2017

Effectiveness of a 10-Week Weight Reduction Program in a Retail Clinic

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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,
and that any and all revisions required by
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Abstract

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MS, Walden University, 2014

BS, Stevenson University, 2007

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2017

Abstract

Obesity is a serious health problem that leads to several chronic diseases and premature death. In this project, the effectiveness of the Weigh Forward (WF), a 10-week weight-loss program administered in retail clinics, was evaluated. The population consisted of 15 obese members of the program, 18 years and above, at 13 dispersed clinics in Maryland and Virginia. The theory of planned behavior (TPB) was used as the framework from which to view the project. The purpose was to determine the efficacy of the WF program by comparing the baseline body mass index (BMI) and the waist circumference (WC) to the BMI and WC at the end of the program. Descriptive analysis was done using correlation coefficient on the 15 participants, who completed the 10-week program. The result showed the mean and mode for BMI reduction to be 2 kg/m^2, and the mean and mode for the WC reduction was 3 inches. The percentage weight loss varied from 3–11%, with the completion rate for the enrolled participants at 29%. This study has implications for social change because the findings support intensive behavioral modification as an effective approach to weight loss. The study can help healthcare providers appreciate the need to complete preventive care assessment on patients, identify patients with obesity, and provide these patients with information on the need to lose weight and available resources to help them lose weight. The mean and mode of 2 kg/m^2 for BMI reduction, and 3 inches for the reduction in WC at the end of 10 weeks, showed that the WF program was effective for weight loss because the participants lost significant amount of weight. The findings from the project can guide the development of practice guidelines for administering the WF program in the retail clinic.

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Dedication

I am deeply grateful to my family for their support and love during this journey. They believed in me, more than I believe in myself to accomplish this task succesfully, and my children – Princess, Jewels, Esther, Sharon, and Prince continuously reminded me of their love and support. The motivation from my loved ones pushed me to greater heights to accomplish what I wasn't sure I could undertake. I am grateful to my mother, Mercy Ndimele, and my siblings, who continuously prayed for my success all through the process. The ultimate glory goes to the Almighty God, my Lord and Savior, who gave me the strength to juggle school, work, family, and social life.

Acknowledgments

Through this journey, it became vividly clear to me that I can do all things through Christ who gives me strength. I must acclaim all glory and honor to the Almighty God, who made this dream come through.

I am thankful to Dr. Dana Leach and Dr. McGinnis for their motivation and support. Dr. Leach has been an inspiration to me during this project. Dr. McGinnis has been very patient in giving me direction on the best approach to completing this project, and I appreciate her for her perseverance with me.

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Section 1: Nature of the Project

Background

Obesity means a body mass index (BMI) of 30 kg/m^2 or more (Losina et al., 2011). The Centers for Disease Control and Prevention (CDC, 2015) noted that in 2011 and 2012, about 35% of adults in the United States were obese. The obesity rate among children and teenagers, aged 2–19 years, remained at 17% at ongoing basis between 2011 and 2014 (CDC, 2015). According to Healthy People 2020, obesity is an important health indicator; it must be addressed to improve the health and quality of life of people in communities (Healthy People 2020, 2015). The goal is for the obesity rate to drop by 14.3% by the year 2020 (Healthy People 2020, 2015). The Surgeon General, David Satcher, noted that even though overweight and obesity are not infectious, they are becoming much more prevalent (CDC, 2001). Also, the Surgeon General David Satcher noted that obesity has become an epidemic and requires immediate attention (CDC, 2001).

The complications of obesity can compromise the health of the people affected and lead to increased morbidity and mortality. They include poor mental health, heart disease, type 2 diabetes mellitus, hypertension, coronary artery disease, high cholesterol, gallbladder disease, and osteoarthritis (Garcia-Dominic et al., 2013). Also, obesity leads to sleep apnea and respiratory problems, stroke, body pain, and certain types of cancer (CDC, 2015). There is an increase in the incidence of diabetes related to obesity according to the result of a study done on Pennsylvania adults between 1995 and 2010

(Garcia-Dominic et al., 2013). The World Health Organization (WHO) classified the diseases that result from obesity into four groups, and they are CVD, some types of cancer, insulin resistance and diabetes, and disease of the gall bladder (Zimmerman, Holst, Sorensen, 2011). Also, Staiano et al. (2012) noted that obesity is antecedent of CVD and certain types of cancer, and increases the mortality rates, according to a study done in Canada. After modifying for age, sex, and race, osteoarthritis of the knee with functional limitations co-exist with obesity, and obesity reduces the quality of life of those affected by it (Losina et al., 2011). Obesity related diseases are debilitating and expensive to treat.

Medical care cost for people who are obese is higher than for people of normal weight by over $1,500 (CDC, 2015). The cost for managing medical conditions related to obesity is very high in the United States due to direct costs (the cost of preventive care, diagnostics, treatment) and indirect costs (low productivity, absenteeism, morbidity, mortality) (CDC, 2015). Altogether the U. S. employers spend over $100 billion on insurance claims every year on chronic diseases related to obesity (CDC, 2013). Organizations with up to 1,000 employees spend about $280,000 each year in medical costs and absenteeism associated with obesity (CDC, 2013). Comparing medical costs from 1998 to 2006, the obesity-related medical care increased overall healthcare costs by 37% (CDC, 2015). There is a significant correlation between BMI and increasing age with the high cost of health care: Obese elderly patients have more chronic diseases and comorbidities than their counterparts with healthy BMI (Tigbe, Briggs, & Lean, 2013).

The risk of elevated rates of morbidity and mortality across every age population, especially among adults, continues to increase (CDC, 2015). Thus, controlling healthcare costs can be difficult.

Obesity is leading to growing decreased quality of life, high rates of illness and death. Reporting finding from a study on 362,200 Danish military men from 1947 to 1977, Zimmerman et al. (2011) claimed that entering adulthood with a BMI greater than 31 doubled their mortality rate. They also reported that findings from a meta-analysis of 57 studies on a million adults, 35-80 years, showed that obesity increased the morbidity and mortality rates in both males and females). Increasing waist circumference (WC) and waist-hip ratio (WHR) have been found to elevate the death rate among the obese adults, but there was no increase in mortality noted among the adults with ideal weight and normal WC or WHR (Staiano et al., 2012).

Multiple studies have shown that engaging in activities that reduce BMI, such as cholesterol-lowering diet, reduced caloric intake, and physical activity, produce weight loss, support positive HRQL, psychological stability, and well-being (Wang, Sereika, Styn, & Burke, 2013). Achieving high HRQL through evidenced-based practice (EBP) requires that health care providers offer training, motivation, and counseling to obese individuals (Cai, et al., 2014). The U.S. Preventive Task Force (USPTF) recommends that health providers provide screening to all adult patients, and offer IBT for weight loss after finding out that very few primary care providers are counseling their obese patients (Wadden, et al., 2013). Clinicians should encourage obese people to engage in weight loss activities and enroll in weight-loss programs. Weight-loss programs integrate

support with counselling, education, and motivation for the participants of the programs to ensure their success in achieving a healthy weight. Trained clinicians provide support to obese patients by offering them sufficient counseling, motivation, and encouragement. This advice and motivation help these participants overcome the challenges that can hinder them from achieving weight loss. Those enrolled in the WF program have access to healthy recipes and a regimen of physical activity that helps promote and sustain a healthy weight.

To ascertain the value of the RediClinic WF program in supporting weight loss and maintenance, a quality improvement project is needed. In the WF program, the trained clinicians or the WF coaches help the program participants to make effective behavioral changes in favor of a lifestyle of physical activity and healthy diet (RediClinic.com, 2014). The clinicians' counseling and motivation help the WF participants to develop strategies to overcome their challenges by finding out from the participants what their barriers to achieving a successful weight reduction are. The participants are expected to lose at least 2 pounds each week for 10 weeks, and have a reduction in their BMI, WC, and to show lowering of their blood sugar level, cholesterol levels, thyroid hormone levels, hemoglobin A1c (HbA1c), and blood pressure.

To determine the effectiveness of the program, the BMI and WC at the beginning of the program were compared to the BMI and WC at the end . The efficiency of the clinicians in directing the WF program is significant to the outcome of the program, and the reduction in the prevalence of obesity among the patients who come to the

RediClinic. When the efficacy of the WF program is established, it can be a motivating factor for the obese persons to enroll in the program and for the clinicians to provide their patients with the necessary information on the program.

