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A Practice Change in Adult Obesity Primary Care

Jasmine Tinsley
Walden University

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Walden University

College of Health Sciences

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Jasmine Tinsley

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Review Committee

Dr. Janice Long, Committee Chairperson, Nursing Faculty
Dr. Francisca Farrar, Committee Member, Nursing Faculty
Dr. Mattie Burton, University Reviewer, Nursing Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

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by

Jasmine Tinsley

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

February 2018

Abstract

The rate of obesity in American adults has increased dramatically over the last decade. Obesity has reached epidemic proportions and demands attention to reverse the current trend. This project was developed to evaluate a quality improvement initiative that was implemented in 2016 to address the problem of obesity in a rural southeastern primary care clinic setting where underserved populations are treated. The quality improvement (QI) initiative was developed using the plan-do-act-check model and the evaluation of the initiative was the focus of the current project. The project question asked if a quality improvement initiative for weight loss monitoring and counseling could improve health outcomes for a rural clinic setting. The project examined the impact of the initiative's outcomes of weight and body mass index (BMI) and lipid profiles. Deidentified data from 10 patients who were treated in the clinic during a 3-month time period before the QI initiative was implemented and 10 patient records during the 3 months after the QI initiative was in place for 3 months were obtained from the clinical site and were entered into SPSS for analysis. Results of an analysis of variance demonstrated that after the QI initiative was in place, BMI improved ($F= 61.895, p\text{-value}= 0.000$) in the 3-month post intervention period compared to the pre-intervention levels. Similarly, total cholesterol levels ($F= 36.877, p\text{-value}= 0.000$) were decreased post intervention. LDL cholesterol did not show a significant difference at the 3-month post-intervention stage although HDL cholesterol improved. Results demonstrate that a QI initiative that addresses weight loss in a rural clinical setting can improve health outcomes and promote positive social change in a rural underserved community.

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Section 1: Overview of a Practice Change in Primary Care

Introduction

Obesity is a major health problem affecting children and adults in the United States. More than one-third of adults in the United States are affected by obesity (Centers for Disease Control and Prevention, 2015). Adults affected with obesity are at risk of multiple comorbidities that include cardiovascular disease, diabetes, stroke and some cancers. Obesity impacts individuals psychologically and socially leading to social isolation, depression, negative feelings, avoidance of healthcare providers, and unhealthy behaviors (Fruh et al., 2016).

To address the problem of obesity in a rural south-eastern region of the United States, primary care providers implemented a quality improvement (QI) initiative for weight loss. The QI initiative was implemented using a model previously developed and tested in a local hospital setting affiliated with the rural primary care clinic where this project took place. The model was designed to promote healthy weight loss. In the initial setting where the model was developed and tested, results demonstrated positive outcomes in reducing obesity rates in the health system's population. For this reason, the providers in the rural primary care clinic chose to implement the model for weight management and treatment in the rural primary care setting where this project took place. The model was implemented in the rural primary care (PCP) clinic setting in 2016 at which time three providers were educated on the program and began implementing the protocols. While the model and the protocols have now been in place for one year, no formal evaluation of the effectiveness has been conducted in the rural PCP clinic setting. Efforts to show the model is effective will promote positive social change by providing

evidence to practitioners that means of obesity prevention and treatment can reduce comorbidities of obesity.

The Quality Improvement Model for Weight Loss

In 2013, the medical center in the southeast region of the US, developed weight loss guidelines intended for those who prefer a non-surgical option or do not qualify for surgery to achieve weight loss goals. This program was designed to help participants lose weight quickly and safely with a low glycemic diet and provider monitoring. Patients who attained a healthy weight through this program had numerous obesity comorbidities reduced, the conditions go into remission, or for risk of these diseases to be greatly reduced. Conditions where these improvements were seen were patients who suffered from or at risk of cardiovascular disease, type 2 diabetes, hypertension and elevated cholesterol (Spartanburg Regional Healthcare System, 2017).

Section one covers the problem statement, the purpose, the nature of the doctoral project, significance, and a summary.

Statement of the Problem

Obesity rates continue to rise among adults and children; in 2015, more than 78.6 million adults in the U.S were obese (Adult Obesity Facts, 2015). Obesity can lead to other comorbid conditions such as diabetes, hypertension, cancer, and stroke. Obesity related conditions are the leading cause of preventable death in the US, and the financial burden of healthcare cost on the government. Medical cost of obesity in 2008 was approximately \$147 billion leading to financial burden on the nation (Centers for Disease Control and Prevention, 2015). However, in 2017, obesity rates have doubled as the cost of healthcare paralleled the increase. Currently, the estimated medical cost of obesity and

related comorbidities ranges from \$147 billion to nearly \$210 billion per year (The Healthcare Cost of Obesity , 2016). The financial cost is only a part of the cost burden to the population as the cost of obesity represents a heavy burden on families and communities as the comorbidities of the obesity alter lifestyles and results in early morbidity and mortality (Levine, 2011). For this reason, it is critical that approaches to reversing the trends of obesity are implemented and evaluated to promote effective treatment and management of obesity. This requires a comprehensive approach which includes diet, nutrition, physical activity, and behavioral changes for long term weight management such as those incorporated into the model of the QI initiative that this project will evaluate.

Primary care physicians and clinicians play an important role in assessing for, managing and treating obesity. However, there have been limited programs applied to clinical settings such as primary care even though weight loss programs delivered in primary care have the potential for widespread reach to those affected by obesity (Gareth & Phillips, 2015). Other healthcare organizations such as clinics and hospitals depend on primary care practices to assist with managing obesity to prevent chronic diseases.

Within the current rural practice setting, over half of the population suffers from obesity and obesity related diseases such as hypertension and diabetes. Prior to the implementation of this QI initiative in 2016, weight loss program, assessment and counseling of obesity was not routinely completed by physicians and healthcare providers. Routine use of guidelines and tools were not utilized to address obesity. With the implementation of the QI initiative in the rural PCP setting, a new model of care for obesity management and treatment was established yet no evaluation of its effectiveness

in the rural, PCP setting was completed. Therefore, this project evaluated the effectiveness of the QI initiative for preventing the complications of obesity.

