Prenatal Education to Improve Reporting of Postpartum Depression

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Abstract

Postpartum depression (PPD) is a concerning medical condition that many women experience after delivery. In its mild form, it is manageable but in its more serious state, expert consultation may be needed for evaluation and treatment. Existing literature focuses on the prevalence of the condition, stigma that exists, and postpartum depression education. The exact prevalence of postpartum depression may be unknown due to lack of reporting symptoms, like other mental health condition. The purpose of this capstone project was to determine whether prenatal education improved knowledge and comfortability with reporting symptoms. Implementation of the project included presenting education to pregnant mothers in an electronic recording and evaluations were made using a pre/post style survey that related to the mother's knowledge base of the condition and her feelings regarding comfortability in reporting symptoms. Methods included the application of two dependent t-tests for comparing pre/post-intervention changes in knowledge of the condition and likelihood of reporting symptoms. A small sample size of n=3 was obtained, and the analysis of survey results did not show statistical significance. Limitations of this project were related to the small sample size and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic. An in-person group education class was the original project design and with the restriction of SARS-CoV-2, alterations were made for the safety of the participating mothers and a decision to do a presentation style recording was alternatively implemented.

Conclusion: While results did not show statistical significance, future research can continue to focus on the educational aspect of postpartum depression to help reduce stigma associated with the condition and improve the reporting of symptoms for earlier treatment intervention from providers.

Keywords: postpartum depression, PPD, mental health, stigma, prenatal, education, pregnant

Prenatal Education to Improve Reporting of Postpartum Depression

Mental health conditions on a national and global level are a significant concern not only for those affected by them but for healthcare organizations as well. Postpartum depression (PPD) is no different. It is a mental condition that can affect mothers during the postnatal period, ranging from mild symptoms to those with devastating consequences. With its unpredictable components and the negative stigma that can be associated with its diagnosis, women may struggle to report or even recognize concerning symptoms. Providers and organizations play an important role in developing a plan of care to outline obstacles and create supportive interventions for this vulnerable population. Improving the education with the prenatal mother could help provide usable knowledge, comfort, and strength to recognize and report feelings to their providers earlier, with a goal to initiate treatment sooner and decrease the likelihood of an adverse event from occurring.

Overview

Background

Postpartum depression can affect 1 in 9 women in this country with some states showing a prevalence as high as 1 in 5 (Centers for Disease Control and Prevention [CDC], 2019). After delivery women may feel as though the “hard” part is over. However, women’s hormones and stress response will continue to fluctuate for some time, leaving them vulnerable to potential postpartum depression. With varying symptoms that could occur for up to one year after delivery, women may experience feelings of sadness, anxiety, depression, panic, post-traumatic stress, obsessive compulsions, and psychosis (Ford, Shakespeare, Elias, & Ayers, 2017). In their mildest form, some of these symptoms can be managed by the individual, but if symptoms worsen, professional treatment is recommended to help treat the condition.

While it can be difficult to predict those mothers who will be affected by postpartum depression, certain factors can make a woman's risk for symptoms higher than others. In a large meta-analysis that included 291 studies from 56 countries, global predictors of postpartum mental health conditions were more associated with those who experienced inequalities with wealth and higher demands and stress of the mother (Hahn-Holbrook, Cornwell-Hinrichs, & Anaya, 2018). Outside of these studies, there are additional risk factors that can increase the likelihood of symptoms; these include decreased social support, history of depression, family history of depression, multiple babies at once, being a younger mother, complications during pregnancy or birth, or a baby in need of hospitalization (CDC, 2019). If any of these risk factors are identified during the prenatal period, it is best practice for providers to monitor the patient for symptoms more closely and establish earlier follow up for a more focused visit postpartum.

The Edinburgh Postnatal Depression Scale (EPDS) is the most used screening process worldwide and has been outlined as a beneficial tool that can help a provider identify symptoms of postpartum depression and anxiety (Gollan et al., 2017). While this tool is useful, it does not solve the issue. The stigma associated with admission of symptoms or being perceived as a bad mother can affect self-awareness and prevent those affected from speaking truthfully about feelings and symptoms (Frankhouser & Defenbaugh, 2017). Negative stigma associated with postpartum depression as well as other mental health conditions are believed to reduce the honest reporting of symptoms. Altogether, it has been estimated that in the U.S, 66% of those suffering from general depression are undiagnosed (United Health Foundation, 2019). Without self-reporting, there cannot be a diagnosis, which in turn prevents the initiation of necessary and potentially life-saving treatment.

Education plays an important role in preparing individuals for changes that may occur with their health. The prenatal period is filled with opportunities for mothers to learn about their changing bodies, growing baby, delivery process, and caring for a newborn. This type of education can help a woman become more confident, have improved skills, and a more appropriate attitude in handling situations encountered during the stages of pregnancy and being a new mother (Leach, Bowles, Jansen, & Gibson, 2017). Adding emphasis to postnatal mental health conditions, such as postpartum depression, may help improve a mother's recognition of symptoms and reporting to providers. Furthermore, group-format education on postpartum depression, versus individual education, may be more effective in decreasing the stigma of the diagnosis, particularly for women with greater psychosocial risk factors (Heberlein et al., 2016). Ultimately, the goal of such education is to help normalize the condition of postpartum depression to improve postnatal reporting of symptoms and allow for earlier treatment intervention.

Problem Statement

While more attention to screening for depressive symptoms is currently given in the postpartum period, opportunity exists to educate women during prenatal care to prepare them to discuss symptoms that may arise. Although not all women will experience symptoms, all women should be educated about postpartum mental health, what to do if symptoms are experienced, and resources available to help with the treatment process. Group education approaches have been shown to be successful for conditions such as diabetes mellitus in bringing awareness to the disease, improving recognition of symptoms, facilitating communication with providers, and being a cost-effective intervention for the organization (Merakou, Knithaki, Karageorgos,Theodoridis, & Barbouni, 2015). Using this model, similar outcomes may be

predicted for postpartum depression. The clinical question asked in this project was will providing a group education class discussing postpartum depression to prenatal women improve their knowledge of the condition, improve their comfort level with discussing symptoms, and improve the likelihood of reporting feelings of PPD to caregivers?

