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Addresing Challenges in Caring for Morbidly Obese by Learning about Bariatric Care

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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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Walden University
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MSN, Walden University, 2015

BSN, Chamberlain College Nursing, 2010

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Obesity is a public health issue linked to high morbidity and mortality among critically ill patients. There are approximately 15.5 million morbidly obese adults in the United States. The purpose of the project was to develop and implement an educational program using evidence-based protocols for bariatric care to educate nurses and caregivers regarding best practices when attending to obese patients. The practice-focused question examined whether learning about evidence-based bariatric care would improve the knowledge of nurses and caregivers caring for morbidly obese patients in an acute care setting. The theoretical foundation was Bandura's self-efficacy theory. A questionnaire using a Likert scale was used to collect data from the 100 participants before and after the learning intervention. The selection criteria involved the inclusion of all nurses and caregivers working at the adult in-patient unit. A paired-samples *t*-test was used to evaluate levels of improvement in knowledge of the causes, treatment, management, and care of patients with obesity and the challenges in caring for morbidly obese patients. The findings indicated a statistically significant increase in participants' knowledge of the causes ($p < 0.000$), treatment, management, and care of patients with obesity ($p < 0.000$) and the challenges involved in caring for morbidly obese patients after the learning intervention ($p < 0.004$). Thus, the implementation of an educational intervention may be effective in improving nurses' knowledge of bariatric care. The implications of the project for social change involve the improvement in nurse's knowledge of clinical guidelines, which can lead to increase in patient satisfaction, and improved overall health outcomes.

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Dedication

This project is dedicated to Jermika Comeger, who gave countless hours reviewing my work and providing inspiration through my course of study. To my two sons, Samuel and Jeremiah, and my wife who encouraged me to pursue this program, I appreciate each of you.

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Section 1: Nature of the Project

Obesity in critically ill patients is linked to increased mortality and morbidity, prolonged duration of mechanical ventilation (MV), long stays in hospitals, readmissions, and prolonged hospital stays (Akinnusi, Pineda, & El Solh, 2008) In the year 2010, approximately 15.5 million United States (U.S.) adults were morbidly obese, which is a 70% increase compared to the rates recorded in 2000 (Brill et al., 2014). Obesity is associated with a range of metabolic and cardiorenal disorders and hypertension (Hall et al., 2014; Hall, do Carmo, da Silva, Wang, & Hall, 2015; Van Rongen et al., 2016). The increase in the number of morbidly obese patients admitted to hospitals over the years should be an indicator of the care providers' need for advancing methods involving caring for bariatric patients. Thomas and Lee-Fong (2010) recommended the development of a bariatric team of experts to provide consultation regarding the care and mobility issues of patients.

Learning about bariatric care is important in ensuring the best possible dignified care for morbidly obese patients. The aim of this staff development project was to train nurses and caregivers effectively about bariatric care to address the challenges faced when caring for morbidly obese patients. Positive social change comprises a transformation of behavioral patterns and cultural values that results in significant health outcomes. The impacts of this project on positive social change through fall prevention include improved patient satisfaction and quality of life, decreased healthcare costs, and improved overall health outcomes. The staff development project would improve the

Nursing staff's knowledge to enable them to deliver bariatric care to morbidly obese adults efficiently. Enhancing the understanding of nurses and caregivers in an acute care setting in a specialized facility would enhance the quality of bariatric care services provided to patients.

Problem Statement

Obesity has increasingly become a significant problem in healthcare systems globally. Additionally, in the year 2013, approximately 31.6% of men and 33.9% of the women in the United States were obese. According to the Centers for Disease Control and Prevention (CDC, 2018), there were about 93.3 million obese adults in the US in 2015/2016. Some of the common comorbidities linked to obesity include metabolic endocrinal, cardiovascular, respiratory, gastrointestinal, and musculoskeletal disorders, as well as cancer and genitourinary disease. Being overweight affects the mobility of patients, which significantly limits their ability to perform activities of daily living (ADL) such as bathing, skin care, feeding, and toileting (Hall et al., 2014; Hall et al., 2015).

According to Hales, de Vries, and Coombs (2017), morbidly obese patients may require prolonged tracheostomy tube placement and mechanical ventilation, and thus have unique demands for intensive care services. In addition, nurses who care for morbidly obese patients are faced with various psychological and resource-based challenges that may negatively influence the quality of care (Hall et al., 2014). The main difficulties identified are associated with equipment needs, nurses' attitudes, and patients' personality (Hales et al., 2017). In addition, patients' physical size can potentially

compromise nursing interventions among obese individuals (Camden, 2009). The healthcare facility hosting the project has had several obese patients in the past admitted. The number of obese patients admitted at the hospital is steadily increasing with an observed rise in the rate of readmissions. The main challenge at the hospital in regard to caring for morbidly obese patients is lack of knowledge regarding bariatric care among nurses.

The acute care facility is located in an urban area, serving a population of about 70,000 residents. The hospital has in the past 10 years experienced a steady increase in the number of obese patients for general and bariatric care. There has been a 10% increase in readmission cases among obese patients in the hospital in the last one year. The hospital management has also received reports of negative attitudes and mistreatments of obese patients by the nursing staff. The steady increase in the number of obese patients admitted for bariatric care combined with the negative reports of nursing staff attitudes and knowledge necessitate the implementation of the project at the facility.

This project focused on implementing a staff education intervention to improve provider knowledge of bariatric care for obese patients, thus improving the type of care offered at the facility. Enhanced care for bariatric patients could improve their health, thereby reducing their length of stay at the hospital and the costs of care. According to Hales et al. (2017), implementing a best practices program such as an education plan enhances the care delivery process for caregivers of morbidly obese patients in hospitals due to improved knowledge regarding bariatric care.

Purpose Statement

The purpose of this project was to develop and implement an educational program, using evidence-based protocols for bariatric care to educate nurses and caregivers regarding best practices when attending to obese patients. The project was conducted in an acute care setting in a specialized facility that attends to bariatric patients. The staff at the facility lack knowledge specific for caring for bariatric patients to attend to the increasing number of patients. There has never been an evidence-based education intervention conducted at the facility on care for bariatric patients and the nursing staff often depend on the knowledge acquired from school and experience gained in practice.

The following practice-focused question guided the project: Among nurses and caregivers in an acute care setting, does learning about evidence-based bariatric care improve their knowledge regarding caring for morbidly obese patients? The doctoral project has the potential to address the gap in practice on nurses' limited knowledge regarding specialized care for morbidly obese patients. Improved knowledge regarding specialized care among the nursing staff would enhance their skills of bariatric care and the quality of care offered to the patients. Increased awareness among the nursing staff may lead to improved health outcomes in the long term. The findings of the project would initiate a change in practice where healthcare managers can learn the importance of introducing educational programs for their nursing staff regarding bariatric care. The

adoption of such educational programs within healthcare facilities was also expected to improve the knowledge and skills of the nursing staff in terms of bariatric care.

Nature of the Doctoral Project

This project involved the development and implementation of an educational intervention regarding caring for bariatric patients. The nurses and caregivers working in an acute care facility that provide specialized bariatric care services attended the intervention program. The project participants included nurses and other caregivers who were educated on specialized bariatric care for obese patients to improve their knowledge. Testing participants' knowledge levels established the outcome of the project before and after the implementation of the educational program. The evidence was collected through questionnaires issued to participants to collect their self-reported knowledge regarding bariatric care.

The education program was developed from existing literature on evidence-based bariatric care protocols. The intervention was designed by the DNP student and assessed by a nurse practitioner certified in bariatric care working at the acute care facility, who also served as the preceptor to this project. The preceptor assisted in developing the educational program by assessing the material to ensure that the information presented was up to date and covers the necessary basics of bariatric caregiving. The preceptor also met with the DNP student during the development phase to discuss progress and offer insights on what to be included in the educational program.

The effectiveness of the education program was evaluated through testing participants' knowledge levels after the intervention and compared to the data recorded before the project implementation. The expected project outcome was improved knowledge among nurses and caregivers at the acute care facility. The participants' knowledge was assessed through the use of questionnaires structured to obtain their knowledge levels about bariatric care measured using a self-developed structured questionnaire. To establish this, the project involved pre and posttest collection of data. The participants attended training sessions held at the acute care facility for 6 weeks and tested after the intervention to determine any changes in knowledge regarding bariatric caregiving. The observed change in participants' knowledge levels was attributed to the educational program. There was a one week break between the last education session and posttest data collection to allow for knowledge retention among the participants. Continuing education unit (CEU) credits were awarded to all participants who completed the staff education program. Continuing education unit credits include hours of participation in accredited programs by licensed professionals or those with certificates to practice (Libner, 2016). Normally, one CEU represents 10 hours working in an accredited program (Libner, 2016).

