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This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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Understanding How to Promote Healthy Dietary Habits Among Parents of Adolescents

A doctoral project submitted in partial satisfaction

of the requirements for the degree of

Doctor of Nursing Practice

by

Jazmine D. Collins, MSN, APRN, FNP-C

April 2022

Dedication

This DNP project is dedicated to all parents who struggle with making wise food choices for their children, especially those with multiple children. As a mother of four, I understand the struggle of ensuring that your children have healthy meals that are nutritious and delicious. The collective effort of this project was focused on engaging parents to be more conscious of food choices, allowing their children to receive the nutrients vital to their health, and learning to enjoy the food they eat.

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To my family, Erick, Kaleigh, Cali, Erin, and Deuce, all of you are my reason why. You have been there for me during the stressful nights of trying to meet deadlines, which may have taken time from you, but instead of complaining, you showed understanding. Thank you for being patient with me as I pushed to reach another goal. Thank you to my parents for instilling in me the spirit never to give up and to keep God first. You both have taught me that there is nothing that I cannot do. Thank you to a host of friends and extended family that gave me encouraging words and believed in me along the way.

Lastly, but certainly not least, none of this would be possible without my Lord and Savior, Jesus Christ. Thank you, Lord, for never counting me out and believing that I could do the impossible. I know that there is nothing that I can not face with you, and you will ALWAYS lead me in the right direction. I pray that everything I do continues to be pleasing to your will, and you get all the glory.

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Abstract

Adolescents in the United States today have record-high prevalence rates for childhood obesity and overweight, which are conditions that have lifelong negative health consequences for individuals, and also carry high financial and social costs for the entire nation. The disproportionate burden of obesity and associated health conditions falls on adolescents of racial and ethnic minority group identities and from lower-income households. The increased risk that adolescents have for developing conditions like childhood obesity is closely associated with youth having diets that are unhealthier than in the past. Parents have a large influence on the eating habits and preferences of their adolescent children, however, and parents who promote healthy eating in their households have been found to successfully promote healthier dietary habits among their children as well as improvements in their children's health status. However, only a limited number of studies have addressed delivering dietary education to the parents of adolescents from lower-income households who are predominantly African American; factors like ethnicity, income, and geography have usually only factored into dietary interventions intended for adults alone. In order to address the research problem framed above, this Doctor of Nursing Practice (DNP) project was developed with the purpose of implementing an evidence-based nutritional and dietary education program, using a virtual format, for the parents of adolescents in order to promote improvements in family dietary and health behaviors. Accomplishing this purpose would allow the DNP project to facilitate obesity prevention efforts while also examining the effectiveness of the virtual format for dietary education interventions targeting the parents of adolescents. The population, intervention, comparison, outcome, time question that framed the project was: Among the adult parents of adolescents living with their children in a lower-income, urban area (P), does participation in a virtual education program on

healthy dietary habits (I) affect pre- to postintervention changes (C) in nutritional knowledge and family eating behaviors (O) over the four-week intervention period (T)? The dependent variables of family eating behaviors and family health behaviors were measured using the Family Nutrition and Physical Activity self-report survey questionnaire, which was administered online at pre- and postintervention time points. Participants were recruited as a convenience sample in a single urban neighborhood, and each participant took part in a single session of the virtual education program. In total, 80 parents of adolescents took part in the intervention. Two-tailed, paired-samples *t* tests were used to compare the sample's mean scores on the relevant subscale of the Family Nutrition and Physical Activity survey, used to measure family eating behaviors, and to compare the sample's mean total scores on the Family Nutrition and Physical Activity survey, used to measure family health behaviors, with a cutoff *p*-value of $p < .05$ to determine significance. The sample's mean scores related to the family eating behaviors and family health behaviors showed significant increases at postintervention compared to pre-intervention. Therefore, the virtual education program was determined to facilitate improvements in the reported family eating and health behaviors among the parents of adolescents who took part in it. These findings have key implications for nurse leaders working to prevent childhood obesity in at-risk communities, and for future research on the use of virtual interventions to promote positive changes in family dietary behaviors.

Keywords: Adolescents, healthy dietary habits, parents of adolescents, healthy eating in children, healthy eating habits

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Chapter 1: Introduction

Childhood obesity in the United States has increased drastically over the last 30 years, and has become a nationwide health problem that is closely linked to unhealthy dietary habits. Since the late 1980s, obesity rates among children and teens under 18 years old have more than tripled in the United States (Centers for Disease Control, 2020). Currently, childhood obesity has reached a record high among American youth, and the Centers for Disease Control (2020) have indicated that 18.5% of Americans who are under 18 years of age meet the diagnostic criteria for obesity, while another 16.6% of children in the United States are at risk for obesity due to being overweight (Fryar et al., 2018). As childhood obesity has become more prevalent among American youth, the eating habits of these youth have also become healthier. American children and teens today consume significantly larger amounts of calories, fewer servings of fresh vegetables and fruits, and more servings of sugar-, cholesterol-, and sodium-laden junk foods in a given day compared to American youth 30 years ago (Larsen et al., 2015). However, parents, rather than the children themselves, tend to make the most influential decisions that shape children's long-term eating choices and their immediate nutritional needs (Frenn et al., 2020; Reed et al., 2015). Nurses have a need to promote healthier eating habits among adolescents and their parents to prevent childhood obesity and reduce its associated health risks, which are capable of affecting individuals throughout their entire lives. Therefore, nurses must be familiar with educational strategies that can effectively encourage the parents of adolescents to make desirable dietary changes, including the use of interventions that are delivered through virtual settings, as opposed to conventional health care provider settings. This study described a Doctor of Nursing Practice (DNP) project that addressed this issue by examining how a dietary

education program for the parents of adolescents influences parental dietary knowledge and family food choices.

The purpose of Chapter 1, the Introduction, was to provide background information on the need for the project and its significance, as well as to offer an overview of what the project entailed. The chapter first describes the problem the project addressed. Then, the chapter frames the overall purpose of the project, and the research questions that guided the project are identified. In the last section of this chapter, the key terms used in the project are identified and defined.