Purpose Statement

Despite continued awareness of the importance of nutrition and exercise, obesity rates continue to increase causing healthcare disparities to worsen leading to an economic and financial burden on the United States (The Healthcare Cost of Obesity, 2016). As a healthcare provider, I have cared for many patients who ultimately succumb to obesity related comorbidities such as diabetes and cardiovascular disease despite many of these conditions being preventable. Obese adults can potentially spend 42% more on direct healthcare than adults with a healthy weight (The Healthcare Cost of Obesity, 2016). With the rise of healthcare cost, increasing comorbidity rates and lack of insurance coverage, low economic populations such as rural areas would benefit from weight loss programs. Furthermore, unhealthy conditions increase the demand for healthcare which is limited in rural communities. Comorbidities of obesity also have a negative impact on a national level. Therefore, the purpose of the project is to evaluate the effectiveness of the QI initiative implemented in a rural PCP clinic in 2016 and designed to reduce the rate of obesity and its comorbidities. The QI initiative was evaluated for its effectiveness in improving obesity rates, body mass index (BMI) levels, lipid profiles (cholesterol, HDL, LDL, triglycerides) over a six month period before and after the new QI initiative was implemented. The practice focused question addressed in this project seeks to determine if a QI initiative that follows an evidence based practice protocol is effective in reducing BMI and lipid profiles for patients seen in a rural PCP clinic setting.

Nature of the Doctoral Project

This evaluation project consisted of reviewing retrospective, deidentified data from medical records available from a single rural primary care practice in the Southeast US. Data for this project were used to evaluate the effectiveness of the QI initiative implemented in 2016. Data extracted from the medical records included information on patients who had a diagnosis of obesity and who were under treatment for the condition with a body mass index (BMI) of 29 and greater. I used a cross sectional pre-post evaluation design to obtain BMI and lab values to compare traditional and post interventional results for patients seen for weight reduction before and after the QI initiative implementation.

Being obese can cause a rise in cholesterol leading to heart attack and stroke. Therefore, variables that were considered in this study included lipid panel, weight and BMI. Data was analyzed using Analysis of Variance (ANOVA) to determine if a statistically significant improvement occurred after implementation of the QI initiative.

The quality improvement program was initiated in May 2016. Pre-intervention data were obtained from patients records from January through March 2016. No data were collected during the three months when the intervention was initiated. Post intervention data were collected from July through September 2016. Results were evaluated for this time frame to determine if the existing quality improvement project was effective in small sectors of healthcare for the treatment and management of obesity and the improvement of lipid profiles to decrease risk of obesity related comorbidities such as heart attack and stroke. By improving the treatment and management of obesity, it is expected that lipid profiles and BMI will improve.

The nature of this clinical project was to support the new process of care that was implemented in 2016 with the implementation of a clinical practice guideline protocol for a quality improvement program in a rural primary care setting. Because obesity is a problem, the purpose of this project was to evaluate if obesity rates were reduced and cardiovascular health improved. This cross sectional retrospective comparison project produced support for the evidence based guidelines that were used in the QI initiative demonstrating how application of an evidence based practice guideline can improve health outcomes for patients with obesity in a rural PCP clinic setting.

Significance

Research indicates that mortality rates are higher among underserved populations, such as rural communities (Meyer, Perry, Sumrall, Patterson, & Walsh, 2016). Obesity is one of the leading contributors to morbidity and mortality rates in the US and yet evidence suggests it can be reduced or controlled (Obesity and overweight, 2015). Not only does obesity place the patient at risk for devastating complications, it is also costly financially to individuals, families and communities. The estimated medical costs of obesity are as high as \$147 billion a year. Currently, the estimated medical cost of obesity and related comorbidities costs range from \$147 billion to nearly \$210 billion per year (The Healthcare Cost of Obesity, 2016).

Effective guidelines for the management of obesity that include routine documentation of weight and BMI may be effective as an identifier of obesity and can offer an opportunity for patients to receive early preventive care or treatment once the condition is recognized. This project is significant to patients as it offers the potential for improved health and health outcomes. The project is significant to providers as it offers a

means to validate the QI initiative and support its use as an ongoing model of care at the rural PCP clinic. The project is also significant to communities and families as it offers an opportunity to reduce the cost of the serious comorbidities that may accompany obesity.

Summary

In conclusion, obesity rates continue to rise, effecting millions of adults in the United States. The treatment of obesity related comorbidities have caused a financial and economic crisis on healthcare. This quality improvement project evaluated how a comprehensive approach to identifying and treating obesity can be effective in improving patient outcomes, overall health, and promoting weight loss. It is imperative for primary care providers to take the lead on the fight against obesity to decrease obesity rates and hospitalizations for chronic diseases. Application of interventions include counseling, measurement of weight and BMI, and medication if medically necessary was evaluated for effectiveness.

Section 2: Background and Context

Introduction

Obesity continues to increase in the United States despite national measures to prevent obesity. Obesity in adults is accompanied with obesity related disease such as cancer, hypertension, stroke and diabetes. According to the Centers for Disease Control and Prevention 2015, obesity related conditions are the leading cause of preventable death in the United States. In addition to the negative effects obesity has on health and limitations on the quality of life, it has become a financial burden on the nation. According to the Centers of Disease Control and Prevention, in 2008, the estimated annual cost of Obesity in the United States was \$147 billion (Adult Obesity Facts, 2015). Rural residents are at higher risk for obesity and chronic diseases related to economic and environmental disparities. Rural residents may have as much as a 6.2 % higher prevalence of obesity than urban residents (Meyer, Perry, Sumrall, Patterson, & Walsh, 2016). Primary care providers in these areas are being encouraged to engage in treating and managing obesity to prevent chronic disease and decrease hospitalization rates. For these reasons, this retrospective, pre-post-comparison project is designed to evaluate the effect of the existing QI initiative in a rural PCP setting. Section two will cover concepts, models, theories, relevance to nursing, local background, and role of the DNP student.

Concepts, Models, and Theories

Many organizations and communities are using quality improvement collaborations and models to improve ongoing efforts, to bridge gaps in healthcare, and achieve the goal of quality care (Loes et al., 2008). Quality improvement projects are used in small to large clinical organizational healthcare settings with the purpose to

improve care. The strength of quality improvement projects stems from expert and peer collaboration exchange of best practice to facilitate the guided improvement (Loes et al., 2008). For this quality improvement project, the plan-do-check-act model was used to guide the quality improvement project to promote weight loss. The PDCA model has been proved to be effective tool in hospitals for probing problems, analyzing reasons, and making changes to continuously improve the current situation (Suo-Wei et al., 2015). PDCA is a four stage approach that has been effective in continual improving processes and for resolving problems. Using the PDCA, this project is a pre and post- intervention quality improvement project. The QI initiative was conducted in a rural primary care clinic that includes two nurse practitioners, one medical doctor, and six medical assistants. The clinic provides primary care services for pediatrics and adults. The project analyzed the effectiveness of the QI initiative and weight loss program implemented at the site in 2016.

The QI initiative began in 2016 and was designed to promote healthy eating through a low carbohydrate and high protein diet. The protocol used in the QI initiative included counseling on consuming a well-balanced diet consisting of three meals a day with healthy snacks in between meals to boost metabolism. Thirty minutes of physical activity was promoted daily. Appetite suppressants, such as Phentermine, were recommended when necessary to assist patients with efforts in dieting and exercising. Patients were monitored at every follow up visit for BMI, blood pressure, and lipid profiles.

