The Moms2B Program:
A Qualitative Evaluation of Participants’ Perceptions of the Program and its Impact on their Diet, Lifestyle, and Behaviors

THESIS

Presented in Partial Fulfillment of the Requirements for the Degree Master of Science in the Graduate School of The Ohio State University

By

Carmen Marie Clutter, B.S.

Graduate Program in Health and Rehabilitation Sciences

The Ohio State University

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Master's Examination Committee:

Dr. Thelma Patrick, PhD, RN

Natalie Ridgway, MS, RD, LD

Dr. Colleen Spees, PhD, MEd, RD

Dr. Diane Habash, PhD, RD, LD, Advisor
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Abstract

**Objective:** Through questionnaires, investigators assessed participant perceptions, surveying nutrition knowledge gained and the impact of the program on diet, lifestyle, and other health behaviors.

**Methods:** Researchers recruited current and previous Moms2B participants. Consenting participants were asked to complete a series of three self-administered questionnaires about their perception of program impact and the nutrition knowledge specific to pregnancy that they gained.

**Results:** A total of 26 participants responded to the questionnaires. The Behavior Change Questionnaire assessed health and nutrition behaviors that changed as a result of Moms2B. The highest possible score was a five and the mean score (± standard deviation) was 4.1 ±1.13. Additionally, 74% of participants agreed or somewhat agreed that the Moms2B program has positively influenced behavior changes. The Support System Questionnaire explored lifestyle adjustments due to the impact of the Moms2B program. The highest possible score was a five and the group mean score was 4.4 ±0.89. Additionally, 84% of participants agreed or somewhat agreed that the Moms2B program has resulted in positive lifestyle change. The Nutritional Knowledge Questionnaire assessed participant knowledge in the context of nutrition and maternal health as they related to successful pregnancy outcomes. The highest possible score
was a fourteen with the group mean score of 10.5 ±1.69. Overall, the group had an average score of 75%.

**Conclusions:** While further testing is required to confirm these results, on average the participants agreed or somewhat agreed that their positive behavior and lifestyle changes have resulted from their Moms2B program involvement. Additionally, the results indicated that participants are learning, and possibly retaining, nutritional and maternal health knowledge.
Dedication

This thesis is dedicated to my patient husband, Brian, for inspiring and motivating me to continuously question.

This thesis is also dedicated to my biggest cheerleaders, my parents, who have helped keep my dreams alive since the beginning.
Acknowledgments

This thesis would have not been possible without the support and guidance of several individuals. First and foremost, I am forever indebted to my graduate advisor, Dr. Diane Habash, for her invaluable assistance and leadership. I must also express my deepest gratitude to the members of my graduate thesis committee, Dr. Thelma Patrick, Natalie Ridgway, and Dr. Colleen Spees, all who contributed to the preparation and completion of this thesis.

I share the credit of my work with the Moms2B program, especially clinical director and program founder, Dr. Patricia Gabbe, who first believed in me as a dietetic intern and since has allowed me the opportunity to grow and develop as nutrition professional. This thesis would have not been possible without the involvement of the Moms2B participants, both past and present. Their dedication to the Moms2B program and devotion to their families is inspiring.

And finally, recognition is due to my fellow cohorts, the women of Medical Dietetics, Alex Borusk, Anne Campbell, Laura Groseclose, and Megan Kelsey for sharing in the laughter and struggles that are graduate school.
Vita

1987......................................................Born, Toledo, Ohio

2005.....................................................St. Ursula Academy

2010 .....................................................B.S. Human Nutrition, The Ohio State University

2012 to present .................................Graduate Research Assistant, Department of Medical Dietetics, The Ohio State University

2013 .....................................................M.S. Clinical Nutrition, The Ohio State University

Field of Study

Major Field: Health and Rehabilitation Sciences
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Chapter 1: Introduction

Background

The chosen area for this study, Weinland Park, is a compact urban neighborhood of less than 5,000 residents, largely African American (50%) and non Hispanic, Caucasian (41%), living in low-income, public housing. Weinland Park is the largest Section 8 Housing area within Franklin County, Ohio. In 2004, median household income in Weinland Park was approximately $15,000; nearly half of this area’s population lived below the federal poverty level. In addition, in 2004 only a third of the adult population was high school graduates. ¹,²

Birth outcomes in the Weinland Park area mirror statistics found within high risk, socially inequitable environments. In 2007 there were 122 infants born. Of those births, Medicaid covered the cost of 88%, indicating a high level of poverty. Over 10% of the pregnancies were further complicated by gestational diabetes and hypertension. Of most concern, 19% were born preterm and two infant deaths occurred.³

Ideally, every pregnancy ends in a full term, healthy infant and healthy mother. However, the disadvantages of poverty and lower socioeconomic status have long been associated with increased risk for poorer health and pregnancy outcomes.⁴ In addition, social support has a mediating influence on the relationship between life stress and the development of pregnancy complications. Women with low social support lack effective psychosocial resources, particularly social stability and social interaction, often receiving insufficient support from the partner, family, and/or friends.⁵,⁶
Specifically, the physiological and psychological stress associated with social disadvantages has been directly correlated to an increase in the likelihood of pregnancy complications, fetal growth restriction, preterm birth, and poor maternal and neonatal health.  

Addressing demographic, social, and environmental risk factors, as well as ensuring pregnant women receive adequate nutrition are essential for reducing the rate of low birth weight (LBW) births. A 2009 report produced for the Annie E. Casey Foundation exploring prevention of LBW births, suggested that nutrition counseling incorporated into preconception and prenatal care could greatly reduce the risk of LBW and premature births. In addition, programs offering nutritional support to low-income, expectant mothers and infants, such as Women, Infants, and Children (WIC) may increase the incidences of healthy birth outcomes.

Nutritional insufficiency directly correlates to food insecurity. Nutritional health is one primary factor affecting preterm birth in both underweight and overweight women alike. Low-income, pregnant women are at an increased risk for inadequate nutritional intake as well as deficiencies of essential nutrients. It is necessary that women are educated about healthy food choices and appropriate weight gain throughout pregnancy.

Purpose and Objectives

The Moms2B program addresses multiple determinants of maternal and infant health through weekly program sessions that include community meals, nutrition education, clinical assessments, prenatal and post partum healthcare education, and
enhanced social support. The nature of this research required the inclusion of Moms2B participants to evaluate their perceptions of the program. Specifically, the research question was: what do Moms2B participants think about the program and its impact on their diet, lifestyle, and behaviors?

The research involved three questionnaires surveying participants’ opinions of the Moms2B program, as well as the program’s influence on their diet, lifestyle, and behaviors patterns. Investigators sought to evaluate knowledge of basic concepts of nutrition and maternal health. Additionally, the investigators sought to identify if there was a difference between the women who are currently participating in the program compared to those who no longer attend. Perceptions of program success were measured through subject questionnaires.

Investigators anticipated lower than minimal risks to the participants. In addition, while investigators anticipated no direct benefit to participants, creation of an even more successful program model was expected through the exploration of participants’ perceptions. Through this work, investigators wanted to clearly define perceived beneficial components of the Moms2B program as well as to identify areas needing improvement. Exploring participants’ perceptions can help create an even more successful program than the current model and thus continue to maximally empower and educate the women in this community in areas of health for themselves and their families.
Definition of Terms

Anemia— a condition in which the blood is deficient in red blood cells, in hemoglobin, or in total volume. \(^{10}\)

Body Mass Index — a measure of body fat that is the ratio of the weight of the body in kilograms to the square of its height in meters. \(^{10}\)

Gestational Age – the age of an infant at birth as determined by the length of the pregnancy or a clinical assessment. \(^{11,12}\)

Income inequality — the extent of disparity between high income and low income households. \(^{13}\)

Infancy — birth to 1 year of age. \(^{10}\)

Infant Mortality Rate — the number of infant deaths in the first year of life per 1000 live births. \(^{11}\)

Intrauterine growth restriction — decreased fetal growth rate as determined by the obstetrician during pregnancy. \(^{11}\)

Low Birth Weight — birth weight less than 2,500 grams (5 pounds, 8 ounces). \(^{4,11,12}\)

Malnutrition — faulty nutrition due to inadequate or unbalanced intake of nutrients or their impaired assimilation or utilization. \(^{10}\)

Preterm Birth — birth before 37 weeks gestation. \(^{4,11,12}\)

Small for Gestational Age — referring to the size of an infant whose birth weight is lower than the 10\(^{th}\) percentile of the standard weight for gestational age. \(^{11}\)

Stress — any challenge that threatens or is perceived to threaten homeostasis; can be physiological or psychological. \(^{14}\)
**Term Birth** — birth between 37 and 42 weeks gestation.  

**Under Nutrition** — deficient bodily nutrition due to inadequate food intake or faulty assimilation.  

**Very Low Birth Weight** — a birth weight of less than 1500 grams (3 pounds, 4 ounces).  

**Very Preterm Birth** — birth before 32 weeks gestation.  

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**List of Abbreviations**

**BMI** — body mass index  
**IMR** — infant mortality rate  
**IUGR** — intrauterine growth restriction  
**LBW** — low birth weight  
**SES** — socioeconomic status  
**SGA** — small for gestational age  
**VLBW** — very low birth weight
Chapter 2: Literature Review

Infant Mortality and Factors of Influence

The United States has one of the highest infant mortality rates among developed nations. Japan, France, Germany, Spain, Italy, and the United Kingdom all have lower infant mortality rates when compared to the U.S. In the U.S. today, six infant deaths out of 1000 occur each year. 19 Low birth weight (LBW) is one of the leading causes of infant and childhood mortality and morbidity in the U.S., with preterm birth listed as the most common reason for LBW infants. 4, 14 The risk of infant mortality decreases as birth weight increases. 20

According to the World Health Organization, studies have consistently shown a strong correlation between social and economic disadvantage and low birth weights. 7, 21, 22 In a 2012 study investigating the effects of poverty on pregnant women, more preterm births were seen within lower socioeconomic groups. When compared to women of upper socioeconomic status (SES), lower SES women displayed poorer educational and nutritional indicators during pregnancy and following birth. 4 In addition, infants born to mothers in socially disadvantaged environments are more likely to be small for gestational age (SGA) and have health problems. 7 In a 2009 survey of the South Carolina Pregnancy Risk Assessment Monitoring System (PRAMS) researchers identified that the prevalence of low birth weight or preterm births decreased with increasing income, education, and higher levels of maternal social support. 22
A review on maternal health and birth outcomes indicated that educational level has been the strongest and most consistent predictor of health.\textsuperscript{4,14} Similarly, findings of a 2000 prospective study suggested that women with more years of education have a greater access to social support and resources, which perhaps correlates to enhance prenatal care.\textsuperscript{20} In addition, in a 2009 report produce for the Annie E. Casey Foundation on the prevention of LBW infants, results indicated that mothers with lower educational achievement have high rates of infant mortality when compared to infants born to mothers with higher education attainment.\textsuperscript{8} LBW rates have been shown to decrease as the use of prenatal care rises.\textsuperscript{23} However, a significant proportion of pregnant women, a majority of which are low-income, do not begin prenatal care until the third trimester of pregnancy.\textsuperscript{8} Additionally, without prenatal health care, maternal well being can suffer. Consequential poor birth outcomes and long-term, negative effects to maternal and infant health can result.\textsuperscript{21}

Several studies and literature reviews have correlated racial and ethnic disparities in low birth weight and preterm births.\textsuperscript{4, 14, 20, 22-23} At almost all education levels, SES, and age categories, Black and/or African American women are twice as likely as non-Hispanic, Caucasian women to have low birth weight and/or preterm births. According to the Center of Disease control and Prevention, non-Hispanic African American infants are more than twice as likely to be born low birth weight or preterm as compared to non-Hispanic Caucasian infants.\textsuperscript{17} Data collected from the South Carolina PRAMS survey suggested that the percentage of low birth weight and preterm births to non-Hispanic, African American mothers was 13.2\% and 14.2\%, respectively. In contrast, the
prevalence of low birth weight and preterm births to Caucasian counterparts was 6.5% and 8.8%, respectively.\textsuperscript{19}

The social stigma associated with living in poverty can be a source of chronic stress.\textsuperscript{5,17,24,25} According to a 2010 Cochrane review exploring the impact of support during pregnancy for low-income women, indicated that social support “may have a mediating influence on the relationship between life stress, regardless of the cause of the stress, and the development of pregnancy complications.”\textsuperscript{7} Social relationships have a positive impact on physical health and psychological well being. Social support can provide individuals with access to resources during times of stress and transition.\textsuperscript{24,25} Findings from existing research on social support suggest a positive association between the effects of social support and newborn health, especially birth weight and gestational age.\textsuperscript{24} In a 2000, prospective study exploring the effects of maternal social support, women with multiple types of social support throughout pregnancy had higher birth weight infants. Additionally, a 2006 article published in the Journal of Obstetric, Gynecologic, and Neonatal Nursing explored social support’s influence on health behaviors of low-income women. Researchers were able to show a statistically significant, positive correlation between social support and prenatal health behaviors.\textsuperscript{26}

Inadequate social support has been linked to depression during pregnancy.\textsuperscript{6} Studies suggest that adequate social support could protect mental well-being by enhancing mental health, thereby defending against stress.\textsuperscript{6,27} Including only full term infants, a 2007 study exploring the effect of social support during pregnancy concluded that social support had a significant effect on birth weight and length. Infants born to
mothers with low social support were significantly smaller and had a significantly reduced birth weight, by 200 grams on average. Additionally, pregnancy complications within the study participants were much lower in women with high social support compared to women with low social support, 14.2% and 23.9%, respectively.  

Emotional distress, related to psychological health, can affect maternal and infant health. According to the data collected from the Oklahoma PRAMS survey, high levels of maternal stress was associated with low birth weight and preterm births, as well as increases in risky behaviors including smoking, alcohol, and drug use which could increase the risk of pregnancy and birth complications. Depression in low-income pregnant women is often related to their exposure to chronic stress and anxiety, life events, and/or absence of support. Maternal depression and anxiety have been shown to directly correlate with infant birth outcomes, specifically, prematurity, LBW, and SGA. Maternal stress, whether physiological or psychological, is becoming recognized as an important risk for preterm birth as stress can activate many physiological pathways that lead to preterm and LBW births.  

