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Final Scholarly Project: Inadequacies in Nutritional Counseling in the Perinatal Population

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2023

In Partial Fulfillment of the Requirements for the Degree

Doctor of Nursing Practice

DNP Final Scholarly Project Team:

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Abstract

Obesity continues to increase at unprecedented levels and warrants immediate provider attention at the perinatal level to improve the health of the present and future generations. Reduction of this condition can reduce risk factors leading to morbidity and mortality. Guidelines exist for the prevention and management of obesity, yet little focus is placed on prevention in the perinatal population. Lack of consistent and healthy lifestyle in the perinatal population has the potential to not only place the mother at risk for obesity but also her unborn child. The overall purpose of the scholarly project is to identify any potential healthcare professional knowledge deficits and confidence in providing nutritional counseling to pregnant women who are at risk for obesity during the perinatal period. The specific aim of the project is to assess and identify the healthcare professional knowledge and perceived confidence in providing nutritional counseling and resources to patients receiving care in perinatal care settings. Conducting a needs assessment will provide the necessary insight for the project team to identify and understand where the deficits exist to develop recommendations, which may affect healthcare professional knowledge and perceived confidence in providing nutritional counseling to this perinatal population at risk for obesity-related morbidity and mortality. Recent studies have revealed that healthcare providers do not feel adequately prepared to provide nutritional counseling to the perinatal population. The research studies elaborate that healthcare professionals report their lack of knowledge and confidence stems from little to no specific didactic on perinatal nutrition during their schooling. Other studies indicate that there is limited if any specific training on evidenced-based nutritional education at their place of employment. Additional studies expand on this matter stating that healthcare professionals do not feel adequately prepared to educate perinatal patients due lack of regular education competencies where they are employed. Nola Pender's Health Promotion Model will drive the project with the overarching goal of health promotion in conjunction with the Plan-Do-Check-Act cycle. To propel change an implementation plan was devised to assist the healthcare professionals who provide nutritional education to the perinatal population. A 15-question survey was created to evaluate the knowledge and confidence of the medical

assistants, licensed practical nurses, registered nurses, advanced practice registered nurses, and obstetricians regarding nutritional guidance in the perinatal population in four Appalachian Federally Qualified Health Care Centers. Based on the findings from the needs assessment, recommendations were provided to assist in the developing future education for the healthcare professionals who provide education to the perinatal population. The data will be analyzed utilizing the analysis of variance method. The results from the data will identify the areas of inadequacy and need for healthcare professionals. They can be utilized by other practices providing perinatal nutritional counseling to ensure the education they provide is evidence-based and up-to-date. Identifying the deficiencies in nutritional counseling will allow the organization to seek out further education to improve the education they are providing to their patients.

Keywords: perinatal, nutrition, pregnancy, evidence-based, antenatal, obesity, healthcare provider knowledge, confidence

Inadequacies in Nutritional Counseling in the Perinatal Population

Obesity is one of the most significant public health concerns ravaging the health of people globally (Lang et al. 2019). Centers for Disease Control and Prevention ([CDC], 2022) report 20% or more of adults nationwide are obese but, the prevalence of obesity in Ohio is greater than 35% in the adult population. More specifically, Singh and DiBari's (2019) research concludes that greater than 20% of women of childbearing age are obese. Preconceptional obesity not only negatively impacts the health of the mother, but also places the children at increased risk for obesity during childhood, and most likely for the remainder of their lives (Singh & DiBari, 2019). Appropriate education, counseling, and follow-up during the preconception period may curtail or prevent obesity in future generations.

General Problem

The present issue this scholarly project will address is the prevalence of obesity. Obesity continues to increase at unprecedented levels and warrants immediate provider attention at the preconception and antepartum levels to improve the health of the present and future generations (Centers for Disease Control and Prevention, 2020). Reduction of this condition can reduce risk factors leading to morbidity and mortality. Inadequate education and training of the health care professionals regarding nutrition pose significant challenges for the perinatal population and the education they receive from the health care professionals. Khomami et al.'s (2019) research supported the need for specific perinatal educational training in undergraduate nursing and midwifery schools to help close the knowledge gap. Studies also identified healthcare professionals reported a lack of standardized nutritional guidelines to follow when providing education to the perinatal population (Mekhoa et al., 2022). Insufficient perinatal nutritional didactic, inadequate training, and competencies in the workplace negatively influence the education and confidence of the healthcare professionals who provide care and teaching to the perinatal population.

Relevance of Problem

Obesity is a common disease that providers manage in practices and healthcare organizations nationwide. Obesity increases the risk for comorbidities such as hypertension, diabetes, heart disease, and some cancers (Mayo Clinic, 2021). Not only does obesity pose a threat to the health of our nation, but obesity also places a significant financial burden on the healthcare system. According to the CDC (2022), obesity and obesity-related health conditions cost the healthcare system \$173 million annually. The CDC (2018) claims obese or overweight children are five times more likely than normal-weight children to be obese in adulthood. Prevention of obesity is the key to improving the health of our nation and currently, there is inadequate focus on the impact nutritional counseling and follow-up could have on the trajectory of obesity in the future

Current perinatal guidelines suggest basics but fail to emphasize the impact that healthy nutrition has on the mother and the unborn child's present and future health. Research reveals that standard preconceptional counseling encompasses cessation of drug and alcohol use, taking a folic acid and multivitamin supplement, and receiving appropriate immunizations (Cha et al., 2021). Cha et al. (2021) elaborate on the failure of discussing the risks related to obesity including nutritional counseling. Currently, the American College of Obstetricians and Gynecologists (ACOG) along with other prominent health advocating organizations lack clinical guidelines or recommendations for nutritional counseling and achieving a healthy weight in the preconceptional period (Cha et al., 2021). Failure to obtain healthy nutritional habits before pregnancy places the mother and unborn child at risk for obesity and other health issues.