The Effectiveness of Quality Improvement Models

To evaluate the effectiveness of the QI initiative, this project used an Outcome Impact Evaluation. Outcome evaluation measures programs effects in the target population by assessing the progress in the outcomes or outcome objectives that the program is to achieve (Types of Evaluation, 2017). This quality improvement project evaluated a comprehensive approach which included diet, nutrition, physical activity, and behavioral changes for long term weight management. Questions that were addressed with an outcome evaluation included:

- Were medical providers more likely to effectively counsel, assess and treat patients identified with overweight or obesity with the use of weight loss guidelines?
- Did the implementation of counseling and treatment in a rural community-based clinic result in changes in knowledge, attitude, and skills among the target population?
- Did the program have unintended beneficial or adverse effects on the target population?
- Does the benefit of the weight loss program justify a continued allocation of this program in this area?

Definitions and Terms

Quality Improvement: Quality improvement is a management system that entails the management, staff and health professionals in the continuous improvement of work activities to obtain better outcomes of patient/client/resident care (Bani-Hani & Al-

Omari, 2012). It entails use of statistical approaches and tools to minimize waste, duplication and unnecessary complexity in work.

Relevance to Nursing Practice

Excess body fat and obesity related comorbidities place individuals in need for support and weight management. Evidence based practice and guidelines recommend diet, exercise, and low carbohydrate or low fat diets. Nurses in primary care have been found to play a key role in encouraging patients to adopt a healthier lifestyle (Brown, Stride, Psarou, Brewins, & Thompson, 2007). A study conducted in the United Kingdom by Brown et al. (2007) consisted of practice nurses in primary care that has a role in prevention and disease. It was found that practice nurses believed that obesity was preventable, caused by lifestyle factors, and that obese patients lack motivation. The findings also demonstrated that low self-esteem and body mass index (BMI) impacted attitudes towards obesity (Brown et al., 2007). However, patients seemed to be more receptive to nursing staff. Although there is a need for more organizational support and training, nurses can serve as leaders in the fight against obesity in healthcare with the proper guidance and training. This project is relevant to nurses who work with clients who are overweight or obese because nurses have the ability to be an agent of change in environments that proactively address the overweight and obesity epidemic (Rowen, 2009).

Local Background

Union County is a rural country located in South Carolina. In 2010, 67.4 % of South Carolina adults were obese or overweight. Union County ranked number 6 with 60% of the county being overweight or obese. Rural demographics play a role in the

disparities among rural and urban residents. Unhealthy diet was found to be a factor in rural obesity rates. There are limited resources, healthcare facilities and providers in rural areas. Structural constraints in this region include lack of medical providers, lack of transportation, and increased distance to obtain medical care. In addition, Union County lacks facilities and amenities such as gyms, recreational centers and grocery stores that can offer the opportunity for adopting and maintain healthy behaviors and lifestyles. Prior to the quality improvement project, there was no structure on assessing, counseling, managing and treating obesity. Obesity was a relevant problem with no solution. After years of managing and treating chronic diseases such as diabetes and hypertension, a passion developed to create a project that will tackle what is identified as a root cause, obesity. Obesity is prevalent in this area and the need for guided weight loss interventions can be effective in reducing obesity rates. Calculation of BMI is an inexpensive reliable tool used to identify patients who are obese and overweight. However, while counseling by a physician has been found to increase patient report of weight loss attempts and increased exercise, primary physicians do not frequently address obesity (Banerjee, Gambler & Fogleman, 2013).

Role of the DNP Student

Nursing as a profession requires practice and expert nurses to expand and apply evidence based practice to nursing care. Doctoral education is designed to prepare nurses to perform at the highest level of leadership. The increased knowledge and professionalism in nursing has resulted in the development of programs to improve patient outcomes and specialty areas in healthcare.

As a nursing leader, my role in this project was to evaluate and apply theory and interventions to improve current practice. Doctoral prepared nurses gain a wide array of knowledge from science and gain the ability to translate knowledge to effectively benefit the patient and healthcare environment (American Association of Colleges of Nursing, 2006). As a role model and leader, the goal is to engage clinicians and participants in being active in managing and treating obesity as a chronic disease. My motivation is to help others who struggle with obesity, as I too have struggled with obesity in my lifetime. As a nurse, I have witnessed many patients with limited quality of life due to comorbidities related to obesity. Potential bias that may be faced with this project is cognitive bias because of my personal experience with weight loss. Obesity can be a contributing factor to other comorbidities such as diabetes and hypertension. With the small sample study being focused on improving obesity and hyperlipidemia, this project will expand to help improve and prevent other related comorbidities.

Summary

In conclusion, obesity is a chronic disease that requires managed care. With the evidence-based data gathered from this project transitioning the gap of practice from the use of no established guidelines or interventions with the use of effective weight loss management guidelines to combat obesity. Obesity is the leading cause of diabetes, hypertension, cancer and stroke. Within the current rural practice setting, over half of the population suffers from obesity and obesity related diseases such as hypertension and diabetes. Prior to the implementation of this weight loss program, assessment and counseling of obesity was not routinely completed by physicians and healthcare providers. Routine use of guidelines and tools were not utilized to address obesity.

Therefore, a gap was identified that indicates a need to establish a new model of care for obesity management and treatment as an effective method for preventing the complications of obesity.

If clinicians and patients can be proactive in preventing the cause, the healthcare system can be relieved from billions of dollars of debt. Applications of models and theory are used to shape concepts of obesity. With encouragement and guidance, individuals will adopt a healthier way of life. Identifying related behaviors and lifestyles in communities is the first step to bringing awareness to stakeholders to create a change to better outcomes for health within the community. Evaluating effective measures and applying interventions within primary care is the goal.

Section 3: Collection and Analysis of Evidence

Introduction

Obesity rates continue to rise affecting millions of Americans. Obesity is the leading preventative cause of some cancers, heart disease, stroke and diabetes. The purpose of this project is to evaluate an existing quality improvement program in a small sector of healthcare to promote weight loss. Literature reviews suggest that active participants in weight loss programs that include counseling and behavioral management result in positive and long-term outcomes for patients with obesity (West, et al., 2011). A study conducted by Asadollahi et al. (2015) showed a 97% impact on obese patients with mindfulness training based on cognitive therapy associated with appropriate diet regime had a better impact on weight. This project provided new evidence based data to show the benefits of managed weight loss to decrease obesity rates and decrease the risk of related diseases. Section three covered the practice focused question, sources of evidence, analysis and synthesis.

Practice-focused Question(s)

The objective of this project was to evaluate the effectiveness of an evidence based weight loss interventions and guidelines developed as a QI initiative to promote weight loss and decrease related comorbidities. The existing quality improvement initiative with practice based criteria was evaluated to assess the effectiveness of weight loss. Hyperlipidemia and weight were evaluated in relation to obesity. Interventions were evaluated for effectiveness in treating, managing, decreasing risk of obesity related disease.