Understanding the relationship between maternal nutritional intake and birth outcomes may provide a framework for developing successful interventions to improve birth outcomes and quality of life, thereby reducing mortality, morbidity, and health care costs. Research supports a correlation between poor maternal nutrition and the leading causes of infant mortality, including birth defects, preterm birth, and fetal growth restrictions. Low pregnancy body mass index (BMI) and poor gestational weight gain during pregnancy correlate with an increased risk for preterm, LBW, and
intrauterine growth restrictions (IUGR). There is a direct link between a mother’s pre-pregnancy BMI and the birth weight of her child. Additionally, there is also a connection between a mother’s weight gain during pregnancy and the birth weight of the infant.

Complications of pregnancy due to poor maternal nutrition are preeclampsia, anemia, infections, and inflammation. Malnourished or undernourished pregnant women are at an increased risk for pregnancy complications, and in extreme circumstance could result in death of mother or child. Throughout the past ten years, maternal underweight and low weight gain during pregnancy have been declining. However, maternal overweight and excessive gestational weight gain are now on the rise. Both high pre-pregnancy BMI and excessive gestational weight gain are associated with a multitude of complications for mother and infant alike.

Under-nutrition is most likely to present itself in low SES populations in which dietary intake is inadequate due to the expense of high-quality, nutrient dense foods. A 2007 report on maternal nutrition and infant mortality suggested that, in general, African American women consume more calories than their Caucasian counterparts; however they consume fewer nutrients. Anemia, a common deficiency among low-income women, can result from the inability to purchase high-quality food or poor dietary intake. According to the Joint Center for Political and Economic Studies Health Policy Institute, one third of low-income women are anemic during the third trimester of pregnancy. Additionally, the presence of anemia is higher among African American women than among all other racial-ethnic groups. A large proportion of pregnant
women do not meet their recommended daily allowances for many micronutrients, most notably calcium, iron, zinc, and vitamins A, B, and C.\textsuperscript{14, 28}

**Moms2B Program Description and Evaluation**

The Moms2B program was founded in 2010 by pediatrician and clinical director, Dr. Patricia Gabbe, professor and clinical researcher, Dr. Thelma Patrick, and program director, Twinkle Schottke as a collaborative effort between The Wexner Medical Center at The Ohio State University and Nationwide Children’s Hospital. The program first began as a research-driven, continual, ten week nutrition course within Weinland Park and has since expanded into a service-oriented, comprehensive prenatal program with three site locations. Moms2B has transformed into a multidisciplinary program with a variety of healthcare professionals including physicians, family advocates, community health advisors, dietitians, certified lactation consultants, nurses, midwives, allied medical professional students, social work interns, and over twenty volunteers.

The Moms2B program was designed to address maternal and infant health disparities, specifically focusing on neighborhoods of Columbus, Ohio with high rates of low-income and infant mortality. In 2011 the infant mortality rate in Franklin County, Ohio was 8.2 per 1000. In Weinland Park the rate was 16.5, one of the highest in the city.\textsuperscript{15} Based on data collected during initial program enrollment, the average age of a Moms2B participant is approximately 24 and most are African Americans reported living below the federal poverty level, with a monthly household income of less than $800. Approximately 60\% of Moms2B participants have or had at least two children and roughly 70\% do not have a high school diploma or GED. Additionally, the majority of
participants are at risk for depression. As food insecurity is an ongoing crisis among low-income neighborhoods, 84% of Moms2B participants self-report food insecurity. Women have been recruited to the Moms2B program through outreach flyers, word of mouth, community outreach events, and referrals from public healthcare clinics.

Moms2B staff and volunteers recognize that the contributing factors to infant mortality and prenatal health are complex, thus goals have been established to improve pregnancy and birth outcomes, ensuring a healthy first year of life for infants (Table 1). Short term goals include increasing knowledge about nutrition and maternal and infant health. Intermediate goals include improving food security, social support, housing stability and breastfeeding rates. Long term goals include reducing preterm births, neonatal intensive care days, infant mortality rates, maternal depression and anxiety, and improving the overall health of participants.
### Moms2B Program Goals

<table>
<thead>
<tr>
<th>Short Term</th>
<th>Knowledge about nutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge about maternal and infant health</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Food security</td>
</tr>
<tr>
<td></td>
<td>Social support</td>
</tr>
<tr>
<td></td>
<td>Housing stability</td>
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<td></td>
<td>Breastfeeding rates</td>
</tr>
<tr>
<td>Long Term</td>
<td>Preterm births</td>
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<tr>
<td></td>
<td>Neonatal intensive care days</td>
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<tr>
<td></td>
<td>Infant mortality rates</td>
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<tr>
<td></td>
<td>Maternal depression and anxiety</td>
</tr>
<tr>
<td></td>
<td>&amp; Improving overall health of participants</td>
</tr>
</tbody>
</table>

Table 1: Moms2B Program Goals

Moms2B program is currently active at three site locations. However, for the purposes of this research, only the Weinland Park site location was evaluated, as it is the longest running Moms2B location. The Moms2B program holds weekly sessions with pregnant and parenting participants every Wednesday from 11:00 am-1:00 pm at Grace Missionary Baptist Church, located within the heart of Weinland Park. Each session integrates messages and interactions targeting social and clinical support to address and reduce underlying factors attributed to poor birth outcomes, while providing each participant with a safe, supportive environment. Support focuses on individual nutrition assessment and education, the encouragement of breastfeeding, planning for safe spacing of next pregnancy, and completion of education and job training goals.\(^3,^{15}\)

At each program session, Moms2B staff and volunteers meet with participants individually. Risk factors of food insecurity, depression, life stressors, smoking, and poor prior pregnancy outcomes are evaluated. The participants are surveyed to assess
smoking risk (ACOG/MOD smoking questionnaire), depression and anxiety (CES-D questionnaire and Prenatal Hassel questionnaire), and food security (Subset of the 12 Month Food Security Scale Questionnaire) (see Appendices A-D). Nutrition education is also provided by the program’s registered dietitian and dietetic interns. Additionally, weight gain, blood pressure, and fetal heart tone are monitored in all pregnant women. Immediate maternal needs including housing stability and food insecurity are assessed and addressed by program social workers and family advocates. Participants are often referred to outside agencies to meet their immediate needs, including education and employment goals.3,15

Nutritional assessment and nutrition education is provided for all pregnant participants by the program’s registered dietitian and/or dietetic student interns from The Ohio State University College of Medicine: School of Health and Rehabilitation Sciences. Each week participants’ weight gain is evaluated based on the recommendations from the American Pregnancy Association (Table 2).16 Participants also receive individualized nutrition education accompanied with nutrition education modules. The nutrition education lessons and modules have been developed and updated by the program’s registered dietitian and dietetic student interns. The lessons were developed around the mnemonic acronym “Pregnancy♥,” with each lesson focusing on a different nutrition topic of importance to prenatal health (Table 3, see Appendices E-N). Additionally, 24-hour dietary recalls are collected from each participant to assess their typical daily diet and to evaluate macronutrient and micronutrient consumption.
Table 2: American Pregnancy Association Guidelines for Maternal Weight Gain

<table>
<thead>
<tr>
<th>Pre-Pregnancy BMI</th>
<th>Weight Gain (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18.5</td>
<td>28-40</td>
</tr>
<tr>
<td>18.5-24.9</td>
<td>25-35</td>
</tr>
<tr>
<td>25-29.9</td>
<td>15-25</td>
</tr>
<tr>
<td>&gt;30</td>
<td>11-20</td>
</tr>
</tbody>
</table>

The Moms2B program’s influence is currently being evaluated along with a number of additional indicators including birth outcomes, nutritional knowledge and behaviors and social support. Since 2010, 92 women have attended at least one of the Moms2B program sessions at Weinland Park.15

Evaluation of program impact through participant perceptions of quality and their own changes in self efficacy may be necessary to demonstrate the value and achievement of the goals of the Moms2B program. A main reason to pursue the program’s quality is to identify and evaluate participant satisfaction. Assessing participants’ perceptions may

Table 3: Moms2B Nutrition Education Lessons aligned with the ‘Pregnancy♥’ mnemonic acronym

<table>
<thead>
<tr>
<th>P</th>
<th>Eat protein at every meal</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Remember your daily prenatal vitamin</td>
</tr>
<tr>
<td>E</td>
<td>Eat dairy three times a day</td>
</tr>
<tr>
<td>G</td>
<td>Gain healthy pregnancy weight</td>
</tr>
<tr>
<td>N</td>
<td>Necessary nutrients: folate and iron</td>
</tr>
<tr>
<td>A</td>
<td>Always choose whole grains for fiber</td>
</tr>
<tr>
<td>N</td>
<td>Nourish yourself with fruits and vegetables</td>
</tr>
<tr>
<td>C</td>
<td>Count your water-eight glasses everyday</td>
</tr>
<tr>
<td>Y</td>
<td>Your breasts are best</td>
</tr>
<tr>
<td></td>
<td>Love yourself, love your baby</td>
</tr>
</tbody>
</table>

15
provide information for education and activity adjustments, possible reallocation of program funds, staff and volunteer development, and program decision making. Feedback from participants may be essential to assess program quality and encourage continued participation while maintaining recruitment efforts. Opinions of participants may help provide direction for the program’s future. However, a well-structured, evaluation instrument to measure participants’ perceptions appropriately has not yet been developed. 17,18

Comparison Educational Programs during Pregnancy and Outcomes

In a 2010 literature review of maternal nutrition and birth outcomes, studies recommended that “optimal maternal nutrition status is achieved through multiple interventions,” which would include reducing food insecurity and providing fortified food supplements. 4 As WIC programs combine nutritional education with vouchers for approved foods, most studies of WIC’s effectiveness have exposed success in reducing the rate of LBW babies and preterm births. In a 2005 exploring the benefits of WIC, enrollment was shown to reduce the probability of low birth weight births by almost one third. 8,30

A review conducted for the Colorado Department of Public Health concluded that program interventions that used intensive, individualized nutrition counseling and follow up throughout gestations resulted in improvements in gestational weight gain and birth outcomes. 4,31 Preventing LBW births requires an approach targeting the health of pregnant women, including SES, environmental and mental health issues. 8 A 2010 Cochrane review assessed randomized control trials focusing on the evaluation of
community programs targeting women at high risk for LBW or preterm births suggest that such programs were able to provide support services, through counseling, assistance, and emotional support, thereby improving birth outcomes. Interventions should integrate resources to assist low income pregnant women improve their current environment, including mental health, social support, and prenatal care.
Chapter 3: Methodology

Research Design

Through a cross-sectional design, qualitative questionnaires were collected from Weinland Park Moms2B participants, both current and previous, for a period of two months from January 2, 2013 through February 27, 2013. Current Moms2B participants were contacted in person at weekly program sessions. Previous Moms2B participants were contacted through mailings using addresses provided upon initial enrollment to the Moms2B program. Research participation was voluntary and in no way jeopardized participant involvement in the Moms2B program. Once consent was obtained, participants completed three self-administered questionnaires highlighting their perceptions of the Moms2B program’s impact on their diet, lifestyle, and behaviors, specifically addressing their perceptions of behavior and lifestyle change and knowledge of basic concepts of nutrition and maternal health. Each participant completed the questionnaires once. Researchers determined the number of Moms2B sessions attended at the time of data collection by accessing Moms2B attendance records.

Participants

At the time of initial data collection 92 Weinland Park women were currently participating or had participated in the Moms2B program, many of whom returned weekly to continue social interaction and nutrition, health, and lifestyle education. Researchers anticipated the recruitment of many of these participants, as they continuously choose to involve themselves with the program. Out of the 92 participants,
63 participants had provided contact information upon initial enrollment and thus, were contacted for the purpose of the research study. A total of 26 Moms2B participants agreed to participate.

Both current and previous Moms2B participants were eligible to participate in the research. Eligibility was restricted to women who have been or currently were participating in the Moms2B program. While some fathers and support persons have attended sessions, research participation excluded males, persons under the age of 18, and non-English speaking persons, as the Moms2B program, to date, has not included any individuals requiring language translation.

**Methods of Measurement**

Perception of program impact was obtained through three participant questionnaires perceptions of impact and self efficacy related to behavior and lifestyle change (See Appendices O-Q). The Behavior Change Questionnaire assessed perceived behavior changed due to the influence of the Moms2B program. The Support System Questionnaire explored perceived lifestyle adjustments due to the social support provided by the Moms2B program. Nutritional Knowledge Questionnaire evaluated participants’ response to basic concepts of nutrition and maternal health presented weekly throughout Moms2B program sessions.

The Behavior Change Questionnaire and Support System Questionnaire used a five-point likert scale, asking participants to rank each question based on their agreement/disagreement with each statement. The Behavior Change Questionnaire was shaped around outcome measures of perceived change as reported by the University of
Wisconsin Program Development and Evaluation department. The University of Wisconsin defined appropriate collection of evaluation data following program completion.\(^{32}\) The Support System Questionnaire was developed using recommendations and key findings from the Medical Outcomes Study (MOS): Social Support Survey. The MOS Social Support Survey was a tool created to evaluate patient perceived social support within a health-centered environment.\(^{33}\) The Nutritional Knowledge Questionnaire was designed in a multiple choice format and formed around nutrition education lessons and maternal health topics discussed weekly at Moms2B sessions. Finally, all questionnaires were reviewed and revised by experts in the program and the healthcare professional community prior to participant use. All questionnaires included the option to not provide an answer.

The Gunning Fog Index was used to measure the readability of the questionnaires. This index estimated that an average of approximately six (6.25) years of formal education were required to easily understand the text. Additionally, the Flesch Reading Ease Index scored the questionnaires with a mean score of 80 (79.75), indicating the material is easy to read.\(^{34}\) Descriptive data collected upon initial enrollment to the Moms2B program suggested that all program participants have some level of high school education. The Ohio State University’s Behavioral and Social Science Institutional Review Board (IRB) granted approval for this research study, including all study related materials, on November 15, 2012 for a period of one calendar year.
Procedures

A designated researcher was responsible to contact participants and collect and administer all consent forms and participant questionnaires. An informal recruitment script was used to recruit and screen participants (see Appendix R). After participants agreed to contribute, consent forms were completed (see Appendix S). Each participant was provided with a copy of the consent form. To maintain confidentiality, a subject identification number was assigned to each participant.