The goal of the staff development project was to improve the knowledge of the nursing staff in an acute care setting taking care of morbidly obese patients. The short-term objective of the project was to train and educate the nursing staff about bariatric care to ensure that they have adequate knowledge to provide required services to their

patients. The project aims to improve knowledge levels of the facility staff to ensure that they are all able to provide quality bariatric care. The project targeted all the team in the facility who were expected to gain considerable knowledge about obesity and care for bariatric patients effectively. Improved knowledge among the participants was expected to be effective in overcoming challenges experienced in caring for morbidly obese patients. The DNP student also expected that after the learning exercise was completed, nurses in the acute care setting would have improved knowledge regarding how to use bariatric guidelines and equipment to provide care to obese patients.

Significance

The stakeholders affected by the local problem include patients and their family members, healthcare organization, registered nurses (RNs), and caregivers. Caregivers help RNs with services that require direct care to patients, therefore addressing the health problem would improve caring. Provision of care to morbidly obese patients helped minimize readmission rates and lengths of stay in the 250-bed facility. The patients would experience improved healthcare services because nurses had improved knowledge of how to use bariatric guidelines and equipment to provide care to obese patients.

Obesity has a high prevalence in the U.S. and is associated with a wide range of comorbidities, thus significantly affecting the quality of life of patients (Brill et al., 2014; Owen-Smith, Donovan, & Coast, 2016). Care for the morbidly obese is more demanding because of the various health conditions that may coexist in individuals in conjunction with their immobility due to weight. There have been significant challenges in caring for

morbidly obese individuals, and effective solutions have not yet been determined. Therefore, this project is essential to nursing practice because increased knowledge of evidence-based bariatric protocol is likely to reduce the challenges faced by nurses and caregivers attending to morbidly obese patients.

Improved knowledge and training about bariatric care contributes to positive social change by enhancing nurses and caregivers' self-efficacy in addressing the challenges of caring for morbidly obese patients. Bariatric surgery is costly, and education on how to use bariatric equipment may save money. Extra costs incurred by patients and their families would reduce lengths of stay, and knowledge acquired by nurses would contribute towards improving patients' health outcomes. Also, the doctoral project has potential transferability in that the findings can encourage other hospitals to incorporate bariatric guidelines and protocols to increase nurses' knowledge. The findings of the project contributed to promoting social change in practice by ensuring that morbidly obese patients are provided with bariatric care to improve their wellbeing. The findings from this project implementation revealed whether patients who cannot afford bariatric surgery could be provided with the best care to improve their quality of life and reduce readmission rates of morbidly obese people.

Summary

Obesity is a primary clinical and public health problem affecting Americans. Caring for morbidly obese patients is complex and challenging because the nursing staff has limited knowledge. The project was significant because the findings could be used to

improve the approaches being used by the nursing staff caring for morbidly obese people and promote positive health outcomes. Improving the quality of care given by the nursing staff is likely to result in a decline in readmission rates of morbidly obese people. Section 2 presents the background and context and comprises of the theoretical framework for the project, relevance of the project to nursing practice, local background and context of the project, and role of the DNP student.

Section 2: Background and Context

The primary role of nurses is to provide care to patients, especially those in the acute care setting. Currently, there are no national guidelines on specific education regarding morbidly obese care that can be included in the advanced practice curricula. Also, obesity education is rarely incorporated into the main nursing core course, leading to increased difficulties for students to consider the subsequent course for diagnosis and management of the illness. The subsequent course includes lessons on the causes of obesity and effective prevention strategies. The present shortage of nurses and caregivers and the prevailing rates of obesity indicate the health care practitioners' need to be well-educated on the topic. However, the knowledge gap among nurses and caregivers in a specialized care unit for morbidly obese patients poses challenges in providing bariatric care.

The practice-focused question is: Among nurses and caregivers in an acute care setting, does learning about evidence-based bariatric care improve their knowledge regarding caring for morbidly obese patients? The purpose of this project was to develop and implement an educational program using evidence-based protocols for bariatric care to educate the nursing staff on best practices when attending to obese patients. Section 2 is composed of the following subsections: concepts, models, and theories, background and context of the DNP project, relevance to nursing, the role of the DNP student, and the role of the project team.

Concepts, Models, and Theories

Developed by Albert Bandura in 1977, the self-efficacy concept is a behavioral learning theory that focuses on enhancements of human achievement and personal well-being. Bandura (1977) emphasized that people's expectations and assurance varied and had an effect on thinking, feeling, motivation, and behavior to execute a personal goal. The theory is based on the supposition that the person being educated regarding a learning behavior is supposed to discover his or her own competencies in fulfillment of the designated task (Bandura, 1977). People tend to become self-motivated if self-efficacy towards goal attainment is perceived. Thus, the provision of education on bariatric care can improve the knowledge of nurses to address challenges in caring for morbidly obese people.

Bandura's theory is based on four factors influencing self-efficacy. The first factor is enactive attainment, and it relates to the ability to master an experience and the perception that success increases self-efficacy and creates personal confidence needed to assist and improve performance (Bandura, 1977). Addressing challenges in caring for morbidly obese patients can increase the self-efficacy and personal confidence of nurses (Tanner, 2017). Second, vicarious experience is related to when a person acknowledges the success of peer, and the acknowledgment motivates the other person to develop a self-efficacy. For example, when nurses are equipped with skills, ability, and knowledge related to the provision of specialized care, patients' needs are met. Social persuasion

comprises direct and non-direct encouragement that improves or destroys an individual's self-efficacy.

Encouragement by third parties such as nurses' educators can encourage social persuasion. The physiological factor is linked to beliefs regarding psychological responses that are perceived as negative to the patient diagnosed with obesity (Bandura, 1977). Failure to provide bariatric care can increase the risk for poor health outcomes and wellbeing of the person (Tanner, 2017). The self-efficacy theory is applicable in this staff development project because it can be used to increase knowledge among nurses on bariatric care. Also, self-efficacy theory is directly linked to this project because enhancement of nurses' perceived confidence and capability due to education can positively improve resource use, communication with patients, and the adoption of bariatric care.

Literature Review

A review of previous literature was conducted from the following databases: EBSCOHost, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Google Scholar, Cochrane, and ProQuest. A search was conducted using the following search terms: *challenges in caring for morbidly obese patients*, *management of morbidly obese patients*, *obesity education*, and *care for morbidly obese patient undergoing bariatric surgery*. The inclusion criteria used to select articles for the literature review required publication in the English language only and peer-reviewed scholarly journal articles, in full text which were published in the last 5 years.

The reviewed literature covers the challenges involving caring for the morbidly obese with bariatric care. The five topics that were covered were: (a) practical issues in caring for morbidly obese patients, (b) equipment, transportation, and safety concerns, (c) postsurgical bariatric experiences of patients, (d) challenges in caring for the morbidly obese, and (e) addressing challenges in caring for morbidly obese patients. The literature review is based on articles published since 2012.

Practical Issues in Caring for Morbidly Obese Patients

Hospitalization of obese patients involves multiple challenges. According to Foroozesh et al. (2017), professional healthcare teams are required to offer patients with optimum care by communicating efficiently with obese patients in order to address their health problems. However, issues related to communication hinder the effective provision of care to hospitalized obese patients. Foroozesh et al. (2017) further noted that in surgical centers, issues related to inappropriate equipment and space, high pressure experienced when transferring patients, shortage of nursing personnel, and incidence of physical injuries prevent delivery of care. During operations of obese patients, issues including intubation, management of anesthesia, and holding the anesthesia mask while operating affect the quality of care provided. Thus, there is a need for nursing staff to prioritize equipping facilities with specialized equipment required for caring for morbidly obese patients (Liu, 2017). The nurses also need to recruit a suitable number of well-trained and experienced personnel.