Statement of the Problem

The problem this DNP project addressed was the need to deliver effective, evidence-based educational interventions that can effectively promote the adoption of healthier familial dietary habits among the parents of adolescents. Dietary preferences and habits developed during childhood and adolescence have short- and long-term physiological influences on children's health and development. The short-term effects include influences of family food and meal choices on the child's ability to maintain a healthy body mass index (BMI), while the long-term indirect effects on health stem from family eating behaviors and food choices acting as influences on individuals' food preferences and dietary habits during adulthood (Quelly, 2014; Xu & Xue, 2016). Educating the parents of adolescents to assist them with promoting the development and retention of healthy eating habits is, therefore, an essential component of interventions that strive to prevent obesity in at-risk youth and to address obesity among young persons who already are obese (Nirmala et al., 2018). Interventions intended to promote healthy eating delivered to the parents of preteen and teen adolescents have been found to be effective in terms of promoting healthier eating choices by both adults and adolescents, as well as improving

family members' health outcomes, including BMI (Moxley et al., 2019; Park & Park, 2016). Research also suggests that educational interventions for improving healthy eating behaviors can be effective when delivered in a virtual format instead of the traditional in-person approach, by using resources such as chat apps, text messages, online activities, and Internet information resources (Boutelle et al., 2015; Militello et al., 2016). The ability of the virtual interventions to promote healthier eating habits and improved health outcomes is especially useful during the current global COVID-19 coronavirus pandemic, which has limited the availability of outpatient health services due to concerns about patient and provider safety. Virtual interventions delivered to the parents of adolescents, therefore, can promote improvements in nutritional knowledge and dietary choices comparable to the improvements seen among participants in individual, group, or family interventions conducted in health care provider settings (Larsen et al., 2015; Martin et al., 2018; Xu & Xue, 2016).

This project translated evidence to practice to implement a dietary education intervention that would be delivered to the parents of adolescents in a lower-income, urban neighborhood whose residents are predominantly African American. While household income, race, and geography can influence dietary education interventions' perceived relevance and applicability among participants, the need to ensure these considerations are included in the intervention design has largely only affected the content of educational interventions for adult African Americans living in lower-income urban households in the past (Brody et al., 2017; Harris & Chew, 2014). In this case, these considerations will influence the delivery of the intervention to parents of adolescents.

The problem that this project addressed had its roots in the substantial increases of the incidence and prevalence rates of childhood obesity that have been documented in the United

States over the past three decades. Since the late 1980s, the child obesity rate increased from 6% of Americans under 18 years of age to 18.5%, which has paralleled a shift in dietary habits among American youth (Fryar et al., 2018). While childhood obesity affects younger children as well as adolescents, there are several reasons that adolescent obesity is a particularly important health issue to address. Compared to children under 12 years of age, adolescents in the United States have shown a greater increase in obesity prevalence and incidence rates and have higher prevalence of obesity, severe obesity, and obesity risk due to being overweight (Fryar et al., 2018). Dietary changes among American adolescents have also been more pronounced during the same time frame than the dietary changes observed among younger children. In part, adolescents have experienced more extreme changes in their diet because of social factors, such as adolescents engaging in eating behaviors during sedentary recreation, and because of the limited physical activity and heightened sedentary activity time associated with the present coronavirus pandemic (Jones, 2018; Mittal et al., 2020). Environmental factors have also influenced this trend, such as the growing number of food deserts in low-income neighborhoods across the United States. In a food desert, the residents lack the ability to buy healthy food inexpensively; in some cases, residents may have no options for purchasing food aside from convenience stores stocked with junk food, and inexpensive, but unhealthy, fast food restaurants (Kulik et al., 2019; Larsen et al., 2015).

Purpose of the Study

The purpose of the DNP project was to implement a virtual nutritional and dietary education program for the parents of adolescents that would effectively promote the adoption of improved family dietary behaviors and family health behaviors among the participants in the program a month after the participants complete the program. The DNP project examined the

ability of a brief, inexpensive program based on research evidence to facilitate healthier family dietary choices among the parents of adolescents who are members of populations that are disproportionately likely to develop childhood obesity and subsequent obesity-related health problems; namely, African American adolescents from lower-income, urban households (Brody et al., 2017). The DNP project would ultimately strive to apply the education program to prevent, mitigate, or eliminate obesity among participants through supporting participant empowerment to choose dietary options that are enjoyable and convenient, but also healthy. The PICOT question that guided this project was "Among the adult parents of adolescents living with their children in a lower-income, urban area (P), does participation in a virtual educational program on healthy dietary habits (I) affect pre- to postintervention changes (C) in nutritional knowledge and family eating behaviors (O) over the course of the four-week intervention period (T)?"

Research Questions

RQ1: Do parents of adolescents who participate in a nutritional education intervention exhibit changes in family health behaviors between pre- and postintervention?

RQ2: Do parents of adolescents who participate in a nutritional education intervention exhibit changes in family eating behaviors between pre- and postintervention?

Definition of Key Terms

Body mass index. Body mass index is defined for an individual as their weight in kilograms divided by their height in meters squared (Squalli, 2017).

Family eating behaviors. In this project, family eating behaviors are defined as the individual participants' reported family meal planning, food selection, portion sizes, and mealtime participation behaviors as measured by the summed score of the first 10 items on the Family Nutrition and Physical Activity screening tool (Ihmels et al., 2009; Peyer et al., 2021).

Family health behaviors. In this project, family health behaviors are defined as the individual participants' reported family eating, exercise, and sleep behaviors as measured by the total score on the Family Nutrition and Physical Activity screening tool (Ihmels et al., 2009; Peyer et al., 2021).

Obesity. Obesity is defined as an excessive amount of adipose tissue resulting in a BMI of 30 or above (Fryar et al., 2018).

Overweight. Overweight is defined as an excessive amount of adipose tissue creating a risk of future obesity, and a present BMI of 25-29.9 (Squalli, 2017).

