

HEALTHY BY DESIGN

BACKGROUND

A new term has been coined for the obesity epidemic in the United States in conjunction with its intimate relationship with diabetes as “diabesity.” With a costly obesity epidemic, policy makers must recognize factors that may influence obesity not only for each person, but also across communities.¹ The annual cost of treating obesity has increased dramatically over the past several years ranging from \$70 to \$100 billion.² Increased primary care physician density on the county level is associated with decreased obesity rates.¹ As we move to restructure the primary care workforce and engage our patients and communities in behavior change, the implications of this association merit closer investigation.¹

Unless we change our eating and exercise habits and pay greater attention to this disease, more than one-third of whites, two-fifths of blacks and half of Hispanic people in this country will develop diabetes.³ Two recent clinical trials showed that Type 2 diabetes could be prevented by changes in diet and exercise. The Diabetes Prevention Program Research Group involving 3,234 overweight adults showed that "intensive lifestyle intervention" was more effective than a drug that increases insulin sensitivity in preventing diabetes over three years.³ The intervention, lasting six months, educates and trains people to choose low-calorie, low-fat diets; increase physical activity; and modify their habits. Likewise, the randomized, controlled Finnish Diabetes Prevention Study of 522 obese patients showed that introducing a moderate exercise program of at least 150 minutes a week and weight loss of at least 5 percent reduced the incidence of diabetes by 58 percent.³

The Primary Care Leadership Program community health center project strategy is positive deviance which is sponsored by General Electric in partnership with National Medical Fellowship. Positive deviance is an intervention and/or development approach that is based on the premise that solutions to problems already exist within the community.⁴ In every community there are certain cases whose uncommon practices and/or behaviors enable them to find better solutions to problems than other, who have access to the same resources.⁴ My community health center project focused on healthy lifestyle changes, including diet and exercise, of not only the individual but the community as well. These lifestyle modifications may also help reduce other obesity related diseases, like diabetes mellitus type two, hypertension, hyperlipidemia, congestive obstructive pulmonary disease, asthma, depression, and heart disease.

Adelante Healthcare is a community health center that serves the greater Phoenix metro area with eight locations available for patients who are insured, uninsured, or under insured in Maricopa County. Maricopa County has a population density of over 3.8 million people and almost doubles in size during the winter months due to the large influx of elderly ‘snowbirds’ from the north.⁵ Adelante Healthcare’s belief in sustainable healthcare is driven by [their] commitment to preserve your health, the health of your community, and the health of the environment. Sustainable healthcare is about treating patients who come to [them] for assistance, and helping them stay healthy after they leave [the clinic].⁶ Sustainable healthcare enhances the overall wellness of the communities by meeting the needs of those who need affordable healthcare.⁶ My community project focused on sustainable healthcare by meeting the needs of the patients at the Surprise Clinic of Adelante Healthcare Community Health Center. Educational and nutritional counseling was provided to patients about diet and exercise that will positively affect the health and well-being of not only the individual but community too.

INTERVENTION

My community health center project consisted of educating patients about lifestyle changes that included diet and exercise to promote overall health and well-being of the individual. Patients were educated about healthy lifestyle changes by using a 'Healthy by Design' worksheet.⁷ A 'Healthy by Design' worksheet⁷ was provided to all patients who were overweight (25.0-29.9) or obese (30.0 and above) by body mass index (BMI) standards and spoke English. The worksheet helped set goals for weight loss and positive healthy lifestyle changes. The worksheet highlighted four key points or the 5-2-1-0 plan: five or more fruits and vegetables; two hours or less of screen time (computer and/or television); one hour of physical activity; and zero sugary drinks and more water (*see figure 1*).⁷ The back of the worksheet contained the action plan and additional physical activity and nutritional goals (*see figure 2*).⁷

Adult Prescription for a Healthy Weight

Name: _____ Date: _____

Current Weight: _____ Current BMI: _____ Ideal Weight: _____

What is BMI? Body Mass Index (BMI) is a measure of health, based on your height and weight. This estimate is a good gauge of your risk for certain diseases such as heart disease and diabetes.

BMI Categories

| | | | |
|----------------------------------|------------------------------------|--------------------------------|--------------------------------|
| Below 18.5 Underweight | 18.5-24.9 Healthy Weight | 25.0-29.9 Overweight | 30.0 and Above Obese |
|----------------------------------|------------------------------------|--------------------------------|--------------------------------|

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

A 5-10% decrease in weight can have positive effects on my health. Achieving a healthy weight and becoming more active would help me manage these health problems:

| | | |
|--|--|---------------------------------------|
| <input type="checkbox"/> High cholesterol | <input type="checkbox"/> Heart disease | <input type="checkbox"/> Depression |
| <input type="checkbox"/> High blood pressure | <input type="checkbox"/> Diabetes | <input type="checkbox"/> Asthma/COPD |
| <input type="checkbox"/> Sleep apnea | <input type="checkbox"/> Arthritis | <input type="checkbox"/> Other: _____ |

Make the healthy choice the easy choice everyday...

