Body image perceptions and physical activity attitudes in postpartum African American women

Seok, Paul

http://hdl.handle.net/2144/15080

Boston University
BODY IMAGE PERCEPTIONS AND PHYSICAL ACTIVITY ATTITUDES IN POSTPARTUM AFRICAN AMERICAN WOMEN

by

PAUL JISOON SEOK

B.A., Hamilton College, 2010

Submitted in partial fulfillment of the requirements for the degree of Master of Science

2014
ACKNOWLEDGMENTS

I would like to thank Dr. R. J. Rushmore for being a truly considerate and caring advisor. His advice and kind approach were instrumental in helping me navigate through my Masters degree. He was always receptive and open to my ideas and always available to meet when needed.

I would also like to thank Dr. Caroline Apovian, Ashley Bourland and the rest of the Nutrition and Weight Management Department at Boston Medical Center. The work that they do everyday truly makes a difference in helping a large population and has helped reaffirm my desire to become a physician.

Acknowledgement and thanks to Dr. Lisa Sullivan is also in order for agreeing to serve as an advisor and reader of this thesis as her role is an important part of the successful completion of this thesis project.
OBODY IMAGE PERCEPTIONS AND PHYSICAL ACTIVITY ATTITUDES IN POSTPARTUM AFRICAN AMERICAN WOMEN

PAUL JISOON SEOK

ABSTRACT

Obesity is a widespread problem in the United States that has profound health implications. Obesity rates also differ across different racial and ethnic groups. Among women, an important time period in their lives is the pregnancy period as gestational weight gain and postpartum weight retention may influence and contribute to noticeable differences in weight gain and retention. Maternal weight retention has implications for future health related problems and therefore needs to be addressed. One such group that is of specific interest is African Americans as data shows that obesity is more prevalent among African American adults, with the highest rates occurring in African-American women. Weight loss intervention programs for postpartum women may be useful in helping new mothers lose weight. This study was aimed at observing changes in areas such as weight loss and body image perception from a pilot-tested randomized controlled culturally tailored weight loss intervention program.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE</td>
<td>i</td>
</tr>
<tr>
<td>COPYRIGHT PAGE</td>
<td>ii</td>
</tr>
<tr>
<td>READER APPROVAL PAGE</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>OBJECTIVES</td>
<td>14</td>
</tr>
<tr>
<td>METHODS</td>
<td>15</td>
</tr>
<tr>
<td>Recruitment and Screening</td>
<td>16</td>
</tr>
<tr>
<td>First Study Visit</td>
<td>17</td>
</tr>
<tr>
<td>Final Study Visit</td>
<td>20</td>
</tr>
<tr>
<td>Control and Intervention Groups</td>
<td>20</td>
</tr>
<tr>
<td>Quality Control</td>
<td>22</td>
</tr>
<tr>
<td>Statistical Analyses</td>
<td>22</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------</td>
<td>------</td>
</tr>
<tr>
<td>RESULTS</td>
<td>23</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>30</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>35</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>38</td>
</tr>
<tr>
<td>CURRICULUM VITAE</td>
<td>41</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Figures Corresponding with previously established BMI</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Figures Corresponding with previously established BMI</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>Examples MBSRQ Statements</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>Example Physical Activity Attitudes Statements</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Average Control and Intervention MBSRQ Scores for First Visit</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>Female Adult Norms for the MBSRQ Subscales</td>
<td>27</td>
</tr>
<tr>
<td>7</td>
<td>Average Control and Intervention MBSRQ Scores for Final Visit</td>
<td>27</td>
</tr>
<tr>
<td>8</td>
<td>Average Control and Intervention MBSRQ Scores from First to Final Study Visit</td>
<td>29</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stunkard Figure Rating Scale and established conversion to BMI</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Study Design</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Study subject attrition</td>
<td>24</td>
</tr>
</tbody>
</table>
INTRODUCTION

Over the past couple decades obesity has become a growing trend among the United States population. The trend has become so pronounced that on June 18, 2013, the American Medical Association officially declared obesity as a disease. The AMA’s declaration is not the first time obesity has been labeled a disease as the National Institutes of Health classified obesity as a disease 15 years prior in 1998 (“What’s next now that the AMA has declared obesity a disease?,” 2013). In regards to the definition of overweight and obesity, the World Health Organization (WHO) states that overweight and obesity are “abnormal or excessive fat accumulation that may impair health”(“WHO | Obesity and overweight,” n.d.). The Centers for Disease Control and Prevention define obesity for adults as having a body mass index (BMI) as 30 or higher (“Obesity and Overweight for Professionals,” n.d.). BMI is calculated by dividing one’s weight in pounds by the square of one’s height in inches (or weight in kilograms divided by square height in meters). Height and weight are used “rather than body fat because of the logistical difficulties involved in measuring body fat in population studies” (Ogden, Yanovski, Carroll, & Flegal, 2007). Although BMI provides a guideline, the WHO and National Heart, Lung, and Blood Institute (NHLBI) recognize that BMI is not the best measure of body fat and is an imperfect measure although more accurate than body weight alone (“ob_gdIns.pdf,” n.d.). Some problems that arise from using BMI as an index is
that there may be individuals with BMI’s less than 25 who may have excess fat and signs that point to metabolic disease while others with BMI’s greater than 30 may not have excess fat or exhibit signs relating to metabolic disease. Much of this stems from the fact that “associations between BMI and adiposity vary by age, gender, ethnicity, socioeconomic status, stature, and athletic training” (“Report of the Council on Science and Public Health - Report 3-A-13 - a13csaph3.pdf,” n.d.). Although BMI has limitations that do not make it the best diagnostic tool, it is a measure that is currently used as it is inexpensive and there is a large body of evidence that shows increased BMI to be associated with various diseases and conditions.

