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A Staff Educational Initiative to Improve the Use of Childhood Obesity Guideline Recommendations

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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the review committee have been made.

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Abstract

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MS, Walden University, 2011

BS, Louisiana State University, 1990

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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April, 2018

Abstract

Obesity affects one out every six children in the United States, which places them at risk for other chronic conditions such as cardiovascular disease, diabetes, and continued obesity into adulthood. Considering military children are more likely to enter the Armed Forces than their civilian counterparts, an increase in obesity among military families decreases the number of potential future military recruits who are physically eligible to serve. Despite this growing epidemic, providers report a lack of education and a low self-efficacy in the treatment of this condition. This doctorate of nursing practice study addresses this educational gap by attempting to improve participants knowledge within a military setting regarding the clinical practice guidelines for the assessment, prevention, and treatment of childhood obesity through an one hour educational inservice. The educational project was guided by the principles of the chronic care model and used the theories of adult learning in the formation of the inservice. The content was derived from current evidence and the clinical practice guidelines endorsed by the American Academy of Pediatrics. Twenty-seven participants attended the 1-hour educational inservice program and 24 completed a 9 question pretest and posttest knowledge survey ($p<0.00$). Analysis of the data from this educational inservice found a significant improvement in participant knowledge between the pretest and posttest surveys. These findings suggest that it is feasible to offer a 1-hour inservice which can promote social change by significantly improving staff's knowledge about the clinical practice guidelines on childhood obesity.

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Dedication

This project is dedicated to my family who have been a constant source of support, encouragement, and understanding. To my oldest daughters and fellow college students, Samantha and Amber, thank you for the editing, APA guidance, and statistical analysis advice. I know you will both be amazing Registered Nurses one day. To my youngest children, Benjamin, Macy, and Timmy, thank you for the love and understanding of the time I was away from your lives during this journey. I sincerely appreciate my husband, Roy who is my rock and partner in life. This project could not have taken place without your constant involvement, love, support, and encouragement. You inspire me to be a better nurse, wife, and mother. Lastly, thank you to my soon to be ninety four year old Aunt Diddy who was my first grade teacher, second mom, and mentor. She taught me all the important values in life and the importance of lifelong learning.

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Section 1: Nature of the Project

Introduction

The World Health Organization (WHO, 2016) listed childhood obesity as one of the most serious problems of the 21st century. The prevalence of childhood obesity has increased in almost all countries primarily in developed countries and urbanized populations with an estimated 43 million children considered overweight or obese (De Onis, Blossner, & Borghi, 2010; Wang & Lobstein, 2006). The Centers for Disease Control and Prevention (CDC, 2015a) stated that obesity now affects one out of every six children in the United States. Obesity within the military sector is a growing concern as well. An estimated 30% of military dependent children are classified as either overweight or obese (Tanofsky-Kraff et al., 2013).

Obesity is a preventable disease which places children at a higher risk of diabetes and cardiovascular disease and continued obesity into adulthood (WHO, 2016). Effective programs are needed on a global, national, and local level to effectively treat this growing problem; however many barriers exist (WHO, 2016). Providers report low self-efficacy in the treatment of childhood obesity and negative feelings towards the long-term management of this condition (Van Gerwen, Franc, Rosman, Le Vaillant, & Pelletier-Fleury, 2009). In addition, pediatricians often report lack adequate resources to treat overweight children for obesity (Spivack, Swietlik, Alessandrini, & Faith, 2010). Another reported barrier is the lack of education regarding the current guidelines to prevent, assess, and treat this condition (Spivack et al., 2010). Pediatric providers failed to correctly respond to questions regarding recommendations on the prevention,

assessment, and treatment of childhood obesity (Spivack et al., 2010). The goal of this project was to provide an educational session on the recommendations for the prevention and management of childhood obesity using the chronic care model to increase staff knowledge and encourage dialogue among multidisciplinary professionals in order to promote novel approaches to addressing this problem within the military sector.

The American Academy of Pediatrics (AAP) and Healthy People 2020 encourage stakeholders to implement a collaborative approach to address the childhood obesity epidemic (Davis et al., 2007; Healthy People 2020, 2017). The use of the chronic care model, recommended by the AAP, encourages the integration of community resources, healthcare practices, and patient self-management techniques to improve patient outcomes (Barlow, 2007). Military healthcare members are in an ideal position to identify military dependents at risk for obesity in the early stages and provide guidance and education to promote healthy lifestyle habits. In addition, the military sector has resources that are often difficult to access in the civilian sector such as free fitness centers and nutrition classes. The implementation of the chronic care model to address the obesity problem has potential positive social change implications through effectively preventing and treating this important healthcare issue within the military sector.

Problem Statement

According to Healthy People 2020 (2017), interventions to improve weight need to be delivered by healthcare team members from a variety of settings in order to effectively change a family's eating habits and encourage increased energy expenditure. However, there are multiple barriers to this proposed treatment plan (Perrin, Skinner, &

Steiner, 2012; Eckstein et al., 2006; Barlow, 2007). Often, providers are not addressing weight related concerns during routine patient appointments (Perrin et al., 2012). Less than one-quarter of parents of overweight children were told their children were overweight by their provider (Perrin et al., 2012). In addition, parents lack the ability to determine accurate weight status of their children which may inhibit them from addressing the topic during routine well child visits (Eckstein et al., 2006). Lastly, the traditional pediatric office visit model has historically been based on the acute care needs of the pediatric patient, leaving little time or resources to address chronic conditions such as obesity (Barlow, 2007). The complexity of chronic conditions requires an office model that can allow for an expanded care team which supports patient self-management and monitors the patient's adherence to recommended clinical best practices.

Obesity prevention within the military community has been a growing challenge with similar obstacles as the civilian sector (Tanofsky-Kraff et al., 2013). A unique consideration within the military population is that dependent children face physical and psychological difficulties related to the frequent deployments of their military parents which may increase their tendency for unhealthy eating (Tanofsky-Kraff et al., 2013). The military system has numerous weight management resources but there is an urgent need for the development of obesity prevention programs to address the needs of the entire military family and not just the active duty member (Tanofsky-Kraff et al., 2013). Obesity adversely affects military readiness, recruitment of new members, and places a financial burden on the Department of Defense (Tanofsky-Kraff et al., 2013). Considering military children are more likely to enter the Armed Forces than their

civilian counterparts, an increase in obesity among military families decreases the number of potential future military recruits who are physically eligible to serve (Tanofsky-Kraff et al., 2013). Based on these statistics, an efficient and effective model for pediatricians to use in military clinics is needed to properly address this health epidemic and potential threat to national security.

Nurses are in an ideal position to assist in the management of this chronic condition. The AAP encourages the redesign of the traditional office model to include the use of an multidisciplinary team to include physicians, nurses, dieticians, behavioral health clinicians, and support staff to address this health concern. The Institute of Medicine (IOM, 2010) has recommended expanding opportunities for nurses to lead and manage collaborative efforts with members of the healthcare team to improve practice environments. This project intent was to fulfill that initiative by providing education on an important clinical practice guideline and encourage dialog among stakeholders in order to improve care to the military pediatric population.

Purpose

There is a gap in knowledge between clinical practice guidelines for the prevention, assessment, and treatment of childhood obesity and provider practice (Spivack et al., 2010; Vine, Hargreaves, Briefel, & Orfield, 2013). Information is lacking on the feasibility, effectiveness, and cost of childhood obesity prevention efforts within the primary care setting (Daniels & Hassinik, 2015). The IOM Committee on Accelerating Progress in Obesity Prevention has encouraged the design of effective obesity prevention programs (McGuire, 2012). The AAP has stressed the importance of

healthcare team members being aware of obesity prevention efforts in their community and collaborating with those members to improve the prevention and treatment of obesity (Daniels & Hassinik, 2015). In addition, the AAP encouraged practice redesign involving the entire healthcare team including nurses, dieticians, behavioral health clinicians, and support staff members (Davis et al., 2007). Education on the recommendations should be the first step towards the goal of practice redesign to meet this objective.