The BMI is the most commonly used anthropometric determinant of obesity (Musaad et al., 2009). It is calculated by dividing the weight of an individual in kilograms (Kg) by the square meter of the person's height (Okorodudu et al., 2010). Because of the ease of calculating the BMI, it is widely used to determine the presence of obesity, but the downside is the inability to use it to determine if the body weight is from a lean or fat mass (Okorodudu et al., 2010). The extent of central obesity or the WC is currently considered the most accurate determinant of the degree of the risk of morbidity and mortality of people with obesity (Huxley, Mendis, Zheleznyakov, Reddy, & Chan, 2010). The WC is the circumference around the waist area, and the calculation of the waist to hip ratio and waist to height ratio are excellent ways to determine when an obese individual is at risk. The waist to height ratio can explain the fat distribution more accurately than the BMI (Huxley et al. 2010). For this project, the WC was considered, along with the BMI, before the start of the WF program and at the end of the program. High BMI and WC are strongly related to chronic diseases including, high BP (HBP), heart disease, T2DM, and high cholesterol; increased BMI and WC are also related to high mortality in the obese individuals (Huxley et al. 2010). Childhood obesity leads to HBP, and the only way to prevent HBP related to childhood obesity is to integrate lifestyle changes through diet and physical activity at an early age (Cai et al. 2014). A

reduction in the BMI and the WC through the weight-loss program can reduce BP. In a meta-analysis, Cai et al. (2014) claimed that a weight loss of >5 kg in adult patients meaningfully reduces BP. A decrease in weight, BMI, and the WC can notably reduce morbidity and mortality rates among all age populations.

The TPB framework was used to assess the participants' will power crucial for achieving the full benefit of the program. The PCA in the TPB framework boost the performance of the participants more than the regimental approach, because the PCA gives the WF enrollees the power needed to complete the weight reduction activities. Since 2011, the Centers for Medicare and Medicaid Services have paid for clinically obese Medicare patients' weight loss programs provided they use intensive behavioral therapy (IBT) (CMS, 2012). And, obviously it is important to discover the proficiency of the WF as a way to help people with obesity change to a healthy lifestyle, and sustain weight reduction and maintenance. Organized weight reduction can meaningfully reduce the rate of obesity and its associated comorbidities. Concrete knowledge of the factors that impede participants from losing weight is key to addressing the challenges. Weight-loss program participants need maximum support to realize the vital goals in weight loss, including a decrease in BMI and WC.

Problem Statement

Obesity is a major problem economically, psychologically, and emotionally (Okorodudu et al., 2010). Obesity alters the healthy metabolism of the persons affected leading to chronic diseases mentioned earlier (Garcia-Dominic et al., 2014). Obesity

presents with the constellation of diseases that result in metabolic syndromes, with elevated fasting blood glucose, high level of cholesterol and triglyceride, elevated BP and increased WC (Chen, Lin, & Hsiao, 2010). High rates of obesity negatively affect productivity and HRQL. Direct and indirect cost related to the various levels of obesity were negatively impacted by the work done by the obese individuals (Dee et al., 2014). The performance of jobs at workplaces is adversely affected by obesity, and leads to poor productivity, and undesirable influence on the economy at various levels where obesity is prevalent (Dee et al., 2014). The obese individuals are slow, sluggish, have multiple comorbidities, and may not perform the same job as fast as the people with the ideal weight.

Obesity leads to the plethora of chronic diseases and the multiple comorbid conditions lead to poor HRQL. Healthcare providers must be highly tactful and diligent in their approach to provide support to the obese patients to lose weight (Losina et al., 2011). Obesity or increased BMI 35 kg/m^2 or more, increases the mortality rate of the middle-aged women and men by 40% and 62% respectively, when compared to individuals with normal BMI of 18.5 to 24.9 (Mehata & Chang, 2009). The increased mortality rate is related to the numerous chronic diseases and comorbidities common in the obese people.

Studies have shown that although most overweight and obese individuals engage in weight-loss programs, it is tough for them to achieve successful weight loss, and when they attain some weight reduction, it is a bigger challenge to maintain the weight loss. Participants in the weight reduction programs often relate not achieving weight-loss to

how the programs are structured, and not individualized in approach (Bogers et al. 2010). While people give different reasons why weight-loss programs did not work for them, it is possible to personalize strategies for weight-loss programs to work for everyone to make weight loss more successful (Bogers, et al., 2010). Healthcare providers must discuss with their patients the numerous health risks associated with obesity, and the need for weight loss to maintain a high HRQL (Jay, Gillespie, Schlair, Sherman, & Kalert, 2010). Healthcare providers must assess overweight and obesity during routine care of their patients (Jay et al., 2010).

Reducing the rate of obesity and the associated chronic diseases requires an evidence-based weight-loss program that meets the needs of people with obesity. The WF program is a 10-week weight-loss program developed by Dr. David Katz and certified by the ACPM. The program is administered in the retail clinics in the Rite Aid retail stores. The retail clinics are becoming popular in healthcare because of the increased accessibility by patients, due the location of the clinics within the communities. Retail clinics are open seven day a week, and offer healthcare at a cheaper rate than other healthcare provision clinics. The convenience of the retail clinics improves accessibility and affordability, and can be combined with other routine activities like shopping and getting prescribed medications from the same location. Since the WF program is provided in the retail clinics, it is vital to ascertain its effectiveness. Determining the value of the WF program in addressing obesity can increase enrollment, and can motivate clinicians to educate their obese patients and encourage them to participate in the program to lose weight. An IBT weight loss program should focus on long-term lifestyle

change, and because the WF program falls in that category, evaluation of the approach in RediClinic is significant.

Purpose Statement

There are several approaches to weight loss and weight maintenance. However, a gap still exists in literature as to a better weight-loss program (Gesundheit, 2012). Different weight-loss programs use dietary control, or physical activity, or both, but without medical supervision, and many people, who are obese use these methods without long-term weight loss result (Dombrowski, Knittle, Avenell, Araujo, & Sniehotta, 2014). Most of the participants in these programs may lose weight but usually are unable to keep it off. (Dombrowski, et al., 2014). In most cases, participants get discouraged before completing the program. Some of the reasons that contribute to the failure to lose weight and keep it off include lack of motivation, lack of counseling, and lack of strategies to address the challenges inherent in the process. In fact, individualized weight-loss program is the best for everyone (Volger et al., 2013). An IBT weight-loss program directed by a healthcare provider, such as the WF program, is needed to address the obesity problem (Volger et al., 2013). A clinician-directed weight-loss program has the prospect of ongoing provider counseling that supports weight loss and weight loss maintenance. For those with obesity, researchers have started promoting weight loss through counseling and motivation over the traditional methods (Volger et al., 2013). The WF program fits the bill: It consists of counseling and motivation, and is directed by

healthcare providers, and the purpose of this project is to determine the effectiveness of the WF program in addressing obesity.

It is significant to establish the efficacy of the WF program for weight loss, to promote the use of the weight loss program to manage obesity. Providing ongoing advice to people, who are obese supports them to get the help they need to lose weight and maintain the weight loss (Volger et al., 2013). In this project, comparing the baseline and the ending BMI and WC is the yardstick used to measure success. Establishing that the WF program supports sustained weight maintenance after the initial weight loss, and improves the HRQL of the participants, would be an ideal and realistic finding. Stakeholders in healthcare consistently look for good reasons to push for policies to improve the health of the people (Santilli & Vogenberg, 2015). A project that support the WF program effectiveness for weight loss in RediClinic can motivate the stakeholders in healthcare to push for policy requiring health commercial insurance companies to provide coverage for the people enrolled in the program and other IBT weight-loss programs to lose weight. Insurance coverage for the WF program can increase enrollment and completion of the weight loss program. With insurance coverage for weight loss, other outpatient health provision clinics may adopt the WF or other IBT programs into their practice to help their obese patients lose weight. An increase in enrollment into the IBT programs can lead to an increase in the number of people with a healthier weight, especially with the CMS model that pays for Medicare patients with BMI starting from 30 kg/m^2 to participate in the IBT weight-loss programs (CMS, 2012). The CMS (2012) maintains that healthcare providers should counsel patients on weight control and weight

loss, and give patients information on the benefits of maintaining a healthy weight. Medicare expects that healthcare providers screen and provide counseling to Medicare patients with high BMI while providing care to them (CMS, 2017). The reason for choosing to complete a project on obesity and weight loss is the high rates of obesity among the patients of all the age populations coming to the retail clinics for care.

