

**Exploring the Effectiveness of Structured Accountability Counseling for Weight Loss Management in
the Outpatient Care Setting of Overweight and Obese Adults**

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Abstract

Introduction/Purpose

This project evaluated the impact of accountability counseling on weight loss success in overweight or obese adults who were seeking to lose weight. The purpose of this quality improvement project was to evaluate if structured accountability counseling aided in individuals' increased weight and fat loss compared to those who did not receive structured accountability counseling.

Methods

A group of 10 participants voluntarily engaged in a quality improvement project comparing the differences between structured accountability counseling and conventional standards of care in an outpatient weight loss clinic setting. The participants engaged in the project for six weeks, following up on a weekly basis. The weekly follow-up sessions were based on the behavior change model of the 5A's (Assess, Advise, Agree, Assist, and Arrange). During the sessions, the participants received a body composition analysis using the Tanita scale that showed the participant's Body Mass Index (BMI), weight, and body fat percentage. Two goals of body fat loss of 4% or greater and BMI drop of 2 points or greater were established for the participants to determine the effectiveness of structured accountability counseling on weight loss in overweight and obese adults.

Results

The study included patients aged 53 on average in the control group (n=10) and 43 on average in the implementation group (n=10). Patients in the implementation group showed a greater increase in fat loss and BMI reduction while receiving structured accountability counseling. Participants achieving both goals were only observed in the implementation group with 50% of individuals achieving both goals compared to the control group with 0% of individuals achieving both goals. In both groups, patients that maintained compliance with the program for the longest time were associated with higher weight loss, fat percentage loss, and reduction in BMI.

Discussion

The evaluation of data deemed the intervention successful. Fifty percent of participants achieved both project goals within the six-week quality improvement project. The project also demonstrated that increased compliance over time with a weight loss program improves weight loss goal achievement. Accountability counseling with weekly follow up increases weight loss in overweight and obese adults with the potential to improve compliance over time with the program.

Keywords: obesity, weight loss, accountability, program, clinical guidelines, evidence-based practice, outpatient, primary care

Exploring the Effectiveness of Structured Accountability Counseling for Weight Loss Management in the Outpatient Care Setting of Overweight and Obese Adults

The trend of obesity has been on the rise since the early 1990's, increasing from 12% in 1991 to 18% in 1998 (Centers for Disease Control and Prevention [CDC], 2020). Based on the 2017-2018 United States obesity statistics, 42.4% of the American population is obese (CDC, 2020). Adults living with obesity face an increased risk for a multitude of various co-morbidities including type 2 diabetes, hypertension, dyslipidemia, cardiovascular disease, stroke, cancer and even increased mortality (Pantalone et al., 2017). Addressing the obesity epidemic is important to undertake to help control and lower the increasing trend of obese adults in America. By doing this, it allows and makes way for change and improvement in the overall health of the adult population.

Background

Ranked in as the 12th most obese country in the world in 2016 (ProCon, 2020), the United States stands at over 73% of the population being either overweight or obese. To date, the trend of obesity has steadily ascended which will make way for additional and continuing complications in the obese population. According to a study led by Ward et al. (2019), almost half of the adult population in the United States will have obesity by the year 2030. Obesity is a worldwide epidemic that was declared a disease in 2008 by the American Obesity Society (Rosen, 2014). Subsequently, in June 2013, the American Medical Association voted to acknowledge obesity as a true disease, necessitating the need for treatment and prevention (Rosen, 2014).

Since then, not only has obesity accentuated complications in individuals including type 2 diabetes, cardiovascular disease, stroke, and cancer; but it also has caused the United States healthcare costs to escalate for each obese individual (CDC, 2020). The United States spends an astonishing \$147 billion on obesity-related diseases and complications (CDC, 2020).

Reducing the rate of obesity aims to decrease the amount of co-morbidities affecting obese individuals

and the reduction in healthcare costs. To do this, some key factors in the causes of obesity need to be addressed. First, one of the more considerable reasons why obesity is getting overlooked starts with the primary care visit. A study done by Matter et al. (2017) investigated the electronic medical records of 10,540 patients and found that although 52% met the requirements for obesity, only 5.6% of those patients' records contained obesity in the list of diagnoses. This indicates that despite more than half of the patients who visit the primary care physician being obese, the diagnosis of obesity is getting overlooked, and instead the co-morbidities that may be the result from obesity are getting treated.

Lack of physical activity is one of the leading causes of obesity in the United States. Not only does a sedentary lifestyle affect a person's weight, it also increases the risk for more health related problems for that individual:

Individuals engaging in light, moderate or vigorous physical activity had significantly lower risk for cardiovascular disease mortality, regardless of their metabolic risk factors. Conversely, physical inactivity resulted in a gain of abdominal and visceral fat and has been associated with a higher risk of type 2 diabetes, regardless of age, sex, ethnicity, or body mass index. It has also been reported that one additional hour of sedentary activity increases the risk of being overweight (13%) and developing high abdominal fat (26%). (Gonzalez et al., 2017, p. 112)

These statistics show the importance of physical activity in a daily routine to reduce the risk for complications, which is not discussed at length in a visit to the primary care physician. Because most adults do not meet the daily physical activity requirements (US Department of Health and Human Services [UDHHS], 2018), it is vital to discuss exercise programs directly in order to reduce obesity.

The dietary patterns for individuals who are obese are just as important as lack of physical activity and accountability. There have been many studies involving the intake of diet and the effects it has on obesity. A study done by Mu et al. (2017) indicates that a healthy dietary lifestyle may decrease the risk of obesity, while an unhealthy dietary lifestyle may increase the risk of obesity. Although this may seem like a practical way of

thinking, there are many barriers that can hinder individuals from eating a healthy lifestyle. Increased cost of healthy food, lack of mindset adjustment for healthier eating, and lack of self-control for avoiding unhealthy foods are some barriers individuals face in the advancement of a healthy lifestyle (Seguin et al., 2014).

Regardless of the barriers that may hinder weight loss, accountability is a vital part in pursuing a healthy lifestyle. Those who stay accountable are more inclined to continue healthy eating patterns and way of life. Increasing accountability through monthly follow-up is a critical part in trying to maximize the success of individuals suffering with obesity (Fitzpatrick et al., 2016). Dietary counselors who contribute to weight loss programs by providing increased accountability are extremely beneficial in intensifying an individual's commitment to weight loss (Painter et al., 2018). In the retrospective study performed by Painter et al. (2018), 1,432 participants registered for a Retrofit weight loss plan from 2011-2016. The results concluded that the one-on-one counseling discussions partnered with weekly class attendance on a web based platform and food diary recordings from the weight-loss coach had high weight loss outcomes in a six-month period.

Problem Statement

Despite the many complications revolving around obesity, Americans still struggle to live a healthy lifestyle. Health and wellness accountability counseling plays an important role in the success of individuals struggling to lose weight. With accountability counseling, people can be held responsible, feel motivated, and ultimately succeed in changing their lifestyle behavior.

The project aimed to determine the impact of a structured accountability program on weight loss for overweight and obese individuals compared to those individuals without the structured accountability aspect. The approach addressed this problem by investigating whether the element of being held accountable based on a structured framework worked in the clinical setting of obesity. With positive outcomes, this approach decreased the obesity trend in a more effective way and helped reduce the number of obese adults in the clinical setting.

Organizational “Gap” Analysis of Project Site

Although many studies exist that investigate the effectiveness of obesity interventions in the clinical setting, there is still a large gap that needs to be addressed in the application of best practice guidelines to patient care. The project site analyzed was the weight loss clinic where clinical hours were being completed. Research needed to be examined about what was already known from the researched group. We know individuals who are obese need to lose weight; the question would be how can this be done for increased success in patients? What is currently known about those living with obesity are the many interventions that can assist individuals to get and stay motivated with their accomplishments. Most patients that came through the weight loss clinic were either overweight or obese. Of the thirty-six new patients who presented to the weight loss clinic in the month of June of 2021, thirty-five were diagnosed with being overweight or obese. To further break down this population, 42% of those thirty-five patients presented with a comorbidity of either hypertension, hyperlipidemia, diabetes, or a combination of the three. This shows many individuals who present with being overweight or obese have preventable comorbidities that may possibly be eliminated or reduced if weight loss occurs.

There are a number of attributions and best practices that were researched based on the reduction of obesity and interventions associated with it. The Canadian Medical Association Journal (CMAJ) issued a clinical practice guideline that educates providers about the analytical approach to weight loss. According to CMAJ (2020, p. 878), there are five measures that lead providers in the direction of caring for those living with obesity:

1. Recognition of obesity as a chronic disease by health care providers, who should ask the patient permission to offer advice and help treat this disease in an unbiased manner.
2. Assessment of an individual living with obesity, using appropriate measurements, and identifying the root causes, complications, and barriers to obesity treatment
3. Discussion of the core treatment options (medical therapy and physical activity) and adjunctive

therapies that may be required, including psychological, pharmacologic, and surgical interventions.

4. Agreement with the person living with obesity regarding goals of therapy, focusing mainly on the value that the person derives from health-based interventions.

5. Engagement by health care providers with the person with obesity in continued follow-up and reassessments, and encouragement of advocacy to improve care for this chronic disease.

This clinical practice guideline promotes health care practitioners to ask patient's permission to treat those living with obesity, since not all patients are inclined to start obesity treatment (CMAJ, 2020). After permission is obtained, assessment of the patient should be performed and the root causes of obesity should be discussed, along with the treatment options for obesity. Patient-provider collaboration should take place and an agreed upon goal initiated with follow-up recommendations introduced.

A priority concern for the obese and overweight population at the clinic includes the lack of structured accountability during the weight loss period for patients. In this population data would be collected to determine if structured accountability counseling is beneficial for a more successful weight loss. This is where prioritization of the needs of the population are enforced, which includes the significance of structured accountability in an outpatient setting. Per the clinical practice guideline, a five-step approach is needed to bring success to patients suffering with obesity. The difference between the current state in the clinical environment and the desired state lies in the approach of accountability sessions.

In the current clinical state, accountability sessions are being performed with no structure, plan or organization of thoughts or patient goals. The desired state in this clinical setting was structured accountability counseling sessions based on behavioral change frameworks and clinical practice guidelines that initiated an increase in weight loss for patients based on written goals and discussions. This project assessed this approach and how it influenced individuals' weight loss.

