**Approaches to Enhancing the Gestational Weight Gain Conversation for**

**Interprofessional Obstetric Providers**

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NUR 7920: DNP Doctoral Project

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August 3, 2022

ABSTRACT

Gestational Weight Gain (GWG) is a clinical inquiry focused on prenatal provider health promotion skills. MI is a patient-provider collaborative approach used to elicit and strengthen the patient's own motivation to change and has been shown to positively impact health behaviors. MI involves “sustain talk” (stay the same) and “change talk” (change behavior), with the provider guiding the conversation. Providers participated in 4 weeks of MI education and practice targeted for GWG, completing pre- and post-tests derived from established MI tools. Providers included obstetric residents, nurse practitioners, nurse midwives, and physician assistants, thirteen of which participated in pre-test and education, with nine completing the post-test. Analysis of the pre- and post- tests results suggest the MI education sessions enhanced the participants perceptions that they could positively impact physical activity, healthy eating, behavioral modification to make lifestyle changes, and family issues around weight management. Additional findings included perceptions that obesity intervention was part of their scope of practice, their role is to intervene regarding the issue of obesity, and yet they lack education and adequate competency in obesity intervention strategies. Integrating MI into obstetric care in the prenatal setting provides knowledge and insight to support that the need to change behavior comes from the patient. Continued work includes incorporating GWG and MI education and skill development for residents, CNM’s and PA providers and study of outcomes for mothers who were exposed to the MI GWG intervention.

*Keywords: motivational interviewing, multidisciplinary obstetric providers, gestational weight gain, clinical inquiry*

**Approaches to Enhancing the Gestational Weight Gain Conversation for Interprofessional Obstetric Providers**

Gestational weight gain has a dramatic impact on the health of the pregnant woman and her baby. The Institute of Medicine (IOM) has published gestational weight gain (GWG) recommendations based on pre-pregnant body mass index (BMI) (2009). Excessive GWG increases the risk for large for gestational age (LGA) babies, gestational diabetes (GDM), gestational hypertension (GHTN), and cesarean birth (McDowell, et al., 2019; Hecht, et al., 2021). Liu, et al., (2019) noted that pre-pregnancy obesity is significantly related to pre-term delivery with more investigation needed to determine the impact of race, age, and ethnicity. Kominiarek and Peaceman (2017) report >50% of women who are overweight or obese have the highest prevalence of exceeding recommended gestational weight gain. Excessive GWG is a modifiable risk with a significant impact on maternal/fetal health, making the prenatal conversation about weight extremely important. Despite this importance, the topic of healthy weight gain can be extremely sensitive and emotional for women. Prenatal providers may not be educated or trained how to effectively discuss such sensitive topics. This combined with the time constraints in busy clinics, the topic of health GWG may be diminished or avoided.

**Background**

**Obesity**

Since 1980, the incidence of obesity has doubled, with the worldwide incidence approaching 30% (Chooi, et al., 2019). According to Healthy People 2030, the proportion of women who start pregnancy at a healthy weight is lower than ever. The target is for 47.1% of women to start prenatal care at a healthy weight. As of 2019, 41.0% met criteria (Healthy People 2030*,* 2019). In 2019, total births were 3.74 million, meaning that only 1.53 million women were at the healthy weight to start prenatal care (CDC, 2019). An additional 430,000 women will need to meet the health weight at onset of pregnancy to satisfy the Healthy People 2030 goal.

The United States National Center for Health Statistics reports that non-Hispanic black women had the highest incidence of obesity at 56.9%, with non-Hispanic Asian women with the lowest incidence of obesity at 17.2% (Hale, et al., 2020). The incidence of adult obesity across races and ages were 42.4%, with severe obesity prevalence higher for females (Hale, et al., 2020). As of 2019, incidence of overweight people in Flint, Michigan was 54.8% as compared to the state of Michigan at 34.1% (City Data, 2019).

**Gestational Weight Gain**

The Institute of Medicine’s (2009) GWG recommendations based on starting Body Mass Index kg/m2 (BMI):

* Underweight BMI of <18.5: 28-40 pounds
* Healthy weight BMI 18.5-24.9: 25-35 pounds
* Overweight BMI 25-29.9: 15-25 pounds
* Obese BMI >30: 11-20 lbs.
* Class 1, 11, or 111 obesities: no specific recommendations

The physiologic aspects of gestational weight gain include:

* Placenta weighs 1-2 pounds
* Amniotic fluid 2 pounds
* Uterus 2 pounds
* Maternal blood volume expansion 4 pounds
* Additional fluid in maternal tissue adds 4 l pounds
* Maternal fat and nutrient stores add 7 pounds
* Maternal breast tissue increases to add 2 lbs.

(American Pregnancy Association, 2021; McDowell, et al., 2019).

Due to first trimester nausea many women do not gain weight until second trimester. In the following trimester, 1-2 pounds per week weight gain is considered appropriate.

