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Development of a Staff Education Module on Adolescent Obesity

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This is to certify that the doctoral study by

Deborah Stallworth

has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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MSN, Temple University, 2011

BSN, Allegheny University of the Health Sciences, 1998

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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Adolescent obesity is a growing health concern in the United States due to its increasing prevalence and comorbidities that can reduce longevity and increase morbidity. Advanced practice nurses (APNs) providing care in school-based health centers (SBHC) located in marginalized communities are uniquely positioned to work with adolescent students challenged with obesity. The management of adolescent obesity requires advanced skills and knowledge to promote healthy lifestyles, prevent obesity, and to directly address the many factors that contribute to the condition. The purpose of this project was to develop an education program for APNs to prepare them to work with students in prevention and control of adolescent obesity in the SBHC. The Shuler nurse practitioner practice model provided the framework to guide the project. A literature search yielded evidence-based care guidelines for adolescent obesity that were used to develop the education program. The program was provided to a panel of 5 clinical experts made up of 2 APNs and 3 pediatricians who work with adolescents who are obese. The panel evaluated the program using a 5-item, Likert-style questionnaire covering the 5 objectives of the program. Results ranged from a mean score of 3.4 to 4.0, indicating that the expert panel agreed or strongly agreed that the program met the objectives. This education program was provided to the SBHC administration and will be implemented in the next school term. The project may promote positive social change through increased APN knowledge of clinical practice guidelines for managing adolescent obesity and through improved adolescent health.

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Dedication

I dedicate this scholarly initiative to the memory of my deceased mother, Geneva Parker, who ignited my passion for nursing when I was 5 years old. Despite the social and racial limitations in the 1960s, she sought and obtained training to become a Licensed Practical Nurse. My witness of her committed sacrifice to provide the needs of family and her professionalism in nursing practice remains forever etched in my memory. The image of her dressed for work in a perfect white uniform, white support stockings, shiny white "clinic" nursing shoes, and a starched and carefully shaped white nursing cap, was complete when she donned a navy blue and red nursing cape. This memory of her has and will continue to drive and motivate me with a comparable commitment to family and the integrity of nursing. I also dedicate this project to my three adult children and six grandchildren, hoping that my commitment to honor my mother's legacy will also inspire them to do even greater things in their lives. Lastly, I dedicate this project to my supportive siblings, and fateful friends, as it was your constant encouragement, unwavering support, and limitless understanding that motivated me to keep going when I found it at times difficult to see my way ahead.

Acknowledgments

Each day in my life, already ordained by GOD and inscribed on the pages of HIS plans for me is a perfect itinerary for how I will prosper, protected from harm. As I believed in HIS plan and followed with optimism the directions for my journey despite unforeseen circumstances that would foster discouragement and despair, I am confident that my steps were ordered which gave me hope in this journey even when it hurt. So, I extend a special thanks to the author and finisher of my faith for how HE has brought me to what has been an "unexpected end" to this academic journey. Moreover, I will forever be grateful for the friendship and support of Laurie Tillery-Russell, CRNP, a valued colleague who precepted my DNP practicum experience and continues as my faithful friend to provide encouragement and support. I would also thank Lori Rea for her editing, proofing skills, and for her unfailing writing assistance and support throughout the most challenging processes of my DNP project development. The professional editorial services Lori rendered was a demonstration of her commitment to skillful quality and embodied the integrity I needed in a consultant and new-found friend. Lastly, to each Walden University faculty member who contributed to this DNP project, I would like to communicate my sincere gratitude and appreciation for the insight and direction you each provided to guide me through the doctoral process.

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Section 1: Nature of the Project

Introduction

Obesity is a disease characterized by excessive body weight, as measured by body mass index (BMI) > 30 for adults and ≥ 95th percentile for weight in adolescents. The Centers for Disease Control and Prevention (CDC; 2017) described children and adolescents as persons aged 2 to 19. For the purpose of this project, adolescents were defined as ages 10 to 19. The BMI is a ratio of a person's weight (in kg) to squared body height measured in meters and is a standard measure for determining a healthy weight. Obesity is a growing health concern among adolescents because of the increase in its prevalence and its association with many identified comorbidities. This disease has both short- and long-term health consequences associated with an imbalance in energy intake versus expenditure (Sahoo, et al., 2015)

As one of the most prevalent nutritional diseases among adolescents in the United States, obesity affects more than 20% of this nations' adolescents, approximately 21%−24% of whom are overweight (CDC, 2016). Moreover, 4%-6% of adolescents in the United States are diagnosed with severe obesity. Severe obesity is defined as a BMI that exceeds the 99th percentile on the gender-specific weight-for-age charts (The Society for Adolescent Health and Medicine, 2016). The Office of Disease Prevention and Health Promotion (2017) has indicated that patterns of behavior established among adolescents contribute to the state of their health and increased risks for chronic disease development.

Obese adolescents develop a variety of health issues that can continue into adulthood. Besides the physical health effects of obesity, its impact on mental health is also significant given that adolescence is a crucial period in human development (Halfon, Larson, & Slusser, 2013). Adolescence is regarded as a healthy period in life, but many public health and social problems can begin or even peak during this period (Alberga, Sigal, Goldfield, Prud homme, & Kenny, 2012). A variety of internal and external influences either support or challenge the health and well-being of adolescents.

According to the CDC (2016), the factors contributing to excessive weight gain among adolescents in the United States are lifestyle, behavior, and genetics, as well as living conditions and their ability to make healthy choices. Likewise, the Office of Disease Prevention and Health Promotion (2017) has maintained that because adolescents are in developmental transition, their sensitivity to contextual or surrounding environmental influences can also impact their adoption of healthy behaviors. Because adolescence is a phase in human development that bridges the transition from childhood to adulthood, obesity management during this phase warrants an evidence-based practice (EBP) education module for staff in school-based health care centers. For this doctoral nursing practice (DNP) project, the settings were middle and senior high schools with a school-based health care center located in marginalized communities or areas represented within the bounds of society that lack ease of access to rights, resources, and opportunities. Results from the investigation for evidence that supports the development

of the proposed education module provided credible, evidence-based guidelines on adolescent obesity management.

Strategies to improve the health of adolescents has been a focus for many years. Sieving, et al. (2017) maintained that adolescent health needs a deliberate process to provide adolescents the support, relationship experiences, resources, and opportunities required to help them become healthy, successful, and competent adults. Sieving et al. also suggested that a deliberate process for promoting adolescent health can offer encouraging methods for the prevention and reduction of a wide range of health-risk behaviors. However, despite significant social, mental, and physiological changes that occur during this phase of human development, scholars have argued that adolescents do not receive sufficient attention in academic studies (Halfon, Larson, & Slusser, 2013). Limited research impacts the industry's efforts to improve adolescent health, especially given that incidences of obesity among adolescents in the United States have reached epidemic proportions (Sawyer et al., 2012).

Advanced practice nurses (APNs) who provide school-based health care services need to do so in a manner that maintains the adolescent patient at the center of attention and tailors health care to meet the specific needs of adolescents (Department of Maternal, Newborn, Child and Adolescent Health , 2012). The management of adolescent obesity requires the knowledge and skills to provide care that addresses adolescent obesity and its comorbid risks.

Problem Statement

Adolescent weight screenings are performed by health care staff working in school-based health care centers situated within middle school and high school settings located in marginalized urban communities. The most recent weight screening of students in these settings revealed adolescent obesity was on the rise. Similarly, according to school-based health center staff interviews conducted during the 2015−2016 school year, the incidence of obesity and overweight status among adolescent students increased when compared to the previous school year. Within the schools targeted for this DNP project, the BMI values of 148 middle school adolescent students (in Grades 6−8) showed that 28.6% of this group (40 students) met the CDC criteria for obesity (Education Plus Health, 2016). Moreover, 16% of the sample (22 adolescent students) met the same standards for overweight status (Education Plus Health, 2016). Likewise, the weight measurements for 463 adolescent students (in Grades 9−12) revealed that 24.4% (113 students) were obese and that 17.1% (79 students) were overweight (Education Plus Health, 2016). These numbers warranted development and implementation of an EBP education module for school-based health center staff on adolescent obesity.

According to the CDC (2017), there is a link between inadequate social determinants of health—including locality, inaccessible nutrition resources, low income, unsafe neighborhoods, or low levels of education—and the growing incidence of adolescent obesity. Because adolescence is a crucial period in human development, obesity during this developmental phase can have lifelong adverse consequences.

Therefore, it is important for school-based health care center staff to have the knowledge necessary to address adolescent obesity.

Managing adolescent obesity in schools located in marginalized urban communities requires that school-based health care center staff possess the EBP knowledge and range of skills needed to identify and manage adolescent obesity in their practice (Dietz et al., 2015). The school-based health center staff also need to learn skills to support screening for related complications of adolescent obesity based on EBP. These skills can be transmitted through a staff education program based on evidence-based treatment and management guidelines in addition to expert recommendations for adolescent obesity.

The proposed school-based health center EBP education module was developed to improve staff knowledge, screening skills, and management of adolescent obesity within school-based health centers to promote improvement in adolescent obesity rates. Many states such as Arkansas, Florida, and Maine mandate annual health and physical activity screenings of all adolescent students (National Association of State Boards of Education, n.d.). In Pennsylvania, school health services have provided the growth screening of school children and adolescents since 1949. Moreover, "Section 1402 (a) (3) of the Public-School Code requires that each child of school age (public and non-public schools) be measured for height and weight annually by the school nurse or teacher" (Pennsylvania Department of Health, 2011, p. 1). Staff at school-based health centers are required to perform evaluations and to provide preventative and health management

education for adolescents, parents, schools, and communities that have the potential to increase basic understanding of adolescent health (Trust for America's Health and Robert Wood Johnson Foundation, 2017).

In the school communities targeted for this project, training programs designed to empower participants and community stakeholders to create sustainable change are already in place. These programs were created around two theories. The diffusion of innovation and empowerment theories each support programs that teach participants the "how-to" of making public health policy that responds to community needs (Health Promotion Council of Southeastern Pennsylvania, Inc., 2013). The Eat. Right. Now program provides nutrition education and obesity prevention led by the local school district and funded by the USDA Supplemental Nutrition Assistance Program Education (Health Promotion Council of Southeastern Pennsylvania, Inc., 2013).

The GREENS (Gardening to Revive the Environment and Educate about Nutrition in the schoolyard) program was created to expand edible gardens and provide education regarding nutrition and physical activity in communities and schools located in several low-income sections of several urban communities (Health Promotion Council of Southeastern Pennsylvania, Inc., 2013). The program's goal is to help families move from awareness to adoption of healthy eating habits by teaching how to grow fruits and vegetables, eat healthy meals, and be physically active at home and school. It also increases the participants' knowledge and awareness of methods to incorporate routine

physical activities into their weekly lifestyle (Health Promotion Council of Southeastern Pennsylvania, Inc., 2013).