Nature of Study

The purpose of this DNP project was to assess the effectiveness of a 10-week weight reduction program. The WF is the only medically supervised weight-loss program certified by ACPM; it is carried out in the retail clinics inside the Rite Aid pharmacy and retail stores (RediClinic.com, 2014). The WF program emphasizes unique approaches for weight reduction and weight loss maintenance. The program's methodology includes the following steps:

1. Medical plan: The clinician obtains baseline biometrics and comprehensive metabolic panel, including the glucose level, the HbA1c, the lipid panel, cholesterol levels, thyroid stimulating hormone as well as vitamin D level in some cases before the start of the program and the 9th week. The vital signs are obtained weekly with each clinic visit - BP, heart rate, respiration, oxygen saturation in the blood and temperature. The participants have weekly visits with a qualified WF coach, who is also a nurse practitioner. The appropriate laboratory tests are obtained before the start of the program to know the baseline, and in the 9th week, to check the effect of the WF program on the test result

numbers. Part of the process is to obtain the participants' weight and body fat, the BMI, and the WC. The WF participants with HbA1c of 6 or more, a rating of three on the metabolic syndrome scale, and with normal kidney clearance are started on metformin. The BMI and the WC measured at baseline and the 10^{th} week of the program were used for the analysis in this project.

2. Participants have access to the WF website with over 500 healthy food recipes online, some of which are on the WF brochure they receive. Again, the participants can access the online dietitian or nutritionist at any time to get answers to diet related questions. The website is customized for the WF participants to track their food intake. The website also offers multiple videos that show how to prepare healthy foods.
3. Physical activity: Participants receive the WF kits with a pedometer to track their activity levels; they have access to an online fitness coach, as well as access to over 50 fitness videos customized to each patient's needs.
4. Participants receive motivational counseling from the WF coaches. The goal is to enable participants to develop strategies to overcome barriers to the behavioral modifications that are required for achieving successful weight reduction.

5. The website gives WF participants the chance to connect and network with other participants, and the chance to watch the weekly videos on the skills necessary for weight reduction and healthy living (posted by Dr. David Katz, founder and director of the WF program).
6. The data analysis used descriptive statistics. The difference between the participants' baseline and post-program BMI and WC was used to determine the value of the program in supporting weight reduction. The data were secondary data provided in the form of a LDS on patients who participated in the WF program provided by the RediClinic organization.

Project Objectives

"The purpose of this project is to assess the effectiveness of a 10-week weight-reduction program," in reducing the participants' BMI and the WC. The core project goals was to investigate if the WF program is an effective way for weight reduction. The findings can provide insight into the best guidelines for administering the weight-loss program. Also, the findings can boost the confidence of the healthcare providers in recommending the WF program. This project serves as a mirror to view the program's effectiveness for weight reduction, and to identify the aspects of the program that need improvement. And with determined effectiveness comes confidence in the program for the enrollees and the clinician, because of having facts as reference points.

According to Volger et al. (2013), teaching participants consistently during regular clinic visits about diet and physical activity, and providing advice on behavioral

weight reduction and weight control lead to weight reduction. For the purpose of this project, positive results refer to a decrease in the BMI and WC. The participants of the WF program were expected to lose at least 2 pounds a week or 20 pounds in 10 weeks. With the ACPM approval of the WF program, verifying the expected efficacy of the program in RediClinic adds to the advantage of increased confidence of the obese patients enrolled into the program, and the healthcare providers who direct the program.

Practice-Focused Questions

The practice-focused question is as follows: What is the effectiveness of the WF program in reducing the BMI and WC among the obese patients?

Significance of the Project

The desire to carry out the project came from seeing the majority of the patients coming to the RediClinic for care obese across all age groups. A suitable weight, healthy lifestyle, and good health are basics for a high HRQL needed to perform necessary activities to support life at home, socially, and perform tasks for jobs. Healthy weight supports reduction in the morbidity and mortality rates from chronic diseases among all age populations, especially the adult population. Healthy BMI is significant in the prevention of disabilities, such as osteoarthritis and other comorbidities that hinder people from completing required tasks. So, healthy weight is significant for physical, mental, psychological, and overall wellness. Disabilities in the adult populations negatively affect the workforce and hamper the care of the people in other age groups.

The need to discover an evidenced-based weight reduction program that works well for people with obesity is obvious.

This study has implications for social change, and include (a) generating EBP guidelines for administering the WF program in RediClinic, and generate information that healthcare providers in other settings may use. (b) provide information for educators in healthcare such as the diabetic educators to utilize when referring their patient population for a weight loss. (c) Help validate the importance of using the IBT approach for weight loss through the use of counseling and motivation as part of routine healthcare. Establishing the efficacy of the WF program is a great motivating factor for the clinicians in the retail clinics to encourage obese patients to participate in the program. Besides, other outpatient clinics can integrate the program into the care of their patients to improve the patients' weight, BMI, WC, and the HRQL. (d) In future, various healthcare stakeholders can get engaged in creating a policy to get the health insurance companies pay for the WF program and other IBT weight-loss programs. Insurance coverage for weight loss by commercial insurance companies is a great incentive for the people with obesity and obesity-related healthcare issues to enroll in the weight-loss programs. Also, reducing the health insurance premium for participants of the weight-loss programs, who lost weight and kept the weight off for a specified period can be a useful approach to reducing obesity. Policies that support weight loss could put the nation back on the right track to becoming a healthier one. An effective WF program can influence communities where the retail clinics that implement the WF program is located to reduce the rate of obesity and associated chronic conditions by participating in the program, and losing

weight. The people in the communities can take advantage of the program, when they get to know about it and its efficacy.

Assumptions

It is true that the WF program is an IBT weight loss program, but there is no way to ensure that participants are compliant, apart from what they reported to the WF coach or clinician. The obese patients except the Medicare patients pay the sum of $249 to enroll in the program, and this fee is not easily affordable for most people. Assuming that creating awareness about the effectiveness of the program in communities will promote weight reduction may not be true, because of the financial responsibility of paying $249 for the program. Determining the effectiveness of the program may not improve the enrollment or commitment of the healthcare providers in providing guidelines for weight reduction to obese patients.

Limitations and Delimitations. The project addressed the effectiveness of the WF program completed in certain locations, and may not reflect the outcome if done in other geographical locations or communities not included in the project. There were inconsistencies in obtaining the WC noted in the data among the WF clinicians, which may have affected the mean. The project was completed on the WF program completed in RediClinic, and may not be applicable in other ambulatory care settings because of operational and workflow differences. The high attrition level among the enrollees makes the validity of the effectiveness questionable. The project did not address the issue of high un-completion rate in the WF program. Finding out the extent of efficacy in other

geographical locations in comparison to the current findings is needed to authenticate the findings of this project.

Summary

The WF weight-loss project was a quality improvement project completed on the obese patients who came to the RediClinic for healthcare, who participated in the WF program to improve their HRQL. The project involved analyzing pre- and post-BMI and WC numbers from the LDS on the WF program. The program used trained coaches to help obese patients develop strategies to overcome the barriers that can hinder them from achieving the desired weight loss. The WF coaches build the patients' confidence through counseling and motivation, and help the patients to identify their hindrances, as well as help them in determining appropriate ways to overcome the obstacles. The participants of the WF program are provided with resources to ensure their success in the program. The 24-hour access to the WF website, the dietician and the fitness coach, online healthy food recipes and food preparation, and fitness videos are tools that equip the participants for a successful weight loss, if utilized as well. The TPB was used as a framework to view the performance of the program participants to achieve successful weight loss. Section 3 is an in-depth literature review, and also addressed the project design, data collection and the analysis of the data used for the project.

Section 2: Background and Context

Introduction

The purpose of this study was to determine the efficacy of a clinician-guided WF weight-loss program carried out in retail clinics inside Rite Aid stores in Maryland and Virginia. A significant number of patients coming to the RediClinic are obese, and the WF program is offered in the clinic, and making sure that it is relevant in addressing obesity in the RediClinic is significant. The leadership of RediClinic can invest more in training more clinicians to implement the program in the clinic to address the issue of obesity among the patients, who come to the retail clinic, when they know it is effective.

Implications

Obesity has devastating complications to health, and is a leading cause of disability and low HRQL. It is a significant cause of negative economic effect at different levels in the society - the family, community, and the nation. Obesity greatly reduces the quality of life of those affected and that of their family members. Because visceral obesity is a common phenomenon among people, who are obese, the risk for cardiovascular events and metabolic syndrome is increased among people who are obese (Davidi et al., 2011).

Concepts, Models, and Theories

Different concepts and theoretical frameworks have been used to guide weight-loss programs with limited success. In most studies, the health belief model (HBM) is used to direct the weight-loss programs by providing information to the obese patients on

perceived susceptibility, perceived threat, perceived barriers, and self-efficacy for weight loss (James, Pobee, Oxidine, Brown, & Josh, 2012). In this project, the choice of theoretical framework was the theory of planned behavior (TPB). It was used to assess the participants' ability to take control of their well-being (Olander, Fletcher, Williams, Atkinson, Turner, & French, 2013). The weight-loss program participants make important behavioral modifications to achieve weight loss, reduce their BMI and WC. Spink, Wilson, Jason, & Bostick (2012) argued that when individuals perceive an action is under their control, and will lead to a positive outcome, they put in more effort to follow the recommendations.