Catalano and Sharank (2017) indicate that obesity overall as the most significant problem in obstetrics that has a negative impact on maternal and fetal health. They elaborate by reporting that women of childbearing age who are obese are more likely to have excessive weight gain in pregnancy. Non-Hispanic black and Mexican American women are most likely to be overweight or obese (Catalano & Sharank, 2017). A review done by Howell (2018) reviews the racial and ethnic disparities that occur, and black women are 3-4 times more likely to die in the peripartum period. Catalano and Sharank (2017) report that lifestyle interventions are rarely successful. This leaves providers who want to provide effective and meaningful care to their patients wondering what is best.

**Interpregnancy Care and Well Women Exams**

Interpregnancy care is healthcare between pregnancies. The major national organizations relevant to women’s health recommend interpregnancy care to facilitate recognition and treatment of chronic illness and information to help space pregnancies at least 6 months apart. This is especially important for women experiencing healthcare disparity, as they are least likely to have interpregnancy care (Louis, et al., 2019). Routine screening for obesity related diseases like hypertension and diabetes happens for women who have health maintenance visits outside of pregnancy. These well woman exams are not only provided by family practice and primary care providers but also obstetricians and advanced practice nurses like Certified Nurse Midwives and Nurse Practitioners. A well woman exam is an opportunity to address modifiable risks that can impact potential future pregnancies.

In 2019, Incidence of unplanned pregnancy globally was 121 million, illustrating the need to incorporate preconception counseling into all interpregnancy and well woman visits (Bearak, et al., 2020). While preconception counseling is recommended by professional organizations (ACOG, 2021; ACNM, 2021; ADA,2020), as best practice to start pregnancy as healthy as possible, it is not clear if this service is offered routinely or if providers possess the communication skills to motivate patients. There is a gap in the literature related to prevalence of preconception care use. Additionally, reimbursement for preconception care is minimal to none as part of an annual exam yet may be billable if the woman comes specifically for that reason. The Affordable Care Act made preconception counseling one the covered services without cost sharing (Preventative care benefits, n.d.).

**Motivational Interviewing**

Koball, et al. (2018) studied patient preferences related to conversations about weight. They discovered that most patients prefer a straightforward conversation, and they want weight issues to be discussed. Patients with a higher BMI desire a weight conversation that is done in a sensitive manner. One solution to address weight in a sensitive and effective manner is Motivational interviewing (MI). Pregnancy is a special time when women are most motivated to seek healthier lifestyle opportunities when they present for care. Motivational interviewing is a proven approach to enhance behavior modification that has the potential to improve pregnancy health as well as address racial and ethnic minority disparities (Miller & Rollnick, 1991). With the proper education and training, providers with effective tools could improve outcomes through effective conversations during preconception and early pregnancy care. The preparation of providers during education and training varies between professional roles, but the need to enhance conversations about healthy GWG is universal.

**Significance**

The risks of excessive GWG have been abundantly documented and include increased risk of cesarean delivery, stillbirth, gestational HTN, gestational diabetes, large for gestational age babies, and preterm delivery. This risk is even more pronounced for women who are categorized as obese entering pregnancy. The risks increase further as the level of obesity goes from Class I to III. Along with increase in obesity around the world outcomes related to excessive weight gain are negatively impacted (Choi, et al., 2021; McDowell, et al., 2019, Liu, et al., 2019).

Pursuing healthy weight is a key component for long term health of the mother and baby. Postpartum weight retention from a prior pregnancy is associated with excessive GWG, and as the woman ages and is beyond childbearing, she is at increased risk for the chronic diseases associated with obesity (McDowell, et al., 2019). Regarding the child’s outcome, there is an increased risk of childhood obesity when excessive GWG happens at specific points in pregnancy (McDowell, et al., 2019). Studies suggest that women with obesity or excessive GWG have increased risk of having a child with asthma, The proposed hypothesis of the physiology behind the phenomenon is the excessive inflammation can impact development in utero, and more research is being done to explore this phenomenon (McDowell, et al., 2019). Not often discussed is the possibility of delayed lactogenesis for women who begin pregnancy obese and have excessive GWG (McDowell, et al., 2019). This delay may lead to the woman choosing to formula feed and missing the benefits of breastmilk.

Women’s health care providers are poised to impact the overall health of women and their children through effective and sensitive communication about the impact of obesity and GWG. The preparation and skills needed to achieve this vary among providers. Applying key concepts from Motivational Interviewing is a proven approach that could support providers having this key conversation.

**Problem Statement**

To meet Healthy People 2030 goals, the issue of healthy gestational weight gain needs to be addressed. Poor outcomes for obese women include large for gestational age babies, maternal diabetes, hypertension, and operative birth, preterm birth, and even stillbirth. Healthy gestational weight gain is essential to optimize pregnancy outcomes for overweight and obese women. Obesity related health issues may persist throughout the woman’s life and lead to chronic diseases like diabetes, hypertension, and heart disease. There is a gap in the education and training of prenatal and women’s health providers related to effective approaches to encouraging healthy gestational weight gain that may lead to this issue being left unaddressed.