Review of the Literature

A comprehensive review of literature was completed using the following databases: The University of

Alabama Libraries with advanced search using Scout, PubMed, and National Center for Biotechnology Information (NCBI). Search keywords consisting of obesity, weight loss, accountability, program, clinical guidelines, outpatient, evidence-based practice and primary care were pilot-tested and evaluated to narrow the search by including the term counseling, finding that this term produced a more adequate search. Search terms utilized were examined individually and in various sequences combined with the conjunctions AND and OR. The literature review was restricted to the last five years unless older sources were utilized for a historical perspective. The search performed on the University of Alabama Libraries generated a total of 56,064 when four search terms were used. When filtered to the most recent five years in the United States a total of 437 articles resulted. A total of 5,280 articles resulted when all keyword terms were used at once. Filters were placed on the articles that included articles published within the last five years in the United States, resulting in 80 articles. The search performed on PubMed generated a total of 28 articles when four search terms were used. When the same search terms were used at once, no articles were found. Filters for publication date, United States studies and age of participants were created that yielded a total of 22 articles.

Specific inclusion and exclusion criteria were used to methodically elect appropriate studies for analysis. The studies chosen were empirical studies that were conducted in the United States on patients between the ages of 18-65 years old who had the diagnosis of obesity. Additional inclusion criteria contained articles with a direct coaching, accountability, and behavioral weight loss program initiated on these individuals. Certain articles were excluded if they were not peer-reviewed research articles, patients were outside of the age range, the study was not conducted in the United States, the patient did not have the diagnosis of obesity, and there was no evidence of a counseling and accountability aspect of weight loss. The final sample size of articles that met full inclusion criteria were about 51 articles with various combinations of the inclusion criteria. The selected articles that are based on the systematic review of literature includes articles that consist of data evaluation of diet, physical activity, and weekly counseling sessions that makes up the accountability aspect of weight loss.

Nelson et al. (2021) implemented a mixed methods study which evaluated the effectiveness and usefulness of a health coaching program where the participants are held accountable. The quantitative research determined the effectiveness of a coaching program where participating employees were enrolled in a twelve-week intervention phase and twelve-week maintenance phase. The research participants were administered surveys at baseline and at the twelve-week mark. Diagnostic lab results and anthropometrics including body mass index (BMI) and body fat percentage were implemented upon baseline, six, twelve, eighteen and twenty-four weeks (Nelson et al., 2021). Due to these criteria, lab work pre- and post-twelve week program was used to determine effectiveness.

The qualitative aspect of this research study included interviews with the participants as well as the health coaches to assess the usefulness of a coaching and accountability intervention on weight loss. The results for this mixed method research study demonstrated a significant decrease in BMI from baseline to post-intervention based on health coaching (Nelson et al., 2021). It also demonstrated that based upon the questionnaires during the qualitative stage, all participants declared the health coaching and accountability aspect “improved their personal health awareness as well as increased their physical knowledge”, in addition to many participants expressing the advantage of digital applications to help success (Nelson et al., 2021, p. 4).

Ford et al. (2017) investigated a study among 120 college-aged students who attended a southeastern university from 2009-2013. These students engaged in weekly counseling meetings lasting anywhere from fifteen to thirty minutes which mainly focused on weight management. The research design employed a longitudinal study with fundamental recruitment criteria comprising a BMI of 27 or greater. Participation was on a voluntary basis and each individual was required to complete a lipid panel, blood pressure, and blood glucose testing prior to any implementation of motivational counseling (MC) sessions (Ford et al., 2017).

The 120 participants met with a health promotion practitioner for an initial visit lasting 20-30 minutes, which proceeded weekly with follow-up appointments lasting about fifteen minutes. Each student spoke

freely about any health behavior changes they were accomplishing on a weekly basis. The number of sessions were dependent on the participants due to schedule, personal days, or missed appointments (Ford et al., 2017). During the MC meetings, the health promotor counseled the student and discussed personal goals for the future. At the end of the visit, the student's weight was recorded, and the upcoming MC visit scheduled. The findings of this study concluded that adhering to a MC weight loss management program appears to have an effect on the weight loss of individuals (Ford et al., 2017).

In a study performed by Krishnaswami et al. (2018), participants were enrolled in an observational, retrospective, medically supervised weight loss study to determine weight changes of obese adults over the course of five years. This program consisted of a long-term behavior management program that was comprised of meal replacements, transitioning phase and then lifestyle maintenance while incorporating weekly behavior sessions and laboratory monitoring. The mean age of participants was 51 with the mean BMI being 39.7, in which 42% of participants were diagnosed with pre-diabetes or diabetes and 49.8% with hypertension (Krishnaswami et al., 2018). The results showed effectiveness over the course of five years displaying a weight change of 5% since baseline weight and reductions in cholesterol levels and statin use (Krishnaswami et al., 2018).

In an exploratory mixed methods study led by Arnold et al. (2019), the researchers aimed to collect various participant's impressions on weight loss education and thoughts for the delivery of a structured weight loss management program using focus group interviews and a cross-sectional survey. The study consisted of 61 participants and 37 completed surveys. The results showed various opinions of the participants with their views on the success of weight loss, one being "how to set goals that are achievable and remain motivated to reach those goals" that are set by a healthcare professional in a one-to-one encounter (Arnold et al., 2019, p. 6). With that said, overall structured accountability counseling benefits the achievements of weight loss in individuals.

Comparisons

The review of literature demonstrates major comparisons between each research study, identifying the key relationships and factors that produced a positive outcome. The studies utilized similar approaches for participants and contained anthropometric measurements to further establish baseline data. The comparisons between the research exhibits positive outcomes from participants enrolled in a supervised behavioral counseling program. The results of each study showed success when accountability and supervision took place in the research process.

Differences

The gaps and differences between these studies include the time frame post program, the number of co-morbidities of each participant, the age groups of participants, and the usage of pre- and post- metabolic data. During the review of literature, it was noted not all research articles included metabolic data or had the program be supervised.

Rationale

Despite the many resources that can be utilized to reduce the increasing trend of obesity, there is still a gap in the clinical practice site where this project will be implemented. Based upon the review of literature and the positive results the research data instated, this project considers the fundamentals of structured accountability counseling on the benefits of weight loss to produce favorable outcomes.

Evidence-based Practice: Verification of Chosen Option

As the review of literature reflects, accountability and counseling play an important role in the impact of a supervised weight loss program. After obtaining baseline data, having a program that is supervised and follows-up with patients on a weekly basis shows improvement in patient outcomes. The evidence-based practice model that will be utilized in this project will be the five-step analytical approach to weight loss developed by the Canadian Medical Association Journal.

As stated above, this clinical practice guideline will pave the way for advancements in assessment, prevention, and treatment of obesity care by the practitioner. The five-step process of the 5A's uses sessions

with the practitioner to recognize, assess, and discuss treatment options for the patient. “Adults living with obesity should receive individualized care plans that address their root causes of obesity and that provide support for behavioral change and adjunctive therapies... medical nutrition therapy, in combination with other interventions should be tailored to meet an individual’s health-related or weight-related outcomes” (CMAJ, 2020, p. 878).

Accountability counseling aids in recognizing the actions of a patient while being responsible for acknowledging any consequences or results that were caused by the choices of the patient. Accountability counseling will be composed of weekly-follow up sessions with the patient to assess and discuss the goals developed while adhering to professional guidelines. This is the preferred intervention, as evidence suggests it will provide the greatest benefit to the patient in combination with diet and exercise. As follows, the research question states, in overweight and obese adults in the outpatient care setting, does accountability and counseling using the 5A’s theoretical structured framework compared to accountability and counseling without using the 5A’s theoretical structured framework result in greater weight loss over a six-week time frame?

Theoretical Framework or Evidence-based Practice Model

In 2015, the Society of Behavioral Medicine presented a behavior change model for the management of obesity in outpatient care established from a counselling framework reflecting the 5A’s (Assess, Advise, Agree, Assist, and Arrange) (Fitzpatrick et al., 2016). This framework underpins this project focused on obesity management in outpatient care. Based upon this framework, outpatient care providers can use this framework to integrate and organize a collaborative team to “address patient’s psychosocial issues while delivering intensive counseling and connecting patient’s with community resources to assist in lifestyle changes” (Fitzpatrick et al., 2016, para. 1). The 5As model for weight management counseling in outpatient care is shown in Appendix A.

This framework guided the project in various ways. The 5As were broken down into Assess, Advise, Agree, Assist, and Arrange. Each step of this framework provided a guide on how to tackle the problem at hand. The first step, Assessment, was an important phase to accomplish accurately. In this step, patients were examined for obesity and other co-morbidities that may have hindered the weight loss process and patients' readiness for behavioral change (Fitzpatrick et al., 2016). During this phase, BMI, weight, and body fat percentage were evaluated due to increased cardiovascular risk to the patient who has increased values in these three areas. If the BMI reaches 30 and above, or 25 and above with current comorbidities, the next step in the 5A's were implemented. Assessment planning needed a holistic approach with not only weight loss interventions but inclusion of psychosocial elements, discussion involving readiness to change, and developing individual care plans for each patient (Fitzpatrick et al., 2016).

Advisement followed assessment. In the Advisement phase, counseling took place by informing the patient about the medical risks that can be associated with obesity and how obesity affects medical conditions that may arise (Fitzpatrick et al., 2016). With patient knowledge and education, there was an increased chance of patient motivation to make changes with their health since understanding is now present. Dietary modification was discussed in this phase and allowed the patient to choose which diet plan they can adhere to for the long term while incorporating crucial physical activity for prolonged health (Fitzpatrick et al., 2016). Recommendations in this framework state that "adults should engage in at least 150 minutes per week of moderate-intensity or 75 minutes per week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate and vigorous-intensity aerobic activity" although data shows that less than half of all Americans do not meet these guidelines (Fitzpatrick et al., 2016, p. 5).