Problem Statement

Emerging research suggests inadequate nutritional counseling before and during pregnancy negatively influences the trajectory of obesity. Lang et al.'s (2019) cross-sectional study reports young

women of reproductive age are the population at the highest risk for obesity. Anleu et al.'s (2019) experimental study support Lang's claim reporting a compelling 51% of women of reproductive age suffer from malnutrition, related to an excess caloric intake. Furthermore, Lang et al. (2019) support the claim that an obese mother places her future children at risk for obesity and other negative health outcomes. Long-term complications stemming from preconceptional obesity include childhood obesity (Anleu et al., 2019). Adaptations in the preconceptional period and pregnancy counseling including attaining a healthy weight before pregnancy, regular exercise, and healthy eating, in collaboration with the standard guidelines, provide a strong foundation for the patient to achieve positive outcomes and significantly decrease the risk of childhood obesity (Lang et al., 2019). The cross-sectional study performed by Lang et al. (2019) concluded that there are misconceptions about what correlates to a healthy body mass index (BMI).

Obesity is a multifactorial health concern devastating the health of our nation as well as causing a significant financial burden on our health care systems. It is apparent if change does not occur the prevalence of obesity may continue to increase at unprecedented levels. Research reports that inadequate or absent nutritional counseling during the preconceptional and perinatal periods negatively influences the trajectory of obesity in future generations (Anleu et al., 2019; Lang et al., 2019). The overall purpose of the scholarly project is to address any potential healthcare professional knowledge deficits in providing nutritional counseling to pregnant women who are at risk for obesity during the perinatal period. The specific aim of the project is to assess and identify the healthcare professional knowledge and perceived confidence in providing nutritional counseling and resources to patients receiving care in perinatal care settings.

Significance to the Profession

Obesity is a multifaceted concern that threatens the nation's economy, health care organizations, and nursing practice in addition to negatively affecting the health of its people. Obesity is a modifiable condition, however, according to several systematic reviews, the research suggests being obese as a child

is a strong indicator that one will remain obese throughout adulthood (Skelton & Klish, 2021). According to the Centers for Disease Control and Prevention ([CDC], 2022), obesity rates rose from 30.5% in the year 2000, to 41.9% in 2020. Management of obesity is imperative to reduce the risk factors of obesity-related morbidity and mortality currently; however, prevention is key to reducing the prevalence of this public health concern for future generations. Emerging research further supports that inadequate or absent nutritional counseling during the preconception and perinatal period negatively influences the trajectory of obesity in future generations (Anleu et al., 2019; Lang et al., 2019). Additionally, present and past research studies report health care professionals lack adequate nutritional knowledge and training, therefore the training they provide to the perinatal population is insufficient and not driven by evidenced-based nutritional guidelines (Kumbiley et al., 2021; Nankumbi et al., 2018). Providing education and nutritional counseling before conception is crucial to curbing the obesity epidemic.

Economic Impact

Obesity places a significant financial burden on the nation's economy directly and indirectly. According to the Miliken Institute (2018), their research suggests 480.7 billion dollars was the direct cost of health care for conditions related to obesity. Furthermore, their research reports 1.24 million dollars was lost indirectly due to economic productivity (Miliken Institute, 2018). Okunogbe et al.'s (2021) research supports the previous claims suggesting that economic impact of gross domestic product in the United States is 9.3%, the highest among high-income countries. Studies reveal there is a concerted need for improved efforts to implement new policies and guidelines to combat the increasing obesity prevalence.

Impact on Healthcare Organizations

The obese population negatively affects healthcare organizations. Obese patients have an increased risk for other comorbidities such as type two diabetes, high blood pressure, chronic obstructive pulmonary disease, and sleep apnea. The comorbidities related to obesity may lead to increased time spent at the bedside by the nurse and an increased risk for poor patient outcomes (Wolters Kluwer, 2019).

Additionally, the safety of the staff is at risk when providing care for the obese population. Many obese patients require frequent turning to prevent skin breakdown and if appropriate staffing is not available, this may place the staff at risk for a physical injury (Wolters Kluwer, 2019). Furthermore, due to the patient's body habitus, the cost of treatment may be increased. The additional cost accrued for bariatric beds and the increased amount of medications may not be reimbursed by the insurance company, requiring the healthcare organization to absorb the excess costs (Wolters Kluwer, 2019). An increased amount of comorbidities that result from obesity in combination with increased staff and cost to fulfill their needs, all negatively impact healthcare organizations.

Impact on Nursing Practice

Registered and advanced practice nurses have an ideal platform to educate and advocate for obese patients to help combat the obesity epidemic. Registered nurses can educate and provide evidence-based resources to patients and parents on healthy eating and physical activity. Furthermore, advanced practice providers can also educate the patients in combination with identifying actual or potential risk factors for obesity. Additionally, advanced practice providers can provide referrals to dietitians and nutritionists when necessary and schedule routine follow-ups to see if the interventions and education are successful, or to determine if another intervention needs to be implemented. Lastly, nurses have the opportunity to advocate for change to promote health and wellness at the local, state, and federal levels to improve obesity prevalence.

Obesity is a multifactorial concern negatively affecting the health of the population, the economy, health care organizations, and nursing practice. As the prevalence of obesity continues to rise at an unprecedented rate, the focus must transition from management to prevention. Furthermore, the collaboration between nurses, providers, and government officials has the potential to bring about positive change and curb the obesity public health concern.

PICO

Due to the continuous rise in obesity, current methods of managing obesity may not be sufficient to curtail the increasing prevalence of obesity. Utilizing evidence-based strategies the project aims to decrease obesity in the perinatal population to decrease obesity-related morbidity and mortality across the lifespan by addressing the inadequacies in knowledge and confidence of the healthcare professionals who educate the perinatal population. The PICO question devised in the scholarly project is (**P- Population**) in health care professionals (**I- Intervention**) who educate perinatal patients on nutrition, (**C- Comparison**) how does lack of nutritional didactic education, workplace training and annual competencies on evidenced-based nutritional education (**O-Outcome**) affect the knowledge and confidence of the staff and the quality of education provided during the perinatal period?

Literature Review

Literature Search Strategy

A literature search was conducted utilizing the key search terms derived from the previously stated PICO question. Multiple databases were included to seek literature about the topic. Cochrane, PubMed, Medline, and CINAHL (EBSCO) were the databases searched. More specifically, the keywords included in the search were perinatal, nutrition, pregnancy, evidence-based, antenatal, obesity, healthcare knowledge, and confidence. The keywords served as filters to extract research applicable to the topic.