**Clinical Question**

Does a Motivational Interviewing based tool increase providers’ comfort and willingness to have conversations with overweight and obese women about gestational weight gain?

**Literature Review**

This review included a database search of PubMed, PubMed Central, CINAHL, Google Scholar, and the Cochrane Database. Search terms included “gestational weight gain (GWG)” and “Motivational Interviewing (MI),” “obesity education in medical school,” “Cognitive Behavior Therapy (CBT),” “preconception, MI, and obesity,” “Flint, MI demographics,” “excessive GWG and obesity outcomes,” and more. Inclusion criteria were original research articles, systematic reviews, and meta-analyses published in peer-reviewed journals between 2016 and 2021 that addressed the relationship between excessive GWG and maternal and neonatal outcomes, as well as Motivational Interviewing, Cognitive Behavioral Theory, and resident education on obesity. Themes that emerged during the literature search are the patients desire the information about GWG to maximize the health of the pregnancy. MI and CBT are effective means to help patients identify a motivation for change. The patient and the provider are teammates and each patient's expertise of their resources and personal drive is respected. Additionally, only articles that were available as full text through the University of Detroit Mercy library were considered.

**The Obesity Conversation**

The pandemic of obesity impacts 93.3 million adults in the United States and 650 million adults worldwide (Mastrocola, et al., 2020). Butch, et al. (2020) did a benchmarking study on medical education preparation in the United States, regarding the care of people who are overweight or obese. The findings demonstrate significant room for improvement as 7.5% of allopathic medical schools have a standalone curriculum on obesity. This compliments a worldwide examination of inadequate medical school preparation systematic review. Physicians do not feel medical school prepared them to counsel and treat obesity. Evidence demonstrates that patients are more likely to work on weight loss after physician discussion (Mastrocola, et al., 2020). Unfortunately, Whitaker, et al., (2021) noted that only 50% of providers had provided correct weight gain recommendations to their patients. Obesity Medicine Association is trying to improve provider training in obesity by offering an online 4-week course for residents, physician assistants, nurse practitioners, etc. The course includes 31 hours of obesity focused education using a variety of teaching methods (Obesity Medicine Association, 2021).

**Gestational Weight Gain**

Lower socioeconomic status increases risk for higher pre-pregnant BMI, as well as stress, lack of social support, and depression (McDowell, et al., 2019). The higher prepregnant BMI increases the risk for excessive GWG and postpartum weight retention. According to Emery et al., (2021) Black women and women with prepregnant obesity were significantly more likely to have excessive GWG. Excessive GWG increases the risk for hypertension in pregnancy, large for dates babies, and cesarean deliveries (McDowell, et al., 2019; Emery et al., 2021). Specifically, risk of cesarean birth is increased based on increased prepregnant BMI and increasing gestational weight gain. Garay, et al., (2021) noted similar biosocial findings in the United Kingdom, with lower socioeconomic status consisted with excessive GWG. In the same study, obesity or overweight pre-pregnant weight was also linked to postpartum depression.

Hill, et al., (2019) assessed knowledge of expected GWG on preconception women and pregnant women. Both groups had misconceptions and expected lower GWG than IOM recommendations. Change in practice recommendation is to educate women before and during pregnancy because knowledge impacts belief and correct knowledge could impact appropriate GWG.

Early screening for depression can guide providers, as depressive symptoms were shown to be a strong predictor of excessive gestational weight gain (Hecht, et al., 2021). Further research is needed to combine depressive symptoms and a specific treatment modality to see if outcomes can be improved.

A subset of Korean women was studied and found 25% of them were obese during childbearing age range. For this group, obesity influenced placental and fetal cardiometabolic development. The study focused on the IOM weight gain recommendations based on white and black women in the United States. Korean women GWG and obesity were evaluated to demonstrate if data is comparable to other races. Adverse pregnancy outcomes matched expected outcomes based on studies that were not race specific. Obesity pre-pregnancy with excessive gestational weight gain demonstrated a dramatic three times increase in adverse pregnancy outcomes, compared to appropriate BMI and appropriate weight gain in pregnancy (Choi, et al., 2021). The authors also note that generalizability of IOM recommended weight gain needs to counsel Korean women at BMI 25 as it is exceedingly rare to have a Korean woman with BMI >30, however adverse outcomes increase as BMI increases.