Consenting participates were instructed to complete the questionnaires based on their perceptions of the program as well as their personal experiences as a part of the Moms2B program. The investigator provided an initial introduction to the questionnaires; however, participants completed the self-administered questionnaires on their own. Researchers anticipated the completion of the consent form and questionnaires to take approximately thirty minutes, although most participants completed all within fifteen minutes.

For those previous participants who no longer attended Moms2B, research packets were mailed out. Using the address provided upon initial enrollment in to the Moms2B program, research packets complete with a recruitment flyer (see Appendix T), consent form, and a stamped, self-addressed return envelope were provided. Upon return of the consent form, a second research packet was mailed out. This second packet provided participants with the three questionnaires and a stamped, self-addressed return envelope. A subject identification number was assigned to these participants following return of the signed consent form.
As no long term follow up was anticipated, Moms2B participants were contacted only once to participate. If they declined to participate, they were not contacted again. If they agreed to participate, questionnaires were completed once and participants were not penalized if they did not complete all three questionnaires.

Analysis of Data

Following completion of questionnaires, responses were entered into an excel database developed by researchers. A spreadsheet was developed for each questionnaire, as well as each question within the questionnaire, so that a numerical value could signify answers. Means and standard deviations were calculated for each question within each questionnaire. Investigators noted themes present within the Behavior Change and Support System Questionnaires. To categorize responses, researchers separated questions into these themes and calculated means and standard deviations among each theme category. Additionally, the percentage of participant response – “agree-somewhat agree”, “disagree-somewhat disagree”, “neutral”, and “prefer not to answer” where also evaluated in the Behavior Change and Support System Questionnaires.
Chapter 4: Results, Discussion, and Conclusion

The specific aim of the research endeavor was to evaluate participants’ perceptions of the Moms2B program, specifically identifying perceived program impact on diet, lifestyle, and behavior patterns. Additionally, investigators sought to evaluate the nutritional and maternal health knowledge gained while participating in the program, identifying differences between women currently participating in the program compared to those who no longer attend.

Descriptive Characteristics of Research Participants

To date, 92 participants have attended at least one session and were enrolled with the Moms2B location in Weinland Park. Of these 92 participants a total of 63 participants provided contact information upon initial program enrollment and were contacted for the purposes of this research. Of the 28 participants contacted in person, 26 consented to participate in the research. However, one of the participants only completed two of the three questionnaires. Although, investigators encouraged participants to complete all three questionnaires, participants were allowed to discontinue participation at any time without penalty. A total of 35 Moms2B participants were contacted through mailings using their last known address provided upon enrollment to the Moms2B program. Investigators did not obtain questionnaires from any of these previous participants. Investigators obtained consent from only one participant. A second research packet was mailed to the consenting participant, however questionnaires were never returned. Six research packets were returned as “undeliverable”. In total, researchers attempted to
contact 63 participants. Of those 63, 26 (41%) participants agreed to participate in the research study.

Program enrollment and demographic information for research participants who completed questionnaires was obtained from the standard program data collected upon initial enrollment to the Moms2B program. Research participant attendance was measured by accessing program attendance records (Figure 1). Mean and median program attendance of research participants was approximately 27 Moms2B sessions. The maximum number program sessions attended by any one of the research participants was 76 and the minimum program sessions attended was five. Approximately 38% of research participants had attended 5-10 Moms2B sessions and 62% had attended more than 10 Moms2B sessions. The Nutritional Knowledge Questionnaire asked research participants to self-report how many Moms2B sessions they have attended (Figure 2). These self-report results suggested that of all research participants, 7% had attended less than 5 Moms2B program sessions, 35% had attended 5-10 Moms2B program sessions, and 58% had attended more than 10 Moms2B program sessions. Participant’s self-reported attendance rates closely resembled the actual program attendance rates as collected and maintained by the Moms2B program.

The average age of research participants was 24 years old, approximately 80% had received their high school diploma or general equivalency degree (GED), and a little over 40% of respondents were currently pregnant when questionnaires were completed. A majority of research participants identified themselves as non-Hispanic/non-Latino and Black or African Americans, 93% and 86%, respectively
(Figures 3 and 4). Additionally, 86% of research participants reported an average monthly household income of $800 or less, which is far below the poverty threshold (Figure 5). To put this in perspective, the 2013 Poverty Guidelines for the 48 Contiguous States and District of Columbia suggests that the poverty threshold for a four-person household is $23,550 annually, approximately $2000/month. The Moms2B program also collected data on food assistance programs accessed by each participant. Upon Moms2B enrollment, approximately half of the research participants reported participating in the Supplemental Nutrition Assistance Program (SNAP) and one third reported participating in the WIC program (Figure 6).
Figure 1: Moms2B Program Attendance: percent of research participant attendance at weekly Moms2B program sessions in Weinland Park (Columbus, Ohio) from September 2010 to February 2013.
Figure 2: Self-reported Moms2B Program Attendance: percent of research participant attendance at weekly Moms2B program sessions in Weinland Park (Columbus, Ohio) from September 2010 to February 2013.
Figure 3: Research participants' self-identified ethnicity collected at initial enrollment into the Moms2B program in Weinland Park (Columbus, Ohio), September 2010 to February 2013.
Figure 4: Research participants' self-identified race collected at initial enrollment into the Moms2B program in Weinland Park (Columbus, Ohio), September 2010 to February 2013.
Figure 5: Research participants' self-reported Average Monthly Household Income collected at initial enrollment into the Moms2B program in Weinland Park (Columbus, Ohio), September 2010 to February 2013.
Figure 6: Percentage of Self-Reported Enrollment by Moms2B Research Participants' in Food Assistance Programs collected at initial enrollment into the Moms2B program in Weinland Park (Columbus, Ohio), September 2010 to February 2013.

Evaluating Questionnaires for Perceived Program Impact

Investigators developed themes to categorize each question in the Behavior Change Questionnaire and Support System Questionnaire. The Behavior Change Questionnaire assessed perceived behavior changed due to the influence of the Moms2B program. Investigators noted four groups of questionnaire themes for the Behavior Change Questionnaire (Figure 7). Each question was categorized into one of the four classifications including:
1. Nutrition Related Behaviors
2. Health Related Behaviors
3. Self Confidence/Self Love Behaviors
4. Resource Use Behaviors

**Nutrition Related Behaviors**
1. Plan more meals ahead of time.
2. Compare prices when shopping for food.
3. Read the “nutrition facts” panel on the food label when making food choices.
4. Think more about healthy food choices when preparing meals.
5. Choose “healthier” ways to prepare meals
6. Wash my fruits and vegetables before I eat them.

**Health Related Behaviors**
9. Have missed fewer doctor’s appointments
10. Have missed fewer doctor’s appointments for my child/children
15. Am more confident that I can achieve these goals
16. Am trying to make more time for myself each day

**Self Confidence/ Self Love Behaviors**
7. Know more about nutrition
8. Am more confident in my ability to get to my doctor’s appointments.
10. Am more confident in my ability to get my child/children to their doctor’s appointments.
14. Am now setting small and achievable goals

**More Comfortable using Resources Behaviors**
12. Am more comfortable using supportive resources.
13. Have learned better ways to help myself when I am feeling down

---

Figure 7: Behavior Change Questionnaire Classifications
The Behavior Change Questionnaire used a five-point likert scale, with the highest score—5 indicating agreement with the statement. Table 4 illustrates how investigators scored participants’ responses. Means and standard deviation were calculated for each question, ranging from 3.7 ±1.37 to 4.4 ±0.90 (see Appendix U). Means and standard deviations were also calculated within the sample size of 26 participants for each classification (Figure 8). The mean score of all responses was 4.1 ±1.13. The highest mean score was 4.4 ± 0.92 (resource use behaviors) and the lowest mean score was 4.0 ±1.10 (nutrition related behaviors). In situations where participants selected “prefer not to answer,” a score of “0” was awarded and was not included within the calculations of means and standard deviations.

As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses —“agree-somewhat agree,” “disagree-somewhat disagree” and “neutral” were also evaluated (Table 5). On average, 74% of participants agreed-somewhat agreed that their involvement in the Moms2B program has resulted in positive behavior changes. Approximately an average of 8% of participants disagreed-somewhat disagreed that the Moms2B program has positively influenced behavior change and 17% remained “neutral”.
<table>
<thead>
<tr>
<th>Participant Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer not to Answer</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td>4</td>
</tr>
<tr>
<td>Agree</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4: The Behavior Change Questionnaire Evaluation: Score of Participant Response
Figure 8: The Behavior Change Questionnaire Data Analysis

- **Nutrition Related Behaviors**
  - Mean: 4.0
  - SD: 1.10
  - n= 26

- **Health Related Behaviors**
  - Mean: 4.0
  - SD: 1.18
  - n= 26

- **Self Confidence/ Self Love Behaviors**
  - Mean: 4.1
  - SD: 1.06
  - n= 26

- **More Comfortable using Resources Behaviors**
  - Mean: 4.4
  - SD: 0.92
  - n= 26

*Because of Moms2B…. (possible highest score = 5)*
<table>
<thead>
<tr>
<th>“Because of Moms2B, I…”</th>
<th>Agree- Somewhat Agree (%)</th>
<th>Disagree- Somewhat Disagree (%)</th>
<th>Neutral (%)</th>
<th>Prefer not to Answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Plan more meals ahead of time</td>
<td>54</td>
<td>11</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>2. Compare prices when shopping for food</td>
<td>77</td>
<td>4</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>3. Read the “nutrition facts” panel on the food label when making food choices</td>
<td>58</td>
<td>11</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>4. Think more about healthy food choices when preparing meals</td>
<td>69</td>
<td>8</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>5. Choose “healthier” ways to prepare my meals</td>
<td>70</td>
<td>11</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>6. Wash my fruits and vegetables before I eat them</td>
<td>77</td>
<td>8</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>7. Know more about nutrition</td>
<td>77</td>
<td>4</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>8. Am more confident in my ability to get to my doctor’s appointments</td>
<td>73</td>
<td>12</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>9. Have missed fewer doctor’s appointments</td>
<td>70</td>
<td>15</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>10. Am more confident in my ability to get my child/children to their doctor’s appointments</td>
<td>73</td>
<td>8</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>11. Have missed fewer doctor’s appointments for my child/children</td>
<td>65</td>
<td>12</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>12. Am more comfortable using supportive resources</td>
<td>92</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>13. Have learned better ways to help myself when I am feeling down</td>
<td>88</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>14. Am now setting small and achievable goals</td>
<td>77</td>
<td>4</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>15. Am more confident that I can achieve these goals</td>
<td>81</td>
<td>4</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>16. Am trying to make more time for myself each day</td>
<td>84</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Support System Questionnaire explored perceived lifestyle adjustments due to the support provided by the Moms2B program. Similar to the Behavior Change Questionnaire, investigators noted six themes for the Support System Questionnaire (Figure 9). Each question was categorized into one of the six classifications, including:

1. Someone who accepts me
2. Someone who will provide me with advice
3. Someone to give love to
4. A group where I belong
5. Love myself more
6. Learned a lot.
The Social Support Questionnaire used a five-point Likert scale, with the highest score—5 indicating agreement with the statement. Table 6 illustrates how investigators scored participants’ responses. Mean and standard deviation were calculated for each question, ranging from 3.8 ±1.18 to 4.8 ±1.18 (see Appendix V). Means and standard deviations were also calculated within the sample size of 25 participants for each classification (Figure 10). The mean score of all responses was 4.4 ±0.89. The highest mean score was 4.8 ± 0.46 (“learned a lot”) and the lowest mean score was 4.4 ± 0.75 (“a group where I belong”). In situations where participants selected “prefer not to answer,” a
score of “0” was awarded and was not included within the calculations of means and standard deviations.

As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses — “agree-somewhat agree,” “disagree-somewhat disagree” and “neutral” were also evaluated (Table 7). On average, 84% of participants agreed-somewhat agreed that their involvement in the Moms2B program has resulted in positive lifestyle changes. Approximately an average of 3% of participants disagreed-somewhat disagreed that the Moms2B program has positively influenced lifestyle change and 13% remained “neutral”.

<table>
<thead>
<tr>
<th>Participant Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer not to Answer</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td>4</td>
</tr>
<tr>
<td>Agree</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 6: The Support System Questionnaire Evaluation: Score of Participant Response
Figure 10: The Support System Questionnaire Data Analysis
<table>
<thead>
<tr>
<th>“Because of Moms2B, I feel like I have…”</th>
<th>Agree-Somewhat Agree (%)</th>
<th>Disagree-Somewhat Disagree (%)</th>
<th>Neutral (%)</th>
<th>Prefer not to Answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Someone who listens to me when I need to talk</td>
<td>92</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2. Someone who gives me good advice when I have a problem</td>
<td>88</td>
<td>0</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>3. Someone in my life I can trust</td>
<td>84</td>
<td>0</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>4. Someone who understands me</td>
<td>84</td>
<td>4</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>5. Someone who makes me feel important</td>
<td>88</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>6. Someone who helps me when I am sick</td>
<td>68</td>
<td>4</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>7. Someone who can take me to the doctor</td>
<td>56</td>
<td>12</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>8. Someone who helps me take care of my children when I need help</td>
<td>76</td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>9. Someone who loves me</td>
<td>80</td>
<td>8</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>10. Someone that I love and makes me feel wanted</td>
<td>80</td>
<td>8</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>11. Someone I have fun with</td>
<td>84</td>
<td>0</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>12. A group that I belong to where I feel important</td>
<td>88</td>
<td>0</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>13. Friends</td>
<td>80</td>
<td>0</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>14. A place I can go to where I feel welcome and safe</td>
<td>88</td>
<td>0</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>15. Found a place (Moms2B) that was good for me</td>
<td>92</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>16. Moms2B would be good for any pregnant woman</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17. Built friendships with others</td>
<td>84</td>
<td>4</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>18. Learned about resources available to me</td>
<td>96</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 7: Support System Questionnaire: Percentage of participant responses, January 2013-February 2013; n=25.
The Nutritional Knowledge Questionnaire assessed nutritional and maternal health knowledge. Researchers assigned point values to each answer, awarding a score of “1” for each correct answer and a score of “0” for each incorrect answer, including “I prefer not to answer”. The highest possible score was a fourteen. Two questions (questions 2 and 5) provided participants with three possible answers, all of which were correct. To receive the highest score possible for these questions, participants needed to select all three answers. However, participants were awarded a score of “1” if they selected one correct answer and a score of “2” if they selected two correct answers. Questions 11 and 12 were not included in the data analysis of evaluating knowledge as they pertained to self-identified characteristics of each participant.