Critical Appraisal and Synthesis

The literature obtained through the queries was appraised and synthesized to differentiate the research that pertained explicitly to perinatal nutritional education, health care knowledge, confidence, and inadequacies in providing education along with strategies and outcomes relative to evidenced-based nutritional counseling. The quality of evidence in the articles was also synthesized. Systematic reviews, randomized controlled trials along with case and cohort studies were evaluated to ensure the highest level of evidence available was used. Through the appraisal and synthesis, it was apparent that healthcare

professionals reported inadequacies in education, training, and confidence that had the potential to negatively impact the perinatal population.

Obesity is a public health concern that continues to ravage the health of the nation. Obesity not only poses a threat to the health of the current generation but also to future generations. Obesity is a multifactorial issue that places the mother at risk for potential health concerns such as gestational diabetes, pregnancy-induced hypertension, coagulopathies, and preeclampsia (March of Dimes, 2022). Additionally, evidence supports maternal obesity increases the unborn child's risk of obesity in childhood and later in life (Godfrey, 2017). This public health concern not only harms the health of the population but also places a significant financial burden on the healthcare system. Currently, programs and guidelines are in place to curtail the prevalence of obesity; however, the rates of obesity continue to rise at unprecedented levels (Centers for Disease Control and Prevention, 2020). Managing the current cases of obesity is crucial to the health of the current population; however, more emphasis needs placed on primary prevention to reduce the prevalence of obesity in future generations. Emerging research supports that inadequate or absent nutritional counseling during the preconceptional and perinatal periods negatively influences the trajectory of obesity in future generations (Anleu et al., 2019; Lang et al., 2019). Furthermore, present and past research studies report health care professionals lack adequate nutritional knowledge and training; therefore the training they provide to the perinatal population is insufficient and not driven by evidenced-based nutritional guidelines (Kumbiley et al., 2021; Nankumbi et al., 2018). Focusing on prevention instead of management is imperative for the health of the current and future generations.

Adequate and healthy nutrition during pregnancy is crucial in the growth and development of the unborn child and plays a role in the prevention of future comorbidities as a child and adult (Sulistyowati, 2019). Dewidar et al.'s (2021) cross-sectional study report women are most impressionable and willing to make healthy lifestyle changes during pregnancy to decrease the risk of poor outcomes for their unborn child. However, recent studies reveal pregnant women report they received little to no nutritional

education during their pregnancy (Nankumbi et al., 2018; Sulistyowati, 2019). Deficits in nutritional education and guidance in the perinatal period may lead to poor health outcomes at birth and in the future (Khomami et al., 2021). Additional research identified root causes for the lack of evidence-based nutritional counseling during the perinatal period.

Many recent research studies have examined how healthcare professionals feel about the antenatal nutritional education they received while at their educational institution. The results revealed current healthcare professionals felt their didactic content was inadequate or did not address antenatal nutrition at all (Khomami et al., 2021; Lee et al., 2018). Another cross-sectional study reported similar findings stating midwives felt ill-prepared and lacked the confidence to provide nutritional guidance to their patients due to their lack of education (Kumbiley et al., 2021). Khomami et al.'s (2021) research supported the need for specific perinatal educational training to occur in undergraduate nursing and midwifery schools to help close the knowledge gap.

Healthcare professionals report minimal or no opportunities to increase their knowledge of perinatal nutrition in the facility where they provide perinatal care (Khomami et al., 2019; Kumbiley et al., 2021). Another qualitative study revealed that health care professionals reported receiving nutritional education while in school, however, reported there were no in-service opportunities provided to improve their current knowledge base on evidenced-based nutritional guidelines in the perinatal period (Mekhoa et al., 2022). Studies also identified healthcare professionals who reported a lack of standardized nutritional guidelines to follow when providing education to the perinatal population (Mekhoa et al., 2022).

The literature delineated that the deficiency was multifactorial and not stemming from one leading cause. Identifying that not only did the pregnant women feel the nutritional education they received was insufficient, but also the healthcare professionals reporting they felt ill-prepared to provide the nutritional counseling substantiated the need for changes to occur to facilitate the patient and healthcare professionals. The identified gaps in knowledge and confidence of the health care professionals will propel this scholarly project with hopes of addressing the current issues with the overarching goal of

improving the health of the mother and unborn child, which has the potential to reduce obesity in future generations.

Theoretical Framework

Nola Pender's Health Promotion Model (HPM) is a framework that is utilized to guide this scholarly project. Pender created the model to facilitate the nursing profession's education and interventions in health promotion and disease prevention to improve health outcomes (Pender, 2011). The theoretical roots for the HPM encompass the Expectancy Value Theory (EVT) and the Social Cognitive Theory (SCT [Pender, 2011]). The EVT reports the outcome and value of a task will increase the individual's motivation and drive if the task leads to desired goals (Pender, 2011). The SCT delineates, for transformations in behavior to occur, the individual must transform their thinking (Pender, 2011). Pender also defines the philosophical foundation of the model as the Reciprocal Interaction Worldview ([RIW] Pender, 2011). The RIW is expressed as the individual's interactions with the world around them, guiding them to reaching their goals and needs [Pender, 2011]). Pender's model will be utilized with the project's overarching goal of health promotion in conjunction with the Plan-Do-Check-Act model.

The Plan-Do-Check-Act (PDCA) is the quality improvement model selected to direct the outcomes of the project. Walter Shewhart created the PDCA model and later introduced to his mentor, William Edwards Deming, and remains a model routinely used for continuous quality improvement processes in healthcare and other professional sectors (Deming Institute, 2022). The goal of the PDCA model is to gain knowledge through the process and assist with quality improvement. The systematic cycle assists in identifying why some methods, products, or services do not operate as desired, and the model will guide individuals or systems through process improvements (Deming Institute, 2022). The PDCA cycle begins with the "planning" stage, where the goal and plan are identified (Deming Institute, 2022). The next step of the cycle is the "do," where the plan is implemented (Deming Institute, 2022). The third step is the "check" stage of the cycle to monitor and evaluate the process (Deming Institute, 2022). The last step of the cycle is the "act" phase, which includes the integration of the learning into a

process or determining what changes need to occur for further quality improvement (Deming Institute, 2022). The PDCA cycle is a loop that allows for continuous improvement in quality to occur.