Moreover, the Healthy Kids, Healthy Communities Out-of-School Time Partnership Initiative, also led by Health Promotion Council in cooperation with numerous nonprofit and governmental organizations in several urban areas, has collaborated to address childhood obesity. This effort has taken a policy and systems approach to address the causes of childhood obesity by creating and implementing healthy living guidelines for nutrition and physical activity in after-school programs throughout several marginalized urban communities (Health Promotion Council of Southeastern Pennsylvania, Inc., 2013). However, currently there are no EBP adolescent obesity educational programs available in school-based health centers located within the middle and senior high school settings situated in the marginalized urban communities of this DNP project.

Purpose Statement

The purpose of this DNP project was to develop a school-based health center staff EBP education module on adolescent obesity for use in public middle and senior high schools located in marginalized urban communities. The proposed school-based health center education module was based on EBP literature regarding adolescent obesity prevention and management (Agreli, Peduzzi, & Silva, 2016; Berkowitz, et al., 2013; de Pinho, Moura, Silveira, de Botelho, & Caldeira, 2013; Dietz et al., 2015; Halfon, Larson, & Slusser, 2013; Hargreaves, 2014; Kirschenbaum & Gierut, 2013; Kolko et al., 2017;

Rickert, 2012). It can provide the current EBP clinical approach to adolescent obesity prevention to health services staff looking for ways to navigate challenges associated with the management of chronic diseases among adolescents such as obesity.

The school-based health center staff adolescent obesity EBP education module was developed to improve the staffs' knowledge and their screening skills needed to assess for adolescent obesity within school-based health centers. The module was used to demonstrate the benefits for health services staff. Benefits include empowering adolescents to take a proactive role in the prevention of obesity and management of their weight. It also emphasized the effectiveness of teaching healthy lifestyle habits (de Pinho et al., 2013). It is essential to evaluate the knowledge of primary care staff regarding adolescent nutrition and obesity and that staff demonstrate understanding of fundamental practices regarding adolescent obesity prevention and management (de Pinho et al., 2013). This more comprehensive training will also enable improved collaboration among school-based health care center staff and adolescents.

Nature of the Doctoral Project

The nature of this DNP project was to develop a school-based health center staff EBP education module on adolescent obesity for use in school-based health centers in middle and senior high schools located in marginalized urban communities. The purpose of this DNP project was to enable school-based health center staff, as the primary stakeholders, to optimize the implementation of standardized EBP guidelines regarding the prevention and management of adolescent obesity. I also sought to improve school-

based health center staff knowledge on how to assist parents, schools, and communities during annual state-mandated adolescent weight screenings.

The school-based health center staff EBP education module was intended to bridge gaps within school-based health care centers and to meet identified staff educational needs in marginalized urban communities. The module was used to demonstrate the benefits of empowering adolescents to take a proactive role in the prevention and management of their obesity.

Significance of the Project

This DNP project is significant because it was designed to educate school-based health center staff on the issue of adolescent obesity within middle school and senior high school settings in marginalized urban communities. The focus on adolescent obesity contributed to improved school-based health center staff EBP practice, knowledge, and skills to reduce adolescent obesity. The school-based health center staff education module developed for this DNP project will continue to offer the potential to enhance maintenance of clinical records. This EBP education module can help to build a more efficient communications infrastructure that will establish and sustain quality assurance in school-based health center staff education and patient confidentiality, which are both essential in the provision of adolescent health care (Keeton, Soleimanpour, & Brindis, 2012). Implementation of this DNP project in the clinical practice setting can improve adolescent health by enhancing school-based health center staff screening skills, knowledge, and management of adolescent obesity. The school-based health center staff

education module has the potential to contribute to clinical practice, as many researchers have noted inconsistencies in the health services offered to many patients of varying ages in the primary care setting (Dietz et al., 2015; Keeton et al., 2012).

This DNP project was significant to the school-based health care center APN professionals identified as the primary stakeholders for this DNP project because they were able to gain information to improve their obesity screening and management skills. Moreover, capitalizing on the knowledge gained through this staff education module, APNs can improve adolescent health and nutrition while providing the lifestyle guidance needed to combat the growing incidence of adolescent obesity within the patient population they serve. As nurse practitioners promote better patient outcomes, APNs can evaluate the relative effectiveness of measures used in the management process for improvement in the patient's health overall (Walker, Robbins, Brown, & Berhane, 2014).

This DNP project has several implications for social change, as its implementation can help address social and economic factors correlated with adolescent obesity. I addressed three identified objectives to improve the U.S. health care system through primary care practices by championing adolescent health needs and expanding the knowledge and skill of school-based health care center staff directly involved in the care of the obese adolescent. These objectives, outlined in the Triple Aim framework by the Institute for Healthcare Improvement, are to transform the patient care experience, improve population health, and reduce the cost of health care. The DNP project education module learning objectives were designed to promote the cost-effectiveness of primary

care delivered by nurse practitioners (see Kupfer & Bond, 2012; see Rueben & Tinetti, 2012; see Shuler & Davis, 1993b).

Summary

Adolescent obesity is a growing health concern in middle and senior high schools in marginalized urban communities. Many factors were identified that contribute to adolescent obesity. However, the main factors include decline in activity levels and increased caloric energy intake among adolescents, often from non-nutritious food sources. In adolescents, BMI values presented as weight-for-age percentiles are used to diagnose obesity and determine the prevalence of this growing health concern in the United States (CDC, 2015). Results of annual, state-mandated weight and physical activity screenings of middle school and high school adolescents in the schools targeted for this DNP project revealed an increase in the incidence of adolescent obesity in recent years. In the school-based health center setting, staff provide a variety of skilled health care services. The health care offered by the APNs in these settings are accessible to adolescent students living in rural communities that are often characterized by the high prevalence of health issues, especially chronic diseases (Keeton et al., 2012). EBP literature indicated that the prevention and treatment of adolescent obesity should be a collaborative initiative, involving the patient and all health care providers (Hargreaves, 2014; The Society for Adolescent Health and Medicine, 2016). Although empirical data supporting this view was limited, it was expected that a collaborative patient-centered approach to care would serve this purpose and strengthen the services provided in school-

based health centers. The goal of this DNP project was to enhance the knowledge and increase the range of skills among school-based health center staff at school-based health care centers in marginalized urban communities, who, as part of their responsibilities, screen and manage adolescent obesity to improve patient outcomes while increasing their satisfaction with the care provided.

Section 2: Background and Context

Introduction

This DNP project's purpose was to develop a school-based health care center staff education module on adolescent obesity to facilitate the APNs provision of health services in a middle and senior high school setting in marginalized urban communities. Operating under the leadership of a nonprofit health care organization in the area associated with the School-Based Health Alliance, school students in underserved communities receive comprehensive health care services. A significant number of middle and senior high school students access health care services in their school-based health care centers. Many can be classified as obese, and the incidence of obesity has continued to increase annually over the past 2 years. In recognition of the impact adolescent obesity can have on long-term health, administrators of the school-based health centers have wanted to introduce measures, such as staff EBP education, to enhance the knowledge and the range of skills possessed by health care staff in these clinical settings. An EBP education module can improve the staff's efficiency in adolescent obesity screening and in helping patients manage their weight which promotes healthier outcomes.

Concepts, Models, and Theories

In studies aimed at affecting social change, it is essential to identify an appropriate theory or model to provide the framework for implementing, managing, and evaluating change (Mitchell, 2013). Although pertinent literature offered insight regarding the management of adolescent obesity through a healthy diet, lifestyle, and

greater physical activity, these recommendations were based on inconsistent concepts and theoretical frameworks used to guide weight management initiatives, with different success rates. For example, Dietz et al. (2015) reported that although many therapeutic modalities have been used for adult obesity, few of these treatment options are made available for adolescent obesity. Health professionals are poorly prepared to treat adolescent obesity, and the training received should address possible bias about obese patients but also their ability to engage patients in behavior change (Dietz et al., 2015). Health professionals should acquire the ability to work in collaboration with other professionals as necessary while highlighting the essential role of patient-centered care in primary practice (Agreli et al., 2016). The key to improving health care and health outcomes in any patient population is changing clinical behavior or practice. The context of collaboration within primary care practice should translate into optimal patient outcomes where all identified resources unify to attain the mutual goal of best practice.

Researchers have maintained that the Shuler nurse practitioner practice model is relevant to the nurse practitioner education structure (Wilson et al., 2015). Patients want to be more involved in their health care (Pomey, Ghadin, Karazivan, Fernandez, & Clavel, 2015). The EBP model was designed to impact staff practice; this model can also encourage a patient-centered practice approach to care. The Shuler nurse practitioner practice model was relevant to this DNP project because it provided several ways to assist school-based health care center staff involved in adolescent obesity treatment and management seeking the best patient outcomes (Shuler & Davis, 1993a).

First, the Shuler nurse practitioner practice model helped unify the nursing discipline as it clarified the combined practitioner's role to reflect both the nursing and the medical components of health care delivery in a clinical setting. In doing so, the dynamics of a good patient-provider relationship allow for a more straightforward application of standard evidence-based clinical practices. Second, the Shuler nurse practitioner practice model is a holistic framework of care that involves sharing and participation between the patient and provider. Shuler and Davis (1993a) asserted the multifaceted elements of this model include wellness, illness, prevention, health promotion, self-care, and education with health and well-being as the ongoing processes foundational to this model. Third, as an equally important initiative adopted by the Institute of Health Improvement's Triple Aim concept, the Shuler nurse practitioner practice model promotes patient-centered care. Finally, as an essential objective of Healthy People 2020 to increase wellness checkups for adolescents, the Shuler nurse practitioner practice model enhances the practice of EBP care for competency in assessment, diagnosis, and management of patients while maintaining a caring practice.

Training school-based health care center staff to identify and address adolescent obesity should be initiated without stigmatizing the participants. This factor is critical to equip staff with strategies to facilitate engagement in healthy behavior change among obese adolescents. Mastering this strategy can improve the staff's ability to screen and manage obesity. Two guidelines noted by researchers were well suited for training school-based health care center staff—screening to identify patients who warrant

adolescent obesity intervention and initiating goals for this intervention in collaboration with the patient (Agreli et al., 2016; Kolko et al., 2017). Suggested guidelines for school-based health care center practitioners aligned with the U.S. Preventive Services Task Force (2017). These guidelines were also aligned with the American Academy of Pediatrics, and the National Association of Pediatric Nurse Practitioners recommendations (Kolko et al., 2017). Gordon, Deland, and Kelly (2015) also identified several strategies to promote and improve collaborative communication between patients and providers that align with the triple aim of improving the value of health care while lowering costs and enhancing the patient experience.