5

or more
fruits &
vegetables

2

hours or
less of
screen time*

1

hour of
physical
activity

0

sugary
drinks,
more wat

*Keep TV/computer out of the bedroom.



**healthy
by
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Figure 1: Front of 'Healthy by Design' Worksheet⁷



Adult Action Plan

The following will help me meet my goal weight:

Referral to other professional for support:

Name: _____

Phone number: _____

Medication (prescribed or over-the-counter): _____

Community resource referral: _____

My Nutrition Goals:

- Use the plate method: fill 1/2 my plate with fruits and vegetables, 1/4 whole grain, 1/4 lean protein.
- 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.
- 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. *Optional: Eat _____ calories/day.*
- Plan meals ahead of time—including meals at home and at work.
- Avoid eating fast food. If I do eat out, I will bring home half of the entrée.
- Other: _____

My Physical Activity Goals:

- Walk, bike or take the bus whenever possible, especially trips that are less than one mile.
- Strengthen my muscles: lift weights, practice yoga, or use my body weight for resistance.
- 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. I will walk 8,000-10,000 steps per day.
- Other: _____

Online Resources

Nutrition

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

Physical Activity

- www.cdc.gov/healthyweight/physical_activity
- www.nwf.org/Get-Outside
- www.naturefind.com
- www.presidentschallenge.org

Figure 2: Back of 'Healthy by Design' Worksheet⁷

Methods

A 'Healthy by Design' worksheet⁷ was provided to all patients who were overweight (25-29.9) or obese (30.0 and above) by BMI standards and spoke English. Information was gathered from each patient that received a worksheet, which included age, gender, ethnicity, BMI, insurance status, and other diseases associated with obesity, for example: diabetes mellitus type two, hypertension, hyperlipidemia, congestive obstructive pulmonary disease, asthma, depression, and heart disease, during the initial counseling session. Two weeks later, each patient was then telephoned at home or seen in the clinic and asked about lifestyle changes that he/she was able to improve upon since receiving the worksheet and educational/nutritional counseling according to the 5-2-1-0 plan. Each patient's weight was then recorded and a new BMI was calculated for each individual two weeks after the healthy lifestyle changes (*see figure 3*). The initial results were tallied based on age, gender, BMI, other diseases associated with obesity, and insurance status, to show significant trends between obesity and lifestyle modifications, consisting of diet and exercise (*see figure 4 and 5*).

Results

The results from the 'Healthy by Design' worksheet⁷ at the Surprise Clinic of Adelante Healthcare Community Health Center showed a decrease in weight and BMI of the patients who participated over the four week health initiative (*see figure 3*).

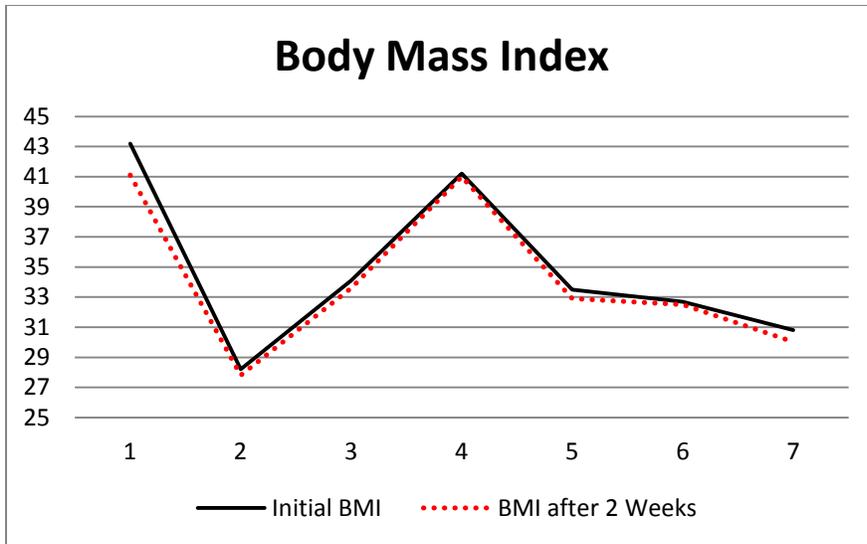


Figure 3: BMI during Initial Screening and Two Weeks After Healthy Lifestyle Changes