The Nutritional Knowledge Questionnaire assessed the nutritional knowledge attained by Moms2B program participants. Mean and standard deviation were calculated for each question (see Appendix W). The highest possible score for the entire questionnaire was 14; only one participant received this score. The mean score was 10.5±1.69 (75%), with seven as the lowest score. Investigators compared participants’ mean score of each question to the highest possible score of each question (Figure 11). Both questions exploring protein sources (question 2) and breastfeeding benefits (question 5) experienced the greatest disparity, with mean scores 2.1 ±0.74 and 2.0 ±0.96, respectively.

Percentage of correct responses of the Nutritional Knowledge Questionnaire of Moms2B research participants were also evaluated (Figure 12). All participants (100%) correctly identified the importance of daily prenatal vitamins for pregnant women.
Additionally, approximately 70% of all participants responded correctly to the following maternal health topics: weight loss, dairy servings, infant feeding practices, preferred cooking methods, weight gain, and safe spacing. Less than half (46%) of all participants responded correctly to questions related to fruit and vegetable servings (question 3) and breastfeeding (question 5). In addition, only 31% of participants responded correctly to the question addressing dietary protein sources. However, it is important to note that questions exploring protein sources (question 2) and breastfeeding benefits (question 5) had three correct answers. To receive the highest possible points, participants had to select all three answers. In situations where participants preferred not to answer the question, the top two reasons indicated were “I learned that, but cannot remember” and “I do not know”.
Figure 11: Nutritional Knowledge Questionnaire: Moms2B Research Participant Mean Score compared to the Highest Possible Score for each Question, January 2013-February 2013.
Figure 12: Percentage Correct by Moms2B Research Participants responding to the Nutritional Knowledge Questionnaire, January 2013-February 2013.

Discussion & Conclusions:

The aim of the research study was to explore participants’ perceptions of the Moms2B program, specifically evaluating if the program impacted their diet, behaviors, or lifestyle. The analysis of all three questionnaires suggested that, on average, participants agreed that the program has positively influenced decisions and personal
perceptions regarding their lifestyle and behaviors. Furthermore, the results indicated that participants have become more knowledgeable with regards to nutrition and maternal health.

The Behavior Change Questionnaire evaluated perceived behavior change as a result of the impact and influence of the Moms2B program. Means and standard deviation were calculated for each question and ranged from 3.7 ±1.37 to 4.4 ±0.90, indicating that participants, on average, somewhat agreed to agreed that the Moms2B program positively influenced personal behavior change. The behaviors that were positively reflective, a mean score equal to or greater than 4.0 were:

“Since attending Moms2B, I….”

1. Now compare more prices when shopping for food.
2. Think more about healthy food choices when preparing foods.
3. Choose “healthier” ways to prepare my meals.
4. Wash my fruits and vegetables before I eat them.
5. Know more about nutrition.
6. Am more confident in my ability to get to my doctor’s appointments.
7. Am more comfortable using supportive resources.
8. Have learned better ways to help myself when I am feeling down.
9. Am now setting small and achievable goals.
10. Am more confident that I can achieve these goals.
11. Am trying to make more time for myself each day.
The overall mean score of the Behavior Change Questionnaire was 4.1 ±1.13, suggesting that on average, participants at least somewhat agreed that positive behavior changes have resulted from Moms2B program enrollment. As the mean score of all responses indicated at least some agreement to the provided statement, percentage of participants’ responses —“agree-somewhat agree,” “disagree-somewhat disagree,” and “neutral” were also evaluated. On average, 74% of participants agreed-somewhat agreed that their involvement in the Moms2B program has resulted in positive behavior changes. Researchers established classifications to categorize questions. Mean scores of each classification ranged from 4.0 ±1.10 to 4.4 ±0.92, indicating a high level of participant agreement with stated questions. The highest scoring classification was the “Resource Use Behaviors” category with a mean score of 4.4 ±0.92. The lowest scoring classification was the “Nutrition Related Behaviors” category with a mean score of 4.0 ±1.10. These results suggest that participant’s perceived positive behavior changed in all classification areas due to the influence of the Moms2B program.

The Support System Questionnaire explored perceived lifestyle adjustments due to the support provided by the Moms2B program. Means and standard deviation were calculated for each question and ranged from 3.8 ±1.18 to 4.8 ±0.52. All Support System Questionnaire questions received mean scores of at least 4.0 or greater, except for question 7 (“I have someone who can (or does) take me to the doctor), with a mean score of 3.8 ±1.18. These results suggested that most participants, on average, somewhat agreed to agreed that the support provided by the Moms2B program had resulted in positive lifestyle changes.
The overall mean score of the Support System Questionnaire, $4.4 \pm 0.89$, indicated that on average, participants somewhat agreed to agreed that their enrollment and involvement in the Moms2B program has resulted in positive sentiments and attitudes towards their current state of being. As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses — “agree-somewhat agree,” “disagree-somewhat disagree,” and “neutral” were also evaluated. On average, 84% of participants agreed-somewhat agreed that their involvement in the Moms2B program has resulted in positive behavior changes. Mean scores within the established classifications ranged from $4.4 \pm 0.75$ to $4.8 \pm 0.46$, indicating a high level of participant agreement within all four established classifications.

The Behavior Change Questionnaire and The Support System Questionnaire focused on perceived behavior and lifestyle changes as a result of the influence of the Moms2B program. Previous research has suggested that social relationships have a positive impact on both the physical and mental health of all parties involved. Results of both questionnaires implied a positive association between participation in the Moms2B program and social support and maternal health behaviors, which is consistent with published research.

The Nutritional Knowledge Questionnaire explored research participant knowledge of nutrition and maternal health. The overall mean score of the Nutritional Knowledge Questionnaire was $10.5 \pm 1.69$ (75%). As the highest possible score was a 14, there is room for additional improvement and education on topics related to nutrition and
maternal health. Approximately 70% of all participants answered correctly to seven out of ten questions, including:

1. How often should pregnant moms take a prenatal vitamin?
2. Jane is pregnant and overweight; should she try to lose weight throughout her pregnancy?
3. How many servings of dairy should a pregnant mom have each day?
4. Is it okay to prop a baby’s bottle during feedings?
5. What cooking method is most preferred for chicken?
6. Does a healthy pregnancy require gaining enough weight?
7. Ideally, how long should a woman wait between pregnancies?

Less than half of all participants responded correctly to questions related to fruit and vegetable servings, breastfeeding benefits, and dietary protein sources. To enhance current nutritional knowledge within the Moms2B program, nutrition education and maternal health professionals may consider providing additional instruction on these topics. Additionally, future questionnaires should be sensitive to differentiate knowledge of adequate fruit/vegetable intake and/or protein intake versus ability to access these foods since a large portion of women in this program are food insecure and might have misunderstood or viewed the question with bias due to their food insecurity.

Understanding the relationship between maternal nutritional intake and pregnancy and birth outcomes provides a framework for developing successful interventions to improve such outcomes, which Moms2B strives to do. Malnourished and/or
undernourished pregnant women are at an increased risk for pregnancy complications. Previous studies suggest that under-nutrition is most likely to present itself in low socioeconomic status environments, in which there are high rates of food insecurity and access to high-quality, nutrient dense foods are poor. The Nutritional Knowledge Questionnaire assessed nutritional and maternal health knowledge resulting from participation in the Moms2B program. The results suggested that participants are learning and retaining maternal nutritional and maternal health knowledge presented during weekly Moms2B program sessions. Nutritional and maternal knowledge attained during Moms2B program sessions may promote healthy pregnancy and birth outcomes by providing participants with the tools and resources to consume balanced diets and adopt healthier behaviors.

Results from the Nutritional Knowledge Questionnaire also implied that frequent exposure to components of the Moms2B program, specifically nutrition education, would enhance participants’ knowledge of maternal health, thereby improving pregnancy and birth outcomes. Studies have shown that maternal nutrition status is achieved best through multiple interventions. Additionally, programs integrating resources to assist pregnant women in improving their current environment, including social support, maternal health and nutrition education and prenatal care, have shown improvements in pregnancy and birth outcomes. The analysis of these participant questionnaires highlights the value of community level involvement to improve maternal health and birth outcomes, especially in areas of social and economic disadvantage. Successful interventions, like Moms2B, ought to
combine clinical care, nutrition education, and social support to improve participants’ current environments.\textsuperscript{8,17,25} While evaluating participant satisfaction, researchers were able to assess beneficial components of the Moms2B program. The majority of participants’ questionnaires revealed enhanced nutritional knowledge and self efficacy disclosed by participant reports of positive behavior change and improved lifestyle adjustment. Additionally, the results suggested an accomplishment of the Moms2B program’s short term goals: increasing knowledge about maternal/infant health and knowledge about nutrition

There are limitations that impact the information obtained from this study. As with all research there exists the potential for bias. The questions and provided answers lend themselves to bias, as investigators developed questionnaires around key concepts established at the Moms2B program. While questionnaires were drafted off similar survey tools and revised by experts in the program and healthcare professional community, they were not tested for validity or reliability. However, the Gunning Fox Index and the Flesch Reading Ease Index were used to test the readability of all questionnaires and research materials. Additionally, potential bias exists within the wording of each question, as evaluating participants’ perceptions are completely dependent on that. Response bias is also probable as participants might have shaped their responses around what they believed researchers wanted to see from responses.

Investigators initially sought to compare the responses of current Moms2B participants to those of previous participants who no longer attend weekly sessions. However, the final sample did not include any previous participants, as investigators were
not able to gain feedback from previous Moms2B participants. The sample only included responses from current Moms2B participants, who likely already acknowledge the benefits and rewards of Moms2B participation.

Moms2B combines several aspects of clinical, prenatal and postpartum care, nutrition education, and support services within a community setting. Evaluation of program quality is useful to assess impact of the goals, outputs, and outcomes of the Moms2B program. Few fully comprehensive comparison programs exist and an evaluation instrument to measure participants’ perceptions has not yet been developed.\textsuperscript{17,18} A main reason to assess the program’s quality is to identify and evaluate participant satisfaction, which can be useful for future funding. Results of this research and program evaluations suggests that participants’ perceived benefits from their involvement in the Moms2B program. All three questionnaires implied that participants, who frequently attended weekly sessions, experienced more positive behavior and lifestyle changes as well as expanded their nutritional knowledge and self efficacy as it pertains to their health.

To completely understand the perceptions of all program participants and the knowledge gained, additional research is recommended, specifically continued recruitment efforts of previous participants who no longer attend weekly program sessions and use of questionnaires during the early entry into the program. This would provide a pre-entry versus post-program comparison. As the Moms2B program continues to collect data pertaining to maternal health and pregnancy outcome it would be worthwhile to correlate the impact of the program to the physical health outcomes of both
mother and infant. Further research to evaluate the long term goals of the Moms2B program would be essential to demonstrate the concrete benefits a community prenatal program can provide.

In conclusion, while further testing is required to confirm these results, on average the participants agreed or somewhat agreed that their positive behavior and lifestyle changes have resulted from their Moms2B program involvement. Additionally, the results indicated that participants are learning, and possibly retaining, nutritional and maternal health knowledge.
Chapter 5: The Moms2B Program: a Qualitative Evaluation of the Participant Perception of the Program and its Impact on Diet, Lifestyle and Behavior

Abstract

Objective: Through questionnaires, investigators assessed participant perceptions, surveying nutrition knowledge gained and the impact of the program on diet, lifestyle, and other health behaviors.

Methods: Researchers recruited current and previous Moms2B participants. Consenting participants were asked to complete a series of three self-administered questionnaires about their perception of program impact and the nutrition knowledge specific to pregnancy that they gained.

Results: A total of 26 participants responded to the questionnaires. The Behavior Change Questionnaire assessed health and nutrition behaviors that changed as a result of Moms2B. The highest possible score was a five and the mean score (± standard deviation) was 4.1 ±1.13. Additionally, 74% of participants agreed or somewhat agreed that the Moms2B program has positively influenced behavior changes. The Support System Questionnaire explored lifestyle adjustments due to the impact of the Moms2B program. The highest possible score was a five and the group mean score was 4.4 ±0.89. Additionally, 84% of participants agreed or somewhat agreed that the Moms2B program has resulted in positive lifestyle change. The Nutritional Knowledge Questionnaire assessed participant knowledge in the context of nutrition and maternal health as they related to successful pregnancy outcomes. The highest possible score
was a fourteen with the group mean score of 10.5 ±1.69. Overall, the group had an average score of 75%.