Comprehensive pre- and postoperative care in most bariatric surgical centers is offered to patients using a multidisciplinary team composed of health practitioners (Liu, 2017). Patients' obesity required safe treatment and quality for to quick and full recovery. The most common adverse events for obese patients after surgery are reoperation and iron deficiency anemia from intestinal bypass operations (Arterburn & Courcoulas, 2014). Caring for morbidly obese patients requires special nursing skills and knowledge of bariatric care to avoid unique challenges. Similarly, Hammond (2013) acknowledged that the provision of optimal surgical care for morbidly obese surgical patients requires nurses and caregivers to overcome the possible unique challenges. According to Hammond (2013), some of the challenges include daily patient care activities, routine procedures, standard treatment protocols, and obesity-related psychological issues.

Equipment, Transportation, and Safety Concerns

Bariatric procedures and transport of morbidly obese patients raise safety concerns that can adversely affect quick recovery (Gable, Gardner, Celik, Bhalla, & Ahmed, 2014). The continued increase in the population of obese patients directly affects bariatric care. Inadequate bariatric specialty and transportation equipment for dealing with high weight capacity causes safety concerns for both patients and healthcare workers (Hammond, 2013). For example, it is essential to ensure hospital equipment such as toilets, beds, showers, stretchers, and wheel chairs are labelled appropriately. In addition, a list of these items with their weight capacity should be available for reference. Also, Arterburn and Courcoulas (2014) said that limited space in operating rooms, lack of

specific nursing skills required caring for the morbidly obese patients, and inadequate material and equipment contributed to safety concerns. Although hospitals have hired lift teams and nurses to transfer and transport obese patients, lack of knowledge regarding how to use bariatric specialty equipment and transportation equipment continues to be a barrier to quality care.

Post-Surgical Bariatric Experiences of Patients

Long-term success for patients who have undergone bariatric surgery remains a challenge, and this suggests the presence of important, and yet, unmet needs (Liu & Irwin, 2017). The authors conducted a cross-sectional study to understand the perception of bariatric surgery recipients indicated that patients lacked access to immediate follow-up appointments for nutrition-specific care. Liu and Irwin (2017) emphasized that they must address post-surgery concerns through educational programs on effective treatment methods, the need for follow-ups, and how to provide bariatric care. Lastly, the authors recommended that the creation of mentorship programs to promote positive experiences among bariatric patients (Liu & Irwin, 2017).

Liu and Irwin (2018) established that in Canada, follow-up appointments after one year following bariatric surgery are less frequent and patients have to cope more independently. Lack of support exposes patients to physical, psychological, and social challenges that should be addressed by trained healthcare professionals.

Challenges in Caring for Morbidly Obese Patients

There has been limited research on the challenges that nurses face while taking care of the morbidly obese patient population, despite the rising number being admitted into the acute care facilities (Sabol, Hammersla, & Idzik, 2012). Some of the challenges include special physical space and equipment needs, patients' personality, nurse's attitudes, shortage of personnel available to assist in caring for the morbidly obese patient, and the associated nurses' injuries (Berrios, 2016; Sabol et al., 2012). Similarly, Hales et al. (2017) established that critically ill morbidly obese patients pose considerable resource utilization and healthcare delivery challenges, such as language and communication barriers. Also, the study established that communication challenge was related to staff expression about words that could be used to describe body mass.

Care for morbidly obese patients in acute care presents formidable challenges to providers and has significant economic implications (Akinnusi, Pineda & El Solh, 2008). Robstad, Söderhamn, and Fegran (2017) found that acute care nurses perceived caring for morbidly obese patients to be emotionally demanding and challenging. Nurses also face communication challenges with regards to language barriers. Tanaka and Peniche (2009) stated that developing specific skill and knowledge and having clinical experience equips nurses in providing quality care, physical and emotional safety, and comfort to morbidly obese patients. Morbidly obese patients require specialized nursing care in terms of levels of staffing needed, techniques, and utilization of specialized equipment. The gap in knowledge about qualified acute care setting experiences of

caring for morbidly obese patients can be addressed through educational programs (Thomas & Lee-Fong, 2011).

Addressing Challenges in Caring for Morbidly Obese Patients

To overcome the challenges faced by nurses when caring for morbidly obese patients, Hales et al. (2017), recommended the use of bariatric care. The study established that bariatric care pathways should be developed to ensure that more appropriate body measurements are used to inform the application of bariatric equipment. Additionally, intensive care staff should engage with one another to establish the most acceptable, respectful and suitable language to use in order to facilitate effective delivery of bariatric patient care. Shea and Gagnon (2015) added that educational programs could be used to improve nurses' knowledge regarding bariatric care in an intensive care unit. Additionally, at an organizational level, continued education for RNS working in the acute care setting should comprise of bariatric sensitivity training to enhance the practical, clinical, and informational needs of nurses.

Educational programs are effective in improving knowledge among nurses regarding the care for morbidly obese patients. Gable et al. (2014) examined the effectiveness of a 3-hour educational course with simulation on improving paramedics' confidence and knowledge of bariatric procedures and transport. The study established that simulation supported with a didactic was an effective approach to education that can improve nurses' knowledge on the use of bariatric care. Education improves learning by enhancing knowledge of bariatric clinical issues. Similarly, Falker and Sledge (2012)

found that the Bariatric Sensitivity Educational Module (BSEM) was important to nurses and caregivers because it improved their sensitivity to issues regarding bariatric care. The post-survey evaluation on the effectiveness of the BSEM indicated a significant decrease in weight stigmatization one month after the intervention was completed. Akinnusi, Pineda, and El Solh, (2008) think that adequate training of staff and provision of appropriate resources uses could effectively lead to the improvement of patients' outcomes.

Nurse educators should design new and innovative strategies that encourage student inquisition skills development, clinical planning, and their sensitivity to the care of patients with morbid obesity (Sabol et al., 2012). Nurses and caregivers need additional education and training in regards to the care for obese patients. Critical care nurses must understand the different challenges and practice guidelines associated with caring for morbidly obese patients (Berrios, 2016). Thomas and Lee-Fong (2010) think that the development of standard protocols is essential to ensure consistent, safe, and dignified care delivery. The protocols should be able to provide the nurses and caregivers with specific guideline information regarding the particular assistance needed by the patients and the appropriate equipment such as blood pressure cuffs, furniture, and operating tables, to allow for excellent care delivery while respecting the patients' dignity (Thomas & Lee-Fong, 2010).

Relevance to Nursing Practice

Currently, more than 17% of the U.S. youth and one-third of the adult population are obese (Berrios, 2016). The condition has been associated with an approximately $147 billion of annual expenses. Thus, care for morbidly obese patients is still a challenge because of the limited knowledge of the nursing staff. The challenges faced by nurses, including limited knowledge on how to use bariatric equipment and how to provide care should be addressed (Sabol et al., 2012; Hales et al., 2017).

Bariatric care pathways can be used to provide care to morbidly obese patients (Hales et al., 2017). Also, educational programs can effectively improve the knowledge of nurses' regarding how to apply bariatric care in an acute care setting (Shea & Gagnon, 2015). Walsh (2014) established that the educational simulation course resulted in improved paramedics' confidence and knowledge of bariatric transport and procedures. The distinct needs of bariatric patients can be addressed when pre-hospital providers are trained in ways to care for overweight and obese patients (Gable et al., 2014). Simulation compared to traditional bariatric training approach was established to be more effective with 4 times greater retention rate of information. Nonetheless, researchers are yet to examine the efficacy of the simulation-based training within bariatric transport (Gable et al., 2014).

To address the gap-in-practice, various strategies and standard practices have been used previously. Berrios (2016) recommended additional education and training among nurses to ensure effective care for obese patients. The education ensures that critical care

nurses have an adequate understanding of the different practice guidelines linked with caring for morbidly obese patients. Mechanick et al. (2013) provided clinical practice guidelines for nonsurgical support of the bariatric surgery patients that can be used to ensure safety. From the guidelines, bariatric surgery is recommended as the most effective and safe intervention for morbidly obese patients (Gloy et al., 2013). However, a team approach is required when providing bariatric care. Ide, Fitzgerald-O'shea, and Lautz (2013) pointed out that evidence-based guidelines, algorithms, and clinical pathways for patient care must be used to ensure a successful bariatric surgical program.

The present doctoral project advances nursing practice to address the challenges faced by caregivers when providing bariatric care to morbidly obese patients. The findings of this project can be used to promote the efforts for reducing the bariatric care-related challenges and improve patients' outcomes. Also, the rate of readmission and length of stays (LOS) by the patients in acute care may be reduced due to improved caregiving as a result of the knowledge attained by the providers after participating in the educational program.