The recommended EBP adolescent obesity guidelines can be easily implemented within school-based settings to facilitate adolescent weight loss, although research has lacked an evaluation of the impact of training providers in these first-line obesity strategies (Kolko et al., 2017). Nonetheless, school-based health care center staff adolescent obesity education and training may improve uptake and implementation of patient-specific obesity screening and management that leads to a decrease in adolescent obesity. The adolescent obesity DNP project module for staff education promotes evidence translated to practice and the modifications needed for school-based health care centers staff to collaborate with adolescent obese patients regarding their obesity management plan in the targeted clinical practice setting. This staff education module encourages an ongoing review of current literature on adolescent obesity and comorbidities and emphasizes measurements needed to correctly calculate BMI and

fulfill the criteria for annual state-mandated student physical screenings. The staff education module also promotes informal training and practice sessions to allow staff time to review correct adolescent weighing procedures.

Providing education that improves school-based health centers staff knowledge and screening skills align with the principles of the Shuler nurse practitioner practice model for adolescent obesity management. It also reflects beliefs of patient-centered care that seeks to value patient input and their ability to take part in their health care plan and disease management process. Implementation of this module in school-based health centers has the potential to help staff to understand and further expand strategies for adolescent obesity management that may motivate adolescent students to adopt a healthier diet and lifestyle. In addition to assisting individual patients with improving their health and well-being, it is believed that the staff education module can help school-based health centers determine any changes in staff effectiveness as measured by patient outcomes. The module can lead to changed staff attitudes about obesity in school-based health centers. Although patient outcomes are typically evident in the long term, staff education can result in immediate improved care for obese adolescents in schools. Expanding staff knowledge and screening skills set in adolescent obesity management can also help them to more effectively integrate the principles outlined in both the Shuler nurse practitioner practice model and patient centered care conceptual frameworks. More importantly, staff in the targeted school-based health centers can efficiently provide

management of adolescent obesity by the knowledge and range of skills gained from this EBP staff adolescent education module.

Framework of the Shuler Nurse Practitioner Practice Model

Emerging practices unique to APNs have theoretical origins grounded in nursing, medicine, and social science. Proposed in 1991, the Shuler nurse practitioner practice model was developed to address the need for a model that reflected the dual nursing and medical roles assumed by nurse practitioners (Shuler & Davis, 1993a). The Shuler nurse practitioner practice model demonstrates theoretical concepts specific to the characteristics of the APN. The development of this model for APN practice continues to enhance APN education, clinical training, and facilitate the dissemination of valued research. While supporting the use of traditional nursing knowledge and skills, the application of this model within APN practice also incorporates a medical approach when determining a relevant plan of care. Providing a framework for APNs in everyday clinical practice, the Shuler nurse practitioner practice model encourages a holistic approach to the patient assessment from multiple dimensions connected to the patient's health status, and an orientation to wellness and health promotion that may extend beyond physical needs.

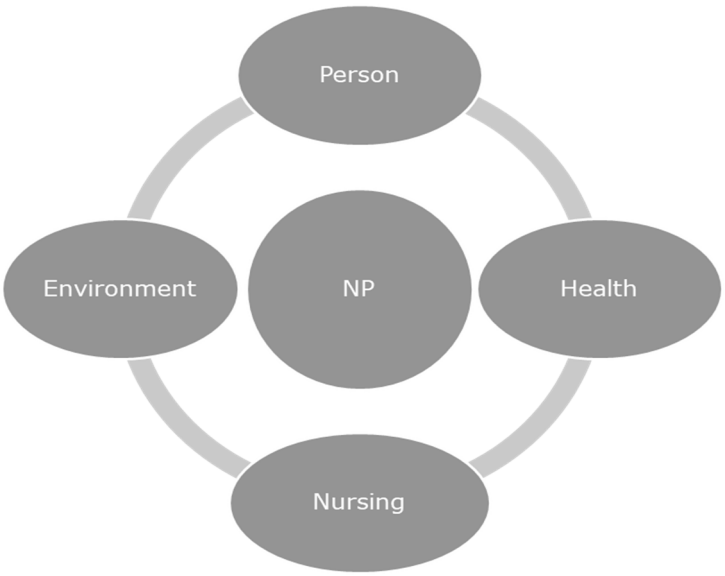

Figure 1. Illustration of the Shuler nurse practitioner practice model. From the Shuler nurse practitioner practice model: A theoretical framework for nurse practitioner, clinicians, educators, and researchers, Part 1, by P. A. Shuler and J. E. Davis, 1993a, *Journal of the American Association of Nurse Practitioners, 5*, p. xx.

The five main elements of the Shuler nurse practitioner practice model include:

1. Person (the patient): a holistic, feeling, thinking, rational being with intrinsic value and worth empowered for self-healing and self-repair.
2. Health and healthy behaviors: the physiological, psychological, social, cultural, and spiritual aspect of the person expected to be exemplified by the patient and the APNs.
3. Nursing: the patient treatment process, assessing, diagnosing (the patient's response to a condition), treating the patients, and promoting wellness.

4. Nurse practitioners/APNs: the health facilitators who perform comprehensive patient health assessment and assist them in the restoration of health through nursing and medical interventions.
5. The environment: all conditions and circumstances influencing dynamic changes closely linked to the health status of the patient (Shuler & Davis, 1993a).

As an open system, this theoretical model consists of three major process components. The organized set of dynamic, interrelated parts in the Shuler conceptual framework includes the inputs patient energy, information from the environment, the patient/APN throughputs, and APN synthesis of gathered information. These effects interrelate with the patient/nurse practitioner outputs and the return of energy and information to the environment (Shuler & Davis, 1993a). The Shuler nurse practitioner practice model is an open system that takes in information and energy during the input phase, facilitates patient/APN interactions and negotiations during the throughput phase, and releases patient/nurse information and energy into the environment during the outputs phase (Shuler & Davis, 1993b). Figure 2 illustrates how the interrelated and dynamic elements of the Shuler conceptual framework are applied when health care practitioners execute this approach as part of their clinical practice in the primary care environment.

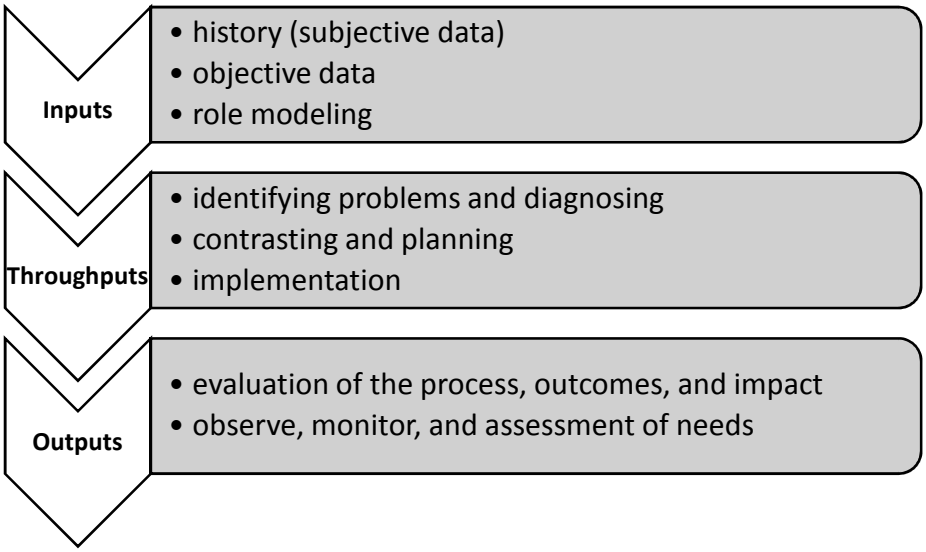

Figure 2. Application of the Shuler nurse practitioner practice model. From the Shuler nurse practitioner practice model: A theoretical framework for nurse practitioner, clinicians, educators, and researchers, Part 1, by P. A. Shuler and J. E. Davis, 1993a, *Journal of the American Association of Nurse Practitioners, 5*, p. xx.

Consequently, the Shuler nurse practitioner practice model's holistic approach to patient assessment requires data collection from numerous sources during the input phase of the theoretical framework. In the clinical setting, the APN solicits patient input and participation and concludes the patient-provider encounter with the patient empowered by the collaborative-derived decisions. The treatment plan is designed to enable the patient to improve lifestyle behaviors that result in increased wellness, focused on areas such as problem judgment, self-care activities, disease prevention activities, and health promotion. This practice model enables APNs to observe and evaluate patient responses from a holistic perspective.

Patient-Centered Care

Patient-centered care is an approach to patient care endorsed in the Shuler nurse practitioner practice model and was the framework used for this DNP project. Patient centered care is essential to "all systems of health care, including solo practitioners, large multispecialty groups, or federally qualified health centers rendering care to underserved populations" (Greene, Tuzzio, & Cherkin, 2012, p. 49). Introduced to clinical practice and patient care in the late 1980s, the concept of patient centered care is focused on the relationship between the health care provider and the patient as the central focus of the process (Greene et al., 2012). According to the Institute of Medicine (2001), patient centered care in clinical practice ensures that the provision and delivery of care are consistent with the values, needs, and desires of patients. However, achieving these aims can only occur when clinicians involve patients in all health care discussions and decisions. Other scholars have argued that the patient-centered approach helps clinicians to collaboratively improve performance in their delivery of the safest patient-centered care possible (Johns Hopkins Medicine, n.d.). Similarly, the Agency for Healthcare Research and Quality supports this approach to care, as it is posited to assist patients in the management of care at a level that the patient chooses (Schottenfeld et al., 2016). These benefits have resulted in the increased adoption of the patient centered care paradigm, whereby patient-centered care is now considered "an essential aspiration of high-quality health care systems" (Greene et al., 2012, p. 49). Figure 3 illustrates how the

clinical practice of patient centered care should appear when health care practitioners implement this approach to clinical practice in the primary care environment.