The organizational level practice-focused question was as follows: Among pediatric healthcare team members including physicians, nurses, dieticians, behavioral health clinicians, and support staff members within a military ambulatory care clinic in the Pacific United States, how does the implementation of an one hour training program improve staff knowledge about the guideline titled Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity (as endorsed by the American Academy of Pediatrics)?

The purpose of this project was to increase the participant's knowledge level regarding the recommended best practices on the prevention, assessment, and treatment of childhood obesity and encourage dialogue and collaboration among a multidisciplinary team. This project addressed the gap in practice problem by providing education and encouraging collaboration among a multidisciplinary team of military professionals. The project aligns with previous scholarly DNP projects by implementing an educational program for healthcare members to increase their knowledge regarding clinical practice guidelines which has been recommended by the AAP (Krebs et al., 2007).

Nature of the Doctoral Project

Sources of evidence for the doctoral project came from a variety of avenues including clinical practice guidelines and provider toolkits regarding the treatment of childhood obesity. In 2005, the American Medical Association (AMA), the Health Resources and Services Administration (HRSA), and the Centers for Disease Control and Prevention (CDC) gathered an Expert Committee to revise the 1997 childhood obesity recommendations (Barlow, 2007). This revision was titled Expert Committee Recommendations on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity which is endorsed by the AAP (Barlow, 2007). The Institute for Healthy Childhood Weight (IHCW) developed free online educational modules and an easy to use algorithm for primary care clinics which provides a structured format to translate the guidelines. The expert committee recommendations and the educational modules were used as the main teaching tool for this project. In addition, the Pennington Biomedical Research Center and the California Department of Health Care Services have supplemental provider resources which were used to enhance the AAP recommendations. Lastly, the Institute for Clinical Systems Improvement (ICSI, 2013) has developed an implementation guide to help accelerate improvement in the prevention, assessment, and treatment of childhood obesity within the pediatric office setting.

This project was a staff education project. The proposal was to provide education to a multidisciplinary team from a military clinic regarding the expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity. Outcomes were measured formatively through

gathering of best practices and evidence related to childhood obesity. Changes in staff knowledge were assessed using a knowledge survey before and after the educational session on the guidelines. The results of the knowledge survey were evaluated to determine if the intervention was successful in increasing participant knowledge regarding the expert committee recommendations.

The purpose of this educational intervention was to address the gap in knowledge regarding the childhood obesity guidelines and current military resources which could be used as potential referral sources for providers in the prevention and treatment of childhood obesity. Providing education to the multidisciplinary members is the first step in addressing the IOM's call to design effective obesity prevention programs using an integrated approach (IOM, 2012). In addition, this project addressed the AAP's recommendation to implement teams within a primary care setting in order to effectively treat the childhood obesity epidemic (Davis et al., 2007).

Significance

The educational session was conducted at a military treatment facility in southern California. Key stakeholders included the organization's executive leadership, population health working group, pediatricians, dieticians, physical therapists, psychologists, nurses, and technical staff. External stakeholders included military beneficiaries, Tricare, and the Department of Defense (DOD). A project team was assembled in order to assist in analyzing the facilities educational needs and to help establish the criteria for the staff education program.

Healthcare systems are encouraged to close the gap between the creation of best practices and the application of those practices at the bedside (Briere, 2001). The IOM reported a 17-year gap between the creation of new evidence and the application to practice (Briere, 2001). Nurses are now challenged with the additional responsibility of being an active team member in the translation of evidence into practice (IOM, 2010). Nurses have the unique ability to assist in this process based on their expert communication skills and diverse levels of experience (Stokowski et al., 2010). In addition, nurse educators in the practice setting are in an ideal position to facilitate change based on evidence-based best practices (Mallory, 2010)

The project is transferable to other chronic conditions such as diabetes and hypertension based on the foundations developed through the chronic care model. These principles can be applied to both the adult and pediatric patient (Chin, 2010). The core principles of the chronic care model are based on the integration of community resources, healthcare services, and patient self-management (Chin, 2010). The chronic care model improves patient care and results in better health outcomes (Coleman, Austin, Brach, & Wagner, 2009).

This project has the possibility to have a positive impact on social change due to its potential effect on childhood obesity within the military sector. Creative interventions are needed to promote change within the standard military pediatric clinic to move from a focus on acute care to more chronic conditions such as childhood obesity. Obesity affects more than two thirds of the adult population and one third of the pediatric population within the United States (IOM, 2012). Obesity among military dependents has a negative

effect on the potential candidates to serve within the military sector (Tanofsky-Kraff et al., 2013). Multidisciplinary efforts have shown effective in the prevention and treatment of chronic conditions (Chin, 2010). This project provided education on the clinical practice guidelines for the prevention, assessment, and treatment of childhood obesity and also outlined the potential referral sources which are already standard within a military facility but are currently being underused in the pediatric population.

Summary

Childhood obesity is a growing health concern with long term consequences. Primary care clinics have the capability of making a positive impact on this epidemic. Previous studies have outlined the long term health and financial effects of childhood obesity on military children (Tanofsky-Kraff et al., 2013; Spiker et al., 2015). The AAP endorsed guidelines to assist healthcare teams in the assessment, prevention and management of this chronic condition (Barlow, 2007). However, multiple barriers have been shown to limit the implementation of these guidelines including provider's lack of knowledge regarding the recommendations (Spivack et al, 2010). Educational opportunities which apply the principles of adult education have the potential to increase the provider's adherence to the guidelines and improve patient care.

Section 2: Background and Content

Introduction

The number of children and adolescents who are considered overweight or obese has tripled since 1970 (Spieker et al., 2015). The purpose of this project was to increase the knowledge level of a multidisciplinary team regarding the recommended best practices on the assessment, prevention, and treatment of childhood obesity and encourage dialogue and collaboration among those members. The organizational level practice-focused question was as follows: Among pediatric healthcare team members including physicians, nurses, dieticians, behavioral health clinicians, and support staff members within a military ambulatory care clinic in the Pacific United States, how does the implementation of an one hour training program improve staff knowledge about the guideline titled Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity (as endorsed by the American Academy of Pediatrics)? The project used a number of educational theories to facilitate learning and collaboration among healthcare team members within the military treatment facility (MTF) in order to effectively prevent and treat this at-risk population.

Concepts, Models, and Theories

One approach to solving clinical problems is the use of evidence-based practice (EBP), which uses the best research available to provide guidelines for improving patient care decisions (Polit, 2010). One challenge regarding integrating evidence into practice is the conversion of peer-reviewed articles and guidelines into information that can be readily shared among practitioners (Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash,

2014). The IOM (2010) has recommended that health professionals should be educated, as members of a multidisciplinary team, to deliver patient centered care. Research supports the effectiveness of delivering evidence-based interventions which use partnerships in the translation of recommendations into practice (Breslau, Weiss, Williams, Burness, & Kepka, 2015).

Interventions delivered within the primary care clinic are recognized as a critical component in the prevention and treatment of childhood obesity (Daniels & Hassink, 2015). However, for a prevention and treatment model to be effective in the clinical setting, a supportive community environment is required to help patients adopt healthy lifestyle recommendations (Daniels & Hassinek, 2015). Families being knowledgeable about healthy behaviors alone is not sufficient to successfully implement behavior change in pediatric obese patients (Daniels & Hassinek, 2015). Pediatricians are urged to help families develop the motivation to change, provide guidance and encouragement, and refer to appropriate community resources to support healthy lifestyle modifications (Daniels & Hassinek, 2015). These interventions can be delivered through a chronic care model which supports the use of a multidisciplinary team (Coleman, 2009). Resources such as disease managers, dieticians, and psychologists are part of a normal military community but are currently not the standard part of a treatment plan for childhood obesity (Tanofsky-Kraff, 2013).