In 2012, using national survey data of BMIs, Flegal et al. set out to estimate the prevalence of adult obesity from 2009-2010 compared to adult obesity data from 1999-2008. Obesity is derived from surveys because systematic data on obesity “cannot be gathered from medical records or vital statistics”(Ogden et al., 2007). In reference to how recent data compared to past data, they stated that there was “little change in BMIs from 1960-1980, followed by an increase of almost 8 percentage points between the 1976-1980 survey and the 1988-1994 survey” and a similar increase in BMI from 1988-2000. (Flegal, Carroll, Kit, & Ogden, 2012). What they found was that obesity exceeded 30% in most sex-age groups and that obesity increased significantly from 1999-2010 for men and for subsets of black and Mexican American women but that “obesity did not change between 2003-2008 and 2009-2010 for men or women” (Flegal et al.,
According to the American Heart Association’s Overweight and Obesity 2013 Statistical Fact Sheet, among Americans who are 20 years of age or older, 78.4 million are obese (36.8 million men and 74.8 million women). Among these, 53.9% of black women were classified as obese as well as 44.8% of Mexican American women. Non-Hispanic white women were shown to have the lowest percentage of obesity at 32.5%.

These numbers and statistics are incredibly important owing to the fact that obesity greatly raises the risk for a variety of other health problems. Among these health problems, the NIH lists coronary heart disease, elevated blood pressure, stroke, type 2 diabetes, abnormal blood fats, metabolic syndrome, cancer, osteoarthritis, sleep apnea, obesity hypoventilation syndrome, reproductive problems, and gallstones. Cardiovascular disease (CVD) is a major concern among today’s U.S. population and “the association between obesity and increased CVD is strong” as “both baseline BMI and change in BMI over time predict the risk of developing CVD” in both sexes (Ogden et al., 2007). In 2009, approximately 1 out of every 6 deaths in the U.S. was caused by coronary heart disease (Go et al., 2013). Of the same concern, type 2 diabetes may have a stronger link to obesity and BMI than any other co-morbidity (Ogden et al., 2007). This strong association is a major problem as 25.8 million Americans have diabetes which accounts for 8.3% of the population and 35% of adults 20 years of age or older have pre-diabetes which translates into 79 million Americans (“FastFacts March 2013.pdf,” n.d.). Of the 25.8 million that have diabetes, 7.0
million Americans are undiagnosed meaning that they do not receive the proper treatment and care necessary. As a cause of death, diabetes is the primary cause of 71,382 deaths each year and contributes to 231,404 deaths annually while costing $245 billion annually ("FastFacts March 2013.pdf," n.d.).

Finklestein et al. assessed the cost of obesity in a paper published in 2009. What they found was that in 1998, the medical cost of obesity was estimated to be $78.5 billion dollars, half of which was covered by Medicaid and Medicare (Finkelstein, Trogdon, Cohen, & Dietz, 2009). That number has risen since and shows the connection between the rising trend of obesity and medical spending. In 2006, the cost of care for obese patients could be 42% more for healthcare costs than non obese patients at an average of $1429 (Finkelstein et al., 2009). One of the major problems with the cost of obesity is that “pharmaceutical, medical, and surgical interventions to treat obesity are available, these treatments remain rare” (Finkelstein et al., 2009). Obesity in this country in the past has been more focused on treatment as opposed to prevention or intervention.

In the past, there has been little research performed on weight loss programs designed at prevention or intervention for patients and little has been looked into qualitatively regarding weight counseling and the type of counseling that patients prefer from their physicians. It is recommended that physicians screen their patients for obesity and refer patients to interventional programs, however, it is often the case that patients do not receive an obesity diagnosis and
are not referred to counseling (Chugh, Friedman, Clemow, & Ferrante, 2013). Of the reasons that obesity screening and referral to helpful programs is often absent is due to the fact that “physician training, negative attitudes toward obese patients, inadequate reimbursement, and perceived futility of potential conversations” leave physicians to neglect helping their obese patients (Chugh et al., 2013).

What a study by Chugh et al. found was that physician interactions and weight loss counseling techniques were very important in a weight loss program. They also found that the women who participated in the study wanted their physicians to help foster their motivation through encouragement, however, what the women actually experienced was that their physicians were not as motivated when compared to their patients, in the physicians’ desire to help their patients lose weight (Chugh et al., 2013). The women in the study also wanted a personalized plan from their physicians in helping lose weight as opposed to a one size fits all plan that included generic advice. Study participants stated that they preferred interactions and discussions about their weight with doctors who were “empathetic, sensitive, respectful, trustworthy, compassionate, nonjudgmental, encouraging, honest, and comforting” while many participants also suggested “sensitivity training” would help improve their physicians’ interactions with them as many health professionals have a negative stigma towards obese peoples which affects the level of care and attention asserted (Chugh et al., 2013)
One of the growing areas of interest in regards to weight, weight loss, and weight loss intervention programs are programs that act as interventions for weight management in postpartum women. This is because gestational weight gain is seen as a strong indicator of postpartum weight retention (van der Pligt et al., 2013). In a systematic review of lifestyle interventions to limit postpartum weight retention written by Van der Pligt et al., the authors wrote that postpartum weight retention can predict future weight gain and long term obesity. A failure to lose weight during the postpartum time period can also lead to increased BMI for subsequent pregnancies and increase the risk of adverse maternal and fetal pregnancy outcomes (van der Pligt et al., 2013). Because previous data has shown that half of all women of childbearing age are overly susceptible to excessive weight gain, the postpartum period presents a key time period for weight focused interventions (van der Pligt et al., 2013). According to the review, it has been estimated that at 6 weeks post partum two-thirds of women weight more than they did prior to pregnancy which has as previously mentioned has implications for weight related concerns for both the mother and offspring both short term and long term (van der Pligt et al., 2013).

According to another comprehensive review of published intervention studies carried out by Keller et al., research has shown that “excessive pre-pregnancy weight, weight gain in pregnancy, ethnicity, race, postpartum family roles and work, dietary transitional changes during pregnancy, and reduced physical activity are correlates to weight retention following childbirth” (Keller,
Records, Ainsworth, Permana, & Coonrod, 2008). Because of the high prevalence of obesity during childbearing and the future implications of this weight gain, there is an increased need for researchers and clinicians to develop effective interventions to address the problem. An effective intervention program is dependent upon a myriad of factors especially in regards to understanding how outcomes are influenced by specific intervention (Keller et al., 2008).