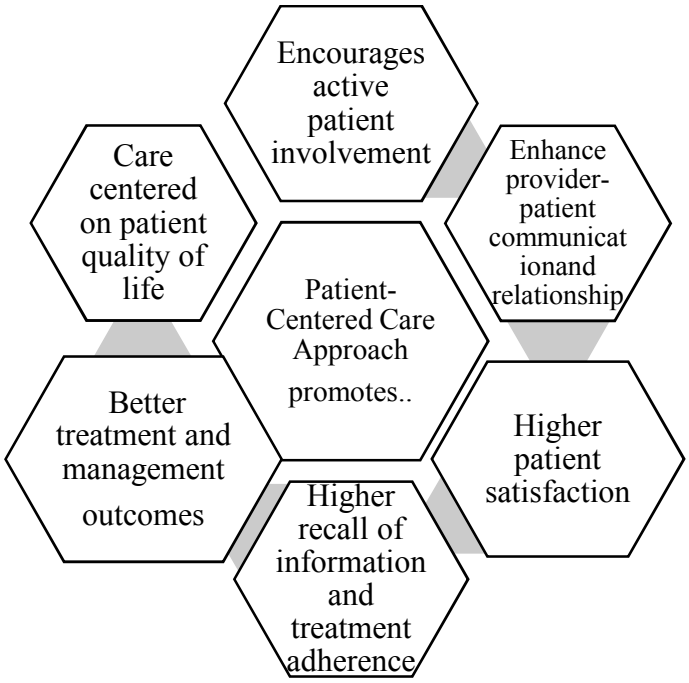

Figure 3. Patient-centered care approach illustrated. From *Creating patient-centered team based primary care*, by L. Schottenfeld, D. Petersen, D. Peikes, R. Ricciardi, H. Burak, R. McNellis, & J. Genevro, 2016 (https://pcmh.ahrq.gov/page/creating-patient-centered-team-based-primary-care).

Definition of Terms

Adolescent: The term adolescent pertains to an individual aged 10−19-year-old. Adolescence is the period of human growth and development that occurs after childhood and before adulthood (World Health Organization, 2017a).

Body mass index (BMI): BMI is the ratio of an individual's body weight (in kg) and the square of body height (measured in meters). While not the best measure to

determine the percentage of body fat, given that muscle is heavier than fat tissue, BMI frequently is used as an indication of one's overweight status. As BMI in children and adolescents is age- and sex-specific, developmental charts are usually used, whereby BMI is expressed as a percentile determined by weight-for-age curves (CDC, 2015).

Obesity: In children and adolescents, BMI values at or above the 95th percentile on weight-for-age gender-based charts is indicative of obesity (CDC, n.d.).

Overweight: is described as a BMI at or above the 85th percentile and below the 95th percentile (Center for Disease Control and Prevention, 2015).

Patient-centered care: An approach to care that, unlike the current physician- or provider-centered system of service, places the patient as the central focus of all treatment decisions. Achieving the delivery of effective patient-centered care is done in consultation with the patient, rather than being determined solely by the physician based on tools or standards of clinical practice (Rickert, 2012).

School-based health centers: These nontraditional health care centers located in schools provide care to the student population and typically operate in partnership with the school or a nonprofit health organization serving the local community. Services rendered by school-based health centers are based on community needs and resources generated through collaborations between the city, the school district, and health care providers (U.S. Department of Health and Human Services, n.d.).

Shuler Nurse Practitioner Practice Model: A model that provides a holistic framework that directs nurse practitioner practice by incorporating medical decision

making into a nursing-oriented practice. It is a model based on five main elements: person, health, nursing, nurse practitioner role, and the environment (Bredow & Peterson, 2013).

Relevance to Nursing Practice

Providers, for various reasons, are sometimes challenged to consistently manage the growing incidence of adolescent obesity in a manner that improves the patient's health and well-being or significantly impacts this increasing public health problem (Findholt, Davis, & Michael, 2013). Research on adolescent obesity has resulted in numerous initiatives aimed at reducing the prevalence of adolescent obesity through care rendered by skilled health care staff in school-based health centers. Pelletier and Stichler (2014) argued that patient-centered attention to care is an emerging core value supporting evidence-based health care that is essential to realizing excellence in patient outcomes. As an inclusive and comprehensive approach to improving the health of adolescents, patient centered care may motivate adolescent patients to make lifestyle changes that would improve their health. These benefits stem from focusing on individual patients and their specific needs, as indicated by scholarly evidence and in line with the fundamental tenets of pediatric clinical practice (Fox, McManus, Irwin, Kelleher, & Peake, 2013; Garg, Jack, & Zuckerman, 2013; Schottenfeld et al., 2016). By adopting this approach, school-based health care center staff could bring clarity to both their reality and research. This approach to patient care could establish an optimum clinical path to care upheld by

research data and relevant to the delivery of services provided in the primary care practice environment (Dietz et al., 2015; Kirk, Penney, McHugh, & Sharma, 2012).

Health professionals practicing patient centered care not only impact the health outcomes of their patients, but also improve patient satisfaction rates because of the high quality of the provider-patient relationship (Barry & Edgman-Levitan, 2012). However, for patients to fully benefit from patient centered care, school-based health center staff must work to enhance all aspects of the patient-staff interaction by employing measurable EBP skills and behaviors. The implementation of patient centered care principles within the framework of the Shuler nurse practitioner practice model can guide the school-based health center staff in a holistic approach toward their education, research, and practice towards obese adolescent patients. Rickert (2012) posited that positive provider-patient encounters could also decrease the use of diagnostic testing, prescription orders, hospitalizations, and the need for referrals. Staff in any specialty can use this approach to health care, especially since patient-centered care has become more prevalent across chronic disease types in recent decades.

This method of health care delivery is particularly relevant to school-based health care centers that provide services to adolescents. An important reason is the relationship of trust it can foster with this population of patients in a clinical environment. Corry and Leavey (2017) posited that in the first instance, school-based health care centers staff should direct their efforts towards trust building that “can ensure adolescents feel comfortable talking to their GP” (p. 7).

This DNP project was relevant to nursing practice because of the efforts made in development to efficiently merge patient preferences into evidence-based guided practices that are multifaceted at multiple target levels of the nursing structure (Burman et al., 2014). The four elements deemed critical to this process of integrating patient preferences into EBP practice from the nursing perspective are defined below.

- Health care redesign: The AHRQ (2017) has maintained that health care redesign involves initiating systematic changes to primary care practices and systems of health that improved the quality, efficiency, and effectiveness of patient care.
- Decision support: According to the AHRQ (2017), adequate decision support consists of the timely provision of information to clinicians, patients, and others involved in patient care to facilitate health care decisions, usually made at the point of service.
- Empowered organizational culture: Appropriately using current evidence from research empowers health care providers and increases their skill set, and thus helps nursing professionals sustain the patient's involvement in their treatment and encourages their active participation in their health and health care (Chen, Mullins, Novak, & Thomas, 2016).
- Informed and empowered nurses: Nurse empowerment is beneficial to patients, as it is positively reflected in nursing practice and outcomes (Yang, Huang, & Zhu, 2013). Likewise, Sepasi, Abbaszadeh, Borhani, and Rafiei

(2016) posited that informed and empowered nurses decisively impact excellence in patient care and the likelihood of achieving professional development goals.

In addition to assessing the effectiveness of a patient-centered approach to adolescent obesity management, the school-based health center staff education module provided insight into the EBP method of adolescent obesity screening and weight management to use in the school-based health center setting. Dhir, Kwong, Foullon, Baran, and Reif (n.d.) has indicated, the use of this framework to facilitate and enhance the clinical practice of APNs incorporates the different functions and tasks required of their professional role into a comprehensive clinical process gained from shared patient knowledge. The evidence-based method together with shared patient information can also help APNs make or confirm a diagnosis of adolescent obesity, develop a patient-specific intervention, and evaluate patient outcomes. Thus, this DNP project's staff education module on adolescent obesity management significantly contributed to the APN profession and the promotion of social change.

Local Background and Context

For this project, the APN was considered the primary school-based health center staff champion of change in the school-based health care center setting. From both a programmatic and organizational perspective, the APN was critical to the adoption and execution of this newly developed staff education module on adolescent obesity. Shaw et al., (2012) argued that the development and implementation of practice transformation in

a primary care setting require sustained improvement efforts guided by knowledge and a broader vision committed to ensuring that a single change is developed into a meaningful whole.

School-based health center staff were the direct care providers at the site proposed for the implementation of this project. They demonstrated commitment and were diligent in their efforts to provide quality health care services to adolescent students of under-resourced communities, in addition to managing the health center. Despite their best efforts in these nontraditional health care settings, however, the adolescent obesity management and treatment the APNs provide often lacked the desired continuity (Dietz et al., 2015; Keeton et al., 2012). Practice gaps in care management of obese adolescents in the school-based health care centers were often associated with factors that were beyond the APNs' control.

The school-based health care center chosen for this DNP project was a division of the nonprofit health care organization that has also agreed to participate in this project. This health care organization employed seven APNs to provide health care services for up to 7,000 students in 14 different school-based health centers (Education Plus Health, 2016). As is often the case for similar nonprofits, dependence on grants, financial resources linked to external project efforts and shrinking government support require the nonprofit health care organization to do more with less at every operational level (National Council of Nonprofits, 2016). Kim, Tollerud, and Perreault (2012) maintained that many nonprofit organizations experience issues regarding revenue choice and a mix

that calls for creative and concentrated strategies to generate revenue and sustain the growth of the business, which at times may limit the availability of needed resources (e.g., additional staff).

As leaders and employees of this organization, the APN acted as the champion of change to help integrate this project's education module. The dedication and support of organization leaders assisted the school-based health care center staff in their approach to improve clinical practice and the management of adolescent obesity. Their efforts not only facilitated the improvements anticipated to achieve desired patient outcomes, but it also promoted the vision of the organization (Mount & Anderson, 2015). The success of this DNP project was dependent on the school-based health center staff's commitment to the newly developed educational program, the value they took from translated evidence, expert opinion in the questionnaires, and their embrace of the recommended strategies, which were vital to enhancing clinical practice and improving the health of obese adolescents.

The primary intention of the newly developed education module for the DNP project was to strengthen the knowledge and range of skills of the school-based health center staff regarding adolescent obesity to improve patient outcomes. As the use of explicit, goal-oriented, straightforward directions from EBP that place patients at the center of attention, can most effectively impact the clinical actions of health care providers (Burman et al., 2014; Kirschenbaum & Gierut, 2013). Furthermore, this DNP project will assist school-based health care center staff in their attempts to decrease the

incidence of adolescent obesity. The ability of school-based health center staff to orchestrate the newly developed staff education module on adolescent obesity could facilitate the use of information presented in the management of other chronic health concerns identified across the health care organization partnered in this initiative.

Also, the school-based health center staff involved in the project, as employees of the partnering organization can share results achieved by their change of practice with other APNs throughout the Alliance for School-Based Health Centers (ASBHC). ASBHC is a wide-ranging membership of individuals across the country participating in a movement to create new school-based health care centers and improve existing centers (School-Based Health Alliance, n.d.). The results when disseminated to organizational leaders and other clinical staff should demonstrate the predicted increase in knowledge and understanding associated with the utilization of a shared decision-making model already tested and shown useful in the primary care of patients affected with any chronic condition (Barry & Edgman-Levitan, 2012). Likewise, the success of the project, post-adoption, will help future staff apply EBP education to the management of other chronic diseases in primary care.

