grade, and 6th-8th grade.
- The Small Bites Out-of-School Time kit is also priced at \$25 and includes the same handbooks.
- The Small Bites Premium kit, priced at \$100, includes 26 Extension Lessons for the Small Bites Program.
- The Small Bites SNAP-Ed¹ kit, priced at \$25, is also available as a SNAP-Ed intervention.

The lessons are taught by trained Common Threads educators. Small Bites provides different training packages for educators:

- The “In-person Small Bites Training” package, priced at \$25, equips educators with the necessary skills to teach Small Bites in face-to-face settings. It includes three courses: an introduction to Common Threads and the Small Bites nutrition education program, nutrition education on the basic eight lesson themes, and implementation of Small Bites.
- The “Virtual Small Bites Training” package, also priced at \$25, prepares educators to conduct Small Bites lessons using a synchronous virtual format. It includes four courses: an introduction to Common Threads and the Small Bites nutrition education program, two courses on the basic eight lesson themes, and a course on facilitating Small Bites virtually using ClassKick or Google Slides.
- The “Small Bites Refresh Training” package, priced at \$25, is a required 30-minute training session for Small Bites teachers who will be teaching the program again in the upcoming school year. It covers updates regarding curriculum access, support for the Covid-19 program, and newly developed resources.

Between 2012 and 2021, a total of 339,000 students have participated in the Small Bites curriculum program.

WE INSPIRE SMART EATING (WISE) CURRICULUM

¹ The Supplemental Nutrition Assistance Program Education (SNAP-Ed) is a program provided by the USDA Food and Nutrition Service that offers high-quality resources based on evidence. SNAP-Ed Implementing Agencies nationwide utilize these recommended interventions and the SNAP-Ed Evaluation Framework to assist households eligible for SNAP benefits in making healthy eating and physical activity decisions while working within a restricted budget. SNAP-Ed interventions are publicly available on <https://snapedtoolkit.org/>.

The WISE curriculum aims to promote increased fruit and vegetable consumption among pre-school and elementary students, with a specific focus on low-income preschool children. The curriculum selects target foods based on factors such as affordability, widespread availability throughout the United States, and their absence from the diets of low-income children.

The curriculum is designed to be implemented over a 9-month period, with weekly food experiences and accompanying activities. Additionally, social media content is available to support programs interested in engaging families and early childhood educators in achieving the goals of the WISE program. To further captivate and engage children, the curriculum incorporates a mascot-character puppet to generate excitement and extend enthusiasm to their home environment.

Those interested in implementing WISE can choose from the available kits or coordinate with the institution to design a customized implementation plan. The available kits are as follows:

- “Curricula Only” kit, priced at \$259 per classroom or site implementing WISE, includes the following materials:
 - Practitioner manual and introductory unit
 - 8 research-based monthly WISE discovery units (available in two versions: preschool or Kindergarten/Grade 1)
 - 9 target food photo packs used with discovery units
 - Windy WISE puppet
 - 8-piece bulletin board set
 - Selected kitchen tools for food experiences
- “Lead Education Implementation” kit, priced at \$299 per classroom or site implementing WISE, includes all the materials from the “Curricula Only” kit along with an additional 6-hour professional development course.
- “Supporting Educator Training” kit, priced at \$59 per classroom or site implementing WISE, focuses solely on training and does not include the curriculum.

WISE has been adopted in over 182 Head Start and preschool sites, encompassing 430 classrooms thus far. It is also recognized as a SNAP-Ed intervention. WISE actively assesses the efficacy of its curriculum and has published multiple articles on this subject.²

VEGGIECATION NUTRITION PROGRAM

² A list of scholarly publications is available on WISE’s website at <https://windywise.org/Research>.

Veggiecation is a nutrition and culinary education program, targeting preschool, elementary, and middle school students. Its main objective is to educate students about healthy eating habits, with a particular focus on the benefits of incorporating vegetables into their diet. The program offers versatile cooking and nutrition training that can be customized to various settings such as schools, grocery stores, after-school programs, and summer camps.