Constructs and Study Variables

The constructs of Pender's HPM include individual characteristics and experiences, behavior-specific cognition, and affect and behavioral outcomes (Pender, 2011). Pender discusses how unique individual characteristics have the potential to impact actions such as prior related behavior or personal factors (Pender, 2011). Furthermore, behavior-specific cognition relates to perceived benefits and barriers of action, perceived self-efficacy, activity-related affect, interpersonal and situational influences, commitment to a plan of action, and immediate competing demands and preferences (Pender, 2011). Lastly, Pender's model discusses health-promoting behavior as the behavioral outcome (Pender, 2011). The HPM sets a great foundation to facilitate patients with health-promoting behaviors by recognizing the barriers that are hindering healthy lifestyle choices. More specifically, the model delineates the impact that nurses have on their patients through education, guidance, and support. These components are crucial to increase awareness and adherence to health-promoting behaviors in the pregnant population. This project aims to educate the nursing staff with evidenced-based nutritional counseling so they may effectively educate the pregnant population with the end goal of reducing the obesity epidemic through means of health promotion, and the HPM will guide the process.

The PDCA model will guide the quality improvement side of the scholarly project. The variables utilized in the project are the "plan" part of the cycle will include evaluating literature reviews and practice guidelines to devise an evidenced-based plan. The "do" part of the cycle will involve a discussion with the clinic administrators to ensure the method of content delivery is acceptable and will be cost-effective for the organization. Furthermore, once the appropriate modality is selected the "do" part of the cycle will also entail the development of a standardized tool to educate the staff. In the "check" step of the process, the student will analyze the data collected to determine the needs. Lastly, the "act" part of the

cycle is the dissemination of the knowledge through education or reassessment to determine if an additional process improvement needs to occur.

Project Objectives

Obesity does not discriminate and is presently ravaging the health of the nation across the lifespan at unprecedented levels. The Centers for Disease Control and Prevention ([CDC], 2020) report 1 in 5 children is impacted by obesity. Additionally, current statistics documented by the Trust for American's Health (2020) report the current adult obesity rate is a startling 42.4 percent. The current prevalence of obesity across the lifespan warrants immediate attention to combat the obesity epidemic. Obesity is a multifaceted public health concern that will not see a decrease in prevalence solely through management, as prevention becomes more of the focus to improve the state of obesity. The CDC (2022) provides resources for "proven strategies" discussing the utilization of state and local programs, community efforts, and healthy living to aid in improving the obesity epidemic, yet there are no current recommendations that dictate that evidenced-based nutritional counseling should occur routinely during prenatal care. The overarching goal of the scholarly project is to address any potential healthcare professional knowledge deficits in providing nutritional counseling to pregnant women who are at risk for obesity during the perinatal period.

The scholarly project aims to determine if there is a knowledge deficit in the knowledge of the healthcare professionals providing care to patients during the perinatal period. Extrapolation of data will occur through a needs assessment. Once the gaps are determined, the goal will be to bridge the gaps through different modalities.

Health promotion will be utilized by healthcare professionals in the rural Appalachian by providing evidence-based nutritional counseling to reduce the prevalence of obesity. Nola Pender's Health Promotion model will guide the process of this quality improvement project until completed in its entirety. The focus of Pender's model is to assist the nurses in increasing their knowledge base of factors that affect the target population's health to ensure that adequate counseling takes place to promote healthy

living (Pender, 2011). Employment of Pender's underpinnings will assist in the data collection, analysis, implementation, and development of objectives to close the gaps in knowledge and confidence of healthcare professionals, which may potentially reduce the prevalence of obesity.

In a recent qualitative study, Alehegn et al.'s (2021) research concluded stakeholders were providing prenatal patients with inadequate nutritional counseling throughout pregnancy. The first objective of the scholarly project is to determine the clinic personnel's knowledge of evidenced-based nutritional counseling and their confidence in providing education utilizing a survey. Data from the survey will determine the deficiencies.

The second objective of the scholarly project is to identify deficient areas for clinical staff. Identifying the gaps among the clinical personnel will allow for the development of a plan to increase their knowledge of evidence-based nutritional counseling. Nola Pender's conceptual model emphasizes one of the main roles of the nurse is to encourage the patient to partake in behaviors that promote good health (Pender, 2011).

The third objective is to provide the organization with recommendations to assist in facilitating the knowledge and confidence gaps of the healthcare professionals providing perinatal nutritional counseling. The recommendations offered will be dependent on the findings from the needs assessment completed by the health care professionals. Recognition of the deficiencies will allow recommendations to be made with the potential to assist in closing the gaps in knowledge and confidence of the healthcare professionals providing nutritional counseling to the perinatal population. The recommendations have the potential to increase the knowledge base and confidence so that healthcare professionals can provide their patients with the most up-to-date evidence-based nutritional education. Providing this education to the patient affords them the latest evidenced-based nutritional data so they can make the healthiest choices for themselves and their unborn children.

Methods

Target Population

The population targeted in this scholarly project will be all the healthcare professionals who will be providing care to the perinatal population in the five Appalachian Federal Qualified Healthcare Centers (FQHC). The five FQHCs are located in rural Appalachia in underserved areas in central Ohio. There are approximately 500 employees total throughout the organization and approximately 50 healthcare professionals are employed in the women's health department. The FQHCs provide care to low-risk pregnant women. Pregnant women that require a higher level of care are referred to larger healthcare systems that have maternal-fetal medicine

Sample

Convenience sampling will be the methodology utilized to select participants. The inclusion criteria will comprise all medical assistants (MA), licensed practical nurses (LPN), registered nurses (RN), certified nurse midwives (CNM), family nurse practitioners (FNP), women's health nurse practitioners (WHNP), and obstetricians and gynecologists (OBGYN) that will have contact with the patients during their perinatal visits. The inclusions will also encompass both male and female genders, participants over the age of 18, a high school diploma or equivalent, and the credentials listed above. The exclusions will be participants under the age of 18 and not having a high school diploma or equivalent will be excluded from completing the needs assessment.