Sources of Evidence

The goal of primary health is to improve overall health and quality of life through patient centered care. Improving overall health involves healthcare providers identifying modifiable behaviors, and initiating interventions to improve overall health.

This project took place at a single-family practice in a rural area in the Southeast. The state where this evaluation project took place is consistently in the top 10 obese states in the country and was the 10th in the nation of obese adults with an average of 31.7 percent of adults considered obese in the state in 2013 which is in accordance to the Behavioral Risk Factor Surveillance System report conducted by the Centers for Disease Control (Gilreath, 2016). Lower income areas have been associated with higher obesity rates. Other factors such as inactivity and traditional southern diets, which consist of larger amounts of carbohydrates and sweets, have to be considered as a contributing factor. The Dietary Guidelines Advisory Committee released its 2015 Scientific Report which outlined that the over consumption of unhealthy foods and the lack of physical activity is the cause of preventable disease such as obesity and hyperlipidemia (Gilreath, 2016). The US Preventative Task Force guidelines recommend screening adults for obesity and offering behavioral interventions for those with a body mass index (BMI) greater than 30 (Phelan, Burgess, Yeazel, Hellerstedt & Griffin, 2015).

Analysis and Synthesis

This project evaluated weight loss interventions in its effectiveness to reduce weight, BMI, and improve cholesterol in overweight and obese adults. The patients participating in the study are in rural Union, South Carolina, a single, family practice. The quality improvement project evaluated participants from June 2016 to November 2016.

Obese and overweight adults were identified by clinicians and providers through routine assessment of weight and body mass index (BMI). Physicians initiated the evaluation by assessing feelings, attitudes and patients perception of weight. The study was approved by the owner of the private practice. De-identified data involving all participants with total cholesterol values greater than 200 mg/dL, low density lipoprotein > 150 mg/dL, and BMI > 25 was obtained during this evaluation project time frame. None of the participants were medically treated for hyperlipidemia. Improvement of hyperlipidemia was based on diet, exercise and counseling interventions alone. Interventions from the existing quality improvement project were initiated to evaluate the effectiveness within this setting.

Peripheral venous blood samples were collected within the laboratory, weight and BMI at the time of first diagnosis of hyperlipidemia and obesity. Participants were provided guidance and counseling regarding risk factors related to obesity and hyperlipidemia over a 3 month period, June 2016 to August 2016. Providers evaluated participant's knowledge, willingness to improve health, behavior, weight and BMI monthly with basic guidance and counseling after diagnosis. Providers and clinicians were also monitored for consistent assessment in identifying overweight and obese patients and initiating treatment. Before the adopted program was introduced to the practice, clinicians in this practice documented weight and BMI routinely approximately 60% of the time. Clinicians and providers showed positive interest and attitudes in promoting weight loss with the appropriate tools and guidance.

For the following 3 months, behavioral patterns were monitored with provider guidance and participation. Participants were then followed using randomly assigned low

calorie or low carbohydrate diets, a commitment of 150 minutes of physical exercise each week, and use of pharmaceutical treatment from June through August. For comparison purposes, a third group is considered as a control group. Patients in the control group were counseled in adopting healthy behaviors with weight loss being the interest and focus, to assess the placebo effect of those participating in the program versus self-monitoring. The outcome of interest in weight loss, defined as the difference in weight and lipid profile measured at the start of the study (baseline) and weight and lipid profile measured at the end of the study. Each participant followed up monthly for diet counseling with a provider and weekly for weight checks.

The initial 3 months of monitoring included assessing and documenting behaviors, attitudes and willingness to be proactive in improving obesity. Baseline weight was measured and subtracted from current weight. Barriers such as limited access fitness centers, cost of food that are lower in calories and carbohydrates, and negative attitudes were identified and addressed. Attitudes, behaviors, and barriers of providers were assessed and addressed with interventions set in place as well.

The following 3-month interventions were added to include diet, physical activity and pharmaceutical management. Patient continued to follow up with a provider once a month with weekly weight checks.

Summary

Obesity is a chronic disease that is related to several preventable diseases. With increasing rates of obesity, it is imperative that primary care providers are active in improving obesity rates. This project can be an effective tool within the community to improve obesity. This project evaluated an existing quality improvement project for

weight management using secondary de-identified data for effectiveness in increasing the assessment, management and treatment of obesity among healthcare professionals and promoting weight loss to improve overall health and combat obesity.

Section 4: Findings and Recommendations

Introduction

The purpose of this DNP project was to evaluate the effectiveness of an existing QI initiative for preventing the complications of obesity. In Section 4, I review the findings, implications and recommendations of the practice change evaluation. The recommendations of nursing practice were made based on data collection, analysis and results. The strengths and limitations of the project are discussed in this section.

Obesity is the leading preventative cause of some cancers, heart disease, stroke and diabetes. Researchers have suggested that active participants in weight loss programs that include counseling and behavioral management result in positive and long-term outcomes for patients with obesity (West, et al., 2011). Offering a pre-existing physician guided weight loss interventions and counseling to overweight and obese individuals with identified hyperlipidemia was a quality initiative offered at the practicum site. I was actively involved in this quality improvement initiative and analyzed the data and outcomes. The goal of this project is to evaluate an existing quality improvement project for weight management using secondary de-identified data for effectiveness in increasing the assessment, management and treatment of obesity among healthcare professionals and promoting weight loss to improve overall health and combat obesity and related diseases, such as hyperlipidemia.

Findings and Implications

Historical data findings

To ensure proper evaluation of weight management and treatment of obesity, it is important to understand the historical context of obesity and baseline data. I was able to

collect retrospective data 3 months prior to the implementation of the quality improvement initiative which was implemented within the private practice setting. The historical data was obtained through the electronic medical records of de-identified patient data of active participants with total cholesterol values greater than 200 mg/dL, low density lipoprotein > 150 mg/dL, and BMI > 25 at the practicum site from June, July and August of 2016. None of the participants were medically treated for hyperlipidemia.

Important data points included:

- Overweight and obesity with related factor of hyperlipidemia.
- Patients who expressed the desire to lose weight and improve overall health.
- Patient expressed the desire for routine guided physician weight management and counseling.

The providers and clinician were also evaluated on their readiness to assess, evaluate and identify patients who would benefit from the project. Before the adopted program was introduced to the practice, clinicians in this practice documented weight and BMI routinely approximately 60% of the time. Clinicians and providers showed positive interest and attitudes in promoting weight loss with the appropriate tools and guidance. Active participation and willingness for change is an important factor needed within the practice to promote improvement among the patient population. The overall overweight and obesity rate for each month of June, July and August 2016 regardless of the continued participation in the project are reflected in table 1. This table shows the significance of overweight and obese populations within this community.