Phase three of this framework involved Agreeing on individualized treatment goals which used the SMART acronym of specific, measurable, attainable, relevant and time-based goals. This step recognized that patients may have unrealistic expectations of weight loss that can increase a negative state of mind. Instead, education was provided to inform patients that 5%-10% weight loss is realistic and attainable for a person

with obesity (Fitzpatrick et al., 2016). Here was where self-monitoring of weight was encouraged in order for the patient to stay on track with nutrition and physical activity. “Patient data gathered from self-monitoring tools can be reviewed by the primary care physician at each patient session and used to facilitate the patient-provider discussion about progress, barriers to change, problem solving, and goal setting” (Fitzpatrick et al., 2016, p. 5).

Phase four was the Assist phase where the barriers to goal attainability and performance were evaluated with plans to discuss ways to overcome these barriers the patients may be facing. “Use of problem-solving skills is associated with significant weight loss in treatment programs” by using the ADAPT acronym representing attitude, definition of the problem, generating alternative solutions and predicting consequences (Fitzpatrick et al., 2016, p. 6). Here was where the patient ideally felt safe enough to discuss any feelings or barriers they may have been facing.

The last and final phase of this framework ties what has been discussed together. The last phase, Arrangement, was crucial to patient success due to increasing accountability through regular follow-up sessions where the provider evaluated the improvement of the patient with the SMART goals established and reviewed self-monitoring recordkeeping by the patient (Fitzpatrick et al., 2016). These steps will follow the patient through their lifetime, so lifestyle behavioral changes can be retained.

These elements outlined the approach of this project by conserving the framework summarized above. The Assessment phase evaluated the patients’ BMI, weight, body fat percentage, and current comorbidities. The Advisement phase took place with discussion about the patient’s current medical conditions or the future risks of developing comorbidities. Conversation regarding the specific diet plan the patient was advised to follow along with the recommended physical activity segment took place in this phase. Following Advisement, both provider and patient collaborated to agree on an individualized treatment plan that was realistic to both provider and patient, with the development of SMART goals. While the patient was completing the described diet program, there were weekly structured accountability follow-up sessions

regarding barriers the patient faced or achievements the patient experienced, which connected both the Assisting and Arrangement phases.

Goals, Objectives, and Expected Outcomes

The goal of this project was to evaluate the impact of accountability counseling had on weight loss success in overweight or obese adults who were seeking to lose weight. To achieve this goal, the primary investigator (PI) performed 15-minute counseling sessions from 7am-2pm on a weekly basis over a six-week period to patients enrolled in a medically supervised weight loss program as a primary objective.

Expected outcomes included:

1. Patients will see a weight reduction with an average of 1-2 pounds per week.
2. Patients will lose at least 4% of their body weight from fat within six weeks of the medically supervised weight loss program.
3. Patient will attend the follow-up sessions and weekly meetings with the provider.
4. Patient will lower BMI at least 2 points within six weeks of starting the medically supervised weight loss program.

Methods (Plan)

A quality improvement project was implemented to guide the weekly accountability sessions and provide the patient a structured framework. This project followed patients through six weekly meetings, with each follow-up developing a new, methodical idea that will hold the patient accountable. The structured model was divided into six categories and was reviewed with the patient each week. Week one incorporated Mindset and Motivation Momentum. This week consisted of discussion of strengths and weaknesses that may affect the mindset of the patient, hindering weight loss. Week two evaluated the patient's readiness for change using the Readiness Scale. The readiness scale was based on the Transtheoretical Model of Change (Appendix B). Developed by Prochaska in the late 1970s, this change model was developed and evaluated, which determined the patient will change and quit a behavior, in this instance obesity, when ready

(1997). The Readiness scale was broken down into six steps as follows:

1. Precontemplation - In this stage, people do not intend to take action in the foreseeable future (defined as within the next 6 months). People are often unaware that their behavior is problematic or produces negative consequences. People in this stage often underestimate the pros of changing behavior and place too much emphasis on the cons of changing behavior.
2. Contemplation - In this stage, people are intending to start the healthy behavior in the foreseeable future (defined as within the next 6 months). People recognize that their behavior may be problematic, and a more thoughtful and practical consideration of the pros and cons of changing the behavior takes place, with equal emphasis placed on both. Even with this recognition, people may still feel ambivalent toward changing their behavior.
3. Preparation (Determination) - In this stage, people are ready to take action within the next 30 days. People start to take small steps toward the behavior change, and they believe changing their behavior can lead to a healthier life.
4. Action - In this stage, people have recently changed their behavior (defined as within the last 6 months) and intend to keep moving forward with that behavior change. People may exhibit this by modifying their problem behavior or acquiring new healthy behaviors.
5. Maintenance - In this stage, people have sustained their behavior change for a while (defined as more than 6 months) and intend to maintain the behavior change going forward. People in this stage work to prevent relapse to earlier stages.
6. Termination - In this stage, people have no desire to return to their unhealthy behaviors and are sure they will not relapse. Since this is rarely reached, and people tend to stay in the maintenance stage, this stage is often not considered in health promotion programs (LaMorte, 2019, p. 6)

Week three concentrated on Barrier Identification and Solution Strategizing. During this week, patients recognized the barriers that may be preventing success with weight loss and brainstormed ways to try and reduce those barriers presented. Week four asked the patient why? Why is this important and what is fueling the patient to stay accountable? Finding Your Why was the idea of week four to recognize the patient's purpose in striving for weight loss. Week five concentrated on specific goal setting and future planning for the patient. Lifestyle changes were important to adapt to on this weight loss journey and week five concentrated on life after weight loss. Week six was the final step in the quality improvement project with the patient. This week focused on the distinct and individualized take-aways from the prior weeks. Here is where the patient acknowledged and understood the education taught to them and recognized the accountability aspect of the program. This quality improvement program tied into the accountability aspect by acknowledging the current literature and incorporating clinical based practice guidelines into teaching.

Monitoring and evaluation continued during the six-week period of data collection. At the end of six weeks, all data collected was based on the criteria stated above. The data collected pre-test was the patients' BMI, weight, and body fat percentage. During the structured accountability sessions, the same data was collected, but evaluation was done on those values with every weekly session to assess the reduction of these numbers. Post-test data included the BMI, weight and body fat percentage at the end of the six-week period, which were reviewed to determine the success of patients enrolled in a supervised weight loss program.

Project Design

The project design was a quality improvement measure. This quality improvement measure focused on the idea of improving a concept already explored to make the results better than before without risk of conflict, ultimately improving the care given. Since it is known how to achieve weight loss, the improvement process was based upon the counseling measure while providing accountability for the patient to stay motivated during the weight loss process. This project explored the evidence based clinical practice guidelines and framework with the 5A's mentioned above to achieve the desired effects and expected results

being researched to improve the outcomes for the patient. The project implemented a pre-test and post-test design and collected quantitative data. The quantitative data that collected was the patients' BMI, weight, and body fat percentage. With this data being collected, the desired outcomes of increased patient weight loss were achieved in a thorough and practical manner.

The expected data outcomes were collected and compared to 10 participants who did not receive structured accountability counseling based on an evidence-based practice clinical guideline. A randomized chart audit was done on 10 participants comparing these numbers to those who received structured counseling. Since all patients who signed up for the weight loss clinic received weekly accountability sessions, the quality improvement project compared the patients' anthropometrics who received a structured framework to those who did not. The data showed the effectiveness of an evidence-based clinical practice guideline and the impact it has on weight loss.

Project Site and Population

The setting in which this project took place was a weight loss clinic located in New Jersey, United States. The community of patients who made up this site consisted of men and women between the ages of 18-65 years old who were considered overweight or obese. The patients signed an informed consent to participate in the project being conducted at this clinical site. The stakeholders in this situation were the project director, medical director, and owner of the agency in order to evaluate the effectiveness of the intervention being performed and the research data being collected. All three stakeholders had similar interests vested into the project that was conducted. The project director, medical director and owner of the agency all dedicated to increasing quality improvement measurements to reduce obesity, which is the main focus of the clinic. The participants who signed informed consent and participated in the study provided the data being collected. The project PI performed the quality improvement intervention and obtained the collected data from each patient each week.

The recruitment strategies promoting this program were flyers and snowball sampling. The initial

recruitment of these participants was an advertisement via the agency flyer and subsequent call in to make an appointment if interested in the program. Once informed consent was obtained during the first visit, the active participants in the project helped to recruit more participants for the study through word of mouth.

The program's inclusion criteria were those who were considered overweight or obese based on the BMI readings greater than 30 or greater than 27 with present co-morbidities, between the ages of 18-65. The exclusion criteria for participation in this program was severe mental illness, uncontrolled hypertension, kidney disease, and a BMI low enough to be considered malnourished if any weight is lost. Based on these criteria, the participants sample size was an estimated 10 participants over the six-week period.

The clinical agency allowed the PI to see participants in the study from the hours of 7am-2pm in weekly fifteen-minute follow-up appointment to discuss weight loss goals and strategies for the upcoming week ahead. Initial intakes were seen every week along with follow-up appointments. Patient retention was achieved by treating each patient encounter as important, treating the patients with respect, and discussing weekly topics as outlined in the interview guide while staying on schedule. Showing the patient their lifestyle change and experience were taken seriously and cared about increased rapport and retention of the clients. The site supported the implementation for the project.

Measurement Instruments

The measurement instruments of this project were the Tanita body composition scale used to measure and collect data on the various variables including BMI, weight, and body fat percentage. In a study done by Kabrini et al. (2015), the Tanita scale demonstrated exceptional test-retest reliability. These data combined were the variables that supported the change in the outcomes for quality improvement. The timing of data collection was obtained pre-program intervention and after six weeks. A chart audit was completed on a similar sample size of participants to collect outcome data on those who did not receive the structured accountability framework sessions. Analysis compared the numbers to those who did receive structured accountability framework session.

Document review was probably the most important tool utilized during the data collection process. During the weekly follow-ups for the patient, measurements were synced into the patient profile. During the document review, the numbers were compared each week from the Tanita scale that breaks down each body reading to determine if weight loss and fat loss were being attained.

Data Collection Procedures

Planning

The planning phase of the project required the vast majority of time and dedication on the PI's part. Patients called in to schedule an appointment after expressing interest in joining the program from the flyer advertisement. The following script was the clinic script for new patients:

Potential Participant: "Hi, my name is _____. I saw the flyer for the diet program and I am calling to find out more about the program."