Although the importance for an intervention program is well supported, it can often be difficult to implement such a program. One major difficulty with intervention programs specifically in regards to postpartum women is that the postpartum time period is one when patients and practitioners have less face-to-face interaction compared with the contacts made during pregnancy. During pregnancy, frequent appointments are a focus of routine practice while postpartum, the absence of postnatal consultations is severely reduced which reduces the opportunity to adequately address weight management (van der Pligt et al., 2013). The reduced frequency of visits is often due to the time constraints new mothers face with their roles in caring for their newborn children. Finding time to concentrate on weight loss and meet with practitioners can be difficult with the contributing factors of decreased time that come with caring for a newborn child. Contributing factors that the review included were “lack of partner support, mothers returning to work, difficulties with childcare options and strong social expectations of the role of a new mother”(van der Pligt et al., 2013). In the numerous cases where an intervention program has not been implemented,
there has also been a lack of advice provided, as the numbers regarding advice
given to postpartum women to help with weight loss seem to support this.
According to Ferrari et al., researchers found that in 688 women that were 3
months postpartum, 89% of these women reported having received no weight
loss advice and 77% no physical activity advice during the postpartum period
(Ferrari et al., 2010). In another study of 179 women that were 4 months
postpartum conducted by Ohlendort et al., 85% of women received no weight
loss information from their healthcare providers (Ohlendorf, Weiss, & Ryan,
2012). Another challenge with implementing intervention programs lies within the
time frame such a program is implemented. “Determining an optimal approach to
 provision of support for women during the postpartum period lies with at what
point following childbirth interventions should be initiated” (van der Pligt et al.,
2013). Among studies reviewed, there was a difference in the recruitment stages
and implementation of when intervention was started that ranged from 1 day post
partum to 12 months postpartum with varied results with the time frame for
success remaining uncertain. Intervention programs that Pligt’s review did find
successful in promoting weight loss included components of both a dietary and
physical nature, which included individualized support but without any specifics
mentioned.

An important question regarding these intervention programs is how
behavioral weight loss intervention varies between ethnic groups, specifically
African American women. In a paper by Fitzgibbon et al. titled Weight loss and
African-American women: a systematic review of the behavioural weight loss intervention literature, the paper stated that obesity is more prevalent among African American adults (74%) with the highest rates occurring in African-American women (78%) (Fitzgibbon et al., 2012). This population of women experience higher morbidity and mortality compared to other populations with respect to obesity related diseases including cardiovascular disease, type 2 diabetes, as well as some cancers (Fitzgibbon et al., 2012). Some factors that may contribute to these numbers include cultural and socioeconomic factors and how women perceive themselves in relation to their bodyweights. A misconceived perception of body size may have factor into obesity as “more than one-third of non-Hispanic black women and Mexican American women are obese, in contrast to one-fifth of non-Hispanic white women” (Potti, Milli, Jeronis, Gaughan, & Rose, 2009). The study’s perception of current and ideal body size was determined by using the Stunkard Figure Rating Scale and the established conversion to BMI (Potti et al., 2009).
Figure 1. Stunkard Figure Rating Scale and established conversion to BMI

Table 1: Figures corresponding with previously established BMI

<table>
<thead>
<tr>
<th>Figure</th>
<th>BMI (kg/m²)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18.3</td>
<td>Underweight</td>
</tr>
<tr>
<td>2</td>
<td>19.3</td>
<td>Normal</td>
</tr>
<tr>
<td>3</td>
<td>20.9</td>
<td>Normal</td>
</tr>
<tr>
<td>4</td>
<td>23.1</td>
<td>Normal</td>
</tr>
<tr>
<td>5</td>
<td>26.2</td>
<td>Overweight</td>
</tr>
<tr>
<td>6</td>
<td>29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>7</td>
<td>34.3</td>
<td>Obese</td>
</tr>
<tr>
<td>8</td>
<td>38.6</td>
<td>Obese</td>
</tr>
<tr>
<td>9</td>
<td>45.4</td>
<td>Obese</td>
</tr>
</tbody>
</table>

Table adapted from Kety et al., 1983.
What the study found was that African American and Hispanic women significantly underestimated their current body size while white women overestimated their body size (Potti et al., 2009).

With the same idea in mind, but specifically tailored to postpartum women, Boyington et al. conducted a study in which the main objective was to explore the body size perceptions of low-income, postpartum black women. The researchers believed that “profound changes in the body have an impact on individuals’ self perceptions, self esteem, feelings of depression, and likelihood to engage in healthy behaviors” (Boyington, Johnson, & Carter-Edwards, 2007). As opposed to the Stunkard Figure Rating Scale, this study used the Reese Body Image scale which is more culturally appropriate and designed to be both a psychometrically stable and socially acceptable tool for examining Black women’s perceptions and was preferred by black women (Boyington et al., 2007). What the study found was that using measures derived from the Reese Scale, there was a high level of body size dissatisfaction that existed in the study participant population (Boyington et al., 2007). Three quarters of the women of the 77 participants were dissatisfied with their current body sizes, which included 55.9% who perceived themselves to be too large and wished to lose weight while 19.5% of women perceived themselves as too small and wanted to gain weight (Boyington et al., 2007). The study indicated that greater than 55% of participants were overweight but 60% of the participants thought themselves to be smaller than the typical women. Ultimately, “the participants perceived typical women to
be large and their selection of a smaller preferred body size indicated that they did not necessarily desire the typical female size as their ideal size” (Boyington et al., 2007).