Purpose Statement

The purpose of this project was to determine if providing a group education class discussing postpartum depression to prenatal women will improve their knowledge of the condition, improve their comfort level with discussing symptoms, and improve the likelihood of reporting feelings of PPD to caregivers.

Outcomes

This project proposed to develop an education curriculum focused on postpartum depression awareness. The education was presented to women in their second or third trimester of pregnancy. Two project outcomes were identified.

The first outcome was to determine knowledge of PPD symptoms, risk factors, and treatment strategies, measured via assessment tool. Second, comfort level and likelihood of discussing symptoms if they occur, were measured with the same assessment tool.

Review of Literature

A comprehensive, structured review of literature was conducted through PubMed Health, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Google Scholar, and the Education Resources Information Center (ERIC) to elaborate on the topic of postpartum depression and how early education of prenatal women can empower women to self-recognize and sooner report symptoms to providers.

When using CINAHL and PubMed Health, a literature search was conducted using key words “prenatal women” “postpartum depression” and “education.” Additional search terms also included “pregnant women” “empower” and “reducing stigma.” Set limitations for each search included reviewing only full text articles, academic journals, publications dates within the last five years, English text, and female participants. Inclusion criteria were articles that included areas of focus, systematic reviews, meta-analysis, and clinical studies. Exclusion criteria were articles not related to the population and those that did not relate to education. After limitations, inclusion and exclusion criteria were applied, a Boolean search using prenatal women AND postpartum depression AND prenatal education returned eight results in CINAHL and seven results in PubMed. Google Scholar and ERIC did not produce additional articles beyond those identified in Appendix A.

The body of literature reviewed includes one evidence report with systematic review, two quantitative studies, three expert opinions, a large systematic review with meta-analysis, and meta-regression, and a smaller systematic review with meta-analysis of both quantitative and qualitative studies. This reference matrix is outlined in Appendix B.

Prevalence of Postpartum Depression

Multiple studies identified in the literature search address the prevalence of postpartum depression. These articles consistently report that the prevalence may be higher than typically assumed. Wilkinson’s report on women affected in the United States estimates the prevalence of PPD at 13%, and goes further in discussing various implications of the condition including general sadness, poor infant bonding, impaired development of the child, marital difficulties, increased risk for suicide, and even harm or death to the new baby (Logsdon, Tomasulo, Eckert, Beck, & Dennis, 2012; Wilkinson, Anderson, & Wheeler, 2017). On the milder end of the

spectrum, the “baby blues” can begin as soon as the first week after delivery and potentially affect 70-85% of new mothers (Lind, Richter, Craft, & Shapiro, 2017). These feelings can be isolated in nature or progress to more concerning symptoms. Overall, epidemiologic reports are consistent in revealing a prevalence of PPD between one in five and one in nine mothers (CDC, 2019).

Mental Health Stigma

The stigma associated with a mental health condition can be a significant barrier to an admission of symptoms and acceptance of the diagnosis. The National Alliance on Mental Health (NAMH) defines stigma as a negative view of individuals leading those affected to have feelings of shame, isolation, judgement, rejection, and discrimination (National Alliance on Mental Illness [NAMI], n.d.). Postpartum depression, defined as a mental health condition by the CDC, therefore often results in feelings of stigma for women experiencing symptoms.

Because of the stigma associated with PPD, women may under-report or deny symptoms during visits with their providers. Corrigan, Kwasky, & Groh (2015) discuss their results of a cross-sectional study with 61 women, exploring the relationship between postpartum depression and social support. One finding suggested that even though half of their participants screened positive for postpartum depression using the EPDS, they denied being depressed to their providers. These results could be related to the stigma surrounding a mental health diagnosis. A second article, which reviewed barriers to admission of symptoms, found that some mothers ignored or denied symptoms to their providers to avoid being viewed as “bad” or “crazy” (Hansotte, Payne, & Babich, 2017). Additional evidence that stigma plays a role in ignoring or denying PPD was outlined in a thematic analysis using online support forums (Moore, Evans, & Farrell, 2016). The authors discussed their results of 1546 messages from 102 online threads

related to stigma and found that women freely discussed internal stigma about themselves, external stigma related to others' opinions, and treatment stigmas from previous negative experiences with providers.

Taken together, these finding suggest that not only do women feel comfortable discussing symptoms and experiences in a more informal online setting but admit that all forms of stigma can be experienced and may play a role in whether admission of symptoms and treatment requests are communicated effectively to providers.

Postpartum Depression Education

Education has been shown to be a large contributor in encouraging women to seek help for postpartum depression (Logsdon et al., 2012). Educating about postpartum depression and screening appropriately may therefore result in more women receiving earlier treatment. Several studies support this premise. One article discusses 2006 legislation in New Jersey, that mandated screening and education for postpartum women (Farr, Denk, Dahms, & Dietz, 2014). After evaluating participation and screening rates, the authors determined that while 94.5% of the participating women screened negative for PPD, 7.8% of these women still reported depressive symptoms postpartum (Farr et al., 2014). This reveals that an increase in education and screening should continue to be a focus postpartum as current screening tools may not accurately identify feelings and could potentially delay treatment and support for some.

Similarly, authors of a comparative cohort study found that prenatal women with greater psychosocial risk factors who participated in group prenatal education, showed a decrease in pregnancy specific distress and increase in coping strategies (Heberlein et al., 2016). While the Heberlein study showed more improvement in those women with more risk factors, there were no negative outcomes related to the education for women with fewer risk factors. Similarly,

Feinberg et al., discussed the impact of a prenatal parenthood education program on improving quality parenting and decreasing adverse birth outcomes related to maternal stress and depression (Feinberg, Roettger, Jones, Paul, & Kan, 2015). Through measurement of cortisol levels as an indicator of stress, women with higher levels of cortisol during pregnancy were shown to have less adverse birth outcomes if they had participated in the education program. Because adverse birth outcomes, along with stress and depression, are risk factors for PPD, it can be inferred that increased education is correlated with more positive outcomes in women who experience symptoms.