Chapter 2: Literature Review

This DNP project addressed the need to promote healthy eating behaviors among the parents of adolescents in order to prevent obesity among their children. Chapter 1 served as an introduction to the project itself, which was guided by the PICOT question, "Among the adult parents of adolescents living with their children in a lower-income, urban area (P), does participation in a virtual educational program on healthy dietary habits (I) affect pre- to postintervention changes (C) in nutritional knowledge and family eating behaviors (O) over the course of the four-week intervention period (T)?" The purpose of Chapter 2 is to present a comprehensive review of the relevant literature that was used to develop the project and support the need for undertaking it. The chapter is divided into several sections that address the various elements of the literature review. The first section describes how the review of the literature was conducted. The second and third sections describe the theoretical and conceptual frameworks for the project as they have been presented in the literature. The literature review itself comprises the fourth section, which is divided thematically into sections covering the literature related to educational interventions, virtual interventions, behavioral interventions, and the use of the Family Nutrition and Physical Activity screening tool. The final section summarizes the main points from the chapter.

Literature Search Methods

The review of the literature described in the sections of this chapter that follow below was conducted using a series of online database searches. The databases that were searched included the Cumulative Index of Nursing and Allied Health Literature, PubMed, and EBSCO. These databases were simultaneously searched using the same parameters, which were that the search results had to be written in English, consist of articles in peer-reviewed publications, and

have been published during or after the year 2015. Multiple combinations of search terms were used to locate articles, including *obes**, *parent* OR famil**, *child* OR youth OR adolescen* OR young adult* OR preteen**, *intervention* OR program* OR educat**, *eat* OR diet* OR nutrition* OR food* OR lifestyle* OR behavior**, *health belief model OR health belief**, and *instrument* OR measur* OR assess* OR tool* OR validat* OR survey**, where the * character denotes an asterisk used as a wildcard in the searches. The searches yielded more than 2,300 results, and 20 articles were selected for inclusion in the present literature review based on their relevance to the POI of the proposed DNP project, the high-quality evidence they contained, and the generalizability of their findings.

Theoretical Framework Discussion

Several sources of evidence used to develop this project support my decision to use the health belief model as its guiding framework. Figure 1, in Appendix A, depicts a diagram of the health belief model. The health belief model asserts that individuals who successfully engage in healthy behaviors must first develop knowledge about the benefits of those behaviors and the drawbacks of failing to engage in them, and they must also establish a sense of self-efficacy for being able to correctly engage in those behaviors in order to obtain their associated benefits (Ownby et al., 2014). Research on healthy eating as a health behavior has determined that knowledge of healthy eating choices and self-efficacy for engaging in healthy eating are both measurable constructs that predict an individual's likelihood to make healthy eating choices (Hall et al., 2015; Silva et al., 2019). The studies that Ihmels et al. (2009) and Peyer et al. (2021) conducted to validate the Family Nutrition and Physical Activity screening tool showed that their survey instrument was able to obtain valid, reliable data on familial healthy eating knowledge, eating behaviors, and health behaviors from parents. Williams et al. (2017), Yee et al. (2011),

and Yee et al. (2015) found that the Family Nutrition and Physical Activity screening tool was able to evaluate correlations with children's eating behaviors and BMI, and to evaluate the impact of family health promotion interventions that sought to promote healthy eating through information and activities intended to first build participants' knowledge of healthy eating choices and their self-efficacy for making those choices. These findings suggest that dietary and nutritional education interventions that were based on the health belief model were effective in improving healthy eating choices, and that this effectiveness was mediated by the ability of the interventions to facilitate increases in participants' knowledge and self-efficacy for healthy eating (Yee et al., 2011, 2015). Furthermore, parents' abilities to make healthy dietary decisions for their families and to set healthy eating examples for their children have been positively impacted by interventions targeting their level of healthy eating knowledge (Bala et al., 2019; Militello et al., 2016).

Conceptual Framework Discussion

Some of the sources of evidence in this literature review supported the proposed project's theoretical framework, while other sources have also provided support for the conceptual framework employed in the project. The developmental cascade model of childhood obesity serves as the basis for understanding obesity in the present project, and also as the basis for addressing obesity through the proposed educational intervention. This model recognizes that obesity is not the product solely of dietary choices made by children, but rather a combination of factors that include behaviors, environmental elements, genetic predispositions, and societal processes (Smith et al., 2018). Therefore, the developmental cascade model anticipates that parents' dietary behaviors, including behaviors that directly influence family meals and the availability of food, and behaviors with indirect influences, such as modeling healthy eating

through personal dietary choices, impact adolescent obesity outcomes (Smith et al., 2018). Changes to contributing factors underlying obesity, even if the changes affect parents, can be sufficient to manage, prevent, or reduce obesity through aggregate effects that outweigh other contributors (Smith et al., 2018). Studies on interventions to prevent or ameliorate childhood obesity among adolescents by educating parents about healthy eating choices have provided evidence to support the developmental cascade model (Hammersley et al., 2016; Reed et al., 2015). An intervention that is limited in scope may be unable to address environmental factors for participating youth, but the developmental cascade model does not anticipate that effective interventions would need to address multiple domains of obesity contributors (Smith et al., 2018). Studies have found that interventions can instead strive to assist the parents of adolescents with utilizing available environmental resources while minimizing barriers in order to promote healthier eating and improvements in health outcomes for their families (Larsen et al., 2015; Moxley et al., 2019).

Literature Review

The intervention format, methodological, and instrumentation choices made in the research studies documented in the literature review have influenced the design of this project. This section is divided into several subsections that correspond to different intervention and research design elements.

Educational Interventions

The current body of research evidence indicates that interventions can effectively address childhood obesity among adolescents through the delivery of educational content to their parents. Educational interventions designed for the parents of youth ages 12-18 years old have been found to be at least as effective, and in some cases, more effective, in promoting desirable

changes in family health behaviors than interventions that targeted the children themselves (Park & Park, 2020; Reed et al., 2015; Smith et al., 2020). Although adolescents are more independent from their families than younger children with regard to many behaviors, including eating behaviors, research findings have shown that parental beliefs about healthy eating and obesity, dietary choices, meal planning activities, food purchase choices, and eating behaviors still exert large influences on adolescents' own food preferences, eating behaviors, healthy eating knowledge, and obesity risks (Larsen et al., 2015; Militello et al., 2016; Park & Park, 2020). The current COVID-19 coronavirus pandemic has even increased the influence that parents have on adolescents' obesity risks and related knowledge and behaviors, because adolescents have been spending less time away from the home and eat with their families more often than they had prior to the pandemic's closure of schools, restaurants, and public spaces nationwide (Mittal et al., 2020).