Role of the DNP Student

As the prevalence of adolescent obesity continues to rise, strategic efforts must be made to help school-based health care centers endorse the structure and continuity of staff education and management of adolescent obesity in these settings. The author

served as a DNP student assigned to work with an APN preceptor employed by the affiliate organization. This was the author's only connection to the project site.

My role in this DNP project was developed as an EBP-driven adolescent obesity education module for school-based health care center staff that could lead to improvements in adolescent obesity rates. The DNP student's role was also to facilitate staff development and professional growth, provide guidance, support, and EBP educational resources required to implement the education module in the future post-graduation. Once developed, the DNP student sought and received IRB approval to solicit the opinions and recommendations of five practicing clinical experts in the local area (as discussed below).

Role of the Project Team

Favorable efficacy and sustainability of any staff education measure requires the full commitment of stakeholders to incorporate research evidence and expert opinions and to champion the changes needed to move innovations and practices through the phases of initiation, development, and implementation (Shaw et al., 2012).

Each of five local experts identified and solicited by the author for this DNP project, were asked to review the newly developed adolescent obesity school-based health center staff EBP education module objectives and provide their evaluation and recommendations by completing a 5-item Likert scale questionnaire.

Summary

Among the factors relevant to practice change, the most important is the efficient execution of EBP to support patients who are motivated and able to maintain suggested behavior and lifestyle changes. The PPC approach represents what could be considered the cornerstone of health care, which is a departure from the current physician- or provider-driven system of service. Implementing measures in primary care practice to improve staff education and development can help improve student's health and reduce critical health care costs in the school setting. Likewise, actions that enhance services in this clinical environment increase the value of health care providers and reduce the potential for low patient satisfaction. Providing education that encourages staff to proactively focus their approach to patient care by collaborating with the adolescent obese patient regarding health services should result in enhanced staff performance. Such an approach should also lead to better patient outcomes, as credible evidence endorsing its value translates into the clinical practice of APNs working in targeted school-based health centers.

Section 3: Collection and Analysis of Evidence

Introduction

The project was conducted due to the increasing incidence of adolescent obesity and the challenges to patient care identified by school-based health center staff providing health care to students in school-based health centers in the schools of marginalized urban communities. The purpose of this initiative was to increase the knowledge and range of skill of the school-based health center staff by developing an EBP adolescent obesity school-based health center staff education module to enhance clinical practice through increased knowledge and awareness of EBPs that have demonstrated improved patient outcomes. Section 3 of this project includes the practice question and a review of the evidence that was used to support the development of a staff education module. It also provides an analysis and synthesis of the evidence.

Practice-Focused Question

Adolescent weight screenings performed by school-based health center staff working in school-based health centers in middle and senior high schools of marginalized urban communities revealed that adolescent obesity is on the rise. The goal of this DNP project was to enhance the knowledge and increase the range of skills among school-based health center staff at school-based health care centers in marginalized urban communities who, as part of their responsibilities, screen and manage adolescent obesity to improve patient outcomes. To evaluate key issues related in this study, learning objectives for an EBP staff education module on obesity were developed. The practice-

focused question for this DNP project was: Are the learning objectives established for an EBP staff education module on adolescent obesity for school-based health center staff in a middle school and a high school of marginalized communities relevant to the improvement of staff knowledge and range of skills needed for the management of adolescent obesity in this clinical practice setting?

The purpose of this DNP project was to develop a school-based health center staff EBP education module on adolescent obesity for use in public middle and senior high schools located in marginalized urban communities. Although this project was intended to improve health outcomes for obese adolescents, I also intended to bridge gaps in primary care practice and satisfy the needs in the targeted clinical practice settings. Addressing these needs can improve care of obese adolescent patients and help achieve better standards of practice that meet state-mandated school health and physical screening requirements. The education module can enable school-based health center care staff to empower adolescents receiving care in school-based health care centers to take a proactive position in their plan of care and decision processes. Empirical evidence has shown that a collaborative patient-centered approach to care can strengthen treatment and management services provided and prevent the development of other health issues linked to obesity (Dietz et al., 2015).

In the DNP project, I sought to achieve objectives formed to improve the school-based health center staff awareness and understanding of the credible, EBP guidelines for the screening and management of adolescent obesity in school-based health centers. The

project also addresses the significance of promoting the patient-centered and collaborative approach to care supported in the Shuler practice model for school-based health center APNs in clinical practice. Because the model has generated evidence of effectiveness among clinicians, educators, and researchers, the framework was used to develop a staff education module for adolescent obesity management (Dhir, Kwong, Foullon, Baran, & Reif, n.d.). To further support the development of the school-based health center staff EBP education module, five local clinical adolescent obesity experts were asked to evaluate project objectives designed to:

1. Enhance the school-based health care center staffs' clinical practice skills to promote better patient outcomes.
2. Introduce information on an EBP patient-centered approach to care that could reduce the incidence of adolescent obesity.
3. Reinforce the education of all school-based health care center staff on BMI measurement and calculation as per the CDC BMI Percentile Calculator for Child and Teen.

Sources of Evidence

I conducted a review of the pertinent literature to determine the state of the research relevant to interventions regarding adolescent obesity treatment, management, and prevention strategies in primary care practice. The databases searched included PubMed, MEDLINE, CINAHL, and ERIC.

The evidence obtained from the sources was applied to this DNP project. The evidence helped to identify the gaps in practice, confirm theoretical underpinnings, and provide up-to-date results for the development of the education module. My overarching goal for this DNP staff education project was to improve school-based health center staff knowledge and range of abilities in the management of adolescent obesity. The principle concepts of this DNP project helped to answer the practice-focused question regarding the effect a newly developed EBP staff education module might have on adolescent obesity rates in the school-based health centers targeted for this initiative. The literature review provided EBP data to both highlight practice gaps and offer support for the development of a staff education module on adolescent obesity. I analyzed expert evaluations and recommendations to generate a survey report for the partnered organization to use in the future regarding the relevance and feasibility of the staff education module. The developed education module incorporated findings from the project questionnaire, and the most effective EBPs available in research literature for improving adolescent obesity, the knowledge of school-based health center staff, and their range of skills regarding adolescent obesity management.

Adolescent-Centered Primary Care

Review of pertinent literature revealed a lack of research aimed at developing methods to improve the health care of adolescents. In 2012, to aid in developing the evidence needed, the National Alliance to Advance Adolescent Health convened experts from various disciplines to identify recommendations that should be prioritized in the

primary health care of adolescents (Fox et al., 2013). Although not explicitly aimed at managing, treating, or preventing the growing problem of obesity among teenagers, three topics were deemed significant. The first was increasing adolescent and parent engagement by promoting self-care management skills. The second topic was improving preventative care and the early identification of conditions. The third topic suggested integrating the physical, behavioral, and reproductive health services provided in primary care (Fox et al., 2013).

Adolescent "Self-Reported" Patient-Centered Care

There was a lack of studies identified in the literature review that were focused on adolescent self-reports on the patient centered care they received. Toomey et al. (2016) investigated whether these self-reports varied by patient characteristics and whether receiving patient centered care was associated with measures regarding the quality of adolescent primary care. Toomey et al. analyzed cross-sectional data from a Healthy Passages population-based survey of 4,105 tenth graders and their parents. The four elements completed by the adolescents measured the provision of confidential care and screening for health topics relevant to adolescents, aiming to assess unmet needs and solicit an overall rating of health care provided (Toomey et al., 2016). Only 47% of the adolescents reported receiving patient-centered care (Toomey et al., 2016). The survey results also showed that the delivery of patient centered care was linked to other high-quality measures such as having a private conversation with the clinician, as adolescents valued the opportunity to talk about their health behaviors with clinicians (Toomey et al.,

2016). The authors also identified an association between patient centered care and the lower likelihood of a self-reported unmet need for care. Although many adolescents did not report receiving patient centered care, for those that did, patient centered care positively correlated with measures of high-quality primary care. The researchers concluded that these findings could provide support for using patient centered care as the best evidence-based approach for health care professionals involved in the care of adolescents in the primary care setting (Toomey et al., 2016).

State-mandated school-level BMI measurements. Sandoval, Turner, Nicholson, Chriqui, Tortorelli, and Chaloupka evaluated the relationship of state law, district policy, and student BMI measurement practices in schools (2012). Considering the potential this strategic intervention has to help reduce growing trends in childhood obesity, they argued school-based BMI measurement a useful tool to track obesity rates among youth. In their study, Sandoval and colleagues compiled data from a consecutive three-year evaluation of health practices and policies in U.S. elementary public schools to determine if school-level BMI measurement had a direct connection to state laws and district policies or was it through a mediation effect (2012). The findings of their study revealed 65% of schools were most likely to perform BMI measurement if mandated by state law compared to 38.4 % of schools where there was no state law mandating school-level BMI measurement (Sandoval et al., 2012). Thus, they concluded state laws may be a helpful tool for checking and tracking the incidence of obesity in youth (Sandoval et al., 2012).

Why state-mandated screenings are required. Ruggieri and Bass conducted a comprehensive literature review of school-based BMI screening programs to determine the effect these programs had on school health (2015). Their reported findings from the National Health and Nutrition Examination Survey (NHANES) indicated the prevalence of childhood obesity exceeded the Healthy People 2020 target of 14.5% for the population group at the time of their review (Ruggieri & Bass, 2015). A finding that along with the need to promote the involvement of parents, students, and schools lead to the initiation of state-mandated BMI screening in U.S. schools (Ruggieri & Bass, 2015). Moreover, they indicated, that although the 10th Amendment of the U.S. Constitution allows states to mandate school BMI screening programs, only 25 states have legislated required BMI screenings in schools (Ruggieri & Bass, 2015).

This DNP project was developed to enhance the education of school-based health center staff in a city located in Pennsylvania. The researchers' literature review revealed data collected from state-mandated BMI screenings in a Pennsylvania school district were used to help justify district-wide development and improvement initiatives (Ruggieri & Bass, 2015). Such programs, Ruggieri and Bass further explained promote nutrition, physical activity, and wellness for students, parents, and staff (2015), much like the health and nutrition initiatives described on pages 6 and 7 of chapter one of this study. Overall, the comprehensive review of literature Ruggieri and Bass conducted regarding school-based BMI screenings presented evidence to show that this practice is "vital to the development of robust school-based obesity prevention programs and the promotion of

healthy lifestyles in schools" (p. 69). Which suggest that state-mandated BMI screenings would provide the ongoing evidence needed to monitor the progress and effect of physical activity and nutritional education among students over time (Ruggieri & Bass, 2015).