**Motivational Interviewing and Cognitive Behavioral Theory**

Motivational Interviewing (MI) started as a behavioral modification tool to help people with alcoholism change their behavior (Miller & Rollnick, 1991). Additional research demonstrated MI was applicable in diverse settings of behavioral modification (Anstiss, 2009; Steffen, et al., 2021). While cognitive behavioral theory became a method of therapy for psychological treatment that was effective for a variety of disorders including anxiety, depression, marital problems, and many more mental health diagnoses (APA.org, 2017). MI requires an empathetic person who is skilled at listening and can reflect on what they have heard. There is power in a person verbally committing to change (*Motivational Interviewing*, 2021). A systematic review by Barrett, et al., (2018) on treating obesity with MI and Cognitive Behavior Theory to improve weight loss found improved physical activity. Motivational interviewing is another proven option for treating obesity or other behavior modification needs. Sodurlund (2018) did a systematic review and noted MI added significant improvement in physical activity outcomes for type 2 diabetics. Motivational interviewing is also credited for decreasing fetal overgrowth in type 2 DM pregnant women (Ásbjörnsdóttir, et al., 2019). Persuasion used with MI resulted in worse outcomes for glycemic control and HgA1c in adolescent type 1 diabetics (Caccavale et al., 2019). Telehealth options were successful for researchers trying to broaden access for MI weight management (Patel, et al., 2019). Once trained, a provider could use short term MI with one or two sessions or incorporate it into ongoing appointments to address prenatal health concerns or to promote health for the lifespan of the woman (Motivational Interviewing, 2021).

Grave, et al., (2020) used CBT to improve weight loss and maintenance for the morbidly obese population and had significant sustained weight loss at 12-18 months. Combining MI and CBT together has been shown to increase effectiveness. Button, et al., (2019) compared CBT alone versus CBT with MI, finding improved outcomes when using CBT and MI together. The subjects of the study stated that using the CBT and MI gave them an opportunity to be participative on their own time and use therapist time to correct errors. Another study using both CBT and MI by Garcia-Caballero, et al., (2019) showed significant improvement to reduce gambling behavior, improve quality of life and decreased impulsivity for those addicted to gambling. Forman and Moyers, (2019), analyzed MI utilization at the first therapy session and the success that ensued. This is the basis for combining CBT and MI to support the aims of this project by being able to elicit change starting in the first prenatal visit and help correct at the following prenatal visits. Building on the assumption proposed by Miller and Rose (2009), people have an innate desire toward wellness. Even those participating in self-destructive behaviors are aware it is not healthy. Therefore, the interviewer can let the subject be self-aware of solutions without pressuring the person in a direction, allowing the patient to elevate themself from ambivalence to action.

**Preconception care**

Care between pregnancies is an opportunity to add MI and prepare the woman for potential upcoming pregnancy. Ogunwole, et al, (2021) note a third of women in general have at least one medical condition. The potential to improve pregnancy outcomes starts prior to pregnancy. Jourabchi, et al., (2019) noted women with preconception care had less adverse events related to preterm delivery, maternal and neonatal complications, and mode of delivery. It is an opportunity to facilitate healthy lifestyle changes to maintain glycemic control, improve baseline blood pressure control, achieve healthy weight status, and more. General practitioners surveyed by Magdaleno, et al. (2020) regarding importance of preconception counseling for women with diabetes, more than 89% stated it is important, however, only 39% reported providing preconception counseling routinely. The primary barriers listed in this study were lack of time and knowledge. Women with diabetes need preconception counseling to improve glycemic control and have a healthier pregnancy. The American Diabetes Association (2021) recommends childbearing age women have preconception counseling at each clinic visit. Peterson-Burch, et al. (2018) reviewed 10 years of preconception care for diabetes studies and noted very few meet the ADA recommendations, but those who do have improved outcomes.

**Organizational Assessment**

Hurley Medical Center (HMC) is the chosen site to implement the clinical inquiry exploratory project. HMC is in Flint, Michigan, has 443 beds, has 23 distinct types of medical services, and is a Level 1 Trauma Center for the region. City level data stats show the median income in Flint is greater than $25,000 below the state average of $59,584. Prevalence of adult obesity is 4% higher in Genesee County as compared to the state of Michigan (City Data, 2019). HMC serves pregnant women through multiple midwifery clinics, and a staff clinic with a variety of providers including OB residents and a nurse practitioner that are supervised by attending physicians and maternal fetal medicine specialists. HMC also has private obstetricians who bring patients to give birth.

Strengths of using HMC as the site of implementation:

* Obesity is prevalent in the childbearing age women of this community.
* Hurley is a regional center for high-risk maternity care with a level 3 NICU
* Providers are poised to improve their sensitivity about GWG conversation

Threats related to implementation at Hurley Medical Center:

* Providers may find patients resistant to MI conversation regarding obesity and healthy weight gain.
* Motivational Interviewing and CBT skills require time and practice.
* Inadequate time during the prenatal visit to address all the patient's educational needs is challenging.
* HMCs location in a healthy food desert.
* Population served by HMC has higher rates of poverty and food insecurity.
* Mass media promotion of unhealthy diet prevalent in the community.
* There is a perception that healthy food is expensive and requires more effort to prepare.

**Financial Analysis**

Broekhuizen, et al., (2018) did a cost utility analysis of healthy eating alone, physical activity alone, or both together in combination intervention on pregnant women at high risk for gestational diabetes (GDM). Two of the included measures were GWG and quality adjustment life years (QALY). The conclusion showed it was cost effective when healthy eating was combined with physical activity for decreased cost and better QALY. The cost savings were primarily related to decreasing the cost of the delivery of the baby, due to less GDM and costly interventions related to maternal and newborn care of GDM patients.