Several components of effective interventions to promote healthy adolescent dietary knowledge and behaviors that are delivered to the parents of adolescents can be identified in the literature. Interventions delivered at the family level, and that include parents and all children living in the same household, have the most robust support for facilitating dietary changes and obesity prevention (Moxley et al., 2019; Reed et al., 2015). However, the available evidence also indicates that interventions that are delivered on a group level to only the parents of adolescents are comparably effective in promoting improvements in healthy eating knowledge as well as increasing healthy dietary behaviors involving food choices, food preparation, nutrition, and meal planning (Boutelle et al., 2015; Brody et al., 2017; Gibbs et al., 2016). In fact, group parental interventions have been found to be as effective as group interventions delivered to both parents and adolescents in promoting more extensive dietary knowledge and healthier eating

choices (Boutelle et al., 2015; Larsen et al., 2015; Moxley et al., 2019). Educational interventions for parents of adolescents that include interactive and lecture elements are particularly helpful in this regard (Gibbs et al., 2016; Reed et al., 2015). Higher levels of participant engagement and positive changes in eating behaviors are also associated with educational interventions that contain content that parental participants find relevant, such as culturally appropriate meal plans and information on local food resources (Brody et al., 2017; Reed et al., 2015).

Virtual Interventions

Researchers have also examined whether virtual interventions are an effective way to deliver content to parents that is intended to prevent childhood obesity. Systematic reviews and primary research have indicated that interventions hosted online can facilitate improvements in family health behaviors that are comparable to improvements in these domains associated with educational interventions that were delivered to the parents in-person (Bala et al., 2019; Hammersley et al., 2016; Rose et al., 2017; Uesugi et al., 2016). Virtual interventions that were culturally tailored to the needs and preferences of African American families have also been shown to facilitate improvements in healthy eating knowledge and dietary choices among both parents and children (Lofton et al., 2016; Reed et al., 2015). Virtual interventions can be effective in reducing obesity via improvements in participants' eating behaviors because participants can access the educational material at any time, attend virtual sessions of the program when their schedule allows, and obtain the information through familiar technological media (Altman & Wilfley, 2015; Hammersley et al., 2016; Rose et al., 2017).

Behavioral Interventions

The body of literature on childhood obesity interventions has found that addressing participants' knowledge and self-efficacy for healthy eating can be an effective way to facilitate healthier eating behaviors. Educational interventions for obesity tend to succeed when they deliver information related to several forms of knowledge relevant to obesity, including the nutritional needs of a healthy body, the biological and health impacts of healthy and unhealthy foods, the pathology of obesity, and strategies for improving eating behaviors in a sustainable manner (Jarpe-Ratner et al., 2016; Wild et al., 2020; Xu & Xue, 2016). Knowledge is conducive to self-efficacy and behavioral change in obesity interventions, but successful interventions provide behavioral modeling, goal setting, information on local food resources, and other support elements to assist participants in translating their knowledge into behavioral changes (Nirmala et al., 2018; Xu & Xue, 2016).

Family Nutrition and Physical Activity Screening Tool

Current research supports this project's utilization of the Family Nutrition and Physical Activity Screening Tool as its instrument for assessing family eating and health behaviors. The initial version of this instrument was a validated tool for measuring adults' knowledge about their family's home eating, nutritional, leisure time, and physical activity behaviors, in order to detect household factors that could contribute to child obesity and cardiovascular disease (Ihmels et al., 2009). Researchers have found that parents reported completing the instrument quickly and easily, and that the Family Nutrition and Physical Activity Screening Tool shows content validity, construct validity, test-retest reliability, and predictive validity in terms of the total score's positive relationship with children's BMI, changes in BMI during childhood, parental

BMI, and childhood risk factors for subsequent chronic diseases, particularly cardiovascular diseases (Ihmels et al., 2009; Peyer et al., 2021; Yee et al., 2011, 2015).

Summary

Chapter 2 of this DNP project described the literature review that was conducted to support the project and guide its development. This chapter described the literature search process, which examined all of the relevant online databases for recent, peer-reviewed research on the project topic. The evidence from the literature demonstrated a need for the proposed project, and supported the use of a virtual educational intervention targeting the parents of adolescents that is based on the health belief model and developmental cascade model of obesity, as this intervention would target obesity by facilitating healthier eating choices through the promotion of relevant knowledge and healthy dietary behaviors among parents in ways that would influence the behaviors of adolescent children.

Chapter 3: Research Method

Purpose

In the United States, obesity and malnutrition commonly affect children under 18 years of age. These health conditions often lead to multiple chronic diseases, early mortality, increased usage of health care services, and other adverse outcomes (Ward et al., 2017). In order to address these health conditions, preventative health strategies can be used. Therefore, this project was guided by the following PICOT question: Among the adult parents of adolescents living with their children in a lower-income, urban area (P), does participation in a virtual educational program on healthy dietary habits (I) affect pre- to postintervention changes (C) in nutritional knowledge and family eating behaviors (O) over the course of the four-week intervention period (T)? This chapter describes the methodology for the proposed project. The first section of the chapter describes the project design used to investigate the PICOT question, including the effect size considerations, data analysis approach, and the quantitative methods used to develop inferential statistics to determine the effects of the project. The methodology is discussed as the second main section of the chapter, and the discussion encompasses the intervention to be used, the expected outcomes, the implementation steps for the intervention, the instruments used to measure data, and the practices used to ensure data integrity. The project setting is described as well. Then, the chapter describes the population the project targets along with the sampling approach and characteristics. The penultimate section of the chapter weighs the benefits and risks of the project and lays out a timeline for the project's implementation. The chapter ends with a summary of the previous sections' main points.