A study conducted by Carter-Edwards et al. compared the difference in perceived body image between African American women and white women 6 months postpartum. What the study showed was that although there was a higher mean BMI among African American women, both participant populations had similar body image perceptions in terms of their current image. Both groups were heavier than their current perceived weight and 76.7% of African American women desired body images considered normal weight while 95.5% of white women desired a normal weight body image. Five times as many African American women desired body images categorized as overweight compared to white women (Carter-Edwards et al., 2010). The results of the study confirmed the idea that the ideal body image was larger for African American than white women. Potential explanations for the difference in populations was that African American women may be more flexible than white women regarding ideas of beauty and body size. Cultural environment and the broader media were also mentioned but were not elaborated upon except that for white women, the media may serve as a barrier to positive weight attitudes “via rigid expectations of thinness”(Carter-Edwards et al., 2010). Based on their research and findings, it was stated that the data implied that prevention and treatment strategies should
be tailored for the individual and should account for cultural differences, which was mentioned as a preference for intervention programs earlier.

The interest in postpartum weight loss intervention specifically among a population of African American women has been addressed and reviewed in previous studies and was addressed in our study at BMC. The study population is well suited for BMC as a number of pregnancies delivered at BMC are from African American mothers and postpartum weight loss is an interest expressed by these women. The goal of this study is to evaluate changes in body image and measure any changes in body image due to an interventional postpartum weight loss program from baseline to the end of the study using a 34-item Multidimensional Body Relations Questionnaire. It was expected that there would be no differences between group scores in regards to the Multidimensional Body Relations subscales but that the subjects in the intervention group would have improved rating averages from baseline to completion of the study indicating a better view of their body images while there would be no changes in average scores from baseline to completion of the study in the control group.
OBJECTIVES

The primary aim of this study was to evaluate any changes in body image from baseline to completion after subjects participated in a pilot clinic-based culturally tailored weight lost intervention program. As obesity and weight retention in postpartum women is an issue in the United States with differences across different populations, the study conducted should help the capacity to reduce racial disparities in obesity among postpartum African American women, help reach what has been deemed a vulnerable population, and help continue to raise insight into how postpartum African American women view their bodies and weight.
METHODS

Figure 2. Study Design

The pilot study was designed with the vision of establishing a feasible and well-accepted weight loss and weight maintenance intervention program for postpartum African American women. This pilot-test was a 2-armed randomized, controlled trial, which was clinic-based and culturally tailored meant to compare...
intervention participants to control participants. The study involved an adaptation of the Diabetes Prevention Program (DPP) and cooperation from peer counselors from Birth Sisters as a support to participants. The study was designed as a 24-week intervention which was revised to 12 weeks. The revision from a longer intervention period to a shorter time period was due to the observation that enrolled subjects in the intervention arm were having difficulty completing the program visits due to alternate commitments and obligations. The intervention period was changed in length with the hope that more subjects would complete the study.

Recruitment and Screening

Inclusion criteria for the intervention program required the following, women had to have received prenatal care at BMC and had to be eighteen years of age or older. Participants also had to have the ability to read and speak English, and also had to have a minimum pre-pregnancy BMI of 25kg/m$^2$, which was obtained from medical records, and possible participants had to state that they were interested in losing weight. Exclusion criteria included failure to meet any of the standards above; patients with HIV or diabetes (not gestational) were also excluded. Screening of the patients was conducted both 2-3 weeks prior to birth or 2-6 weeks postpartum and was completed over the phone. During screening, subjects also completed surveys, which included the Patient Health Questionnaire (PHQ-9) and Stages of Change (SOC). The PHQ-9 is a screening
measure for depressive disorders, so if a subject’s score was 9 or greater, this score indicated possible depression and the subject was disqualified from the study and referred for treatment. A Concomitant medications page was also filled out detailing any medications a subject might be on which included prenatal vitamins along with the doses of any medications, indications, and start and stop dates the medications were administered.

First Study Visit

Table 2. Summary of Data Collection for Study

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Instrument</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Study Outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight, BMI, Waist Circumference</td>
<td>-</td>
<td>Clinical Exam</td>
</tr>
<tr>
<td>Nutrition Attitudes</td>
<td>NAS</td>
<td>Interview</td>
</tr>
<tr>
<td>Physical Activity Attitudes</td>
<td>PAAS</td>
<td>Interview</td>
</tr>
<tr>
<td>Body Image Attitudes</td>
<td>MBSRQ</td>
<td>Interview</td>
</tr>
<tr>
<td>Feasibility and acceptability of</td>
<td>PSS</td>
<td>Interview</td>
</tr>
<tr>
<td>program</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Study Outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in Physical Activity</td>
<td>KPAS</td>
<td>Interview</td>
</tr>
<tr>
<td>Change in total caloric intake and</td>
<td>FFQ</td>
<td>Interview</td>
</tr>
<tr>
<td>fat calories</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Retrieved from Reducing Obesity in Underserved Postpartum African American Women study grant
At approximately 6 weeks postpartum, a first study visit was completed. Vitals signs including pulse and blood pressure were taken at this visit along with subjects’ height, weight, and BMI. In addition to vitals and physical data, the subjects completed surveys which consisted of the Eating Behavior Patterns Questionnaire (EBPQ), Kaiser Physical Activity Survey (KPAS), Edinburgh Postnatal Depression Scale (EPDS), the Multidimensional Body-Self Relations Questionnaire (MBSRQ), and the Physical Activity Attitudes Survey (PAAS).

The EBPQ was created to measure eating patterns while the KPAS was focused on household and family care activities and active living habits. The EPDS was another survey aimed at disqualifying any subjects that might be depressed. The MBSRQ is a 69 item self-report inventory that serves to help assess one’s self-attitudinal aspects of their body image construct. The 69-item survey has 7 subscales that include appearance evaluation, appearance orientation, fitness evaluation, fitness orientation, health evaluation, health orientation, and illness orientation. Additional subscales include a body areas satisfaction scale, overweight preoccupation scale, and self-classified weight. The MBSRQ evaluation used in this study was the 34-item survey titled MBSRQ-AS (MBSRQ-Appearance scale), which excludes the fitness and health aims and focuses on appearance evaluation, appearance orientation, overweight preoccupation, self-classified weight, and the body areas satisfaction scale. The Physical Activity Attitudes Survey was a 17-item survey that displayed how a subject felt about and viewed their physical activity.
Table 3. Example MBSRQ-AS statements. One statement from each of the five MBSRQ categories

