

**GE-NMF Primary Care Leadership Program
Matthew Walker Comprehensive Health Center
Wanda Averhart**

According to the CDC, the obesity epidemic is not only affecting adults, but also, greatly affecting children (Ogden 2010). As identified by Healthy People 2010, obesity and overweight are 1 of 10 leading health indicators (Ogden 2010). According to the 2007-2008 National Health and Nutrition Examination Survey (NHANES), an estimated 16.9% of children and adolescents aged 2-19 years are obese (Ogden 2010). Among preschool children aged 2-5, obesity increased from 5.0% to 10.4% between 1976-1980 and 2007-2008 and from 6.5% to 19.6% among those aged 6-11 (Ogden 2010). Among adolescents aged 12-19, obesity increased from 5.0% to 18.1% during the same period (Ogden 2010). A study conducted in 1993, showed that among obese preschool children, 26-41% were found to be obese as adults, and among obese school age children, 42-63% were obese as adults (Serdula 1993). Overall the risk for becoming an obese adult was 2-6.5 times higher for obese children than for non-obese children (Serdula 1993). These numbers show that childhood obesity is an increasing problem in the United States and that those children who are obese have a higher risk of becoming an obese adult.

When the statistics on childhood obesity are analyzed on a state by state basis, the rates are alarmingly high in certain areas all over the nation. Majority of the states show 10-15% obesity prevalence, including the state of Tennessee (CDC 2012). According to the CDC, 16% of Tennessee youth 9th through 12th grade are overweight, and another 16% are obese (CDC 2012). Furthermore, only 24% of these children meet the current physical activity recommendation of 60 minutes or more of physical activity each day and only 18% eat fruits and vegetables for the recommended five or more times a day (CDC 2012). Other behaviors that contribute to obesity such as soda drinking and

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television time were analyzed showing that 41% drank at least one non-diet soda each day and 38% watched three or more hours of television each day (CDC 2012).