While research on this topic is limited, the reported benefit of prenatal education on reducing adverse events that have been reported justifies additional studies.

Theoretical Framework

The revised Iowa Model for evidence-based practice to promote excellence in health care is an example of a framework that exists to help guide practice change and is outlined in Appendix C (Cullen et al., 2018). For the topic of postpartum depression and the need for more education in the prenatal period, the Iowa Model helps structure the planning process for successful intervention and dissemination.

The first step in the Iowa Model was used to outline a patient-identified issue (Cullen et al., 2018). For this capstone topic the issue is that the stigma associated with postpartum depression symptoms may deter women from reporting their symptoms to providers.

Next, the PICOT question was evaluated, and it was determined to be a priority for the population, so a team was developed. The question asked in this project was: Will providing an education class discussing postpartum depression to prenatal women improve their knowledge of the condition, improve their comfort level with discussing symptoms, and improve the likelihood

of reporting feelings of PPD to caregivers? A community assessment was completed and feedback from those responses indicated that there was a need for more to be done with this topic. This finding, combined with the results of a systematic review of evidence on the prevalence of postpartum depression, stigma of mental health, and potential education interventions suggested the need for further study through this capstone project. Correspondingly, the makeup of the team included pregnant participants, student led educator, and college faculty.

Designing and piloting the practice change was the next step of the theoretical framework. The concept of this project was simple; educating on changes that occur as a woman transitions to the postpartum period, risk assessment, symptom recognition, prevention, and when to ask for help from providers was conducted via recorded class to help normalize the condition and empower women to discuss feelings openly and without fear. This is in line with the framework of the Iowa Model as it engaged the patient, can be implemented into many organizations, enhances existing education, and potentially engages providers. With a pre/post assessment, inferences were made on whether there was a shift in the woman's knowledge base and improvement in psychosocial feelings. Data collected from the project indicated an improvement in overall totals of the returned post-education surveys. The project can now be developed into a business plan specific to any organization for adoption into practice.

According to the Iowa Model framework, once the change is recognized as a permanent intervention, it must be implemented into the organization (Cullen et al., 2018). All staff members, providers, and administration, existing and new, must be educated on its components and the new policy. Ongoing review of the practice change will be performed through analysis of

potential long-term outcomes, including increased reporting of symptoms by mothers, earlier treatment interventions, and results of patient satisfaction surveys.

The final piece of the model is to disseminate the results to key entities (Cullen et al., 2018). Key entities related to this project may include future patients, providers, educators, stakeholders, and outside organizations that could benefit from the intervention.

Postpartum depression is considered one of the most common complications of pregnancy in the United States (Hamilton, Stevens, Lillis, & Adams, 2018). Given its prevalence, significant opportunity exists to educate and support women prior to the postpartum period to prepare them for the potential of experiencing symptoms. The Iowa Model best lays the framework for this capstone with the aim of helping mothers take control of their postpartum experience.

Sample

The population of interest for this project was prenatal women, specifically those within their second or third trimester. This time during pregnancy is preferred because educating post-delivery, when mothers are often sleep-deprived and overwhelmed, may not result in efficient retention of information.

Inclusion criteria for participants were female gender, a minimum of four months gestation, and able to read and speak English. Exclusion criteria were current diagnosis of depression and pregnancy complications that may contraindicate this type of education technique.

Setting

The setting for this project was originally a local college campus associated with a large health organization. This organization specializes in acute care, primary care, specialty care,

women's health, and obstetric care. The college is a private institution that specializes in nursing and allied health, including advanced nursing practice opportunities. While the health organization does offer similar classes, availability of these classes to mothers not receiving care at this organization or who live outside the community may be limited. Creating a separate class in a central location on the college campus was the goal, to help recruit mothers from outside the organization's reach, as well as from higher risk areas in the community. This setting was supported by the health organization's prenatal education facilitator, who acknowledged the need for greater focus on PPD in other areas of the community.

Unfortunately, due to the severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) pandemic, a group education approach in a central location was not possible regarding social distancing and quarantine measures. A recorded presentation that could be viewed in the safety of the participants home became the new setting for the project.

Organizational Assessment

The mission of the organization describes influencing the health and well-being of the community through the education and development of individuals. The proposed education-based project focused on helping women become more knowledgeable and confident on the topic of PPD aligns well with this stated mission.

A few facilitators were already in place that indicated the readiness of the organization for the proposed project. They included available space for group-education format, technology resources for the group education, and support from faculty and administration. An additional facilitator was the endorsement from the education service line of the healthcare system. The most significant barrier or risk to the project was the SARS-CoV-2 pandemic. This virus affected this project by changing it from an in-person group education class to a recorded presentation

which may have inhibited interested in participating. Additionally, the lack of supportive providers may have contributed to the lower participant recruitment. To minimize this risk, a range of options for recruiting participants were used, including distribution of fliers to local clinics and community sites, and social media-based advertisements.

Methodology

Introduction

The original proposed capstone project was designed to be an in-person, group-format education regarding postpartum depression. With the SARS-CoV-2 pandemic, the project was changed from an in-person education class to a recorded presentation delivered by the project investigator. A new educational curriculum was created and recorded as a PowerPoint presentation and disseminated to recruited participants. The curriculum was developed using evidence-based guidance and focused on discussing all the components of postpartum depression, without the time constraints of an obstetric appointment.

The format of this learning included a 36-minute recorded speaker and presentation style curriculum and was offered to prenatal women who were preferably in their second or third trimester of pregnancy. This recording was made available to participants via emailed link to view in the comfort of their own home to view at a time that was convenient for them. Data supported a group approach to education because it may help improve recognition of new or worsening symptoms and improve communication between the patient and the provider (Merakou et al., 2015). However, given the SARS-CoV-2 pandemic, group education was not an option for this project, but could still be a future goal. Despite the pandemic, the goals of the project remained constant. The short-term goals of this project were to improve prenatal women's knowledge of postpartum depression, their comfort level, and likelihood of discussing

these symptoms with their caregivers. The long-term goal was to increase the rate that women discuss postpartum depression with their providers so that earlier treatment can be initiated, decreasing the risk of adverse events.