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Example Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Evaluation</td>
<td>“My body is sexually appealing”</td>
</tr>
<tr>
<td>Appearance Orientation</td>
<td>“Before going out in public, I always notice how I look”</td>
</tr>
<tr>
<td>Body Areas Satisfaction</td>
<td>On a scale of 1-5 how dissatisfied or satisfied are you (1 being very dissatisfied, 5 being very satisfied) with the following areas or aspects of your body: Face (facial features, complexion)</td>
</tr>
<tr>
<td>Overweight Preoccupation</td>
<td>“I constantly worry about being or becoming fat”</td>
</tr>
<tr>
<td>Self Classified Weight</td>
<td>I think I am…</td>
</tr>
<tr>
<td></td>
<td>1. Very underweight</td>
</tr>
<tr>
<td></td>
<td>2. Somewhat underweight</td>
</tr>
<tr>
<td></td>
<td>3. Normal weight</td>
</tr>
<tr>
<td></td>
<td>4. Somewhat overweight</td>
</tr>
<tr>
<td></td>
<td>5. Very overweight</td>
</tr>
</tbody>
</table>

Table 4. Example Physical Activity Attitudes statements.

<table>
<thead>
<tr>
<th>Example Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Do you have any negative feelings toward, or have you had any bad experience with, physical activity programs?”</td>
</tr>
<tr>
<td>“Can you exercise during your work day”</td>
</tr>
<tr>
<td>“Would an exercise program interfere with your job?”</td>
</tr>
<tr>
<td>“What types of exercise interest you?”</td>
</tr>
<tr>
<td>“How much weight would you like to lose?”</td>
</tr>
</tbody>
</table>
Final Study Visit

The final study visit was completed between 15-20 weeks postpartum. Vitals signs including pulse and blood pressure were taken at this visit along with subjects’ height, weight, and BMI. The EBPQ, KPAS, MBSRQ, PAAS, were again completed as well as a Participant Satisfaction Survey (PSS).

Control and Intervention Groups

The control group was offered the standard of care. This included a nutrition visit with a dietitian at the Nutrition and Weight Management Center of BMC approximately 6 weeks postpartum. The nutritional visit was approximately 1 hour. During this visit, specific aspects of nutrition directly relating to postpartum care were covered including daily caloric needs necessary postpartum to sustain lactation, vitamin and mineral supplements, and advice regarding the time table for weight loss in the postpartum period.

The intervention group also had a nutritional visit with a dietician that covered the exact same information as the control group. In addition to the nutritional visit, the intervention group also received support sessions that combined nutrition education with monitored physical activity. The sessions were developed with the intention to include 30 minutes of exercise (walking or dancing) and a 1-hour health education and skill development component aimed at incorporating awareness in nutrition and exercise behaviors. Sessions were based on a modified version of the Diabetes Prevention Program (DPP). The
DPP was developed as a program aimed towards discovering “whether modest weight loss through dietary changes and increased physical activity or treatment” could prevent or delay the onset of type 2 diabetes (insert citation DPP research group 2002). The DPP adapted program used in our study was specifically tailored towards AA women by using items like a culturally specific food pyramid. The modified program was meant to help allow for the cultural food preferences of AA women and address the concerns of postpartum mothers attempting to eat healthy and exercise while faced with the many challenges of early motherhood.

The patients of the two groups were randomized according to a randomization schedule that was stratified by BMI measured at baseline and based on the permuted blocks strategy with randomly varying blocks size 4-6 within stratum. The BMI strata was determined by BMI<40 and BMI>40.

The Birth Sisters are a group of women from the community who provide support during the prenatal and early postpartum time period. In this study, they were women who acted as peer counselors and helped encourage and offer informational assistance to the subjects in the intervention group of the study. One Birth Sister was assigned to each intervention subject and focused on assisting intervention subjects through the group sessions and helped provide childcare and support throughout the study. Normally, Birth Sisters are free and available only through referral from the patient’s primary care provider to patients who need their assistance the most but in this study, the Birth Sisters were
provided to all the intervention subjects and one Birth Sister was assigned to each subject. The staff were not blinded to outcome assessments.

**Quality Control**

In order to maintain the quality of the study, the intervention staff completed standard training. The staff involved with the study had a minimum of 1-year program experience in the areas of nutrition and weight management and intervention staff was trained by members of a curriculum team under the direction of Dr. Apovian. Monthly meetings were also held between Dr. Apovian and the intervention staff during the course of the study to discuss and evaluate the study. Program evaluation involving data collection also occurred.

**Statistical Analyses**

Only subjects that completed the study were analyzed (control 19, intervention 16). Mean and standard deviation values were calculated to summarize continuous outcomes. Student t tests were used to assess differences in means while paired t tests were used to assess differences within groups over time. Statistical analyses were performed using Microsoft Excel and GraphPad Prism (GraphPad Software, La Jolla California USA, www.graphpad.com”). A p value less than 0.05 was considered statistically significant.
RESULTS

A total of 61 women were randomized in the program. 31 were placed in the intervention group and 30 were placed in the control group. 1 person in the control group withdrew consent before the end of the study and 25 of the 61 randomized subjects were lost to follow up. Of the group lost to follow up, 15 were in the intervention group and 10 in the control group. Of the original 61 subjects that were randomized, 35 of those subjects completed the study with 19 in the control group and 16 in the intervention group. There was no specific pattern of what time period women were lost to follow up as these women stopped their visits and could not be contacted throughout the entire study. While there was nothing that indicated that loss to follow up could be attributed to the assignment of a specific Birth Sister. The loss to follow up also was not attributed to any other specific factors but most likely due to a variety of factors. Previous studies have showed that retaining postpartum women is a challenge, so it was unsurprising that a large dropout rate was observed. The first randomized subject to complete their first study visit occurred on 8/31/11 and the last randomized subject to complete their first study visit occurred on 7/11/13. The first study visit was completed on average between 6 and 7 weeks postpartum. The first randomized subject to complete their final study visit occurred on 5/10/12, while the last randomized subject to complete their final study visit occurred on 9/19/13. The average completion time for the final study visit was between 20 and 21 weeks post partum.
**Figure 3. Study subject attritions.** Attritions of study subjects from randomization to conclusion of study.

