

Student name: Alisha Hudson

Date: 8/20/2006

Preceptor Name: Dr. Marla Kushner

Clinic Locations: Mercy Phillips Health Center, Mercy Hospital, Hazelden Chicago, Lincoln Park office (2437 N. Southport)

Title: Adolescent obesity intervention: a school health center approach

Description: Dr. Kushner, D.O. oversees the student health centers at Phillips Academy and Dunbar high schools in the Douglas neighborhood of Chicago. I have been working with Dr. Kushner, and Margaret Bavis, FNP at Mercy-Phillips Health Center. This project targets overweight and obesity in low-income African American adolescents. The Body Mass Index (BMI) is being used to classify individuals as overweight (BMI 25-29.9), and obese (BMI ≥ 30). I created materials to supplement the developing obesity intervention program at Mercy-Phillips Health Center. The framework for the program is still being finalized for the 2006-2007 school year. Margaret Bavis, FNP, is the nurse practitioner responsible for the eventual implementation of the program.

Short-term goal: The short term goals are to 1) get the obesity intervention program materials up and running for the 2006-2007 school year and 2) start the overweight and obese adolescents on pathways towards weight reduction and healthier lifestyles. Even if the students do not initially achieve weight reduction (a longer-term goal), active participation and involvement in the program constitutes an early success.

Long-term goal: The long term goals are 1) weight reduction as measured by BMI 2) reducing the incidence of co-morbidities related to overweight and obesity, and 3) providing a working example of a successful school-based obesity intervention program.

Rationale: Adolescent obesity is a growing epidemic at the national and local levels. Nationally, 32.1% of non-Hispanic African American adolescent males (ages 12-19), and 41.9% of females are overweight or obese¹. When examining the same type of information at Phillips, the trend continues. As of 2005, 903 students (grades 9-12) are enrolled at Phillips Academy. 98.8 % are African American and 96.7% are considered low income. Of the 903 students enrolled, 191 are registered with the health center. Almost 36% of the 191 students currently enrolled in the health center are identified as overweight or obese², using the BMI classifications explained previously. At both a national and local level we are far from the Healthy People 2010 goal of 5% overweight/obesity in 6-19 year olds³.

There is a plethora of medical literature describing the adverse effects of overweight and obesity, including in the pediatric and adolescent populations (specifically African American). It is clear that the problem continues to worsen. Although a huge public health problem has been identified, we have yet to scrape the surface on how to effectively evaluate and manage the problem.

When looking at statistics on obesity, the students at Phillips are at a significant disadvantage: they are low-income African Americans living in an unsafe neighborhood,

with decreased access to affordable healthy foods, and limited access to community physical activity resources. A considerable percentage of the students enrolled at Phillips have limited access to healthcare. For some, the school-based health center is the only source of healthcare. Considering this, it is advantageous to maximize the services and health education opportunities at the health center. A school based program is an ideal setting for the project considering the individuality needed in an intervention program. The literature I have reviewed indicates that for any dietary/exercise/behavioral intervention to have a chance at success, it must be tailored to the specific population in question. Taking this “lowest level” approach by targeting students in a school-based environment seems like a reasonable way to address this issue.

Method/Community resources: Some evidence exists for the effectiveness of school-based obesity intervention programs⁴⁻⁷, but strong evidence-based research is needed to substantiate such programs. In light of the immediacy of the problem we cannot wait for the results of such studies to begin implementing ideas to help control this obesity epidemic. The importance of pilot programs and grass-roots initiatives cannot be overemphasized. The staff at Phillips took this initiative, and is beginning the obesity intervention program for the 2006-2007 school year. The materials I created will help the program get up and running faster, and they will provide the practitioners with important clinical decision-making tools regarding co-morbidities of obesity.

The basic framework of the intervention program is based on the stages of change model. This model has been proven to be successful for other health behavior interventions and has promising efficacy for overweight and obesity⁸⁻⁹. This model for development was established when I started working Phillips. I took the stages of change theory into account when I created the materials for the program so they could be easily incorporated.

The health clinic has been tracking the BMI's of every student enrolled in the health center. The measurements are entered into a “clinical fusion” database so the information can be used for statistical analyses. If the student is identified as being overweight or obese, some attempt at diet and exercise counseling is made. The staff has identified that this alone is not enough. Ms. Bavis and Dr. Kushner have been working on organizing a more formal intervention program that includes diet and exercise counseling, educational materials, and close follow-up visits. When I came to the clinic, the program was more in the theoretical stage; they were just beginning to get ideas and plans down on paper. I am providing some concrete educational, clinical, and activity materials that will be used when the program is implemented. According to the Mercy-Phillips staff, resources within the school (such as the physical education program) and outside of the school (community centers, etc) have not proven to be 100% reliable for long term purposes. Therefore, it was decided to keep the intervention focused on those students enrolled in the health center, and using health center resources to implement the program.

I collaborated with the Consortium to Lower Obesity in Chicago Children (CLOCC), as well as with practice-based researchers (Dr. Ariza and Dr. Binns) at Children's Memorial Hospital to develop and tailor materials for the program. Having worked together previously on childhood obesity intervention strategies, Dr. Ariza, Dr. Binns and I discussed which materials would provide the most benefit to the students at

Mercy-Phillips Health Center. Using resources such as these allows for insight into local problems, as well as the opportunity for feedback and advice from projects that have been attempted in the Chicago area. They are really the experts when it comes to pediatric and adolescent obesity in Chicago, and using information acquired from them has proven advantageous.