Project Design

This project employed a quantitative methodology and a group pre-/posttest design. The project was delivered to a sample of 40–80 parents of adolescents, 12–19 years of age, who reside in a single low-income, urban neighborhood in the United States. The intervention was delivered as four once-weekly virtual sessions of 30–40 minutes each to groups of 10–20 participants each. Data collection from all participants was undertaken at a pre-intervention time point just prior to the beginning of the intervention and at a postintervention time point at the end of the fourth meeting after the intervention had been completed. Exposure to the intervention served as the independent variable, while the dependent variable was participants' self-reported family health behaviors. The sample size of 40–80 total participants should provide sufficient statistical power for the project to detect the effect of the intervention (Turner-Bowker et al., 2018). Figure 2, in Appendix B, depicts a diagram of the of the project timeline, and Figure 3, in Appendix C, depicts a diagram of the of the project task list.

Instruments

The dependent variable of family health behaviors was evaluated using the Family Nutrition and Physical Activity screening tool. This instrument is a 20-item self-report survey questionnaire that can be administered online through a confidential survey hosting site, allowing the participants to complete the survey through a computer or mobile device with Internet access. The survey contains questions related to family meal behaviors, family eating practices, family food choices, family beverage choices, familial restrictions and reward usage of children's intake of junk foods, family screen time, health promoting environments, family physical activities, child physical activities, and family sleep routines, which constitute 10 domains (Ihmels et al., 2009; Peyer et al., 2021). Each of the items are structured as four-option forced-choice Likert-

type responses to questions such as “How often does your child eat breakfast, either at home or at school?,” with responses that range from 1, denoting “never or almost never” to 4, denoting “very often or always,” responses. The items are scored as 1–4, except for six items that are reverse-scored, for a total score of 20–80, where higher scores reflect healthier family behaviors and nutritional practices. The instrument has high internal consistency reliability for all of the individual domains according to confirmatory factor analysis (0.600-0.859), along with high concurrent validity according to high Pearson correlations ($p < .001$), and high external and predictive validity according to multiple linear regression analyses that compared parental survey scores to their children’s BMI, changes in children’s BMI over time, parental BMI, and childhood cardiovascular and chronic disease risks ($p < .001$; Ihmels et al., 2009; Peyer et al., 2021; Williams et al., 2017; Yee et al., 2011, 2015).

Data Collection and Analysis Plan

The recruitment of adult participants took place at a community center, the YMCA, in the neighborhood of interest. The YMCA in the neighborhood of interest provided permission to contact parents at this site and worked with them to deliver a virtual intervention. Participant informed consent was sought and obtained before the data collection or intervention begin. When participants provided the informed consent documents necessary to enroll in the project, each participant was provided with a unique identification number, ranging from 001–100, which was used to keep track of their questionnaire data by incorporating it into the survey links that were sent to participants via email.

The data collection was undertaken by hosting the surveys containing the Family Nutritional and Physical Activity screening tool on the online survey hosting site SurveyMonkey. The participants completed the surveys as self-report questionnaires at the pre-

intervention and postintervention time points. The pre-intervention time point for all participants was just before the first of the four weekly intervention meetings, one day prior to the beginning of the intervention, while the postintervention time point was 28 days afterward, just after the end of the fourth session of the intervention. Participants were emailed or texted links to the survey according to their preference and provided with reminders until they completed the survey. The surveys did not take more than 10–15 minutes to complete. The data from the survey were solely accessible to the project leader who had the password to the SurveyMonkey account and any offline files used to store and analyze the data after transferring it from SurveyMonkey.

The information from the surveys was coded according to each survey's response coding as provided by Ihmels et al. (2009) and Peyer et al. (2021). All responses were entered into a data set by participant number so each participant had a pre- and postintervention series of responses in the data set. For each survey, the analysis proceeded as follows. The total scores at the pre- and postintervention time points were calculated from each participant's survey. The data analysis used descriptive statistics to identify the mean total scores and corresponding standard deviations at the pre- and postintervention time points. A two-tailed, paired-samples *t* test using the *p*-value of $p < .05$ was then used to compare within-group pre- and postintervention mean total scores for the sample.

Methodology Appropriateness

The project methodology involves an educational intervention delivered to the parents of adolescents' ages 12–18 years to promote improvements in family health behaviors. The information delivered through the intervention were based on the United States Department of Agriculture's (2020) MyPlate for My Family nutritional education curriculum, which covered the types of family nutritional and health behaviors that were evaluated through the Family

Nutrition and Physical Activity screening tool. The intervention was delivered as four virtual sessions conducted online using a secure group meeting application, and the sessions were held once per week for four weeks. Each session was 30–40 minutes in length and was intended to be delivered during the evenings when participants were available. Multiple sessions with the same content were conducted each week so participants were able to attend all four sessions, even if their availability suddenly changed. Each session was delivered to 10–20 participants. Each intervention included audiovisual presentation, participative and hands-on elements, participant discussions, question and answer sessions, and interactive activities. The content of the intervention included basic information on nutrients and their role in a healthy body, the interaction between proper nutrition and exercise in promoting long-term health and avoiding disease, selecting healthy foods, identifying healthy and unhealthy ingredients, and participating in family food selection and meal planning. Resources for the participants and their family members to access whenever they wanted was also provided or linked during each session.

This intervention approach was chosen because, even though adolescents often have more agency in their meal choices, their parents still strongly influenced their dietary and nutritional habits. Adolescents still tend to eat most of their meals at home, and many meals outside the home are consumed with their family members. The stay at home orders during the present COVID-19 pandemic have further increased the impact that parents have on the dietary and nutritional habits of their adolescent children, because many American families have had to eat at home for months on end (Larsen et al., 2015; Mittal et al., 2020). Parents of adolescents are likely to be responsive to educational interventions that convey dietary and nutritional information in a family-oriented manner that is helpful, relevant, and engaging (Militello et al., 2016; Moxley et al., 2019). Even brief interventions that are delivered as five or fewer sessions

of 30-60 minutes can facilitate improvements in parental knowledge of their children's nutritional needs and can promote healthier family dietary activities, and virtual interventions have been as successful as conventional in-person interventions in these senses (Altman & Wilfley, 2015; Bala et al., 2019; Boutelle et al., 2015; Larsen et al., 2015). Additionally, parents and adolescents from lower-income households frequently lack access to health care and dietary resources that can assist them in developing healthy dietary habits, which the proposed project seeks to address (Park & Park, 2020; Reed et al., 2015). The need to prevent obesity and overweight among African American youth from low-income households by promoting healthy eating behaviors early in life contributed to the selection of an intervention aimed at the parents of adolescents in this project (Reed et al., 2015).