PI: "Hi _____, nice to meet you, I am one of the Nurse practitioners who work at the clinic. Upon arrival to your appointment, you are going to be weighed in and your vital signs taken, including waist and neck measurements. Bloodwork will be drawn, ECG done, and a metabolism breathing test performed. You will then meet with myself to go over a thorough medical history and brief physical examination. This is all standard protocol for the clinic. After this one hour long visit, you will return to the clinic within one to seven days to again meet with myself for the diet explanation. From then on you will have weekly follow up sessions with myself to go over your week and other various take-always. Do you have any questions?"

Patients were put on schedule within the next seven days by the PI after explaining the program using an agency script about what it entails. This was done on a weekly basis. The PI then reviewed the Electronic Medical Record (EMR) weekly to determine how many new patients were scheduled to start the weight loss program.

Implementation

Once the patient arrived to their appointment, they were weighed in with the Tanita body composition scale to determine baseline data. During this standard care of the practice, the patient met with a provider to conduct a full past medical history and physical examination. It was during this visit with the provider that a goal weight was determined, and the patient made aware of the quality improvement project. The patient either agreed or disagreed to be included as a participant. If the patient was agreeable to the project, informed consent was obtained by the PI. After the hour visit, the patient returned in the next one to seven days for the diet explanation to take place which was part of standard protocol for the agency. The sample size was made up of 10 new patients who had signed informed consent to participate in the project received structured framework accountability sessions. These 10 participants were compared to a group of 10 patients who were not receiving the structured framework accountability counseling sessions.

Upon the patient's return to the clinic, the second visit with the participants revolved around the explanation of the diet program, supplement use, appetite suppressant use, and injections offered in the clinic which is part of standard protocol. At the end of this sixty-minute visit, the participant was scheduled an appointment for a week one follow-up which is part of the agency program. During the week one follow-up, the patient was weighed in via the Tanita scale and a new weight and BMI will be determined based upon the weight loss the patient accomplished during week one.

Week one and beyond included weekly follow-up appointments with the PI. These served the purpose of reviewing the participant's week, what their nutrition composed of, and holding the participant accountable on a week-to-week basis using the structured guide developed. The accountability sessions were completed face to face consistently.

Evaluation

Participants were evaluated after a six-week time period in order to determine the impact of accountability with the weight loss program. At the end of six-weeks, the BMI and Tanita scale readings were reviewed and determined if weight loss succeeded. Based on the review of literature, having structured

accountability sessions has an impact on the weight loss of individuals. According to LeBlanc and Nosik, “Certain steps of a structured problem-solving process are better suited to meetings than other steps. The earliest steps of a structured problem-solving process involve functional assessment in the form of identification and analysis of the problem” (2019, p. 698). Having the first step in a structured program as recognition of the problem made way for the accountability aspect of the program. Compared to standard care, the effectiveness of having structured accountability counseling rather than accountability counseling with no prepared structure was intended to be useful in the success of weight loss for individuals.

Data Analysis

At the end of this six-week period, the data collected from the BMI and Tanita body composition scale was reviewed and analyzed. The BMI is a straightforward indicator of weight loss but needs further breakdown to see successful loss. The Tanita body composition scale was utilized to determine how much fat the participant lost. The goal for patient’s weight loss was at least 4% of total fat lost from baseline until the end of the six-week period after enrollment. The patients who signed informed consent and participated in the project as part of the sample and succeeded with the above criteria were compared to those who did not receive structured accountability counseling. Those patients who received the structured program but did not meet the 4% fat loss goal were identified for potential reasons as to why the goal was not achieved and then compared to those participants who did achieve the goal. A randomized chart audit of equal sample size was done to evaluate the outcome results of structured accountability weekly sessions. The quantitative data measuring outcomes based on the anthropometrics were a vital reflection on the data collection and analysis of this project.

Cost-Benefit Analysis/Budget

The cost-benefit analysis of this project was important to determine the feasibility of the proposed project based on the pros and cons of the predicted costs and advantages associated with the project’s focus. The data collected was done during clinical hours at the clinical site at no financial burden to participants or

project manager. The cost for the participants was the commitment to attend and not miss the weekly follow-up sessions, although that can also be a benefit to the participant as well. Another cost for participants was the risks and complications associated with obesity including diabetes, stroke, and heart attack, just to name a few. As stated earlier, the United States spends \$147 billion on obesity-related diseases and complications (CDC, 2020), which is one of the major costs for this disease. The cost for the PI was the cost of time taken to develop, plan, implement and evaluate data associated with this project as well as the implementation of the structured accountability intervention. To offset costs with benefits, the resources provided to the patients at the clinic were utilized, no other providers were responsible for data collection, and patients gained the accountability and support they were seeking through this program. Participants needed to be committed and not miss the weekly follow-up sessions, which benefitted them as a whole, including the possibility of mitigation of disease. As an additional benefit, the Tanita Scale data collection tool was provided by the clinic at no cost to the PI. The cost-benefit analysis table is located in Appendix C.

Timeline

After proposal approval, there was a six-week timeline for the proposed project. Once approval was obtained, data collection started on new participants who were joining the weight loss program seeking to gain accountability. Each participant was followed throughout the program until the end of six weeks after enrollment. Following data collection, the analysis of data, interpretation of outcomes, and evaluation of results was completed over four weeks. A final two to three months was devoted to project write up and dissemination. The timeline for this project is located in Appendix D

Ethical Considerations/Protection of Human Subjects

The University of Alabama (UA) Institutional Review Board (IRB) approval was obtained prior to initiating the project. All participants in this study were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) which is guaranteed to protect the health information of the patient. Standards of Care for practice in an outpatient care clinic was adhered to and the data obtained from those

who provided informed consent was kept confidential. The risks associated to these patients were the same risks associated to patients who receive care from other outpatient care sites. The confidentiality of participants was guaranteed by assigning each participant an individualized numbered chart which excluded any patient identifiers. The data collection spreadsheets that were used to record data were composed of numerical identifier for the participant, with various columns including their weight loss goal, the intervention received (either a structured accountability program or a non-structured accountability program), baseline outcome data, and post-intervention outcome data. The spreadsheets were secured in a UA Box folder and accessed weekly to input the new data. All electronic files containing identifiable information were stored on the HIPPA secure UA Box and destroyed upon project completion. Ethical considerations that were acknowledged were the agreement of informed consent to participate in the research study and to strictly adhere to patient confidentiality.

Results

A total of 20 individuals were studied for this project. Ten participants who were part of the implementation group were studied and evaluated based upon their agreement to participate in the study. Ten individuals who were part of the control group were also studied and evaluated but did not receive the structured accountability counseling aspect the implementation group received.

Table 1. Summary statistics of the study cohort by Intervention Group

	Intervention Group			p-value ²
	Total (N=20) ¹	Implementation (N=10) ¹	Control (N=10) ¹	
BMI, kg/m ²				
Week				
0 (baseline)	32.0 (4.0)	31.8 (3.3)	32.3 (4.8)	0.880
1	31.1 (3.9)	30.7 (3.1)	31.4 (4.7)	0.970
2	30.5 (4.1)	30.1 (3.3)	30.9 (5.0)	0.967
3	30.1 (3.8)	29.9 (3.1)	30.4 (4.7)	>0.999
4	30.5 (3.9)	30.0 (3.0)	30.9 (4.7)	0.833
5	29.9 (2.9)	30.0 (2.7)	29.8 (3.4)	>0.999
6	30.2 (4.0)	29.7 (2.7)	30.7 (5.2)	0.880
Weight, lbs.				

Week				
0 (baseline)	191.2 (36.5)	192.3 (42.2)	190.1 (31.9)	>0.999
1	185.4 (34.9)	186.0 (39.9)	184.9 (31.3)	>0.999
2	182.4 (36.2)	182.9 (41.0)	181.9 (32.5)	0.968
3	179.4 (33.7)	181.3 (39.2)	177.4 (28.7)	0.842
4	183.3 (34.5)	183.8 (41.4)	182.9 (29.7)	0.963
5	181.4 (33.0)	184.3 (38.5)	176.8 (25.0)	>0.999
6	182.2 (34.1)	182.5 (37.9)	181.9 (32.5)	>0.999
Fat %				
Week				
0 (baseline)	38.7 (5.1)	37.8 (4.2)	39.7 (5.9)	0.364
1	37.1 (5.3)	36.1 (4.3)	38.2 (6.2)	0.364
2	36.6 (5.3)	35.2 (4.6)	38.1 (5.8)	0.220
3	36.2 (5.1)	35.1 (4.7)	37.3 (5.5)	0.220
4	36.9 (5.4)	35.6 (4.7)	38.1 (6.0)	0.248
5	35.4 (4.1)	34.8 (4.8)	36.4 (2.6)	0.284
6	36.3 (5.8)	34.7 (4.6)	37.9 (6.8)	0.462

¹Mean (SD). ² Wilcoxon rank sum test; Wilcoxon rank sum exact test.

Outcome: BMI

A Two-Way Mixed ANOVA was conducted to examine the impact of a weight loss intervention on BMI over a 6-week period. The interaction between Intervention Group and Time ($F(6, 92.01) = 1.131, p = .3505$) was not significantly associated with BMI, with participants showing similar average BMI's over time in the Implementation and Control groups, Figure 1.

