

Resident Scholarly Project Proposal 2022

Title of Project: Evaluating Outcomes of Watching Recipe and Nutrition Education Videos on Children's Nutrition Education and Health Empowerment

Resident: Nabanita Hossain

Faculty Mentor: Dr. Ileana Vargas-Rodriguez

Brief background:

Childhood obesity impacts almost 20% of children in the United States¹. It has an even bigger impact on children with lower socioeconomic status. Studies have shown that the prevalence of obesity decreases as the education level of the head of household increases². Additionally, families with lower incomes have a higher prevalence of childhood obesity when compared to families with higher incomes¹. Childhood obesity also varies by race. Greater than 25% of Hispanic children are obese, compared to 16% of non-Hispanic White children and 8.7% of non-Hispanic Asian children¹. There are many health outcomes of obesity in children, including, but not limited to, diabetes, sleep apnea, fatty liver disease, increased cardiovascular disease risk, high cholesterol, musculoskeletal problems, and menstrual abnormalities³. Childhood obesity also has many social and emotional consequences. Obesity can be stigmatizing in children and cause negative stereotypes, discrimination, and social marginalization, which can then cause low self-esteem, low self-confidence, and decreased social interaction and play³. The COVID-19 pandemic has greatly affected childhood obesity. One study of >400,000 children aged 2-19 years old showed that the rate of BMI increase approximately doubled during the pandemic, as compared to pre-pandemic rates of BMI increases⁴. Therefore, childhood obesity remains a large problem, and we as a society need to find ways to decrease its prevalence.

One way to attempt to decrease childhood obesity rates is by increasing education on healthy eating habits. Studies have shown early nutrition education can help prevent childhood obesity⁵. At our present time, media content is prevalent throughout society. It is quick and easy to watch a video on a phone, tablet, or computer, making video media content an accessible medium to promote nutrition education. Our goal is to create healthy recipe videos featuring children that other children can view in order to improve nutrition education and empower children to take control of their own nutrition and health.

Study Design:

We will be partnering with two organizations in Washington Heights for this project – Choosing Healthy and Active Lifestyles for Kids (CHALK) and The Uptown Hub. CHALK is NewYork-Presbyterian's (NYP) obesity prevention program in collaboration with Columbia University Irving Medical Center (CUIMC) and the community of Northern Manhattan. The Uptown Hub is a NYP Youth Opportunity Hub which gives adolescents in Washington Heights and Inwood the opportunity to act, create, and inspire growth within themselves and their communities. Both organizations have community programs that children and adolescents participate in. CHALK has a farmer's market and cooking demonstration program and The Uptown Hub has video equipment and a kitchen studio.

We will recruit child and adolescent volunteers from CHALK's summer farmer's market program to star in recipe videos of healthy meals and snacks. The video content will be written by the study investigators and recorded at The Uptown Hub. Video content will include about 1-2 minutes of recipe content and 1-2 minutes of nutrition education content. There will be 4 videos in total.

After having the videos made, we will then show the videos to other children and adolescents. Consent will be obtained from the child and their parent. We are determining whether we will show these videos to children in diabetes clinic or children in the CHALK and Uptown Hub community programs. The video watchers will complete a survey prior to watching the videos and after watching the videos. Survey questions will aim to gather information about nutrition education (ex: I know how much sugar is in an apple; I know what a serving size is; I know how many calories are in a serving of potato chips) as well as health empowerment (ex: I have a lot of knowledge about healthy eating; I understand how nutrition affects my health). The same survey will be administered prior to watching the video as well as after watching the video. The surveys given to the subjects will have numbers on them to identify the pre and post survey of specific subjects, but will not have any identifying data.

Statistical Procedures:

The survey answers collected during the study will be analyzed via a paired-sample t-test to determine if there is any improvement in nutrition education and feelings of nutrition empowerment after watching the recipe videos. Answers to the surveys will be along a Lichert scale (Strongly disagree, mildly disagree, neutral, mildly agree, strongly agree). The scores of the pre and post surveys will be added up. The total score of the pre-survey data will be compared to the total score of the post-survey data. If the survey has 8 total questions, we expect a score difference of 1-2 points per question, which can theoretically result in a total score difference of between 8-16 points. With a theoretical standard deviation of 0-27 (no change to a change in 3 points per question), we can expect a need for 25 subjects to find a statistically significant difference of 8 points from pre-to-post survey, and a need for 8 patients to find a statistically significant difference of 16 points from pre-to-post survey. If we use a control group and show non-nutrition education/recipe videos to them and administer pre-and-post surveys, we will need 46 subjects in each group to see a difference of 8 between groups and 13 subjects in each group to see a score difference of 16 between groups.

Aims or Hypothesis:

The goal of this project is to create healthy recipe videos with children that can then be shown to other children in order to increase education on and promote healthy eating habits, as well as empower children and adolescents to take control of their nutrition and health. We will measure this with surveys conducted prior to watching the videos and after watching the videos. Our hypothesis is that as children watch recipe videos on how to create nutritious meals and snacks, their education on what constitutes healthy and nutrition eating will improve, and they will feel more empowered to take control of their own nutrition and health.

Potential Risks:

There are no anticipated medical risks associated with participation in the proposed project.

Potential Benefits:

Participating in this study can allow subjects to gain nutrition education and recipe content knowledge, which they can then utilize to improve their health outcomes in the future.

Alternatives:

Participants can choose to not participate in the study and continue to receive their usual care.

References:

- ¹ Fryar CD, Carroll MD, Afful J. Prevalence of overweight, obesity, and severe obesity among children and adolescents aged 2–19 years: United States, 1963–1965 through 2017–2018. NCHS Health E-Stats. 2020
- ² Ogden CL, Carroll MD, Fakhouri TH, et al. Prevalence of Obesity Among Youths by Household Income and Education Level of Head of Household — United States 2011–2014. *MMWR Morb Mortal Wkly Rep* 2018;67:186–189. DOI: <http://dx.doi.org/10.15585/mmwr.mm6706a3external icon>.
- ³ Sahoo, K., Sahoo, B., Choudhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: causes and consequences. *Journal of family medicine and primary care*, 4(2), 187–192. <https://doi.org/10.4103/2249-4863.154628>
- ⁴ Lange SJ, Kompaniyets L, Freedman DS, et al. Longitudinal Trends in Body Mass Index Before and During the COVID-19 Pandemic Among Persons Aged 2–19 Years — United States, 2018–2020. *MMWR Morb Mortal Wkly Rep* 2021;70:1278–1283. DOI: <http://dx.doi.org/10.15585/mmwr.mm7037a3>
- ⁵ Gato-Moreno, M., Martos-Lirio, M. F., Leiva-Gea, I., Bernal-López, M. R., Vegas-Toro, F., Fernández-Tenreiro, M. C., & López-Siguero, J. P. (2021). Early Nutritional Education in the Prevention of Childhood Obesity. *International journal of environmental research and public health*, 18(12), 6569. <https://doi.org/10.3390/ijerph18126569>