School-Based Primary Care and Adolescent Obesity Initiatives

Sobal-Goldberg, Rabinowitz, and Gross reviewed 32 studies (N = 52,109) published between 2006 and January 2012 that examined the effectiveness of school-based programs to reduce obesity in youth (2013). Results of their analysis revealed that, overall, school-based obesity programs were "mildly effective in reducing BMI relative to controls not receiving interventions" (Sobal-Goldberg, Rabinowitz, and Gross, 2013, p. 2422). Studies in which researchers focused on young children demonstrated significant intervention effects that were not observed among teenagers (Sobal-Goldberg et al., 2013). However, a meta-regression analysis revealed, "a significant linear hierarchy of studies with the largest effects for comprehensive programs" (Sobal-Goldberg, Rabinowitz, and Gross, 2013, p. 2422). Some differences emerged because several school-based obesity programs were implemented for more than one academic year, with the aim of providing students with health information regarding nutrition, physical activity, the benefits of changed attitudes, and environmental modifications to support weight reduction. Additional topics included behavior monitoring and parental support to help students improve diet and increase their level of physical activity (Sobal-Goldberg et al., 2013). Based on their comprehensive examination, the researchers

concluded that in contrast to earlier studies, the more current studies provided credible evidence of the utility of school-based interventions for the overall management of obesity among students. Likewise, they indicated that, at best, school-based interventions were only "mildly effective in reducing BMI values among the youth" (Sobal-Goldberg, Rabinowitz, and Gross, 2013, p. 2422).

Whittemore, Jeon, and Grey compared the effectiveness of two school-based obesity prevention programs on the internet, indicating that prevention efforts were promoted broadly as an essential strategy to address the rising prevalence of obesity in adolescents because, once young children become obese, treatment in adolescence is less effective (2013). They suggested that a school-based obesity prevention program was one approach to reaching adolescents at risk for overweight status and obesity, and to engage them in learning ways to correct unhealthy behaviors and develop a healthier lifestyle (Whittemore et al., 2013).

Project Expert Panel Questionnaire

The author developed a five-question, four-point Likert scale evaluation questionnaire to solicit the professional opinions of five local experts in clinical practice involved in the care of adolescent patients. The questionnaire was shared with the five experts, and they were asked to evaluate the objectives of the proposed staff education module according to the Shuler nurse practitioner practice model. The questionnaire was scored based on the following responses: 4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree. It also provided space for the entry of suggestions and comments

(Appendix B). To ensure more reliable, valid results, appropriate actions were taken to maintain and protect the anonymity of experts who volunteer to participate in the project survey at all times. A descriptive analysis of questionnaire responses was used to determine the feasibility of the school-based health center staff adolescent education module and to create a report to reflect the results of the survey data and recommendations before the partnering organization implements it in the future. The author will support the organization's implementation of the education module and will request that the project partner provides access to staff evaluations of the program completed by those who receive the training at a future time point.

Analysis and Synthesis

An intensive, multifaceted, interdisciplinary plan of care approach to help adolescents with obesity was suggested to prevent and reverse many deleterious health effects of obesity (Foltz et al., 2012). Before designing and implementing a staff education program, it is essential to obtain stakeholder approval for the project initiative. As the DNP student, I served in a position of leadership throughout the project process. The proposed adolescent obesity school-based health center staff education module objectives were presented to an expert panel of five practitioners involved in the clinical practice of adolescent obesity treatment and management. The experts were asked to provide a formative review of the staff education module content before implementation. Summary of the panels' responses facilitated a comprehensive analysis of the education module objectives developed for staff at school-based health centers. The data were

collated and shared with stakeholders using descriptive analysis to report the expert panel questionnaire results. Module changes were made as suggested before implementation at the school-based health care center after the author graduates. Before beginning this study, permission was requested and obtained from Walden University's Institutional Review Board (IRB) to endorse and ensure the ethical integrity of this project and to confirm that no human subjects were included in this study. The DNP project IRB approval number assigned was 04-20-18-040630.

Summary

Several foundational practice standards have been devised and revised by scholars and clinicians over the years with the aim of guiding health care providers in the primary care setting in their treatment and management of pediatric obesity patients. Adolescent obesity rates have increased over the past three to four decades (Jortberg et al., 2016; Trust for America's Health and The Robert Wood Johnson Foundation, 2016). The implications of this growing health issue extend beyond the affected individuals and call for social change in practice among primary care professionals. Researchers' arguments regarding the significant health problems associated with obesity among adolescents in the US indicate that despite numerous initiatives aimed at curbing adolescent obesity this health problem continues to grow. As such, many U.S. states have enacted legislation that mandate annual BMI screenings programs in schools to monitor and track the incidence of obesity growing among children and adolescents (Ruggieri & Bass, 2015). This factor, combined with negative personal and professional attitudes overall among some health

care staff regarding the value of research, has also contributed to the translational gaps between evidence gained through research and clinical health care practice in primary care settings (Grimshaw, Eccles, Lavis, Hi, & Squires, 2012). However, school-based health center staff education that fosters the professional development of more effective initiatives in clinical practice is needed to improve communication between patients, practitioners, and experts who can bridge the gaps between research and clinical practice needed to inform practice and to allow practice to inform research.

Section 4: Findings and Recommendations

Introduction

The problem addressed in this project was the growing incidence of adolescent obesity identified in school-based health center staff providing health care to students in school-based health centers in the schools of marginalized urban communities. Adolescent obesity is a disease characterized by excessive body weight, and when identified in children and adolescents, shows a calculated BMI of ≥ 95 percentile (CDC, 2016). As one of the most prevalent nutritional diseases among adolescents in the United States, obesity affects more than 20% of this nations' adolescent population (CDC, 2016). Therefore, I developed the educational module on adolescent obesity and sought to provide an analysis of evidence-based guidelines and expert recommendations to aid school-based health center staff in their delivery of the best clinical approaches to patient care. The staff education module was designed to achieve and then sustain a desired goal for adolescent patients to reduce unhealthy BMI rates.

Overview

The purpose of this DNP project was to develop a school-based health center staff EBP education module on adolescent obesity for use in public middle and senior high schools located in marginalized urban communities. Numerous nursing scholars agree that evidence-based nursing care can improve patient outcomes and is the optimal approach to patient care. Evidence-based care provides care that is guided by empirical and clinical research findings, clinical expertise, and supports patient values (Peterson et

al., 2014). The purpose of this DNP project was to develop a school-based health center staff EBP education module on adolescent obesity for use in public middle and senior high schools located in marginalized urban communities.

Section 4 includes a description of how the method that was chosen to develop this education project ensured both the credibility and feasibility of the staff education module. The findings reflect a descriptive analysis of the data collected that were based on the learning objectives for the staff education module. Overall, the EBP staff education module on adolescent obesity presented as a PowerPoint (Appendix A) when implemented by staff supports their need as providers of health care for enhanced knowledge, and an improved range of skills in their management of adolescent obesity within the SCHOOL-BASED HEALTH CARE CENTERs targeted in this DNP project. Finally, this section presents an overview of the education program developed for the staff to implement later.

The findings of this project show that staff education can improve the patient outcomes in a school-based clinical practice. The panel of experts reviewed the content and learning objectives established for the EBP staff education module on adolescent obesity and provided responses and recommendations to consider for the staff education module development. The expert responses and recommendations enabled me to develop an educational module that can help staff to engage adolescents from a patient-centered model of informed choices that can promote health and potentially reduce health care costs.

Findings

The data in this project included the opinions of an expert panel of five clinicians actively participating in the care and management of obese adolescents. The expert panel was asked to respond to questions that were created to appraise the feasibility of the learning objectives established for the EBP staff education module on adolescent obesity. The panel provided anonymous feedback on the feasibility of the staff education module objectives (Table 1). Responses to the questionnaire indicated that the education module would be a useful tool to inform and assess the identified learning objectives. Panel experts' responses also indicated that the education module was well received and credible, which provided support that the education module would provide an informative educational program for staff. The evidence-based module has the potential to enhance staff education and skills and apply EBP knowledge to the care of adolescents with obesity.

Table 1

Expert Panel Feasibility Results for the Staff Education Module Objectives

Questions	Score	Total	Mean	Percentage
1. Do you think an EBP staff education module on adolescent obesity for school-based health center staff will improve patient outcomes?	4, 4, 3, 3, 4.	18	3.6	90
2. Do you think an EBP staff education module on adolescent obesity will enhance the school-based health care center staffs' clinical practice and range of skills?	4, 3, 3, 4, 4	18	3.6	90
3. Do you think that an EBP patient-centered approach to care is an underused intervention to reduce the incidence of adolescent obesity?	4, 4, 4, 4, 4	20	4.0	100
4. Do you think that an EBP staff education module on adolescent obesity can enhance the BMI measurement and calculation skills of school-based health center staff?	3, 3, 3, 4, 4	17	3.4	85
5. Do you think EBP staff education on adolescent obesity can reduce the incidence of this disease among students receiving health care in school-based health centers?	4, 4, 3, 3, 4	18	3.6	90

Note. Scoring Key: 4= *Strongly Agree*, 3= *Agree*, 2= *Disagree*, 1= *Strongly Disagree*. Questions 1-5 are of equal weight on 4-point type Likert scale.

The expert panel's responses to the five Likert style questions included in the Expert Panel Feasibility Survey indicated the staff education module was : (a) relevant to improving patient outcomes (n = 5, M = 3.6); (b) important to enhancing the school-based health care center staffs' clinical practice and range of skills (n = 5, M = 3.6); (c) significant to increase the use of an underutilized approach to patient-centered care (n = 5, M = 4.0); (d) an appropriate way to enhance the BMI measurement skills required of school-based health center staff (n = 5, M = 3.4); and (e) pertinent to the goal of reducing the incidence of obesity among adolescents receiving health care in school-based health centers (n = 5, M = 3.6). The findings suggest the education module will enhance staff knowledge in a way that can improve clinical practice and improve patient outcomes.