Implementation Procedures

As described, the revised Iowa Model for evidence-based practice outlines the steps that include identifying the opportunity, stating the purpose, forming a team, appraising the evidence, designing the project intervention, integrating the project into practice, and disseminating the results (Cullen et al., 2018). This process guided this project intervention into implementation.

Identification of the opportunity occurred prior to the start of the project planning process. This included gathering data associated with the prevalence of postpartum depression as well as outlining the stigma associated with mental health conditions and lack of reporting by those affected. Additionally, a review of the lack of consistent educational opportunities for prenatal women was identified as a potential barrier to that reporting. The purpose was stated to be that improving the postpartum curriculum in the prenatal period through increased education could create a knowledge base for women to ease anxiety, promote empowerment, allow for better recognition of symptoms, and improve reporting to providers more quickly.

The curriculum for this project was developed using evidence-based research and best practice approaches and had the sole purpose of educating women about postpartum depression including physiology, symptoms, prevention, treatment, and resources.

Appraisal of the evidence related to benefits of group education as well as ways to improve mental health stigma was of great focus. Focusing on normalizing the condition, incorporating real life personal stories, reporting the prevalence of symptoms, outlining risk factors, and discussing treatment options were important to help reduce negative psychosocial

feelings that may be associated with postpartum depression, ultimately affecting the reporting of symptoms.

Designing the intervention was the next step in this project. A presentation was created to deliver the curriculum via recorded presentation. The project investigator was responsible for facilitating the presentation. The original plan was to include volunteer speakers including affected mothers sharing their own experiences would have helped provide depth to the intervention but due to the SARS-CoV-2 pandemic was not able to be executed.

The participant size was not limited due to the education being recorded instead of previously conducted via an in-person class. Participants included pregnant women in their second or third trimester who were recruited through community and social media outlets. To facilitate the recruitment process, a one-page paper flier of the pilot project was created. The flier included an overview of the project, class schedule, and contact information of the investigator. Copies of the fliers were distributed to local community organizations where pregnant women may seek care. Additionally, social media distribution occurred through community threads and forums sites specializing in women's pregnancy support. Interested participants were encouraged to send inquiries through a designated email address, where interest could be established, inclusion/exclusion criteria could be examined, and contact information could be collected for future reminders and the post-intervention assessment.

When restrictions were put into place because of social distancing, changes to the recruitment process eliminated any further community flier recruitment and relied strictly on social media recruitment with the updates that the project would no longer be in person but through recorded and electronic channels only. Those participants that had already expressed

interest in the live class were contacted and given the opportunity to continue the project with the new changes or withdraw their participation.

Once participants were finalized, informed consent letters were emailed along with an identification number specific to that person to be included in both the pre and post survey.

Prior to the educational presentation being distributed, participants were sent an email link to complete a Prenatal Psychosocial Assessment on Postpartum Depression (PPAPD) created by the project investigator. The 10-question assessment gathered information on how each mother felt about their current knowledge about postpartum depression and likelihood of reporting symptoms to others prior to the education. Following the completion of the pre-education survey, the educational presentation link was emailed to each participant in the same manner. The education was comprised of a PowerPoint presentation created and delivered by the project investigator. The curriculum was discussed in a way that balances the delivery of important facts with personal reflection. The goal for participants was to become more knowledgeable of the condition, recognize varying degrees of symptoms, know when to ask for help, and feel empowered to communicate effectively with support persons and providers so a plan of care can be developed. After the presentation, the participant was instructed to email a confirmation to document the date completed. A follow-up PPAPD was emailed two weeks later to assess changes that may have occurred because of the education provided.

The outcomes for this project were to see an improvement in knowledge and psychosocial feelings associated with discussing PPD symptoms. This result would justify continuing this type of postpartum depression education with the long-term goals of empowering additional pregnant mothers and increasing the reporting of symptoms to providers. Lastly, in accordance with the Iowa Model, the results will be disseminated back to local providers, with

the objective of PPD-based education of second and third trimester women becoming integrated into routine obstetric practice.

Measurement Instruments

To measure the effectiveness of this education project, each participant completed a PPAPD two times, prior to and following the education curriculum. The PPAPD was a newly created assessment tool, developed exclusively for this project. Therefore, no psychometric data was available. The PPAPD is a 10-item questionnaire that seeks insight into the mother's knowledge base of postpartum depression, comfort level, and likelihood of reporting symptoms to caregivers.

Data Collection

Completed PPAPDs were reviewed to determine whether outcomes were met. An assigned identification number was used to link participants' pre-and-post intervention responses, which were compared to evaluate any changes as a result of the education. Responses to questions regarding age, race, number of pregnancies, and number of live births were originally intended to be used to identify any relationships between demographics and psychosocial feelings, although this analysis was not necessary for this project.

Utilizing this PPAPD assessment was intended to provide a clear interpretation of how well the group class approach and evidence-based content prepared pregnant women for coping with the potential development of symptoms of the disease, and how best to communicate with providers if they do occur. These results were reviewed and will be disseminated to key stakeholders within the healthcare organization to show the value of the class and areas needed for improvement.

Data Analysis

To investigate the research question, two-dependent t-tests were conducted through Excel Office 365. The data analysis was then related to each outcome. Questions 1-4 on the PPAPD relate to the capstone project outcome of post-education changes in knowledge of postpartum depression. Descriptive statistical analysis was performed to determine any change in knowledge as a result of the intervention. Questions 5-10 of the PPAPD assessment relate to the outcome of changes in women's comfort level and likelihood of reporting symptoms related to PPD. Descriptive analysis was conducted on the responses to these questions to evaluate whether this outcome was met. A statistician was utilized to assist with the capstone data analysis as needed.

Ethical Considerations/Protection of Human Subjects

This capstone project was a research-based initiative designed to incorporate existing knowledge of postpartum depression into to an improvement intervention with the potential to benefit an at-risk population.

IRB approval was obtained prior to the start of the project. CITI certification for the investigator and assigned faculty member were completed. The consent to participate in the capstone project was also completed.