The Theory of Planned Behavior

The TPB framework is useful in helping people develop the self-efficacy to engage in activities they perceive will improve their health, and the activities are within their control (Spink et al., 2012). It takes a conscious decision and ability to plan activities that form a planned behavior, and lead to weight reduction. It includes planning the type of activities to engage in and the amount of time to spend on it, and the type of food to eat to avoid ingesting excess energy. The tenets of PBC works best in structured settings and involves having personal conviction and belief of owning the ability to perform the necessary tasks proficiently, as an intended behavior integrated into the daily routine (Spink et al., 2012). In a study on post-menopausal women in Canada, the TPB framework was used to examine the behavior of the women regarding physical activity. The findings from the inquiry showed that the TPB was useful in understanding the intents of the post-menopausal women about participating in the physical activity

(Vallance, Murray, Johnson, & Elavsky, 2011). A successful weight loss comes from developing the right mindset and self-efficacy, and getting the right support from the healthcare providers. The clinicians provide counseling to the obese patients to give them insight into the fact that they have an unhealthy weight that predispose them to chronic diseases, and increase their PBC to engage in activities to improve their weight (Yaesmiri et al., 2011).

Relevance to Nursing Practice

An effective weight-loss program approach in the retail clinic over time, means the patients presenting to the clinics will have a lower number of chronic diseases due to the decline in the obesity rate. Individualized weight reduction programs require motivation, counseling of the patients and the monitoring of the participants in the programs. The nurse practitioners (NPs) and other clinicians are well positioned to administer the program to the participants. Motivation, counseling, and close monitoring are valuable to assist people who are obese to change their unhealthy lifestyle to a healthier one through eating a healthy diet and improving their physical activity level (Vos et al., 2014). This project comprises the analysis of the effects of the WF program on the participants' BMI and WC by comparing the numbers at the beginning of the program to the numbers towards the end of the program. Increased participation in the WF program in the retail clinic means that the obese patients are informed about the resources available to them for weight reduction. Promoting weight loss in clinics over time will eventually result in the healthcare providers providing routine care to patients with less complicated health problems, less number of chronic diseases and

complications, and multiple prescription medications. Improvement in the BMI and WC are consistent with reduction in chronic conditions such as HTN, T2DM, heart disease, and health complications. Weight reduction improves disease conditions, such as osteoarthritis, T2DM, HTN, and other chronic illnesses. Having the right perception and the understanding about the consequences of obesity prompt people to take positive actions for weight control to improve their HRQL. Weight control, weight loss, and weight loss maintenance are great ways to reduce the healthcare cost and improve the economy of the families, communities, and the country because of the reduction in the healthcare spending on chronic diseases caused by obesity (Yaemsiri et al., 2011). The framework recommended by Jay, Gillespie, Schlair, Sherman, & Kalet (2010) provides great strategies for clinicians to use in the assessment of obesity with their patients:

1. Evaluate patients' risk, behavior, and willingness to change.
2. Counsel patient to change unhealthy behaviors.
3. Collaborate with patients to set appropriate goals for weight loss.
4. Assist patient to develop barrier busters to the challenges of weight loss.
5. Ensure that weight loss maintenance visits are set up for follow-up.

This framework can competently support successful weight loss in ambulatory or primary care settings.

Local Background and Context

Obesity is a devastating and chronic disease. It affects the health of people in our country and worldwide adversely. Obesity has a detrimental consequence on the economy of any nation with high obesity rate. Addressing the issue of obesity at every

level in healthcare is critical, and cannot be overemphasized, because of its harmful influence on the health of people, and the burden it presents to the healthcare providers having to manage patients with multiple chronic diseases, complex health conditions and comorbidities. The CDC (2015) reports that the United States spends over $150 billion in healthcare cost on conditions related to obesity, and the debilitating conditions from obesity reduce the quality of life of the people. The accelerated number of individuals that come to the clinic obese, and those with multiple comorbidities secondary to obesity indicate that effective weight reduction program and practical education by clinicians are lacking, and something need to be done to improve the situation. Engaging in weight reduction in the clinic settings can reduce the epidemic, due to increased access to healthcare at the convenient care settings. For effective education on weight reduction and the available resources, the clinicians must have the conviction that a program works. Supporting the patients, who come to the clinics to engage in the weight-loss program can lessen the number of chronic diseases, comorbidities, obesity-related complications, and improve their HRQL. Reduction in the rate of obesity is realizable with evidenced-based and sustainable weight-loss program, that is affordable and accessible. Most likely accessing the weight loss intervention at the convenient care and primary care clinic settings are the easiest and economical way to accomplish weight reduction in people who are obese. The advantage of the WF program is that it is personalized, and the participants have one on one encounter with the WF coach each visit. Also, the participants have the added advantage of accessing numerous healthy recipes, dietitian, fitness coach, physical activity and healthy food preparation videos online. The people in

our society today are technology savvy, and the ease of accessibility to technology favors the WF program.

The Role of the DNP Student

My role in the project was to glean through the WF program limited data set (LDS) provided by the RediClinic organization to identify the data for analysis. Offering weight reduction programs through IBT in primary and other ambulatory care settings have not been studied extensively (Volger et al., 2013). So this project will add to the existing evidence on weight loss to establish evidenced-based guidelines for managing obesity in RediClinic. There is the need for an appropriate and timely weight reduction program relevant in clinic settings. Carrying out the weight-loss program in retail care clinics brings the program closer to home and daily activities, and to the communities. It also meets the need of having a weight-loss program within the communities.

The statistical analysis of the secondary data on the WF patients, who participated in the weight-loss program in the RediClinic determines the value of the program through descriptive statistical calculation of the correlation coefficient of the BMI and WC. The results of the data analysis determine the merits of personalizing the weight reduction program for the people who are obese, who come to the convenient care clinic settings (Vos et al., 2014). The significant difference between the WF program and other weight-loss programs is that the WF program targets long-term behavioral change and is individualized to each patient. While the approach in other weight-loss programs is a temporary fix (Trilk & Kennedy, 2015), the method in the WF program is aimed at long

term behavioral change towards healthy diet and exercise lifestyle, because the IBT weight loss program includes change in behavioral lifestyle.

Summary

This weight loss project is significant to nursing practice, and the findings from the project support the clinicians to encourage their patients to engage in weight-loss program. Furthermore, the findings promote inclusive care that supports routine and sufficient motivation for weight reduction. The TPB framework is a conceptual framework that provides insight into the self-efficacy of the participants, that is necessary for making important weight reduction decisions. TPB is especially important when the patients understand the benefits of losing excess weight to their well-being and maintaining a high HRQL. Weight loss programs in primary and convenient care clinics offer the opportunity for individualized weight reduction approach, and the potential for the participants to continue weight loss maintenance, because of the ease of accessibility by patients. Retail store clinics provide weight loss participants an opportunity to combine other chores with their weight loss efforts, such as shopping, accessing healthcare provider, and the clinics are open seven days a week.

The WF program is cheap and affordable more than other weight-loss programs out there and better still; it is medically supervised and presents the opportunity for needed counseling, motivation, and coaching that are necessary to help the obese patients lose the excess weight. The weekly visits provide the patients unique opportunity to address the barriers they encounter, and discuss with the clinicians the various ways to overcome the challenges presenting against the weight loss process. Section 3 is the

discussion of other methods of weight loss programs through literature review. Understanding the methodology and outcomes of other methods of weight-loss programs ((dietary, physical activity, combination of diet and physical activity, and medication) compared to that of the WF program that uses (intensive behavioral therapy approach) is valuable in appreciating the usefulness of the programs, and identifying the effectiveness of the WF program. Also, section 3 address the comprehensive literature review, and collection and analysis of the evidence

Section 3: Collection and Analysis of Evidence

Introduction

Having a weight-loss program in the RediClinic makes it crucial to establish the effectiveness of the program in reducing the obesity rate among the patients, who come to the clinic. Because obesity is a precursor for most chronic diseases, weight reduction is a positive way to reduce the rate of chronic diseases. The evaluation of the WF program consists of comparing the baseline and the program end BMI and the WC of the participants who completed the weight-loss program. The Walden IRB served as the IRB of record for the project. The IRB approval number for this study is 03-10-17-0344815. Section 2 discussed the use of TPB to view the actions of the participants of the weight-loss program to lose weight, the relevance of the project to nursing practice, and the role of the DNP student in completing the project. In Section 3, I describe the project design, including sources of evidence, analysis and synthesis of data, and a systematic review of the different methods of weight reduction and their effectiveness. The literature review shows that there are different methods of weight-loss programs without identified effective program. Most programs are ineffective and expensive, and so, are unaffordable for obese individuals.