Design

Plan, Do, Check, Act Cycle

The graduate student will use the PDCA cycle (Appendix A) to direct the process. The "P" or planning step of the cycle begins with evaluating literature reviews and practice guidelines to devise an evidenced-based plan. Also during this step of the cycle, the graduate student will be collaborating with the chief medical officer and the managers of the women's health departments at the FQHCs to determine the appropriate timeline and implementation of the project. The graduate student will meet with the managers overseeing the women's health staff to determine the most effective, convenient, and reliable

method to reach all of the staff providing care to the perinatal population. The student will also determine the stakeholders and healthcare professionals who should be included. The next step in the process will be seeking approval from the Institutional Review Board (IRB) at the facility as well as at the university of the graduate student.

The next step in the cycle is the “D” or do. In the “do” part of the cycle the graduate, student will create the needs assessment survey (Appendix B) to identify the gaps in knowledge and confidence. The needs assessment includes questions regarding evidence-based information for the perinatal population from the CDC. The survey also evaluates if the health care professionals feel they had adequate perinatal nutritional didactic in school, training at their place of employment, and if they had annual competencies to refresh their knowledge. Furthermore, the assessment will assess the healthcare professionals’ confidence in providing nutritional education. Once the appropriate staff is recruited, the managers will conduct a meeting with the staff, and the graduate student will be present to discuss the process, implementation, and goals and to answer any questions. Obtaining consent (Appendix C) from the participants and distributing the survey will also take place during the “do” part of the cycle. The graduate student will meet with the managers overseeing the women’s health staff to determine the most cost-effective, convenient, and reliable method to reach all of the staff providing care to the perinatal population. The next step in the cycle is the “check” step. In the “check” step, the survey data will be analyzed and the gaps will be identified. The last step of the cycle is the “act” part where the data collected will be provided to the organization with recommendations to improve the knowledge and confidence of the healthcare professionals to assist in closing the knowledge and confidence gap.

Protection of Human Subjects

Human subject protection will be maintained throughout the scholarly project. First, the participant’s time will be respected by providing them with a survey that will be concise. Next, the participants will be reassured their results will not be discussed with their manager or employer, but they will be compiled without identifiers with the other participants’ results into an Excel database. The data

collection will remain confidential and password-protected Excel program on a computer to ensure the privacy of the participants. Approval to collect data from the employees was received from the Chief Medical Officer at the organization. Additionally, Institutional Review Board (IRB) approval was obtained from Otterbein University for implementation (Appendix D).

Facilitators

The Chief Medical Officer (CMO) and each of the managers for the women's health departments will facilitate the graduate student with the implementation of the project. Internal facilitators are well-versed in policies and procedures (University of Minnesota Extension, 2022). According to the University of Minnesota Extension (2022), managers have relationships with the employees and stakeholders in the organization, which may facilitate the buy-in of healthcare professionals. Post-implementation of the project the managers will continue to facilitate the student by conveying concerns and disseminating the information to the health care professionals.

Implementation

The graduate student disseminated the needs assessment survey to the target population who consented to participate. The graduate student will stay at the health care center until the surveys are completed that day. Then once weekly for two weeks, the graduate student will conduct the same process. Then the graduate student will collect and compile the data. Finally, the graduate student with collaboration from the project team will then make recommendations to the organization. The final question on the survey will allow the participants to enter a private email, not work related to enter to win a \$25 Amazon gift card, as a thank you for participating.

Timeline and Budget

Timeline

The proposed timeline for the final scholarly project is six months.

1st month (December 2022)- discussion of the project; timeline and implementation with the CMO, director, and managers of the women's health department. IRB submission and approval/ revision

2nd month (January 2023)- Meet with staff at five FQHC locations to discuss the project, answer questions, and get the consent signed. Disperse the initial survey; and analyzation of initial data.

3rd month (February 2023)- Dissemination of education to all women's health staff.

4th month (March 2023)- Distribution of final survey to all participants who completed the initial survey and education.

5th month (April 2023)- Data analysis and working on the final scholarly project.

6th month- (May 2023) Finalizing and presentation of the final scholarly project.

Budget

The budget for the final scholarly project will include the cost of Microsoft Office \$40 and \$600 for the research database. Both of these costs are funded by the student's university. An Amazon gift card for \$25 for a drawing as a thank you to the participants. The cost of the IRB application will be approximately \$1000 but was waived. The cost of paper and ink to print materials was \$100. Printing of the poster for the final project will cost around \$100. The budget without assistance would be approximately \$1865, but with financial assistance will cost \$325. The preceding was the anticipated cost, however, a statistician was not factored into the initial cost. The cost of a statistician was \$270. The final cost for the scholarly project is \$595.

Outcome Analysis Plan

Data Collection

The recruited healthcare professionals who provide nutritional counseling to the perinatal population, who have also provided consent (see Appendix B) will complete a 15-question needs assessment survey to identify the participant's confidence in providing education and their overall

knowledge base on evidence-based nutritional counseling in the perinatal population. Once all data from the survey is compiled, it will be entered into a password-protected Excel database that only the graduate student and advisor can access. The data will be kept on file for one-year post presentation of the scholarly project and then it will be destroyed by overwriting the file using a secure erase utility.

Data Analysis

The survey questions were developed utilizing the Likert scale and closed-ended questions. The Likert scale is a five-point scale utilized for standardization and to prevent bias. Two questions on the survey will collect demographic information. One question will gather the health care professionals' confidence levels: one is "not confident" and five is "completely confident." The question was created based on a cross-sectional study indicating healthcare professionals report needing more confidence in providing nutritional counseling due to inadequate or absent didactic education on perinatal nutrition (Kumbiley et al., 2021). Seven questions will collect data on the health care professionals' education, training, and yearly education/ competencies with one indicating "strongly disagree" and five "strongly agree." The seven questions regarding the preceding topics were devised based on cross-sectional and qualitative studies conducted to evaluate why nutritional counseling was lacking in the perinatal population (Khomami et al., 2021; Nankumbi et al., 2018). Two questions will gather data on the health care professional's knowledge of caloric intake needs in the first semester and during the second and third semesters, and evaluated as "correct" or "incorrect." The questions based on caloric intake were created from the evidence-based guidelines provided by the CDC regarding appropriate weight gain and nutrition in pregnancy (CDC, 2022). Two questions were created to gauge the satisfaction of the health care professionals on the training and education they received, and scored with one being "very dissatisfied" and five being "very satisfied." The two previous questions came from studies performed by Khomami et al., (2021), Mekhoa et al. (2022), and Lee et al., (2018) to evaluate why perinatal counseling is absent or insufficient in college and the workplace. The last question on the survey is optional for the participant to

complete. The data compiled was formatted in an Excel spreadsheet. Descriptive statistics was the type of analysis used. The data was compiled and percentages were tabulated.