To ensure participant anonymity and confidentiality of the data, each participant was provided an identification number for their assessments that was only known by the project investigator. The pre-intervention assessment documents were administered and collected via Google survey by the investigator. The assessment results were kept on a locked, password-protected computer and only accessed by the investigator. The post-assessments were handled the same way. The results of both assessments were entered into software for data analysis and

stored on the investigator's password-protected computer. When the data was transferred to the statistician, the identification number was utilized to link assessments for paired t-test analysis.

There was no greater than minimal risk associated with this capstone project. However, pregnant women are classified as a vulnerable population. Risks associated with this project include the potential for psychological distress related to the nature of the education and the psychosocial questions on the pre/post assessment. Answering these questions may have elicited an emotional response by the participants. To address the potential that some participants need psychological or emotional support, contact information for community resources were within the presentation and were made available to email on request to the participant. Importantly, the results of this capstone project did not negatively affect the participants' prenatal care, delivery experience, or postpartum period. Potential benefits of participating in this project included increased knowledge of postpartum depression awareness, improved ability to self-recognize symptoms, and enhanced communication between providers and participants.

There was no personal benefit to the investigator resulting from the capstone other than scholarly experience. The investigator had no personal relationship with potential participants. Therefore, no conflict of interest existed.

Results

The results of the three linked pre-and-post surveys were analyzed through dependent t-tests. The first outcome was to evaluate the knowledge base of the participants regarding postpartum depression symptoms, risk factors, and treatment strategies. Questions 1-4 on the pre and post survey addressed this outcome. The results of the first dependent t-test ($p = 0.099$) indicated that there was no statistical significance between the groups. This suggests the intervention did not have an effect.

The second outcome was to evaluate the participants' comfort level and likelihood of reporting symptoms if they occurred. Questions 5-10 on the pre and post survey addressed this outcome. The results of the second dependent t-test ($p = 0.5$) indicated that there was no statistical significance between the groups. This suggests the intervention did not have an effect.

When reviewing individual surveys, it was noted that each of the three participants did have a slight improvement in certain score. Two of the participants showed an improvement of at least two points on questions 1-4 and one participant showed a one-point improvement on questions 5-10 when comparing pre-and-post test results. However, due to the small sample size the overall significance was not evident.

Discussion

The purpose of this project was to determine whether the practice of prenatal education of postpartum depression influences a woman's knowledge base of postpartum depression as well as a woman's comfort level in reporting symptoms. This was evaluated by the results of a pre and post survey assessment prior to the review of an education presentation and two weeks after review of the education. The responses from the participants on both the pre and post survey revealed that while slight improvements were scattered through the three participants, overall statistical significance was not achieved.

Limitations

There were significant limitations to this project. One of the limitations that most impacted this project was the small sample size, which made determination of statistical significance impossible. Additionally, with the worldwide repercussions of the SARS-CoV-2 pandemic, the original design of the project was changed. Recruitment of participants was completed solely through means of social media instead of fliers to physical locations where

pregnant women would seek care. Also, the in-person group approach to presenting the education was changed to a recorded presentation and pre/post surveys sent via email. It is likely that multiple avenues for participant recruitment and an in-person, group education class, may have provided more interest in the project, increasing the sample size.

Despite these limitations, the findings, particularly when reviewing individual scores, suggest that future research and participation from a larger health organization would be beneficial. Seeking support from a large healthcare organization that has consistent access to a larger population of pregnant women and the ability to incorporate this type of learning into existing education curriculum would provide additional opportunities for further research.

Plan for Sustainability

If future research supports these preliminary findings and suggests the intervention is effective, sustaining the intervention would require support from the organization. Having the endorsement of one or more obstetric providers would give the project the depth and support it needs to be maintained as a permanent part of practice and benefit to the community. Additionally, continuous reviews of the intervention by key stakeholders, once incorporated into practice, would be necessary to determine effectiveness within the organization and for participating mothers. Continued updates would also need to be incorporated into the education as significant evidence related to these practices emerge.

Implications for Practice

The small sample size and the results of the dependent t-tests prohibit any interpretation of this project on implications for practice. However, the individual responses do indicate a slight effect of the intervention, although no significance was determined.

This project paves the way for future research involving similar evidence-based educational curricula and measurement tools but with substantial changes to recruitment and implementation. With organizational support, wider recruitment, greater participation and an in-person intervention, significant opportunity exists to provide a valuable service to this vulnerable population and to contribute to the evidence in this area.

Conclusion

In conclusion, this goal of this project was to address the ongoing problem of postpartum depression, not by attempting to prevent the condition, but by empowering women to be knowledgeable about symptoms that may occur and reducing the stigma associated with the diagnosis, and to improve earlier recognition and reporting. While a group education approach was the original foundation of the project, the SARS-CoV-2 pandemic prevented exact replication of the initial proposal. With unsuccessful recruitment and the setting change from an in-person class to a recorded presentation, the data analysis did not support the intended outcomes. However, with a larger sample size, statistical significance may be achieved. Future research with more participants and implementation of the original project would allow for additional data collection and variations of the intervention. Postpartum depression is just one area of many mental health conditions that need further attention. Addressing the concerns that surround that topic as well as providing needed information and support to a vulnerable population should continue to be areas of immediate focus.

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Hamilton, N., Stevens, N., Lillis, T., & Adams, N. (2018). The fourth trimester: toward improve postpartum health and healthcare of mothers and their families in the United States. *Journal of Behavioral Medicine*, *41*, 571-576. https://doi.org/10.1007/s10865-018-9969-9

Hansotte, E., Payne, S. I., & Babich, S. M. (2017). Positive postpartum depression screening practices and subsequent mental health treatment for low-income women in Western countries: A systematic literature review. *Public Health Reviews, 38*, 1-17. https://doi.org/10.1186/s40985-017-0050-y

Heberlein, E., Picklesimer, A., Billings, D., Kolb-Covington, S., Farber, N., & Frongillo, E. (2016). The comparative effects of group prenatal care on psychosocial outcomes. *Archives of Women's Mental Health*, *19*, 259-269. https://doi.org/10.1007/s00737-015-0564-6