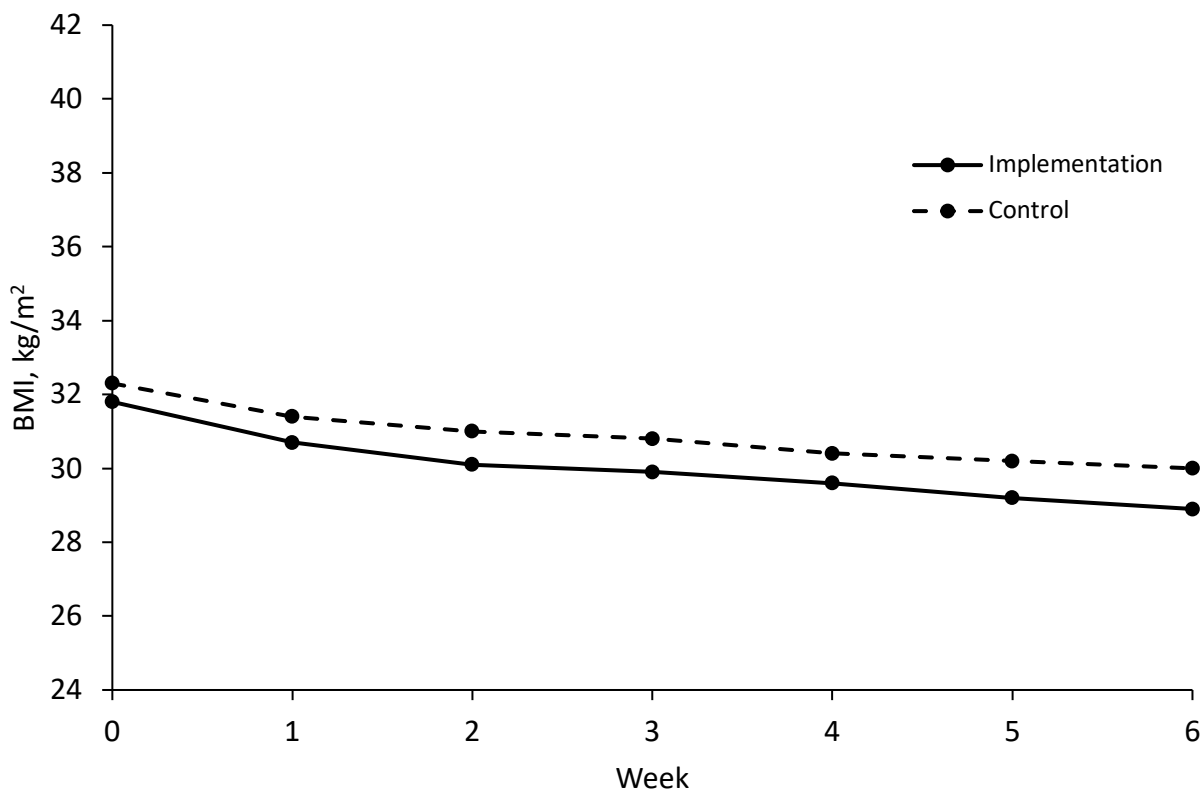


Figure 1. Mean BMI (kg/m²) by Intervention Group, Over Time

In addition, the main effect of Intervention Group (Implementation vs. Control) [$F(1, 18) = .2315, p = .6362$], was not significantly associated with BMI, with participants in the Implementation (Mean = 30.0) and Control (Mean = 30.9) groups responding similarly overall.

In contrast, Time was significantly associated with BMI ($F(6, 92.01) = 103.3, p < .0001$), Figure 2. Pairwise comparisons were adjusted using Tukey's HSD test, Table 3.

Table 2. Mean BMI (kg/m²) Over Time

	Mean	Standard Error
Week		
Baseline	32.0	0.8904
1	31.1	0.8904
2	30.6	0.8901
3	30.3	0.8907
4	30.0	0.8913
5	29.7	0.8932
6	29.4	0.8916

Estimated Marginal Mean BMI.

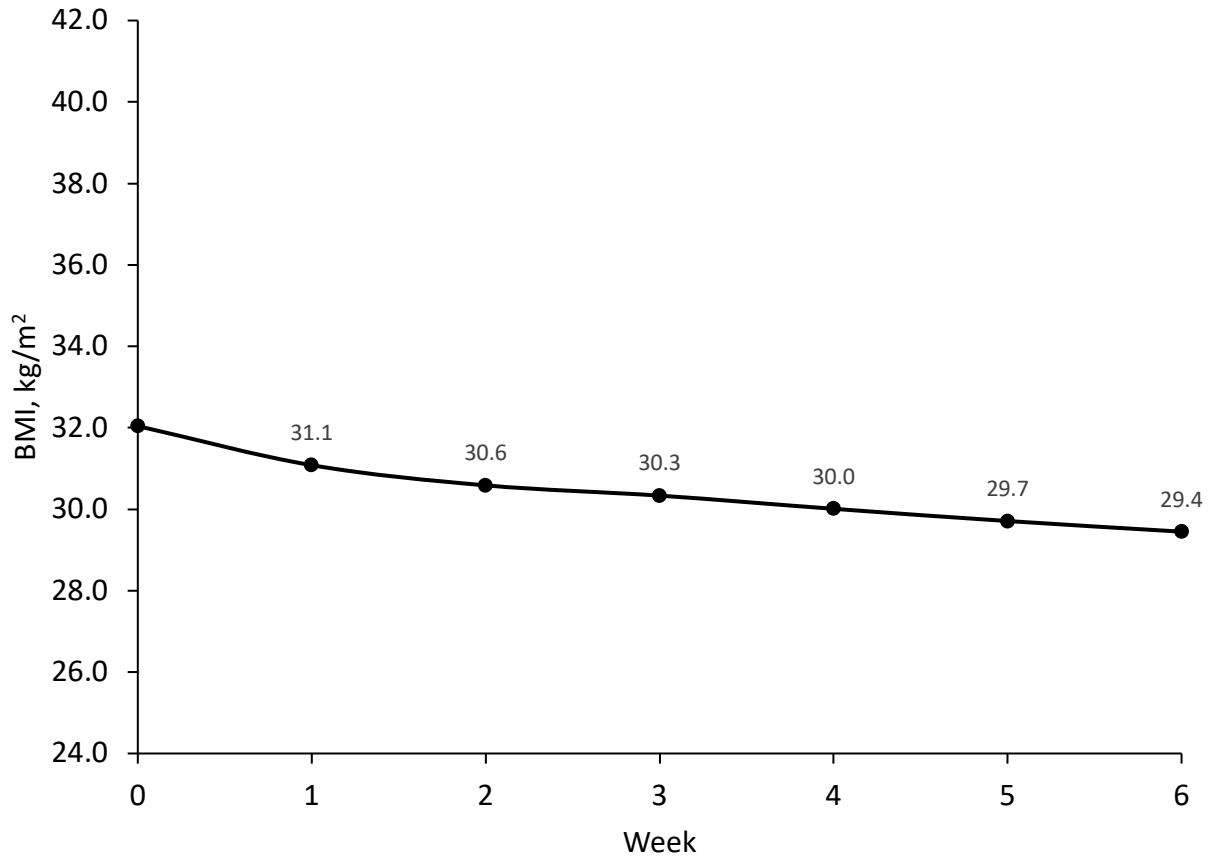


Figure 2. Mean BMI (kg/m²) Over Time (estimated marginal means)

Table 3. Pairwise Comparisons (Mean BMI Differences)

Week		Mean Difference	Standard Error	p-value	95% Confidence Interval	
					Lower	Upper
Baseline	1	0.960	0.114	<.0001	0.616	1.304
	2	1.456	0.116	<.0001	1.106	1.805
	3	1.708	0.116	<.0001	1.358	2.058
	4	2.031	0.120	<.0001	1.669	2.394
	5	2.331	0.134	<.0001	1.928	2.735
	6	2.593	0.123	<.0001	2.223	2.963
1	2	0.496	0.116	.0009	0.146	0.845
	3	0.748	0.116	<.0001	0.398	1.098
	4	1.071	0.120	<.0001	0.709	1.434
	5	1.371	0.134	<.0001	0.968	1.775
	6					

	6	1.633	0.123	<.0001	1.263	2.003
2	3	0.252	0.118	.3404	-0.104	0.608
	4	0.576	0.122	.0002	0.208	0.944
	5	0.876	0.136	<.0001	0.466	1.286
	6	1.137	0.125	<.0001	0.762	1.513
3	4	0.324	0.122	.1239	-0.045	0.692
	5	0.624	0.135	.0002	0.217	1.031
	6	0.885	0.125	<.0001	0.509	1.261
4	5	0.300	0.138	.3191	-0.116	0.716
	6	0.561	0.127	.0005	0.178	0.944
5	6	0.261	0.139	.495	-0.156	0.679

Based on estimated marginal means. Bold=Mean difference is significant at the 0.05 level.

Outcome: Weight (lbs.)

A Two-Way Mixed ANOVA was conducted to examine the impact of a weight loss intervention on Weight (lbs.) over a 6-week period. The interaction between Intervention Group and Time ($F(6, 92.01) = 1.22, p = .3006$) was not significantly associated with Weight, with participants showing similar average Weights over time in the Implementation and Control groups, Figure 3.

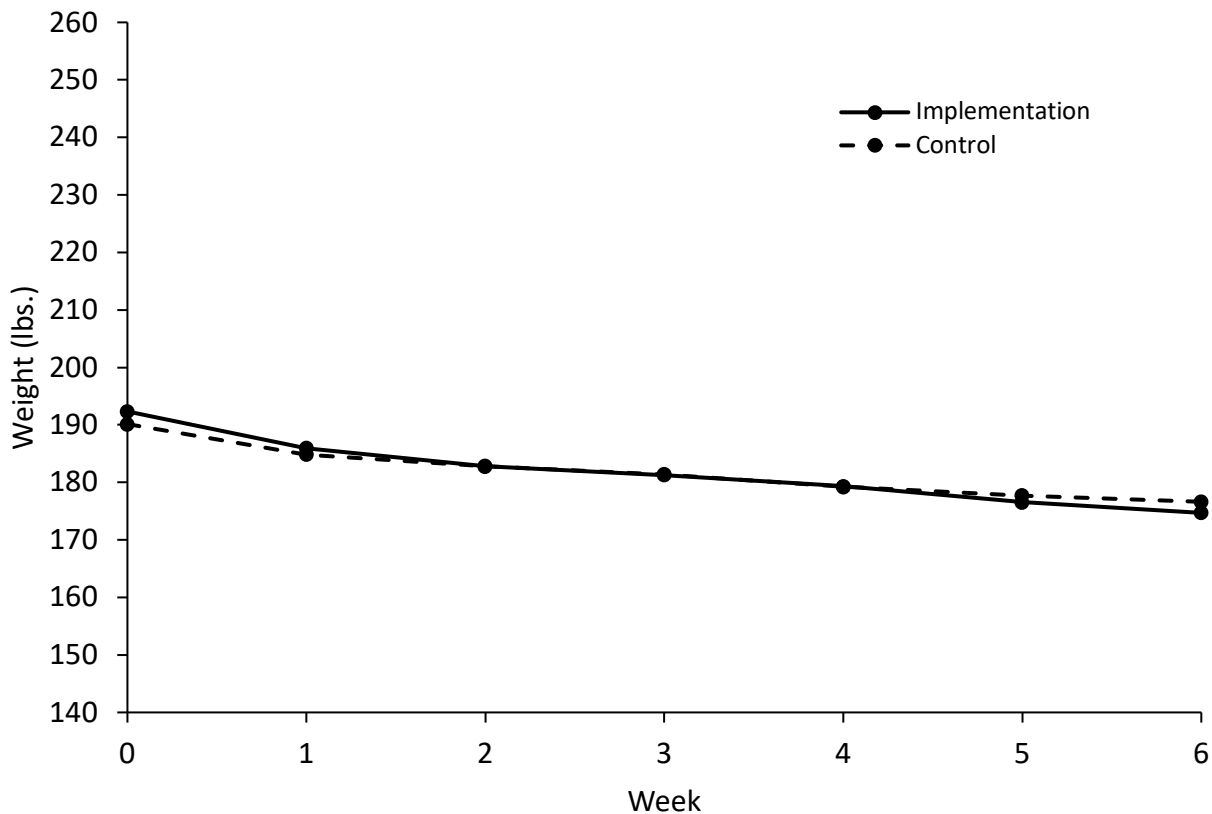


Figure 3. Mean Weight (lbs.) by Intervention Group, Over Time (estimated marginal means)