The purpose of this project study was to examine the usefulness of the WF program in a convenient care setting. This project looked at the efficacy of the program in helping participants lose weight. The result of this project is expected to help control the rate of obesity in communities.

Clarifying the Purpose of the Project and Key Concepts

The objectives of this project were to establish whether the WF program was effective for helping people with obesity lose weight. A valuable weight-loss program must teach patients (participants) about the health risks of obesity and about weight reduction options, and determine a way to give patients control in the program (Vos et al., 2014). The WF program have all the components of an IBT program, and is individualized in approach. Giving control to participants is critical to self-efficacy and success in the program, and takes precedence over a regimental approach in losing weight (Vos et al., 2014). Knowing that the program works improves the motivation of people who need to lose weight, and individualization of the program will increase engagement in the program, especially when the participants know that they can integrate it into their day to day activities. Educating patients about the health hazards of obesity, the benefits of weight reduction, and the need to make positive changes to lifestyle produce positive outcomes and improves clinical outcomes (Yaemsiri et al., 2011). The WF program involves motivation, counseling, and identifying barrier-busters to overcome challenges. In fact, the participants enrolled in the program are monitored weekly by the clinicians or the WF coaches, to ensure that they are making progress in the right direction, observed for adverse effects, and assisted to discover skills to overcome challenges that could hamper weight loss. The positive results from patient education motivates the healthcare providers to continue ongoing targeted education on healthy weight, and increase supportive counseling to the obese patients.

The findings from the project can guide the modification of practice guidelines in RediClinic on patient education and on providing needed resources for weight reduction. Determining that the WF is an effective weight-loss program can prompt soliciting for grant to sponsor the obese patients who cannot pay for the WF program out of their pocket. The reason for this 10-week weight loss project is to determine the effectiveness of the WF program through comparing the pre- and post-BMI and WC. It is expected that through the WF program, the people who are obese can lose weight and keep it off, with improvement in their BMI and WC, and with a decline in the rate of chronic diseases subsequently. Reduction in the BMI and WC present a significant and positive outcome on hypertension, high cholesterol, T2DM, OA in patients. The tenets of the WF program support a long-term positive influence on the obese individuals to develop and maintain healthy behaviors that sustain a high HRQL.

Sources of Evidence

For this project, secondary data collected on the WF program participants was used. The LDS on patients who participated in the WF program in a selected RediClinic locations within three years period served as a source of evidence. The data on participants, 18 years and above, with a BMI $\geq$30 kg/m^2 and completed the WF program in certain locations was used for the analysis. The identifying information was removed from the WF data to ensure the confidentiality and privacy of the participants. The data analysis determines if the goals of the program are realizable. Participants are expected to lose two or more pounds per week or $\geq$ 20 pounds in 10 weeks, with a drop in the BMI and the WC.

Systematic Review

To identify prospective, peer-reviewed articles and books, the following databases—MEDLINE with Full Text, CINAHL and MEDLINE simultaneous search, ProQuest, and Google Scholar—were searched for the years 2000–2017. The government websites, CDC and CMS were especially helpful. I used the following keywords: *complications, effectiveness, weight loss, theory of planned behavior, obesity, BMI, HRQL, program, waist,* and *circumference*. In addition, I used the Boolean operators, AND and OR, to optimize the results. Abstracts were used to judge an article's relevancy to the research questions. My focus was on current practices that are not outdated.

The literature review reveals that there are different approaches to weight loss, such as diet, meal replacement, physical activity, diet and physical activity together, and chemical weight-loss programs and surgery not addressed here. The different weight loss methods can provide successful weight loss to an extent, but without lifestyle modification, they do not offer lasting solution to obesity (Trilk & Kennedy). The weight loss participants can adopt lifestyle modification through consistent counseling and motivation from the health care providers in the IBT weight-loss programs. While some methods are very frustrating like engaging in an intensive physical activity, meal replacements, or the combination of diet and physical activity, investigators are beginning to study the effects of the clinically supervised weight reduction program in primary care settings. The CMS and other commercial insurance companies are requiring PCPs to offer obesity management as part of routine care. And, proficient and evidenced-

based weight-loss program is critical to realize a decline in the obesity rate, and drop in the elevated rates of chronic conditions.

Diet Approach

Diet is central to the control and management of weight. The type of food consumed by individuals plays a significant role in the cause of obesity. A clear understanding of the role of diet in obesity, weight control and weight loss is vital for the policy makers to develop policies that support healthy eating, and empower healthcare providers to provide targeted care to the obese patients. The implications of energy imbalance as the primary cause of obesity must be explained, when advising people to make adjustment to their eating lifestyle. Energy imbalance is consuming more calories than the amount used (Davidi et al., 2011). Healthy People 2020 (2014) recommend that increasing the intake of fruits and vegetables among all age groups can reduce the rate of obesity. Consuming fiber enriched bars and vegetables improves the quality of the diet, increases satisfaction and fullness, and reduces the ingestion of unnecessary calories (Davidi et al., 2011). Many dietary weight-loss programs have used the concept of calorie intake reduction to create weight loss diets that people adopt to encourage weight loss. However, the weight loss resulting from participating in such programs is usually short term (Grief & Miranda, 2010). Consistency in dieting has proven to be successful in weight loss, and participants of diet weight-loss programs acknowledge the usefulness of dietary weight loss (Grief & Miranda, 2010). However, the weight loss is often short lived, because as soon as the dietary program is discontinued, the participants gain the weight back, and sometimes, even more. The participants of diet programs, such as Atkin

diet, Mediterranean, Nutrisystem, South beach diet, and Weight watchers have to continue in the programs for life, or tend to gain the weight back when no longer consistent with the recommended diet (Grief & Miranda, 2010). The several dietary weight-loss programs out there do not guarantee weight maintenance after the weight reduction, and the process of buying packaged food is not sustainable over a long period of time, because the programs are expensive. Policies that regulate the availability of grocery stores that sell fruits and vegetables in all communities are needed.

Losing weight requires reducing the number of calories ingested, eating more fruits and vegetables, high fiber diet, and drinking lots of water (CDC, 2015). Eating a balanced diet and the recommended calories support healthy living and reduce the rate of obesity. Additionally, physical activity is relatively as significant as eating a healthy diet in weight loss and weight maintenance (Barte, Veldwijk, Teixeira, Sacks, & Bremelmans, 2014). Weight loss programs that use meal replacements are expensive, and the process of meal replacement is unlikely to continue in routine practice and lifestyle, and as such not maintainable (Hartmann-Boyce, Johns, Jebb, & Summerbell, 2014). An effective weight loss program should be obtainable, accessible, sustainable for everyone, and easily integrated into everyday routine life.

Physical Activity Approach

Physical activity is indispensable for weight loss, weight loss maintenance, supporting cardiac health, reducing the rate of chronic conditions, morbidity and mortality, and promoting high HRQL. Reduction in the BMI and WC is achievable through intensive physical activity. Several cross-sectional studies have shown that

moderate to intensive physical activity supports weight loss and reduce systemic inflammatory processes (Beavers, Ambrosius, Nicklass, & Rejeski, 2013). It is obvious that physical activity can lead to the reduction in the systemic concentration of inflammatory profile that causes cancer and other chronic diseases (Beavers et al., 2013). Lack of physical activity leads to losing the muscle mass, strength, and function of the muscles, and associated with the increase in pro-inflammatory cytokines, cognitive decline, and poor quality of life (Daly et al., 2015). A study by Florez et al. (2012) on the association of HRQL and glycemic tolerance in Australian adults showed that physical activity with an intensive lifestyle (ILS) program improved HRQL and vitality scores, achieved through weight reduction. Vos et al. (2014) suggest that effective weight-loss programs must focus on changing eating habits and must include physical activity. There is a strong relationship between moderate to intensive physical activity and the reduction in the risk of chronic diseases, improvement in chronic conditions, and perceived behavioral control (PBC) (Spink et al., 2012). However, engaging in physical activity without healthy eating lifestyle can never be an ideal approach**.**

Social Economic Status. Socioeconomic status (SES) of people has a strong correlate with the type of foods they eat, as well as their approach to physical activity, and weight. There is a relationship between combination therapy that includes dietary intake, physical activity and behavior change with weight loss and maintenance (Bogers et al., 2011). The fact remains that these approaches can be expensive, and it seems that the higher the cost of the weight-loss program, the better the outcome (Bogers et al., 2011). Enrollment into a gym and the dietary programs, and eating the right food instead of junk foods can be

expensive. Then the question is: Can people in the low SES afford the expensive weight-loss programs? It may be unrealistic to expect people of low SES to enroll in such program. The people in the low SES may easily access the weight reduction program provided at the retail clinics because of the accessibility, when they go there for healthcare. Retail and convenient care clinics are becoming popular in place of going to the emergency department (ED), and other urgent care clinics, because of the consistency in cost, low cost, and availability of care seven days of the week. Realistically, providing care at convenient care clinics, primary care clinics, and urgent care clinics have become relevant, and reduced the rate of visits to the ED. Providing the patients in ambulatory clinics education on healthy weight is a great way to get more people to enroll in weight management programs. Creating policies that support insurance coverage for weight-loss program is a great incentive for obese people, who cannot pay for the weight management program out of pocket to opt into the program. Discussing the advantages of weight loss, and the risks of obesity, and providing patients with the facts on the importance and the effectiveness of the weight-loss programs provided in the ambulatory care settings is crucial.