Leach, J., Bowles, B., Jansen, L., & Gibson, M. (2017). Perceived benefits of childbirth education on future health-care decision making. *The Journal of Perinatal Education*, *26*, 49-56. https://doi.org/10.1891/1058-1243.26.1.49

Lind, A., Richter, S., Craft, C., & Shapiro, A. C. (2017). Implementation of routine postpartum depression screening and care initiation across a multispecialty health care organization:

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Logsdon, M. C., Tomasulo, R., Eckert, D., Beck, C., & Dennis, C. L. (2012). Identification of mothers at risk for postpartum depression by hospital-based perinatal nurses. *American Journal of Maternal Child Nursing, 37*, 218-225. https://doi.org/10.1097/NMC.0b013e318251078b

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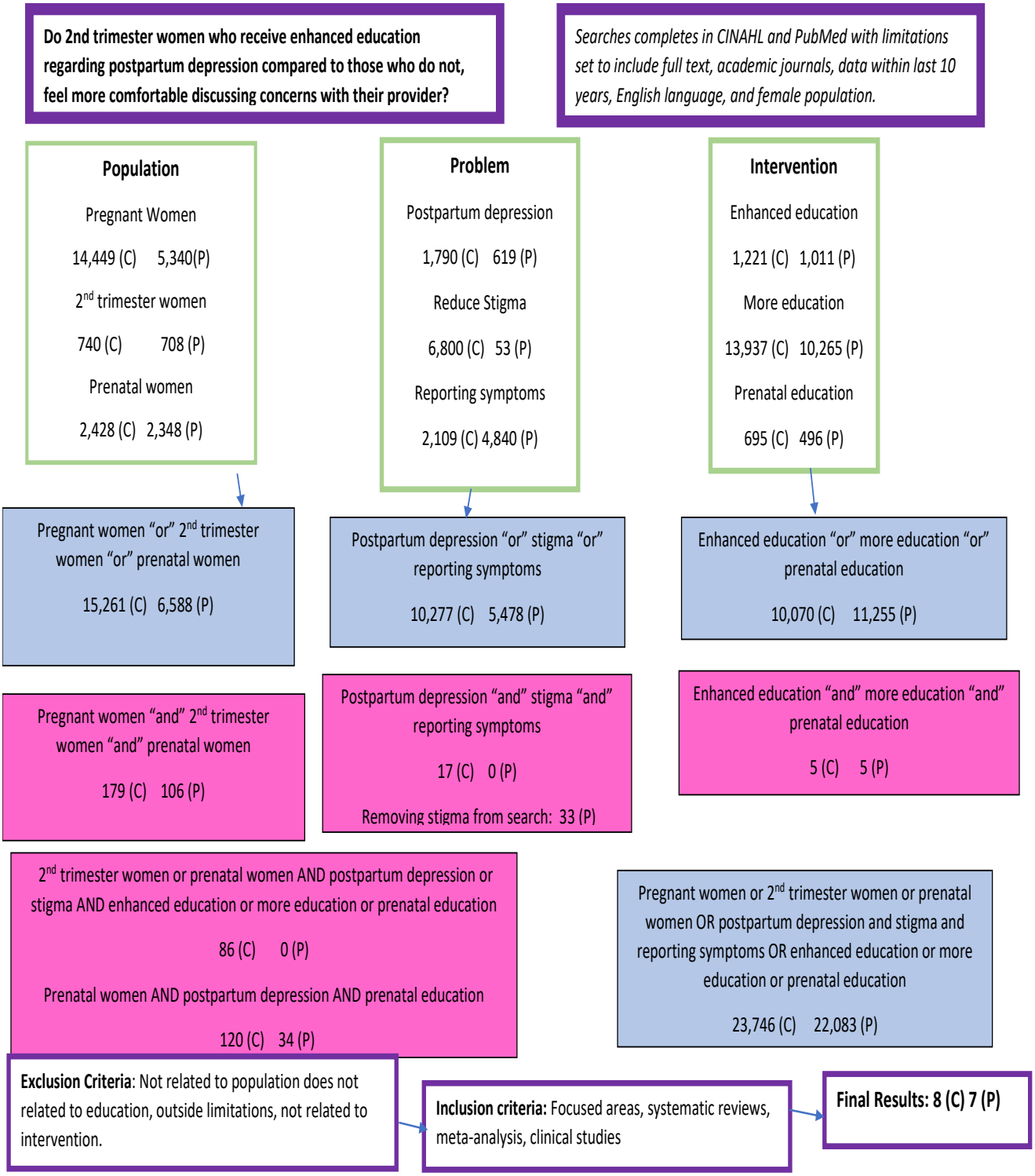
Appendix A
Literature Review



Appendix B

Reference Matrix

Clinical Question:

Do second trimester women who receive enhanced education regarding postpartum depression compared to pregnant women who do not, feel more comfortable discussing and reporting symptoms to providers as evidence by the results of a pre/post education assessment?

Citation/Level of Evidence	Participant / Setting/ Sample Size	Purpose/ Background	Methods/Design & Limitations	Findings/Summary/Strengths/ Weakness	Applicability to Own Research
O'Connor, E., Rossom, R. C., Henninger, M., Groom, C., & Burda, B. U. (2016). Primary care screening for and treatment of depression in pregnant and postpartum women: Evidence report and systematic review for the US Preventive Services Task Force. *JAMA*, *315*, 388-406. https://doi.org/10.1001/jama.2015.18948	6 trials (n=11,869) and 23 studies (n=5398) were used to determine reductions in screening programs and depressive symptoms.	To determine if the effects of screening pregnant and postpartum women will reduce depressive symptoms and decrease the prevalence of postpartum depression in women 18 years and older.	Search terms included depression remission, prevalence, symptoms, and related measures of depression recovery or response; sensitivity and specificity of selected screening measures to detect depression; and serious adverse effects of antidepressant treatment	6536 titles and abstracts and 478 full-text articles were reviewed by two independent investigators with inclusion criteria listed including 18-year-old older women, English text, good quality studies, postpartum or pregnant at the time of enrollment and in highly developed countries. Limitations include those with medical or mental health conditions Quality was assessed using criteria defined by the USPSTF Recommendations include to help the US Preventative Services Task Force (USPSTF) update its recommended depression screening and expand it to utilize evidence related to postpartum and pregnant women.	This article supports my research because it identifies a significant review of the data that exists regarding screening to help identify postpartum depression and associated benefits and harms.