The chronic care model, which supports the use of community resources such as disease managers, dieticians, and psychologists, has shown to be effective in treating chronic conditions such as asthma, diabetes, and congestive heart failure (Pearson et al.,

2005). Research supports the chronic care model as a framework to guide clinic redesign in treating chronic conditions (Coleman, 2009). The primary purpose of the chronic care model is to encourage a systematic approach in redesigning primary care to involve community resources such as a multidisciplinary team in caring for patients with chronic conditions (Stellefson, Dipnarine, & Stopka, 2013). Training of providers regarding the prevention and treatment of childhood obesity has shown to be more effective when components of the chronic care model were incorporated into the educational session (Jacobson & Gance-Cleveland, 2011). This project aimed to teach not only the pediatric providers within an MTF but members of the multidisciplinary team including disease managers, dieticians, psychologists, and clinic technicians regarding the best practices for the assessment, prevention, and treatment of childhood obesity. Due to the diversity and expertise of the intended audience, a teaching model which focused on the learning that occurs through social interactions among multidisciplinary members was chosen for this project. For this reason, a variety of theories were used in designing the educational in-service.

Adult educators are aware that no single learning theory can be applied to all adult learners (Billings & Halstead, 2015). Based on this knowledge, a variety of models, principles, and theories are needed to foster learning in the adult classroom (Billings & Halstead, 2015). Proponents of adult learning theories are compelled to use a mixture of principles and theories in creating instructional methods in order to appeal to the wide range of learning needs of adults (Billings & Halstead). A variety of social theories and

models were used with this project to facilitate adult learning and encourage the exchange of information among professionals in order to improve patient care.

Constructivism is based on the belief that learners construct new knowledge based on existing knowledge (Taylor & Hamdy, 2013). Social constructivism, an expansion of constructivism, theorizes that learners do not learn in isolation from others (Taylor & Hamdy, 2013). Social learning theorists, based on the belief that communities provide a foundation for sharing knowledge, suggest that learning communities can provide a foundation for sharing knowledge and improving healthcare performance (Taylor & Hamdy, 2013).

Vygotsky's social constructivism theory is built on the foundations of the belief that new knowledge is based on existing knowledge but there was a social component to learning as well (Huang, 2002). Vygotsky emphasized the social content that occurs during learning and that the interaction among students and between students and teachers is a critical component of collaborative problem solving (Huang, 2002). Vygotsky stressed that the interactivity between others can provide a way to motivate and stimulate learners (Huang, 2002). The educational session used the concepts of social constructivism by designing opportunities during the in-service that allowed for open conversations between the learners and teacher. The goal was to allow for dialogue among the multidisciplinary team which focused on what is already known regarding the prevention and treatment of childhood obesity in order to put that information in context with the new information which was shared during the in-service. This technique has

shown to enhance learning and allow for collaborative problem solving (Taylor & Hamdy, 2013).

The concept of andragogy was developed by Malcolm Knowles, who proposed a set of assumptions of how adult learners differed from child learners (McGrath, 2009). He proposed that educators of adult learners should act as educational facilitators and provide an environment which supports cooperative learning in the classroom (McGrath, 2009). Knowles felt adult learners should be allowed to use their experience and knowledge in solving real-life problems (McGrath, 2009). Andragogy, according to Knowles, is based on the following five aspects of adult learners, which differentiate them from child learners:

- Adults need to understand the reason behind learning new knowledge
- Adult learners should be allowed to share their views during the class session
- Adult have a lifetime of experience which needs to be applied in the classroom in order for the adult learner to understand the new material being presented
- Adult learners are motivated to learn by discussing both academic and personal issues related to the topic
- Andragogy works effectively when the classroom promotes a safe environment for open discussion among members (Taylor & Hamdy, 2013).

The educational session incorporated the principles on andragogy by establishing clear objectives with the project team and allowed opportunities for open discussion during the presentation to encourage the attendees to share their experience and knowledge among the group members.

Another concept that supports social learning theory is Wenger's concept of communities of practice (CoP). Healthcare sectors are encouraged to deliver high-quality healthcare as effectively and efficiently as possible (Ranmuthugala et al., 2011). In order to accomplish this goal, healthcare systems have turned to the business sector for templates to improve organizational performance (Ranmuthugala et al., 2011). One successful model from the business sector that is gaining popularity in the healthcare arena is the formation of a CoP (Li et al., 2009). CoP has been used in the healthcare sector to provide a template to guide practitioners to learn in social environments (Li et al., 2009). The concept encourages the interactions between experts through open discussion in order to facilitate knowledge and promote the exchange of information. The use of CoP's has been shown to improve healthcare performance by facilitating the implementation of evidence-based practice (Li, 2009). In addition, CoP's have been shown effective with virtual communities in bridging the knowledge gap between research and practice (Alali & Salim, 2013). This may be an effective model within the military sector considering the remote location of many of the Air Force Bases. The CoP model was briefly introduced in this educational session in order to encourage continued exchange of information among the multidisciplinary team beyond the in-service and to

allow for a transition to other military sectors for future use in the prevention and treatment of childhood obesity.

Incorporating adult learning principles into educational sessions can increase the effectiveness of lectures (Palis & Quiros, 2014). A key goal for this project was to teach the adult learners through an educational in-service that promoted dialogue, allowed for meaningful reflection, and offered high quality information in a timely manner. By applying the concepts of social constructivism, andragogy, and CoP, the project aimed to create an educational session which used the above teaching modalities which encouraged dialogue in order to actively engage the participants and allowed for a deeper understanding of the recommendations.

Definitions of important terms include overweight, obesity, and multidisciplinary. According to the CDC (2016), childhood overweight is defined as a body mass index (BMI) at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex. Obesity is defined as a BMI at or above the 95th percentile for children and teens of the same age and sex (CDC, 2016). A multidisciplinary team is a group of healthcare workers who are members of different disciplines each providing specific services to the patient (Health Service Executive, 2017).

Relevance to Nursing Practice

Obesity presents a broader problem to society and to the nursing practice in relation to the long-term negative effects of this condition. According to the CDC, obesity has been associated with an increased risk for a number of serious diseases and adverse health conditions (CDC, 2015b). Nearly half of all Americans have at least one

chronic condition and the medical treatment of these individuals is responsible for 83% of the total U.S. spending on healthcare (Trehearne, Fishman, & Lin, 2014). Primary care is recognizing the need to move away from an acute care office model to a model that can effectively address chronic conditions (Trehearne, Fishman, & Lin, 2014). Registered nurses are in an ideal role to improve the care for patients with chronic conditions based on their medical expertise and strong patient relationships. However, this shift to meet the needs of chronic care patients not only places a financial burden on the healthcare system, but challenges available resources in an environment that is already feeling the effects of shortages. According to the American Nurses Association (ANA, 2017), there is a projected need for nearly 6.5 thousand nurses by 2024. The prevention of chronic conditions such as childhood obesity, has the means to improve not only the quality of life and longevity of our patients, but reduce the cost of caring for these individuals later in life.

It is imperative that nurses acknowledge the importance of their role in preventing childhood obesity by recognizing that children who are overweight have a serious medical condition and are at risk for developing other long-term health problems. Traditionally, school nurses have had the primary role in addressing childhood obesity. In 2005, the IOM released recommendations that students should have their weight and height screened every school year and provided with appropriate wellness information (Koplan, Liverman, & Kraak, 2005). However, the role of nurses in obesity prevention needs to move beyond the scope of the school nurse to involve nurses in every clinical arena. The American Nurses Association (ANA) has issued a call to action for nurses to

develop skills such as advocacy and collaborative leadership in order to contribute to the prevention of childhood obesity (Berkowitz & Borchand, 2009). Nurses need to be more educated regarding current obesity prevention methods and position themselves as role models for their patients and families. In addition, the ANA has encouraged nurses to be actively involved in prevention strategies aimed at the entire family, initiate prevention methods early in childhood prior to establishing poor dietary habits, and support healthy lifestyle initiatives within their community (Berkowitz & Borchand, 2009).