Individualized Weight Loss Programs in Primary Care

Most researchers are looking at the effectiveness of the healthcare provider driven weight-loss programs in the convenient care clinics, and the primary care settings. It is unfortunate that all the healthcare providers are not providing the necessary information on maintaining a healthy weight and the need to lose weight to the patients, and as a result, the obese patients are not asking for help to lose weight (Yaemsiri et al., 2011).

The weight-loss program provided in the clinics integrates the needed motivational interviewing and counseling capable of changing patients' behavior towards weight loss (Vos et al., 2014). The weight-loss program through the clinic can certainly hold the answer to move the communities and the country in the right direction regarding people having healthier weight and BMI (Vos et al., 2014). With the literature review, there is a lack of consistency in tackling the problem of obesity, and until date, researchers are still looking for an operative and efficient way of dealing with the problem. The commercial weight-loss programs offer meal replacement, and exercise programs without monitoring the health outcome of the cholesterol, BP, blood glucose level, and the quality of life (Hartmann-Boyce et al., 2014). The participants of the programs not supervised by the healthcare providers still need to go to their PCP for health-related monitoring of their BP, cholesterol, diabetes, and other health benefits gained from the program, which makes the process time and monetary intensive. With weight-loss programs carried out in the health provision clinics, both the weight loss and the health-related monitoring are done at the same site supporting consistency and cost control. Evidenced-based weight-loss programs have the capability of measuring the positive clinical outcomes of the program with the weight reduction, BMI and the WC.

In a study that measured the efficacy of healthy eating, physical activity, with or without lifestyle counseling, the findings showed that diet or weight loss pill with enhanced lifestyle counseling from the PCP supported with concrete weight loss advice resulted in a good outcome. In fact, the participants who maintained a food diary had a better outcome than those who did not keep a food diary (Volger et al., 2013). Recording

the food intake proved to be a correlate with weight reduction (Volger et al., 2013). Consistency in recording the food eaten in each meal requires self-efficacy and planned behavior to accomplish. Individuals enrolled in the weight-loss program, who always attended their PCP and coaching visits had a better outcome (Volger et al., 2013). These facts support counseling and motivation as significant and effective ways to support weight reduction in obese patients. Still, the program participants must comply with the program requirements and follow through with the necessary weight loss activities to achieve a successful weight loss. The success of any program always depends on the compliance of the participants in following the program requirement and adopting effective planned behavior. Coaching and motivational visits are ideal concepts for achieving a successful weight reduction. The TPB approach is an excellent conceptual framework that support the participants and the providers in any clinician-supported weight-loss program.

Analysis and Synthesis

Descriptive statistical analysis was used. The mean, and the mode of the variables- BMI and WC were used to determine the importance of the WF program. Correlation coefficient was used to establish the magnitude of effect of the WF program on the BMI and WC. According to Grove, Burns, & Gray (2013), Correlation design examines a sample to determine the relationship between or among the variables. The organization provided the student with the LDS on the participants of WF from 2015 to the beginning of 2017. Only the data on participants 18 years and older with BMI of 30 kg/m^2 or more, and those who completed the 10 weeks of the program were evaluated.

The data analysis on the variables- BMI and the WC was completed on 15 participants. One participant who completed the 10 weeks of the program gained weight, instead of losing weight, and was excluded. Another participant had a BMI of 25 kg/m^2 at the onset of the program, and did not meet the profile of obesity, and so, was excluded. Although there were confounding variables, such as not following the recommended recipes and the exercise schedule, not coming to the clinic 10 straight weeks, and failing to access the resources online, the confounding variables were not analyzed. The goal was to establish the relationship between the WF program and the reduction in the BMI and WC, since the BMI and the WC numbers are determinants in the cause of most chronic diseases. The WF program qualifies as an intensive behavioral counseling intervention (IBCI) program for weight loss, and the USPSTF has found sufficient evidence in favor of IBCI programs supporting weight loss (USPSTF, 2014).

The privacy of the WF participants used for this project was protected by removing the identifiers from the data provided to the DNP student by the project site organization. The first step in the analysis and synthesis was to scan the LDS and identify the data appropriate for analysis. Of the 18 clinics in Maryland and the 5 clinics in Virginia, only 13 clinics had participants who enrolled in, and completed, the WF program. Some clinics had enrollees, but either they did not participate or dropped out during the program. In the WF program, individuals were given the opportunity to enroll into the boost program, which ran for 6 rather than 10 weeks. If they liked the program, then they would pay the full price and complete the full 10 weeks. Participants who registered for, and completed, the standard 10-week program, could continue with a

weight maintenance program for another 10 weeks. For Medicare patients, the WF program is free; they could continue with the weight maintenance re-enrollment as long as they were losing weight at the end of each 10 weeks. The WF data I analyzed was drawn from 2015 to the beginning of 2017. Only the data on the participants, who enrolled in the standard 10-weeks program were used for the analysis in this project, and the analysis was completed with descriptive statistics – correlation coefficient (*r*).

The data analysis was completed on the WF participants in 13 retail clinics located in Maryland and Virginia. There were 58 participants enrolled to participate in the WF program in the 13 clinics during the time period used for the analysis. Out of the 58 enrollees, only 17 enrollees completed the 10 weeks of the WF program, and 41 participants did not complete the program. One participant was not included in the analysis, because the baseline BMI was 25, and another participant was excluded, because instead of losing weight gained weight with elevation in the BMI and WC respectively. The data analysis started by identifying the data of participants within the LDS that met the criteria for the project analysis. Within the pull of the LDS, 15 participants met the criteria of 18 years of age and above, completed the 10 weeks of the WF program, and adhered to the requirements of the program. The Mean for the 10^{th} week BMI and WC were compared to the Mean of the baseline BMI and WC. First, the beginning and ending BMI and WC were obtained. Then the ending Mean for the BMI and the WC were subtracted from the beginning Mean of BMI and WC to establish the relationship between the WF program and the BMI and WC. The relationship of the effect is shown in Table 1: Correlation coefficient of BMI, and Table 2 is the correlation

coefficient of the WC. Comparison of the Participants Baseline and Post WF BMI and WC, and the Difference in the BMI and WC are shown in Table 3. In Table 4 individual participant's weight loss and the percentage weight loss from the initial body weight was shown. The goal of the WF program is that the participants of the program will lose at least 2 pounds a week, or 20 pounds in the 10 weeks of the program. Losing 5% of the body weight can lead to good health outcomes (Wadden et al., 2013). To understand the analysis, the result was displayed in APA table. The correlation coefficient is a great way to demonstrate linear relationship (Polit, 2010). Although correlation does not establish causality, it establishes the magnitude of effect (Polit, 2010). The project analysis result is suitable for directing actual research studies on IBT weight-loss programs.