The Veggiecation program utilizes professionals in different areas to enhance its effectiveness. A professional illustrator is employed to create Veggiecation characters, while a school food chef develops Veggiecation recipes. Additionally, the curriculum for classroom companion books is developed by a master elementary educator and curriculum developer.

Veggiecation has made significant strides in its reach, with implementation in over 30 US states, as well as Canada, the UK, South Africa, South Korea, and the Dominican Republic. The program incorporates various tools and resources like kids cooking classes, family workshops, educational posters, and family recipe books to promote vegetable education in everyday life.

For schools interested in the program, Veggiecation offers a school package priced at \$129.99 for Grades 1-3. This package includes Veggiecation Classroom Companion books³, supporting materials for lesson integration, and a full set of 34 informational Veggie Posters.

Furthermore, schools can benefit from Veggiecation Healthy Kids Cooking Classes by enrolling their staff in a 2.5 to 3-hour training session priced at \$295 per faculty member. The training package includes a portable cooking kit (including all of the cooking equipment needed to create Veggiecation's classroom-style recipes), Veggiecation Apron and Tote, a full set of 34 informational Veggie Posters, "I tried it!" stickers, and a recipe e-book.

Veggiecation also provides group training options for schools, health departments, hospitals, and non-profit organizations.

Individuals interested in becoming certified Veggiecation educators, known as Veggiecators, can participate in online self-paced training workshops that are available in both the US and Canada. Certified educators have the opportunity to teach Healthy Kids Cooking Classes in various venues, such as schools, after-school programs, grocery stores, fitness centers, farmer's markets, enrichment

³ These books are designed for students at different grade ranges.

programs, and community centers, and Veggiecation supports them in establishing successful businesses.

The training package for becoming a certified Veggiecation educator is priced at \$328 and includes the portable cooking kit, a Veggiecation apron, a full set of 34 Veggiecation Informational Veggie Posters, “I Tried It!” stickers, the Veggiecator Recipe E-book, and a one-year license to use the Veggiecation trademark.

Certified educators can be located through the Veggiecation website, and Veggiecation encourages individuals to engage in their classes and reap the benefits of their expertise.

CATCH WELLNESS PROGRAM

The CATCH (Coordinated Approach to Child Health) Wellness Program is a comprehensive program designed to promote health and prevent disease among children and adolescents. It focuses on instilling healthy eating habits, encouraging physical activity, and preventing tobacco use. Key components of the CATCH program include classroom lessons, physical education activities, and initiatives to improve the nutritional quality of school meals and snacks. The program also actively involves families and communities in promoting and reinforcing healthy choices. In addition to nutrition and physical education, CATCH offers programs addressing vaping prevention, social and emotional learning, and oral health.

CATCH offers programs across multiple age ranges such as early childhood, elementary school, middle school, high school. It also offers an after-school program. Each program has multiple components and different prices. CATCH also offers both in-person and virtual trainings for teachers and educators who will be implementing the program.⁴

CATCH is primarily implemented in schools, serving pre-K, grades K-5 and K-8, and grades 6-8, as well as in after-school settings. CATCH programs have been implemented in all 50 states, and internationally. Across the United States, over 15,000 educational sites have adopted CATCH programs, positively impacting the lives of more than 1.3 million children. CATCH is a SNAP-Ed intervention.

FUTURE OF THE PRESCHOOL FOOD ADVENTURE CURRICULUM

Dr. Fernando has been delighted to see that the Dr. Yum’s brand has successfully built awareness, while the preschool curriculum has reached more children in preschool programs (TABLE 5). This expansion has yielded favorable profit

⁴ CATCH programs, their components and corresponding prices are available here: <https://letsgo.catch.org/pages/pricing>.

margins (EXHIBIT 1). Dr. Fernando wonders what could be done next to not only maintain but also enhance the achievements of the Dr. Yum's Project and reach even more children. So far, much of their growth has come from either local contacts or chance meetings at conferences. The Head Start centers in Alabama were a welcome surprise, but competing on a national scale will require a different approach. One-at-a-time contacts across such a fragmented childcare industry seem daunting for such a small team. And the Dr. Yum Project is likely to come up against competing organizations. How would the Dr. Yum Project be able to compete on a larger scale? They need a strategy.

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