This clinical inquiry will have pre- and post-surveys; therefore, besides making 40 copies, the only cost is provider and researcher student time. The providers participating are not paid. There is also the cost of time in learning the MI with CBT in addition to the added 5 minutes of time during the prenatal visit.

**Purpose Statement**

This clinical inquiry involved teaching multidisciplinary obstetric providers how to approach the GWG conversation and utilize Motivational Interviewing with CBT. The goal was to improve OB provider’s confidence in using motivational interviewing for GWG measured by a pre-survey (before teaching) and post-survey results (after one month of implementation). If successful, providers will be confident with behavior modification techniques and excessive GWG will decrease, impacting maternal and fetal outcomes. Addressing obesity or overweight status is both essential and ethical, as women deserve to know the health risks attributed to weight. When a provider spends time addressing weight, this demonstrates to the patient GWG is a priority for health. When a provider spends time addressing any health issue during the limited time of a prenatal visit, this demonstrates to the patient the issue is a priority. Initiating the conversation starts by asking women, “what do you do for self-care?”. Then, progress to activities for mental and physical health from a lifestyle angle to minimize the risk of isolating a person who is obese.

**Theoretical Framework**

Cognitive Behavioral Theory (CBT) uses core principles to help facilitate changes in thought patterns. Over time patterns of unhelpful thinking can lead to patterns of unhelpful behaviors. CBT looks at the patterns and works to help the person identify the faulty thinking and view them with a distinct perspective or reality. The process unfolds coping skills of detecting the undesired thought pattern and facing fears. During CBT, the therapist can engage in role playing to help reinforce the learned behavior and give the person confidence for future interactions and self-thought understanding (APA.org, 2017). With practice and time, the patient can learn to become their own therapist. Patients can recognize problematic emotions and behaviors and implement the learned coping skills (APA.org, 2017).

Mujcic, et al., (2020) examined CBT and MI used together to help decrease alcohol consumption. MI helps the individual examine their status and resources available to them to be successful. CBT offers coping skills to utilize during times of strife or indecision. Being prepared ahead of time helps the person engage in a desired behavior or work through avoiding an undesired behavior.

**Methodology**

This multidisciplinary clinical inquiry included developing an education program regarding the conversation about GWG using MI perspective for obstetric providers at Hurley Medical Center. The project participants were obstetric residents, nurse practitioners (NP), physician assistants (PA), and certified nurse midwives providing prenatal care for Hurley Medical Center patients. There were no exclusion criteria to be involved in the exploratory project except if the provider is unwilling to participate. Provider participation consent was in the pre-survey.

A pre-post survey was utilized to determine if the MI with CBT intervention improved the comfort of the providers to have the conversation about GWG. Clinical inquiry is different from the Sanchez-Ramirez, et al. study as it includes only pregnant patients. However, the tool can be extrapolated to apply to generalized women’s health patients that an obstetrician, PA, NP, or midwife may encounter.

The clinical inquiry plan was submitted to IRB at HMC and University of Detroit Mercy. Providers offered standard GWG information via a MI and CBT conversation. Review of the process yielded no unethical use of study participants or harm anticipated for patients or providers. No patient data was collected or stored. Providers were asked via a survey to evaluate their comfort level and opinions about GWG conversation.

Once per week for four weeks, participants spent an hour learning and practicing MI skills. The interprofessional sessions were intended to show common goals and allow interaction. The learning sessions included education on steps of MI and demonstration on utilization and pitfalls to avoid. During the week in between participants could practice in the clinic. In follow up sessions we discussed what went well or ways to improve. Once sessions concluded participants were given a post-test for data analysis to pre-test.

In this design, the independent variable is defined as the conversation about GWG with MI/CBT. The dependent variable is the comfort level of the providers in having the conversation. Breakdown of the dependent and descriptive variables includes provider role and gender as well as whether the provider rates themself as under, normal, or overweight, etc. Primarily, the Mann-Whitney U test was used and the Fisher-Freeman-Halton or as appropriate the Fisher exact test (personal communication J. LaChance, 6/17/22). Limitations to these results are that the validity only applies to the providers at Hurley Medical Center and cannot be extrapolated to other obstetric facilities.

**Results**

The majority of participants were between 30-39 years old and female. Provider types included obstetric residents, certified nurse midwives, nurse practitioners, physician assistants, and staff attending faculty obstetricians, the majority of which were OB residents. The participants rated themselves as underweight, normal weight, overweight, and obese in the pre- and post-test.

Response to the survey tool were broken down into three categories: perceived skills, professional attitudes, and challenges.

Perceived Skills (Low to High 1-3 scale):

* + Assessing weight status and risk were above average with a mean of 2.55. Addressing weight management and obesity issues with patients, was slightly above average, mean 2.18.