Conclusions: While further testing is required to confirm these results, on average the participants agreed or somewhat agreed that their positive behavior and lifestyle changes have resulted from their Moms2B program involvement. Additionally, the results indicated that participants are learning, and possibly retaining, nutritional and maternal health knowledge.
Introduction

Background

The chosen area for this study, Weinland Park, is a compact urban neighborhood of less than 5,000 residents, largely African American (50%) and non Hispanic, Caucasian (41%), living in low-income, public housing. Weinland Park is the largest Section 8 Housing area within Franklin County, Ohio. In 2004, median household income in Weinland Park was approximately $15,000; approximately half of this area’s population lived below the federal poverty level. In addition, in 2004 only a third of the adult population was high school graduates. ¹ ²

Birth outcomes in the Weinland Park area mirror statistics found within high risk, socially inequitable environments. In 2007 there were 122 infants born. Of those births, Medicaid covered the cost of 88%, indicating a high level of poverty. Over 10% of the pregnancies were further complicated by gestational diabetes and hypertension and 19% were born preterm and two infant deaths occurred. ³

Ideally, every pregnancy ends in a full term, healthy infant and healthy mother. However, the disadvantages of poverty and lower socioeconomic status have long been associated with increased risk for poorer health and pregnancy outcomes. ⁴ In addition, social support has a mediating influence on the relationship between life stress and the development of pregnancy complications. The physiological and psychological stress associated with social disadvantages has directly correlated to an increase in the
likelihood of pregnancy complications, fetal growth restriction, preterm birth, and poor maternal and neonatal health.\textsuperscript{7}

Addressing demographic, social, and environmental risk factors, as well as ensuring pregnant women receive adequate nutrition are essential for reducing the rate of low birth weight (LBW) births. Incorporating nutrition counseling into preconception and prenatal care would greatly reduce the risk of LBW and premature births. In addition, programs offering nutritional support to low-income, expectant mothers and infants may increase the incidences of healthy birth outcomes and pregnancies.\textsuperscript{8}

Nutritional insufficiency directly correlates to food insecurity. Nutritional health is one primary factor affecting preterm birth in both underweight and overweight women alike. Low-income, pregnant women are at an increased risk for inadequate nutritional intake as well as deficiencies of essential nutrients. It is important that women are educated about healthy food choices and appropriate weight gain throughout pregnancy.\textsuperscript{3, 9}

**Purpose and Objectives**

The Moms2B program addresses multiple determinants of maternal and infant health through weekly program sessions that include community meals, nutrition education, clinical assessments, prenatal and post partum healthcare education, and enhanced social support. The nature of this research required the inclusion of Moms2B participants to evaluate their perceptions of the program. Specifically, aiming to answer the research question: what do Moms2B participants think about the program and its impact on their diet, lifestyle, and behaviors?
The research involved three questionnaires surveying participants’ opinions of the Moms2B program, as well as the program’s influence on their diet, lifestyle, and behaviors patterns. Investigators sought to evaluate knowledge gained while participating in the program, specifically identifying if there was a difference between the women who are currently participating in the program compared to those who no longer attend. Perceptions of program success were measured through subject questionnaires.

Researchers anticipated lower than minimal risks to the participants. In addition, while investigators expected no direct benefit to participants, creation of an even more successful program model was probable through the exploration of participants’ perceptions. Through this work, investigators wanted to clearly define perceived beneficial components of the Moms2B program as well as to identify areas needing improvement. Exploring participants’ perceptions can help create an even more successful program than the current model and thus continue to maximally empower and educate the women in this community in areas of health for themselves and their families.

**Methods**

**Participants**

At the time of initial data collection 92 Weinland Park women were currently participating or had previously participated in the Moms2B program, many of whom returned to continue social interaction and nutrition, health, and lifestyle education. Researchers anticipated the recruitment of many of these participants, as they continuously choose to involve themselves with the program.
Both current and past program participants at the Weinland Park Moms2B site location were eligible to partake in the research. Eligibility was restricted to women who were current or previous Moms2B participants. While some support persons attended weekly sessions, research participation excluded males, persons under the age of 18, and non-English speaking persons, as the Moms2B program, to date, has not included any individuals requiring translation.

Procedure

Through a cross-sectional design, qualitative questionnaires were collected from Weinland Park Moms2B participants for a period of two months from January 2, 2013 through February 27, 2013. Research participation was voluntary and in no way jeopardized participant involvement in the Moms2B program. As researchers anticipated no long term follow up, participants were contacted only once to complete questionnaires.

An investigator met with Moms2B participants who currently attended weekly sessions and was responsible to collect and administer all consent forms and participant questionnaires. An informal recruitment script was used to recruit and screen participants. Following written consent, a subject identification number was assigned to each participant to ensure confidentiality. The investigator provided an initial introduction to the questionnaires; however, participants completed the self administered questionnaires on their own.

For participants who no longer attended weekly sessions, research packets were mailed out using the contact information provided during enrollment into Moms2B.
program. Research packet included a recruitment flyer, consent form, and a stamped, self-addressed return envelope. Upon return of the consent form, a subject identification number was assigned. A second research packet was mailed out, including three subject questionnaires and a stamped, self-addressed return envelope.

As no long term follow up was expected, Moms2B participants were contacted only once to participate. If they declined participation, they were not contacted again. If they agreed to participate, questionnaires were completed once and were not penalized if they did not complete all three questionnaires.

Methods of Measurement:

Perception of program impact was obtained through three participant questionnaires exploring basic knowledge and perceptions of program impact related to behavior and lifestyle change. The Behavior Change Questionnaire assessed perceived behavior changed due to the influence of the Moms2B program. The Support System Questionnaire explored perceived lifestyle adjustments due to the support provided by the Moms2B program. The Nutritional Knowledge Questionnaire addressed knowledge of basic nutrition and maternal health topics.

The Behavior Change Questionnaire and Support System Questionnaire used a five-point likert scale, asking participants to rank each question based on their agreement/disagreement with each statement. The Behavior Change Questionnaire was shaped around outcome measures of perceived change as reported by the University of Wisconsin Program Development and Evaluation Department. The University of Wisconsin defined appropriate collection of evaluation data following program
The Support System Questionnaire was developed using recommendations and key findings from the Medical Outcomes Study (MOS): Social Support Survey. The MOS Social Support Survey was a tool created to evaluate patient perceived social support within a health-centered environment.

The Nutritional Knowledge Questionnaire was designed in a multiple choice format and formed around nutrition education lessons and maternal health topics discussed weekly at Moms2B sessions. Finally, all questionnaires were reviewed and revised by research investigators prior to participant use. Investigators assessed questionnaires ensuring study objectives were met. All questionnaires included the option to not provide an answer.

The Gunning Fog Index was used to measure the readability of the questionnaires. This index estimated that an average of approximately six (6.25) years of formal education were required to easily understand the text. Additionally, the Flesch Reading Ease Index scored the questionnaires with a mean score of 80 (79.75), indicating the material was easy to read. Descriptive data collected upon initial enrollment to the Moms2B program suggested that all program participants had some level of high school education.

The Ohio State University’s Behavioral and Social Science Institutional Review Board (IRB) granted approval for this research study, including all study related materials, on November 15, 2012 for a period of one calendar year.

Following completion of questionnaires, responses were entered into an excel database developed by researchers. A spreadsheet was developed for each
questionnaire, as well as each question within the questionnaire, so that a numerical value could signify answers. Means and standard deviations were calculated for each question within each questionnaire. Investigators noted themes present with the Behavior Change and Support System Questionnaires. To categorize responses, researchers separated questions into these themes and calculated means and standard deviations among each category. Additionally, the percentage of participant response – “agree-somewhat agree”, “disagree-somewhat disagree”, “neutral”, and “prefer not to answer” where also evaluated in the Behavior Change and Support System Questionnaires.

Results

Sample

To date, 92 participants have attended at least one session and were enrolled with the Moms2B location within Weinland Park. Of these 92 participants a total of 63 participants provided contact information upon initial program enrollment and were contacted for the purposes of this research. Of the 28 participants contacted in person, 26 consented to participate in the research. However, one of the participants completed only two of the three questionnaires. Although researchers encouraged participants to complete all three questionnaires, participants were allowed to discontinue participation at any time without penalty. A total of 35 Moms2B participants were contacted through mailings. While consent was obtained from one participant, investigators did not obtain questionnaires from any previous participants. The consenting participant failed to return any questionnaires. Six research packets were returned as “undeliverable”. In total,
researchers attempted to contact 63 participants. Of those 63, 26 (41%) participants agreed to participate in the research study.

Program enrollment and demographic information for research participants who completed questionnaires was obtained from the standard program data collected upon initial enrollment to the Moms2B program. Research participant attendance was measured by accessing program attendance records. Mean and median program attendance was approximately 27 Moms2B sessions. The maximum program sessions attended was by any one participant was 76 and the minimum program sessions attended was five.

The average age of research participants was 24 years old, approximately 80% had received their high school diploma or general equivalency degree (GED), and a little over 40% of respondents were currently pregnant. A majority of research participants identified themselves as non-Hispanic/non-Latino and Black or African Americans, 93% and 86%, respectively. Additionally, 86% of research participants reported an average monthly household income of $800 or less.

**Questionnaires: Evaluation and Results:**

Investigators noted themes within both the Behavior Change Questionnaire and Support System Questionnaire to categorize questions. The Behavior Change Questionnaire assessed perceived behavior changed due to the influence of the Moms2B program. Investigators developed four themes for the Behavior Change Questionnaire. Each question was categorized into one of the four themes including:

1. Nutrition Related Behaviors
2. Health Related Behaviors

3. Self Confidence/Self Love Behaviors

4. Resource Use Behaviors

The Behavior Change Questionnaire used a five-point likert scale, with the highest score—5 indicating agreement with the statement. Means and standard deviation were calculated for each question, ranging from 3.7 ±1.37 to 4.4 ±0.90 (see Appendix U). Means and standard deviations were also calculated within the sample size of 26 participants for each theme (Table 8). The mean score of all responses was 4.1 ±1.13. The highest mean score was 4.4 ± 0.92 (resource use behaviors) and the lowest mean score was 4.0 ±1.10 (nutrition related behaviors). In situations where participants selected “prefer not to answer,” a score of “0” was awarded and was not included within the calculations of means and standard deviations.

As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses —“agree-somewhat agree,” “disagree-somewhat disagree” and “neutral” were also evaluated. On average, 74% of participants “agreed-somewhat agreed” that their involvement in the Moms2B program had resulted in positive behavior changes. Approximately an average of 8% of participants “disagreed-somewhat disagreed” that the Moms2B program had positively influenced behavior change and 17% remained “neutral”.
“Because of Moms2B, I…”

| Nutrition Related Behaviors | 1. Plan more meals ahead of time  
2. Compare prices when shopping for food  
3. Read the “nutrition facts” panel on the food label when making food choices  
4. Think more about healthy food choices when preparing meals  
5. Wash my fruits and vegetables before I eat them | M  
SD | 4.0  
1.10 |
| Health Related Behaviors | 9. Have missed fewer doctor’s appointments  
11. Have missed fewer doctor’s appointments for my child/children  
15. Am more confident that I can achieve these goals  
16. Am trying to make more time for myself each day | M  
SD | 4.0  
1.18 |
| Self Confidence/Self Love | 7. Know more about nutrition  
8. Am more confident in my ability to get to my doctor’s appointment  
10. Am more confident in my ability to get my child/children to their doctor’s appointment  
14. Am now setting small and achievable goals | M  
SD | 4.1  
1.06 |
| More Comfortable using Resources Behaviors | 12. Am more comfortable using supportive resources  
13. Have learned better ways to help myself when I am feeling down | M  
SD | 4.4  
0.92 |
| **Total** | **M** | **SD** | **4.1** | **1.13** |

Table 8: Data Analysis: The Behavior Change Questionnaire
The Support System Questionnaire explored perceived lifestyle adjustments due to the support provided by the Moms2B program. Similar to the Behavior Change Questionnaire, investigators developed six themes for the Support System Questionnaire, including:

1. Someone who accepts me
2. Someone who will provide me with advice
3. Someone to give love to
4. A group where I belong
5. Love myself more
6. Learned a lot

The Social Support Questionnaire used a five-point likert scale, with the highest score—5 indicating agreement with the statement. Mean and standard deviation were calculated for each question, ranging from 3.8 ±1.18 to 4.8 ±1.18 (see Appendix V). Means and standard deviations were also calculated within the sample size of 25 participants for each classification (Table 9). The mean score of all responses was 4.4 ±0.89. The highest mean score was 4.8 ± 0.46 (“learned a lot”) and the lowest mean score was 4.4 ±0.75 (“a group where I belong”). In situations where participants selected “prefer not to answer,” a score of “0” was awarded and was not included within the calculations of means and standard deviations.

As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses —“agree-somewhat agree,” “disagree-somewhat disagree” and “neutral” were also evaluated. On average, 84% of
participants “agreed-somewhat agreed” that their involvement in the Moms2B program had resulted in positive lifestyle changes. Approximately an average of 3% of participants “disagreed-somewhat disagreed” that the Moms2B program had positively influenced lifestyle change and 13% remained “neutral”.

<table>
<thead>
<tr>
<th>“Because of Moms2B, I feel like I have…”</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Someone who accepts me</td>
<td>4.5</td>
<td>0.88</td>
</tr>
<tr>
<td>1. Someone who listens to me when I need to talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Someone in my life I can trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Someone who understands me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Someone who makes me feel important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Someone who loves me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Someone who will provide me with advice</td>
<td>4.5</td>
<td>0.88</td>
</tr>
<tr>
<td>2. Someone who gives me good advice when I have a problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Someone who helps me when I am sick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Someone who can take me to the doctor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Someone who helps me take care of my children when I need help</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Someone to give love to</td>
<td>4.4</td>
<td>0.96</td>
</tr>
<tr>
<td>10. Someone that I love and makes me feel wanted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Someone I have fun with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Built relationships with others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A group where I belong</td>
<td>4.4</td>
<td>0.75</td>
</tr>
<tr>
<td>12. A group that I belong to where I feel important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. A place I can go to where I feel welcome and safe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Love myself more</td>
<td>4.7</td>
<td>0.61</td>
</tr>
<tr>
<td>15. Found a place (Moms2B) that was good for me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned a lot</td>
<td>4.8</td>
<td>0.46</td>
</tr>
<tr>
<td>16. Moms2B would be good for any pregnant woman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Learned about resources available to me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.4</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Table 6: Data Analysis: The Support System Questionnaire
The Nutritional Knowledge Questionnaire assessed nutritional and maternal health knowledge. Investigators assigned point values to each answer, awarding a score of “1” for each correct answer and a score of “0” for each incorrect answer, including “I prefer not to answer”. The highest possible score was a fourteen. Two questions (questions 2 and 5) provided participants with three possible answers, all of which were correct. To receive the highest score possible for these questions, participants needed to select all three answers. However, participants were awarded a score of “1” if they selected one correct answer and a score of “2” if they selected two correct answers.