Findings

The baseline and the end of WF program BMI Mean were 35 kg/m^2 and 33 kg/m^2 respectively, and using the correlation equation the (*r)* was calculated as 0.84, which is the magnitude of effect of the WF program on the dependent variable of the BMI. In (Table 2), the beginning and the ending WC mean were 42.5 inches and 39.2 inches, while the (*r)* was 0.54. For the 15 participants who lost weight, there was a reduction in BMI of between one and three, while the reduction in the WC was between two and six. The percentage weight loss as represented in (Table 4) varied from 3 to 11%, and the average percentage weight loss was 7.3%. Although, it is generally believed that losing 5% of one's initial weight is significant, and leads to good health outcomes, currently successful weight loss maintenance is losing at least 10% of one's initial body weight, and maintaining the weight loss for at least a year (Grief & Miranda, 2010). The Mean

and the Mode were calculated respectively for the baseline and 10th week BMI and WC on the 15 participants, who enrolled in the program, completed the 10 weeks, and had a reduction in their weight, BMI and WC. For the BMI, the Mean = 2, Mode = 2, and for the WC, the Mean = 3, and the Mode = 3. The Mean deviation *(MD)* for BMI was 0.5, Standard deviation (*SD*) = 0.57. The dispersion of the BMI reduction was contained between 1kg/m^2 and 3 kg/m^2. For the WC, the *MD* = 0.8, and the *SD* = 1.57. The dispersion of WC among the participants was between 2 inches and 6 inches, and was not greatly dispersed. There were no outstanding outliers in both the BMI and WC of the participants. The standard error (*SE*) of the Mean for BMI and the WC were 0.002 and 0.01 respectively. A total of 58 participants enrolled in the WF program, but only 17 participants completed the 10 weeks, and not all the participants consistently went for 10 straight weeks. In Table 1, individual participant's BMI for the baseline and the 10th week of the program were listed, and the sum for each calculated. The difference between the beginning and the ending BMI became the mean ($\bar{X}$), and using the correlation coefficient equation, the (*r*), which is the small *r* was calculated to be 0.84, and this represent the magnitude of effect of the WF (independent variable) on the BMI (dependent variable).

Table 1

Correlation Coefficient of BMI

Participant	$\bar{X}$	$X-\bar{X}$	$(X-\bar{X})^2$	Y	$Y-\bar{Y}$	$(Y-\bar{Y})^2$	$(X-\bar{X})(Y-\bar{Y})$

1	36	1	1	35	2	4	2
2	33	-2	4	30	-3	9	6
3	35	0	0	32	-1	1	0
4	33	2	4	31	-2	4	4
5	39	4	16	37	4	16	16
6	46	11	121	43	10	100	110
7	37	2	4	35	2	4	4
8	30	-5	25	27	-6	36	30
9	33	-2	4	31	-2	4	4
10	34	-1	1	32	-1	1	1
11	36	1	1	34	-1	1	1
12	31	-4	16	28	-5	35	20
13	32	-3	9	31	-2	4	6
14	39	4	16	35	2	4	8
15	32	-3	9	30	-3	9	9
Total	525		231	491		322	222
Mean	35			33			

Note. X = baseline BMI, $\bar{X}$= baseline mean, Y = end of program BMI, $\bar{Y}$= end of program mean, *r* = correlation coefficient.

In Table 2, the beginning and ending WC for individual participants were obtained from the LDS and listed, and the total for each calculated. The mean for beginning and the ending WC were obtained, and using the correlation coefficient equation, the correlation

coefficient (*r*) was obtained as 0.54, which is the magnitude of the effect of the WF (independent variable) on the WC (dependent variable).

Table 2

Correlation Coefficient of WC

Participant	X	$X-\bar{X}$	$(X-\bar{X})^2$	Y	$Y-\bar{Y}$	$(Y-\bar{Y})^2$	$(X-X)(Y-\bar{Y})$
1.	45	2.5	6.25	43	3.8	14.44	9.5
2.	40	-2.5	6.25	38	-1.2	1.44	3
3.	43	0.5	0.25	40	0.8	0.64	0.4
4.	46	3.5	12.25	43	3.8	14.44	13.3
5.	43	0.5	0.25	40	0.8	0.64	0.25
6.	47	4.5	20.25	44	4.8	23.04	21.6
7.	42	-0.5	0.25	39	-0.2	0.04	0.1
8.	39	-3.5	12.25	36	-3.2	10.24	11.2
9.	42	-0.5	0.25	38	-1.2	1.44	0.6
10.	40	-2.5	6.25	36	-3.2	10.24	8
11.	42	-0.5	0.25	38	-1.2	1.44	0.6
12.	44	1.5	2.25	34	-5.2	27.04	7.8
13.	39	-3.5	12.25	42	-2.8	7.84	9.8
14.	46	3.5	12.25	38	-1.2	1.44	4.2
15.	39	-3.5	12.25	39	-o.2	0.04	0.7

Total	637	113.75	588	114.4	91.75
MEAN	42.5		39.2		

Note. WC = waist Circumference, X = baseline WC, $\bar{X}$= baseline WC mean, Y = End of program WC, $\bar{Y}$ = end of program mean.

In table 3, comparison of the pre-and post BMI and WC shown, and the differences and the Mean calculated. The WC measurement was in inches

Table 3

Comparison of the Participants Baseline and Post WF BMI and WC, and the Difference in BMI and WC

Participants	Pre-WF BMI	Pre-WF WC in inches	Post-WF BMI	Post-WF WC in inches	DF in BMI	DF in WC
1	36	45	35	43	1	2
2	33	40	30	38	3	2
3	35	43	32	40	3	3
9	30	39	27	36	3	3
10	33	42	31	38	2	3
11	33.5	40	32	36	2	4

12	36	44	34	38	2	6
13	31	39	28	34	3	5
14	32	46	31	42	1	4
15	39	43	35	38	1	5
16	32	41	30	39	2	2
Total	370	462	345	422	23	39
Mean					1.5	2.6
Approximate					2	3

Table 4, shows the percentage of weight loss for the participants of the weight loss program.

Table 4

Percentage of Weight Loss

Participant	Baseline weight	Post-Weight	Weight loss	weight loss %
1	214	199	15	7
2	211	191	20	9.5

3	194	180	14	7
4	216	205	11	5
6	238	224	14	6
8	169	155	14	8
9	216	202	14	6
10	189	178	11	6
11	204	189	15	7
12	174	160	14	8
13	187	182	5	3
14	195	174	21	11
15	182	170	12	6.5

Note. To calculate percentage weight loss is weight loss divided by starting weight, and multiplied by 100, (WT loss/starting weight) x 100.

Table 5, shows the number of enrollment, and the rates of completion and un-completion among those who enrolled in the WF program in the clinics used for the project, and the percentage of completion and un-completion.

Table 5

WF Enrollment, Completion and Un-completion in the Retail Clinics

No	Clinic	No of Enrollment	Completion	Un-Completion

1	Reisterstown	8	4	4
2	Sulphur Spring	1	0	1
3	Owing Mills	2	1	1
4	Pikesville	6	2	4
5	Silver Spring	16	2	14
6	Potomac	2	1	1
7	Riverdale	2	0	2
8	Largo	3	1	2
9	Ellicot City	1	1	0
10	Severna Park	1	0	1
11	Sterling	6	2	4
12	Purcellville	8	2	4
13	Silver Lake	2	1	1
Total		58	17	41
Percentage			29.3%	70.7%

Summary

Section 3 has provided an extensive literature review on methods of weight loss, information on the practice-focused questions, and clarified the purpose and the key concepts of the project, as well as the pertinent information on the sources of evidence, data analysis, and synthesis. The next section is the description of the findings and implications of the project, and provides recommendations grounded on the findings from

the project. The explanation of the identified strengths and limitations of the project is useful for further quality improvement on the WF weight-loss program. As soon as the Institutional Review Board (IRB) approved the project proposal, the collection of data for the project started. The data for the project came from the LDS provided to the DNP student by the RediClinic organization.

Section 4: Findings and Recommendations

Introduction

The purpose of this quality improvement project was to determine the effectiveness of the WF program, a 10-week weight-loss program that promoted counseling, motivation, healthy diet, and physical activity to achieve a weight loss goal of at least two pounds a week or 20 pounds in 10 weeks. The beginning mean was compared to the ending mean for the dependent variables, BMI and WC, to determine if the program had any positive impact on the variables.

Findings and Implications

The statistical evaluation of the program data was completed manually using correlation coefficient. The correlation coefficient for BMI was 0.84, and *r* for the WC was 0.54. The mean for baseline BMI = 35 kg/m^2, 10th week BMI = 33 kg/m^2, while the baseline WC mean = 42.5 inches, and the 10th week WC mean = 39.2 inches. The mean and mode for the reduction in the BMI over the 10th weeks for all the participants was 2 kg/m^2 respectively, while the mean and mode for the reduction of the WC was 3 inches respectively. The individual percentage weight loss varied from 3–11%. Three participants had a weight loss of 3–5%, 10 participants had a percentage weight loss of 6–8%, while two participants had a weight loss of 9% and11% respectively. Of the total number of 58 participants enrolled to participate in the program in the 13 clinics used for this evaluation, only 17 participants completed the program. Majority dropped off after completing some weeks, with 29% completing the 10 weeks' requirement for the program, and 71% did not complete the 10 weeks. Since the WF program is a behavioral

change weight loss approach, it is important to discuss with the participants at ongoing bases how to develop strategies to overcome barriers to successful participation in the WF program. Healthcare providers must be engaged with their patients to establish consistent weight loss approaches, and maintain the strategies for healthy weight (Grief and Miranda, 2010). The completion rate of 29% is very discouraging, and identifying the issues that led to the failure of the participants completing the program is important in order to tailor the program to the participants' needs. The mean and mode for BMI reduction was 2 kg/m^2 respectively, and the mean and mode for the WC was 3 inhes respectively. Many IBT weight-loss programs are effective, and focus on behavioral change towards diet and physical activity (USPSTF, 2015).