Professional Attitudes rated strongly disagree to strongly agree on 1-5 Likert scale. Participants disagreed with the following (mean score 2 or less):

* + “I do not feel that obesity intervention is part of my scope of practice (mean 1.63).
  + “I believe that a clinician’s role is simply to raise the issue of obesity rather than intervene (mean 1.86)
  + “I do not have time to deal with the issue of obesity in my practice” (mean 1.64).
  + “Obesity is too difficult an issue to tackle and therefore I do not address it in my practice” (mean 1.50).
  + “I feel overwhelmed by the issue of obesity” (mean 2.0)
  + “I am not confident that any obesity intervention I attempt will make a difference” (mean 1.77).

Participants were neutral about the following (Likert scale 1-5):

* + “I do not feel sufficiently educated or competent in obesity intervention strategies” rated towards neutral (mean score 2.55).
  + “I don’t know who to refer patients to in cases of obesity intervention” (mean score 3.09).
  + “Providers are neutral regarding obesity intervention being taught in their discipline’s curriculum (mean score 2.91)

Challenges

The Mann-Whitney Test was selected due to small sample size and ordinal level data (personal communication J. LaChance, 5/25/22). Each survey question was evaluated for pre- post-test significance. The difference in means for items that demonstrated significance is found in Table 1and the full results can be found in Appendix 3.

**Table 1**

**Difference in Means and Significance**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Question** | **Pre-Test mean Average** | **Post -Test mean Average** | **P value** |
| 3 | “My ability to teach and motivate patients toward physical activity.” | 1.46 | 2.22 | 0.026 |
| 4 | “My ability to teach and motivate patients toward healthy eating practices.” | 1.77 | 2.44 | 0.032 |
| 5 | “My ability to use behavior modification techniques to make lifestyle changes in patients.” | 1.46 | 2.67 | 0.001 |
| 6 | “My ability to deal with family issues around weight management.” | 1.38 | 2.22 | 0.004 |
| 8 | “I believe that a clinician’s role is simply to raise the issue of obesity rather than intervene.” | 2.15 | 1.44 | 0.030 |
| 13 | “I do not feel sufficiently educated or competent in obesity intervention strategies.” | 3.08 | 1.78 | 0.011 |

**Discussion**

The data analysis provided insight into the implementation of the project at Hurley Medical Center. The project explored how the MI approach to GWG impacted interprofessional provider’s comfort in having conversations about health promotion. If providers feel comfortable with these conversations, this could motivate women to pursue healthy GWG and in turn optimize pregnancy outcomes. “My ability to teach and motivate patients toward physical activity” and “My ability to teach and motivate patients toward healthy eating practices” suggest the teaching sessions gave the participants confidence related to motivating and teaching their patients related to physical activity and healthy eating. Providers indicated comfort in avoiding an abrupt end to the conversation when weight management involves family as demonstrated in the item “My ability to deal with family issues around weight management.”

In Table 1, we see the participants baseline perception and the change in perception after the intervention. The most statistically significant result (p=0.001) was for the item: “My ability to use behavior modification techniques to make lifestyle changes in patients.” This change in belief supports the impact of the teaching session and left providers feeling like they had another clinical tool to use for obesity conversation.

Several of the items provide insight into the challenges of obesity management. Providers perceive obesity as a time intensive, complex issue that is outside the scope of practice. It is surprising that the providers felt more able to raise the obesity conversation and understand allowing the patient to present the solution to their concerns. More conversation is necessary to help connect the phenomenon of obesity to pregnancy risk status.

Catalano and Sharank (2017) discuss obesity as the most significant problem in obstetrics that has a negative impact on maternal and fetal health. After the participants learned MI, they have a validated tool to help them address behavioral modification and increase physical activity and nutrition.

The versatility of MI impacts those who struggle with depression, providers with skills to help decrease GWG through behavioral modification can help those at higher risk for excessive GWG. Hecht, et al. (2021) Noted depressive symptoms were a strong predictor of excessive GWG. Hurley OB clinics do a depression screening on all patients. Anyone who is screened as “at risk” for current depression can have added MI counseling and information about excessive GWG.

Another impact MI can have on obstetric outcomes is using the skill during preconception care. Jourabchi, et al., (2019) noted women with preconception care had less adverse events related to preterm delivery, maternal and neonatal complications, and mode of delivery. The new skill of behavioral modification and motivating patients towards physical activity and nutrition can start prior to pregnancy.

**Sustainability Plan**

Team specific roles include the OB residency program director supporting the exploratory project and facilitating the time for the exploratory project to be presented on MI and CBT during didactic time. Initial OB resident and CNM (Certified Nurse Midwives) education done by CNM project leader, who can be supportive during the annual MI and CBT education session during new resident didactic time with the goal of senior residents teaching incoming junior residents. Motivational Interviewing as a tool to improve healthcare in the OB/GYN specialty will be used in the didactic teaching of the residents at Hurley Medical Center. The program director supports the process and has incorporated MI into resident education. Arrangements are being made to use DNP educated faculty to spend time working with residents in resident clinics to enhance the MI skill set of residents. The residents have embraced the opportunity to learn more as they have a drive to improve patients’ health now and for future generations.

