

Otterbein University

Digital Commons @ Otterbein

Doctor of Nursing Practice Scholarly Projects

Student Research & Creative Work

Spring 5-30-2016

Assessment of Air Force Providers' Adherence to Overweight and Obesity Guidelines

Dale Harrell

Otterbein University, gatordale@me.com

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_doc



Part of the [Family Practice Nursing Commons](#)

Recommended Citation

Harrell, Dale, "Assessment of Air Force Providers' Adherence to Overweight and Obesity Guidelines" (2016). *Doctor of Nursing Practice Scholarly Projects*. 17.
https://digitalcommons.otterbein.edu/stu_doc/17

This Thesis is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Doctor of Nursing Practice Scholarly Projects by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact digitalcommons07@otterbein.edu.

Running Head: HARRELL DNP PROJECT

NURS8000 Harrell DNP Project

Dale Harrell

Otterbein University

Assessment of Air Force Providers' Adherence to Overweight and Obesity Guidelines

Executive Summary

Despite the existence of obesity treatment guidelines, Air Force healthcare providers may offer suboptimal weight management. The purpose of this quality improvement project is to assess adherence by healthcare practitioners with adult overweight and obesity guidelines before and after an educational session on the optimal management of the overweight or obese patient. Overweight or obese adults treated in Military Treatment Facilities (MTF) may not be properly identified and controlled, as providers may not be adhering to the American College of Cardiology (ACC) and the American Heart Association (AHA) guidelines for the management of obesity (see Appendix A). The ACC and AHA guidelines are the standards of practice for the medical management of overweight or obese patients in the Air Force.

A retrospective chart review was conducted on Air Force active duty and reserve patients treated at an MTF during their annual Preventative Health Assessment (PHA) exam. The chart review searched for ICD 9/10 diagnosis codes identifying overweight or obese patients with a body mass index (BMI) equal to or greater than 25. After reviewing 98 of the 201 charts, a provider educational session was conducted outlining the ACC/AHA guidelines for identification and management of overweight and obese patients. The patient sampling occurred between August 15, 2015 and December 30, 2015. Based on a review of all 201 charts, 9.5% of patients were overweight and 24% of patients were obese (a total of 67 patients) according to standards of the American College of Cardiology (ACC). The post-provider educational intervention revealed a greater adherence to treatment guidelines. The review found that educating providers with standards of care for overweight and obese patients improves identification and adherence to treatment guidelines. This study has established that providers can improve on properly identifying overweight or obese patients and assigning the proper ICD 9/10 code.

Introduction

Overweight or obese adults treated in MTFs may not be properly identified and controlled, as providers may not be adhering to the ACC and the AHA guidelines for the management of obesity. The ACC and AHA guidelines are the standards of practice for the medical management of overweight or obese patients in the Air Force.

According to the most recent data, respondents to a 2009 survey evaluating health-related behaviors among 28,500 active duty service members, 64% of men and 40% of woman self-reported being nominally overweight with a BMI greater than 25 (Nevin, 2011). A healthy weight is defined as a BMI of 24 or less (American College of Cardiology, 2013). In contrast, in 2010 military primary care providers only diagnosed 5.3% of the U.S. armed forces as being overweight or obese (Nevin, 2011). This data shows that there is a disconnect between the number of individuals self-reporting as overweight or obese and the number actually being diagnosed with excessive weight or obesity by their Primary Care Managers in the MTFs.

A family practice clinic located at an Air Force MTF served as the study setting for this project. This practice represents the care provided by one nurse practitioner, one physician assistant, five physicians and their respective clinical support staff. The principal investigator (PI) obtained the data from encounter notes dating back no more than 2 months from the start of the project. The encounter notes were obtained from medical records of active duty adults receiving their PHA at a medium-sized Air Force Base (AFB) MTF. The electronic health record (EMR) used at this medical clinic automatically calculates the patients BMI. The patient population at the study site shared a similar mix of demographics and economic status.

Problem Statement

Air Force primary care providers are challenged to properly identify and provide evidenced-based interventions for overweight and obese patients.

Background and Significance of Problem

In the United States, adult obesity has become an epidemic and the primary care provider is on the front lines battling a disease that can have dire impacts if not identified and treated appropriately. In 2001, obesity was identified by Surgeon General David Satcher as an epidemic and he advised the public to be aware that obesity should be seen as a source of multiple health problems (Warner et al., 2008). Obesity is a preventable disease and has been linked to many chronic medical conditions such as heart disease, stroke, cancers, and diabetes mellitus (Ford, Li, Zhao & Tsai, 2011). In 2007-2008, over 72.5 million adults in the United States were classified as obese based on their weight and height (Burke & Wang, 2011). Estimations note that the cost of treating medical conditions is attributed to obesity is over \$147 billion dollars a year (Ford et al., 2011). An adult who is overweight has a BMI classified as of 25-30 kg/m² and obesity as a BMI greater than 30 Kg/m² (Almond, Kahwati, Kinsinger, & Porterfield, 2008).