- **Enrollment**
  - Assessed for eligibility (n = 128)
  - Randomized (n = 61)
    - Not randomized (n = 67)
      - Subjects not randomized were excluded due to not meeting inclusion criteria or not wanting to participate

- **Allocation**
  - Allocated to intervention (n = 31)
    - Received allocated intervention (n = 31)
  - Allocated to control (n = 30)

- **Analysis**
  - Analyzed (n = 16)
    - Excluded from analysis (n = 15)
      - 15 subjects lost to follow up
  - Analyzed (n = 19)
    - Excluded from analysis (n = 11)
      - 1 subject withdrew consent
      - 10 subjects lost to follow up
First Study Visit

Table 5. Average Control and Intervention MBSRQ Scores for First Visit.
Data represents the mean and standard deviations for the control and intervention group’s scores for the MBSRQ questionnaire for the first study visit. An independent sample t-test was used with an alpha value of 0.05.

<table>
<thead>
<tr>
<th>MBSRQ Subscale</th>
<th>Control Mean ± S.D. (n=19)</th>
<th>Intervention Mean ± S.D. (n=16)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Evaluation</td>
<td>2.74 ± 1.37</td>
<td>3.11 ± 1.39</td>
<td>0.43</td>
</tr>
<tr>
<td>Appearance Orientation</td>
<td>3.42 ± 1.42</td>
<td>3.38 ± 1.35</td>
<td>0.95</td>
</tr>
<tr>
<td>Body Areas Satisfaction</td>
<td>2.86 ± 1.39</td>
<td>2.83 ± 1.45</td>
<td>0.39</td>
</tr>
<tr>
<td>Overweight Preoccupation</td>
<td>3.18 ± 1.47</td>
<td>2.83 ± 1.43</td>
<td>0.49</td>
</tr>
<tr>
<td>Self Classified Weight</td>
<td>4.05 ± 0.66</td>
<td>3.97 ± 0.61</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Table 5 displays the baseline scores between control and intervention for the different subscales of the MBSRQ-AS questionnaire. There were no statistically significant differences between the control group and the intervention group in terms of mean values. This shows that the randomization process yielded two groups with no differences in terms of their baselines scores for the MBSRQ-AS questionnaire. There did appear to be a large standard deviation for all subcategories with the exception of self-classified weight in comparison to the standard deviations from the female adult norms provided by the MBSRQ manual provided in Table 6. In Table 6, the average standard deviation was 0.78.
with no standard deviation found to be greater than 0.96 or less than 0.6, where as in Table 5, the average standard deviation was 1.26 and only self classified weight was found to have a standard deviation of less than 1 at 0.66. The mean values were also different from the mean values provided by the MBSRQ users’ manual, which are displayed in Table 6 below. The differences were not analyzed as the MBSRQ was used in our study to be targeted at a specific cultural population.

In terms of the specific subscales, most women in the control group tended to mostly disagree or neither agreed nor disagreed with statements made regarding appearance evaluation, while in the intervention group most women neither agreed nor disagreed. For statements made regarding appearance orientation, women in the control group women mostly agreed or neither agreed nor disagreed with the statements while in the intervention group the responses were very similar. Regarding overweight preoccupation, there were two questions that focused on diet. The questions were “I am on a weight-loss diet” and “I have tried to lose weight by fasting or going on crash diets.” The mean score indicates that most women were ambivalent in terms of their current diet and that they sometimes fasted or went on crash diets. Regarding self classified weight, the information shows that most women in both the control and intervention group answered that the they believed that they were somewhat overweight and that other people would also think that they were somewhat overweight. In terms of the body areas satisfaction portion of the questionnaire,
the average scores show that most women are between being mostly dissatisfied or neither satisfied nor dissatisfied with the aspects of their body that were listed. These features included their face (facial features, complexion), hair (color, thickness, texture), lower torso (buttocks, hips, thighs, legs), upper torso (chest or breasts, shoulders, arms), muscle tone, weight, height, and overall appearance.

**Table 6. Female Adult Norms for the MBSRQ Subscales.**

<table>
<thead>
<tr>
<th>MBSRQ Subscale</th>
<th>Mean ± S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Evaluation</td>
<td>3.36 ± 0.87</td>
</tr>
<tr>
<td>Appearance Orientation</td>
<td>3.91 ± 0.60</td>
</tr>
<tr>
<td>Body Areas Satisfaction</td>
<td>3.23 ± 0.74</td>
</tr>
<tr>
<td>Overweight Preoccupation</td>
<td>3.03 ± 0.96</td>
</tr>
<tr>
<td>Self Classified Weight</td>
<td>3.57 ± 0.73</td>
</tr>
</tbody>
</table>

Adapted from MBSRQ Users’ Manual

**Final Study Visit**

**Table 7. Average Control and Intervention MBSRQ Scores for Final Visit.** Data represents the mean and standard deviations for the control and intervention groups’ scores for the MBSRQ questionnaire for the final study visit. An independent sample t-test was used with an alpha value of 0.05.

<table>
<thead>
<tr>
<th>MBSRQ Subscale</th>
<th>Control Mean ± S.D. (n=19)</th>
<th>Intervention Mean ± S.D. (n=16)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Evaluation</td>
<td>2.85 ± 1.33</td>
<td>2.88 ± 1.32</td>
<td>0.95</td>
</tr>
</tbody>
</table>
Table 7 displays the scores between control and intervention for the different subscales of the MBSRQ-AS questionnaire after completion of the program with the survey being completed at the final visit. There were no statistically significant differences between the control group and the intervention group in terms of mean values. Similarly to the first study visit, there did appear to be a large standard deviation for all subcategories with the exception of self classified weight meaning that the answers to the questions provided had a slightly larger array of responses from the mean. The average standard deviation from Table 7 was 1.22 with self-classified weight once again being the only standard deviation below 1 with a value of 0.71.
Table 8. Average Control and Intervention MBSRQ Scores from First to Final Study Visit. The data represents the mean and standard deviation for the control and intervention groups’ score on the MBSRQ at the first and final study visit. A paired sample t test was used with an alpha value of 0.05.