Evidence Report and Systematic Review, (Cullen et al., 2018).					
Corrigan, C. P., Kwasky, A. N., & Groh, C. J. (2015). Social support, postpartum depression, and professional assistance: A survey of mothers in the Midwestern United States. *The Journal of Perinatal Education, 24*, 48-60. https://doi.org/10.1891/1058-1243.24.1.48 Quantitative Study, cross-sectional (Cullen et al., 2018).	61 women who fit the criteria of delivering a child within the last 8 months, at least 18 years of age, and able to read and write English. Recruited through word of mouth from urban and suburban communities within Midwestern United States.	To determine the relationship that exists between postpartum depression and social support and whether mothers who were overwhelmed sought professional help.	Participants completed a one-time 47-item questionnaire the asked questions related to demographic data, social support, and depression Limitations include the potential for a casual effect, small sample size, restriction of data collection, lack of diagnostic assessment.	Findings demonstrated that even though a positive postpartum depression was identified, the self-assessment denied feelings of depression. Mothers who sought professional help where more overwhelmed in life since becoming a mother. This study contributed to research by outlining that relationship between social support and depression and comparing results between whites and minorities in the Midwest United States Strengths: Outlines the need to assess new mothers for a support system and access to knowledge in the postpartum period Weakness: small sample size	This article supports my research because it shows that using a screening tool alone may not be enough to properly assess and treat women with depressive symptoms and more support is needed.
Citation/Level of Evidence	**Participant / Setting/ Sample Size**	**Purpose/Background**	**Methods/Design & Limitations**	**Findings/Summary/Strengths/ Weakness**	**Applicability to Own Research**

Hahn-Holbrook, J., Cornwell-Hinrichs, T., & Anaya, I. (*2018*). Economic and health predictors of national postpartum depression prevalence: A systematic review, meta-analysis, and meta-regression of 291 studies from 56 countries. *Frontiers in Psychiatry*, 01. https://doi.org/10.3389/fpsyt.2017.00248 Systematic review, meta-analysis, and meta-regression (Cullen et al., 2018)	291 studies of 296,284 women from 56 countries	The purpose of this article was to outline the global prevalence of postpartum depression and use a meta-regression to determine disparities associated with PPD.	Search terms included postpartum depression or postnatal depression, incidence or prevalence, and Edinburgh postnatal depression scale. Limitations include using self-reporting measures to outline PPD instead of the gold-standard clinical interview. Unequal studies between some countries. Some disparities were not included as potential predictors of prevalence.	This study showed, based on the studies and total sample size that the global prevalence of PPD was 17.7% with additional prevalence differentiated between 40 different countries. The meta-analysis also revealed notable disparities which can be cross-referenced to prevalence within the country Strengths include large size (largest meta-analysis and meta-regression to date) Weaknesses: Limited data from some of the countries included. Limited to just one form of PPD screening process with the Edinburgh postnatal depression scale.	This article supports my research as it is the largest systematic review to outline the significance of postpartum depression globally and proves that there is a need for further research, studies, and interventions that should be done for this population and condition.
Lara-Cinisomo, S., Clark, C. T., & Wood, J. (2018). Increasing diagnosis and treatment of perinatal depression in Latinas	No participation or study	The purpose of this article is a call to action for policymakers to invest in funding for reliable screening tools that can be used to help diagnose women prenatally with potential risks of postpartum	No methods, designs, limitations to discuss	This article is an expert opinion of the topic of postpartum depression that outlines increased risk factors associated with certain ethnic groups like African Americans and Latinas. Stigma and other cultural factors play a role in reporting and treatment. Recommendations to optimize diagnoses and treatment are discussed.	This article supports my research as it outlines an important topic regarding the disparities that exist with certain ethnic groups allowing for further research and incorporation