Project Evaluation

Outcome Analysis and Synthesis

The following is the analysis and outcome of objective one. The completion and analysis of needs assessment surveys were completed by 30 healthcare professionals in the women's health department at five FQHCs in rural Appalachia. When the participants were asked how confident they were providing nutritional education to the perinatal population 6.67% reported they were not confident at all, 20% reported they were slightly confident, 26.67% reported they were somewhat confident, 40% reported they were confident and 6.67% reported they were completely confident. The survey also inquired if the college they attended provided nutritional education for the perinatal population and 20% strongly disagreed, 16.67% disagreed, 26.67% reported a neutral response, 30% agreed and 6.67% strongly agreed. The participants were asked to rate their satisfaction with the nutritional education they received regarding the perinatal population while in college 6.67% declared they were very dissatisfied, 36.7% reported they were dissatisfied, 40% of the participants had a neutral response, 16.67% responded they were satisfied and zero of the health care professionals reported they were very satisfied. When the health care professionals were asked how satisfied they were with the education they received on nutritional guidelines/recommendations for the perinatal population at this facility no participants reported they were very dissatisfied, 26.67% declared they were dissatisfied, 40% of the participants claimed they were neutral, 30% reported they were satisfied and 3.33% reported they were very satisfied. The needs assessment also inquired if annual competencies were completed at their current place of employment to increase their knowledge of evidenced-based nutritional guidelines/ recommendations for the perinatal population and 16.67% strongly disagreed, 43.3% disagreed, 16.67% were neutral, 16.67% agreed and 6.67% strongly agreed. In addition to asking the participants about their confidence, education, satisfaction, and competencies, the survey also inquired about their knowledge regarding perinatal

nutritional recommendations from the CDC. When asked if nutrition should be discussed at every prenatal visit and postpartum checkup 3.33% of the participants strongly disagreed, no healthcare professionals that were surveyed disagreed, 13.33% had a neutral response, 56.67% agreed, and 26.67% strongly agreed. The survey also inquired to see if the healthcare professionals knew how many additional calories a pregnant mother should consume in the first trimester, and only 23.3% answered correctly choosing zero additional calories. Only 43.33% answered correctly, choosing 300 additional calories when asked how many additional calories the pregnant mother should consume in the second and third trimesters. When asked if an obese pregnant woman increases the risk of her unborn child being obese in childhood and later in life 3.33% strongly disagreed, 16.67% disagreed, 13.33% were neutral, 53.33% agreed and 13.33% strongly agreed. The respondents were questioned if the healthy amount of weight gain should be discussed with each mother during her initial prenatal visit and 3.33% strongly disagreed, no participants disagreed, 10% were neutral, 56.67% agreed and 30% strongly agreed. No healthcare professionals strongly disagreed or disagreed when asked if iron needs to increase during pregnancy, 3.33% were neutral, 63.33% agreed and 33.33% strongly agreed. The final question inquired if pregnant and breastfeeding women should take a daily prenatal vitamin and no respondents strongly disagreed, disagreed, or had a neutral response, but 16.67% agreed and 83.33% strongly agreed.

The outcome of objective two was identifying the clinical personnel's gaps in confidence, knowledge, and satisfaction with their education and training regarding perinatal nutrition. The survey revealed approximately half of the staff felt confident providing nutritional education while the other half reported they lacked confidence. The needs assessment identified only half of the respondents had perinatal nutrition education while in school, but only 16.67% rated their satisfaction as satisfied. Additionally, only 33.33% reported they were satisfied with the education they received at the current facility and only 23.34% reported annual competencies were completed to increase their knowledge of evidence-based nutritional guidelines for the perinatal population. Furthermore, only 23.34% of the respondents knew that zero additional calories should be consumed during the 1st trimester and only

43.33% identified only 300 additional calories were needed in the second and third trimesters. The needs assessment results revealed that even though half of the staff reported they received education on perinatal nutrition while in college and approximately half felt confident providing the education to patients, almost 75% were not satisfied with their education in school or at the current facility. In addition, it is noteworthy that less than 25% of the healthcare professionals were aware no additional calories are needed in the first trimester and less than 50% were aware of the appropriate increase in caloric intake for the second and third trimesters, which plays a crucial role in the appropriate weight gain in pregnancy. Contrarily, the graduate student was pleased that 66.66% of the healthcare professionals recognized that obesity in pregnancy increases the risk of the unborn child being obese as a child and later in life. Furthermore, the participants identified the importance of the need to discuss adequate weight gain at the initial prenatal visit and to discuss appropriate nutrition at every prenatal visit, which is notable. Finally, all the respondents besides one identified the need for increased iron during pregnancy and the importance of taking a daily prenatal vitamin, which demonstrates the participants, received adequate training on these concepts.

The third objective was to provide recommendations to the organization to assist in improving the knowledge and confidence of healthcare professionals. The results provided the graduate student with the necessary data to offer recommendations to the organization to assist in increasing the knowledge base and confidence of the healthcare professionals providing nutritional counseling to the perinatal population. More specifically, recommendations were provided to the women's health managers and the chief obstetrician/ gynecologist as they directly oversee the health care professionals providing perinatal nutrition counseling. The first recommendation was to include perinatal nutrition guidelines and education for newly hired health care professionals'. Furthermore, it was recommended to have perinatal nutrition education and guidelines added to the health care professionals' yearly competencies.