There were lots of interesting and un-expected findings with the data analysis. Although the program is new in the two states, where the WF was evaluated, the rates of enrollment was low. Considerably, the cost for the WF program is cheaper compared to other weight-loss programs without the advantages the WF program has, such as medical supervision, counseling, health screening and monitoring. Another finding is that despite the flexibility in the program that enables the participants to go for their visit at their convenience, the rate of attrition from the program was high. The participants paid the full price at enrollment, except the Medicare patients, before beginning the weight-loss program, and it is surprising that there is a high un-completion rate of more than 70%. Identifying the reasons for attrition is crucial in revamping and tweaking the program to the participants' needs. The correlation coefficient of 0.84 and 0.54 for the BMI and the WC respectively are positive relationships, meaning that the WF program had significant

effect in reducing the BMI and the WC. The program can be tweaked to become even more individualized and effective, and, it is relatively important for the obese patients to know that they can utilize the program for weight reduction.

It seems that the program has not gained any popularity yet, and educating the patients who come to the clinic about the program is significant to increasing the use of the program by the people, who are obese. This means that the healthcare providers in RediClinic have a great role to play in letting people know about the usefulness of the WF program in reducing obesity. The pertinent question to ask is: "Is the retail care clinic appropriate for the IBT weight-loss program?". For an ongoing positive effect of an IBT program Grief and Miranda (2015) recommends regular ongoing monitoring of the patients' weight, BMI, WC, and providing counseling on maintaining healthy weight through diet and exercise. Are the primary care physicians equipped to do these tasks, and are the tasks reimbursable at ongoing bases? And if the patients go to the retail/convenient care clinics, will the services be reimbursed by the insurance companies, or will the patients have to pay out of pocket for the services? These are pertinent questions that need answers, that can help tackle the problem of obesity.

The WF program integrates the rudimentary of IBT approaches which are effective for weight loss and maintenance, but it has not been tweaked to ensure adequate compliance in participation by the enrollees. One clinic had 16 enrollees, and only two participants completed the program, and several other clinics had participants, who did not complete the program. Although the reasons for attrition is not known, it could be that the program did not meet the needs of the participants, or the program was not

individualized enough. Also, inconsistencies in the approach by the clinicians could have contributed to the high rate of un-completion. To increase the confidence of patients in the program, the approach must be consistent. The behavioral change approach encompassing counseling, motivation, dietary, physical activity, and support to develop strategies for overcoming barriers are great ways to support effective weight loss, and are all part of the WF process. So, with improved enrollment and compliance by the WF participants, the WF could be an excellent and effective program to address obesity in communities. The observation from reviewing the LDS is that there were inconsistencies in the WC measurement, because the clinicians were measuring them differently.

Determining the actual effectiveness of the WF program requires a study that integrates the program according to the guidelines provided by the founder and director of the program Dr. David Katz. The fact that 10 of the 15 participants had 6-8%, and two participants 9% and 11% weight loss attest to the fact that the program is a great program for weight loss, and efforts should focus on preventing attrition. The mean and mode of two for the BMI, and three for the WC in 10 weeks are significant outcomes if the adopted behaviors are continued, and the outcomes maintained over a longer period of time.

Recommendations

The efficacy of the WF program or other IBT weight-loss programs in the organizations that use them depends on how the program is presented, and requires that the staff owns the program. The counseling, motivation, personalized time, and other aspects of care should be integrated well, and with the participants having full

understanding of the process, the WF program is a great program for addressing obesity. Providing call back in between clinic visits can be a great way to ensure compliance and to keep the participants in the program. To achieve weight loss, the WF coaches must consistently reinforce strategies to overcome barriers, and provide guidelines of the program to the participants in the program until completion. The coaches/clinicians must engage in ongoing training to bring consistency in the provision of care to the obese, including obtaining the biometrics and the WC measurement to ensure the validity of the outcome. The organizational leadership and the staff must discover ways to create awareness of the program to the people in communities where the clinics that implement the WF program are situated.

The next quality improvement study is needed to discover why the participants dropped out of the program, in order to modify the program to become more effective. There should be a way of tracking the patients enrolled in the program to make sure that they are completing the 10 weeks of enrollment. A WF participant, who has not completed the program and is relocating to a different city or state can take the program with her/him to the new location. Adding follow up with the WF participants in six months, one year, and possibly two years after program completion can offer insight into the long-term effect of the program.

Strengths and limitations of the project. The strength of this project is that the data for the10-week WF weight-loss program was actual and real-life un-adulterated data from the WF program. The project provides a valid picture of the program, and the extent of the effectiveness, as well as the flaws in the administration of the program. The project

provided insight into the limitations of the program, such as high rates of un-completion by the enrolled participants, poor enrollment into the program, and the inconsistencies of the WC measurement. However, this project did not address the issue of attrition. The need to undertake another project to determine the reasons for attrition of enrollees is apparent.

The project has its limitations. Because of the poor enrollment and completion, the project could not be completed in one clinic, it was spread out to 13 clinics. Also, there was no way to know if the participants maintained the weight loss. In determining the effectiveness of a weight-loss program, the component of the weight maintenance is important. The WF has a weight maintenance component, but because the non-Medicare participants are self-pay, their enrollment into the maintenance program is not guaranteed. Apart from making sure that the participants used were 18 years and above, the ages of the participants were not identified to help understand if the participants, who dropped out of the program were Medicare or self-pay participants. Likewise, knowing the reasons for the participants dropping out is important in revamping the program.

Section 5: Dissemination Plan

In this project, I evaluated a 10-week weight-loss program administered in the retail clinic to determine its effectiveness, and the findings can help make the program more effective in addressing obesity among the overweight and obese population that come to the clinic. The program is currently on hold, according to its leadership, because it needs to revamp the program to make it more efficient. When I was given the LDS, corporate leadership expressed interest in learning about the outcome of my project. The plan for the dissemination is to share with the leadership and the staff of the organization the findings of the project, and suggest ways of addressing the problems inherent in the administration of the program. The plan is to provide an outline of the results and limitations of the program to the leadership, the WF trainers, and provide educational sections to the staff. I intend to use Power Point presentation, journal, and poster presentation in conferences as the methods to share the findings from the project.

Analysis of Self

It is the duty of a DNP nurse to seek an understanding of the beliefs, ideas, and values that validate the individual's clinical practice by applying scientific concepts and theories (Zaccagnini & White, 2011). The passion to see obesity rate go down in my community is one of the reasons why I undertook this project, and as Zaccagnini & White (2011) noted, finding answers for nursing practice is a fundamental aspect of the function of a doctoral nurse. This project will form a basis for addressing issues in the WF program, and can drastically reduce obesity in communities with the retail clinic that administers it. The passion for seeing a significant reduction in obesity and related

chronic diseases should persuade healthcare providers to continue to seek more effective ways to reduce obesity. Adequate education for both the clinicians and the patients on the management of obesity and maintaining a healthy weight are on top, on my list of things to do. My philosophy is to keep educating people until they get the message, and until everyone understands the importance of healthy weight. After graduation, my anticipation is to push for an organization-wide quality improvement project to identify why the obese patients enrolled in the WF program do not complete the program. My ultimate goal is to fulfill the role of a doctoral prepared nurse by being an educator, and identify evidenced-based guidelines for providing the best care. Although the LDS provided by the organization was a large one, I invested time in the identification of the appropriate data for this project. The findings will go a long way to support improvement in administering the WF program, and providing the best care to the obese patients coming to the retail clinic.

Summary

In summary, this project is the evaluation of the WF program, which is a 10-week weight-loss program carried out in retail clinics inside the Rite Aid pharmacy and grocery stores. The WF program is an IBT weight loss program that supports significant weight loss, and reduction in the BMI and WC. However, the rate of attrition from the program is high, and most enrollees are not completing the 10 weeks of the program. A quality improvement study is needed to identify the reasons for high rate of un-completion, to make the program more efficient in addressing obesity, and for the obese to optimize the benefits of the program as an IBT. The healthcare providers must be

equipped to integrate education for weight loss and weight loss maintenance in the care of their patients.

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