Table 1.

Historical data formatting

Measure	Rate	Numerator	Denominator	Outcome
June 2016				
WL Desire	15	15	20	75%
OW/Obese	17	17	20	85%
Hyperlipidemia	10	10	20	50%
July 2016				
WL Desire	25	25	25	100%
OW/Obese	20	20	25	80%
Hyperlipidemia	12	12	25	48%
August 2016				
WL Desire	30	30	30	100%
OW/Obese	25	25	30	83%
Hyperlipidemia	15	15	30	50%

Key**WL Desire:** Pre-intervention desire for weight loss**OW/Obese:** Number of patients identified as obese or overweight, BMI > 25**Hyperlipidemia:** Number of patients identified with hyperlipidemia, total cholesterol values greater than 200 mg/dL, low density lipoprotein > 150 mg/dL

The historical data shows the foundation and the state that practice with control data. From the control data, I could determine the rates of patients who desired to lose weight to improve overall health. I could evaluate the state of obesity and obesity related disease in regards to hyperlipidemia. From June through August 2016, 91.7% of patients expressed the desire to lose weight to improve overall health with physician guided interventions and counseling.

The historical data displayed the rate of overweight and obese patients within the practice. From June through August 2016, 82.7 % of patients were identified as overweight or obese with 49% of the patient population being identified with

hyperlipidemia. The implications of the historical findings confirm that obesity rates are high in rural areas. Implications coincide with the findings of other literature which indicate higher rates of obesity in rural areas versus urban areas.

In research analysis of body mass index (BMI), diet and physical activity from 7,325 urban and 1,490 rural adults in the 2005-2008 National Health and Nutrition Examination Survey (NHANES), conducted by Befort, Nazir, and Perri (2012), rural obesity were markedly higher among rural adults compared to urban counterparts. Obesity increases cardiovascular risk through risk factors such as increased fasting plasma triglycerides, high LDL cholesterol, low HDL cholesterol, elevated blood glucose and insulin levels and high blood pressure (Boudewijn, Elte & Cabezas, 2013). Studies suggest that rural residents have higher rates of chronic disease compared to urban communities, and obesity may be a major contributor to disparity (Befort et al., 2012). The historical data identified the significant need for weight loss counseling and interventions within this private sector. Literature reviews suggest that active participants in weight loss programs that include counseling and behavioral management result in positive and long-term outcomes for patients with obesity (West, et al., 2011). The goal of primary health is to improve overall health and quality of life through patient centered care. Improving overall health involves healthcare providers identifying modifiable behaviors, and initiating interventions to improve overall health. This quality improvement project fulfilled the desire for these overweight and obese patients who were identified as wanting to lose weight. In the DNP project, a quality improvement project was initiated from a program that was already in place at a medical center in the southeast region of the US since 2013. This program developed weight loss guidelines

intended for those who prefer a non-surgical option or do not qualify for surgery to achieve weight loss goals. This program was designed to help participants lose weight quickly and safely with a low glycemic diet and provider monitoring. Similar interventions and monitoring were evaluated in a smaller sector of healthcare.

Practice change findings and implications

The practice change that I evaluated in this study involved 10 patients who were identified as overweight or obese with hyperlipidemia. Each patient expressed the desire to lose weight and improve lipid panel with physician guided weight loss and diet. Each patient was not being medically treated for hyperlipidemia which eliminated bias with improving lipid panels with diet and exercise. Subjects for this study were obese and overweight adults identified by clinicians and providers through routine assessment of weight and body mass index (BMI). Physicians initiated the evaluation by assessing feelings, attitudes and patient's perception of weight. The study was approved by the owner of the private practice. De-identified data from all participants with total cholesterol values greater than 200 mg/dL, low density lipoprotein > 150 mg/dL, and BMI > 25 was obtained during this evaluation project time frame to be compared retrospectively. The next section focus is to evaluate the effectiveness of QI in managing obesity rates while focusing on key factors such as cholesterol, BMI, HDL, LDL and fasting triglycerides among others.

The focus of this project was to evaluate the effectiveness of an existing QI initiative for the prevention of complications associated with obesity. A group of participants diagnosed with obesity provided data for various elements for measuring the complications related to obesity. The elements of BMI, LDL, HDL, cholesterol level and

fasting triglycerides were used to assess the effectiveness of the QI initiative. A pre-post intervention assessed at different time intervals (pre-intervention, 3 months and post-intervention) evaluated the effectiveness of the QI initiative for the different time intervals. The pre-post intervention was carried out by use of ANOVA as shown in the next section. The section is divided into main elements affecting obese people.

BMI

The project assessed whether the BMI levels of the participants improved after the implementation of the QI intervention. Table 2 shows the descriptive statistics of the BMI element which was measured at pre-intervention period, 3 months and 6 months. Results show that the number of participants in the study was 10. The results demonstrated that the participants at the pre-intervention had a mean BMI of 30.93 with a standard deviation of 2.9714. The minimum BMI level was 26.0 while the highest value was 35.0. At 3 months, the participants had a mean BMI of 30.740 and a standard deviation of 2.9014 where the lowest BMI value was 24.8 and highest being 34.1. Moreover, the BMI level of participants at 6 months had a mean of 27.490 with a standard deviation of 2.4265 where the minimum value was 24.0 and the maximum value was 30.2.

Table 2.

Descriptive statistics: BMI

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Pre-intervention BMI	10	26.0	35.0	30.6	30.930	2.9714
3 Months BMI	10	25.8	34.1	30.5	30.740	2.9014
6 Months BMI	10	24.0	30.2	27.45	27.490	2.4265

In order to assess the effectiveness of QI intervention in improving BMI rates, ANOVA was carried out to assess the effectiveness at pre-intervention, 3 months and post intervention. Table 3 describes the results of the ANOVA. The results describe that the BMI means were significantly different at the three time points as described by the Greenhouse-Geisser correction ($F(1.088, 9.788) = 61.895$, $p\text{-value} = 0.000$).

Table 3.

ANOVA analysis: BMI

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	74.774	2	37.387	61.895	.000
	Greenhouse-Geisser	74.774	1.088	68.757	61.895	.000
	Huynh-Feldt	74.774	1.122	66.663	61.895	.000
	Lower-bound	74.774	1.000	74.774	61.895	.000
Error(Time)	Sphericity Assumed	10.873	18	.604		
	Greenhouse-Geisser	10.873	9.788	1.111		
	Huynh-Feldt	10.873	10.095	1.077		
	Lower-bound	10.873	9.000	1.208		

Results from the ANOVA did not specify which means were statistically different. A Bonferroni post hoc test enabled the researcher to discover which specific means differed. The results from Bonferroni test are indicated in table 4. The results revealed that there was a significant difference in BMI between pre-intervention and post-intervention ($p\text{-value} = 0.000$) where the BMI reduced from 30.93 to 27.49. Similarly, results demonstrated a significant difference in BMI between 3 months intervention and post-intervention ($p\text{-value} = 0.000$) where the BMI reduced from 30.74 to 27.49. The results, however, did not show significant difference between pre-intervention and 3 month intervention ($p\text{-value} = 0.292$). The results lead to a conclusion

that that long term exercise (6 months) of QI intervention significantly improves the BMI levels of participants but not after only 3 months of QI intervention.