In addition, the main effect of Intervention Group (Implementation vs. Control) [$F(1, 18) = 0.0, p = .9982$], was not significantly associated with Weight (lbs.), with participants in the Implementation (Mean=181.9 lbs.) and Control (Mean=181.8 lbs.) groups responding similarly overall. In contrast, Time was significantly associated with Weight ($F(6, 92.01) = 75.42, p < .0001$), Figure 4. Pairwise comparisons were adjusted using Tukey's HSD test, Table 5.

Table 4. Mean Weight (lbs.) over time

	Mean	Standard Error
Week		
Baseline	191.2	7.92
1	185.4	7.92
2	182.8	7.92
3	181.3	7.92
4	179.3	7.92
5	177.1	7.93
6	175.7	7.92

Estimated Marginal Mean Weight.

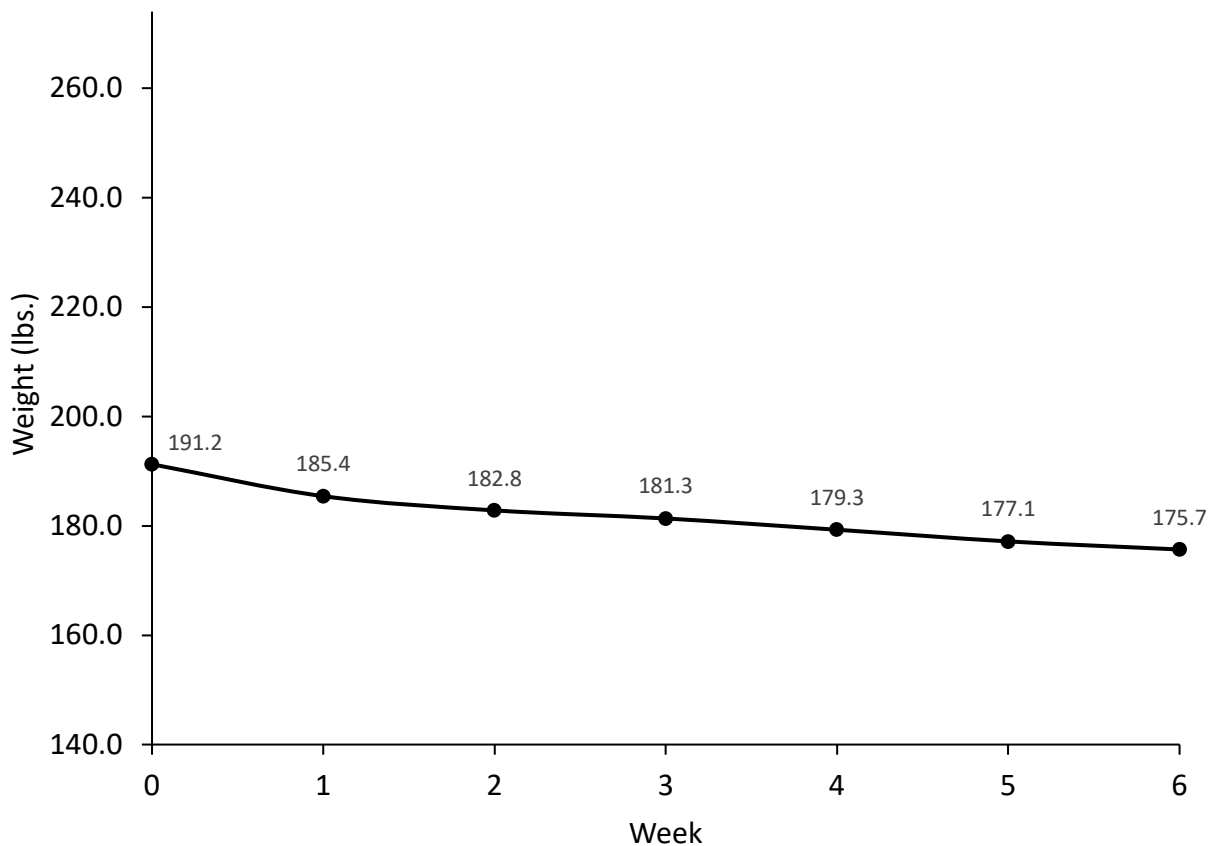


Figure 4. Mean Weight (lbs.) Over Time (estimated marginal means)

Table 5. Pairwise Comparisons (Mean Weight Differences)

Week		Mean Difference	Standard Error	p-value	95% Confidence Interval	
					Lower	Upper
Baseline	1	5.830	0.798	<.0001	3.424	8.236
	2	8.425	0.811	<.0001	5.980	10.870
	3	9.908	0.811	<.0001	7.462	12.353
	4	11.967	0.841	<.0001	9.432	14.502
	5	14.096	0.935	<.0001	11.276	16.915
	6	15.575	0.857	<.0001	12.992	18.159
1	2	2.595	0.811	.0300	0.150	5.040
	3	4.078	0.811	<.0001	1.632	6.523
	4	6.137	0.841	<.0001	3.602	8.672
	5	8.266	0.935	<.0001	5.446	11.085
	6	9.745	0.857	<.0001	7.162	12.329
2	3	1.483	0.824	.5526	-1.003	3.968
	4	3.542	0.854	.0014	0.969	6.116
	5	5.670	0.950	<.0001	2.806	8.535
	6	7.150	0.870	<.0001	4.527	9.774
3	4	2.059	0.854	.2058	-0.515	4.634
	5	4.188	0.943	.0005	1.345	7.031
	6	5.667	0.871	<.0001	3.043	8.292
4	5	2.128	0.964	.3010	-0.776	5.033
	6	3.608	0.888	.0019	0.932	6.284
5	6	1.480	0.968	.7268	-1.438	4.397

Based on estimated marginal means. Bold=Mean difference is significant at the 0.05 level.

A Two-Way Mixed ANOVA was conducted to examine the impact of a weight loss intervention on Fat Percentage over a 6-week period. The interaction between Intervention Group and Time ($F(6, 92.03) = 1.01$, $p = .3694$) was not significantly associated with Fat Percentage, with participants showing similar average Fat Percentages over time in the Implementation and Control groups. See Table 6. Figure of Weight by week for both groups, Figure 5.

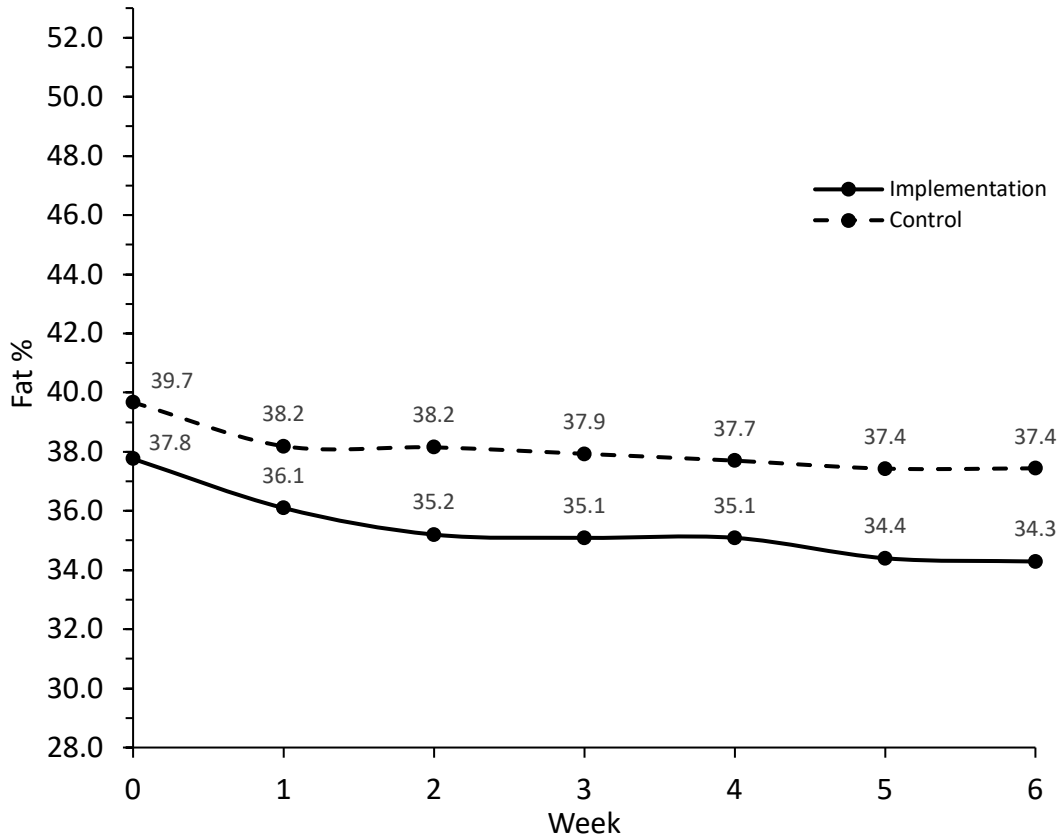


Figure 5. Mean Fat Percentage by Intervention Group, Over Time (estimated marginal means)

In addition, the main effect of Implementation Group (Implementation vs. Control) [$F(1, 18.01) = 1.35, p = .2605$], was not significantly associated with Fat Percentage. Participants in the Implementation (Mean = 35.4%) group had a slightly lower Fat Percentage than participants in the Control (Mean=38.1%) group; however, this difference was not statistically significant, $p=.2605$.