<table>
<thead>
<tr>
<th>MBSRQ Subscale</th>
<th>First study visit Control Mean ± S.D. (n=19)</th>
<th>Final study visit Control Mean ± S.D. (n=19)</th>
<th>P value</th>
<th>First study visit Intervention Mean ± S.D. (n=16)</th>
<th>Final study visit Intervention mean ± S.D. (n=16)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance Evaluation</td>
<td>2.74 ± 1.37</td>
<td>2.85 ± 1.33</td>
<td>0.198</td>
<td>3.11 ± 1.39</td>
<td>2.88 ± 1.32</td>
<td>0.164</td>
</tr>
<tr>
<td>Appearance Orientation</td>
<td>3.42 ± 1.42</td>
<td>3.47 ± 1.39</td>
<td>0.430</td>
<td>3.38 ± 1.35</td>
<td>3.43 ± 1.22</td>
<td>0.505</td>
</tr>
<tr>
<td>Body Areas Satisfaction</td>
<td>2.86 ± 1.39</td>
<td>2.98 ± 1.30</td>
<td>0.139</td>
<td>2.83 ± 1.45</td>
<td>3.33 ± 1.30</td>
<td>0.601</td>
</tr>
<tr>
<td>Overweight Preoccupation</td>
<td>3.18 ± 1.47</td>
<td>3.68 ± 1.38</td>
<td>0.287</td>
<td>2.83 ± 1.43</td>
<td>3.05 ± 1.35</td>
<td>0.121</td>
</tr>
<tr>
<td>Self Classified Weight</td>
<td>4.05 ± 0.66</td>
<td>3.92 ± 0.71</td>
<td>0.235</td>
<td>3.97 ± 0.61</td>
<td>4.03 ± 0.67</td>
<td>0.677</td>
</tr>
</tbody>
</table>

When comparing the average change in MBSRQ-AS scores between the first and final study visit for the control and intervention groups, we found that there was nothing considered to be statistically significant and thus no major changes from the subscale scores from the first visit compared to the scales at the last visit. This showed that the women’s body perceptions did not change from the beginning of the study to the end of the study. Considering the relatively short intervention period, this is not particularly surprising.
DISCUSSION

The main objective of this study was to evaluate any changes in body image from baseline to completion after study subjects participated in a culturally tailored and clinic-based program that was focused on weight loss as well as other factors. The study focused on addressing how postpartum African American women viewed their bodies prior to an interventional program compared to how these same women viewed their bodies after completing an interventional program. The reason this group was targeted was because African American women including those from lower socioeconomic backgrounds are at a higher risk of being overweight or obese and may have a different view of body image compared to other demographics (Ogden et al., 2006).

In regards to the MBSRQ-AS scores, the results showed that at baseline, there was no significant difference in the mean scores of the two groups with regards to the MBSRQ-AS subscales of appearance evaluation, appearance orientation, body areas satisfaction, overweight preoccupation, and self-classified weight which was the expected outcome that there would be no differences between group scores at baseline. There was a larger standard deviation from the responses that were provided by the MBSRQ showing that the women in this study had more variable responses with the exception of self classified weight where most women believed that they were somewhat overweight and perceived that others also believed that they were somewhat overweight.
At the final visit, the MBSRQ also showed no significant differences in the mean scores of the two groups with larger standard deviations once again indicating variable responses. The smallest standard deviation mimicking the first visit scores was present in self classified weight with results indicating that most women believed themselves to be somewhat overweight and showing they believed others to hold the same belief that the women were somewhat overweight.

The scores for the first visit compared to the last visit did not change significantly between either of the groups. This differed from the belief that there would be a change and improvement in scores from subjects placed in the intervention group. The lack of change in scores for the subjects in the control group was expected as the control group did not partake in the intervention sessions. No statistically significant data was found from baseline to finish and the scores for the different subscales stayed relatively the same. One reason for this may have been the short intervention period in which it would be hard to change perceptions of how a person viewed their own body. Another reason could have been that the small sample size limited the data and any changes as many study subjects were lost to follow up during the course of the study. It is not surprising that the score of the control group did not change as the subjects in this group did not attend any intervention meetings. The intervention meetings did not necessarily stress how the subjects viewed their body images, which also may have contributed to the lack of change in scores.
The strengths of this study included clearly stated objectives that were well thought out and focused on a specific population (AA women) helping to increase the amount of information on weight loss intervention programs for postpartum African American women. The fact that this was the first study conducted at BMC to address a postpartum intervention program and how this may affect body image changes was also a strength especially as it focused on a population that was incredibly relevant to BMC as BMC often provides healthcare to Boston’s underserved and vulnerable populations. According to the grant for this study, in 2006, 53% of women giving birth at BMC were AA. The screening and randomization process that was followed was also a positive of the study, as initially there was about a 50:50 ratio of women placed in the control group (30) to the intervention group (31) while women that needed to be excluded from the study due to the exclusion criteria were directed towards the proper professionals such as mothers that might be suffering from depression. In addition to the MBSRQ, the different questionnaires used were another positive aspect of the study as the different questionnaires focused on different aspects of postpartum life including nutrition and activity. The oversight of the study by Dr. Apovian and those involved with study visits was also a strength of the program as the program was completed successfully due to the flexibility that those involved with the study showed. Another strength of this study was that subjects who did complete the study filled out a participant satisfaction survey and although not
presented, the majority of the participants who did fill out the survey enjoyed the study showing that it was well received.