**Implications for practice**

The skill to be able to use behavior modification techniques to make lifestyle changes in patients has a direct implication for practice as providers see many patients each day who would benefit from behavioral modification. Flint, Michigan exceeds the state average for obesity, and pregnancies that start out obese and gain excessive gestational weight gain have increased maternal and fetal risk factors. A modest number of patients who are receptive to MI from the provider could decrease excessive GWG and change the outcome of the pregnancy for that family. With increased success rates, the provider could be more willing to take on the few extra minutes. If this is extrapolated by the number of providers who participated, Flint, Michigan could see a dramatic decrease in maternal & fetal morbidity/mortality.

Enhancing interprofessional relationships through shared professional development improves safety in the department through mutual appreciation that builds trust and collegiality. Better relationships between nursing, physicians, PA’s, NPs, and nurse midwives offer opportunities for more effective co-management of patients. As interprofessional relationships evolve, the role of nursing’s contribution to resident education and evidence-based practice initiatives becomes more impactful. Advanced practice nurses participating in resident education benefits residents and allows OB resident faculty to meet the demands of clinical oversight.

**Conclusion**

Motivational Interviewing is an attainable skill that can positively impact health behaviors. It is a low-cost intervention that can improve the health of families served by Hurley Medical Center (HMC) providers in Flint, Michigan. HMC Providers perceive adequate time during the prenatal visit along with adequate level of knowledge regarding obesity assessment and intervention. This provides a foundation on which to build motivational interviewing skills. The MI educational interventions changed provider perceptions regarding behavioral modification, speaking to family members about obesity, and teaching/motivating patients towards healthy eating and physical activity. Taking advantage of MI skills in the preconception opportunities can start a pregnancy healthier than without that intervention. More studies are needed and will be pursued to determine outcomes of the patients whose providers learned and utilized motivational interviewing.

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Appendix 1

Proposed script (Oshman & Combs, 2016)

Role Play Worksheet:

**Instructions for speaker**:

Identify a change that you are considering making in your life. Something “good for you” that you “should “do.

**Instructions for listener:**

Ask the questions, listen carefully to the speaker’s responses, and then summarize what they have told you. Try to make some reflections.

1. Ask Permission

2. Ask open-ended questions:

a. Why might you want to make a change in this part of your life?

b. What are the most important reasons for you to \_\_\_\_\_?

c. What is at stake if you don’t change?

d. How important is it to make this change?

e. How confident are you that you can make this change?

f. If you did decide to change, how would you do it?

3. Summarize “change talk”

4. Find out what they want to do next.

5. Make an affirmation.

**Appendix 2**

Motivational Interviewing with the Gestational Weight Gain Conversation

This survey is to learn more about perceived skills, attitudes, and challenges around gestational weight gain. It is part of a exploratory project with Lyric Walsh and Dr. Young. Aggregate findings may be shared in academic work, presentations, and publications. Completing this survey should take less than 5 minutes. Participation is voluntary and you can skip any question you choose. By answering questions, you are consenting to the use of your survey data. If you have any questions about the survey, research, or project, you can contact Lyric Walsh at 810-715-2231.

Date: \_\_\_\_\_\_\_\_\_\_ Survey timing [ ] Pre-Educational Intervention [ ] Post-Education Intervention

|  |  |  |  |
| --- | --- | --- | --- |
| Perceived skills (1–3)  1 = Low to 3 = High | 1 Low | 2 | 3 High |
| My ability to assess weight  status and associated risk  factors |  |  |  |
| My ability to address  weight management and  obesity issues with patients |  |  |  |
| My ability to teach and  motivate patients toward  physical activity |  |  |  |
| My ability to teach and  motivate patients toward  healthy eating practices |  |  |  |
| My ability to use behavior  modification techniques to  make lifestyle changes in  patients |  |  |  |
| My ability to deal with  family issues around  weight management |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Professional  Attitudes (1–5)  1 = Strongly disagree  5 = Strongly agree | 1 Strongly  Disagree | 2 | 3 | 4 | 5 Strongly Agree |
| I do not feel that obesity intervention is part of my scope of practice |  |  |  |  |  |
| I believe that a clinician’s role is  simply to raise the issue of obesity rather than intervene |  |  |  |  |  |
| I do not have time to deal with  the issue of obesity in my  practice |  |  |  |  |  |
| Obesity is too difficult an issue  to tackle therefore I do not address it in my practice |  |  |  |  |  |
| I feel overwhelmed by the issue of obesity |  |  |  |  |  |
| I am not confident that any obesity intervention I attempt will make a difference |  |  |  |  |  |
| I do not feel sufficiently educated or competent in obesity intervention strategies |  |  |  |  |  |
| I do not know whom to refer  patients in cases of obesity  intervention |  |  |  |  |  |
| I am not comfortable discussing obesity with my  patients |  |  |  |  |  |
| I avoid bringing up the topic of  obesity as I do not want to  offend or jeopardize my  relationship with my patients  and/or their family members |  |  |  |  |  |
| As a healthcare provider, I am  Extremely frustrated with the low success rate in managing  Obesity |  |  |  |  |  |
| I feel that my pts will not be  compliant and any obesity  intervention efforts I attempt  will have little impact, if any |  |  |  |  |  |
| I do not feel the need to address  obesity issues with my patients  unless they look or act sick |  |  |  |  |  |
| I fear that talking about obesity could do even more damage by leading my patient toward  an eating disorder or other  psychological problem |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Challenges (1–5)  1 = Strongly disagree 5 = Strongly agree | 1  Strongly  Disagree | 2 | 3 | 4 | 5  Strongly agree |
| Obesity intervention is not taught in my discipline’s curriculum before we enter practice |  |  |  |  |  |
| There is limited professional training in this area |  |  |  |  |  |
| Healthcare providers in my discipline are not adequately compensated for treating obesity |  |  |  |  |  |
| There is a lack of appropriate referral options (ex: dietitians or other professionals |  |  |  |  |  |
| There is a lack of patient education materials regarding obesity to distribute to patients |  |  |  |  |  |
| Healthcare providers in my discipline need more guidance toward raising a sensitive issue such as obesity with our patients |  |  |  |  |  |
| Healthcare providers in my discipline need more guidance in motivational interviewing for behavior change related to  Obesity |  |  |  |  |  |