Obesity in the military is also becoming widespread and can affect military readiness and the ability for the military to complete its mission. When deployed to combat regions around the world, each military member must be in top physical condition. The military primary care provider is in a unique position to quickly identify and treat overweight or obese adults. A literature review was conducted to determine existing research available on the primary care provider's identification and treatment of obesity in adults.

There are limited research articles that specifically reveal how well adult obesity is

identified in primary care. There are several studies that evaluate various management modalities for adult obesity. Dr. Gilles Plourde (2012) examined various methods for improving the management of obesity in primary care, including counseling, medications, and weight management programs. He found that one of the most important strategies to improve the care of patients with obesity in the primary care setting is to regularly measure BMI and waist circumference. In a randomized control trial, providers who were given a prompt from the electronic medical record to calculate BMI were significantly more likely to make a diagnosis of obesity (Plourde, 2012). Plourde also concluded that primary care providers could successfully persuade patients who are overweight or obese to change their dietary and physical activity habits using a counseling strategy for changing lifestyles.

In 2008, Podraza & Roberts studied the identification, evaluation, and management of the pediatric obese patient in the military primary care setting. This study is a retrospective chart review of data for 3,941 patients ranging from 4 to 17 years of age who were seen for a well-child examination at a military treatment facility with 31 primary care providers. Each EMR note was reviewed to determine whether the patient was obese or overweight at the time of the visit based on the child's age and gender. Researchers then assessed if the providers documented obesity, screening for comorbidities, ordered screening laboratory tests, and offered assistance with weight control. They concluded that approximately 17% of pediatric military dependents were obese and there was evidence of poor screening and identification of pediatric obesity in the military health care system (Podraza & Roberts, 2008). Warner et al., (2008), conducted a qualitative study in which military family physicians were given a survey to assess their attitudes towards treating obesity. Email invitations were sent to 1,186 active members of the Uniformed Services Branch of the Academy of Family Physicians with a total of 477 physicians responding

to the questionnaire. Only 74.9% of respondents thought they were obligated and felt comfortable counseling their patients regarding obesity. A mere 50% of respondents reported counseling patients about obesity as gratifying (Warner, 2008).

Also, according to Warner et al. (2008), providers identified a lack of confidence in their ability to counsel patients regarding obesity and felt they were not making a difference. Younger providers who responded to the survey thought that laziness of the patient was the cause of obesity. This was an important study that helped identify the feelings family physicians have in regards to obesity. They concluded there were some negative stereotypical attitudes that persist towards obesity and these attitudes affect treatment practices (Warner, 2008).

Researchers Burke & Wang (2011) reviewed treatment options available for overweight or obese adults. They concluded that the first step in the treatment of obesity, BMI greater than 30 kg/m², is identifying the disease and discussing the topic with the patient (Burke & Wang, 2011). Life style change was found to be the most effective treatment approach for adult obesity, which included diet and exercise (Burke & Wang, 2011). Individuals who utilized lifestyle modifications with diet and exercise achieved the greatest percentage of long lasting weight loss. Other less effective treatment options are bariatric surgery, behavioral therapy, and medications.

Project Implementation and Measures

Theoretical Framework. The ideal theoretical framework for improving the identification of obesity in Air Force clinics is the 3-Step model developed by Kurt Lewin in 1947. Lewin was a humanitarian who believed that only by resolving social conflict could human conditions be improved (Burnes, 2004). He also believed the key to resolving social conflict was to facilitate learning which would enable individuals to understand and restructure

their perceptions of the world around them. Lewin's 3-Step model is specifically designed to affect organizational change and involves three steps: unfreezing, moving, and refreezing. (see Appendix B)

Step 1: Unfreezing. Lewin alleged that the stability of human behavior was founded on a quasi-stationary equilibrium reinforced by an intricate field of driving and restraining forces (Mitchell, 2012). Lewin asserted, equilibrium needs to be disrupted (unfrozen) before old behavior can be rejected (unlearned) and new behavior successfully applied (Burns, 2004). The key to unfreezing is to recognize that change, whether at the individual or a group level, is a profound psychological dynamic process. Unless sufficient psychological safety is created, the change information provided to the group will be denied and defended against. There will be no survival anxiety felt within the group (Burns, 2004).

Those affected have to feel safe from loss and humiliation before they can accept the new information and reject old behaviors. Unfreezing creates motivation to learn but does not control or predict change. For this project, unfreezing involves showing Air Force medical providers that a change is needed to improve the identification of overweight or obese patients at medical appointments. The providers will realize the benefits of properly identifying overweight or obese patients and following established treatment guidelines.

Step 2: Moving. In this step, Lewin emphasized that one should contemplate all the forces at work and identify and evaluate, on a trial and error basis, all the available options (Mitchell, 2012). The moving step is when one takes actions, creates changes, and involves people. This step is considered the learning approach. With this approach, research and action enables the groups and individuals to move from a less acceptable to a more acceptable set of behaviors (Burns, 2004). Lewin indicated in his model that without reinforcement to the change,

the new behavior could be short-lived. In the moving step, providers at the Air Force MTF) will be given an educational briefing on the current American College of Cardiology (ACC), the American Heart Association (AHA) guidelines for management of obesity and will review the Air Force medical standard guidelines 48-123.

