

Integrating a Community-Based, Family-Centered Nutrition and Exercise Program into a Preexisting Physical Extracurricular Activity

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Purpose

- The purpose of this study was to utilize a systems perspective in the implementation and evaluation of a community-based, family-centered, nutrition and exercise program at the community organization to increase knowledge of healthy food behaviors and improve youth participant's attitude and mindset towards a healthy lifestyle over twelve weeks.
 - The project aimed to improve health outcomes and decrease long term complications related to childhood obesity within the community.
- Objectives :
- Analyze diet and physical activity patterns based on age-appropriate national guidelines.
 - Increase knowledge of healthy food behaviors by April 2020 for members of organization through the implementation of a 12-week community, base, family-centered nutrition and exercise program.
 - Improve participant's attitude and mindset towards a healthy lifestyle by April 2020 for members of the organization through the implementation of a 12-week community-based, family-centered nutrition and exercise program.
 - Improve participants access to healthy food choices for members of the organization and community by creating more sustainable healthy food options such as a farmer's market and increasing healthy food availability in vending machines within the organization.

Background

- Childhood obesity continues to be a problem in urban areas despite an understanding of the causes and consequences.
- Percentage of overweight and obese children aged two to four years in the state of New Jersey is 15%.
- Rate of overweight and obese youth ages ten to seventeen is 14.8%.
- The state of New Jersey ranks # 22 for levels of obesity.
- The study site recognized the need to increase healthy living and healthy lifestyles to reduce the incidence of chronic diseases and conditions for community members.
- Nutrition and exercise are main components in addressing the issue of obesity and childhood obesity; however, addressing these alone will not solve the problem.
- In order to truly create sustainable change in the realm of childhood obesity, it was important to focus on changes that address systems level obstacles with evidence-based interventions based on the identified needs of the community.

Methods

- In order to address systems level practice changes, the community-based, family-centered nutrition and exercise program that was established into the community organization helped address obesity prevention practices at the systems level.
- A 12-week nutrition and exercise program was implemented using evidence-based materials from Let's Go 5210 to develop the curriculum regarding diet and activity.
- An evidence-based 10 item open-ended survey design was used to measure knowledge of healthy food behaviors and attitude towards a healthy lifestyle pre and post intervention.
- Anthropometric measurements were obtained at 0, 6, and 12 weeks to determine if there had been any changes from baseline.
- Phase one: pre-intervention survey was completed by both the child and parent; baseline anthropometric measurements obtained for child participants.
- Phase two: nutrition and exercise program; 6 week anthropometric measurements; meetings with community stakeholders for identification of system level changes.
- Phase three: post-intervention survey was completed by both the child and parent; anthropometric measurements obtained for child participants.
- System level policy changes were implemented including establishing a partnership with a farmer's market and restocking the organization vending machines with healthy food choices.

5210 Healthy Habits Questionnaire (Ages 10-18)

We are interested in the health and well-being of all our patients. Please take a moment to answer the following questions.