The Nutritional Knowledge Questionnaire assessed the nutritional and maternal health knowledge attained by Moms2B program participants. Mean and standard deviation were calculated for each question. The highest possible score for the entire questionnaire was 14; only one participant received this score. The mean score was 10.5±1.69 (75%), with seven as the lowest score. Investigators compared participants’ mean score of each question to the highest possible score of each question (figure 13).
Percentages of correct responses of the Nutritional Knowledge Questionnaire of Moms2B research participants were also evaluated. All participants (100%) correctly identified the importance of daily prenatal vitamins for pregnant women. Additionally, approximately 70% of all participants responded correctly to the following maternal health topics: weight loss, dairy servings, infant feeding practices, preferred cooking methods, weight gain, and safe spacing. Less than half (46%) of all participants responded correctly to questions related to fruit and vegetable servings and breastfeeding.
In addition, only 31% of participants responded correctly to the question addressing dietary protein sources. In situations where participants preferred not to answer the question, the top two reasons indicated were “I learned that, but cannot remember” and “I do not know”.

Discussion

The aim of the research study was to explore participants’ perceptions of the Moms2B program, specifically evaluating if the program impacted their diet, behaviors, and/or lifestyle. The analysis of all three questionnaires suggested that, on average, participants agreed that the program had positively influenced decisions and personal perceptions regarding their lifestyle and behaviors. Furthermore, the results indicated that participants have become more knowledgeable with regards to nutrition and maternal health.

The Behavior Change Questionnaire evaluated perceived behavior change as a result of the impact and influence of the Moms2B program. Means and standard deviation were calculated for each question and ranged from 3.7 ±1.37 to 4.4 ±0.90, indicating that participants, on average, somewhat agreed to agreed that the Moms2B program positively influenced personal behavior change.

The overall mean score of the Behavior Change Questionnaire was 4.1 ±1.13, suggesting that on average, participants at least somewhat agreed that positive behavior changes have resulted from Moms2B program enrollment. As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses were also evaluated. On average, 74% of participants “agreed-
somewhat agreed” that their involvement in the Moms2B program had resulted in positive behavior changes. Researchers established themes to categorize questions. Mean scores of each classification ranged from $4.0 \pm 1.10$ to $4.4 \pm 0.92$, indicating a high level of participant agreement with stated questions. The highest scoring classification was the “Resource Use Behaviors” category with a mean score of $4.4 \pm 0.92$. The lowest scoring theme was the “Nutrition Related Behaviors” category with a mean score of $4.0 \pm 1.10$. These results suggested that participants perceived positive behavior changed in all classification areas due to the influence of the Moms2B program.

The Support System Questionnaire explored perceived lifestyle adjustments due to the support provided by the Moms2B program. Means and standard deviation were calculated for each question and ranged from $3.8 \pm 1.18$ to $4.8 \pm 0.52$. These results suggested that most participants, on average, “somewhat agreed to agreed” that the support provided by the Moms2B program had resulted in positive lifestyle changes.

The overall mean score of the Support System Questionnaire, $4.4 \pm 0.89$, indicated that on average, participants “somewhat agreed to agreed” that their involvement in the Moms2B program had resulted in positive sentiments and attitudes towards their current state of being. As the means score of all responses indicated at least somewhat agreement to the provided statement, percentage of participants’ responses were also evaluated. On average, $84\%$ of participants “agreed-somewhat agreed” that their involvement in the Moms2B program has resulted in positive behavior changes. Mean scores within the established classifications ranged from $4.4 \pm 0.75$ to $4.8 \pm 0.46$, indicating a high level of participant agreement within all four established classifications.
The Behavior Change Questionnaire and The Support System Questionnaire focused on perceived behavior and lifestyle changes as a result of the influence of the Moms2B program. Previous research has suggested that social relationships have a positive impact on both the physical and mental health of all parties involved.\(^4\) Results of both questionnaires implied a positive association between participation in the Moms2B program and social support and maternal health behaviors, which is consistent with published research.\(^{26}\)

The Nutritional Knowledge Questionnaire explored research participant knowledge of nutrition and maternal health. The overall mean score of the Nutritional Knowledge Questionnaire was \(10.5 \pm 1.69\) (75\%). As the highest possible score was a 14, there is room for additional improvement and education on topics related to nutrition and maternal health. Approximately 70\% of all participants answered correctly to seven out of ten questions. Less than half of all participants responded correctly to questions related to fruit and vegetable servings, breastfeeding benefits, and dietary protein sources. To enhance current nutritional knowledge within the Moms2B program, nutrition education and maternal health professionals may consider providing additional instruction on these topics. Additionally, future questionnaires should be sensitive to differentiate knowledge of adequate fruit/vegetable intake and/or protein intake versus ability to access these foods since a large portion of women in this program are food insecure and might have misunderstood or viewed the question with bias due to their food insecurity.

Understanding the relationship between maternal nutritional intake and pregnancy and birth outcomes provides a framework for developing successful interventions to
improve such outcomes, which Moms2B strives to do. Malnourished and/or undernourished pregnant women are at an increased risk for pregnancy complications. Previous studies suggest that under-nutrition is most likely to present itself in low socioeconomic status environments, in which there are high rates of food insecurity and access to high-quality, nutrient dense foods are poor.

The Nutritional Knowledge Questionnaire assessed nutritional and maternal health knowledge resulting from participation in the Moms2B program. The results suggested that participants are learning and retaining maternal nutritional and maternal health knowledge presented during weekly Moms2B program sessions. Nutritional and maternal knowledge attained during Moms2B program sessions may promote healthy pregnancy and birth outcomes by providing participants with the tools and resources to consume balanced diets and adopt healthier behaviors.

Results from the Nutritional Knowledge Questionnaire also implied that frequent exposure to components of the Moms2B program, specifically nutrition education, would enhance participants’ knowledge of maternal health, thereby improving pregnancy and birth outcomes. Studies have shown that maternal nutrition status is achieved best through multiple interventions. Additionally, programs integrating resources to assist pregnant women in improving their current environment, including social support, maternal health and nutrition education and prenatal care, have shown improvements in pregnancy and birth outcomes.

The analysis of these participant questionnaires highlights the value of community level involvement to improve maternal health and birth outcomes, especially in areas of
social and economic disadvantage. Successful interventions, like Moms2B, ought to combine clinical care, nutrition education, and social support to improve participants’ current environments.\textsuperscript{8,17,25} While evaluating participant satisfaction, researchers were able to assess beneficial components of the Moms2B program. The majority of participants’ questionnaires revealed enhanced nutritional knowledge and self efficacy disclosed by participant reports of positive behavior change and improved lifestyle adjustment. Additionally, the results suggested an accomplishment of the Moms2B program’s short term goals: increasing knowledge about maternal/infant health and knowledge about nutrition

There are limitations that impact the information obtained from this study. As with all research there exists the potential for bias. The questions and provided answers lend themselves to bias, as investigators developed questionnaires around key concepts established at the Moms2B program. While questionnaires were drafted off similar survey tools and revised by experts in the program and healthcare professional community, they were not tested for validity or reliability. However, the Gunning Fox Index and the Flesch Reading Ease Index were used to test the readability of all questionnaires and research materials. Additionally, potential bias exists within the wording of each question, as evaluating participants’ perceptions are completely dependent on that. Response bias is also probable as participants might have shaped their responses around what they believed researchers wanted to see.

Investigators initially sought to compare the responses of current Moms2B participants to those of previous participants who no longer attend weekly sessions.
However, the final sample did not include any previous participants, as investigators were not able to gain feedback from any of these participants. The sample only included responses from current Moms2B participants, who likely already acknowledge the benefits and rewards of Moms2B participation.

Moms2B combines several aspects of clinical, prenatal and postpartum care, nutrition education, and support services within a community setting. Evaluation of program quality is useful to assess impact of the goals, outputs, and outcomes of the Moms2B program. Few fully comprehensive comparison programs exist and an evaluation instrument to measure participants’ perceptions has not yet been developed. 17, 18 A main reason to assess the program’s quality is to identify and evaluate participant satisfaction, which can be useful for future funding. Results of this research and program evaluations suggests that participants’ perceived benefits from their involvement in the Moms2B program. All three questionnaires implied that participants, who frequently attended weekly sessions, experienced positive behavior and lifestyle changes as well as expanded their nutritional knowledge and self efficacy as it pertains to their health.

To completely understand the perceptions of all program participants and the knowledge gained, additional research is recommended, specifically continued recruitment efforts of previous participants who no longer attend weekly program sessions and use of questionnaires during the early entry into the program. This would provide a pre-entry versus post-program comparison. As the Moms2B program continues to collect data pertaining to maternal health and pregnancy outcome it would be
worthwhile to correlate the impact of the program to the physical health outcomes of both mother and infant. Further research to evaluate the long term goals of the Moms2B program would be essential to demonstrate the concrete benefits a community prenatal program can provide.

In conclusion, while further testing is required to confirm these results, on average the participants agreed or somewhat agreed that their positive behavior and lifestyle changes have resulted from their Moms2B program involvement. Additionally, the results indicated that participants are learning, and possibly retaining, nutritional and maternal health knowledge.
References


12. Murray E. Public Health Best Practices that Affect Low Birthweight


15. Gabbe P. Moms2B: Reducing Birth Disparities with Community Meals and Clinical Support


19. The World Factbook. *Central Intelligence Agency*. 2012. Available at:


27. Oklahoma State Department of Health: Maternal and Child Health Service. Stressors, Social Support and Pregnancy Outcomes Among African American and White Mothers


Appendix A: ACOG/MOD Smoking Questionnaire

Ohio Better Births - Community Weinland Park
ACOG/MOD Smoking

1. Have you EVER smoked (Tobacco) cigarettes? Yes = 1 No = 0
   1a. If Yes, what was the average number of cigarettes on any given day?
   __________ (1 pack = 20 cigarettes)

2. Do you smoke or use tobacco now? □ Yes = 1 □ No = 0

Complete this section if the client currently smokes or use tobacco

3. If yes, which type of tobacco do you use?
   □ Cigarettes = 1 □ Clove Cigarettes = 2 □ Snuff/Dip/Chew = 3
   □ Cigars = 4 □ Pipes = 5

4. If yes to cigarettes and pregnant have you smoked during this pregnancy?
   □ Yes = 1 □ No = 0

5. If yes to smoking during pregnancy, what is the average number of cigarettes in a day
   that you smoked in the last week? __________ (0 = less than one day)

6. What is the average number of cigarettes on a BAD day? __________ (0 = less than 1/day)

7. If yes to smoking cigarettes now –
   a. How soon after you wake up do you smoke your first cigarette?
      □ Within 5 mins = 3 □ 6 – 30 mins = 2 □ 31-60 min = 1
      □ After 60 mins = 0
   
   b. Do you find it difficult to refrain from smoking in places where it is forbidden?
      (e.g. church, library, Cinema)
      □ Yes = 1 □ No = 0
   
   c. Which cigarette would you hate to give up?
      □ 1st one in the morning = 1 □ Any other = 0
   
   d. How many cigarettes per day do you smoke?
      □ Less than 10 = 0 □ 11-20 = 1 □ 21-30 = 2 □ More than 31 = 3

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e. Do you smoke more frequently during the first hours after waking than the rest of the day?
   □ Yes = 1 □ No = 0

f. Do you smoke if you are so ill that you are in a bad mood most of the day?
   □ Yes = 1 □ No = 0

8. If yes to smokeless tobacco, how often does the client use each day? ____ (# of times).

9. Have you ever tried to stop smoking? □ Yes = 1 □ No = 0

10. Do you want to stop smoking now? □ Yes = 1 □ No = 0

11. Does anyone in the household smoke? □ Yes = 1 □ No = 0
   a. If yes, who smoke? ___________________
      □ in the house □ outside

12. How frequently are you exposed to second-hand cigarette smoke?
    □ All the time = 4 □ 3 □ Some = 2 □ 1 □ Never = 0

13. Are you exposed to cigarette smoke (second-hand smoke) at work?
    □ Yes = 1 □ No = 0
Appendix B: CES-D Questionnaire

**Weinland Park**

**CES-D**

I am going to ask you questions about how you have been feeling lately. For each statement that I read, please tell me how you have felt during the past week. Your choices are:

0= rarely or none of the time (<1 day)
1= some or little of the time (1-2 days)
2= occasionally or a moderate amount of time (3-4 days)
3= most of the time (5-7 days)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I was bothered by things that usually don’t bother me</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>I did not feel like eating; my appetite was poor</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>I felt like I couldn’t shake off the blues even with help from my family or friends</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>I felt like I was just as good as other people</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>I had trouble keeping my mind on what I was doing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>I felt depressed</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>I felt everything I did was an effort</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>I felt hopeful about the future</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>I thought my life had been a failure</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>I felt fearful</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>My sleep was restless</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>I was happy</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>I talked less than usual</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>I felt lonely</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15.</td>
<td>People were unfriendly</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>16.</td>
<td>I enjoyed life</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17.</td>
<td>I had crying spells</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>18.</td>
<td>I felt sad</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>19.</td>
<td>I felt that people disliked me</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>20.</td>
<td>I could not get going</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix C: Prenatal Hassles

**Mom2 B Prenatal Hassles**

Please tell us about problems or worries that you may be having during this pregnancy. For each question, there are 4 answer choices. How much are you bothered by: 1 = No Stress … 4 = Severe Stress

<table>
<thead>
<tr>
<th></th>
<th>Worries about food</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Worries about shelter</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Worries about health care</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Worries about transportation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Money worries about paying bills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Problems related to family</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Having to move, either recently or in the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Recent loss of a loved one</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>The pregnancy itself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Sexual Abuse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>Emotional Abuse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>Physical Abuse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>Problems with alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>Problems with drugs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>Work problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>Problems with your friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16.</td>
<td>Feeling generally overloaded</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17.</td>
<td>Crime in your neighborhood</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix D: Subset of the 12 month Food Security Scale Questionnaire

6-Item Subset (Short Form) of the 12-month Food Security Scale – Questionnaire

These next questions are about the food eaten in your household in the last 12 months and whether you were able to afford the food you need. Please check whether the statement was OFTEN, SOMETIMES, or NEVER true for (you/you and the other members of your household) in the last 12 months.