Table 4.

Pairwise comparison of means: BMI

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.190	.103	.292	-.111	.491
	3	3.440*	.429	.000	2.182	4.698
2	1	-.190	.103	.292	-.491	.111
	3	3.250*	.410	.000	2.048	4.452
3	1	-3.440*	.429	.000	-4.698	-2.182
	2	-3.250*	.410	.000	-4.452	-2.048

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Total Cholesterol

The DNP program also evaluated whether QI intervention lowered participants' total cholesterol levels. Table 5 reveals the descriptive statistics of the total cholesterol variable. The results reveal that pre-intervention cholesterol had a mean of 220.50 mg/dL with a standard deviation of 14.577. The lowest value recorded was 204 mg/dL and a maximum of 250 mg/dL. Further, the cholesterol levels at 3 months intervention showed a mean of 219.90 mg/dL and a standard deviation of 15.147. The minimum value observed as 202 mg/dL while the maximum value was 252 mg/dL. Similarly, the post intervention cholesterol levels showed a mean of 216.40 mg/dL and a standard deviation of 15.086. Moreover, the lowest value observed was 200 mg/dL and highest value being 248 mg/dL.

Table 5.

Descriptive statistics: Total cholesterol

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Pre-intervention Cholesterol	10	204	250	217.50	220.50	14.577
3 Months Cholesterol	10	202	252	217.00	219.90	15.147
6 Months Cholesterol	10	200	248	212.50	216.40	15.086

To assess the effectiveness of the QI intervention on reducing participants' cholesterol levels, ANOVA was carried out. The ANOVA tests that means of the cholesterol at different time period are significantly different. Table 6 displays ANOVA results. Since the sphericity was violated, the Greenhouse-Geisser was used to assess the significance of the analysis which demonstrated that the means of cholesterol at pre, 3 months and 6 months were significantly different ($F(1.362,23.933)= 36.877$, $p\text{-value}= 0.000$).

Table 6.

ANOVA results: Total Cholesterol

	Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Time	Sphericity Assumed	98.067	2	49.033	36.877	.000
	Greenhouse-Geisser	98.067	1.362	71.998	36.877	.000
	Huynh-Feldt	98.067	1.521	64.456	36.877	.000
	Lower-bound	98.067	1.000	98.067	36.877	.000
Error(Time)	Sphericity Assumed	23.933	18	1.330		
	Greenhouse-Geisser	23.933	12.259	1.952		
	Huynh-Feldt	23.933	13.693	1.748		
	Lower-bound	23.933	9.000	2.659		

Further, the Bonferroni post hoc test helped in identifying which means were statistically different. Table 7 displays the results of the pairwise comparison of variables.

Results demonstrated that the cholesterol means at pre-intervention and at 3 months were significantly different (p-value= 0.000) at 5% level of significance where the values reduced from 220.50 mg/dL to 219.90 mg/dL. The results also show that the cholesterol means at pre and post intervention were significantly different (p-value 0.000) which were observed to reduce from 220.50 mg/dL to 216.40 mg/dL. Similarly, there was a significant difference in means of cholesterol levels at 3 months and 6 months of QI intervention (p-value= 0.000) which decreased from 219.90 mg/dL to 216.40 mg/dL. The results, therefore, leads to a conclusion that the QI intervention effectively leads to the reduction of cholesterol levels at short term (3 months) and long term exercise (6 months).

Table 7.

Pairwise comparison of means: Total cholesterol

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.600	.636	1.000	-1.265	2.465
	3	4.100*	.547	.000	2.496	5.704
2	1	-.600	.636	1.000	-2.465	1.265
	3	3.500*	.307	.000	2.599	4.401
3	1	-4.100*	.547	.000	-5.704	-2.496
	2	-3.500*	.307	.000	-4.401	-2.599

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Fasting Triglycerides

The DNP program focused to determine whether the QI intervention reduces the levels of fasting triglycerides among obese students. Table 8 demonstrates the descriptive

statistics of the fasting triglyceride variable. The results demonstrate that the mean value for fasting triglycerides at pre-intervention period was 165.60 mg/dL and a standard deviation of 40.053. The lowest value was measured as 100 mg/dL while the highest value was 242 mg/dL. The mean value for fasting triglyceride at 3 months period was 165 mg/dL with a standard deviation of 39.121. Moreover, its minimum value was 99 mg/dl while the maximum was 240 mg/dL. Similarly, the results demonstrate a mean value of fasting triglyceride at 6 months period was 162 mg/dL and a standard deviation of 38.859. The lowest value was recorded as 96 mg/dL while the highest value was recorded as 238 mg/dL.

Table 8.

Descriptive statistics: Triglycerides

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Pre-intervention Triglycerides	10	100	242	161.00	165.60	40.053
3 Months Triglycerides	10	99	240	163.00	165.00	39.121
6 Months Triglycerides	10	96	238	159.50	162.00	38.859

The project evaluated whether the QI intervention would be effective in reducing the fasting triglyceride levels among obese participants which as assessed at varying time period of pre-intervention, 3 months and 6 months. ANOVA aided with the analysis process to determine the significance of the three-time periods. Table 9 displays the results of the ANOVA. The results demonstrates that since the sphericity assumption is not significant, the Greenhouse-Geisser test was used which revealed that the three means of fasting triglyceride at pre-intervention, 3 months and 6 months are significantly different ($F(1.754,15.783)= 14.067$, $p\text{-value}= 0.000$).

Table 9.

ANOVA results: Triglycerides

	Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Time	Sphericity Assumed	74.400	2	37.200	14.067	.000
	Greenhouse-Geisser	74.400	1.754	42.426	14.067	.000
	Huynh-Feldt	74.400	2.000	37.200	14.067	.000
	Lower-bound	74.400	1.000	74.400	14.067	.005
Error(Time)	Sphericity Assumed	47.600	18	2.644		
	Greenhouse-Geisser	47.600	15.783	3.016		
	Huynh-Feldt	47.600	18.000	2.644		
	Lower-bound	47.600	9.000	5.289		

In addition, Bonferroni test was used to determine which means were significantly different. The results are displayed on table 10. The results from the test reveal that the means of fasting triglycerides at pre-intervention and post-intervention are significantly different (p-value= 0.006) where the values of fasting triglyceride dropped from 165.60 mg/dL to 162 mg/dL. The results also demonstrate that the means of fasting triglyceride at 3 months and post-intervention are significantly different (p-value= 0.003) where the values changed from 165 mg/dL to 162 mg/dL. However, the means of fasting triglyceride at pre-intervention and 3 months were not significantly different (p-value= 1.000). This leads to a conclusion that QI intervention is effective in reduction of fasting triglycerides among obese patients. However, the effectiveness is long term (6 months) rather than short term (3 months).