Local Background and Context

The DNP student examined this topic because caring for morbidly obese patients operating in an acute care setting provides challenges and has substantial economic implications (Akinnusi, Pineda & El Solh, 2008). Currently, the 250-bed facility that offers bariatric care to morbidly obese patients experiences elevated readmission rates and length of stays. The nurses in the specialized facility have reported challenges such as

communication issues and limited knowledge required to provide quality bariatric care. Therefore, the DNP student examined the topic to establish the problems encountered by nurses and identify the best practices, and that can be implemented to improve the well-being of the patients. In the local and institutional levels, the increasing rate of readmission and lengthened stays by the patients is an indication of limited knowledge by nurses and inadequate care offered to them (Blecker et al., 2014). However, the providers have also noted challenges in caring for morbidly obese compared to other types of patients. Conducting the project is necessary because caring for the morbidly obese patients is perceived as relatively more demanding compared to the care for non-obese patients. Also, at the State and Federal level, there exist no national guidelines related to specific education on taking care of morbidly obese people (Sabol et al., 2012). The authors also established that there is a shortage of qualified nurses with specialized skills required to provide care to patients with the condition effectively. Therefore, the knowledge gap on specialized care for morbidly obese patients is a primary challenge in the provision of bariatric care.

Role of the DNP Student

The DNP student practices in the institution where the project was conducted and interacted with nurses to establish the problem. The DNP student's main role as a master's prepared RN pursuing the DNP program was to promote quality improvement in the healthcare system. One of the requirements in partial fulfillment of the DNP program was to develop a doctoral project focused on implementing evidence-based practice in

clinical settings. The DNP student observed the long overstays and readmissions of patients in bariatric care that has been a source of motivation to develop an effective intervention. The DNP student has been involved in the topic creation and presentation to the supervisory committee for approval. The DNP student sought permission from the Walden University IRB before implementing the DNP project at the facility. The DNP student was also involved in the development of the educational program for training and educating the providers about bariatric care. Collected data was organized and analyzed by me, and the findings were shared with the facility**.**

Role of the Project Team

The project team was composed of experts in various fields. Nurse educators with knowledge and expertise on bariatric care assisted in the delivery of the intervention to the critical care nurses and registered nurses (RN**s)** working in the acute care facility. Two nurse educators and the DNP student offered lectures and educational simulations, as part of the educational program intended to improve knowledge for caring to morbidly obese patients. The nursing project coordinator offered support required when evaluating the educational program by encouraging the staff to respond and submit the filled questionnaires and attend education sessions. A registered nurse with experience in data collection helped the DNP student in distributing and collecting questionnaires from the participants. The nurse presented the de-identified data to the DNP student for analysis and synthesis.

Summary

The focus of the project was to determine whether providing educational interventions using evidence-based guidelines for health care professionals attending to morbidly obese patients is effective in reducing the challenges they face when providing care. Currently, the healthcare facility has elevated admissions for morbidly obese patients. Nurses in acute care setting have limited knowledge regarding bariatric care, hence the need for educational intervention to promote their knowledge and skills. There is a consensus that morbidly obese patients in the acute care setting are faced with numerous challenges, including resource allocation and communication issues. Development of protocols that provide the care-providers with training and education on bariatric care can reduce readmission of patients and improve the patients' quality of life. Section 3 presents the data collection and analysis of evidence.

Section 3: Collection and Analysis of Evidence

Critically ill morbidly obese patients have continued to pose substantial healthcare delivery and resource use challenges that have an adverse effect on the nursing care provided (Hales et al., 2017). Care for the morbidly obese is more demanding because of the various health conditions that may coexist in individuals, such as immobility resulting from being overweight. The focus of this staff development project was to investigate whether implementing an evidence-based educational intervention for nurses and caregivers attending to morbidly obese patients could significantly improve their knowledge of bariatric care with the long-term effect of reducing the challenges they face in caring for this patient population.

The information contained in this section involves data collection and analysis of evidence. The subsections are sources of evidence, analysis and synthesis of collected data, and a summary of the section. The setting of the DNP project was a 250-bed facility with high readmission rates of morbidly obese patients.

Practice-focused Question

In the project facility, the hospital's records indicate that more morbidly obese individuals have been hospitalized in the past 10 years. The nurses and caregivers in the hospital have strived to provide better care for the morbidly obese, but there have been complaints from the patients about mistreatment by the nursing staff. There is also an lack of knowledge regarding specialized bariatric care among these nurses and caregivers who have never been educated on caring for morbidly obese patients.

The project involved the implementation of an educational program for the nurses focused on caregiving for morbidly obese patients. The practice-focused question guiding the project was: Among nurses and caregivers in an acute care setting, does learning about evidence-based bariatric care improve their knowledge regarding caring for morbidly obese patients? The purpose of this project was to develop and implement an educational program using evidence-based protocols for bariatric care to educate the nursing staff on the best practices when attending to obese patients. The term nursing staff, as used in this project, referred to the participants who included nurses and caregivers. The clinical question was answered through the analysis of the collected evidence to establish the effectiveness of the education program in improving knowledge and attitudes of the healthcare providers.

Sources of Evidence

The sources of information for this project were data collected through questionnaires from caregivers and the existing literature. Databases that were used to address the practice-focused question were: EBSCOHost, PMC, PubMed, CINAHL, Google Scholar, Cochrane, and ProQuest. To promote the quality of the articles, inclusion and exclusion criteria were applied during the search strategy process. The search was exhaustive and comprehensive and was achieved through purposeful evidence-based searching and gathering of evidence. The literature review comprised of qualitative and quantitative research published between 2008 and 2018.

The inclusion criteria comprised of articles that were (a) published in the English language only, (b) peer-reviewed scholarly journal articles, (c) in full text, and (d) published between the years 2013 and 2018. All articles not in full text and not published in English were excluded. Also, all articles not published within the last 5 years were not included in the literature search. Older articles were included if they had a significant contribution to this project. The search terms included *challenges in caring for morbidly obese patients*, *management of morbidly obese patients*, *obesity education*, and *care for morbidly obese patient undergoing bariatric surgery*. The evidence obtained from literature was useful in developing the education program for the healthcare providers in order to increase their knowledge of bariatric care and consequently improve their attitudes towards morbidly obese patients.

Evidence for determining the project outcome was obtained from questionnaires filled by the participants which focused on knowledge of bariatric care. The questionnaire was administered at the beginning of the project and after implementation of the educational program. The results were used to determine the effect of the intervention on their knowledge levels measured using questionnaires, thus answering the practice-focused question. The bariatric care protocol needed to educate the staff for this DNP project was acquired from studies published on bariatric care. The protocol has 11 components including healthcare resource use, obesity-related comorbidities, characteristics of attitude and depression symptoms, health-related quality of life, dietary

intake, physical activity, physical function and strength, bone mineral density, lean muscle mass, body fat mass, and percentage weight loss (Jassil et al., 2018).

Evidence Generated for Doctoral Project

Evidence generated in the clinical setting in answering the practice-focused question was obtained from the pre and posttests that were administered to the nursing staff. Data were collected before and after the implementation of the staff education program. Discussed are the issues regarding participants, procedures for data collection, and human subject protection.

Participants

The hospital has a capacity of 250 beds. Healthcare professionals from various specializations are available in the hospital. RNs constitute a majority population of the healthcare providers working in the hospital. The RNs are assisted with services which require direct care to patients for caregivers in each unit. All nurses and caregivers working at the adult in-patient unit (n = 100) were targeted for the project to ensure that as many as possible are educated regarding bariatric care.

Procedures for Implementation and Data Collection

The project facility supervised the development and implementation of the education program and collection of data from the participants. The educational program was developed by the DNP student after a thorough review of the literature on bariatric care. The DNP student collected evidence from past studies on bariatric care for the educational content for the program. The educational program focused on knowledge and

practices in bariatric care, morbid obesity, and associated comorbidities. After developing the educational program, the DNP student designed a 25-item questionnaire that was used as the pre- and posttest (see Appendix). The questionnaire included three primary sections: Causes of obesity, treatment, management, and care of patients with obesity, and challenges of caring for morbidly obese patients. The DNP student then presented the modules to the two nurse educators and project coordinator for validation.

The nursing and caregiving pretest staff were encouraged to participate in the project by their seniors at the facility. The DNP student presented the developed educational program and questionnaire to the nursing manager at the facility. Baseline data collection began where all participants were issued with questionnaires. The DNP student was then provided with the deidentified baseline data.