Healthcare team members are encouraged to be aware of community based obesity prevention efforts and collaborate with a variety of professionals in order to improve the prevention and treatment of obesity (Daniels & Hassinik, 2015). Prevention strategies incorporating a multidisciplinary approach have shown some promising results (Farris, Taylor, Williamson, & Robinson, 2011; Okihiro, Pillen, Ancog, Inda, & Sehgal, 2013). Kaiser Permanente, the nation's largest not-for-profit integrated healthcare delivery system, has initiated an integrated, disease management approach in addressing the obesity epidemic (Histon, Goeldner, Bachman, & Rothert, 2005). They recommend using a multidisciplinary approach within the clinic setting in order to optimize the skills of each team member (Histon, Goeldner, Bachman, & Rothert, 2005). The recommended members include medical assistants, nurses, dieticians, health educators, and behavioral health specialists (Histon, Goeldner, Bachman, & Rothert, 2005). The use of a registered dietician has shown statistically significant reductions in body mass index among pediatric patients in a primary care setting (Resnicow et al., 2015). In addition,

therapy/counseling has shown improved nutrition and physical activity among obese children (Hadley, Hair & Dreisbach, 2010).

The doctoral project addressed the gap in practice between healthcare members knowledge about the clinical guideline for childhood obesity and adherence to the guidelines by providing an educational in-service on the recommendations. Research has shown a gap in knowledge regarding clinical best practices and provider adherence to guidelines (Spivack et al., 2010; Vine et al., 2013). This project increased the knowledge level of a multidisciplinary healthcare group within a MTF regarding the recommended best practices on the prevention, assessment, and treatment of childhood obesity. In addition, through the use of adult education principles, the project encouraged dialogue and collaboration among the multidisciplinary team which enhanced the learning experience of the multidisciplinary group. Lastly, this project addressed the gap in practice problem related to a lack of collaboration within the community by facilitating discussion in order to promote relationship building and knowledge exchange.

Local Background and Context

Obesity rates among children within the military sector parallel rates observed in the civilian sector (Spiker et al., 2015). However, military dependent children face unique consequences compared to the civilian population. Military children are more likely to enter the Armed Forces than their civilian counterparts (Tanofsky-Kraff et al., 2013). An increase in obesity among military families decreases the number of potential future participants who are eligible to serve (Tanofsky-Kraff et al., 2013). .An increase in body mass index (BMI) not only affects the recruitment of new members but also affects

military readiness and places a financial burden on the Department of Defense (Tanofsky-Kraff et al., 2013). Cawley (2010) listed the direct costs of childhood obesity, which included annual prescription drugs, emergency room visits, and outpatient costs, at $14.1 billion with an additional price of inpatient costs of $237.6 million. Indirect costs would include the expenses related to taking care of these obese children when they enter adulthood. Based on these statistics, an efficient and effective model for pediatricians to use in military clinics is needed to properly address this health epidemic and potential threat to national security. Educating team members on the evidenced-based best practices in the prevention, assessment, and treatment of childhood obesity is the first step in meeting this goal.

The project site was a MTF located in southern California which serves 8,500 patients to include active duty members, their spouses and children, and military retirees. Of the 8,500 patients, approximately 2,400 are children aged from birth to 18 years of age. The MTF employs eight primary care providers with two of them being pediatricians. An electronic medical record, the Armed Forces Health Longitudinal Technology Application (AHLTA), is used for capturing outpatient medical visits. Included in the electronic medical record is an age specific template for the clinic staff to chart all pediatric patient encounters. This template, which includes some of the AAP charting recommendations, contains BMI charts, questions regarding nutrition, exercise and screen time assessments, and a review of the family's medical history.

Definitions of locally used terms include military treatment facility and dependent. Tricare (2016) defines a military treatment facility as a hospital or clinic that

provides healthcare services to members of the uniformed services. A dependent is a spouse or child of a member of the uniformed services (Tricare, 2016).

Based on information between 2003 and 2011 from the National Survey of Children's Health (NCSL, 2017), the State of California had 15.3 percent of children between 10-17 years of age who were considered overweight and 15.1 percent who were classified as obese. According to the WHO (2012), effective healthcare policies can help prevent or reduce childhood obesity. The WHO (2012) supports the use of governments using population-level actions such as laws and regulations, taxes and subsidies, and social marketing campions in order to provide comprehensive childhood obesity prevention strategies. Currently, the State of California has approved two childhood obesity policies that were enacted in 2013 (NCLS, 2017).

The first legislation requires after-school programs to provide a nutritious snack or meal. High schools are required to provide a physical activity in addition to the healthy snack (NCLS, 2017). The policy also allows for school cafeteria funds to be used for food preparation expenditures, the cost of housing and equipping cafeterias, and for the cost of providing drinking water in cafeterias (NCLS, 2017). In addition, the policy extended the current standard, which prohibits the selling of less nutritious foods during the school day, by 1/2 hour before and after school (NCLS, 2017). The second California policy is the joint or cooperative use agreement for school facilities. This policy provides access to school's or community college's recreational facilities to residents of subdivisions with fewer than three acres of park area per 1,000 members of the population (NCLS, 2017). This policy can have a considerable impact on the

physical activity of a community, such as the county of Los Angeles, which has a population of 10.2 million people.

Additional policies have been developed in order to address the childhood obesity problem on a national level. The Department of Health and Human Resources allotted $650 million to the 2009 American Recovery and Reinvestment Act in order to fund all 50 states in addressing obesity through population based approaches (CDC, 2017). The funding is through the CDC's Division of Nutrition, Physical Activity, and Obesity (CDC, 2017). The goal of the initiative, Communities Putting Prevention to Work, is to reduce risk factors, prevent or delay chronic diseases, promote wellness, and provide sustainable health changes in communities (CDC, 2017). Of the 50 CDC funded states, 25 states have allotted a portion of their funds to implement obesity prevention in the area of early care and education (CDC, 2017).

Role of the DNP Student

The DNP student is a spouse of an active duty Air Force (AF) member and I previously worked as a pediatric case manager for the MTF. In addition, my husband is a Nurse Practitioner and currently holds the position as the Flight Commander for the clinic. I have also used this site for the required practicum hours towards my DNP degree. Due to my previous role and clinical time at this site, I have established a close working relationship with the pediatricians and support staff. As a result of this relationship, I am aware of the unique needs and future goals of the Air Force and the MTF. In addition, being a military wife has allowed me to better understand the unique challenges of the military family.

One of the upcoming priorities of the military system is in addressing childhood obesity and the impact it has on the military (Tanofsky-Kraff et al., 2013). The Veterans Administration and the Department of Defense have developed a number of programs for military children in order to address the problem of childhood obesity (Tanofsky-Kraff et al., 2013). However, additional measures are needed at the level of primary care in order to effectively prevent, treat, and monitor this chronic condition. Based on the relationship between the student and the MTF, I am in a unique position to assist in closing the gap between the military goals of addressing pediatric obesity and creating an educational initiative to meet the needs of a multidisciplinary audience.

In order to close the gap between the military goals of addressing pediatric obesity and creating an educational session for staff members, a number of steps were accomplished. The first step was to review the professional practice guidelines and recommendations regarding childhood obesity in order to gain a fuller understanding of the issue and recommended prevention and treatment. The second step involved developing the preliminary educational content and a knowledge evaluation tool for the session. The preliminary educational content and evaluation tool was then presented to the project team for review and feedback. After the project team was allowed sufficient time to review the suggested revisions, the program was presented to the staff. Lastly, an evaluation was performed to determine the change in the staff's knowledge regarding the presented information.

My passion for this project is a result of my previous experience working with the pediatric population and understanding the specific needs of a military child. In addition,

I have two children who have made a commitment to serve our Nation by also joining the AF. Childhood obesity within the military sector is a personal endeavor for me. Obesity places a child at risk for chronic diseases into adulthood and poses a national security challenge in regards to being unfit and ineligible to enlist in the military. According to the CDC, obesity has become one of the most common disqualifiers for military service by affecting 25 percent of those who apply to serve (NCSL, 2017).