Step 3: Refreezing. This is the final step in Lewin's 3-Step model. The refreezing process attempts to stabilize the group at a new permanent position. This ensures the new behaviors are reasonably safe from regression (Mitchell, 2012). The key point about refreezing is that new behavior must be consistent with the rest of the behavior, character and environment of the learner or it will merely lead to a new series of disconfirmation (Varkey & Antonio, 2010). Lewin saw successful change as a group activity, because unless group norms and routines are also transformed, changes to individual behavior will not be sustained (Burns, 2004). In organizations, refreezing frequently requires changes to the values, standards, policies and procedures. In the refreezing step, Air Force medical providers will properly identify overweight and obese individuals at every medical appointment evidenced by a retrospective chart review conducted after the educational briefing. Policies and procedures will be constructed or updated to create clear expectations that all providers must follow. Also, the topic of adhering to overweight and obesity guidelines will be revisited once per year at a monthly provider meetings to prevent unfreezing of the behavior.

Project Purpose and Objectives. Despite the presence of obesity treatment guidelines, healthcare providers often provide suboptimal weight management. The purpose of this quality improvement project was to systematically assess adherence with adult overweight/obesity guidelines in an Air Force primary care clinic to reduce the patient's risk associated with this disease. The objective of this study was to increase the awareness of proper identification and

management of overweight and obesity in the active duty population by Air Force primary care providers. A documented diagnosis of overweight or obesity is critical and is correlated with the patient receiving counseling for weight loss. The diagnosis assists providers in recognizing overweight or obesity as a disease and determining a treatment plan.

Method. The method employed for this project was a quantitative, retrospective analysis of a selected number of patient encounter notes from Air Force active duty, enlisted and officer, and adult patients enrolled in an Air Force primary care clinic. Data was collected before and after an education session to determine the extent that guidelines for optimal management of obesity are being followed by clinic providers.

Target Population and Sample. The target population consisted of active duty and reserve Air Force including all ranks of enlisted and officers who are overweight or obese. The sample consisted of 98 charts before the educational brief and 103 charts after the educational brief. Charts were reviewed from the period of time two months before and two month after the education session. Every third PHA EMR was reviewed and there was an unequal number of charts pre- and post-educational session because of the limited active duty population at the MTF.

Inclusion Criteria and Recruitment. The inclusion criteria for the encounter notes included: active duty or reserve Air Force, enlisted or officer, adults ages 18–65, coded as a PHA, who are patients at the selected primary care practice and who had eligible office visits during both the pre- and post-education session periods (July through September 2015 and again between September and December, 2015). Eligible office visits for inclusion included PHA exams. If more than one encounter note was eligible for inclusion, then the first eligible visit was included in the analysis. Subject recruitment was not warranted due to the nature of the study.

Data Collection Plan. For this project, the PI performed all record selections and data collection. Encounter notes that met eligibility criteria were reviewed from records of individuals who were seen during a PHA visit. To analyze the differences between the quality of care before and after the education session, the encounter notes from the patients' medical records were reviewed. The nominal variables were recorded as "yes" or "no," to document the provider's compliance before and after the education session. These nominal variables include: weight, height, BMI, obesity diagnosis, waist circumference, and counseling regarding dietary, physical activity, and behavioral recommendations. A completeness score was calculated from the patient's EMR by tallying the total number of points earned for the identified indicators. Each measure equaled one point with a maximum of eight points possible.

Data Analysis Plan. A Two-sample T test for completeness was calculated from the independent samples. A chi-square analysis was completed to examine patient demographics and compare baseline characteristics of the sample along with a general linear model factoring the completeness score versus age, pre, post, and gender. (see Appendix C).

Securing the Team and Stakeholders. Securing the team entailed enlisting support from the primary care medical providers at the Air Force MTF. The medical providers consented to participate in a Doctor of Nursing Practice (DNP) project with a goal of improving the identification and management of overweight and obesity (see Appendix D). No IRB was required at this MTF but the project was approved through the Otterbein IRB (see Appendix E). Approval for this project was also obtained from the Chief Nurse at the MTF.

The desired results of this project were that overweight and obesity identification in the Air Force primary care clinic improved through a brief educational session. An increase in compliance with overweight/obesity guidelines was anticipated. The PI expected to see

significant progress in the rate of documented height, BMI, diagnosis of overweight/obesity and counseling related to diet, as well as, statistically significant gains in physical activity by the patients. Possible barriers to this project included providers not participating in the education session and not gaining approval from the Commander or Chief Nurse at the MTF. This was of minimal concern because the Air Force is extremely receptive to retrospective chart review projects that can enhance medical care for its patient population.

Timeline and Budget. In August 2015, the PI obtained approval to conduct this project from the Commander and the Chief Nurse at the Air Force Base MTF. To assess guideline compliance with the identified quality indicators, the PI conducted the medical record audit to review documented care in encounter notes from adults seen in the primary care setting for a PHA two months before and two months after the educational session. Data collection before the education session started in September 2015. The education session also took place in September 2015 after half of the targeted patient population had been seen. The chart analysis after the education session occurred in October 2015 and lasted until 201 charts were reviewed for the entire project. This project involved a total of 300 hours, which includes obtaining the approval of MTF leadership, the completion of pre and post educational chart reviews, and the delivery of the educational session. The projected cost for this project was \$500 with the actual cost totaling less than \$100. Cost included printing of material for the provider education session and supplies for a poster presentation.

Outcome and Analysis Evaluation

A two-sample T-test, a general linear model, and a Chi Square analysis were performed to determine the significance of the data obtained in the sample. An unpaired two-sample T-test was chosen to determine if the two sets of data are independent from each other and to test the

project's null hypothesis that provider education has no effect on coding and treatment of overweight or obese patients. An unpaired two-sample T-test examines two separate sets of independent samples (Salkind, 2011). The two-sample T-test objective is to determine if the pre and post education session showed a difference in adhering to treatment guidelines for overweight and obese patients. The two-sample T-test calculations on the pre and post sample revealed the means of the completeness score to be significantly different on the pre and post intervention thus rejecting the null hypothesis with a P-value rounded to equal 0.00. A P-value is a function of the observed sample results that is utilized for testing the null hypothesis (Salkind, 2011). For this project, a threshold of 5% corresponding to a 95% confidence level was used and because the P-value was below this threshold it indicates the observed data is inconsistent with the null hypothesis.

The Chi-square test was also performed on the completeness score that revealed a P-value of 0.00. A Chi-square is a nonparametric test that allows a researcher to determine if what is observed in a distribution of frequencies would be what is expected to occur by chance. The Chi-square test informs the researcher how different the observed values are from the predicted values (Salkind, 2011). A P-value threshold of less than 5% was used to determine if the Chi-square calculation would support the researchers prediction and reject the null hypothesis. A P-value of less than 0.05 illustrates that the difference between the observed and expected values are due to the results of the educational intervention.

A General Linear Model (GLM) was calculated on the completeness score versus age and gender to determine whether the means of the pre and post educational groups differ. A GLM P-value of less than 5% for a given model component such as the two predictors or their interaction have a significant effect on strength (Salkind, 2011). The P-value for completeness score versus

age was 0.027 and gender was 0.03. These scores also indicate a rejection of the null hypothesis that provider education has no effect on coding and treatment of overweight or obese patients. All statistical tests performed demonstrated a statistically significant effect that provider education does have an effect on coding and treatment of overweight or obese patients. The P-value on the two-sample T-test, Chi-square, and the General Linear Model was less than 0.05.

Characteristics of gender for the military patient population sampled included 22.5% females and 77.5% males. The average age of the sample was 29 years old with an average BMI of 24.1 (see Appendix F). Of the 98 military members in the pre provider education sample, 22.4% (n=22) were overweight, 8.2% (n=8) were obese totaling 30 overweight/obese patients, and 69.4% (n=68) had normal BMI's. Out of 103 patients in the post provider education sample, 25.2% were overweight (n=26), 10.7% (n=11) were obese, totaling 37 obese/overweight patients, and 64.1% (n=66) had a normal BMI. The average BMI of this study was 9.6% above the Healthy People 2020 BMI goal of 14.5%.

Table 1. Comparison of pre and post education samples

	Sample	Overweight	Obese	Normal
Pre-education	98	22.4% (n=22)	8.2% (n=8)	69.4% (n=68)
Post-education	103	25.2% (n=26)	10.7% (n=11)	64.1% (n=66)

Prior to the educational session, 20% (n=6) of overweight or obese patients were coded correctly, 6.7% (n=2) of the 30 identified overweight/obese patients received waist measurement, 10% (n=3) of the identified overweight/obese patients had nutrition counseling, 13.3% (n=8) had physical activity counseling, and 6.7% (n=2) were referred to behavioral counseling. After the educational brief to providers on overweight and obesity guidelines there was a significant increase with appropriate coding and medical management. Post intervention, 86.5% (n=32) of patients received the appropriate ICD code (see Appendix G), 32.4% (n=12) of the 37 identified overweight/obese patients had waist measurement completed while 78.4% (n=29) of the identified overweight/obese patients received nutritional counseling. 37.8% (n=14) had physical activity counseling, and 32.4% (n=12) were referred to behavioral counseling (see Appendix H).

The first step in treating an individual who is overweight or obese is identifying the condition and discussing the topic with the patient (Burke & Wang, 2011). An increase from 20% of overweight or obese patients being correctly coded to 86.5% after the educational session is significant (see Table 2). This illustrates that providers with proper training will identify patients who are overweight and obese which may allow a discussion about how the patient perceives being overweight or obese, if he or she wishes to address it, and their goals and personal resources.

Lifestyle modification is the cornerstone to an individual achieving weight loss. Lifestyle modification has three main components: dietary modification, regular exercise, and behavior therapy. Physical activity by itself can lead to a 3% weight loss but when coupled with diet therapy it can lead to a greater weight loss (Burke & Wang, 2011). Before the educational session, 10% of the overweight and obese patients received nutritional counseling, physical activity recommendations were given 13.3% of the time, 6.7% of these patients were referred for

behavioral counseling, and the average completeness score was 3.4. As a result of the educational session, there was a significant increase in overweight and obese patient receiving nutritional counseling (78.4%), physical activity recommendations (37.8%), referral to behavioral counseling (32.4%), and the average completeness score of 5.4 (see Table 2). The completeness score is calculated by tallying the total number of points earned for each of identified indicators. Measured indicators include weight, height, BMI, correct ICD code, measurement of waist circumference, dietary counseling, physical fitness recommendations, and behavioral counseling referral. Each indicator equaled one point with a maximum of eight points possible.

Behavioral counseling is an important tool with managing overweight and obese individuals and the Air Force has invested heavily into this resource. In the Air Force, every primary care clinic has a Licensed Clinical Social Worker (LCSW) that is trained to provide behavioral counseling for overweight and obese patients. Behavioral counseling is a highly effective treatment in achieving successful weight loss among those who are overweight or obese (Burke & Wang, 2011). An increase of 25.7% in utilizing behavioral treatment with the LCSW is encouraging but there is room for improvement in this area for treatment and management of overweight and obese Airmen in the Air Force (see Table 2).

For military personnel with fitness requirement, it's important to determine the waist measurement in patients who are classified as overweight or obese. Excess adipose tissue is not only related to increased morbidity and mortality risk but also can affect an individual achieving a passing score on his or her fitness test. Waist circumference (WC) is used to screen for overweight and obesity in military personnel during the semi-annual physical fitness testing. Individuals who exceed the measurement thresholds may be placed on an exercise program or

risk dismissal from the military. By providing the educational session there was an increase of waist measurement from 6.7% to 32.4% in overweight and obese patients (see Table 2). Waist measurement is a vital component of the PHA for overweight or obese individuals. The patient must have the waist measurement so treatment can begin before the physical fitness test is performed and they risk failure.

Table 2. Comparison of pre and post education samples

	Correct ICD Code	Waist Measured	Dietary Counseling	Physical Activity Counseling	Behavioral Therapy	Average Completeness Score
Pre-education	20% (n=6)	6.7% (n=2)	10% (n=3)	13.3% (n=8)	6.7% (n=2)	3.4
Post-education	86.5% (n=32)	32.4% (n=12)	78.4% (n=29)	37.8% (n=14)	32.4% (n=12)	5.4

Conclusions and Recommendations

Educating providers on identification and treatment guidelines for overweight and obesity has a positive effect on adherence to these guidelines. Prior to the educational session, the majority of overweight or obese individuals were not identified or counseled appropriately. Inadequate overweight/obesity identification and counseling can affect a patient's health and military career. A review of the patient's BMI and management of overweight or obesity should occur at every PHA visit. The providers should discuss proper dietary choices, exercise programs, and counseling options available to aid in weight loss.

Chart review as an assessment tool has several limitations. First, there is a possibility that providers did discuss the patient's BMI and counseled the individual on proper nutrition and exercise but failed to assign the proper ICD (9/10) code in the patient's medical record.

Secondly, military members are very active in weight lifting and their calculated BMI may not reflect a true adipose composition. Thirdly, perceptions of the providers were not assessed to determine if specific barriers or issues affected the documentation and/or discussion of weight during a PHA visit. Lastly, the demographics of the clinic studied may limit the generalizability to other populations. Recommendations for further evaluation or future research may include assessing barriers to identifying and addressing the issues of overweight and obesity at the PHA visit.

Based on the results of this study, an Air Force level review is recommended to evaluate the proper identification of overweight and obesity including adherence to treatment guidelines. Replication of this study is feasible based on the access to data afforded to personnel at the Air Force Medical Operations Agency (AFMOA). If further studies correlate with this project, a computer-based training (CBT) program should be mandated to educate Air Force providers on proper identification and treatment of overweight and obese patients. This would be the easiest and most cost effective way to reach providers located in the 74 MTF's around the globe. Air Force medical software engineers should also design the EMR to automatically notify the provider when the patients BMI is in the overweight or obesity range. This would prevent a provider from overlooking the BMI and increase the identification of overweight and obese patient's.

Summary

Air Force medical providers have a unique responsibility ensuring that the men and woman of the armed forces are ready to deploy to any location with minimal notice. Maintaining an appropriate weight and waist standards is key to continued employment in the Air Force. Proper identification and management of overweight and obese patients should be evaluated at

every annual PHA visit to ensure a healthy fighting force. This study concluded that a brief educational session on overweight and obesity treatment and guidelines increases the identification and management of overweight and obese patients. Overweight and obesity is not only a health epidemic in the civilian population but is also an issue in the Air Force which must be addressed to maintain the safety of our nation and that of our global partners.

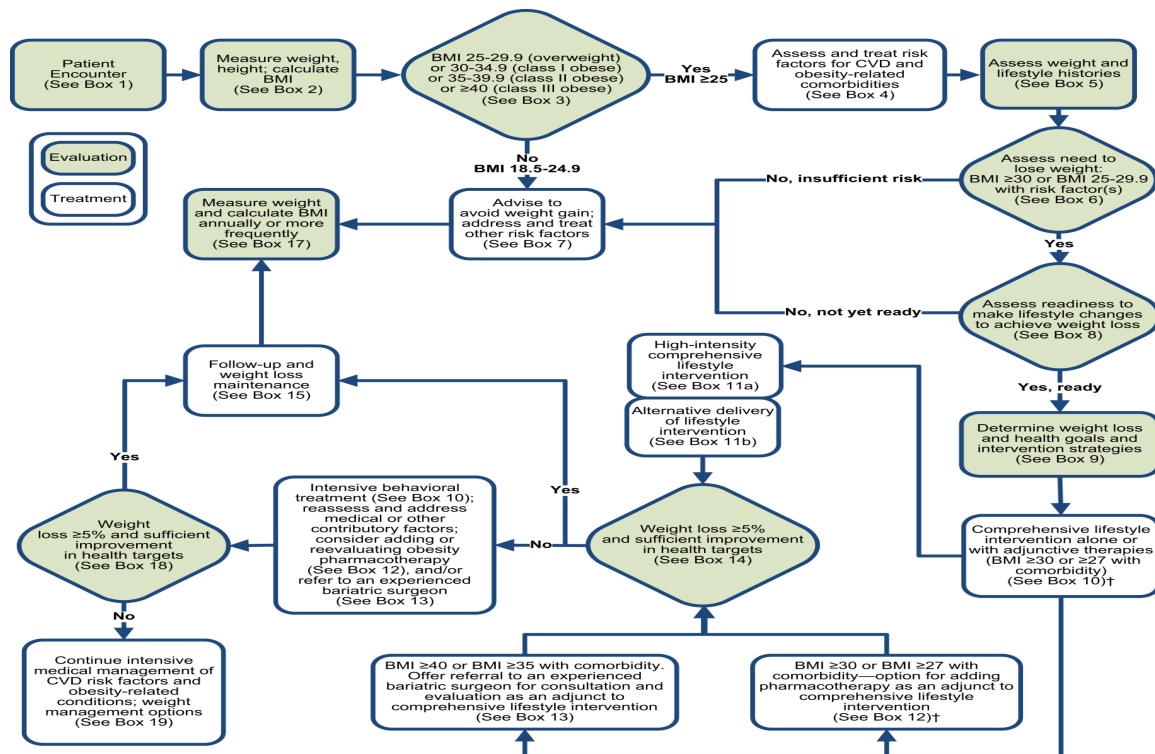
References

- Almond, N., Kahwati, L., Kinsinger, L., & Porterfield, D. (2008). The Prevalence of Overweight and Obesity among U.S. Military Veterans. *Military Medicine*, 173, 544-548.
- American College of Cardiology. (2013). 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults. Retrieved from <http://content.onlinejacc.org/article.aspx?articleid=1770219>
- American Heart Association. (2013). 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults. Retrieved from <http://professional.heart.org>
- Burke, L. E., & Wang G. T. (2011). Treatment Strategies for Overweight and Obesity. *Journal of Nursing Scholarship*, 43 (4), 368-375.
- Burns, B. (2004). Kurt Lewin and the planned approach to change: a re-appraisal. *Journal of Management Studies*, 41 (6), 1-18.
- Ford, E., Li, C., Zhao, G., & Tsai, J. (2011). Trends in obesity and abdominal obesity among adults in the United States from 1999-2008. *International Journal of Obesity*, 35, 736-743.
- Mitchell, G. (2012). Selecting the best theory to implement planned change. *Nursing Management*, 20, 32-37.
- Nevin, R. (2011). Diagnoses of overweight/obesity, active component, U.S. Armed Forces, 1998- 2010. *Medical Surveillance Monthly Report (MSMR)*. 2011;18 (1):7-11.
- Plourde, G. (2012). Managing obesity in adults in primary care. *Canadian Medical Association Journal*, 184 (9), 1039-1044.

- Podraza, J. & Roberts, T. A. (2008). Identification, Evaluation, and Management of Pediatric Obesity in Military Academic and Nonacademic Settings. *Military Medicine*, 173, 1199-1202.
- Salkind, N.J. (2011) *Statistics for People Who Hate Statistics*. Thousand Oaks, CA: SAGE Publications.
- Varkey, P., & Antonio, K. (2010). Change management for effective quality improvement: a primer. *American Journal of Medical Quality*, 25, 268-273.
- Warner, C. H., Warner, C. M., Morganstein J., Appenzeller, G. N., Rachal, J., & Grieger, T. (2008). Military Family Physician Attitudes toward Treating Obesity. *Military Medicine*, 173, 978-984.

Appendix A

2013 ACC/AHA Algorithm Management Overweight/Obese Patients



Treatment Algorithm—Chronic Disease Management Model for Primary Care of Patients With Overweight and Obesity. BMI indicates body mass index; CVD, cardiovascular disease. ACC-American College of Cardiology. AHA- American Heart Association. (taken from <https://professional.heart.org>)

Appendix B
Kurt Lewin's Change Model

Step One: Unfreezing	Old behaviors, ways of thinking, processes, people and organizational structures must all be carefully examined to show employees how necessary a change is for the organization to create or maintain a competitive advantage in the marketplace
Step Two: Changing	Changing is marked by the implementation of the change. This is when the change becomes real and people begin to learn the new behaviors, processes and ways of thinking
Step Three: Refreezing	Refreezing to symbolize the act of reinforcing, stabilizing and solidifying the new state after the change. The changes made to organizational processes, goals, structure, offerings or people are accepted and refrozen as the new norm or status quo

Appendix C
Data Analysis Tools

Two-Step T-Test

P-Value less than 0.05

Chi Square

P-Value less than 0.05

General Linear Model

P-Value less than 0.05

Appendix D
Informed Consent

To: XXXXXXXXX

The Department of **Nursing** at Otterbein University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are interested in studying the effects of diagnosing and management of overweight/obesity in the Air Force population. A retrospective chart review will be conducted evaluating BMI, identification of overweight/obesity, and management of overweight/obesity. An educational session describing the current American College of Cardiology (ACC) and American Heart Association (AHA) overweight and obesity treatment guidelines will be given to providers and a repeat retrospective chart review will be conducted looking at the same criteria. It is estimated that this will take no more than 30 minutes of your time. Although participation will not directly benefit you, we believe that the information will be useful in evaluating the identification of overweight/obesity in the Air Force population.

Your participation is solicited although strictly voluntary. We assure you that your name will not be associated in any way with the research findings. Only a code number will identify the information.

If you would like additional information concerning this study before or after it is complete, please feel free to contact me by phone or mail.

Sincerely,

Dale Harrell, Principal Investigator

Laughlin AFB, Texas 78843

419-689-9169

Signature of subject agreeing to participate/Date

With my signature I affirm that I am at least 18 years of age.

Appendix E

Otterbein IRB Approval

INSTITUTIONAL REVIEW BOARD
RESEARCH INVOLVING HUMAN SUBJECTS
OTTERBEIN UNIVERSITY

☒ Original Review
☐ Continuing Review
☐ Five-Year Review
☐ Amendment

ACTION OF THE INSTITUTIONAL REVIEW BOARD

With regard to the employment of human subjects in the proposed research:

HS # 15/16-06

Ball & Harrell: Assessment of Air Force Provider's Adherence to Obesity ...

THE INSTITUTIONAL REVIEW BOARD HAS TAKEN THE FOLLOWING ACTION:

☒ Approved ☐ Disapproved
☐ Approved with Stipulations* ☐ Waiver of Written Consent Granted
☐ Deferred

*Stipulations stated by the IRB have been met by the investigator and, therefore, the protocol is APPROVED.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the college, signed consent forms are to be transferred to the Institutional Review Board for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the IRB, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: 17 September 2015

Signed: 