1. The first statement is, "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?
   [ ] Often true
   [ ] Sometimes true
   [ ] Never true

2. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?
   [ ] Often true
   [ ] Sometimes true
   [ ] Never true

3. In the last 12 months did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?
   [ ] Yes
   [ ] No

4. If yes, how often did this happen --almost every month, some months but not every month, or in only 1 or 2 months?
   [ ] Almost every month
   [ ] Some months but not every month
   [ ] Only 1 or 2 months

5. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food?
   [ ] Yes
   [ ] No

6. In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?
   [ ] Yes
   [ ] No
Appendix E: Eat Protein at Every Meal

PROTEIN

3 Servings Each Day

Why Protein?
Helps Build Muscle and Tissue for You and Baby!
As Baby Continues to Grow, Your Body Demands More Protein
Helps Maintain Healthy Skin and Nails

Sources of Protein
Meat—Beef, Pork
Poultry—Chicken, Turkey
Fish
Eggs
Beans
Nuts and Peanut Butter
Dairy—Milk, Yogurt, Cheese

Helpful Tips
Aim to Eat Protein at each Meal
Use Beans as a Main Dish—Chili!
A Small Handful of Nuts Makes a Great Snack!
Choose Low Fat Dairy and Lean Cuts of Meat.
Appendix F: Remember Your Daily Prenatal Vitamin

Remember Your Prenatal Vitamin

Take Daily

**Why Take Prenatal Vitamins?**

- Nutrient needs higher during pregnancy
- Contain many vitamins and minerals for your growing baby and you
- Recommended for all women
- Helps promote a healthy pregnancy and baby

**Helpful Tips**

- Come in pill, liquid, or capsule form
- Found at local stores
- Continue to eat a balanced diet
- If hard to swallow, cut pill in half or take the liquid form
- If feeling nauseous, take after a meal or snack
- Take with vitamin C – orange juice
- 2 Flintstone vitamins have the vitamins and minerals needed
Appendix G: Eat Dairy 3 times a Day

DAIRY
3 Servings Each Day

Why Dairy?
Excellent Source of Nutrition for a growing Mommy and developing Baby.
Provides Calcium, Protein, Vitamin D, and Phosphorus
Helps to Strengthen Bones and Teeth
Decreases Risk of Health Problems

Sources of Dairy
Milk
Cheese
Yogurt
Cottage Cheese
Ice Cream/Sherbert

Helpful Tips
Always choose Low-Fat, Pasteurized Dairy Sources!
Make a yogurt dip for fresh vegetables or fruits!
A Yogurt and Fruit Parfait makes a quick, Healthy Breakfast!
Appendix H: Gain Healthy Pregnancy Weight

Gain Healthy Pregnancy Weight

Why Gain Weight?
Weight gain is normal during pregnancy
Weight gain is healthy for Mom and Baby
Never try to lose weight during your Pregnancy

How Much Weight?
Healthy Weight Mom = 25-35 pounds
Underweight Mom = 28-40 pounds
Overweight Mom = 15-25 pounds
Obese Mom = 11-20 pounds
Twins = 35-45 pounds
Gain 0-6 pounds total in the 1st trimester
Gain about 1-2 pound a week in the 2nd and 3rd trimesters
Appendix I: Necessary Nutrients: Folate and Iron

**FOLATE & IRON**

**NECESSARY NUTRIENTS**

### Why Folate?
- Building Block of DNA
- Helps to Make and Maintain Cells
- Increased Needs due to Growth of Mom & Baby

**Sources Include:**
- Leafy Greens
- Beans
- Asparagus
- Cantaloupe & Oranges
- Fortified Grains

### Why Iron?
- Carries Oxygen All Over Your Body
- Increased Needs due to Rapid Growth of Mom and Baby

**Sources Include:**
- Beef, Poultry, Pork, and Fish ★
- Beans
- Fortified Grains (*Whole Grain Breakfast Cereals*)
- Spinach

★ Body Absorbs this Source Best!

### Helpful Tips
- Take Prenatal Vitamin Daily!
- Make Beans a Main Dish!
- Eat Fortified Cereal for Breakfast!
Appendix J: Always Choose Whole Grain for Fiber

Always Choose Whole Grains for Fiber

411 on Whole Grains

Make at least Half of your Grains Whole Grains
Whole grains provide Dietary Fiber
Substitute a Whole-Grain Product for a Refined product
Dark color food does not always mean it is a whole grain product

Sources:

- whole-wheat flour
- whole-wheat bread
- cornmeal
- whole-wheat cracker
- bulgur
- oatmeal
- whole
- brown rice
- wild rice

Importance of Fiber

Reduces risk of heart disease, may reduce constipation, help with weight management, diverticulitis
Provides a feeling of fullness with fewer calories
Helps keep good bowel function
Appendix K: Nourish Yourself with Fruits and Vegetables

FRUITS & VEGGIES

Why Fruits & Vegetables?

Packed with Vitamins, Minerals, and Fiber for You and Baby!

Vitamins & Minerals are Important to Baby’s Growth and Development

Naturally Low in Fat, Sodium, and Calories.

Helpful Tips

Keep Fruits in Sight!

Top Your Pizza with Veggies!

Fill Casseroles with Mixed Veggies

Fruits & Veggies make Perfect, Quick Snacks for a Mom on the Go!

How Much is Enough?

2 Cups of Fruit each Day

3 Cups of Vegetables each Day

★ VARY YOU COLORS ★
Appendix L: Count your Water-8 Glass a Day

WATER

8-12 GLASSES EACH DAY

Why Water?
Helps the body transport nutrients
Protects your spinal cord and other tissues
Lubricates and cushions joints
Eliminates wastes
Dehydration can lead to pre-term labor

Helpful Tips
Carry a water bottle with you
Try adding lemon, lime or mint to zest up your water
Choose water instead of sugar-sweetened beverages

Avoid well-water when pregnant and breast-feeding.
Instead drink city water, filtered, bottled or boiled water.
Enjoy milk, juice, and decaffeinated drinks in moderation, but make sure you get your 8-12 glasses of WATER each day.
Appendix M: Your Breasts are Best

BREASTFEED

Your Breasts are Best!

Breastfeeding 101
Preferred feeding method for all infants
Provides perfect nutrition for baby

Benefits of Breastfeeding

For Baby:
Easier to Digest
Decreases Chances of Allergies
Increases Protection from Disease and Illness
Tastes Better than Formula
Always the Perfect Temperature and Consistency

For You:
Promotes Weight Loss
Reduces Risk of Cancer and Disease
Great Mom-baby Bonding Time
It’s FREE!

Helpful Tips
Breastfeed as soon as possible after birth
Drink plenty of water—stay hydrated
Many Hospitals and Health Centers offer FREE classes and breastfeeding assistance!
RELAX!
Appendix N: Love Yourself, Love your Baby

Love Yourself, Love your Baby

Bonding 101
Most infants are ready to bond immediately
For parents, bonding may take a little longer
Bonding has no time limit!
Bonding helps lay the foundation for your relationship as parent and child

The Ways Babies Bond
Touch & Skin-to-skin contact
Eye-to-eye contact
Imitating facial expressions and gestures
Listening to the sound of your voice
Breastfeeding

Ways to Promote Bonding
Respond when your baby cries
Hold and touch your baby as much as possible
Use feeding and diapering times to look into your baby’s eyes, smile, and talk to your baby
Read, sing, and play peek-a-boo

Helpful Tips
Bonding will be much easier if you aren't exhausted by all of the other things going on at home, such as housework, meals, and laundry.
It's OK to ask family members and friends for help in the days — even weeks — after you bring your baby home.

The best gift you can give your baby is YOU! The love and attention you give your baby now will stay with him or her forever and will help your baby grow into a healthier and happier child and adult.
Appendix O: The Behavior Change Questionnaire

**QUESTIONNAIRE 1**

Think about your experiences in the Moms2B program. Please read each statement below and **CIRCLE** your response. There is NO right or wrong answer.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Prefer not to answer</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Since attending Moms2B, I plan more meals ahead of time</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Since attending Moms2B, I now compare prices when shopping for food</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Since attending Moms2B, I now read the “nutrition facts” panel on the food label when making food choices</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Since attending Moms2B, I think more about healthy food choices when preparing meals</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Since attending Moms2B, I choose “healthier” ways to prepare my meals (<em>baking instead of frying</em>)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Since attending Moms2B, I wash my fruits and vegetables before I eat them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Because of Moms2B nutrition lessons, I know more about nutrition</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Since attending Moms2B, I am more confident in my ability to get to my doctor’s appointments</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Since attending Moms2B, I have missed fewer doctor’s appointments</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Since attending Moms2B, I am more confident in my ability to get my child(ren) to their doctor’s appointments</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>Since attending Moms2B, my child(ren) have missed less doctor’s appointments</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>Since attending Moms2B, I am more comfortable using supportive resources (Moms2B, neighbors, friends, family)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>Since attending Moms2B, I have learned better ways to help myself when I am feeling down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>Since attending Moms2B, I am now setting small and achievable goals</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Since attending Moms2B, I am more confident that I can achieve these goals</td>
<td>Prefer not to answer</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neutral</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Since attending Moms2B, I am trying to make more time for myself each day</th>
<th>Prefer not to answer</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Appendix P: The Nutritional Knowledge Questionnaire

**QUESTIONNAIRE 2**

These questions are based on the nutrition education topics discussed at the Moms2B Nutrition Station. Please read each question below and choose your answer by **CIRCLING** your response

1. How often should pregnant moms take a prenatal vitamin?
   a. Every day
   b. Every other day
   c. Prenatal vitamins are not necessary
   d. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

2. Protein is an important nutrient for keeping mom and baby healthy and growing strong. Sources of protein include…
   (Circle all that apply)
   a. Meat
   b. Beans
   c. Milk
   e. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

3. Fruits and vegetables provide lots of vitamins and minerals. How many servings of fruits and vegetables should a pregnant mom eat each day?
   a. 2
   b. 5
   c. 7
   d. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer
4. Jane is pregnant and overweight; she should try to lose weight throughout her pregnancy
   a. True
   b. False
   c. I prefer not to answer
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

5. One of our lessons emphasizes: “Your Breasts are best!” Why is breastfeeding so important?
   Circle all that apply
   a. Breast milk is easy to digest
   b. Breast milk is always the perfect temperature and consistency
   c. Breast milk protects from diseases and illnesses
   d. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

6. Low fat dairy products (low fat yogurt, cheese, milk) are essential for strong bones and healthy teeth. How many servings should a pregnant mom have each day?
   a. 1
   b. 3
   c. 5
   d. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

7. Is it okay to prop my baby’s bottle during feedings?
   a. Yes
   b. No
   c. I prefer not to answer
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer
8. Which cooking method is the most preferred for chicken?
   a. Deep Frying
   b. Baking
   c. Frying
   d. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

9. A healthy pregnancy requires gaining enough weight
   a. True
   b. False
   c. I prefer not to answer because…
      a. I have not learned that yet
      b. I learned that, but cannot remember
      c. I do not know
      d. I still prefer not to answer

10. Spacing between pregnancies is essential for a mom’s health. This allows time for a mom’s body to recover. Ideally, how long should a woman wait between pregnancies?
    a. 2 months
    b. 7 months
    c. 18 months (1 year and a half)
    d. I prefer not to answer because
       a. I have not learned that yet
       b. I learned that, but cannot remember
       c. I do not know
       d. I still prefer not to answer

11. Please circle the choice that best describes you
    a. I am currently pregnant
    b. I am not currently pregnant
    c. I prefer not to answer

12. How many Moms2B nutrition sessions have you attended?
    a. Less than 5
    b. 5-10
    c. More than 10
    d. I prefer not to answer
Appendix Q: The Support System Questionnaire

**QUESTIONNAIRE 3**

Think about your experiences in the Moms2B program. Please read each statement below and **CIRCLE** your response. There is NO right or wrong answer.

<table>
<thead>
<tr>
<th>Question</th>
<th>Prefer not to answer</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Because of Moms2B, I feel like I have someone who listens to me when I need to talk</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Because of Moms2B, I feel like I have someone who gives me good advice when I have a problem</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Because of Moms2B, I feel like I have someone in my life I can trust</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Because of Moms2B, I feel like I have someone who understands me</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Because of Moms2B, I feel like I have someone who makes me feel important</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Because of Moms2B, I feel like I have someone who helps me when I am sick</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Because of Moms2B, I feel like I have someone who can (or does) take me to the doctor</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Because of Moms2B, I feel like I have someone who helps me take care of my children when I need help</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Because of Moms2B, I feel like I have someone, other than my child(ren), who loves me</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Because of Moms2B, I feel like I have someone, other than my child(ren), that I love and makes me feel wanted</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Because of Moms2B, I feel like I have someone, other than my child(ren) I have fun with</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Because of Moms2B, I feel like I have a group or organization that I belong to where I feel important</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Because of Moms2B, I feel like I have friends other than my child(ren)</td>
<td>0 1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Prefer not to answer</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neutral</td>
<td>Somewhat Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>30. Because of Moms2B, I feel like I have a place where I feel welcome and safe</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Moms2B was good for me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Moms2B would be good for any pregnant mom</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Moms2B helped me build relationships with others in my community</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. Moms2B helped me to learn about and use resources available to me (WIC, food bank, job &amp; family services, etc)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix R: Research Informal Recruitment Script

INFORMAL RECRUITMENT SCRIPT

Investigators plan to advertise that we are conducting research during weekly Moms2B program sessions. A designated staff member will be stationed at a research table to provide information to participants regarding the research. In addition, this designated staff member will help recruit potential participants. These interactions will be somewhat informal, but the following will serve as guidelines for recruitment purposes.

The following informal verbal script (in italics) may be used with participants.