In contrast, Time was significantly associated with Fat Percentage ($F(6, 92.03) = 18.01, p < .0001$), Figure 6. Pairwise comparisons were adjusted using Tukey's HSD test, Table 7.

Table 6. Mean Fat Percentage over time

	Mean	Standard Error
Week		
Baseline		
1	38.71	1.16
2	37.14	1.16
3	36.67	1.16
4	36.51	1.16
5	36.40	1.16
6	35.92	1.17

Estimated Marginal Mean Fat Percentage

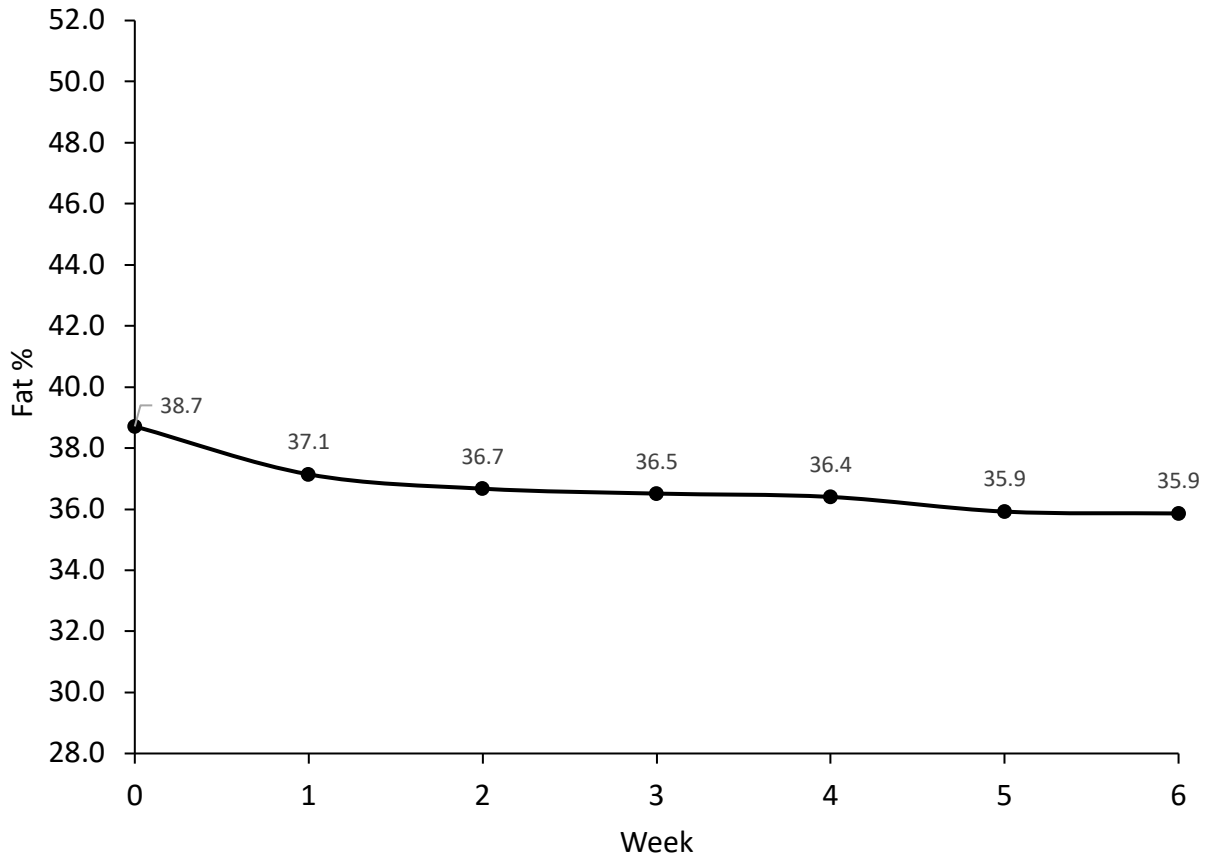


Figure 6. Mean Fat Percentage by Time (estimated marginal means)

Table 6. Pairwise Comparisons (Mean Fat Percentage Differences)

Week		Mean Difference	Standard Error	p-value	95% Confidence Interval	
					Lower	Upper
Baseline	1	1.57	0.305	<.0001	0.650	2.490
	2	2.04	0.310	<.0001	1.106	2.975
	3	2.21	0.310	<.0001	1.271	3.141
	4	2.32	0.321	<.0001	1.347	3.285
	5	2.80	0.357	<.0001	1.721	3.876
	6	2.85	0.328	<.0001	1.865	3.839
1	2	0.47	0.310	.7332	-0.464	1.405
	3	0.64	0.310	.3905	-0.299	1.571
	4	0.75	0.321	.2450	-0.223	1.715
	5	1.23	0.357	.0150	0.151	2.306
	6	1.28	0.328	.0032	0.295	2.269
2	3	0.17	0.315	.9984	-0.785	1.115

	4	0.28	0.326	.9795	-0.708	1.259
	5	0.76	0.363	.3699	-0.337	1.852
	6	0.81	0.333	.1944	-0.191	1.814
3	4	0.11	0.326	.9999	-0.874	1.094
	5	0.59	0.360	.6553	-0.494	1.679
	6	0.65	0.333	.4588	-0.357	1.649
4	5	0.48	0.368	.8463	-0.628	1.592
	6	0.54	0.339	.6956	-0.487	1.559
5	6	0.05	0.370	>.999	-1.061	1.169

Based on estimated marginal means. Bold=Mean difference is significant at the 0.05 level.

Implementation Group

Nine females with an average age of 42 years and one male with an age of 51 years were studied. Baseline data using the Tanita scale was obtained that included the patient's weight, BMI, and body fat percentage. These 10 participants were explained the basis of the study, in which consent was then obtained to participate. The participants were given six weeks to meet two goals of weight loss success which included reducing their BMI by two points and reducing their body fat percentage by 4%. Of these 10 participants, 50% met both goals, 30% met one goal and 20% did not meet a goal.

Of the five participants who met both goals, 80% attended every structured accountability session for six weeks straight whereas the remaining 20% missed three structured accountability sessions within the six-week mark, all three being missed at weeks four, five, and six. Of the three participants who met at least one goal, 66% attended every structured accountability session for six weeks straight and the remaining 33% missed only one appointment. Of the two participants who did not meet a goal, 50% attended every structured accountability session for six weeks straight and the remaining 50% missed two appointments, both being missed at weeks five and six.

Control Group

Ten females with an average age of 53 years were studied. The same data was used to determine these participants success without utilizing the structured accountability counseling sessions. These participants did not know about the study but were followed for six weeks as well to determine if structured accountability

counseling helps improve weight loss success in overweight and obese individuals. Of these 10 individuals, 60% of these patients met one of the two goals and 40% met no goal. No individuals in the control group met both weight loss goals. Of the six individuals who met one goal, 66% attended every weekly session and 33% missed one visit during the six-week time period. Of the four individuals who did not meet a goal, all 40% missed at least one visit or more during the six-week time period.

Interpretation/Discussion

The Two-Way Mixed Anova statistical analysis showed results regarding correlation with participants' BMI, weight, and fat percentage. The two goals of a reduced BMI and fat percentage were measured using the analysis. In both results, when the implementation group was compared to the control group the results showed no significant association with BMI or fat loss. Yet in contrast, time was strongly associated with BMI and fat loss in both the implementation and control groups.

The intervention of structured accountability counseling did not show significant results in both the reduction of BMI or fat loss. The statistics showed a positive correlation in the amount of time a participant stayed in the program on a weekly basis. Although the structured accountability counseling was not statistically significant in aiding in reduction of BMI or fat loss, both groups were statistically significant the longer they were in the treatment program.

Compliance in the treatment program is ultimately the end goal for the participants in both the implementation and control group who want to achieve a reduction in BMI and fat loss. The longer the participants were in the counseling therapy, the more success was reflected. Based upon the findings presented in the study, 80% of participants reached one or more weight loss goals with structured accountability counseling compared to only 50% of individuals meeting one or more goals without structured accountability counseling. This data shows a strong relationship between individuals receiving a more sustained type of long-term counseling and accountability on the basis of weight loss success. The theoretical framework of the 5A's guided the study that in turn obtained the final results and outcomes. The participants

who were part of the implementation group and received the 5A's theoretical framework structured accountability counseling showed more success in the long run than those who did not receive the structured counseling.

Compliance was likely achieved by the rapport and accountability aspect that was given to the participants in the implementation group. Structured accountability counseling can lead to improved compliance over time due to the expectation the client has with the counselor. Even when the study was over, the participants in the implementation group requested the PI to continue with the counseling sessions, which demonstrates the significance of rapport and accountability of one-on-one counseling.

Limitations

There are some limitations regarding the structured counseling sessions that may have affected the project as discussed below.

Knowledge of the Project

Having knowledge of the project may have affected the performance of the individuals who were part of the implementation group. Those participants who knew about the project compared to those who did not know about the project may have had more motivation and accountability to perform better than if they were not aware.

Time Frame of Project

The project was performed from the months of October to December. During this period of time, there are trends of lower participation in the clinic due to the holidays. This may have affected not only the motivation of the clients but the sample size as well. Since the clinic's trend is a lower population during these months, clients have a tendency to fall out of the program and lack motivation which then affects the sample size.

More Male Participants/Varying Metabolisms

Ninety-five percent of those studied were made up of the female population. Varying results may have occurred if there were equal parts of both male and female. Depending on the individual's bodily makeup, the participants metabolism varies, based upon the level of activity and sedentary level which can also affect the results of the study. Since 95% of the participants were female with the average age being in the 40's and 50's, the average metabolism is slower due to age and hormones in these individuals.