Barriers and Limitations

The project was evaluated from the data extrapolated from the needs assessment survey. Barriers may include time constraints, which have the potential to impede healthcare professionals from providing evidence-based nutritional counseling to the perinatal population (Khomami et al., 2019). An additional limitation may include that the data for the scholarly project was only gathered from one institution and may not reflect an accurate depiction, but rather a generalization from one organization (Mekoha et al., 2021). The participation of most women's health staff is crucial for the project to succeed. In addition, the project is considered a success if the majority of the healthcare professionals participate in the survey and the organization is receptive to the recommendations provided. The survey was offered to the 35 healthcare professionals who met the requirements of the survey. Thirty-one of the thirty-five healthcare professionals responded, but one survey was excluded due to the survey not being completed in its entirety.

The needs assessment survey would also apply to other organizations that provide perinatal nutrition counseling. The recommendations would apply even if the data analysis from their needs assessment did not identify identical deficiencies, as new hire education and annual competencies will still offer an opportunity to improve the knowledge base and confidence level of the healthcare professionals. The costs to the organization would include one hour of compensation for the educator or manager creating the education, the cost of one hour of compensation for the new employee to complete the education during orientation, and the cost of one hour of wages for each healthcare professional annually to complete education/ competency on nutritional guidelines/ recommendations for the perinatal population.

Conclusion

The overall purpose of the scholarly project is to identify any potential healthcare professional knowledge deficits and confidence in providing nutritional counseling to pregnant women who are at risk for obesity during the perinatal period. The specific aim of the project is to assess and identify the

healthcare professional knowledge and perceived confidence in providing nutritional counseling and resources to patients receiving care in perinatal care settings. Conducting a needs assessment survey will provide the necessary insight for the project team to identify and understand where the deficits exist to develop recommendations for the organization which has the potential to affect healthcare professional knowledge and perceived confidence in providing nutritional counseling to this perinatal population at risk for obesity-related morbidity and mortality. The final scholarly project afforded me the opportunity to gather data to delineate where the inadequacies in knowledge, satisfaction, and confidence exist in thirty healthcare professionals who provide perinatal nutritional counseling in five rural FQHCs.

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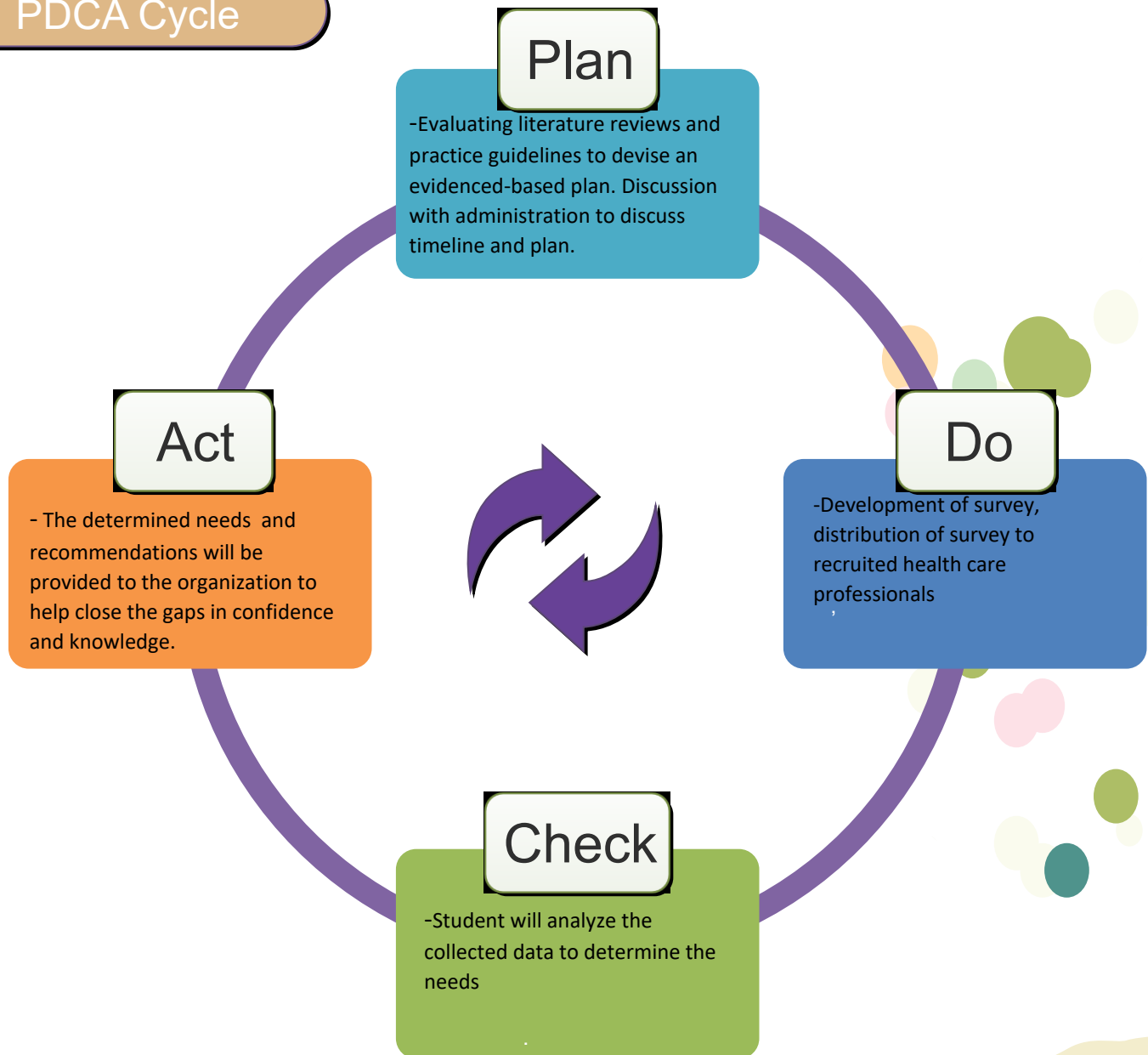
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Appendix A

Plan- Do-Check- Act (PDCA) Cycle Framework

PDCA Cycle



[Appendix B](#)[Survey](#)**Survey**

The survey below is to gauge the confidence, experience, training, education and knowledge of healthcare professionals in regard to nutrition who provide education to the perinatal population. The goal of the survey is to utilize the data obtained to improve the knowledge and confidence of healthcare professionals, which has the potential to increase the nutritional knowledge of the perinatal population.