Table 10.

Pairwise comparison of means: Triglycerides

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.600	.702	1.000	-1.460	2.660
	3	3.600*	.846	.006	1.119	6.081
2	1	-.600	.702	1.000	-2.660	1.460
	3	3.000*	.615	.003	1.197	4.803
3	1	-3.600*	.846	.006	-6.081	-1.119
	2	-3.000*	.615	.003	-4.803	-1.197

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

HDL Cholesterol

The QI intervention was applied to determine whether it is effective in managing the HDL cholesterol levels among obese patients. Table 11 illustrates the descriptive statistics of HDL cholesterol. The mean value for pre-intervention HDL cholesterol was 40.10 mg/dL and a standard deviation of 6.919. The HDL cholesterol had a minimum value of 30 mg/dL and maximum of 52 mg/dL. The mean value of HDL cholesterol at 3 months was 40.20 mg/dL and a standard deviation of 6.941. The lowest value was recorded as 31 mg/dL while the highest as 53 mg/dL. The mean of HDL cholesterol recorded at 6 months was 41.90 mg/dL with a standard deviation of 7.370. The lowest value recorded was 32 mg/dL and the highest was 55 mg/dL.

Table 11.

Descriptive statistics: HDL cholesterol

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Pre-intervention HDL	10	30	52	39.50	40.10	6.919
3 Months HDL	10	31	53	39.00	40.20	6.941
6 Months HDL	10	32	55	41.00	41.90	7.370

In addition, ANOVA model was conducted to determine if QI intervention contributed to the changes in HDL cholesterol among obese participants. Table 12 demonstrates the results of the ANOVA. Results from the Greenhouse-Geisser test demonstrated that the means of HDL cholesterol at pre-intervention, 3 months and 6 months were significantly different ($F(1.45,13.054)= 11.858$, $p\text{-value}= 0.002$).

Table 12.

ANOVA results: HDL cholesterol

	Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Time	Sphericity Assumed	20.467	2	10.233	11.858	.001
	Greenhouse-Geisser	20.467	1.450	14.111	11.858	.002
	Huynh-Feldt	20.467	1.656	12.357	11.858	.001
	Lower-bound	20.467	1.000	20.467	11.858	.007
Error(Time)	Sphericity Assumed	15.533	18	.863		
	Greenhouse-Geisser	15.533	13.054	1.190		
	Huynh-Feldt	15.533	14.907	1.042		
	Lower-bound	15.533	9.000	1.726		

Further, the Bonferroni test aided to determine the means that were significantly different as demonstrated in table 13. Results reveal that the HDL cholesterol means recorded at pre-intervention and post-intervention were significantly different ($p\text{-value}=$

0.015) and were observed to increase from 40.10 mg/dL to 41.90 mg/dL. Also, results show that means of HDL cholesterol at 3 months and 6 months were significantly different which were observed to increase from 40.20 mg/dL to 41.90 mg/dL. However, the means for HDL cholesterol recorded at 3 months and 6 months were not significantly different. The results, therefore, reveals that QI intervention is effective in improving the HDL cholesterol levels among obese patients. However, the intervention is 6 months after initiation as opposed to 3 months after initiation.

Table 13.

Pairwise comparison of means: HDL cholesterol

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-.100	.458	1.000	-1.444	1.244
	3	-1.800*	.490	.015	-3.237	-.363
2	1	.100	.458	1.000	-1.244	1.444
	3	-1.700*	.260	.000	-2.464	-.936
3	1	1.800*	.490	.015	.363	3.237
	2	1.700*	.260	.000	.936	2.464

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

LDL Cholesterol

The study also focused to determine whether the implementation of QI intervention would help reduce the levels of LDL cholesterol among obese patients. Table 14 demonstrates the descriptive statistics of LDL cholesterol variable. Results demonstrate that the mean of LDL cholesterol recorded at pre-intervention was 150.2 mg/dL with a standard deviation of 23.64. The minimum value recorded was 100 mg/dL

while the highest value recorded was 180 mg/dL. The mean of LDL cholesterol recorded at 3 months was 150.8 mg/dL with a standard deviation of 23.64. The lowest value recorded was 102 mg/dL while the highest value was 181 mg/dL. In addition, the mean value of LDL cholesterol recorded at post intervention was 148.4 mg/dL with a standard deviation of 22.633. The minimum value was recorded as 100 mg/dL and the maximum as 178 mg/dL.

Table 14.

Descriptive statistics: LDL cholesterol

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Pre-intervention LDL	10	100	180	153.50	150.20	23.640
3 Months LDL	10	102	181	155.50	150.80	22.846
6 Months LDL	10	100	178	152.00	148.40	22.633

The study determined whether implementing the QI intervention would help in reducing the LDL cholesterol levels of participants. This was determined by conducting ANOVA analysis where the results are displayed in table 15. Results from the Greenhouse-Geisser test illustrates that the means for LDL cholesterol recorded at pre-intervention, 3 months and 6 months were significantly different ($F(1.985,17.865)=13.081$, $p\text{-value}=0.000$).

Table 15.

ANOVA results: LDL cholesterol

	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	31.200	2	15.600	13.081	.000
	Greenhouse-Geisser	31.200	1.985	15.718	13.081	.000
	Huynh-Feldt	31.200	2.000	15.600	13.081	.000
	Lower-bound	31.200	1.000	31.200	13.081	.006
Error(Time)	Sphericity Assumed	21.467	18	1.193		
	Greenhouse-Geisser	21.467	17.865	1.202		
	Huynh-Feldt	21.467	18.000	1.193		
	Lower-bound	21.467	9.000	2.385		

In addition, the Bonferroni test was conducted to determine which LDL cholesterol means were significantly different as indicated in table 16. The results show that the means for LDL cholesterol recorded at pre-intervention and post-intervention were significantly different (p -value= 0.012) and the values were observed to fall from 150.2 mg/dL to 148.4 mg/dL. Moreover, the means for LDL cholesterol recorded at 3 months and 6 months were significantly different (p -value= 0.003) where the LDL cholesterol values dropped from 150.8 mg/dL to 148.4 mg/dL. However, the means for LDL cholesterol recorded at pre-intervention were not significantly different from those recorded at 3 months (p -value= 0.779). The results, therefore, reveals that the QI intervention is effective in reducing the LDL cholesterol levels among obese people but the effect is long term (6 months) rather than short term (3 months).