Implementation of the program took 6 weeks. The program was designed as biweekly sessions attended by the participants and presented by the nurse educators working at the facility. The education program focused on bariatric care knowledge and practices, obesity, and associated comorbidities. The 30-minute education sessions also covered transfer and mobility concerns, addressed patients' safety, and promoted sensitivity and professionalism concerning bariatric patients. Post-implementation data were collected 2 weeks after the last education session. The DNP student was again presented with de-identified data to conduct the analysis. The collected data were stored in a Microsoft Excel file. The coded data were stored in a password-protected personal computer only accessible to the DNP student. The hard copies of the filled questionnaires

were stored in a locked cabinet. Stored data will be destroyed after 5 years as per the university's policy.

Human Subject Protections

The project involved human subjects; therefore, they were protected as per the expectation of the IRB. Thus, the project was conducted after approval from the Walden University IRB (approval number 0086037 dated 11-29-18), and the facility's administration. The purpose of IRB is to ensure that suitable stages are followed in the protection of participants' welfare in a study. The IRB of Walden University is involved in carrying out an analysis of the benefits and risks of research to establish if it should be conducted or not.

The DNP student, who is the project leader, followed standards of care for practice when dealing with the participants and sought approval for conducting the project before starting the implementation. The IRB is mandated to assess a project proposal with regards to the protection of human subjects before approving (Nicholls et al., 2015). Therefore, getting an approval of the IRB and the hospital's administration would indicate that human subjects are protected. For instance, during data collection, identifiers of participants were encrypted and collected information kept in a locker and a password-protected computer that could only be accessed by the project leader. Also, the participants were briefed about the project and provided with informed consent forms before recruitment (Nicholls et al., 2015). All electronic files that contained identifiable

information were password-protected to stop access by unauthorized users. Only the project coordinator had access to the passwords.

Analysis and Synthesis

The data collected through questionnaires from RNs and caregivers were analyzed using the Statistical Package for Social Sciences (SPSS) version 22. Both descriptive and inferential statistics were used to analyze data for the project. Descriptive statistics presented the demographic data of the participants in the form of tables and graphs for simplified understanding. The questionnaire was issued twice to the participants, before and after the educational program. The filled responses for the two occasions were compared for significant differences. Statistics were interpreted at 0.05 level of significance, where any significant change in the participant knowledge levels would indicate the effectiveness of the education program in addressing the challenges faced in offering bariatric care.

Missing values and outliers can be encountered while collecting data. Missing values may occur as a result of some of the participants dropping out of the project before completion. If any participant left the investigation, none of their earlier provided data were used in analyzing the project outcome. The presence of missing values decreases the data available to be analyzed, thus, compromising the statistical power of the project. The effect of missing values was countered by targeting more than the required minimum number of participants to ensure a power of 90%. While a minimum of 36 participants

are needed, the project involved 100 or more participants to ensure that as many nursing staff as possible benefit from the project.

Summary

The staff development project was implemented in a healthcare facility that serves a population of about 70,000 residents. The Bariatric Care Protocol for educating the staff for this DNP project was obtained from studies published about bariatric care. Pre and post intervention questionnaires were used to collect data on the effectiveness of the Bariatric Care Protocol for educating the staff. The expected outcome was an increase in knowledge and skills among the nursing staff on providing care to bariatric patients which would help in improving the type of care offered at the hospital. Improved provider attitudes towards morbid obesity were also expected as a result of the project which would assist in overcoming challenges experienced in caring for morbidly obese patients. Section four provides the findings of the DNP project.

Section 4: Findings and Recommendations

Introduction

The problem involved in this project was the constant increase in admission of obese patients for bariatric care and negative reports of the nursing staff's knowledge and attitudes regarding care. The gap in practice that was addressed was the limited knowledge regarding specialized care for morbidly obese patients. Among nurses and caregivers in an acute care setting, does learning about evidence-based bariatric care improve their knowledge regarding caring for morbidly obese patients? The purpose of the current project was to develop and implement an educational program using evidence-based protocols for bariatric care and educate nurses and caregivers on the best practices when attending to obese patients. The clinical question was to establish the effectiveness of the education program in improving healthcare providers' knowledge of bariatric care.

The educational intervention involved the administration of a bariatric care protocol which was designed from previous bariatric care research. The primary sources of evidence included peer-reviewed journal articles. The primary databases included EBSCOHost, PMC, Google Scholar, PubMed, CINAHL, Cochrane, and ProQuest. Evidence generated from the project included the nurses and caregivers' knowledge of bariatric care that was collected using a Likert-scale questionnaire ranging from 1 (strongly disagree) to 5 (strongly agree) that was administered before and after implementing the educational intervention.

Findings and Implications

The purpose of the project was to develop and implement an educational program using evidence-based protocols for bariatric care to educate the nurses and caregivers regarding best practices when attending to obese patients. The practice focused question was: Among nurses and caregivers in an acute care setting, does learning about evidence-based bariatric care improve their knowledge regarding caring for morbidly obese patients? The results of the current project involved evaluation of the knowledge acquired in three primary categories of findings: Causes of obesity, treatment, management, and care of patients with obesity, and challenges in caring for morbidly obese patients.

Causes of Obesity

The first part of the questionnaire measured the caregivers' knowledge of the causes of obesity. Comparison of the pre and posttest knowledge scores allowed the evaluation of the effectiveness of the educational program. Table 1 provides a summary of the distribution of pretest responses relating to the causes of obesity.

Table 1

Pretest Scores on the Causes of Obesity

Causes of Obesity **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The main cause of obesity is an energy imbalance between the amount of calories consumed and calories expended.	0	0	5	50	45
Obesity can be caused by reduced exercise and physical activity.	0	0	3	57	40
Obesity can result from easy access to fast foods and ready meals.	0	0	2	40	58 *(table continues)*

People with obese parent(s) are more likely to develop obesity (through genetics).	0	12	8	60	20
Overeating foods, especially those with high fat and sugar content can cause obesity.	0	0	0	35	65
Medications such as antidepressants, most corticosteroids, some diabetes drugs, oral contraceptives, and anticonvulsants cause obesity.		5	7	55	33
Psychological factors including stress result in eating habits that may cause obesity.	0	0	2	46	52
Some diseases including insulin resistance and hyperthyroidism cause obesity.	2	2	10	42	44
Living a sedentary lifestyle increases the risk of obesity.	0	0	0	30	70

As shown in Table 1, 50% of participants agreed that obesity is mainly caused by an energy imbalance between the amount of calories consumed and calories expended, while 45% strongly agreed. The pre-intervention knowledge scores indicated that 57% of participants agreed that obesity could result from reduced exercise and physical activity. Fifty-eight percent of caregivers strongly agreed that obesity could result from easy access to fast foods and ready meals. In addition, 60% of participants agreed that individuals with obese parents have a higher likelihood of developing obesity through genetics. Sixty-five percent of participants strongly agreed that overeating foods, especially those with high fat and sugar content, could cause obesity. Fifty-five percent of participants agreed that medications such as antidepressants, corticosteroids, diabetes drugs, oral contraceptives, and anticonvulsants could cause obesity. Fifty-two percent of participants strongly agreed that psychological factors including stress might cause eating habits that may encourage obesity, while 44% strongly agreed that some diseases

including insulin resistance and hyperthyroidism could cause obesity. Seventy percent strongly believed that living a sedentary lifestyle increases individuals' risk of obesity. Table 2 shows the distribution of posttest responses relating to the causes of obesity.