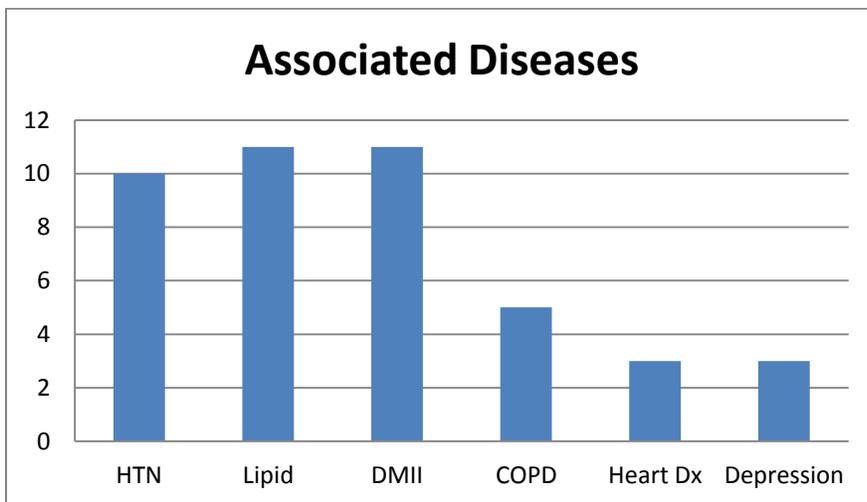


Figure 4: Diseases Associated with Obesity

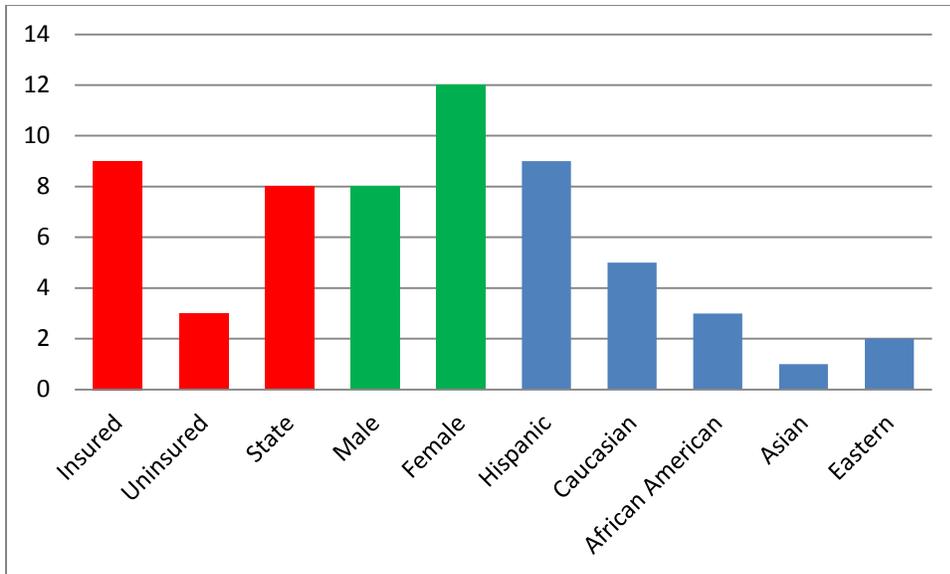


Figure 5: Insurance Status (Red); Male to Female Ratio (Green); Ethnicity (Blue)

CONCLUSION

Educational counseling about healthy lifestyle changes through the use of the ‘Healthy by Design’ worksheet⁷ helped decrease weight and BMI in most patients. Additionally, close follow up with the patient by a telephone call two weeks later improved the end results by holding each patient accountable for his/her actions. Encouragement from the provider to the patients helped them stay motivated and on-track with the healthy lifestyle modifications and goals that they were aiming to achieve. The average percent difference from the initial BMI and two weeks after the healthy lifestyle change was 1.9%. The percent difference ranged from 0.5% to 4.9%. Most patients stated overall they felt better and had more energy throughout the day.

Best Practices

The community project which was conducted at Adelante Healthcare Community Health Center in Surprise, Arizona showed educational counseling about healthy lifestyle changes

through the use of the 'Healthy by Design' worksheet⁷ helped decrease the BMI in most patients. Although not statistically significant or proven by this small sample group of only seven, theoretically the healthy lifestyle changes would also help reverse the symptoms or help prevent diabetes over the next few years. Patients were encouraged to follow the 5-2-1-0 plan: five or more fruits and vegetables; two hours or less of screen time (computer and/or television); one hour of physical activity; and zero sugary drinks and more water.⁷ The 5-2-1-0 plan encouraged patients to eat more fruits and vegetables or a low-calorie, low-fat diet, as well as drink more water and less sugary beverages. The plan also motivated patients to increase physical activity to at least one hour daily and limit sedentary activities in front of the computer and/or television. These four lifestyle changes paralleled the Diabetes Prevention Program Research Group. This study showed that "intensive lifestyle intervention" was more effective than a drug that increases insulin sensitivity in preventing diabetes over three years.³ The results of the 5-2-1-0 plan were also very similar to the Finnish Diabetes Prevention Study. This study showed that introducing a moderate exercise program of at least 150 minutes a week and weight loss of at least five percent reduced the incidence of diabetes by over fifty percent.³

Final Recommendations

Following a low-calorie, low-fat diet and increasing physical activity can help reduce the incidence of diabetes and other obesity related diseases, for example: hypertension, hyperlipidemia, congestive obstructive pulmonary disease, asthma, depression, and heart disease. Following the 5-2-1-0 plan can help patients make healthy lifestyle choices that will promote overall health and well-being.

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