Table 16.

Pairwise comparison of means: LDL cholesterol

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-.600	.499	.779	-2.063	.863
	3	1.800*	.467	.012	.431	3.169
2	1	.600	.499	.779	-.863	2.063
	3	2.400*	.499	.003	.937	3.863
3	1	-1.800*	.467	.012	-3.169	-.431
	2	-2.400*	.499	.003	-3.863	-.937

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Section 5: Dissemination Plan

Introduction

In this section, I will discuss the process through which I will disseminate this DNP project to the institution experiencing the problem. The current DNP project focused to evaluate the effectiveness of the quality intervention program as well as evidence based weight loss interventions and guidelines in improving weight loss and reduction of related co-morbidities among obese people. The DNP study was carried out on a single, family practice unit in a medical centre in South Carolina. In order for the institution and people of South Carolina in rural areas to implement and make use of the findings and evidence from this DNP program, I developed a dissemination plan that would facilitate the presentation of findings and evidence.

Associated with undertaking research, many researchers focus to undertake research purely as a means of fulfilling their degrees' requirements. However, medical practitioners such as nurses or midwives are expected to contribute to the development of quality service provision (Whitehead & Schneider, 2013). This entails sharing and disseminating their research findings and actively reporting the results of their clinical innovation at their best practice. The students' research can be made useful and successful to all nursing staffs through the dissemination process (Whitehead & Schneider, 2013). While developing a dissemination plan, key strategies and questions are implemented in order to obtain a successful plan which entails: purpose of disseminating the research findings, target audience and any other individual that would benefit from the findings, various best media channels for communicating and reaching out to various people and the execution plan (Whitehead & Schneider, 2013).

Various methods of research dissemination have been proposed which include oral presentation, peer review publication and poster presentation. Journal or peer reviewed publication is a long process as compared to oral or poster presentation. For my DNP project, I will focus to employ a poster publication to disseminate my research findings since my target audience is small. In addition, the poster presentations are done at local, national or international conferences and are useful as they are creative, eye catching and provide a detailed method of communicating research findings (Whitehead & Schneider, 2013). An appropriate dissemination involves choosing the right poster format. The dissemination plan will involve the following process: Organization identification, budget allocation, time allocation, preparation of the poster presentation, analysis of self, and execution. The last part of this section is the summary.

Organization Identification

The process of research dissemination involves identifying the organization and target audience to disseminate the information. I will focus on including the participants of this DNP program during the process of research findings dissemination. In addition, the target organization through which the dissemination process will take place will involve the medical center that facilitated data collection. The target audience will be people with obesity and associated cardiovascular diseases as well as key stakeholders responsible for the reduction of the epidemic condition. I will also identify the poster presentation as the channel of findings of dissemination and I will select the organization's conference as the venue of findings dissemination.

Budget Allocation

DNP project dissemination is associated with several costs incurred especially for the use of poster presentation. I will keep track of the costs required for designing the poster presentation and printing out of handouts and documents to be used during the poster presentation conference. In addition, cost of using materials such as projectors and other media channels during the conference will be listed.

Time Allocation

The DNP project dissemination is a chronological process that requires successful execution of preceding steps. In addition, I will focus to use a less time to ensure that the implications of findings are executed as soon as possible. The preparation of the poster presentation will take a period of 5 days. This will include developing an abstract and the poster document as well as printing papers to be used during the conference. The preparation of venue and analysis of self will take place in 2 days. This ensures that possible errors are minimized and eliminated and allow enough preparation time for the conference. The execution process will take one day where the dissemination of the findings will take place in the conference and I will be the main stakeholder. Time will also be provided for additional questions from the panel members in the conference.

Preparation of Poster Presentation

The crucial part in the dissemination plan is the preparation and development of poster presentation. I will first develop an abstract of my poster presentation and present it to the panel members in the conference. This will aim to prepare them about my DNP program. I will then follow the guidelines developed in the conference in order to develop an eye catching poster. Formatting of the poster presentation involves first

developing of background, rationale and statement of problem. The purpose must be stated succinctly. Then the synthesis of evidence and practice questions are developed to provide the link between nursing implications and best practices (Forsyth, Wright, Scherb & Gaspar, 2010). I will develop the search for evidence and the methods used to collect evidence. I will create the presentation and critical appraisal for evidence as well as summary conclusions drawn from the evidence. I will then describe the clinical practice implications and significance of the work to the conference. I will conform to the writing guidelines to eliminate possible grammatical mistakes, formatting errors and plagiarism.

Analysis of Self

In order for the next phase to take place, I will conduct a self-assessment in order to address the needs and requirements of the conference presentation. The self-assessment process helps the researcher who is the main stakeholder to help build relationships with the audience as a result of increased interactions (Reitmeier & Vrchota, 2009). The self-assessment entails the abilities of transferring knowledge from the classroom to other settings. Similarly, conducting self-analysis process will ensure that I am efficiently able to transfer written evidence from the DNP program to the audience to help in the practical utilizations of findings implications. The self-analysis helps to answer the following questions: How effective are you able to translate research information topic to your audience?, How did the presentation of the tool help you in understanding the topic?, What did you learn while presenting the information? (Reitmeier & Vrchota, 2009). I will focus to put the following key considerations during the conference: clarity of purpose, content, presentation skills, organization, ability to engage audience and quality of materials used. Moreover, self-evaluation process will

enable me to identify my weaknesses and adjust the weaknesses on time. I will also use self-reflection process to learn about my personality, improve professional development and learn the process of aligning stipulated time and content (Hurnell, 2010).

Execution Process

This is the final stage of the dissemination plan that will focus on reporting the main findings to the stakeholders using the poster presentation. I will interactively engage the audience to participate in the presentation of the findings. I will distribute the handouts to various members in the conference. I will take the stakeholders into step by step analysis of the poster presentation and provide time sessions for asking questions. I will ensure that organized poster is used to minimize time wastage. At the end of the poster presentation, I will provide an opportunity to the stakeholders to ask questions as well provide recommendations based on the poster presentation.

Summary

Dissemination of my own research project to the target audience is important to help in transferring knowledge, improving social relations as well as encouraging professional development. Developing a dissemination plan will enable me to report my research findings and implications to the medical center in which the research setting took place. The dissemination plan will enable me to estimate the required budget and costs, set the time period, prepare an eye-catching poster presentation as well as engage my audience in the process of reporting research findings. I will ensure that the purpose of my DNP project is stated clearly as well as reporting of findings that are easily understood by the audience. Moreover, self-analysis process will play a major role during the presentation of the poster whereby self-reflection will enable me to identify

weaknesses and loopholes in the presentation and fix the errors on time. During the execution phase, I will allow the audience to ask questions as well as provide recommendations where necessary in order to improve the process.

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