Table 2

Posttest Scores on the Causes of Obesity

Causes of Obesity **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The main cause of obesity is an energy imbalance between the amount of calories consumed and calories expended.	0	0	0	0	100
Obesity can be caused by reduced exercise and physical activity.	0	0	0	0	100
Obesity can result from easy access to fast foods and ready meals.	0	0	2	8	90
People with obese parent(s) are more likely to develop obesity (through genetics).	0	0	5	20	75
Overeating foods, especially those with high fat and sugar content can cause obesity.	0	0	0	0	100
Medications such as antidepressants, most corticosteroids, some diabetes drugs, oral contraceptives, and anticonvulsants cause obesity.	0	0	2	30	68
Psychological factors including stress result in eating habits that may cause obesity.	0	0	0	10	90
Some diseases including insulin resistance and hyperthyroidism cause obesity.	0	0	0	0	100
Living a sedentary lifestyle increases the risk of obesity.	0	0	0	0	100

After the educational intervention, all participants (n = 100) strongly agreed that obesity is mainly caused by an energy imbalance between the amount of calories consumed and calories expended. There was a 32% increase in the number of participants

who strongly agreed that obesity could result from easy access to fast foods and ready meals after the educational program. Compared to the pretest, the participants who strongly agreed that individuals with obese parents have higher chances of developing obesity through genetics was higher by 15%. All participants strongly agreed that overeating foods, especially those with high fat and sugar content, could cause obesity. The educational intervention elicited a 35% increase in the number of participants who strongly agreed that antidepressants, corticosteroids, diabetes drugs, oral contraceptives, and anticonvulsants could cause obesity. In addition, 90% strongly agreed that psychological factors including stress might cause eating habits that may encourage obesity, which increased by 38% after the educational intervention. Compared to the pretest, all participants strongly agreed that some diseases including insulin resistance and hyperthyroidism can cause obesity and living a sedentary lifestyle increases individuals' risk of obesity after the educational intervention.

Treatment, Management, and Care of patients with Obesity

The second section of the questionnaire evaluated participants' knowledge of treatment, management, and care of patients with obesity. By comparing the pre and posttest scores, the effectiveness of the educational program in improving participants' knowledge of treatment, management, and care of patients with obesity is evident. Table 3 presents the distribution of the participants' pretest responses regarding the treatment, management, and care of patients with obesity.

Table 3

Pretest Scores for Treatment, Management, and Care of patients with Obesity

Treatment, Management, and Care of patients with Obesity **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dietary modification by participating in diet modification programs helps in reducing obesity.	0	0	0	54	46
Obesity can be treated through behavioral modification by adopting positive beliefs about weight loss.	0	0	7	61	32
Intake of low-calorie diets helps in reducing body weight.	0	0	15	50	35
Exercise and physical activity increases obese individuals' chances of weight loss in the long-term.	0	0	0	30	70
Some weight-loss drugs such as Fastin, Xenical, and Phentermine help in treating obesity.	7	10	25	58	0
Bariatric surgery can be helpful in helping obese individuals lose weight.	3	5	20	72	0
Hormonal treatment is beneficial in reducing weight among obese individuals.	2	2	75	21	0
Identifying and avoiding high-risk situations to help in managing obesity.	0	1	10	89	0
Eating 5-6 servings of vegetables and fruits daily can help care of patients with obesity.	0	0	6	70	24
Measuring and weighing foods to understand portion sizes help care of patients with obesity.	0	0	15	60	25

Fifty-four percent of the participants agreed that dietary modification by participating in diet modification programs helps in reducing obesity. Also, 61% of the participants agreed that obesity could be treated through behavioral modification by adopting positive beliefs about weight loss. In addition, 50% of the participants agreed that the intake of low-calorie diets helps in reducing body weight. Approximately 70% of the participants strongly agreed that physical activity and exercise increases obese

people's likelihood of long-term weight loss. Based on the pretest knowledge scores, 58% of the participants agreed that some weight-loss drugs including Fastin, Xenical, and Phentermine help in treating obesity. About 72% of the participants agreed that bariatric surgery could be beneficial in helping obese individuals lose weight, while 20% were neutral. In addition, 75% of the participants were neutral regarding whether hormonal treatment is beneficial in reducing weight among obese patients, while 89% agreed that identifying and avoiding high-risk situations helps in managing obesity. Also, 70% of the participants agreed that eating 5-6 servings of vegetables and fruits daily can help care of patients with obesity. Sixty percent of the participants agreed that measuring and weighing foods to understand portion sizes help in caring for obesity. Table 4 provides the distribution of the participants' posttest responses about treatment, management, and care of patients with obesity.

Table 4

Posttest Scores for Treatment, Management, and care of patients with Obesity

Treatment, Management, and care of patients with Obesity **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dietary modification by participating in diet modification programs helps in reducing obesity.	0	0	0	30	70
Obesity can be treated through behavioral modification by adopting positive beliefs about weight loss.	0	0	0	24	76
Intake of low-calorie diets helps in reducing body weight.	0	0	0	20	80
Exercise and physical activity increase obese individuals' chances of weight loss in the long-term.	0	0	0	0	100*(table continues)*

Some weight-loss drugs such as Fastin, Xenical, and Phentermine help in treating obesity.	0	0	0	2	98
Bariatric surgery can be helpful in helping obese individuals lose weight.	0	0	0	10	90
Hormonal treatment is beneficial in reducing weight among obese individuals.	0	0	5	9	86
Identifying and avoiding high-risk situations help in managing obesity.	0	0	0	0	100
Eating 5-6 servings of vegetables and fruits daily can help care of patients with obesity.	0	0	0	0	100
Measuring and weighing foods to understand portion sizes help in caring for obesity.	0	0	0	5	95

Approximately 70% of the participants strongly agreed that dietary modification through participation in diet modification programs helps in reducing obesity. Compared to the pretest, 76% of the participants strongly agreed that obesity could be treated through behavioral modification by adopting positive beliefs about weight loss. The educational program elicited a 30% increase in the number of participants who strongly agreed that the intake of low-calorie diets helps in reducing body weight. After the educational intervention, all the participants (n = 100) strongly agreed that physical activity and exercise increases obese people's likelihood of long-term weight loss. Compared to the pretest, the posttest indicated a 40% increase in the number of participants who strongly agreed that weight-loss drugs including Fastin, Xenical, and Phentermine help in treating obesity. In addition, the number of participants who strongly agreed that bariatric surgery is beneficial in helping obese individuals lose weight increased by 18% post-intervention. Compared to the pretest, the posttest showed a 10%

increase in the proportion of participants who strongly agreed that hormonal treatment is beneficial in reducing weight among obese patients. All the participants strongly agreed that identifying and avoiding high-risk situations helps in managing obesity and that eating 5-6 servings of vegetables and fruits daily can help in the care of patients with obesity. The educational program elicited a 30% increase in the number of participants who strongly agreed that measuring and weighing foods to understand portion sizes help in caring for patients with obesity.

Challenges of Caring for Morbidly Obese Patients

The third section of the questionnaire measured the participants' knowledge of the challenges experienced when caring for morbidly obese patients. Comparing the pre-and posttest scores shows the effectiveness of the educational program in improving the participants' knowledge of the challenges of caring for morbidly obese patients. Table 5 presents the distribution of participants' pretest responses about the challenges of caring for morbidly obese patients.

Table 5

Pretest Scores on the Challenges of Caring for Morbidly Obese Patients

Challenges in Caring for Morbidly Obese Patients **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Most morbidly obese patients need assistance with bathing, walking up/down stairs, dressing, eating, and toileting.	0	20	5	40	35
Morbidly obese patients have difficulty in doing the social activities they enjoy.	0	5	5	60	30

(table continues)

Most morbidly obese patients suffer from depression.	0	5	6	69	20
The majority of morbidly obese patients use absorbent pads and diapers.	2	35	23	35	5
The majority of morbidly obese patients cannot walk independently.	3	10	15	52	5
It is difficult to transfer morbidly obese patients between wards.	0	5	5	65	25

Based on the pretest scores, 40% of the participants agreed that most morbidly obese patients need assistance with bathing, walking up/down stairs, dressing, eating, and toileting. The majority of the participants (60%) agreed that obese patients have difficulty in doing the social activities they enjoy, while close to one-third (30%) strongly agreed. Sixty-nine percent of the participants agreed that most morbidly obese patients suffer from depression. Similar proportions of the participants agreed (35%) and disagreed (35%) that the majority of morbidly obese patients use absorbent pads and diapers, while only 5% strongly agreed. Slightly over half of the participants, 52% agreed that the majority of morbidly obese patients could not walk independently. About two-thirds (65%) of the participants agreed that it is difficult to transfer morbidly obese patients between wards, while 25% strongly agreed. Table 6 presents posttest responses about the challenges of caring for morbidly obese patients.

