

Effectiveness of Implementing Initial Education Strategies to Promote Awareness and Healthy Habits in Childhood Obesity: A Quality Improvement Project

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Conflicts of interest: None to report.

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0891-5245/\$36.00

Published by Elsevier Inc. on behalf of the National Association of Pediatric Nurse Practitioners.

<https://doi.org/10.1016/j.pedhc.2017.09.006>

ABSTRACT

Background: Rising incidence and prevalence of childhood obesity and related costly health consequences suggest the need for an effective training tool at the primary care level. Evidence-based studies show how a healthy diet and physical activity help reduce the incidence of obesity.

Methods: The objective for this quality improvement project was to evaluate the effectiveness of an evidence-based educational tool in improving healthy eating and physical activity habits among overweight and obese children in a primary care setting over 3 months.

Results: There was a positive statistically significant change in behavior in eating more fruits and vegetables and decreased intake of sugary drinks and sedentary habits ($p < .05$).

Conclusion: After receiving education on the importance of healthy lifestyle changes with regard to nutrition and physical activity, pediatric patients adopted better diet and physical activity habits. However, there was little effect on reducing body mass index in a 3-month timeframe. *J Pediatr Health Care.* (2017) ■■, ■■■-■■■.

KEY WORDS

Childhood obesity, overweight, pediatric

INTRODUCTION

Childhood obesity affects approximately 12.7 million children in the United States, which is approximately 17% of the pediatric population. The principal ethnicity affected is the Hispanic population (Centers for Disease Control and Prevention, 2013). An individual with a body mass index (BMI) in the 95th percentile or greater for their sex and age is considered obese, and a child with a BMI in 85th through 94th percentiles is considered overweight. There are multiple psychological and physical implications correlated with obesity. An elevated BMI is a major risk factor for cardiovascular disease, diabetes, cancer, hypertension, hypercholesterolemia, and nonalcoholic fatty liver disease (Centers for Disease Control and Prevention, 2009). Additionally, there are psychological implications correlated with obesity such as poor self-esteem and depression, which adversely affect a child's quality of life (Centers for Disease Control and Prevention, 2009). Obesity-related illnesses for all ages costs the United States an astounding \$190.2 billion annually, which accounts for almost 21% of all medical spending each year (Cawley & Meyerhoefer, 2012). These serious health consequences are not only financially exorbitant but also cause premature mortality. Because of the high prevalence, cost, and serious health consequences correlated with overweight and obesity, this is one of most serious public health concerns affecting future generations.

There is speculation that people of certain ethnicities, such as African Americans and Hispanics, are more genetically inclined to develop obesity because of the high prevalence rates in these ethnic groups (National Institutes of Health, 2017). However, further research is needed to support this claim. Although there is no exact causation identified for obesity, there are a number of risk factors identified through research. These risk factors may include lack of physical activity, consuming excess calories, and eating foods high in sugar and saturated fats (National Institutes of Health, 2017). Fuglestad, Jeffery, and Sherwood (2012) found that individuals with a diet high in fruits and vegetables, portion control, and more physical activity were more likely to reduce their BMI compared with individuals who did not change their diet and sedentary lifestyle.

Conlon et al. (2015) found that the role of parenting practices in the home environment may play a detrimental role in treating obesity in childhood. Therefore, when formulating an intervention, it is imperative to address the parents' educational level and understanding of the needs to treat obesity through lifestyle changes. Parents are more likely to offer healthier options at home when counseled on healthy eating (Conlon et al., 2015). In fact, using motivational interviewing and dietary counseling with the family has been shown to be effective in reducing BMI percentiles

in children over a 2-year period in primary care settings (Resnicow et al., 2015). There have been similar results with providers using coaching and written contracts in conjunction with nutritional and exercise counseling among the pediatric population (Ho et al., 2012; Taveras et al., 2015).

Despite the increased awareness of the problem, there is a gap between synthesizing knowledge into daily activities and healthy lifestyle changes for pediatric patients. The need to bridge the gap at the community level for our obese patients warrants a multifaceted approach.

Therefore, given the mounting evidence suggesting the need to educate families on healthy living, the National Institute for Children's Health Quality (National Institute for Children's Health Quality, 2015) developed an obesity toolkit for health care providers to help combat childhood obesity locally. The toolkit addresses the need to increase fruits and vegetable intake, decrease sugar intake, and promote physical activity (see Figure).

LOCAL PROBLEM

The prevalence of childhood obesity in the state of Delaware has been escalating. The obesity rate in Delaware has increased, making the state 3rd in the nation for obese/overweight children aged 2-4 years old (The State of Obesity, 2016). In the author's pediatric primary care setting, more than 75% of the population is Hispanic, and more than half are either overweight or obese. The purpose of this quality improvement project was to evaluate the efficacy of an evidence-based educational training about childhood obesity at Rainbow Pediatrics, a primary care pediatric office in a rural town in Delaware. The primary aim is to implement and evaluate an educational training for parents and children about the risks of childhood obesity and lifestyle modifications to improve health specifically through nutritional and exercise counseling. Goal-setting between the parent and the child (patient) was part of the educational training. The project outcomes were both objective and self-reported and were measured against the following criteria.

- Patients will increase vegetable and fruit intake by 10% over a 2-month interval.
- Half of the obese patients will decrease their consumption of sugary drinks by 50% over a 2-month interval.
- Half of the obese patients will increase their physical activity by 2 or more hours a week over a 2-month interval.
- Weight, BMI percentile, and blood pressure measured at the initial appointment and at the 1-month follow-up appointment in the office, as documented objectively. Overall, it is expected that half of the overweight and obese patients will lose

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