Culture: The targeted population for this intervention is low socioeconomic status (SES) African American adolescents. The materials created for this program were tailored to the special needs of this population. Considering the lower literacy in this group, the handouts and questionnaires were geared towards a fifth grade reading level. Also, the recommendations on healthy eating and exercise tried to accommodate an African American perspective. Intake forms identifying problems such as depression, violence, and access to food (let alone healthy foods), help to differentiate and address barriers that are unique or more prevalent in this population.

The indoor exercise cards are an especially important example of cultural appropriateness. These were specifically designed so the participant could engage in physical activity inside the home, with minimal noise/disturbance to neighbors, and without having to go outside or to a special exercise facility. Due to the violence rate and other environmental dangers in the Douglas neighborhood, it is not always safe for the students to exercise outdoors. The exercise cards provide a viable alternative if fear of violence is an issue.

Results: The obesity intervention program and materials will not officially be launched until the 2006-2007 school year is underway; therefore, I do not have any immediate results/outcome of my efforts until this has begun. However, I anticipate several ways of assessing the effectiveness of the program and materials. The short term goal of program implementation will be considered successful if identified students (according to BMI) are invited to participate in the program by the end of October/early November of 2006. Increased staff awareness when identifying BMI's will help to make sure the at-risk student is identified. Student participation and adherence will be measured by 1) the percentage of follow-up visits attended 2) detailed subjective reports of behavior change (such as eating a healthy breakfast, switching from regular to diet soda, 20-30 minutes of physical activity per day, etc.). The effectiveness/appropriateness of the educational materials I created can be assessed by 1) a verbal question and answer session with the students or 2) a questionnaire. The materials intended for the clinician's use could be assessed with similar means. The longer term goal of the weight reduction will be measured by comparing the initial BMI's with the BMI's at the conclusion of the program. Finally, assessing the long term goal of decreasing obesity co-morbidities is probably beyond the scope of the health center. By the time these potential co-morbidities are identified, the students may have already moved on from Phillips Academy. If anything, the health center may notice a decrease in the amount of specialist referrals for students experiencing health problems due to their overweight/obesity.

Discussion: Addressing overweight and obesity in the adolescent population is an overwhelming task. This health issue is multidisciplinary, a cultural and societal problem. I have discovered an abundance of barriers and challenges that low-SES

African American adolescents encounter when facing obesity. Being adolescents, they are not in total control of their healthcare; their parents or caregivers should be providing for basic medical needs, but the teen is essentially in control of his/her own diet and exercise. This freedom mixed with little or poor education on healthy eating and exercise leads to poor habits and lifestyle. The cafeteria and physical education (P.E.) programs at Phillips do not foster the types of ideas that would be presented in the obesity intervention program. The overweight students reported that the P.E. teacher does not require their participation; the cafeteria does not offer salads, and a majority of the foods are re-constituted and fried. These students also face many barriers outside of school including violence, homelessness, depression, poor family relationships, and lack of role models. All of these factors combined make the obesity problem more challenging for the African American adolescent compared to the rest of the population.

I learned that it is extremely difficult to get an adolescent motivated, and to keep him/her motivated. They are very prone to quitting if immediate benefits cannot be realized. I found that it does not work to use scare tactics such as high blood pressure, high cholesterol, etc. They find these health issues esoteric, and they don't think that it can happen to them. I also learned that an effective intervention strategy has to include more than just diet and exercise. The adolescent needs emotional support, constant positive reinforcement, and close follow-up. This means an incredible amount of time, energy, and resources are required to have a chance at success.

For future success in reducing obesity the health center should offer a continual means of tracking the students. If at the conclusion of the program, the students don't have some sort of "continuing care" regarding their obesity, they are very likely to relapse into their old behaviors. They should also be given resources on how to continue their healthy behaviors without being supervised by the health center. In order to provide a more conducive environment at school, the health center should try to work with the P.E. program and the cafeteria to implement healthier practices. The obesity intervention program at Mercy-Phillips Health Center is still in its infancy, and many challenges should expect to be encountered. Because overweight and obese adolescents are likely to carry their habits into adulthood, it is extremely important to implement an intervention while the students are still in the impressionable period of high school.

References

1. Hedley AA, Ogden CL, Johnson CL, et al. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999-2002. *JAMA*. 2004 Jun 16;291(23):2847-50.
2. Height, weight and BMI 09/01/2005 to 07/11/2006. Mercy-Phillips Health Center database. Last accessed July 12, 2006.
3. Healthy People 2010 Leading Health Indicators. Available at: http://www.healthypeople.gov/document/html/uih/uih_4.htm#overandobese. Last accessed July 16, 2006.
4. Nemet D, Barkan S, Epstein Y, et al. Short- and long-term beneficial effects of a combined dietary-behavioral-physical activity intervention for the treatment of childhood obesity. *Pediatrics*. 2005 Apr;115(4):e443-9.
5. Pate RR, Ward DS, Saunders RP, et al. Promotion of Physical Activity Among High-School Girls: A Randomized Controlled Trial. *Am J Public Health*. 2005 Sep;95(9):1582-7.
6. Simons-Morton BG, Parcel GS, Baranowski T, Forthofer R, O'Hara NM. Promoting physical activity and a healthful diet among children: results of a school-based intervention study. *Am J Public Health*. 1991 Aug;81(8):986-91.
7. Veugelers PJ, Fitzgerald AL. Effectiveness of school programs in preventing childhood obesity: a multilevel comparison. *Am J Public Health*. 2005 Mar;95(3):432-5.
8. Logue EE, Jarjoura DG, Sutton KS, et al. Longitudinal relationship between elapsed time in the action stages of change and weight loss. *Obes Res*. 2004 Sep;12(9):1499-508.
9. Wee CC, Davis RB, Phillips RS. Stage of readiness to control weight and adopt weight control behaviors in primary care. *J Gen Intern Med*. 2005 May;20(5):410-5.