Future Research

Future research can be done to study the long-term effects structured accountability counseling has on individuals who desire weight loss. Recommendations for future research can be geared towards longer sessions counselors have with clients and how prolonged continued counseling sessions over time will affect clients. The standard time frame spent with patients is an average of 10 minutes or less. Longer sessions to answer in depth questions or speak to the client to a more personal level may heighten the rapport and have the client feel important rather than rushed. Continued therapy with clients may improve compliance and potentially improved weight loss. Another area of future research that would be beneficial is to see how a mapped-out diet and exercise program can affect client's motivation and compliance with the program. A client who has an exercise program and weekly meal schedule made for them may have increased motivation in succeeding with weight loss due to less stress on the patient and easy access to the everyday activity that is expected of them.

Conclusion

The obesity epidemic demonstrates the urgency for change not only on a local but national level. The clinical problem currently facing individuals is the lack of accountability in the success of weight loss for those who are struggling with this condition. Evidence shows being held accountable with structured accountability counseling programs that increase compliance with long term commitment to the program can have a lasting effect on weight loss over a time (Krishnaswami et al., 2018). In the practice setting for this project the PI addressed the problems of obesity by providing structured accountability to participants to have

increased sustainability in weight loss. While the data did not reach statistical significance, clinical significance was evident. The outcomes for this project gained insight on how guidance positively affects individuals in the supervised weight loss clinic.

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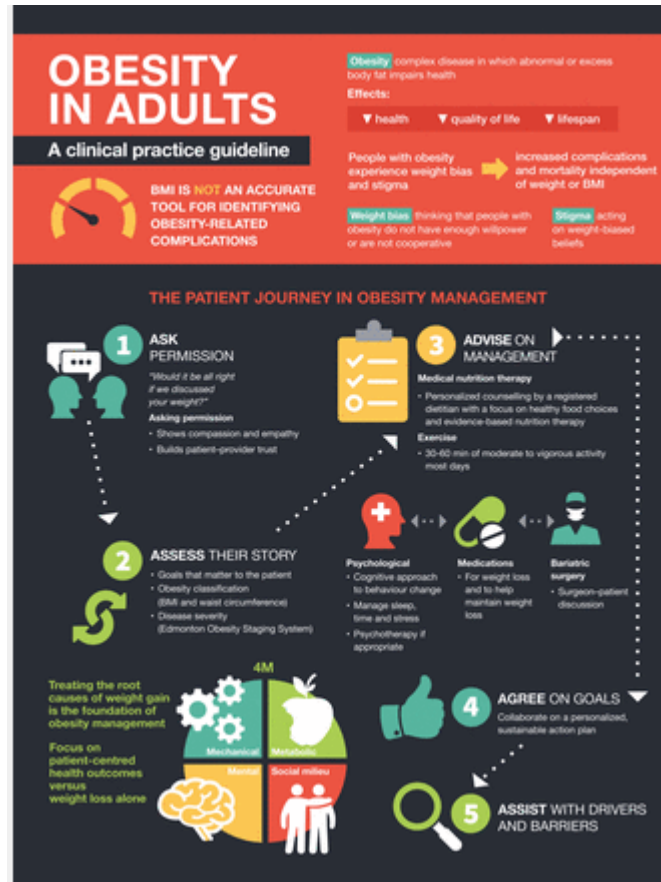
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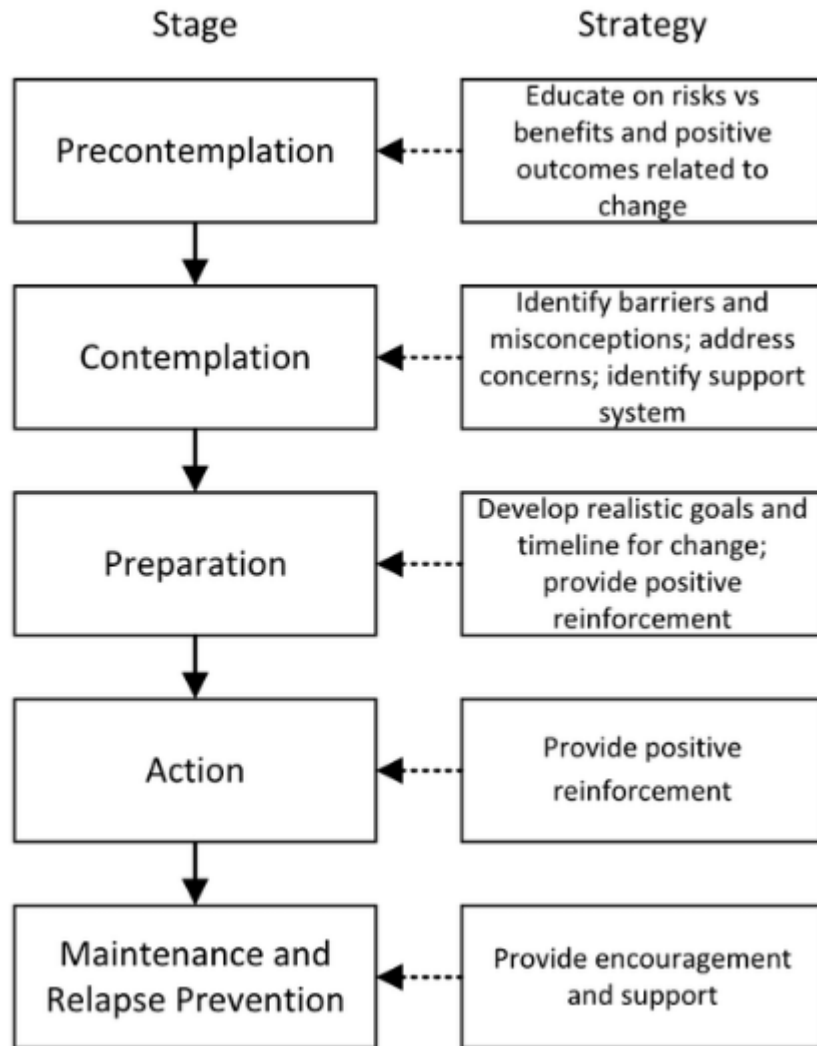
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Appendix A: Clinical Practice Guideline 5A's



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Appendix B: Transtheoretical Model of Behavior Change

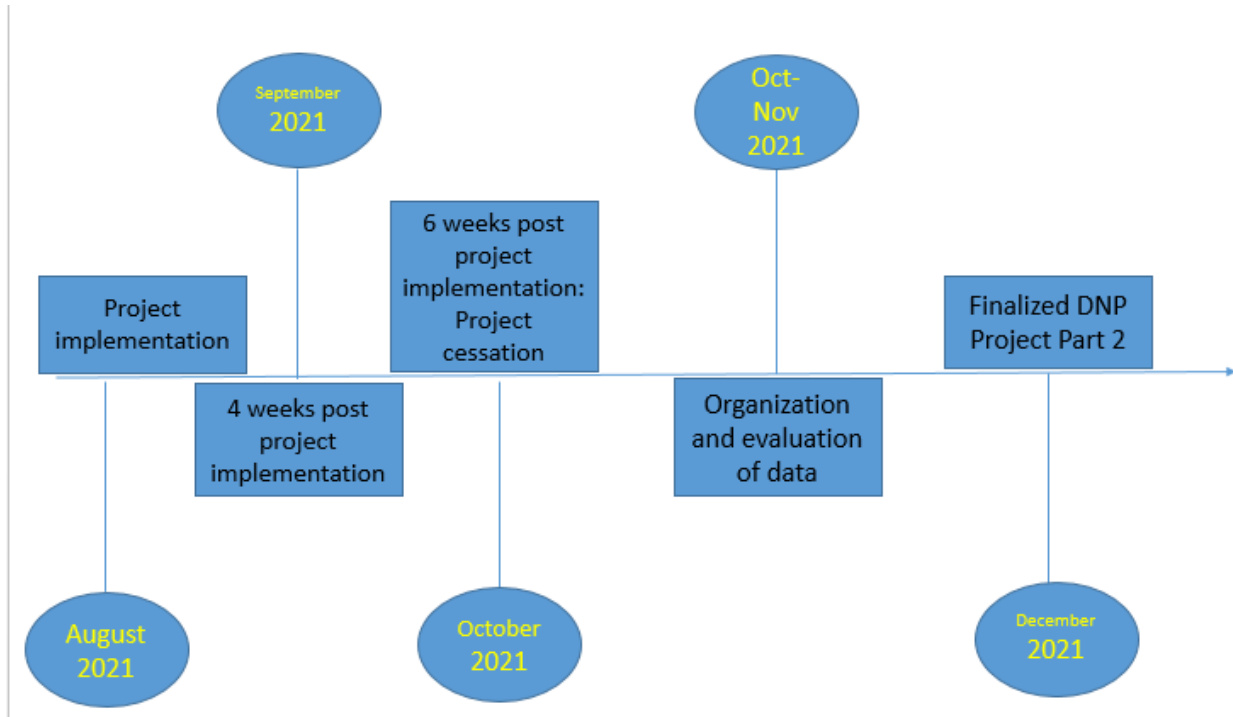


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Appendix C-Cost-Benefit Analysis

COST	QUANTIFICATION OF COST	PAYMENT	Benefits
			Customer Referrals
Time spent on planning, implementing, and evaluating data	12 hours/week for patient encounter x8 weeks 10 hours/week gathering, organizing, and evaluating patient data x16 weeks Total of 256 minimum hours of voluntary time	Time spent developing project. 256 hours x \$50/hr= \$12,800	Mitigation of Disease
			Free Utilization of agecny equipment
Data Collection Tools	Tanita Scale: \$6,000	Provided by the clinic at no extra cost to the project manager	

Appendix D: Project Timeline



Graduation Criteria Statement

The DNP Project Proposal and DNP Final Project submitted, revised, and completed by the student and approved by the Faculty Advisor are criteria for graduation from the DNP program. All DNP students are strongly encouraged to revise the final project as a manuscript for publication in collaboration with the faculty advisor and submit to the student and Faculty Advisor's peer reviewed journal of choice. However, this is not a graduation criterion.