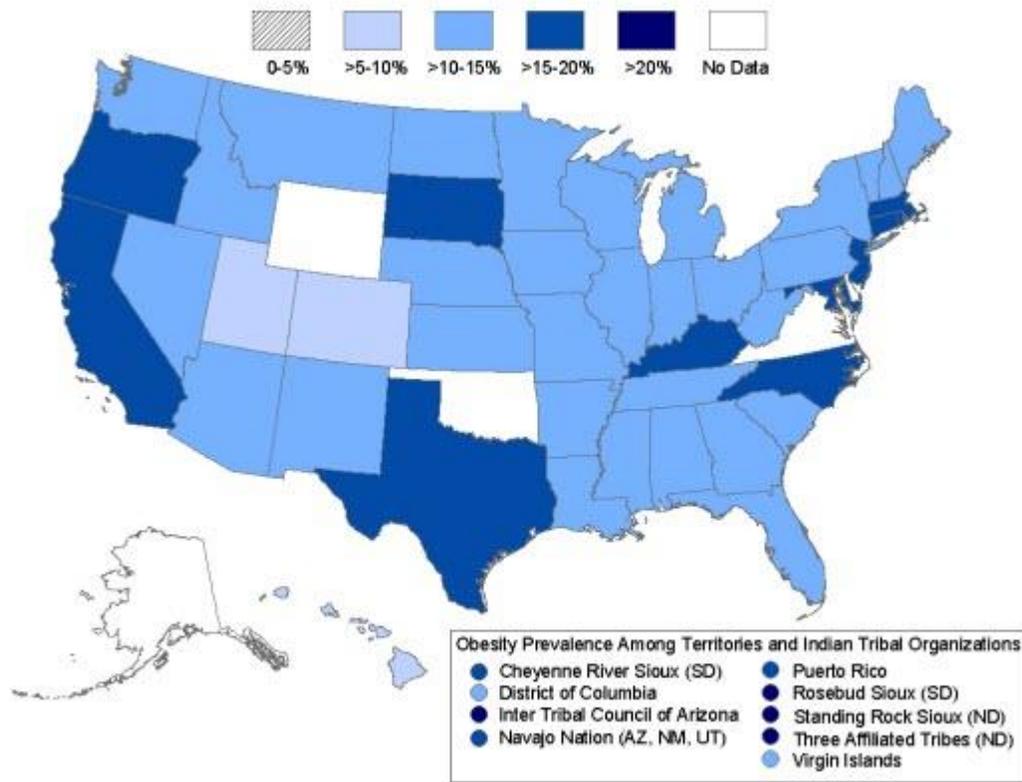


Figure 1. Shows the state prevalence of obesity in low income children aged 2-4 years old*

Another important factor in the obesity trends are the demographics of those that are most affected. Data has shown that rural, low income or minority residents are most often affected by poor access to supermarkets and healthy food products (Larson et al. 2009). As a result, these populations tend to have a higher incidence of obesity (Wilson et al. 2009). Researchers at the US Department of Agriculture/Agricultural Research Service Children’s Nutrition Research Center at Baylor College of Medicine examined

the diet quality and nutrition adequacies of 993 low-income Hispanic children (Wilson et al. 2009). According to the results the conclusion was drawn that the diets of low SES Hispanic children with and without overweight were adequate in most essential nutrients, but frequently exceed the guideline for total fat, cholesterol, added sugar, and sodium intake while not meeting the guideline in fruits, vegetables, and fiber (Wilson et al. 2009).

With such alarming numbers, childhood prevention and treatment of childhood obesity has to be a top priority, as well as, understanding the factors contributing to the childhood obesity epidemic. Childhood obesity has been shown to be associated to many factors with one of such factors being parental feeding behaviors. There are numerous studies of how feeding behaviors and methods influence childhood weight status. A study funded by the US Department of Agriculture, showed that the use of a bottle at 24 months of age was positively correlated with having a BMI greater than or equal to the 95th percentile at 5.5 years of age (Gooze 2011). In addition, maternal characteristics have been shown to influence perception of infant hunger and satiety while interpretation of these feeding clues have been associated with pressuring feeding style (Gross 2010). It has been shown that the main mediator of change in weight related interventions for children should be parents (Golan & Crow 2004). According to Wardle et al., targeting the family may be vital for obesity prevention in the earliest years, but longer term weight control will require a combination of individual engagement and society wide efforts to modify the environment, especially for children with high genetic risk (Wardle et al. 2008).

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The purpose of my project with Matthew Walker Comprehensive Health Center is to expose the myths surrounding feeding infants and to educate parents on healthy feeding practices and behaviors. Most of the patients receive their information about feeding practices from the physician or nurse practitioners during their visits. Unfortunately, the information can be very general and not in much depth because of time restraints. As a result, I believe more time is needed with patients to discuss many of the myths surrounding feeding practices, in an effort to decrease the frequency at which parents are participating in those feeding practices that are obesigenic. This can in turn help with the goals of decreasing the rate of childhood obesity. The project has a three pronged approach. New mothers of babies 0–6 months when presenting for OB/GYN and well-baby appointments, were given a 10 question survey (Appendix 1) before their appointment asking if the statements are true or false. For simplification all the statements were myths surrounding feeding of infants that promote obesity in children. The survey was collected before entry into their exam room. During the appointment, I was supposed to meet with the parents and discuss feeding their infant in general and appropriate feeding styles, while giving anticipatory guidance. In actuality, after completing the pre-survey the mothers were given the handout to read. After the discussion or reading the handout, the mothers were be given a post survey (Appendix 2). To conclude the session parents were able to take the handouts (page 10) on the information discussed home with them. Once it was noticed that the volume of patients that met my survey qualifications would be low, I began to conduct telephone interviews in addition to the clinic interviews. The telephone interviews consisted of calling those

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mothers that met the qualifications, asking the questions from the pre survey, reading a loud and discussing the information from the handout, and finally asking the post survey questions. The telephone patients were then offered the opportunity to have information mailed to them via USPS on the topics discussed.