The expected outcomes of the project intervention were that the participants would show changes between the pre- and postintervention time points that involved an improvement in family health behaviors (Brody et al., 2017; Larsen et al., 2015). The outcome of an improvement in family health behaviors was operationalized as a significant ($p < .05$) increase in the sample's mean total score on the Family Nutrition and Physical Activity screening tool at postintervention compared to pre-intervention.

Feasibility and Appropriateness

This project was feasible to accomplish because many parents in the neighborhood where the project took place were interested in promoting better health among their children and on a family level (Reed et al., 2015). The intervention itself was developed to be engaging and aligned with the health literacy of the participants. Additionally, the project engaged the other family members of the participants by providing additional resources they could access and by being able to contact the project leader through email or by phone.

IRB Approval and Process

Because this project involved human participants who provided information used as data in the project, a full IRB review was necessary for this project and IRB approval was needed for the project to be implemented.

Interprofessional Collaboration

If appropriate, opportunities were taken to engage in interprofessional collaboration for the project, including coordination of the development of intervention content with a licensed nutritionist as well as a pediatrician.

Practice Setting for EBP

The project setting consisted of an urban neighborhood in the United States containing 1,500–2,000 residents. The residents were mostly African American families and nearly all of the residents lived in low-income households. The overweight and obesity rates are around 10% each for youth in the area, which is roughly the national average rate (Centers for Disease Control, 2020). There were a few local grocery stores that provided food options for families in the area other than fast food restaurants and convenience stores, although the latter types of food sources were more numerous. The neighborhood parks and walking paths were deemed safe by the residents, although some were poorly maintained by the local government.

Target Population

This project drew its sample from a population of the parents of adolescent children, where adolescents can be considered to be children who are ages 12–18 years old, who reside within a single lower-income urban neighborhood in the United States. The sample was a convenience sample of 40–80 parents of adolescents in the neighborhood selected as the project setting. The sample most likely included a larger number of women, as many children in the area

lived only with their mother. The participants were likely to live in households with similar earnings, and to report similar family health behaviors.

Risks and Benefits

The risks of the project were minimal and were limited to privacy and confidentiality issues. The risks were mitigated by using only a secure application to host the virtual meeting sessions, avoiding the collection of personally identifying data in the survey instruments, and taking steps to safeguard all participant data and personal information. The benefits from the project included improvements in the participants' nutritional knowledge and in their families' eating behaviors.

Timeline

The timeline of the project began by obtaining IRB approval for the project, as the YMCA had already provided approval to conduct recruitment at that site. The project leader began recruiting 2–4 weeks before the project began, and during that time, the project leader used conventional mail, take-home information, and phone or email contact to notify participants about the project meeting schedules and to obtain informed consent. Data collection at pre-intervention took place one day before the start of the four-week intervention, followed four weeks later by postintervention data collection.

Chapter Summary

This chapter described the methodology for the proposed project to address adolescent obesity through a virtual educational program for the parents of adolescents that promoted improved family health behaviors. The intervention was delivered as four once-weekly sessions, 30–40 minutes each, over the course of four weeks. The sessions involved participative, interactive, and audiovisual learning. The project design was structured as a pre-/posttest

comparison, and the pre- and postintervention measures of family health behaviors were assessed using the Family Nutrition and Physical Activity screening tool.

Chapter 4: Results

This project delivered an intervention consisting of an online, small-group educational program on healthy dietary habits to a sample of adult parents of adolescents living with their children in lower-income, urban households with the aim of promoting improvements in nutritional knowledge and family eating behaviors. The purpose of this chapter is to describe the results obtained from the data collection and analysis components of the project. The chapter begins by discussing the demographics of the sample. The research questions are briefly reiterated afterward, and then the findings from the data analysis are presented. The project's limitations are discussed as well. The chapter ends with a summary of the major points from the preceding sections.

Discussion of Demographics

Table 1 depicts the frequency distributions for the participants' gender and race. The participants were predominantly female ($n = 66$, 82.5%) and African American ($n = 65$, 81.3%). However, other racial groups were also represented in the sample, with the next most common race of participants being Hispanic ($n = 8$, 10.0%). Table 2 shows the descriptive statistics from the participants' ages. The mean age of the participants was 34.31 ± 4.552 years old.

Table 1*Frequency Distributions for Participants' Gender and Race (N = 80)*

Demographic	<i>n</i>	%	Cumulative percentage
Gender			
Female	66	82.5	82.5%
Male	14	17.5	100%
Race			
White	3	3.8	3.8%
African American	65	81.3	85.0%
Hispanic	8	10.0	95.0%
Asian-American	1	1.3	96.3%
Native American	1	1.3	97.5%
Two or more races	2	2.5	100%

Table 2*Descriptive Statistics of Participants' Age (N = 80)*

Descriptive statistics	Age (in years)
Mean	34.31
Standard deviation	4.552
Minimum	20
Maximum	50

Questions Guiding the Inquiry

RQ1: Do parents of adolescents who participate in a nutritional education intervention exhibit changes in family health behaviors between pre- and postintervention?

RQ2: Do parents of adolescents who participate in a nutritional education intervention exhibit changes in family eating behaviors between pre- and postintervention?

Data Analysis

The descriptive statistics were first calculated for the sample's first 10 items on the Family Nutrition and Physical Activity screening tool at pre- and posttest, as well as for the sample's total scores at pre- and posttest. Table 3 presents the information from these analyses. The family eating behaviors, represented by the summed scores for the first 10 survey items for each participant, had a mean of 16.58 ± 4.676 at pre-test and 29.35 ± 5.232 at posttest. The total scores for each participant represented family health behaviors, and these scores had a sample mean of 34.79 ± 6.17 at pre-test and 54.43 ± 7.69 at posttest.

The sample's family eating behavior subset mean scores at pre- and posttest were then compared using a two-tailed, paired-samples *t* test with a *p*-value of $p < .05$ to determine significance. Table 4 depicts the findings from that test. The outcome was $t = -.19.078$, $p < .001$, which was statistically significant.