Implications

There are several implications for the findings of this study that examined the effectiveness of an education module developed to improve staff knowledge, screening skills, and management of adolescent obesity within school-based health centers to reduce adolescent obesity rates. The results denote the potential influence this education module can have on the APNs' management of obesity found in adolescents seeking health care in school-based health centers. To more efficiently identify and manage adolescent obesity in clinical practice, this initiative provides EBP knowledge of methods. The results of this project add support for a patient-centered care approach in adolescent, school-based clinical practice. The EBP approach to health care is preferred and proven effective in multiple practice settings and across the spectrum of health care

problems (Elwyn et al., 2014). The findings indicated an expert panel would support and approve the use of the adolescent obesity education program for APNs and other staff in the targeted school-based health centers. Likewise, the findings have shown learning objectives developed for an EBP staff education module on adolescent obesity for SCHOOL-BASED HEALTH CARE CENTER staff in a middle school and a high school of marginalized communities were relevant to the improvement of staff knowledge and range of skills needed for the management of adolescent obesity in this clinical practice setting.

Findings of this education module on adolescent obesity (Appendix A) included one of the DNP Essentials which provide the foundation of APN roles. Specifically, the results of this study reflect DNP Essential VIII: Advanced Nursing Practice by Building Knowledge Within Our Nursing Discipline. This principle reinforces the efforts of nurse practitioners to efficiently combine medical practice and the advanced practice skills that nurse practitioners possess. Nurse practitioners have a goal to improve patient outcomes and demonstrate advanced levels of clinical judgment, systems thinking, and the delivery of evidence-based care (ANCC, 2006).

This DNP project also has implications for nursing practice. The education module will help to advance the education and professional development of APNs and strengthen their resolve as principal stakeholders in the local health care organization. It also denotes the efforts of nurse practitioners to improve access to high-quality health care that further promotes opportunities for improved educational access and outcomes

among students in underserved communities that are the focus of this education project. Furthermore, this education module can facilitate and support the efforts of APNs to disseminate the EBP approach to collaborative patient care presented in the education module to other areas of disease management within the school-based health centers.

In section one of this project, I described the problem of adolescent obesity and its incidence among middle and high school adolescent students who reside in underserved communities. Therefore, this DNP project has several implications for social change and the factors that contribute to the social determinants of health for this population. Many social determinants of health contribute to the growing prevalence of obesity among these adolescent students. The most impactful social health determinants include socioeconomics, inadequate access to healthy food sources, locality, and physical inactivity (Frederick, Snellman, & Putman, 2014; Cobb et al., 2015; Lu et al., 2012; Stankov & Cargo, 2012). Therefore, the implication of this project for social change is that the application of EBP knowledge in clinical practice by school-based health center staff can indirectly help to improve social factors that are linked directly to the incidence of obesity among adolescents living in communities where the school-based health centers are situated.

Recommendations

From the results of the project questionnaire, several recommendations can be made for future studies to address gaps in current research and to support the utility of school-based interventions for the management of adolescent obesity and other chronic

diseases requiring attention in this population. The results of this project suggest that the education module is important to the development of school-based health care center staffs' clinical practice and range of skills. Future studies are needed to examine the validity of similar programs using a larger sample size.

Lifelong learning is a dynamic process that encompasses both the personal and professional lives of nursing staff. Learning processes are comprised of both formal and informal knowledge and skills and are dependent, in part, on the staff's willingness to seek and appreciate innovative strategies and actions to gain new insights and advance learning to improve patient outcomes (Davis, Taylor, & Reyes, 2014). Based on the findings of this study, the school-based health center in this one community found the program beneficial as a method for staff education and skill development. Perhaps the model might benefit other programs. Moreover, the essence of lifelong learning can afford school-based health center staff the ability to consistently translate current EBP knowledge to the delivery of high-quality nursing practice (Davis, Taylor, & Reyes, 2014).

I plan to expand the DNP project beyond the development of a staff education module that will contribute to lifelong learning. The future project will create a learning progression module of vertically sequenced steps so that school-based health center staff could become proficient in knowledge and skills related to adolescent obesity management.

Project Strengths and Limitations

The findings of multiple studies communicated the benefits of a patient-centered care approach in the treatment and management of a variety of health care problems. Numerous scholars declared obesity in adolescence is a significant social problem and requires increased focus to address the gap in research and the scarce studies within this population (Sawyer et al., 2012). The strength of this project was that it provides specific obesity management guidelines for APNs who provide health care in settings that are more accessible to the adolescent population (Keeton et al., 2012). Researchers have identified the need to implement interventions in clinical practice that align with EBP models and published expert committee recommendations for the weight management of adolescents that provide the distinct benefit of accessible health care in venues such as school-based health centers (Pbert et al., 2013; Barlow, 2007). Consequently, the ability to provide weight management and a variety of other comprehensive health care services to adolescents in the convenient and accessible setting of SCHOOL-BASED HEALTH CARE CENTERs offers health care to the adolescents within the marginalized communities targeted in this project who may not otherwise have access to consistent and affordable care (Keeton et al., 2012). An additional strength of this project was that it provides a specific obesity management approach for the care of adolescent patients. A third advantage is that SCHC staff will learn essential EBP knowledge to improve clinical practice and provide the best care possible. Conversely, the portability and ease of using the education module offer an opposing strength for this project as it enables

self-learning which saves time, is cost-effective and facilitates a steadier influx of billable income for the organization.

However, the literature search for this project offered only a fraction of evidence regarding the management of adolescent obesity in a primary care setting which is a limitation of this project. Furthermore, time constraints associated with high work volume and limited resources are two contributing significant work factors that school-based health center staff must judiciously manage to empower staff members' efficacy to utilize the education module and supporting resources provided to restructure clinical practice. To further validate the feasibility of the use of education modules for school-based health center staff deficits, specifically in the management of chronic diseases identified among students', replication of this program is considered essential to reduce the potential for researcher bias. Furthermore, additional studies could ensure credibility and validate education initiatives.

Summary and Conclusion

Staff knowledge and skill development are vital to the livelihood of any organization. A health care organization's value is not merely derived from its physical capital but also its intellectual capital. A staff education module is one of many methods used to maintain and enhance intellectual capital vital to the continuous improvement and assurance of quality of staff performance and contribute to the overall value of the organization. The staff of school-based health center is uniquely positioned to provide a collaborative approach to care that is sensitive to the distinct needs of adolescents. The

EBP staff education module on adolescent obesity developed for this study offers relevant information and resources to support the work of school-based health center staff to reduce the incidence of adolescent obesity while providing the best patient care possible. Obesity is a growing health problem among adolescents and for individuals of every age, ethnic, and socioeconomic group. Associated with comorbid risks, obesity identified during adolescence can continue into adulthood. Few studies have explicitly focused on the management and treatment of obesity in adolescents. However, this DNP project when deliberately implemented by the partnering health care organization post-graduation for employees, will supplement prior training and result in substantial contributions necessary to intentionally attend to the holistic health care needs of adolescents to bridge the gap in extant research on adolescent obesity management in school-based health centers.

Section 5: Dissemination Plan

This project addressed adolescent obesity and a developed EBP staff education module to encourage and assist school-based health center staff in their adoption of a collaborative and patient-centered care approach to obesity treatment and management at a convenient time for them. The plan to disseminate the project will begin with providing the school-based health center organization access to the staff education module on adolescent obesity developed in a PowerPoint presentation along with an explanation of its purpose and learning objectives. An overview of the study findings, strengths, and limitations of the program will also be provided. Requests will be made to the organization to assess data regarding the use of the education module over a 6-month period and again after 1 year. Data will allow evaluation of the module's impact on anticipated adolescent obesity rate reductions based on use of the modules.

A request for the distribution rates for this project will be made to ProQuest as well as appropriate professional journal publications for APN professionals. Other plans for the dissemination of study findings include sharing the project as a PowerPoint presentation at gatherings sponsored locally by the Public Health Management Corporation created to foster the building of healthier communities through partnerships. Further, opportunities to present the project at annually held gatherings such as the Doctor of Nursing Practice, American Association of Nurse Practitioners, and the National Alliance of School-Based Health Centers conferences will be explored.

Analysis of Self

As a nursing scholar, the journey I have taken to complete this DNP project, though rigorous, has prepared me to be a more innovative agent of change driven to champion affirmative, equitable, and sustainable patient literacy regarding their health and health care processes with a scholarly voice and teachable spirit. The process of completing this project has resulted in my ability to both recognize and resolve problems impacting patients and expand my support of the APN profession more efficiently. This DNP journey has taught me many things, but none more important than the need to hold true to the vision and value of ethical responsibilities this scholarly pursuit represents in every area of my professional, personal, and social endeavors.

As a practitioner, I represent the champion of change I alluded to often in this DNP project. I am committed to ensuring that the impact of a single practice change spawned by enhanced knowledge can develop into a meaningful movement of revitalization specifically for school-based health center staff and among my colleagues and peers in health care. As a practitioner, the process of developing objectives for the staff education module and knowledge acquired from analyzing project questionnaire results has rekindled my passion for nursing education and the privilege of teaching future nursing scholars. The scholarship I now possess underpins my resolve to contribute to nursing education while highlighting the leadership skills I have developed through this process.

As a nurse educator, I now fully appreciate the National League of Nursing's declaration regarding nurse educators prepared at the doctorate level. They maintain that doctoral prepared nurse educators are in a better position to contribute significantly to their students, providing systems processes, and organizational-level understanding of health care needed to make substantive contributions and thus effect real change at the clinical level (Doctor of Nursing Practice DNP.org, 2018). Moreover, the Institute of Medicine in a report titled the Future of Nursing: Leading Change, Advancing Health, indicated doctorate-prepared nurse educators are vital to leading the movement to improve and redesign nursing education programs to make them more cost-effective (Doctor of Nursing Practice DNP.org, 2018).

As a project developer, the hours invested during my practicum experience allowed me to witness the challenges nurse practitioners confront in providing health care services in school-based environments. Moreover, innumerable hours spent scouring research literature to substantiate the need for this initiative strengthened my understanding the importance for me as a project developer to explore and develop innovative strategies to bridge existing gaps in clinical practice while challenging obscure health statistics that reflect the serious nature of this public health issue. Particularly, evidence regarding specific health concerns identified among the underserved adolescent population. Because knowledge communicated in this DNP project can improve clinical outcomes and impact the incidence of adolescent obesity that too often is as unrestrained

as the social factors and determinants of health that strongly affect the health of many individuals in this population subgroup.

Summary

Adolescence is a phase of human development that bridges the transition of childhood to adulthood. It is both a unique and vulnerable period in human life because several factors can either support or challenge health and well-being during this period in life. This DNP project focused on obesity among adolescent students receiving health care services in school-based health center centers as a growing health problem. A staff education module on adolescent obesity was developed to help staff seize opportunities to impact this ever-increasing health disease among adolescents. Enhancing staff knowledge of adolescent obesity management and clinical practice skills in this setting not only facilitates the translation of evidence to practice but promotes social change through reduced health care cost. This DNP project reflects the need for a health care delivery approach that acknowledges collaboration and confidentiality as factors essential to developing a trusting patient-practitioner relationship among adolescents. Conversely, the framework chosen for the DNP project enables APNs as partners in the clinical practice collaborative to efficiently combine their nursing knowledge and medical skills in the delivery of accurate adolescent obesity treatment and management services.