Due to time constraints and patient volume, I conducted a pilot study of the survey. The surveys were distributed at the pediatric and OB/GYN clinics at Matthew Walker Comprehensive Health Center in Nashville, Tennessee and over the phone to recently delivered mothers taken from the OB/GYN clinic information; I was able to get 9 surveys completed and 1 partially completed survey. Most of the women that completed the survey had 1 to 3 children and only one woman had 9 children. 33% were first time mothers. Of all the women that completed pre-surveys, 20% recognized that all the statements were false. Even with most of the questions on the pre-survey, over 60 percent of the women knew that the 8/10 statements were false. Two of the questions (number 3 and 6), had only a 50% rate of those women that knew the statements were false. This shows that more emphasis could be placed on dispelling the myths surrounding an empty plate and juice in the bottle within the community. When comparing the pre-survey to post survey, it is seen that over half the ladies identified that the statements were true, showing that the intervention of having them read the handout or reading it them helped them to realize the true behind those statements. Overall, the results showed that these myths do exist within the Matthew Walker Comprehensive Health Center patient population. Although the sample size was small, there was definitely an increase in knowledge of number of items correct after reading over the

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handouts. There needs to be more investigation into the feeding behaviors discussed in this study.

Table 1.

Question	Pre-Survey Percent Correct	Post-Survey Percent Correct
1a/1b	100	88.9
2	70	100
3	50	100
4	90	77.8
5	60	88.9
6	50	77.8
7	80	N/A
8	80	N/A
9	90	N/A
10	N/A	N/A

There are many limitations to the analysis of the surveys. First, the number of completed surveys was very low. This was due to the lack of OB/GYN clinic visits at Matthew Walker Comprehensive Health Center and decreased volume of well-baby visits under age 6 months. On a great day there were 2 well baby appointments that met the qualifications. The low number of completed surveys is also due to difficulty getting surveys passed out to those parents that met criteria due to my other obligations.

Unfortunately, during the time that I was to pass out surveys, the annual Health Center Week events were occurring, on which days, I was obligated to work with the Woman's

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Clinic doing clinical breast exams and mammograms. Furthermore, even though I had the telephone numbers of forty mothers from OB/GYN clinic that met the criteria for inclusion, there were a low number of completed surveys due to unanswered calls, language barriers and disconnected/invalid numbers. Another limitation is the wording of some of the questions may have been confusing for the mothers. The first question of the pre and post survey was changed half way through the study, using question 1b instead of 1a, for clarification when talking to mothers. Also, it was not realized until analysis that comparison of the pre-survey to the post-survey was difficult due to the fact that some questions from the pre-survey were grouped together when asking about the topics on the post-survey.

Although, there was a low yield of completed surveys, this project has laid a foundation for future projects involving either pregnant woman or newborn mothers. This survey can be built upon with more questions that are targeted at a broader population to gather very useful information. The problem I wanted to address still exists at Matthew Walker Comprehensive Health Center. There still aren't any specific programs, besides WIC, to address many of the obesigenic feeding myths in the community.

Over my time, I have learned a lot about the dynamics of Matthew Walker Comprehensive Health Center that will be valuable information for the next class of GE-NMF PCLP Scholars. Any projects that will involve pregnant women should be conducted at the Murphysboro clinic and not the Nashville, Tennessee location. The Nashville clinic only does OB/GYN clinic twice a week with a maximum of 6 patients

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each day. Although the pediatrics clinic is run every day, the appointments are very infrequent, occurring at 30 minute intervals, only allowing for 15-20 appointments a day. Also, there is only one practitioner, a nurse practitioner or physician, on any given day. As a result, the volume is very low for a selected population in pediatrics, like those I choose, newborns 6 months and less. Basically when doing a project with Matthew Walker Comprehensive Health Center, it is best to have a very general target audience, preferably adults. Furthermore, since this is a community health center, doing a project that can be done in the community setting would be an advantage to completing the project, versus performing a project that is centered on clinic visits. I found that if I had chosen a project with a community focus, there would have been numerous opportunities to gather volunteers.