Alongside the strengths of the study, there were limitations as well. One limitation was the number of subjects who were lost to follow up and the number of subjects who completed the study. 26 subjects total did not complete the study with 25 lost to follow up. Subjects who missed a visit were followed up with a phone call and mailed letter but most subjects did not respond to the follow up. In a systematic review of weight loss intervention that included intervention for AA women, the review showed that although there were a wide array of retention rates across studies, ranging from high retention rates for AA women to low retention rates (Fitzgibbon et al., 2012). With the numerous responsibilities that new mothers must face, it is not necessarily surprising that some of the women placed in the intervention group did not complete the study compared to the lower amount of subjects lost to follow up in the control group that were not required to come in for multiple sessions and visits. Reasons for not attending sessions could include transportation problems, infant illness, as well as conflicts at work or simply adjusting to motherhood (Walker et al., 2012). The smaller sample size may have also had an effect on the outcome of the study. Another limitation of the study was the length of the study. The study was initially supposed to occur over a span of 12 weeks, which was later changed to 8 weeks. A shorter intervention may have weakened the outcomes of the study as it has been suggested that multi-session interventions of longer duration produce
better results (Fitzgibbon et al., 2012). It may have also had an effect on the data as a reduced intervention time meant a correlated reduction in exercise time and class time that provided relevant information and reduced the time from baseline to final visit.
CONCLUSION

This study was an important step in the process of determining whether an interventional weight loss program for postpartum African American women at risk of health outcome disparities related to weight and chronic disease can change their views regarding their bodies. Subjects were screened and recruited with certain inclusion and exclusion parameters clearly stated and followed to ensure the study was carried out as envisioned and that the data analyzed was relevant. It was expected that there would be no differences between group scores in regards to the Multidimensional Body Relations subscales but that the subjects in the intervention group would have improved rating averages from baseline to completion of the study indicating a better view of their body images while there would be no changes in average scores from baseline to completion of the study in the control group. What was actually observed was that there were no statistically significant changes in subscale scores in the intervention group from baseline to completion as well as no changes in scores in the control group or between groups.

A closer look at associations between body mass index and body image may have helped strengthen the study and outcomes and helped provide a clearer understanding of how body image is perceived; whether it is weight related or is based on different factors. A study by Cox et al. stated that “body dissatisfaction may mediate the relationship between body mass index and weight related quality of life in black women” and that it is an “interplay of factors
related to obesity such as quality of life and body image” that need to be examined further in order to better understand body image views in black women (Cox et al., 2011). By looking at factors in addition to body image, this may have provided a deeper understanding of the outcomes of the study.

This was the first study of its kind performed at BMC and may be used to carry out a weight loss intervention program for postpartum mothers in the future and observe how this program may create changes in attitude regarding body image. The study is important in providing feedback both in terms of data and subject satisfaction to determine what could be improved and what was well received by subjects who were part of the study. The study was targeted towards a specific demographic as previous studies have shown that there may be a difference in regards to body image depending on the demographic of the population. The challenges, responsibilities, and time constraints that come with motherhood are also major obstacles as can be seen with the number of subjects lost to follow up and perhaps other avenues should be explored in terms of the number of in person visits and the lengths of those visits. One of the aims of the study larger study was to observe any changes in weight loss during the postpartum period of the study, and although weight loss was not observed from baseline to conclusion of the study, the main aspect of the study was met in regards to determining whether an interventional weight loss program had any impact on how study subjects viewed their bodies as determined by the 34 item MBSRQ questionnaire. The study demographic of African American women is
one that faces numerous challenges regarding weight loss, eating behaviors, and possibly body image as things like childcare and transportation methods can be inhibiting factors in the goal to participate in such an intervention program and cultural beliefs as well as health as portrayed in the media may have an impact on how women view their bodies. This period of life for our study population is a difficult time and dramatic change in lifestyle and remains an important time to address weight loss, lifestyle changes, and body image views. Because of the importance of this issue and this study, an interventional program should continue to be examined to determine whether positive outcomes may arise from such a program in regards to areas such as subject views on body image.
REFERENCES


CURRICULUM VITAE

Paul Jisoon Seok
pauljseok@gmail.com

Year of Birth: 1987
593 Tremont Street, Boston
(607) 206-4920

EDUCATION

**Boston University**
Boston, MA
Candidate for Masters of Medical Science, May 2014

**Hamilton College**
Clinton, NY
Bachelor of Arts, May 2010
Concentration in Biology

**Wilkes University**
Wilkes-Barre, PA
Concentration in Biology, August 2006-July 2008

RELEVANT EXPERIENCE

**Outreach Van Project**
Boston, MA
(June 2013-Present)
- Student run organization that provides clothing, groceries, and a hot meal to the homeless in East Boston

**Native Tribal Scholars**
Weston, MA
*Residential Counselor* (June 2012-August 2012)
- Set up and oversaw activities for Native American students during a summer academic program
- Fulfilled the role of mentor and supervisor of residence living

**Wells College**
Aurora, NY
*Admissions Counselor* (September 2010-November 2011)
- Recruited prospective students from counties in NYS and the Mid-Atlantic and maintained correspondence with students during the application process
- Help research, test, and implement a software product for tracking and managing student contact
- Helped organize and run campus events
**Hamilton College**  
Clinton, NY  
*Resident Advisor (August 2009-May 2010)*  
- Promoted and maintained a positive living environment for all residents  
- Fulfilled the roles of peer advisor, role model, programmer, administrator, and limit setter  
- Maintained regular contact with my supervisor through weekly reports, and informal conversation

**Hamilton College**  
Clinton, NY  
*Tour guide (May 2009-May 2010)*  
- Worked in Admissions acting as an ambassador for the college giving guided tours to prospective students, parents, and high school counselors  
- Assisted prospective students with the college process by answering questions through conversations and e-mail

**Big Brothers Big Sisters Organization**  
Wilkes-Barre, PA  
*Big Brother (October 2007-July 2008)*  
- Aided my 12 year old “little” with help in whatever areas needed socially and academically  
- Collaborated with a caseworker once a month to discuss my “little’s” progress and any problems the parents wanted addressed  
- Organized various activities ranging from going to the movies to spending time in the Wilkes University library