This survey is being conducted as part of a doctoral nursing project at Otterbein University. Your insight and time are greatly appreciated.

1. What is your current job title?

Mark only one oval.

- ☐ Obstetrician/ Gynecologist
- ☐ Midwife
- ☐ Women's Health Nurse Practitioner
- ☐ Family Nurse Practitioner
- ☐ Registered Nurse
- ☐ Licensed Practical Nurse
- ☐ Medical Assistant

[Appendix B \(continued\)](#)[Survey](#)

2. How many years have you worked in Women's Health?

Mark only one oval.

- ☐ 0-1 year
- ☐ 2-4 years
- ☐ 5-7 years
- ☐ 8-10 years
- ☐ 11-13 years
- ☐ 14-16 years
- ☐ 17-19 years
- ☐ 20 years or more
- ☐ Other:
-

3. How confident do you feel in providing nutritional education to the perinatal population?

Mark only one oval.

- ☐ Not confident at all
- ☐ Slightly confident
- ☐ Somewhat confident
- ☐ Fairly confident
- ☐ Completely confident

[Appendix B \(continued\)](#)

[Survey](#)

4. Did the college you attend provide nutritional education to the perinatal population?

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

5. Rate your satisfaction with the nutritional education you received regarding the perinatal population while in college.

Mark only one oval.

- ☐ Very dissatisfied
- ☐
- ☐
- ☐
- ☐

Dissatisfied

Neutral

Satisfied

Very satisfied

[Appendix B \(continued\)](#)

[Survey](#)

6. How satisfied are you with the education you received on the nutritional guidelines/recommendations for the perinatal population at this facility?

Mark only one oval.

- ☐ Very dissatisfied
- ☐ Dissatisfied
- ☐ Neutral
- ☐ Satisfied
- ☐ Very Satisfied

7. Annual competencies are completed at my current place of employment to refresh or increase my knowledge of evidence-based nutritional guidelines/ recommendations for the perinatal population.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

[Appendix B \(continued\)](#)

[Survey](#)

8. Nutrition should be discussed at every prenatal visit and postpartum check-up.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

9. How many additional calories should a pregnant mother consume in the 1st trimester?

Mark only one oval.

- ☐ 0 Additional Calories
- ☐ 300 Additional Calories
- ☐ 500 Additional Calories
- ☐ 1000 Additional Calories

10. How many additional calories should a pregnant mother consume in the 2nd and 3rd trimesters?

Mark only one oval.

- ☐ 0 Additional Calories
- ☐ 300 Additional Calories
- ☐ 500 Additional Calories
- ☐ 1000 Additional Calories

[Appendix B \(continued\)](#)

[Survey](#)

11. If a pregnant woman is obese, she increases the risk of her unborn child being obese in childhood and later in life.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

12. The healthy amount of weight gain during pregnancy should be discussed with each mother during her initial prenatal visit.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

[Appendix B \(continued\)](#)

[Survey](#)

13. Iron needs increase during pregnancy.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

14. Pregnant and breastfeeding women should take a daily prenatal vitamin.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

15. Please type in a personal email address below (to ensure the anonymity of your employer) if you would like to be entered in the drawing for a chance to win a \$25 Amazon gift card for completing the survey.

Appendix C

Informed Consent

The Department of Nursing at Otterbein University supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty. We are interested in studying the effects of media on how people view themselves, their problems, and their futures. You will be participating in two sessions that will involve filling out some questionnaires, watching some videotaped materials, talking with the researcher, and doing some written and verbal tasks. It is estimated that this will take no more than two hours of your time. Although it is not likely, there is a chance that you might feel slightly uncomfortable with some of the questions and parts of the videotapes. Although participation will not directly benefit you, we believe that the information will be useful in evaluating the effects of media on viewers. Your participation is solicited although strictly voluntary. We assure you that your name will not be associated in any way with the research findings. The information will be identified only by a code number. If you would like additional information concerning this study before or after it is complete, please feel free to contact me by phone or mail.

Sincerely,

Deana Batross, Principal Investigator

Tiffany Fry, Co-Investigator

Otterbein University

Science Center, Suite 439e

1 Grove Street

Westerville, OH 43081

614-823-1614

Signature of subject agreeing to participate

With my signature, I affirm that I am at least 18 years of age.

*If participants will be endorsing electronic consent statements instead of a hard copy consent form, replace this signature line and text with the following.

By clicking on the (Next/Submit/>>>/I agree) button below, I consent to be in this study and affirm that I am at least 18 years of age.

Appendix D

IRB Approval



INSTITUTIONAL REVIEW BOARD

- ☒ Original Review
☐ Continuing Review
☐ Amendment

Dear Dr. Batross,

With regard to the employment of human subjects in the proposed research:

HS # 22/23-49

Batross & Fry: Inadequacies in Nutritional Counseling in the Perinatal Population

THE INSTITUTIONAL REVIEW BOARD HAS TAKEN THE FOLLOWING ACTION:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Disapproved |
| <input type="checkbox"/> Approved with Stipulations* | <input type="checkbox"/> Waiver of Written Consent Granted |
| <input type="checkbox"/> Limited/Exempt/Expedited Review | <input type="checkbox"/> Deferred |

*Once stipulations stated by the IRB have been met by the investigator, then the protocol is APPROVED.

1. As Principal Investigator, you are responsible for ensuring all individuals assisting in the conduct of the study are informed of their obligations for following the IRB-approved protocol.
2. It is the responsibility of the Principal Investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the Principal Investigator leave the university, signed consent forms are to be transferred to the IRB for the required retention period.
3. If this was a limited, exempt, or expedited review, there is no need for continuing review unless the investigator makes changes to the proposed research.

4. If this application was approved via full IRB committee review, the approval period is one (1) year, after which time continuing review will be required.
5. You are reminded you must promptly report any problems to the IRB and no procedural changes may be made without prior review and approval. You are also reminded the identity of the research participants must be kept confidential.

Signed: Noam Shpancer
IRB Chairperson

Date: 2-10-2023