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Appendix A: Staff Education Module PowerPoint Presentation

ADOLESCENT OBESITY

Staff Education Module

Objectives

Upon completion of this module the learner will be able to:

- Review adolescent obesity and comorbidity risks.
- Provide information on factors contributing to the incidence of adolescent obesity among students receiving care in SBHC centers.
- Discuss EBP guidelines and recommendations for the treatment and management of adolescent obesity, their purpose, management approach, nursing considerations, and potential impact for desired patient outcomes

Adolescent Obesity

- Adolescence is a significant time in human development for establishing healthy behaviors.
- Obesity is a complex, multifactorial condition affected by genetic and non-genetic factors
- Obesity is a disease characterized by grossly excessive body weight, as measured by body mass index (BMI) ≥ 95th percentile for weight in adolescents.
- BMI for adolescents is gender- and age- specific because the amount of body fat tend to change over the lifespan as they grow and differs between males and females

Adolescent Obesity…continues

- Obesity rates vary by race/ ethnicity.
- At one-time obesity rates increased at similar rates for all adolescents, but has begun to decline among higher SES youth and continued to expand among lower SES youth.
- Socioeconomic background influences an individual's food consumption and physical activity patterns.
- Not only are fresh vegetables and fruits costlier than fast food, but healthy alternatives are sometimes hard to find in poor neighborhoods.
- Overweight and obesity prevalence was reported greater among publicly insured youth ages 10 to 17 than their privately insured peers
- Extra medical costs due to obese adolescents are estimated at more than $14 billion per year which expands health care costs annually by billions of dollars.

Adolescent Obesity Stats

- 1 in 6 adolescents are overweight, and 1 in 3 are at risk.
- 33% of America's youth overall are either obese or overweight.
- 20.6% of youth aged 12–19 years were diagnosed as obese.
- More than 29% of school-aged youth are either overweight or obese.
- 13.9% of high school students were obese, and further 16.0% of this population were overweight
- Up to 25% of this population group are at risk of developing heart disease and other comorbid conditions, with the potential for premature death.

More… Adolescent Obesity Stats

- Studies have reported substantial growth in elevated BMI values among adolescent males aged 12 through 19 years (P = .04) but not among any other age group or females.
- Other studies have reported for adolescents ages 12 to 19, non-Hispanic black girls have the highest rate of obesity,
- Physical activity and sports participation decline during adolescence especially in teenage girls
- Sedentary behavior, the risk for depression and body esteem issues increase during the adolescent years.

Negative Impact of Adolescent Obesity Include:

Increased susceptibility to comorbid diseases

- Hypertension
- Dyslipidemia
- Insulin resistance
- Type 2 diabetes
- Fatty liver disease
- Orthopedic problems,
- Sleep apnea
- Asthma
- Premature death

Increased susceptibility to major psychological disorders

- Internalizing and externalizing disorders
  - *Anxiety*
  - *Depression*
- ADHD
- sleep problems.

Factors contributing to the risk of adolescent obesity

Hereditary Factors

- Genetics-
  - may affect the quantity of body fat stored
  - may affect the efficiency in which the body converts food into energy
  - may affect how the body burns calories during exercise
- Family Lifestyle-
  - If one or both parents are obese, the risk of obesity is increased in their children
  - Family members tend to share similar eating and activity habits

Non-Hereditary Factors

- Inactivity-
  - ✓ decreased physical activity and increased calorie intake
- Unhealthy diets-
  - ✓ high in calories
  - ✓ Lack fruits and vegetables
  - ✓ fast foods
  - ✓ high-calorie beverages
  - ✓ oversized portion

The Shuler Nurse Practitioner Practice Model (SNPPM)

An EBP patient-centered care approach to clinical practice

This paradigm in clinical practice can facilitate efforts to provide evidence-based advanced practice nursing services in school-based health care centers to achieve competency in the assessment, diagnosis, and management of obese adolescent patients and factors that contribute to disease development.

Nursing Practice Outcome:

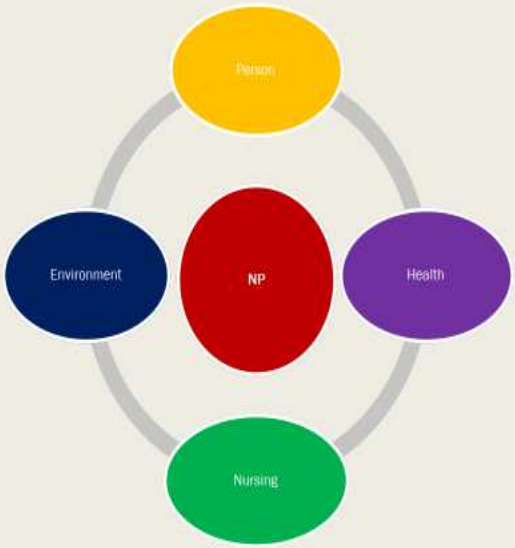
- Facilitates enhanced nursing aspects and clinical skills directly associated with the nurse practitioner role because it describes nursing as it should be instead of the messy reality of daily practice.

Medical Practice Outcome:

- Supports the efficient function of the nurse practitioner when implementing the medical components of the role because it directs the NP practice by incorporating medical decision making into a nursing-oriented practice.

Theoretical Conceptual Framework Overview of the Shuler Nurse Practitioner Practice Model

- A holistic approach to patient care
- Practice requires integration of values and beliefs regarding four concepts:
  - Person
  - Health
  - Environment
  - Nursing
- Based evidence-based nursing research
- Scientifically supported generalizations



An Overview of the SNPPM Evidence-based Practice Paradigm

Input Phase

1.History
2.Objective Data
3.Role Modeling

Throughput Phase

1. Identifying problems and diagnosing
2. Contracting and Planning
3. Implementation

Output Phase

1. Internal feedback
2. External feedback

Evaluation

1. Needs Assessment
2. Process Evaluation
3. Outcome Evaluation
4. Impact Evaluation

Input Phase:

- **Type of Visits-**
  - Episodic
  - Comprehensive with an existing health problem
  - Comprehensive without an existing health problem
- Data collection during interaction between the patient and NP guides the progression of care.
- Information is then exchanged through the -data gathering and NP modeling- processes of the practice model.

Throughput Phase

- During the patient/NP throughput phase, the NP synthesizes the gathered information in collaboration with the patient through:
  - diagnosis
  - identification of problems and by
  - affirming unique combinations of needs, factors, and associated problems.
- NP should continually adjust conditions of the interaction so the patient can remain an active participant.
- Includes the patient in the health care planning process through 'contracting.'
- The NP/patient interaction aims to improve patient health status and well-being by promoting wellness, self-care participation, health promotion, disease prevention, and learning to take part in activities that can restore health.
- This phase includes consultation/referral, treatment plan development, self-care planning, and model implementation in the clinical practice setting.

Output Phase

- In the output phase information is released back into the environment by the NP and the patient in the form of feedback, also an essential component of this EBP model for clinical practice.
- Feedback is received *internally* from within the system.
- Feedback is also received *externally*, a process that occurs between the system and the environment.

Evaluation

The evaluation portion of the model addresses the effectiveness of the NP/patient interaction and determines through the feedback mechanisms whether or not modifications in the treatment plan are needed.

The evaluation phase must consider:

- Needs assessment: to assess the need for other required services and future revisions
- Process evaluation: to assess progress towards service delivery goals
- Outcome evaluation: to evaluate attainment of short and long-term goals
- Impact Evaluation: to determine program significance

Nursing Considerations

Perform a Comprehensive Holistic Patient Assessment

A time for data gathering and role modeling

- **Patient/NP** interaction acquires data collected to determine:
  - physiological needs
  - psychological needs
  - social networks and support
  - cultural health beliefs
  - environmental and relational conditions
  - spiritual views regarding the patients' health and health-related problems.
- **NP** identifies any relational problems such as:
  - ✓ unmet needs
  - ✓ illness and disease
  - ✓ lack of fitness
  - ✓ over or under nutrition
  - ✓ psychological and emotional problems
  - ✓ lack of social support
  - ✓ unhelpful relationships
  - ✓ cultural restrictions and environmental and spiritual distress.

The integration of this SNPPM as a patient-centered care approach to clinical practice will demonstrate…

- Assessment of patients from a holistic perspective
- A develop treatment plan that is mutually agreeable, and self-care oriented
- Health promotion as well as disease prevention activities in all treatment plans
- Consideration of non-pharmacological treatments that may include alternative practices
- Efficient function within a multidisciplinary team
- Enhanced personal involvement of both the patient and nurse practitioner toward improved wellness

Patient-Centered Care Approach will demonstrate these eight principles

Respect for patients' preferences

A coordinated integration of care

Provide information and education

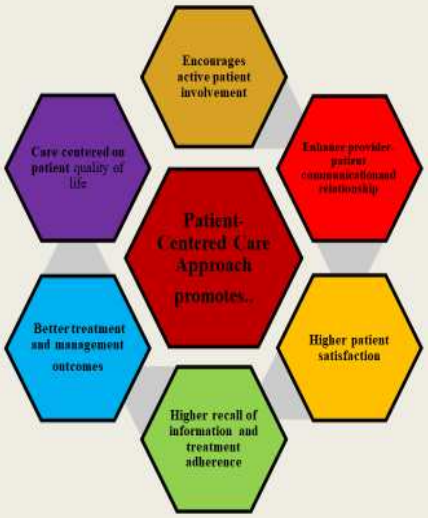
Facilitate physical comfort

Provide emotional support

Encourage family involvement

Endorse continuity and transition of care

Provide accessible care



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Appendix B: Project Questionnaire

1. Do you think an EBP staff education module on adolescent obesity for school-based health center staff will improve patient outcomes?

Strongly agree Agree Disagree Strongly disagree

2. Do you think an EBP staff education module on adolescent obesity will enhance the school-based health care center staffs' clinical practice and range of skills?

Strongly agree Agree Disagree Strongly disagree

3. Do you think that an EBP patient-centered approach to care is an underused intervention to reduce the incidence of adolescent obesity?

Strongly agree Agree Disagree Strongly disagree

4. Do you think that an EBP staff education module on adolescent obesity can enhance the BMI measurement and calculation skills of SBHC center staff?

Strongly agree Agree Disagree Strongly disagree

5. Do you think EBP staff education on adolescent obesity can reduce the incidence of this disease among students receiving health care in school-based health centers?

Strongly agree Agree Disagree Strongly disagree

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