Potential bias to this doctoral project may have been present secondary to educator assumptions regarding participant demographics, the level of clinical knowledge, and the previous military experience of the attendees. Due to the diversity of the military's demographics, those attending this educational session came from a variety of different cultures, backgrounds, professions, knowledge levels, and experience. In addition, the military employs members of all ages from around the world so personal customs and generational influences may be vastly different among participants. Lastly, the participants, as with all adult learners, had different learning styles that needed to be taken into account. One mean to overcome these biases was to utilize Knowles' principles of adult learning and applying those concepts to the educational session. Participants were encouraged to utilize their past experiences and apply that information to the newly acquired knowledge. In addition, the educational session used a variety of different teaching techniques to accommodate the participant's preferred learning style.

Role of the Project Team

A project team was assembled in order to assist in analyzing the individual learner's needs and to help establish the criteria for the staff education program. The

team comprised organizational leaders to include a pediatrician, disease manager, psychologist, dietician, staff educator, and process improvement coordinator. Consultation and coordination with the AF Research Oversight and Compliance Division and a representative of the MTF's Clinical Research Office and Health Insurance Portability and Accountability Act (HIPAA) was used to assist in processing the project's approval at the MTF level. Assistance from Information Systems, Population Health/Disease Management, Family Practice Clinic leadership, and nutritional and behavioral medicine representatives were consulted as needed.

An informational session was planned to provide the doctoral project team members with the background information and relevant evidence regarding childhood obesity. Each member was provided with a copy of the clinical practice guideline for the assessment, prevention, and treatment of childhood obesity as recommended by the AAP. In addition, a copy of the algorithm for the prevention and management of obesity for children and adolescents from the Institute for Healthy Childhood Weight was provided in order to give a visual representation of the guideline to facilitate a deeper understanding of the recommendation.

Weekly correspondence through meetings, emails, and/or conference calls was arranged to allow team members the opportunity to share their expertise in the creation of the staff educational program. Responsibilities of the team members was to evaluate and provide feedback on the proposed educational in-service. Timeline for completion was based on the project team's completion of the review of the educational program and

knowledge evaluation. The team was provided an initial review, secondary review, and a final review prior to the initiation of the staff training.

Summary

Clinical practice guidelines can help clinicians make the best possible care decisions regarding the treatment of their patients. The prevention and treatment of obesity is a complex issue which can be effectively treated using a multidisciplinary team. Lack of knowledge regarding the clinical practice guidelines is one barrier in the treatment of this condition. This project plan was to educate a multidisciplinary team at a military treatment facility by applying the principles of adult education in order to improve the care of their pediatric population. The planning of the educational session will be discussed in the following section.

Section 3: Collection and Analysis of Evidence

Introduction

The issue of childhood obesity in the United States has been prevalent for over 3 decades and remains above the Healthy People 2020 goals to reduce the proportion of children and adolescents who are overweight (Healthy People 2020, 2017). The purpose of this staff education project was to increase the knowledge level of a multidisciplinary team regarding the recommended best practices on childhood obesity by using a number of educational theories to facilitate learning and collaboration among attendees. A knowledge survey was distributed and collected before and after the educational in-service to determine the effectiveness of the educational program.

Practice-focused Question

Military children face unique stressors associated with their parent's military careers which likely increases their risk for obesity (Tanofsky-Kraff et al., 2013). This highlights the importance of developing prevention strategies within MTFs to address this risk factor. There is a gap in knowledge between clinical practice guidelines regarding childhood obesity and provider practice (Spivack et al., 2010; Vine et al., 2013). The organizational level practice-focused question was as follows: Among pediatric healthcare team members including physicians, nurses, dieticians, behavioral health clinicians, and support staff members within a military ambulatory care clinic in the Pacific United States, how does the implementation of an one hour training program improve staff knowledge about the guideline titled Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity

(as endorsed by the American Academy of Pediatrics)? The purpose of this project was to increase the knowledge level of MTF team members regarding the recommended best practices on the prevention, assessment, and treatment of childhood obesity and encourage dialogue and collaboration among those members.

A number of terms need to be defined related to the project regarding childhood obesity. According to the CDC (2016), BMI is calculated by dividing a person's weight in kilograms by the square of height in meters. For children and adolescents, BMI is age and sex specific and is referred to as BMI-for-age (CDC, 2016). To determine a child's weight status, an age and sex specific percentile for BMI is used in the calculation (CDC, 2016). This variation is based on age and sex because children's body composition varies based on those categories (CDC, 2016). BMI levels among children and adolescents are expressed relative to other children of the same age and sex (CDC, 2016).

Sources of Evidence

In 2005, the AMA, the HRSA, and the CDC, gathered a group of experts to update the 1997 childhood obesity recommendations. The recommendations, titled "Expert Committee Recommendations on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity", were released in 2007 and have been endorsed by the AAP. The IHCW (2015b) developed educational modules and an easy to use algorithm for primary care clinics which provides a structured format to translate the guidelines. Lastly, the California Medical Association Foundation (CMAF) developed a Child and Adolescent Obesity Provider Toolkit which included a "Quick and Basic Training Guide for Child and Adolescent Overweight and Obesity" as a framework

for training health care provider teams in primary care. All of these resources were sources of evidence for this doctoral project.

Multiple databases were searched including PubMed of the National Library of Medicine, Cochrane, and the Cumulative Index of Nursing and Allied Health Literature (CINAHL). In addition, sites such as the National Guidelines Clearinghouse (NGC), National Institute for Nursing Research (NINR), Agency for Healthcare Research and Quality (AHRQ), National Institute for Children's Healthcare Quality (NICH), and Institute for Clinical Systems Improvement (ICSI) were searched for supporting evidence and recommendations. Additional resources such as the CDC and the National Institutes of Health (NIH) were consulted for current statistics and up-to-date information regarding childhood obesity.

Search phrases to retrieve appropriate articles included the following keywords: *Childhood obesity, definition of childhood obesity, impact of childhood obesity, interventions for childhood obesity, primary care and childhood obesity, childhood obesity clinical practice guidelines, teaching clinical practice guidelines, adult education theories, andrology, communities of practice, and constructivism.* This search provided evidence to address the practice focused question.

The evidence generated from these resources was evaluated to assist in the planning of the staff education program. This evaluation helped address healthcare team members not being knowledgeable about the current recommendations for the assessment, prevention, and treatment of childhood obesity. The purpose of this project

was to increase team members knowledge about the guidelines. The evidence gathered from the search was used to create the educational initiative.

Evaluation of the evidence allowed for the DNP student to learn additional information in a number of areas related to this project. The review allowed for increased knowledge regarding educating healthcare members regarding clinical practice guidelines. In addition, the literature on EBP in improving the prevention and treatment of childhood obesity strengthened the integrity of this educational session. Lastly, the information was used to inform stakeholders of the importance of this childhood epidemic.

Evidence Generated for the Doctoral Project

Participants for the Educational Program

The participants for this project included healthcare team members from the MTF. All team members were eligible to participate in the educational session which used a knowledge survey completed before and after the educational program. It was important to measure the current knowledge of the team members related to EBP guidelines on childhood obesity in order to evaluate the effectiveness of the educational session. The goal was to provide an educational session that increased knowledge regarding the recommendations and to improve the care of this at-risk population.

Procedures

The educational project consisted of a knowledge survey which was given to all attendees at the beginning and end of the educational program. The survey tested participant knowledge regarding the recommendations for the assessment, prevention,

and treatment of childhood obesity. Once the pre-survey was completed, a childhood obesity inservice was presented to the healthcare group. After the presentation, a post-survey was administered to allow for assessment of the change in knowledge of participants.