The sample's family health behaviors, using the mean scores calculated from participants' total survey scores, were compared for their pre- and posttest values with a two-tailed, paired-samples *t* test with a *p*-value of $p < .05$ to determine significance. Table 5 depicts those findings, which were $t = -21.795$, $p < .001$, which was also statistically significant.

Table 3*Descriptive Statistics for Family Eating and Health Behavior Data (N = 80)*

Descriptive statistics	Family eating behavior data	Family health behavior data
Pretest		
Minimum	10	23
Maximum	28	53
Mean	16.58	34.79
Standard deviation	4.676	6.170
Posttest		
Minimum	17	40
Maximum	40	77
Mean	29.35	54.43
Standard deviation	5.232	7.690

Table 4*Results of t Test for Family Eating Behavior Data*

<i>SEM</i>	<i>t</i>	Significance
0.670	-19.078	< .001*

* denotes statistical significance at $p < .05$ **Table 5***Results of t Test for Family Health Behavior Data*

<i>SEM</i>	<i>t</i>	Significance
0.901	-21.795	< .001*

* denotes statistical significance at $p < .05$

Limitations

This project had a few limitations that are important to note when examining the results of these analyses. First, the project used a convenience sample and did not compare the demographics of the sample to those of the larger population the sample was drawn from. The use of a convenience sample could have biased the results due to participants self-selecting into the project, and the lack of population to sample comparisons makes it difficult to generalize the findings to the community population. Additionally, the project did not employ a control condition to compare to the intervention, nor did it use an experimental design, which prevents any conclusions about the causal effects of the intervention from being drawn using the analytical outcomes.

Chapter Summary

This chapter's purpose was to describe the results obtained from the project's data analyses. The demographic data for the sample showed that the sample had some diversity, but predominantly the sample was comprised of African American women. The research questions for the project sought to examine the participants' changes in family eating behaviors and family health behaviors between the pre- and postintervention time points. The sample showed a trend with their scores for the subset of survey items representing family eating behaviors, where the mean score increased from pre- to posttest, and a similar pre- to posttest increase was observed with the participants' total mean scores on the Family Nutrition and Physical Activity screening tool. The two-tailed, paired-samples *t* tests used to compare the sample means revealed that the increase in family eating behaviors mean scores and family health behaviors mean scores from pre- to postintervention were both statistically significant ($p < .05$). Chapter 5 discusses these

findings in the context of other research outcomes and develops implications and recommendations based on the findings.

Chapter 5: Discussion, Conclusions, and Recommendations

As Chapter 4 discussed, the findings from this project revealed that the inferential statistical analyses had statistically significant results. The purpose of this chapter is to discuss the findings in the context of other research, draw conclusions about the significance of the finding for various stakeholders, and make recommendations for future research. The chapter begins by interpreting the findings discussed in the previous chapter in the context of the body of research on parental interventions to promote healthy eating. Then, implications of the project findings for nurse leaders are discussed. Afterward, the project's findings in terms of evidence-based practices (EBP) are discussed and their relationship with the American Association of Colleges of Nursing (AACN) DNP essentials are explored. The chapter concludes with a set of recommendations for future research that would enable investigators to follow up on the findings from this project.

Interpretation and Inferences of Findings

This project's *t* test that compared the pre- to postintervention family eating behaviors mean scores had a statistically significant ($p < .05$) outcome, which indicated that the answer to the first research question was that parents of adolescent who participate in a nutritional education intervention do show changes in their family eating behaviors from pre- to postintervention. More specifically, the family eating behaviors mean score increased from pre- to postintervention, suggesting a general improvement in the participants' family eating behaviors.

The *t* test comparing the pre- to postintervention family health behaviors mean scores likewise had a statistically significant ($p < .05$) outcome. That outcome showed that the answer to the second research question was that parents of adolescents who take part in a nutritional

education intervention exhibit changes in family health behaviors between pre- and postintervention. The increase from pre- to postintervention with the total mean scores on the Family Nutrition and Physical Activity screening tool suggested that the participants improved in their reported family health behaviors as well. Such an improvement, of course, is based in part on the improvement in family eating behaviors, but also encompasses improvements in reported family sleep and exercise behaviors.

The findings from this project make sense, given the outcomes from previous research, but this project's findings also build on these past outcomes. Other nutrition education interventions that were designed for parents of adolescent children had been found to promote improvements in reported eating behaviors for the entire family (Park & Park, 2020; Reed et al., 2015). Although this project did not measure other family members' reported eating or health behaviors directly, past studies showed consistency between parental self-reports for family health and eating behaviors and observations or self-report measures of the other family members' behaviors (Larsen et al., 2015; Militello et al., 2016). Past research suggested that virtual interventions could be used to deliver nutrition education content and promote improvements in eating behaviors, which this project confirmed (Altman & Wilfley, 2015; Rose et al., 2017). This project also built on previous findings about virtual interventions for nutrition education by showing that such interventions did not need to target children or adolescents directly; instead, these interventions could be delivered to the parents of adolescents in a virtual format while promoting improvements in family health and eating behaviors (Lofton et al., 2016; Reed et al., 2015).

Implications for Leaders

This project's findings have implications for nurse leaders. Nurse leaders working in clinic, school, or public health settings frequently encounter childhood obesity as a health issue among patients and community members. This project indicated that nurse leaders in these settings could develop effective interventions to engage with the parents of adolescents and provide nutritional education in a virtual format for a brief period of just four meetings over four weeks, and would still be able to effectively promote improvements in family eating behaviors and family health behaviors through such an approach. Nurse leaders who are already delivering or overseeing childhood obesity interventions that target children should therefore consider the intervention in this project as a complementary method of preventing and addressing childhood obesity by engaging with the parents of adolescents.

EBP Findings and Relationship to DNP Essentials

The findings from this project demonstrate that this DNP project addressed each of the AACN's DNP essentials. These domains of consistency are described in the following subsections.