Table 6

Posttest Responses about the Challenges of Caring for Morbidly Obese Patients

Challenges in Caring for Morbidly Obese Patients **N=100**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Most morbidly obese patients need assistance with bathing, walking up/down stairs, dressing, eating, and toileting.	0	0	0	10	90

(table continues)

Morbidly obese patients have difficulty in doing the social activities they enjoy.	0	0	5	10	85
Most morbidly obese patients suffer from depression.	0	0	11	19	70
The majority of morbidly obese patients use absorbent pads and diapers.	0	0	1	29	70
The majority of morbidly obese patients cannot walk independently.	0	0	2	8	90
It is difficult to transfer morbidly obese patients between wards.	0	0	0	0	100

Based on the posttest scores, 90% of participants strongly agreed that most morbidly obese patients need to be assisted when bathing, walking, eating, dressing, and toileting. Compared to the pretest, posttest showed that 85% of the participants strongly agreed that morbidly obese patients have difficulty in doing the social activities they enjoy. There was a 50% increase in the number of participants who strongly agreed that most morbidly obese patients have depression after the educational intervention. The educational intervention elicited a 65% increase in the number of participants who strongly agreed that the majority of morbidly obese patients use absorbent pads and diapers. The majority of the participants (90%) strongly agreed that most morbidly obese patients could not walk independently after the educational intervention.

Paired Samples T-test

The frequency distributions and percentages suggested an improvement in the participants' knowledge of the causes and treatment of obesity and the challenges involved in bariatric care. However, to determine whether the positive change in

knowledge was statistically significant, the paired samples t-test was done at 0.05 level of significance. Table 7 shows the findings of the paired samples t-test for the three sub-sections of the questionnaire.

Table 7

Paired Samples T-test Results

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Dev	Std. Error Mean	Lower	Upper	t	Df	Sig. (2-tailed)
Causes of Obesity	Pre- Post	-.52000	.19307	.06436	-.66840	-.37160	-8.080	8	.000
Treatment	Pre – Post	-.90300	.51340	.16235	-1.27026	-.53574	-5.562	9	.000
Challenges	Pre – Post	-1.10000	.53457	.21824	-1.66099	-.53901	-5.040	5	.004

The project also involved the evaluation of whether learning about evidence-based bariatric care would improve nurses' knowledge regarding caring for morbidly obese patients. Percentages and frequencies were used to analyze the frequency distribution. The means for items relating to the causes of obesity were computed using SPSS as shown in Table 8.

Table 8

Means of Items Relating to the Causes of Obesity

Item	Pretest	Posttest
The main cause of obesity is an energy imbalance between the amount of calories consumed and	4.40	5.00 *(table continues)*

calories expended.		
Obesity can be caused by reduced exercise and physical activity.	4.37	5.00
Obesity can result from easy access to fast foods and ready meals.	4.56	4.88
People with obese parent(s) are more likely to develop obesity (through genetics).	3.88	4.70
Overeating foods, especially those with high fat and sugar content can cause obesity.	4.65	5.00
Medications such as antidepressants, most corticosteroids, some diabetes drugs, oral contraceptives, and anticonvulsants cause obesity.	4.16	4.66
Psychological factors including stress result in eating habits that may cause obesity.	4.50	4.90
Some diseases including insulin resistance and hyperthyroidism cause obesity.	4.24	5.00
Living a sedentary lifestyle increases the risk of obesity.	4.70	5.00

As shown in Table 8, there was a considerable increase in the participants' knowledge of the causes of obesity after the implementation of the educational intervention. The paired samples t-test indicated a significant increase in knowledge of the causes of obesity post-intervention ($p < 0.000$; see Table 7). Table 9 shows the means for items relating to the treatment, management, and care of patients with obesity.

Table 9

Means of Items Relating to the Treatment, Management, and care of patients with Obesity

Item	Pretest	Posttest
Dietary modification by participating in diet modification programs helps in reducing obesity.	4.46	4.70
Obesity can be treated through behavioral modification by adopting positive beliefs about weight loss.	4.25	4.76

(table continues)

Intake of low-calorie diets helps in reducing body weight.	4.20	4.80
Exercise and physical activity increase obese individuals' chances of weight loss in the long-term.	4.70	5.00
Some weight-loss drugs such as Fastin, Xenical, and Phentermine help in treating obesity.	3.34	4.98
Bariatric surgery can be helpful in helping obese individuals lose weight.	3.61	4.90
Hormonal treatment is beneficial in reducing weight among obese individuals.	3.15	4.81
Identifying and avoiding high-risk situations to help in managing obesity.	3.88	5.00
Eating 5-6 servings of vegetables and fruits daily can help care of patients with obesity obesity.	4.18	5.00
Measuring and weighing foods to understand portion sizes help care of patients with obesity.	4.10	4.95

As shown in Table 9, there was an increase in the participants' knowledge of all the items relating to the treatment, management, and care of patients with obesity. The paired samples t-test indicated that the change in the participants' knowledge of treatment, management, and care of patients with obesity was statistically significant ($p < 0.000$; see Table 7). Table 10 provides the individual means for items focusing on the challenges of caring for morbidly obese patients.

Table 10

Means of Items Relating to the Challenges of Caring for Morbidly Obese Patients

Item	Pretest	Posttest
Most morbidly obese patients need assistance with bathing, walking up/down stairs, dressing, eating, and toileting.	3.90	4.90
Morbidly obese patients have difficulty in doing the social activities they enjoy.	4.15	4.80
Most morbidly obese patients suffer from depression.	4.04	4.59

(table continues)

The majority of morbidly obese patients use absorbent pads and diapers.	3.06	4.69
The majority of morbidly obese patients cannot walk independently.	3.01	4.88
It is difficult to transfer morbidly obese patients between wards.	4.10	5.00

As shown in Table 10, there was a considerable increase in the participants' knowledge in all the aspects regarding the challenges of caring for morbidly obese patients after the intervention. The paired samples t-test in Table 7 indicates that the increase in knowledge of the challenges of caring for morbidly obese patients was statistically significant ($p < 0.004$).

In this project, the paired t-test was used to determine whether there was a significant difference in the participants' pre-and posttest knowledge of the causes and treatment of obesity and the challenges involved in caring for morbidly obese patients. A p-value of less than 0.05 indicates the presence of a significant difference. P-values that are larger than 0.05 indicate that the differences between the two samples are not significant. As shown in Table 10, there was a significant increase in the nurses and participants' knowledge of the causes and treatment of obesity, and the challenges involved in caring for morbidly obese patients after the educational intervention ($p < 0.000$). This finding indicates that the educational program was effective in improving participants' knowledge of bariatric care.

Implications

The project findings indicated that the implementation of an educational program focused on bariatric care might be beneficial in improving nursing staff's knowledge regarding the causes and treatment of obesity, and the challenges involved in bariatric care. Clinicians are known to report various challenges in the management of morbidly obese patients including inadequate resources and knowledge among nursing staff (Hales et al., 2017). Additionally, educating nurses using updated guidelines can have significant impacts on their knowledge of bariatric care that can translate into positive patient outcomes (Liu & Irwin, 2017). The findings of this project support previous studies by demonstrating that the implementation of an educational program improves caregivers' knowledge of bariatric care.

This project has demonstrated that improvement of nurses' knowledge of bariatric care can impact their perceptions of challenges encountered while caring for morbidly obese patients, thereby leading to quality improvement in the care of this target population in the acute care settings. A similar educational program could be implemented in different clinics at the community level. The findings of this project can help in the improvement of systems within the healthcare sector by guiding the development and implementation of educational programs to educate the nurses and caregivers on the best practices for bariatric care. According to Blecker et al. (2014), the majority of obese adult Americans receive inadequate care and treatment. Therefore, there is a need for inter-professional educational interventions to improve the

effectiveness of the multicomponent care delivery system that is necessary for the management of obesity. The implication of this project for social change in practice includes improving the nursing staff's knowledge of clinical guidelines focused on caring for morbidly obese patients. The participants in this project gained adequate knowledge of obesity and associated clinical guidelines for nursing care. Understanding bariatric care may facilitate the reduction of social stigma among morbidly obese patients. The findings of this project can also be used by bariatric surgeons, physicians, and morbidly obese patients who are contemplating surgery.

Recommendations

Various recommendations can be drawn from the findings of this project. For example, interventions similar to the educational programs need to be implemented in all acute care settings in the US to enhance the quality of bariatric care. This project showed that the implementation of an educational program could improve knowledge of bariatric care among nurses and caregivers in the acute care setting. Thus, nationwide implementation of similar educational interventions could improve staff's knowledge of evidence-based practice guidelines on bariatric care, which, in turn, would enhance care for morbidly obese patients in acute settings. Additional effort is also needed to accelerate the development and implementation of educational programs to address the existing gap in knowledge of specialized care for morbidly obese patients among nurses in the country. The findings of this project can also influence the development of policies involving bariatric care in acute care settings. Given that educational modules are

delivered in person, this project could be used as a template to educate clinical staff in different care settings.