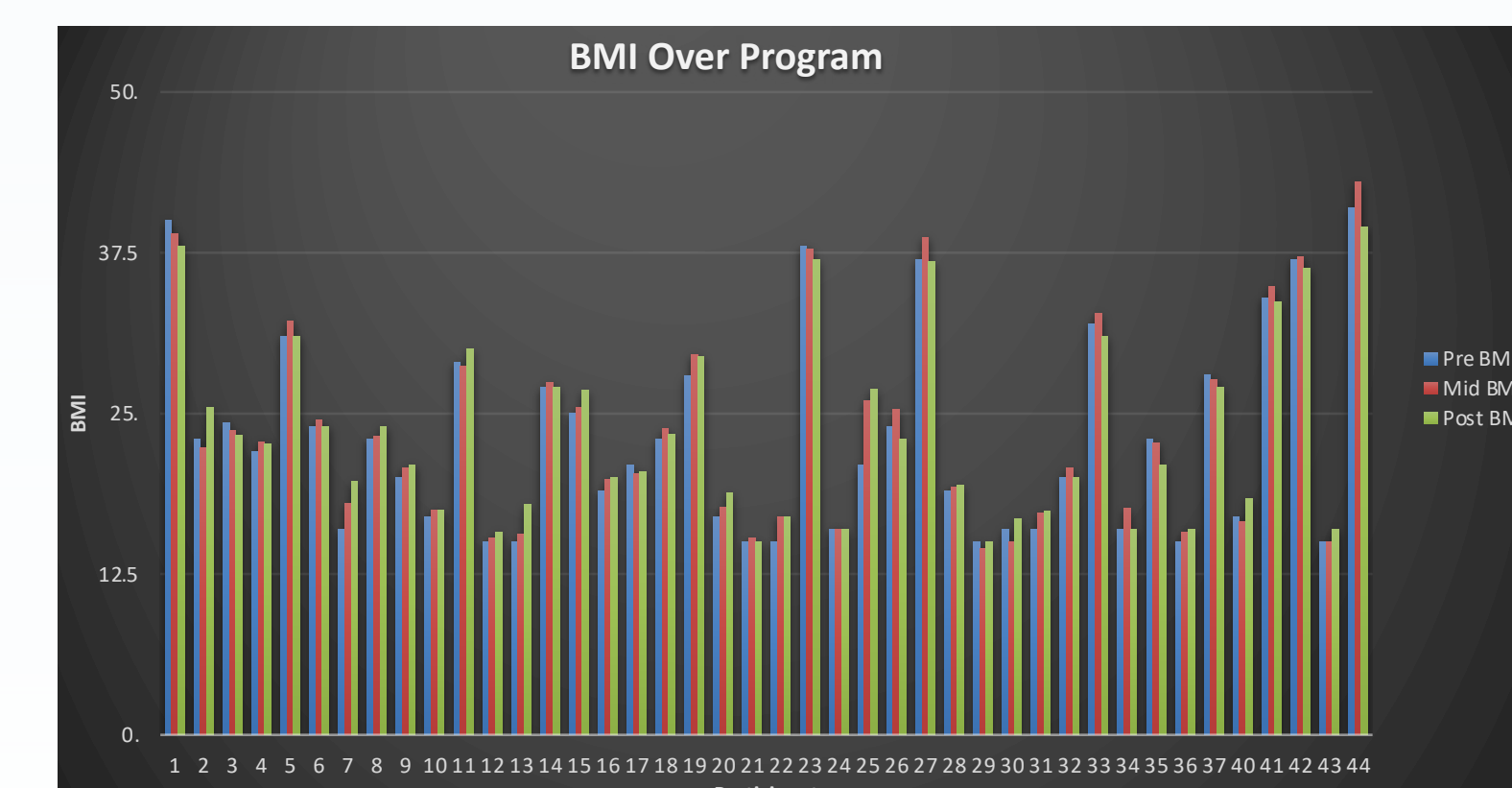
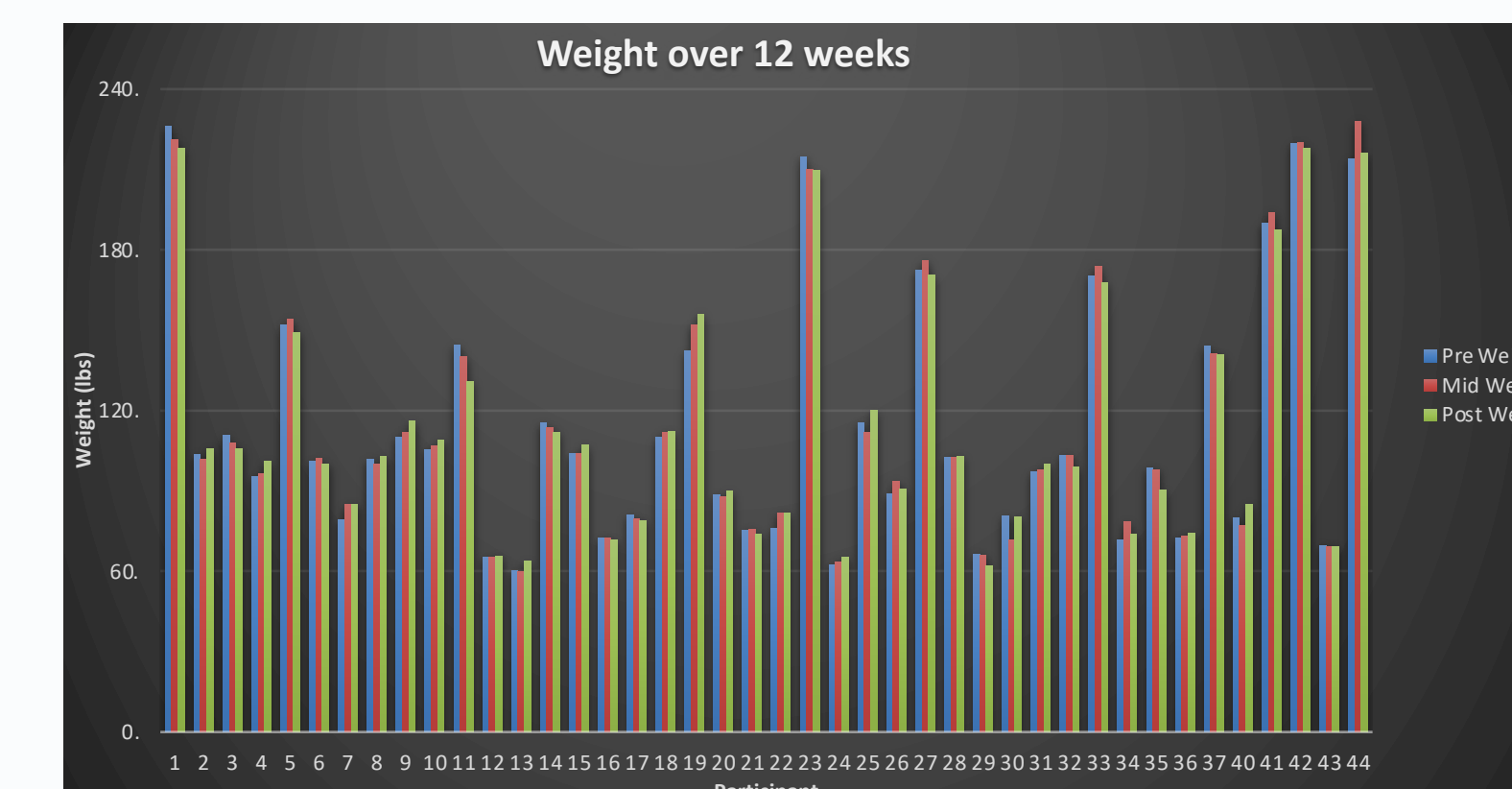
Patient Name: _____ Age: _____ Today's Date: _____