Essential I: Scientific Underpinnings of Practice

This project addressed Essential I because the nutrition education intervention was developed using theoretical bases like the health belief model and developmental cascade model of obesity as well as empirical research. The project also involved developing the intervention by synthesizing evidence from a range of fields, including nursing, nutrition, public health, biology, medicine, and information science (American Association of Colleges of Nursing, 2006).

Essential II: Organization and Systems Leadership for Quality Improvement and Systems Thinking

This project involved the delivery of an intervention to promote health and safety among an at-risk population of lower-income adolescents, most of whom were African American, in the community by engaging the parents of these adolescents. The project involved identifying childhood obesity among members of the population as a health issue that contributed to major health disparities locally and nationally, and designing as well as delivering a culturally responsive intervention that successfully engaged the participants.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

This project met the elements of Essential III because it based the intervention on a literature search and critical analysis of evidence on childhood obesity and interventions to address this health issue via nutritional education delivered to parents. Relevant findings on nutrition education interventions, as well as virtual and telehealth obesity interventions, were obtained, analyzed, and translated into practice in the course of this project.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

Essential IV was met through the project's activities, which included using information technology to deliver the intervention to participants, and to collect survey data at pre- and postintervention time points. The data were stored entirely digitally and analyzed using statistical analysis software. Moreover, this data were safeguarded in a manner consistent with relevant ethical and legal considerations.

Essential V: Health Care Policy and Advocacy in Health Care

The project met the components of Essential V by engaging in community leadership to formulate and deliver an intervention to community members. By addressing a health issue, childhood obesity, that presents disparities in the United States along racial and socioeconomic lines, this project also advocated for social justice.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

The project met Essential VI because it required the use of in-person, telephone, and virtual communication with interprofessional stakeholders and the parent participants to develop and deliver the practice intervention.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

This project had elements that met the criteria for Essential VII because it employed epidemiological and other forms of scientific data on childhood obesity to demonstrate the need for the project, and the decision to deliver the intervention to parents of a diverse adolescent population was based on evidence supporting this care delivery strategy.

Essential VIII: Advanced Nursing Practice

The project met the Essential VIII components by incorporating cultural competence and diversity values into the assessment of community health and into the delivery and design of the educational intervention.

Recommendations for Future Research

The findings from this project could serve as the starting point for future research. Studies should be developed in the future that would employ a similar virtual intervention that would be delivered to the parents of adolescents in order to provide them with nutritional education. In

addition to utilizing pre- and postintervention measures of family health and eating behaviors via self-report surveys administered to the parent participants, other methods should be used to evaluate the health and eating behaviors of their family members, such as surveying them directly or utilizing some form of observational measure. Moreover, pre- and postintervention measures of participants' and their children's health data should be conducted to assess the intervention's impact on key indicators of childhood and adult obesity, such as BMI.

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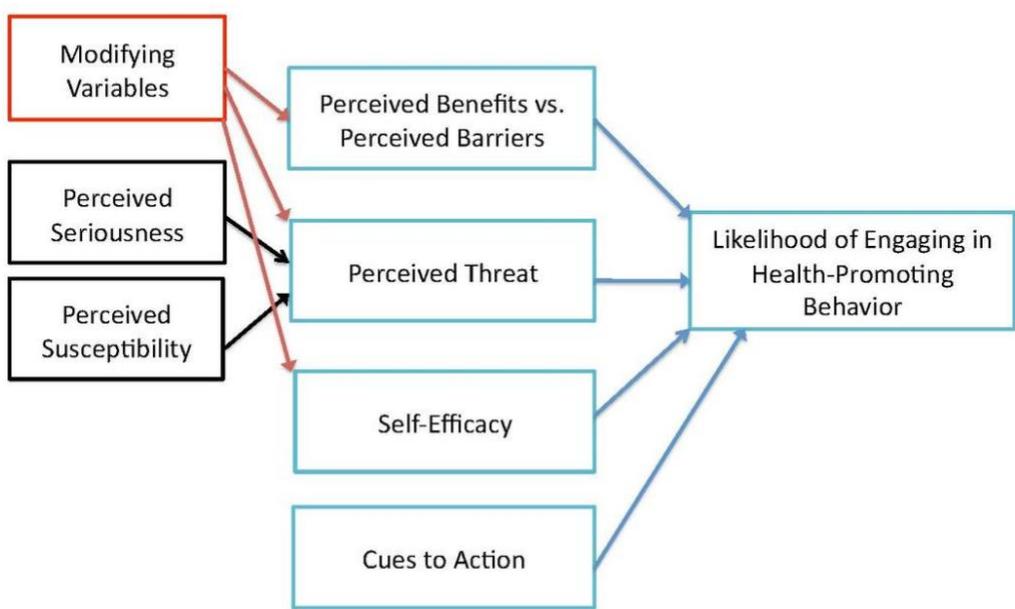
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Appendix A: Health Belief Model

Figure 1

Health Belief Model Diagram

The Health Belief Model



Appendix B: Project Timeline

Figure 2

Project Timeline

January	Form interprofessional team
January-February	Identify online meeting app for use, develop presentation content
February	Meet with community center leadership and set up recruitment times
February-March	Recruit participants
February-March	Obtain informed consent and schedule participants for online meeting
April	Pre-intervention data collection
April-May	Intervention delivery
May	Post-intervention data collection
May-June	Data analysis and development of report
June-July	Present findings to stakeholders through online meetings
August-September	Identify potential conferences or journals to submit to, develop submissions

Appendix C: IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY

Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885



July 30, 2021

Jazmine Collins
Department of Nursing
Abilene Christian University

Dear Jazmine,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "Promoting Healthy Diets for Adolescents Through Parental Education",

was approved by expedited review (Category 6 & 7) on 7/30/2021 (IRB # 21-073). Upon completion of this study, please submit the Inactivation Request Form within 30 days of study completion.

If you wish to make any changes to this study, including but not limited to changes in study personnel, number of participants recruited, changes to the consent form or process, and/or changes in overall methodology, please complete the Study Amendment Request Form.

If any problems develop with the study, including any unanticipated events that may change the risk profile of your study or if there were any unapproved changes in your protocol, please inform the Office of Research and Sponsored Programs and the IRB promptly using the Unanticipated Events/Noncompliance Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs