An Adult Plan for a Healthy Weight:

A Clinic-Based Intervention for Patient Weight Loss

By

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Introduction

When I started my clinical rotations last fall, I was generally surprised by the number of my patients who were either overweight or obese. I failed to recognize many of these patients until I calculated their body mass index, likely due to my 21st century perception of what a normal American woman and man should look like.

As my concern for these patients grew, I began to observe the lack of effective physician intervention. Whether due to other health issues to address or lack of detection, patients were not receiving the adequate education and intervention for their condition.

Intervention for obesity screening and discussion can be difficult in the time constrained clinical environment that now exists. In most cases it needs to be a lengthy discussion on nutrition and physical activity, and needs to be personalized to the patient. Obesity needs to be followed up like any other disease, with the potential to take up a significant amount of time in consecutive appointments. As a result, I have become interested in finding a resource that providers could easily use in their office to address their patients' weight issues and assist them in developing a healthy lifestyle.

Background

The word epidemic stems from epi-, meaning "above", and –demo, meaning "peoples". By definition, it means "affecting or tending to affect a disproportionately large number of individuals within a population, community, or region at the same time," or "excessively prevalent" (Merriam-Webster). Many in the medical community now consider obesity to be a global epidemic.

In June 2013, the American Medical Association made an announcement. At their annual meeting, the House of Delegates voted to place obesity under the heading of "disease" (American). Although this may seem like a simple change of labeling, the decision will have numerous consequences in the medical community. It will affect how physicians approach their patients, insurers' reimbursement for treatment and general change in overall healthcare for obese patients. The war on obesity has officially begun.

According to the Centers for Disease Control and Prevention, over 33% of adults and over 15% of children are obese in the United States (CDC). Obesity in America has been steadily increasing for the last twenty years. In the Americas, the United States is currently in second place for adult obesity rates, with Mexico winning the race (WHO). As countries become more developed and acquire a more "American" lifestyle of fast food and cubicle jobs, obesity has spread worldwide. Of the 7 billion people living on Earth, there are currently 1.7 billion adults over the age of 20 who are overweight. Of these individuals, 500 million are considered obese (WHO).

So why are we so worried about obesity? The diagnosis of obesity usually has company. Obesity is associated with a significant increase in mortality. It also increases a person's risk of developing hypertension, dyslipidemia, gastrointestinal disease, diabetes mellitus, cardiovascular disease, sleep apnea, cancer and other diseases. In the United States, it is estimated that over $190 billion was spend on obesity related health care in 2005 (Cawley and Meyerhoefer, 2012). The cost of healthcare for an individual with obesity can cost anywhere from $1,429 (Finklestein et al, 2009) to $2, 741 (Cawley and Meyerhoefer, 2012) above the average cost per person per year.

Screening for obesity involves calculating a patient's body mass index (BMI), or the less common method of calculating a patient's waist circumference. BMI is an indicator for body fatness and is calculated by taking an individual's mass in kilograms and dividing it by the square of their height in meters. The BMI places an individual in a category:

Underweight: <18.5 kg/m^2

Normal: 18.5-24.9 kg/m^2

Overweight: 25-29.9 kg/m2

Obese Class 1: 30-34.9 kg/m^2

Obese Class 2: 35-39.9 kg/m^2

Obese Class 3: >40 kg/m^2

Waist circumference has also been used as a screening tool for obesity. The waist circumference is measured at level midway between the lowest rib and iliac crest. Men with waist circumferences > 40 inches and women with waist circumferences > 35 inches, are considered at high risk for obesity-related diseases.

Effective intervention for overweight and obese patients can be time consuming and even frustrating for providers. A study in Denver compared the effectiveness of a clinic-based weight loss program to a commercial program. At a single site, 46 patients were randomized to either Weight Watchers or a clinic group. The clinic group included 12 visits over 17 weeks and involved medication or meal replacement for weight loss options. Patients in the clinic group lost an average of 4 kg compared to the .4 kg lost by those assigned to the commercial program. The

study concluded that clinic-based interventions were more effective than commercial weight loss programs (Tsai et al, 2013).

Another study includes a meta-analysis that reviewed research on weight loss interventions over the previous 25 years. Inclusion criteria included peer reviewed scientific journals and therapeutic interventions that involved diet, exercise, or both. Aerobic exercise was included, while drug, hormone and surgical treatments were excluded from the study. Diet interventions for weight loss resulted in an average loss of 10.7 kg, exercise interventions resulted in an average loss of 2.9 kg, and a combination of both exercise and diet resulted in an average loss of 11 kg. At one- year patient follow-ups, diet and exercise programs appeared to be the superior program of the three options for maintaining weight loss (Miller et al, 1997).

Another intervention includes the recent attempt by Mayor Bloomberg of New York City to limit fountain beverages and sugary bottled drinks to 16oz. A day before the ban was set to take effect, a New York Supreme Court judge ruled that the city health board did have the authority to initiate the ban. The fate of the ban is still in limbo, with both sides vowing to continue the fight.

Methodology

Patients with a BMI of 30 or above were selected to receive "An Adult Plan for a Healthy Weight" form. Patients were selected from the Matthew Walker Comprehensive Health Center (MWCHC) Internal Medicine and Family Medicine Clinic and from the United Health Services Health Screenings at Parkwood and Mcferrin Community Centers.

"An Adult Plan for a Healthy Weight" form consists of two parts: setting a goal weight and setting a plan to reach that goal weight. The first part includes information on the current weight of the patient, current BMI, a diagram to show what BMI category they fall in, the

patient's goal weight and the date they would like to reach that in. The maximum goal weight will be set to two pounds per week, based on the recommendations by the Mayo Clinic (Weight Loss). There is also a section that list health problems that can be improved with weight loss.

The second part of the plan lists both nutritional and physical activity goals. The patient has the option to check which goals they believe will work for them or they can individually write goals in. Patients were not limited to the amount of goals they wished to select. A list of online resources is provided for patient education. Please refer to Appendix A for a copy of the form.

The "An Adult Plan for a Healthy Weight" form is filled out with the medical student's assistance. The goal is for the form to be completed as a collaborative effort between the patient and the student. The student should aid in selecting a healthy goal weight for the patient and realistic physical activity and nutritional goals.

The patient will provide a phone number to contact them for follow up. The patient will be contacted weekly via phone or in person if they are already planning to come to the clinic for other reasons. Patients will receive weekly follow ups through the fifth week of the externship. Weekly follow ups have been chosen due to the 6 week time limitations of the independent project. Patients will be asked the following questions at follow up:

Are they keeping track of their weight at home, and if so what is their current weight?

Have they been able to meet their physical activity/nutritional goals?

Do they have support at home for their physical activity/nutritional goals?

Do they feel ready to add any goals?

Do they feel that follow up with the clinic is helping them meet their goals?

Have they used the online resources, and if so have they found them helpful?

Results

In total, fifteen patients agreed to fill out the "An Adult Plan for a Healthy Weight" form. Twelve patients were recruited from MWCHC Internal Medicine and Family Medicine clinic and three patients were recruited from the United Health Services Health Screenings at Mcferrin and Parkwood Community Centers.

The average BMI of the patients was 41.53, with the highest BMI being 53 and the lowest BMI being 31. Of the fifteen patients, only seven chose to set goal weights. The most common health problems patients reported were hypertension and diabetes. The raw data set is below:

Hypertension	7
Diabetes	6
High Cholesterol	4
Arthritis	4
Heart Disease	3
Depression	2
Sleep Apnea	2
Asthma/COPD	2

The two most commonly selected physical activity goals were to "find a workout partner to hold me responsible for my physical activity goals" and to "take daily walks." Two patients elected to create their own physical activity goal. The raw data set is below:

Take daily walks	8
Find a workout partner to hold me responsible for my physical activity goals	4
Enjoy nature and outdoor activities with friends and family	4
Take the stairs whenever possible	2
“Increase gym time”	2
“20 arm and leg kicks a day”	1

The two most commonly selected nutritional goals were “eat fresh, frozen or canned fruits or vegetables, aim for 5-9 servings a day” and “eat more meals at home, instead of eating out, if I do eat out, I will bring home half the entrée.” Only one patient elected to create their own nutritional goal. The raw data set is below:

Eat fresh, frozen or canned fruits or vegetables, aim for 5-9 servings a day	9
Eat more meals at home, instead of eating out, if I do eat out, I will bring home half the entrée	7
Use the Plate method: fill ½ plate with fruits and vegetables, ¼ with whole grain. ¼ with lean protein	5
Choose whole grain foods	5
Choose low fat or nonfat dairy	3
Choose lean protein	1
Decrease portion sizes	1

Seven patients were recruited during the third week of the externship and had the potential to be followed up weekly for two weeks. I was unable to contact two of the seven patients, so only five patients were followed up for two weeks.

Eight patients were recruited during the fourth week of the externship and had the potential to be followed up with for one week. I was unable to contact one of the eight patients.

Thus, twelve patients were able to be followed up with, 5 for two weeks and 7 for one week after. All patients were followed up via telephone. The raw data from the one week follow-up questions are below:

Question	Yes	No
Are they keeping track of their weight at home, and if so what is their current weight? The average weight loss of the patients who answered yes: 0 pounds	3	9
Have they been able to meet their physical activity/nutritional goals?	5	7
Do they have support at home for their physical activity/nutritional goals?	11	1
Do they feel ready to add any goals?	0	12
Do they feel that follow up with the clinic is helping them meet their goals?	12	0
Have they used the online resources, and if so have they found them helpful?	3	9

The raw data from the two week follow up questions with the five patients is below:

Question	Yes	No
Are they keeping track of their weight at home, and if so what is their current weight? The weight loss of the patient who answered yes: 2 pounds	1	4
Have they been able to meet their physical activity/nutritional goals?	2	3
Do they have support at home for their physical activity/nutritional goals?	4	1
Do they feel ready to add any goals?	1	4
Do they feel that follow up with the clinic is helping them meet their goals?	5	0
Have they used the online resources, and if so have they found them helpful?	1	4

Discussion

Originally, patients were only going to be selected from the MWCHC Internal Medicine and Family Medicine Clinic. However the search was expanded to the United Health Services Health Screenings to increase patient recruitment to at least fifteen patients. Every patient I approached was willing to fill out the form and I believe recruitment was low from MWCHC due to the lack of patients who fit the requirements for the study.

Less than half of the patients elected to set goal weights. For the patients who decided not to set goal weights, their reasons included "it was just a goal for them to fail at" or "they didn't like the pressure." Others stated that they did not have the means to weigh themselves at home and "didn't see the point." Of the goal weights that were made, a few patients elected to set unrealistic goals weights and they were scaled back to a maximum goal of 2 pounds per week.

Hypertension and diabetes were the most common health problems listed by the patients. This is not surprising given the fact that these diseases are among the most common associated with obesity.

When choosing physical activity goals, the most common selected was to "take daily walks." This was a popular choice likely due to it being inexpensive and a less strenuous exercise. Many of the patients spoke of low back pain and joint pain and decided that walking would be a reasonable physical activity for them.

Between the physical activity and nutritional goals, patients were most reluctant to change their eating habits. "Eat fresh, frozen or canned fruits or vegetables, aim for 5-9 servings a day" and "eat more meals at home, instead of eating out, if I do eat out, I will bring home half the entrée" were the two most commonly selected. Most patients claimed they were already

eating vegetables and fruit, and they did not think it would be too much of an "inconvenience" to eat more portions. Also, most patients admitted to eating out a lot and could be talked into at least trying to bring some of that meal home. Most patients were unwilling to change their dairy or red meat consumption.

Three patients were lost to follow up. Of the twelve patients I was able to follow up with at one week, 100% of them felt that follow up with the clinic was helping them meet their goals. A third of the patients found the online resources beneficial to use and another third were keeping track of their weight at home. A majority of the patients, 91%, claimed they had support at home and 41% were able to meet their goals.

Of the five patients followed up with at two weeks, only one patient was keeping track of their weight and reported a two pound weight loss. One patient was willing to add goals, 40% were able to meet their goals and 80% reported support at home. One patient reported the online resources as helpful, and 100% felt that follow up was beneficial to maintaining their goals.

All the patients in the study felt that knowing they were going to be followed up with helped them maintain their nutritional and physical activity goals. As the project was limited to short term follow up, it cannot be determined whether or not the form can actually result in significant weight loss for these patients. However, it does have the potential to initiate and support lifestyle changes in patients.

Recommendations

Although this project was not designed for the specific needs of MWCHC, it is a resource they could use for patients who are overweight or obese. The form is inexpensive and not incredibly time consuming, allowing for a blueprint that a provider can follow and personalize

for their patient. Patients could easily be followed up in the office, instead of wasting man power with phone calls. With the limited financial resources of any community health center, "An Adult Plan for a Healthy Weight" offers a cost effective way for any clinic to address obesity.

Conclusion

Past generations have had to fight off the smallpox and polio epidemics. This generation is faced with the challenge of combating the rising population of those who are either overweight or obese and preventing the numerous chronic diseases that accompany it. Clinic-based interventions have been shown to be effective, though very time consuming.

"An Adult Plan for a Healthy Weight" is just one of many possible interventions providers can use to address their patients weight issues. Benefits to using the form include low cost, individualize for a patient's particular needs and time efficiency.

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Appendix A

Adult Plan for a Healthy Weight

Name:_____ **Date:**_____

Current Weight: _____ **Current BMI:**_____ **Contact Number:**_____

What is BMI: Body Mass Index (BMI) is a measure of body fat, and is based on your weight and height. This is an estimate of your risk for certain diseases

Below 18.5 Underweight	**18.5-24.9** Healthy Weight	**25.0-29.9** Overweight	**30-39.9** Obese	**40 and Above** Morbidly Obese

My Goal Weight: _____. I will work to reach my goal by:_____/_____/_____(date).

A **5-10% decrease** in weight can have many positive effects on my health. Achieving weight loss and increasing my physical activity could help me manage certain health problems:

- ☐ High Cholesterol
- ☐ Heart Disease
- ☐ Depression
- ☐ High Blood Pressure
- ☐ Diabetes
- ☐ Asthma/COPD
- ☐ Sleep Apnea
- ☐ Arthritis
- ☐ Other:_____

My Nutrition Goals:

- ☐ Choose whole grain foods: brown rice, oatmeal, bran cereal, whole grain breads and pastas
- ☐ Choose lean protein: beans, fish, chicken, turkey, eggs, pork and nuts
- ☐ Eat fresh, frozen or canned fruits and vegetables. Aim for 5-9 servings a day
- ☐ Use the Plate Method: fill ½ plate with fruits and vegetables, ¼ with whole grain, ¼ with lean protein
- ☐ Choose low-fat or nonfat dairy: low-fat milk, low-fat yogurt and low-fat cottage cheese
- ☐ Limit the use of added fats. Such as salad dressing, mayonnaise, margarine, butter and oil.
- ☐ Keep track of my daily intake using a food journal
- ☐ Plan meals ahead of time, including meals at home and at work
- ☐ Avoid eating fast food
- ☐ Eat more meals at home, instead of eating out. If I do eat out, I will bring home half the entrée
- ☐ Other:_____

My Physical Activity Goals:

- ☐ Walk, bike or take bus whenever possible, especially trips that are less than a mile
- ☐ Strengthen my muscles, lift weights, practice yoga or use by body weight for resistant
- ☐ Join a recreation center or gym
- ☐ Enjoy nature and outdoor activities with friends and family
- ☐ Find a workout partner to hold me responsible for my physical activity goals
- ☐ Take the stairs whenever possible
- ☐ Use a pedometer to track my steps. Goal to walk 8,000-10,000 steps a day.
- ☐ Take daily walks
- ☐ Other:_____

Online Resources:

Nutrition

- www.cdc.gov/healthyweight/healthy_eating
- www.choosemyplate.gov
- www.fruitsandveggiesmorematters.org
- www.health.gov/dietaryguidelines

Physical Activity

- www.cdc.gov/healthyweight/physical_activity
- www.naturefind.com
- www.choosemyplate.gov/physical-activity
- www.presidentschallenge.org