Contribution of the Doctoral Project Team

The primary purpose of the project team was to guide and offer leadership in developing and implementing an educational intervention to improve nursing staff's knowledge of bariatric care in an acute care setting. The team comprised of two nurse educators, project coordinator, and an RN. The DNP student developed the educational program using past evidence on bariatric care. The educational program and questionnaire were validated by the project coordinator and two nurse educators. The nurse educators had adequate knowledge and expertise on bariatric care and helped with the implementation of the educational program at the acute care facility. Specifically, the nurse educators assisted the DNP student in administering lectures and simulations as part of the educational intervention to the participants. The coordinators played an essential role in encouraging the participants to attend the sessions and complete the pre- and posttest questionnaires. The RN assisted the DNP student with data collection, specifically distributing and collecting completed questionnaires. The nurse helped in presenting the de-identified data for analysis and synthesis. Based on the findings of the project, there is a plan, if there is adequate funding, to extend the staff education program to acute care settings throughout the county, in order to significantly enhance nurses' knowledge of bariatric care.

Strengths and Limitations of the Project

A primary strength of this project is the vast amount of empirical support for the implementation of educational interventions to enhance nurses' knowledge of bariatric care. The presence of reliable empirical studies allowed the DNP student to develop and implement an evidence-based educational program for educating caregivers on bariatric care. An additional strength of this project was the adequate support provided by nurses at the project site. The nursing staff's positive attitude towards the project facilitated seamless and effective implementation of the educational program. One major limitation that affected this project was the time constraints that may not have been adequate to achieve the desired outcome. The project was implemented within a six-week period, which may not have been adequate to achieve a significant improvement in knowledge among the nursing staff.

A recommendation for future studies is the evaluation of patients' experiences and satisfaction of bariatric care to confirm the effectiveness of staff educational programs. In addition, future-similar educational interventions should focus on how nurses can empower their patient to embrace weight loss programs and help reduce readmission of obese patients in acute settings. Also, similar educational programs need to be implemented in primary care facilities to determine if the findings are transferrable to other settings.

Summary

The purpose of this project was to develop and implement an educational

program, using evidence-based protocols for bariatric care, to educate the nurses and caregivers on the best practices when attending to obese patients. The findings indicated an improvement in caregivers' knowledge of bariatric care after the implementation of the educational program. The findings showed that implementing the educational program at the clinic may be beneficial in improving nurses' knowledge of the causes and treatment of obesity and the challenges involved in caring for morbidly obese patients. Data analysis indicated a significant increase in nurses and caregivers' knowledge of the causes, treatment, management, and care, and challenges in caring for morbidly obese patients ($p < 0.000$). The findings can be applied to the development of more effective educational programs for bariatric care. The major strengths of the project included the vast empirical literature on educational programs for bariatric care and adequate support from the acute care facility.

Section 5: Dissemination Plan

The plan for dissemination of the project involves presenting the findings to the leadership and stakeholders at the acute care facility. The first step in disseminating this project will include developing a PowerPoint presentation that will summarize the entire project. The PowerPoint presentation will be presented to selected leaders at the acute care facility to demonstrate the project findings and recommendations. A poster will also be developed and posted on the acute care facility's website to ensure access for other interested stakeholders. Potential audiences for the poster presentations will be local and state conferences. An article can also be written for appropriate professional journal publications.

Analysis of Self

There is a significant gap between the introduction of new evidence and their application in clinical practice. Nursing is uniquely placed to help in addressing this gap by facilitating the development, evaluation, and implementation of the most effective interventions and promoting improvement in care quality. This project contributed to the DNP student's progress significantly as a practitioner, scholar, and project manager.

Practitioner

As a practitioner, the DNP student was able to use past training to argue for the introduction of more effective interventions which would lead to positive change in the healthcare sector. Being a nurse, the DNP student understands the problem of obesity and its health, financial, and psychological implications. This project provided the DNP

student with the chance to introduce change by educating nurses on the causes, treatment, and challenges involved in bariatric care. The processes involved developing and implementing the educational program, creating a questionnaire, and data analysis renewed the DNP student's passion for nursing education.

The DNP student's journey as a nursing scholar has adequately prepared him to be an innovative change agent ready to improve health literacy among nurses and patients. The DNP student's goal in this project was to apply knowledge gained from the DNP program to practice by improving nurses' knowledge of bariatric care. The current project has improved the DNP student's ability to identify problems and develop effective interventions that impact patients' health and support the nursing profession. The DNP student was satisfied with the current project because it facilitated evidence-based improvement of nursing staff's knowledge of bariatric care, which can translate to improved weight management among morbidly obese patients.

Scholar

The DNP program has adequately prepared me to be a change agent in improving patients' and nursing staff's knowledge and health literacy. This project has enhanced the DNP student's ability to identify practice gaps and problems, design effective interventions, and implement these initiatives in practice. Among the things learned from the DNP program include effective interpersonal relationships, ethical responsibilities, resourcefulness, and the importance of maintaining a clear vision for all undertakings.

Project Manager

As a project manager, the DNP student invested significant time and resources to implement the educational program in the acute care setting. Through this project, the DNP student experienced the challenges facing implementation of clinical interventions in bariatric care. The extensive literature search conducted before developing and implementing the educational program improved my understanding of the importance of literature in evidence-based practice. As a project manager, the DNP student was able to witness the challenges experienced by nurse practitioners in providing healthcare services in acute care facilities. For instance, the DNP student experienced scheduling problems, limited resources, and difficulty in ensuring all the participants were prepared for the intervention.

Summary

The purpose of this project was to develop and implement an educational program using evidence-based protocols for bariatric care to educate nurses and caregivers on best practices when attending to obese patients. The objectives were achieved through the development and implementation of an educational program focused on bariatric care at the acute care facility. The findings of the project indicated a significant increase in nurses and caregivers' knowledge of the causes and treatment of obesity, as well as the challenges experienced when delivering bariatric care ($p < 0.000$). By improving caregivers' knowledge of bariatric care, this project supports nurses' mandate to design and implement effective evidence-based obesity care interventions. The project will be

disseminated to the stakeholders through a PowerPoint presentation and poster that will be placed at the facility's website. The project has significantly contributed to the DNP student's growth as a scholar, project manager, and nurse practitioner.

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Appendix: Pretest and Posttest Questionnaire

Item	SD	D	N	A	SA
The main cause of obesity is an energy imbalance between the amount of calories consumed and calories expended.					
Obesity can be caused by reduced exercise and physical activity.					
Obesity can result from easy access to fast foods and ready meals.					
People with obese parent(s) are more likely to develop obesity (through genetics).					
Overeating foods, especially those with high fat and sugar content can cause obesity.					
Medications such as antidepressants, most corticosteroids, some diabetes drugs, oral contraceptives, and anticonvulsants cause obesity.					
Psychological factors including stress result in eating habits that may cause obesity.					
Some diseases including insulin resistance and hyperthyroidism cause obesity.					
Living a sedentary lifestyle increases the risk of obesity.					
Dietary modification by participating in diet modification programs helps in reducing obesity.					
Obesity can be treated through behavioral modification by adopting positive beliefs about weight loss.					
Intake of low-calorie diets helps in reducing body weight.					
Exercise and physical activity increase obese individuals' chances of weight loss in the long-term.					
Some weight-loss drugs such as Fastin, Xenical, and Phentermine help in treating obesity.					
Bariatric surgery can be helpful in helping obese individuals lose weight.					
Hormonal treatment is beneficial in reducing weight among obese individuals.					
Identifying and avoiding high-risk situations to help in managing obesity.					

Eating 5-6 servings of vegetables and fruits daily can help care of patients with obesity
Measuring and weighing foods to understand portion sizes help care of patients with obesity.
Most morbidly obese patients need assistance with bathing, walking up/down stairs, dressing, eating, and toileting.
Morbidly obese patients have difficulty in doing the social activities they enjoy.
Most morbidly obese patients suffer from depression.
The majority of morbidly obese patients use absorbent pads and diapers.
The majority of morbidly obese patients cannot walk independently.
It is difficult to transfer morbidly obese patients between wards.