- How many servings of fruits or vegetables do you eat a day? (One serving is most easily identified by the size of an palm of your hand)
- How many times a week do you eat dinner at the table together with your family?
- How many times a week do you eat breakfast?
- How many times a week do you eat takeout or fast food?
- How many hours a day do you watch TV/movies or sit and play video/computer games?
- Do you have a TV in the room where you sleep? Yes No
- Do you have a computer in the room where you sleep? Yes No
- How much time a day do you spend in active play (faster breathing/heart rate or sweating)?
- How many 8-ounce servings of the following do you drink a day?
 100% juice Fruit or sports drinks Soda or punch
 Water Whole milk Nonfat (skim), low-fat (1%), or reduced-fat (2%) milk
- Based on your answers, is there **ONE** thing you would be interested in changing now? Please check one box.
 Eat more fruits and vegetables. Spend less time watching TV/movies and playing video/computer games.
 Take the TV out of the bedroom. Eat less fast food/takeout.
 Play outside more often. Drink less soda, juice, or punch.
 Switch to nonfat (skim) or low-fat (1%) milk. Drink more water.

Please give the completed form to your clinician. Thank you.

Results

- Increase in servings of fruits and vegetables, 95.2% ($p < 0.001$).
- Decrease in number of fast food per week, 71.4% ($p = 0.021$).
- Decrease in number of sugary drinks per day, 71.4% ($p < 0.001$).
- Decrease in the hours of screen time per day 78.5% ($p < 0.001$).
- Increase in hours of active play 80.9% ($p < 0.001$).
- A repeated measures ANOVA was conducted on weight and BMI data achieved statistical significance for BMI but not for weight; p-value 0.005 and 0.891, respectively.
- A reduction in weight and BMI, 42.8% and 23.8%, respectively was noted.



Conclusion

- Incorporating a nutrition and exercise program into preexisting extracurricular activities encouraged healthy lifestyle changes for families to combat childhood obesity.
- As a result, organization has adopted the program into the curriculum of the dance school, with plans to implement into other after school programs.
- Additionally, a partnership was established with a farmer's market where members receive vouchers to purchase items from the market. The vending machines were also restocked with healthier food items to provide members with more health conscience choices.
- It is important to note that this was pilot study conducted in the organization.
- Although, the study was short term, positive outcomes specific to participants healthy lifestyle behaviors and attitudes were achieved at the end of the 12-week intervention.
- Further studies need to be conducted to measure long term behavior changes.

References

- Kumanyika, S., Parker, L., and Sim, L. (2010). Bridging the evidence gap in obesity prevention: a framework to inform decision making. (Washington, DC) *The National Academies Press*; pp 71-84.
- Stateofobesity.org. (2019). Childhood obesity trends. *The State of Obesity: Better Policies for a Healthier America*. Retrieved from: <https://stateofobesity.org/childhood-obesity-trends/>
- Dearholt, S., and Dang, D. (2018). Johns Hopkins nursing evidence-based practice model and guidelines. Indianapolis, IN: *Sigma Theta Tau International*. Chapters 3, 9.