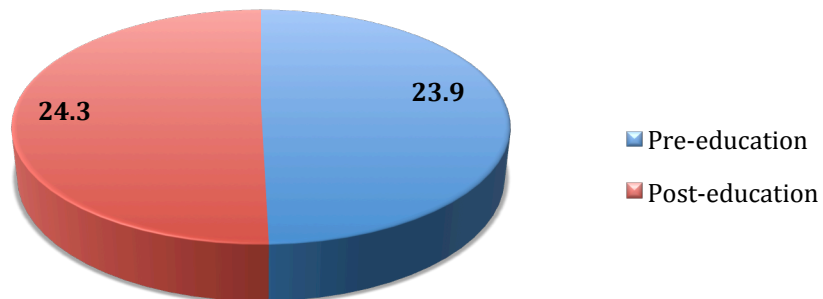
Chairperson

OC HS Form AF

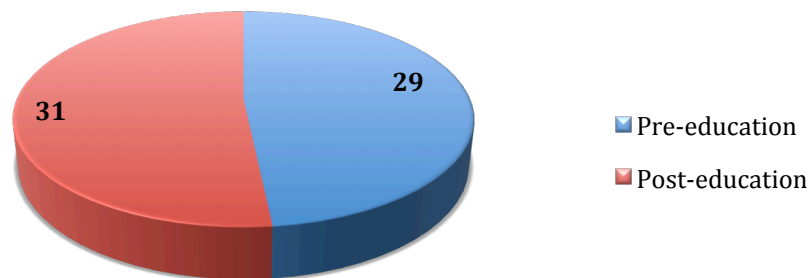
Appendix F

Average BMI, Age, and Gender Makeup

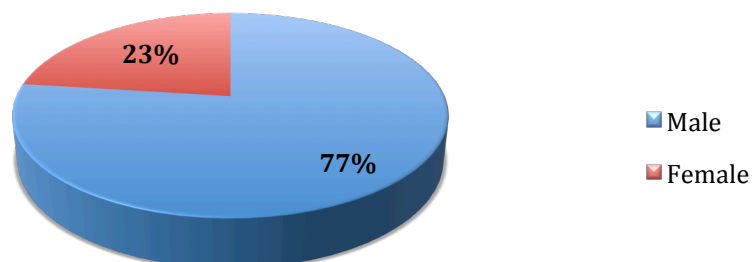
Average BMI



Average Age of Sample

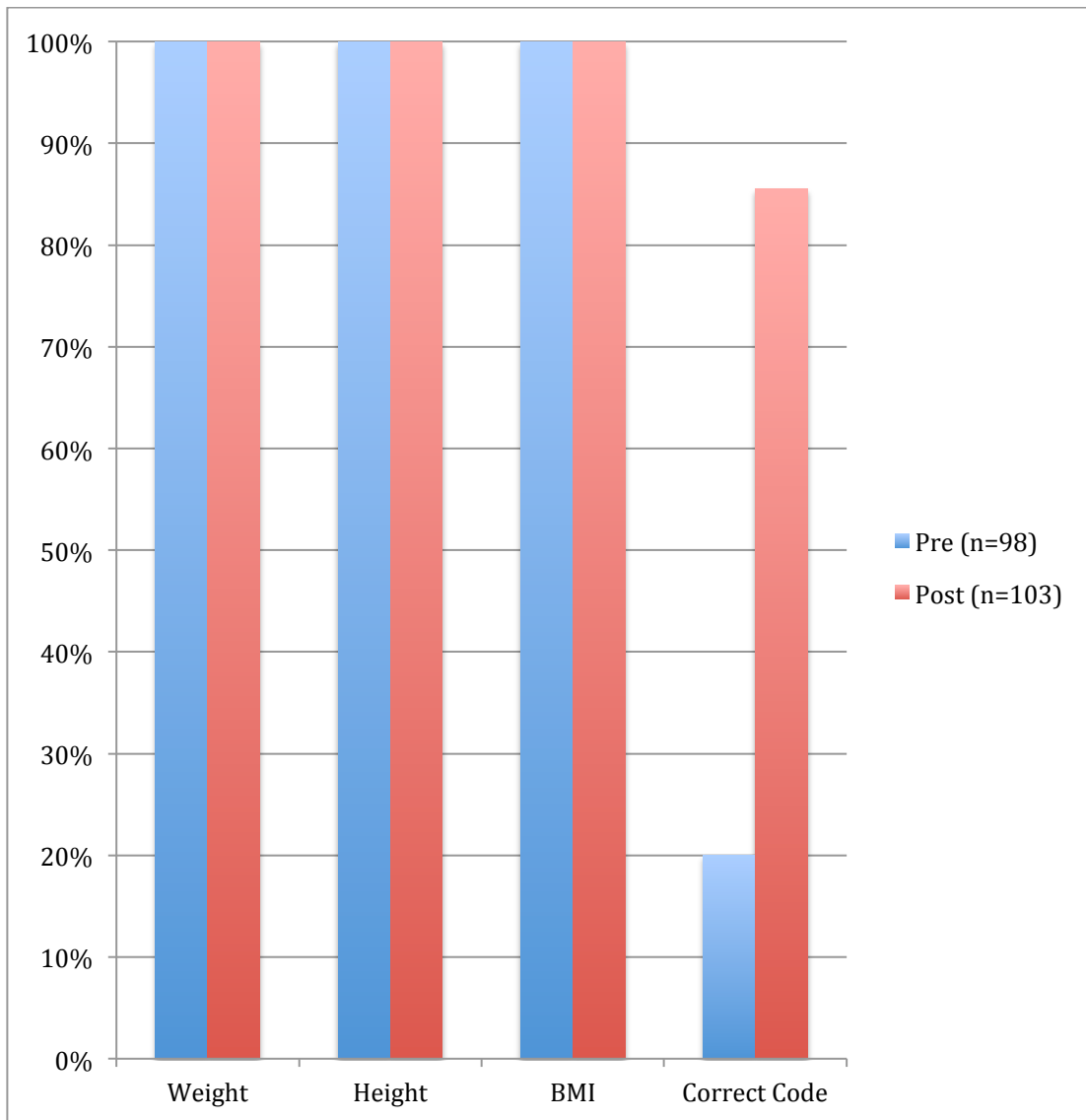


Gender Makeup



Appendix G

Interventions Completed for Patients Pre and Post Education Session



Appendix H

Interventions Completed for ICD Coded Overweight/Obese Patients Pre and Post Educational Session