Development and review of educational material. After reviewing the literature and research regarding childhood obesity, the specific learning objectives were formulated in conjunction with leadership and the project team. A formative review using an anonymous questionnaire was used in order to allow the organizational leadership and project team to make suggestions and offer feedback regarding the staff education program plan. After review of the suggestions and revised materials, resources were secured to implement the staff education program. The suggested program was reviewed again by leadership and the project team using an anonymous questionnaire and revisions were made based on those suggestions. The approved educational session used a lecture format with a visual presentation but interactive dialogue among participants was encouraged to allow for collaboration and exchange of knowledge.

Development of educational materials. Educational materials and questionnaires that have been previously developed and tested for validity and accuracy of content are preferred for use in educational venues. In 2008, the California Medical Association Foundation (CMAF) created a Child and Adolescent Obesity Provider Toolkit. The clinical guidelines in the toolkit were obtained from the 2007 AMA Expert Committee Recommendations Regarding the Prevention, Assessment and Treatment of Child and Adolescent Overweight and Obesity. The recommendations were refined by

the National Initiative for Children's Healthcare Quality (NICHQ) Childhood Obesity Action Network into an implementation guide. In addition, the Institute for Healthy Childhood Weight (IHCW) developed free online training modules and an easy to use algorithm for primary care clinics which provides a structured format to translate the guidelines. These resources were used as the main teaching tools for this project. The modules contain specific learning objectives, an instructional plan, core training materials, and a training evaluation. After approval was received from the IHCW to utilize the modules, implementation guide, and evaluation tools as a template for the educational session, the evaluations were combined and modified in order to accurately assess the participant's knowledge before and after the educational session (See Appendix A). The final evaluation was reviewed with the organizational leadership and the project team to ensure the evaluation's validity.

Protections

The human subject committee at Walden University reviewed the project for regulatory status. After the determination was made by the Walden University Institutional Review Board (IRB protocol number 09-15-17-0076361), the protocol and determination letter was sent to the Air Force Research Oversight and Compliance Division for concurrence (IRB protocol number FSG20170041N). Members of the adult healthcare team over the age of 18 were invited to participate in the educational inservice. The project did not include vulnerable subjects such as children, prisoners, or specific populations of race, religion, or ethnicity. The responses of the healthcare staff will not be disclosed outside of the project arena and will not place them at risk of liability or be

damaging to their financial standing, employability, or reputation. Test results were obtained and used for this project through attendees volunteering to participate in the educational session. Completion of the knowledge survey before and after the educational session provided implied consent for the project. Completed knowledge surveys will be kept in a secured area and will be shredded in accordance with Walden University's protocols.

Evaluation and Synthesis

A two-part analysis using Microsoft Excel Software was performed to evaluate whether an increase in knowledge regarding the current evidenced-based clinical practice guidelines on childhood obesity occurred after the educational session was provided. The project used a knowledge survey completed before and after the educational session to evaluate for the measurement of the participant's knowledge regarding the clinical practice guidelines. The MTF has approximately 50 staff members who were invited to participate in the educational session.

Summary

Childhood obesity has a significant impact on the future of healthcare to include the long term consequences, availability of resources, and financial considerations. Increasing healthcare team member's understanding of the clinical practice recommendations for the prevention, treatment, and assessment of childhood obesity has the means to improve patient outcomes. This project developed an educational in-service regarding the recommendations and then evaluated if learners had increased knowledge after the intervention. Findings from this proposed project and additional

recommendations to include plans for disseminating the findings will be addressed in the next section.

Section 4: Findings and Recommendations

Introduction

Being overweight is now the leading medical reason for failing to qualify for military service (Tanofsky-Kraff et al., 2013). Children of active duty members are most likely to enter the military than their civilian counterparts (Tanofsky-Kraff et al., 2013). Increased obesity among military children not only places them at risk for other chronic conditions, but must be viewed as a threat to national security based on the potential decreased number of qualified applicants. This doctoral project addressed the gap in practice problem between healthcare member's lack of knowledge about clinical practice guidelines for childhood obesity and adherence to the recommendations by providing an educational in-service. The organizational level practice-focused question was as follows: Among pediatric healthcare team members including physicians, nurses, dieticians, behavioral health clinicians, and support staff members within a military ambulatory care clinic in the Pacific United States, how does the implementation of an one hour training program improve staff knowledge about the guideline titled Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity (as endorsed by the AAP)? The purpose of this project was to provide an educational session using the principles of andragogy and constructivism on the recommendations for the prevention and management of childhood obesity in order to increase staff knowledge and promote novel approaches to addressing this problem within the military sector.

The sources of evidence used for the educational session came from a variety of resources. The clinical practice guidelines endorsed by the AAP were used as the primary source of evidence for this initiative. In addition, The IHCW has free online educational modules and an easy to use algorithm for primary care clinics which provided additional sources of evidence for this project. The CMAF developed a Child and Adolescent Obesity Provider Toolkit which included a "Quick and Basic Training Guide for Child and Adolescent Overweight and Obesity" which was used to assist in planning the inservice. Lastly, sources of evidence included the theories of andragogy and constructivism which were used as a framework for planning the project in order to increase collaboration and sharing of information among the participants. The sources of information were obtained through an extensive review of the evidence related to childhood obesity. In addition, Dr. Victoria Rogers, Associate Director with the IHCW, was contacted and agreed to serve as a content expert for the project.

After obtaining written permission from Dr. Rogers at the IHCW to use the training modules and knowledge survey developed by the IHCW for this educational session, the modules were reviewed and consolidated into a PowerPoint presentation. The main focus of the inservice centered on the Algorithm for the Assessment and Management of Childhood Obesity (IHCW, 2015a). Lastly, the six training modules within the IHCW provider resources included post event evaluations which were previously validated for accuracy by the IHCW. Those evaluations were consolidated into a ten item knowledge survey that was given to the participants before and after the

educational inservice to assess the change in knowledge of the participants (See Appendix B).

The results of the knowledge survey were evaluated to determine if the intervention was successful in increasing participant knowledge regarding the expert committee recommendations. The knowledge survey was used as a measurement tool to determine each participant's knowledge regarding the clinical practice guidelines. A paired sample t-test analysis using Microsoft Excel software was performed to evaluate whether an increase in knowledge regarding the current evidence-based clinical practice guidelines on childhood obesity occurred after the educational session was provided.

Findings and Implications

The educational session was attended by 27 participants out of a potential 50 participants (54% participation rate) with 24 (89% completion rate) completing the pre and post knowledge survey, which served as the consent form for the project. The one hour educational session was found to significantly increase the staff's knowledge regarding the clinical practice guidelines regarding the prevention and management of childhood obesity. During review of the completed knowledge surveys and after consultation with the project team, one question (#9) was excluded from the survey analysis because the question was not covered during the inservice due to time constraints. Analysis of scores were based on the resulting 9-item knowledge survey.

Pretest scores ranged from 33 to 89% while posttest scores ranged from 44 to 100%. The average pretest score was 56% while posttest scores averaged 76%. In this participant sample (n=24), the knowledge survey scores increased on the posttest

knowledge survey after the educational program was presented. The analysis found the change in participant scores was significant which confirmed the inservice was effective in increasing participant knowledge about the guidelines. The pre and posttest scores and statistical analysis are summarized in Table 1.

Table 1

Pretest and Posttest Scores for all Participants

Test	**N**	**Mean**	**SD**	***t***	***P***
Pre-Test	24	5.08	1.35	-6.21	0.00
Post-Test	24	6.88	1.26		

A number of unanticipated limitations occurred during the planning of this educational inservice which might have impacted the findings. The project had to be approved by the Air Force Research Oversight and Compliance Division prior to the inservice being scheduled at the MTF. Once approval was granted, the organizational leadership felt the inservice needed to take place within a two week time period due to other organizational commitments. The shortened time between receipt of IRB approval and the actual educational session may not have allowed for sufficient time for participant recruitment nor did it allow for the application of continuing education units which might have attracted additional attendees.