“Would you help Ohio State University researchers to learn about your perceptions of the Moms2B program? We want to know if you think this program made an impact on you and your health and wellness activities. We are trying to learn if knowledge you gained in Moms2Be has affected you.”

GENERAL: “My name is Carmen Clutter and I am a graduate student from the College of Health and Rehabilitation Sciences at OSU. I want to learn what the participants’ think of the Moms2B program. Let me tell you a little bit about what we are doing today.”

“This study is called “The Moms2B Program—an evaluation of participants’ perceptions of the programs impact on diet, lifestyle, and behaviors.” Our main research question is to find out if you think the Moms2B program has affected you in anyway—is the program helpful or not? Also, we want to find out if there is a difference between women who
already completed the program and pregnant women who are currently participating in the program. This research study would involve three questionnaires that you would complete on your own. This process should take no longer than 30 minutes and you only have to complete the questionnaires one time.”

“As you may already know, the Moms2Be program is set up to bring pregnant women together to share and learn about creating and keeping a healthy pregnancy going for themselves and their families. Each week there is a meeting where food and new topics related to healthy pregnancy are shared by the women and health professionals. The meetings usually last about two hours and there are many different ‘stations’ where women work with different healthcare workers.”

INITIAL ASK: “Would you like to participate in this small study to give us feedback about how Moms2Be has impacted you?”

IF THEY SAY NO: “That’s OK. Thank you for your time.”

IF THEY SAY YES: Ask the appropriate screening questions:

a) AGE CHECK: “How old are you?”
b) LANGUAGE CHECK: “Do you speak English?”
c) PARTICIPATION CHECK: “Are you a current Moms2B participant or have you previously participated in the Moms2B program?”

FAIL SCREENING: “Thank you for your interest! Unfortunately, we are only looking for current or past Moms2B, adult participants who speak English to participate today.”

PASS SCREENING: “Thank you. Let me give you a consent form to look at.”
Appendix S: Research Participation Consent Form

The Ohio State University Consent to Participate in Research

Study Title: MOMS2B Program—An evaluation of participants’ perceptions of the program’s impact on diet, lifestyle, and behaviors
Researcher: D. Habash, C. Canestraro, T. Patrick, N. Ridgway, C. Spees
Sponsor: The Ohio State University College of Medicine—School of Health and Rehabilitation Sciences: Medical Dietetics Program

This is a consent form for research participation.
It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
We want to know what you think about the Moms2Be program. We also want to know if you think this program made an impact on your diet, lifestyle habits and behaviors for taking care of yourself and your family. We are trying to learn if your knowledge gained and your changed behaviors have continued outside the program. We want to know if there is a difference between women who successfully completed the program compared to those currently participating in the program.

Procedures/Tasks:
You will be contacted by way of two separate methods—in person and/or through mailings. If you continue to participate in the Moms2B program, you will be contacted, individually, in person during a weekly program session. As the typical flow of the program involves small group activity, a designated staff member will meet with you at a designated research station. At this time you will be provided a consent packet complete with an appropriate consent form. The designated staff member will review the consent packet, detailing the consent form as well as a description of the research, with you. Any additional questions or concerns you have will be addressed by the designated staff member. With consent, you will be assigned a subject ID number. Next, you will be given three, self-administered questionnaires to complete. You will be asked
to answer a variety of questions regarding your perceptions of the program and your current diet, lifestyle, and behavior patterns. You will complete these questionnaires only once. Your questionnaires can only be identified through your subject ID number.

If you are a past participant, who no longer attends Moms2B weekly sessions, consent packets will be mailed to your last known residence. The consent packet will include a consent form, description of the research study, and a stamped, self-addressed return envelope. Once you return your consent forms, a subject ID number will be assigned to you. Next, a second packet including the three questionnaires, with appropriate subject ID number, will be mailed to you. You will be asked to answer a variety of questions regarding your perceptions of the program and your current diet, lifestyle, and behavior patterns. You will complete these questionnaires only once. A stamped, self-addressed return envelope will also be included for return of the questionnaires.

**Duration:**
There are three questionnaires. You will complete each questionnaire just once; your time commitment is approximately thirty minutes. No long-term follow up will occur. You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. If you decline to participate in the research, you may still take part in the Moms2B program. Your decision will not affect your future relationship with The Ohio State University.

**Risks and Benefits:**
No risks are anticipated with your participation in this research study. You will be asked to answer a variety of questions regarding your perceptions of the program and your current diet, lifestyle, and behavior patterns. Questions may include sensitive topics that could provoke slight discomfort to you. You will not receive compensation or other incentives.

**Confidentiality:**
Once consent forms are obtained, you will be assigned a subject number—the only identifying trait tied to you. A master list complete with subject name and corresponding subject ID number will be stored in a locked file cabinet in the locked OSU office of the investigator (306 Atwell Hall). These subject numbers will be placed on each questionnaire. Questionnaires focus on your perceptions. Research-related records must be retained for a period of at least five years after the research has been discontinued. After this time period any identifiers will be permanently removed from the data and destroyed. You may refuse to participate in this study without penalty. If you choose to participate in the study, they may discontinue participation at any time.

However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed.
if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

**Incentives:**
No incentives are provided for your participation. Your participation is voluntary.

**Participant Rights:**
You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you decline to participate in the research, you may still take part in the Moms2B program. If you are a student or employee at Ohio State, your decision will not affect your grades or employment status.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

An Institutional Review Board responsible for human subject research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

**Contacts and Questions:**
For questions, concerns, or complaints, or if you feel you have been harmed as a result of the study participation, please contact Carmen M. Clutter at 614-949-2003. Additionally you can contact the lead investigator, Dr. Diane Habash, at 614-293-6689.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.
Signing the consent form

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

__________________________        ____________________________  AM/PM
Printed name of subject                  Signature of subject
                                                   Date and time

__________________________        ____________________________  AM/PM
Printed name of person authorized to        Signature of person authorized to consent
consent for subject (when applicable)                         for subject
                                                            (when applicable)
                                                    ____________________________  AM/PM
Relationship to the subject                                                  Date and time

Investigator/Research Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

__________________________        ____________________________  AM/PM
Printed name of person obtaining        Signature of person obtaining consent
consent                                           AM/PM
                                                    Date and time
Appendix T: Research Recruitment Flyer

A Research Study for Moms2B Participants

Researchers at The Ohio State University are interested in your opinion of the Moms2B program. This voluntary research study is for Moms2B participants, both current and past.

Would the study be a good fit for me? This study might be a good fit for you if:
- You are currently participating in the Moms2B program
- You are or were pregnant while attending the Moms2B program
- You want to help create an even more successful Moms2B program for expectant mothers!

What can you expect if you participate in this study? If you decide to take part in the research study, you will:
- Complete voluntary surveys about your experience with the Moms2B program:
  - Did you learn anything from the program?
  - Have you changed anything about your lifestyle or behavior?

To take part in the Moms2B research study, please complete the attached form and return it in the envelope.

For more information, please contact:
Carmen Canestraro, Graduate Research Assistant
614-949-2003

The lead investigator for this study is Dr. Cara Hedash at Ohio State University (614-292-8168)

*Research Flyer adapted from Seattle Children's Hospital Research Foundation
### Appendix U: Data Analysis: Behavior Change Questionnaire

**Research Question:** “Since attending Moms2B…”

<table>
<thead>
<tr>
<th></th>
<th>Research Question</th>
<th>Mean*</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I plan more meals ahead of time.</td>
<td>3.8</td>
<td>1.10</td>
</tr>
<tr>
<td>2.</td>
<td>I now compare prices when shopping for food.</td>
<td>4.2</td>
<td>0.91</td>
</tr>
<tr>
<td>3.</td>
<td>I now read the “nutrition facts” panel on the food label when making food choices.</td>
<td>3.8</td>
<td>1.28</td>
</tr>
<tr>
<td>4.</td>
<td>I think more about healthy food choices when preparing foods.</td>
<td>4.0</td>
<td>1.10</td>
</tr>
<tr>
<td>5.</td>
<td>I choose “healthier” ways to prepare my meals.</td>
<td>4.0</td>
<td>1.02</td>
</tr>
<tr>
<td>6.</td>
<td>I wash my fruits and vegetables before I eat them.</td>
<td>4.3</td>
<td>1.13</td>
</tr>
<tr>
<td>7.</td>
<td>I know more about nutrition.</td>
<td>4.2</td>
<td>0.90</td>
</tr>
<tr>
<td>8.</td>
<td>I am more confident in my ability to get to my doctor’s appointments.</td>
<td>4.0</td>
<td>1.13</td>
</tr>
<tr>
<td>9.</td>
<td>I have missed fewer doctors’ appointments.</td>
<td>3.7</td>
<td>1.37</td>
</tr>
<tr>
<td>10.</td>
<td>I have more confident in my ability to get my child(ren) to their doctors’ appointments.</td>
<td>1.0</td>
<td>1.17</td>
</tr>
<tr>
<td>11.</td>
<td>My child(ren) have missed less doctors’ appointments.</td>
<td>3.8</td>
<td>1.31</td>
</tr>
<tr>
<td>12.</td>
<td>I am more comfortable using supportive resources.</td>
<td>4.4</td>
<td>0.90</td>
</tr>
<tr>
<td>13.</td>
<td>I have learned better ways to help myself when I am feeling down.</td>
<td>4.4</td>
<td>0.94</td>
</tr>
<tr>
<td>14.</td>
<td>I am now setting small and achievable goals.</td>
<td>4.2</td>
<td>1.02</td>
</tr>
<tr>
<td>15.</td>
<td>I am more confident that I can achieve these goals.</td>
<td>4.3</td>
<td>0.88</td>
</tr>
<tr>
<td>16.</td>
<td>I am trying to make more time for myself each day.</td>
<td>4.2</td>
<td>1.02</td>
</tr>
</tbody>
</table>

* Highest possible score = 5
Appendix V: Data Analysis: Support System Questionnaire

<table>
<thead>
<tr>
<th>Research Question: <em>“Because of Moms2B, I feel like…”</em></th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have someone who listens to me when I need to talk.</td>
<td>4.8</td>
<td>0.60</td>
</tr>
<tr>
<td>2. I have someone who gives me good advice when I have a problem.</td>
<td>4.7</td>
<td>0.69</td>
</tr>
<tr>
<td>3. I have someone in my life I can trust.</td>
<td>4.5</td>
<td>0.77</td>
</tr>
<tr>
<td>4. I have someone who understands me.</td>
<td>4.4</td>
<td>0.87</td>
</tr>
<tr>
<td>5. I have someone who makes me feel important.</td>
<td>4.6</td>
<td>0.82</td>
</tr>
<tr>
<td>6. I have someone who helps me when I am sick.</td>
<td>4.1</td>
<td>0.95</td>
</tr>
<tr>
<td>7. I have someone who can (or does) take me to the doctor.</td>
<td>3.8</td>
<td>1.18</td>
</tr>
<tr>
<td>8. I have someone who helps me take care of my children when I need help.</td>
<td>4.1</td>
<td>1.15</td>
</tr>
<tr>
<td>9. I have someone, other than my child(ren), who loves me.</td>
<td>4.2</td>
<td>1.20</td>
</tr>
<tr>
<td>10. I feel like I have someone, other than my child(ren), that I love and makes me feel wanted.</td>
<td>4.2</td>
<td>1.09</td>
</tr>
<tr>
<td>11. I have someone other than my children I have fun with.</td>
<td>4.5</td>
<td>0.77</td>
</tr>
<tr>
<td>12. I have a group or organization that I belong to where I feel important.</td>
<td>4.5</td>
<td>0.71</td>
</tr>
<tr>
<td>13. I have friends other than my child(ren).</td>
<td>4.3</td>
<td>0.79</td>
</tr>
<tr>
<td>14. I have a place I can to where I feel welcome and safe.</td>
<td>4.6</td>
<td>0.71</td>
</tr>
<tr>
<td>15. Moms2B was good for me.</td>
<td>4.7</td>
<td>0.61</td>
</tr>
<tr>
<td>16. Moms2B would be good for any pregnant mom.</td>
<td>4.8</td>
<td>0.37</td>
</tr>
<tr>
<td>17. Moms2B helped me build relationships with others in community.</td>
<td>4.4</td>
<td>1.00</td>
</tr>
<tr>
<td>18. Moms2B helped me learn about and use resources available to me.</td>
<td>4.8</td>
<td>0.52</td>
</tr>
</tbody>
</table>

* Highest possible score = 5
### Appendix W: Data Analysis: Nutritional Knowledge Questionnaire

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Mean</th>
<th>SD</th>
<th>Highest Possible Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How often should pregnant moms take a prenatal vitamin?</td>
<td>1</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>2. What, of the following, are sources of protein?</td>
<td>2.1</td>
<td>0.74</td>
<td>3</td>
</tr>
<tr>
<td>3. How many servings of fruits and vegetables should a pregnant mom eat each day?</td>
<td>0.5</td>
<td>0.51</td>
<td>1</td>
</tr>
<tr>
<td>4. Jane is pregnant and overweight; should she try to lose weight throughout her pregnancy?</td>
<td>0.7</td>
<td>0.47</td>
<td>1</td>
</tr>
<tr>
<td>5. Why is breastfeeding so important?</td>
<td>2.0</td>
<td>0.96</td>
<td>3</td>
</tr>
<tr>
<td>6. How many servings of dairy should a pregnant mom have each day?</td>
<td>0.7</td>
<td>0.47</td>
<td>1</td>
</tr>
<tr>
<td>7. It is okay to prop a baby’s bottle during feedings?</td>
<td>0.8</td>
<td>0.37</td>
<td>1</td>
</tr>
<tr>
<td>8. What cooking method is most preferred for chicken?</td>
<td>1.0</td>
<td>0.20</td>
<td>1</td>
</tr>
<tr>
<td>9. Does a healthy pregnancy require gaining enough weight?</td>
<td>0.80</td>
<td>0.37</td>
<td>1</td>
</tr>
<tr>
<td>10. Ideally, how long should a woman wait between pregnancies?</td>
<td>0.9</td>
<td>0.33</td>
<td>1</td>
</tr>
</tbody>
</table>