Overall, the GE-NMF Primary Care Leadership Program was very informative. I spent most of my time with the developmental director and diabetes case manager at Matthew Walker Comprehensive Health Center. Through these experiences, I was able to learn a lot about the community health care and public health setting. It was very interesting to actually go out into the community and talk to the community members. I was able to see the humanistic side of medicine. Being able to move from the physician role of diagnosing and treating patients to the public health role of understanding the patient and their environment has given me valuable experience that I will take into my practice. Having the opportunity to talk with leaders in the community health center was very informative. The CEO, CFO, and board member were from very diverse backgrounds, but none had a medical background, so I found it hard to envision myself in

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their leadership role. It would have been nice to be required to have a conversation with the medical director, so that we could actually see an M.D. in a leadership role of the community health center. Overall, the GE-NMF PCLP was a success in giving me invaluable experience in the community health center setting as well as exposing me to leaders in the field of community health.

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Appendix 1.

Please mark if the statement below is true or false	True	False
1a. If I don't breast feed for at least a year, my baby and I get no benefits.	_____	_____
1b. If I can't breast feed for a year, then I should not start	_____	_____
2. A big baby is a healthy baby.	_____	_____
3. An empty plate equals a happy plate.	_____	_____
4. It is ok to continue with the bottle up to 2 years old	_____	_____
5. Adding a little cereal in the bottle increases sleep duration.	_____	_____
6. It is ok to put juice in the bottle.	_____	_____
7. Solid foods can begin as soon as my child is born.	_____	_____
8. When I start giving foods, I can give my baby whatever I'm eating.	_____	_____
9. Babies are not supposed to double their birth weight by 5 months.	_____	_____
10. How many children do you have? _____		

Appendix 2.

Please mark if the statement below is true or false	True	False
1a. Mom & baby do receive benefits from breastfeeding, even if short term.	_____	_____
1b. It is good to breast feed, even if for a short time	_____	_____
2. I should not pressure feed to make a "big baby" or to empty a plate.	_____	_____
3. Its recommended that bottle is to be weaned before 18 months.	_____	_____
4. I should not give my child cereal or juice in the bottle.	_____	_____
5. I should start introducing cereals, fruits and veggies at 6 months.	_____	_____
6. Babies should double their birth weight by 5 months.	_____	_____
7. Will you use information learned in this session?	_____	_____
8. Did you learn something new?	_____	_____
9. Do you feel like that healthy eating is important?	_____	_____
10. Any Comments: _____		

**WHAT TO FEED MY
BABY?**

**0-4 MONTHS: BREAST
MILK/FORMULA ONLY**

**4-6 MONTHS: START
CEREALS**

**6-8 MONTHS: ADD
PUREED FRUITS AND
VEGGIES**

**8-12 MONTHS: ADD
PUREED LEAN MEATS
OR BEANS**

**12 MONTHS: TABLE
FOODS IN BITE SIZE
PIECES**



**BREAST MILK OR FORMULA FOR 1 YEAR OF
LIFE OR MORE AND EXCLUSIVELY IN THE
FIRST 6 MONTHS**

**BOTTLE WEANING BEFORE 18 MONTHS OF
AGE**

**BREAST MILK AND/OR FORMULA HAVE ALL
THE NUTRIENTS NEEDED FOR GROWING
BABIES**

**HELPS PROTECT BABY FROM GERMS AND
DISEASE**

MOMS LOSE BABY WEIGHT FASTER

**LESS RISK OF DIABETES AND SUDDEN INFANT
DEATH SYNDROME**

**MAKE SURE YOU GIVE BABY VITAMIN D
DROPS**

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****DO NOT****
OVER FEED
FORCE FEED
OR PUT TO BED
WITH BOTTLE

Did you know?

*Your baby should
double their birth
weight around 5
months*

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Figure 1* CDC/ Centers for Disease Control and Prevention (2012). Overweight and Obesity: Data and Statistics. Available at: <http://www.cdc.gov/obesity/data/childhood.html>. Accessed July 27, 2012