In addition, the leadership moved the inservice location to an offsite facility due to scheduling conflicts. Unfortunately, the offsite facility was too small for the number of

participants attending the conference which required some of the attendees to sit on the floor to complete their knowledge surveys. The inadequate conference location may have affected the participant's ability to accurately complete the knowledge surveys.

Nevertheless, the findings suggest that a one hour educational inservice can significantly increase a participant's knowledge regarding the clinical practice guidelines for childhood obesity. Historically, physicians have reported a lack of time, resources, and knowledge about the published recommendations as barriers to pediatric obesity prevention (Plourde, 2012). In addition, providing pediatricians with short educational sessions on the updated clinical guidelines can have a dramatic increase in their self-reported counseling ability regarding healthy eating and lifestyle modifications (Plourde, 2012). This project supports those findings by showing a one hour inservice can impact a healthcare member's knowledge level.

The United States Preventative Services Task Force (USPSTF, 2013) recommended that children be screened for obesity and referred to comprehensive behavioral interventions to improve their weight status. This project has shown improvement at the military clinic level in raising the knowledge level of staff members. A similar educational inservice could easily be implemented at other MTF's in order to increase staff knowledge regarding best practices in addressing the growing pediatric obesity problem. This project can help improve systems of care within the entire military sector by helping to advance the implementation of these recommendations.

The majority of children within the United States do not receive adequate treatment for obesity (Wilfrey, 2017). Interprofessional education is needed to support

the comprehensive, multicomponent care delivery system which is required to treat this condition (Wilfrey, 2017). This project has the possibility to have a positive impact on social change due to the potential effect on childhood obesity by introducing education regarding the clinical evidence on the treatment of this condition. Multidisciplinary interventions are needed to promote change within the standard pediatric clinic as recommended by the USPSTF and the AAP (USPSTF, 2013; Barlow, 2007). This project provided a short, condensed educational session on the clinical practice guidelines for the prevention, assessment, and treatment of childhood obesity and significantly increased the participant's knowledge level of the recommendations.

Recommendations

One recommended solution to address the gap in practice problem between clinical practice guidelines for the prevention, assessment, and treatment of childhood obesity and provider practice is to ensure the use of evidence based protocols provided by a well-trained healthcare team (Wilfrey, 2017). Efforts are needed to accelerate evidence into practice by developing feasible, acceptable, effective, and sustainable care delivery models to address the pediatric obesity epidemic (Wilfrey, 2017). Barriers to the implementation of the childhood obesity guidelines include a lack of provider training (Wilfrey, 2017). A priority in addressing these barriers has been the need for the development of standardized training and certification which allows for delivery of evidenced-based treatments in a variety of settings (Wilfrey, 2017).

Using the training modules provided by the IHCW is one avenue to address this priority. The educational modules are free to use by the public and also provide

continuing education units for members of the AAP. The modules can be completed by any member of the clinical staff and then shared with other members of the team in order to accelerate translation into practice. This project could be used as a template in order to train additional team members. An additional recommendation discussed after the inservice was the development of an obesity champion who could complete the online modules by the IHCW and then serve as the lead person in training the staff and incorporating these recommendations into patient care. The use of change champions can be a critical component in transformative change efforts (Shaw et al., 2012).

The only costs related to this project was the purchase of a healthy breakfast as recommended in the CMAF's Child and Adolescent Obesity Provider Toolkit (2009). The toolkit recommended using the American Cancer Society's Meeting Well program in designing the inservice agenda (ACS, 2005). The Meeting Well program provides tools for planning healthy meetings and events to include active ice breakers and healthy food options. These recommendations were used in preparing the food and activities for the inservice.

Contribution of the Doctoral Project Team

The formation of a project team was used in order to obtain guidance and leadership support in developing objectives and educational goals regarding the treatment of childhood obesity and to help establish the criteria for the staff education program. The team comprised organizational leaders to include a pediatrician, disease manager, psychologist, dietician, staff educator, and process improvement coordinator. The initial step was the arrangement of an informational session where the doctoral project team

members were provided with an overview of the relevant evidence regarding childhood obesity. Regular correspondence with the project occurred through meetings, emails, and/or conference calls to allow team members the opportunity to share their expertise in the creation of the staff educational program. In addition, Dr. Tory Rogers from the IHCW, agreed to serve as content expert and was emailed regularly to provide guidance on the planned agenda for the inservice. Responsibilities of the individual team members included assisting in creating the objectives for the inservice and to provide feedback and evaluation of the proposed educational in-service. The project team was provided an initial review, secondary review, and a final review prior to the initiation of the staff training.

Plans to extend the DNP doctoral project include the formation of an obesity champion and using the process improvement (PI) coordinator to assist in implementing the recommendations provided during the inservice at the MTF. One pediatrician has offered to be the obesity champion and is interested in moving forward with using the staged approach for the treatment of overweight and obese pediatric patients as recommended by the AAP. Initial thoughts include the pediatrician completing the online training modules offered by the IHCW and leading the process improvement efforts in conjunction with the PI coordinator. In addition, the pediatrician is interested in working with the DNP student to extend these efforts to other AF MTF's through the use of the COP's module which was discussed after the educational inservice.

In addition, the doctoral team discussed the need to address the lack of funding for children needing tertiary care intervention at a pediatric weight management center.

Currently, Tricare, the healthcare system for the Department of Defense (DOD), does not cover doctor visits for the treatment of obesity or for weight loss programs (Tricare, 2016). The Affordable Care Act mandates that patients should not have to pay copays or deductibles for the treatment of obesity (Wilfrey, 2017). Unfortunately, the Affordable Care Act allows for plans to be grandfathered in if they existed prior to March 23, 2010 which includes Tricare (Wilfrey, 2107). Advocating for policy change at the DOD level for the treatment of childhood obesity is another initiative set forth by the doctoral team after completion of the inservice. This future endeavor is also a recommendation outlined by the USPSTF (2013).

Strengths and Limitations of the Project

The staff education project has several identified strengths and limitations. One strength was that the inservice was based on the latest clinical practice guidelines for the prevention, assessment, and treatment of childhood obesity as endorsed by the AAP. The project was also very fortunate to have input from a content expert within the IHCW. Another strength included the use of educational materials and a survey tool which was already tested and validated by the IHCW. This helped to ensure content validity of the pre and posttest evaluations. In addition, the use of the project team was beneficial in providing feedback and recommendations specific to the military audience prior to the inservice taking place.

Limitations included the small participant sample size which may have affected the survey results. Grove, Burns, and Gray (2013) suggest that sample sizes for quantitative studies should have at least 30 participants in order to have a normal

distribution. In addition, researchers are encouraged to anticipate an attrition rate of 10-15%. The MTF has approximately 50 staff members who were invited to participate which should have provided enough study candidates for this project. Unfortunately, a number of participants might not have been able to attend due to the last minute scheduling and offsite location of the inservice. Lastly, using a one group pretest/posttest design does contain factors that may threaten the studies validity. Those factors include posttest scores that might be altered secondary to maturation processes, administration of a pretest, and changes in instruction (Grove, Burns, & Gray, 2013).

Implications for future studies include the use of an participant evaluation to assess the attendee's satisfaction which this type of educational inservice. In addition, a quality improvement project which focuses on the outcomes related to the implementation of these clinical practice guidelines may be beneficial in assessing the feasibility of the recommendations within a military facility. Lastly, similar studies held in civilian primary care practices may be needed to assess if these findings are transferrable to other non-military practices.

Summary

A gap in practice problem exists between provider knowledge about the clinical practice guidelines for the prevention and treatment of childhood obesity and provider adherence to the guidelines. After an extensive literature search, an educational inservice was developed based on current clinical best practices and using adult education principles to encouraged dialogue and collaboration among the multidisciplinary team. The inservice included a one hour lecture format using a PowerPoint presentation based

on the modules developed by the IHCW. Analysis of the data from this educational inservice found a significant improvement in participant knowledge between the pretest and posttest surveys. These findings suggest that it is feasible to offer a one hour inservice which can significantly improve staff's knowledge about the clinical practice guidelines on childhood obesity. An analysis of self and the process for dissemination will be discussed in the following section.