Additional questions:

Age: [ ] 20-29 [ ] 30-39 [ ] 40-49 [ ] 50-59 [ ] 60+

Gender: [ ] Male [ ] Female [ ] Non-binary [ ] Other \_\_\_\_\_\_\_\_

Type of provider:

[ ] OB/GYN resident [ ] OB/GYN faculty [ ] Midwife [ ] Medical student [ ] Other\_\_\_\_\_\_\_\_\_

How would you describe your own weight?

[ ] Underweight [ ] “Normal” [ ] Overweight [ ] Obese

\*Survey questions on attitudes, skills, and challenges from Sanchez-Ramirez, et al., 2018

**Appendix 3**

|  |  |  |
| --- | --- | --- |
| Number | Question | P value |
| 1 | “My ability to assess weight status and associated risk factors” | 0.075 |
| 2 | “My ability to address weight management and obesity issues with patients.” | 0.137 |
| **3** | **“My ability to teach and motivate patients toward physical activity.”** | **0.026** |
| **4** | **“My ability to teach and motivate patients toward healthy eating practices.”** | **0.032** |
| **5** | **“My ability to use behavior modification techniques to make lifestyle changes in patients.”** | **0.001** |
| **6** | **“My ability to deal with family issues around weight management.”** | **0.004** |
| 7 | “I do not feel that obesity intervention is part of my scope of practice.” | 0.363 |
| **8** | **“I believe that a clinician’s role is simply to raise the issue of obesity rather than intervene.”** | **0.030** |
| 9 | “I do not have time to deal with the issue of obesity in my practice.” | 0.490 |
| 10 | “Obesity is too difficult an issue to tackle therefore I do not address it in my practice.” | 0.125 |
| 11 | “I feel overwhelmed by the issue of obesity.” | 0.200 |
| 12 | “I am not confident that any obesity intervention I attempt will make a difference.” | 0.214 |
| **13** | **“I do not feel sufficiently educated or competent in obesity intervention strategies.”** | **0.011** |
| 14 | “I do not know whom to refer patients in cases of obesity intervention” | 0.488 |
| 15 | “I am not comfortable in discussing obesity with my patients.” | 0.194 |
| 16 | “I avoid bringing up the topic of obesity as I do not want to offend or jeopardize my relationship with my patients and/or their family members.” | 0.123 |
| 17 | “As a healthcare provider, I am extremely frustrated with the low success rate in managing obesity.” | 0.470 |
| 18 | “I feel that my patients will not be compliant and any obesity intervention efforts I attempt will have little impact, if any.” | 0.593 |
| 19 | “I do not feel the need to address obesity issues with my patients unless they look or act sick.” | 0.161 |
| 20 | “I fear that talking about obesity could do even more damage by leading my patient toward an eating disorder or other psychological problem.” | 0.308 |
| 21 | “Obesity intervention is not taught in my discipline’s curriculum before we enter practice.” | 0.732 |
| 22 | “There is limited professional training in this area.” | 0.782 |
| 23 | “Healthcare providers in my discipline are not adequately compensated for treating obesity.” | 0.076 |
| 24 | “There is a lack of appropriate referral options (ex: dietitians or other professionals).” | 0.349 |
| 25 | “There is a lack of patient education materials regarding obesity to distribute to patients.” | 0.068 |
| 26 | “Healthcare providers in my discipline need more guidance toward raising a sensitive issue such as obesity with our patients.” | 0.772 |
| 27 | “Healthcare providers in my discipline need more guidance in motivational interviewing for behavior change related to obesity.” | 0.855 |