Section 5: Dissemination Plan

The plans for dissemination are to share the results from this project with the MTFs executive leadership. In coordination with the project team, a PowerPoint presentation will be shown to the Command Staff on one of the upcoming training days. Locally, results will be forwarded to the MTF's EBP and Quality Counsels. According to members of the project team, future endeavors are being planned to improve the provider's adherence to the childhood obesity guidelines. As required by the military's IRB board, this project in not intended to be generalizable to audiences outside the military system and therefore cannot be published to nonmilitary audiences. However, it may be possible to seek publication in the peer-reviewed journal, *Military Medicine.* In addition, this project could be highlighted in a poster presentation at one of the disease management conferences. For instance, the Chronic Disease Prevention & Management in Primary Care conference would be an excellent venue to present a childhood obesity prevention and treatment project highlighting this educational inservice.

Analysis of Self

The IOM (1999) defined quality in healthcare as those interventions which enable patients to reach desired outcomes. The IOM (1999) reported a 17-year gap between the creation of new evidence and the application to practice. Nursing is in a unique position to assist in reducing this gap by researching the most effective interventions and advocating for that care for patients. The DNP prepared nurse is trained to lead members of the healthcare team in bringing evidence based care to the bedside. As a DNP prepared nurse, I used my training as a practitioner, leader, scholar, and project manager in order to

accomplish that goal. I have been able to incorporate all of those skills in creating and implementing this project on childhood obesity.

As a nurse, military spouse, and mother, this project has been a personal endeavor which I plan to continue after the completion of the DNP program. The DOD has acknowledged a priority in addressing childhood obesity and the impact it has on the future of American defense (Tanofsky-Kraff et al., 2013). A number of initiatives have been developed to address the problem of childhood obesity within the military system (Tanofsky-Kraff et al., 2013). However, additional measures are needed at the level of primary care in order to effectively prevent, treat, and monitor this chronic condition. My goals are to continue to work towards improving the prevention and treatment of childhood obesity at the clinic and national level by working on policy change. Based on my work as a pediatric case manager, I am in the ideal position to assist in improving the care of this patient population.

White and Dudley-Brown (2012) appealed to the research community to advocate for the use of evidence-based research through policymaking efforts. Nurses have the capability to positively influence policymaking due to their excellent communications skills, trustworthiness, and diverse backgrounds (Stokowski, McDonald, & Lovejoy, 2010). One of my future goals is to advocate for policy level change at the DOD level in order to promote insurance coverage for the tertiary treatment of childhood obesity. My plan is to start at the local level through my connections as a military spouse and continue at the regional and national level.

The DNP pathway has allowed me to grow as a nurse leader and scholar practitioner. A number of barriers occurred during the planning of this educational inservice. Those barriers ranged from staff resistance to unexpected venue changes. However, I was able to overcome those barriers by using the training I received during this journey. Means to address those barriers supported the creation of a culture for translation. The culture change during this project was accomplished through a variety of means. The first step included stakeholder education which is considered a critical component of knowledge translation (White & Dudley-Brown, 2012). Another recommended means of translating knowledge into practice is to implement the changes in phases so that the change is better tolerated (White & Dudley-Brown, 2012). In addition, the use of case studies, which was incorporated into the educational inservice, encourages a humanistic perspective for the change (White & Dudley-Brown, 2012). Lastly, the use of change champions who can act as role models during a process improvement plan can help cultivate a positive environment (Shaw et al., 2012). The MTF has now elected to appoint an obesity champion to further their endeavors towards this goal.

Summary

The purpose of this project was to increase the participant's knowledge level regarding the recommended best practices on the prevention, assessment, and treatment of childhood obesity and encourage dialogue and collaboration among a multidisciplinary team. The goal was completed by creating an evidence based educational inservice using the principles of adult learning. The findings of the project found that a one hour

educational inservice can significantly increase a participant's knowledge regarding the clinical practice guidelines for childhood obesity. The IOM (2010) has recommended expanding opportunities for nurses to lead and manage collaborative efforts with members of the healthcare team to improve practice environments. Increasing the knowledge level of this multidisciplinary group was the first step in addressing the IOM's call to design effective obesity prevention programs using an integrated approach.

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Appendix A: Institute for Health Childhood Weight Approval

Victoria W. Rogers <ROGERV@mmc.org>

Wed 10/11/2017, 3:15 PM

Hi Kris

I am happy to help you with this – you can use any or all of the modules for your in-service.

Tory
Victoria W. Rogers, MD
Medical Director, [letsgo.org]Let's Go!

The Barbara Bush Children's Hospital at Maine Medical Center
Portland, ME 04102
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Appendix B: Participant Knowledge Survey

Childhood Obesity Test

1. Fasting glucose, fasting lipid profile, ALT, and AST are the labs recommended for:
    a. Only children with BMI > 99%
    b. Children identified as overweight with risk factors and children with obesity
    c. All children
    d. Only patients with findings on the physical exam
2. In terms of childhood obesity rates, which statement accurately depicts a current trend over the last decade?
    a. Overall prevalence has more than tripled over the last 10 years
    b. There is a higher prevalence of obesity in children in minority ethnic and racial groups
    c. The prevalence of severe obesity is decreasing
    d. The rates of obesity for young children and adolescents are the same
3. The primary care provider has a clear role to play in addressing overweight and obesity in the context of primary care. Some of those roles are identified below, which one is NOT accurate?
    a. Accurately weigh and measure patients (<2 years-weight for length; >2 years body mass index)
    b. Only screen and counsel for healthy eating and physical activities behaviors in those children with a BMI higher than 85
    c. Identify children with obesity and screen for comorbidities
    d. Engage and partner with families of children with obesity in weight management
4. What does the 1 in 5-2-1-0 stand for?
    a. 1 hour of screen time
    b. 1 sugary sweetened beverage a day
    c. 1 hour of physical activity
    d. 1 fruit each day
5. There are three main elements of a comprehensive obesity assessment in the context of a well visit. Which one of these is not included for all children?
    a. Behavioral assessment
    b. Weight classification
    c. Medical assessment (review of systems, physical exam, and history)
    d. Lab screening

6. The global aim for the childhood obesity in primary care project is:
    a. To accurately assess behavioral risk associated with pediatric overweight/obesity
    b. To improve evidence-based primary care practice surrounding healthy weight assessment for pediatric patients, from birth to 21 years of age
    c. To engage in patient-centered counseling with children and families in the context of overweight and obesity
    d. To accurately weigh, measure, and chart growth, based on age and sex at all well child visits
7. Stage 1 (prevention plus) and Stage 2 (structured weight management for patients) is feasible in the context of primary care. Some strategies to effectively tackle follow-up care include all the following except:
    a. Patient-centered-let the patient and family be the guide
    b. Goals should be realistic and focus on behaviors not necessarily weight
    c. Follow up must take place on a schedule of every 4 months in the physician office
    d. Consider engaging partners (such as registered dietician, psychologist, health educator, etc.) to help with ongoing care and management.
8. Which statement is false?
    a. Laboratory screening is not helpful in early identification and treatment of comorbidities
    b. The risk of any comorbidities with obesity varies by age, socioeconomic status, and racioethnic status
    c. Several major comorbidities are asymptomatic
9. Acanthosis nigricans is a skin condition that can be seen in children with obesity. What is it associated with?
    a. Pseudotumor cerebri
    b. Precocious puberty
    c. Insulin resistance
    d. Slipped capital femoral epiphysis (SCFE)
10. A comprehensive review of systems can inform diagnosis of potential comorbidities. Below is a list of symptoms, which one of these is not indicative of an obesity-related comorbidity?
    a. Snoring
    b. Hip pain
    c. Vertigo
    d. Polyuria and polydipsia