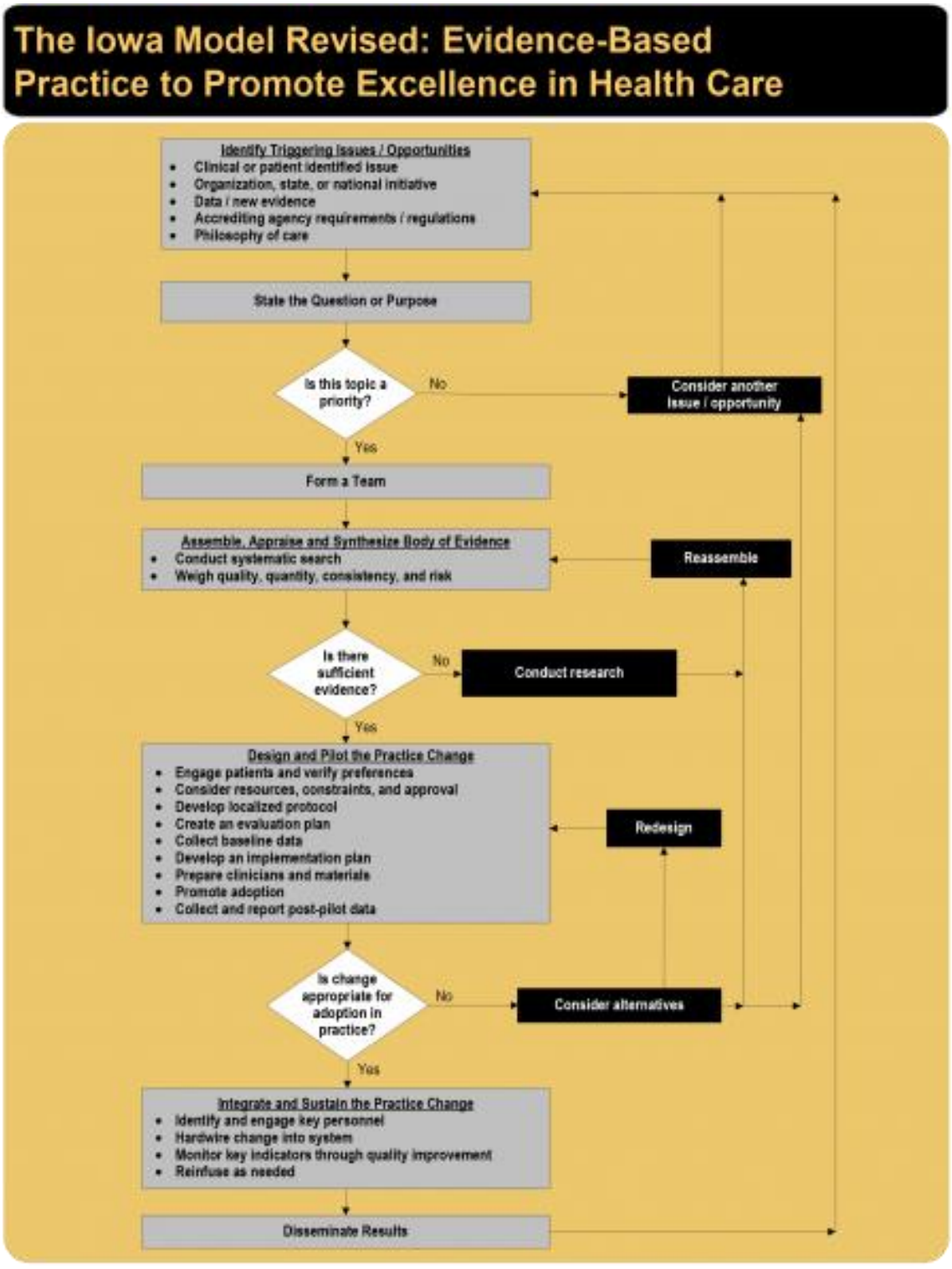
and African American women: Addressing stigma is not enough. *Women's Health Issues*, *28*, 201-204. https://doi.org/10.1016/j.whi.2018.01.003 Other literature, expert opinion (Cullen et al., 2018)		depression. Especially in high risk populations like African Americans and Latinas			within the capstone
Citation/Level of Evidence	**Participant / Setting/ Sample Size**	**Purpose/Background**	**Methods/Design & Limitations**	**Findings/Summary/Strengths/ Weakness**	**Applicability to Own Research**
Hamilton, N., Stevens, N., Lillis, T., & Adams, N. (2018). The	No participation or study	The purpose of this article is to outline the special issue within The Journal of	No methods or designs Limitations include a	The summary of this article is to give experta data and research associated with the topic of postpartum depression and recommendations toward	This article supports my documentation as it is a recent expert journal

fourth trimester: toward improve postpartum health and healthcare of mothers and their families in the United States. *Journal of Behavioral Medicine, 41*, 571-576. https://doi.org/10.1007/s10865-018-9969-9 Other literature, expert opinion (Cullen et al., 2018)		Behavioral Medicine that was composed to discuss the fourth trimester of mothers and improving postpartum health within the United States	predominantly white, non-Hispanic and heterosexual population of women	improving the future of women's perinatal and postnatal health. Strengths include a large amount of cited data of the condition and its magnitude amongst women Weaknesses included no study or designs for a specific intervention	about postpartum depression to create necessary attention to the topic and influence needed change.
Morrell, C., Sutcliffe, P., Booth, A., Stevens, J., Scope, A., Stevenson, M., ... Stewart-Brown, S. (2016). A systematic review, evidence synthesis, and meta-analysis of quantitative and qualitative studies evaluating the clinical effectiveness, the cost-effectiveness, safety, and acceptability of interventions	Quantitative review 122 papers (86 trials) Qualitative Review 56 papers (44 studies).	To determine the effectiveness of interventions or pregnant and postnatal women to help prevent postnatal depression through evaluations of existing data using a systematic review approach.	Search Terms included pregnant women and those at risk for developing PND because of social factors, or psychological risk factors. Postnatal women in their 1st 6 weeks and all interventions. All usual care and enhanced care were considered. Limitations included studies that omitted EPDS values, reporting or selection bias, lack of quality clinical trials included, inconclusive evidence.	Inconclusive results when looking for a clear pattern of evidence on consistent interventions and effectiveness. However, there was beneficial data that showed midwifery designed care, person-centered approach, and cognitive-behavior therapy can be useful in this specific target population. Strengths include that the qualitative review helped identify beneficial features from women and providers regarding interventions or potential treatment. Weakness: inconclusive at identifying a clear path toward effective intervention that would show a significant improvement in postpartum depression	This article is significant to my topic as it is a large review of the current data that exists within the population of prenatal and postnatal women and interventions that have taken place with results. While data is inconclusive to specifics, future research with certain interventions my yield needed results related to my capstone topic.

to prevent postnatal depression. *Health Technology Assessment*, *20*(37), 1-414. https://doi.org/10.3310/hta20370 Systematic review, evidence synthesis, and meta-analysis of quantitative and qualitative studies (Cullen et al., 2018).					
Citation/Level of Evidence	**Participant / Setting/ Sample Size**	**Purpose/Background**	**Methods/Design & Limitations**	**Findings/Summary/Strengths/ Weakness**	**Applicability to Own Research**
Heberlein, E., Picklesimer, A., Billings, D., Kolb-Covington, S., Farber, N., & Frongillo, E. (2016). The comparative effects of group prenatal care on psychosocial outcomes. *Archives of Women's Mental Health*, *19*, 259-269. https://doi.org/10.1007/s0	124 women who participated in the centering pregnancy model and 124 women who participated in individual care	Comparing two equal groups of women to participate in either individual education or utilizing a group model to help educate women about postpartum depression and determine existing psychosocial outcome before and after.	Survey style participation in an initial survey around 12.5 weeks pregnant, 2nd survey at around 32.7 weeks pregnant, and final survey at 6 weeks postpartum to determine effectiveness of education and comparing groups using multiple linear regression models. Limitations: bias related to unmeasured groups. Survey 2 may not reflect the extent of the	Findings included that those women who had higher psychosocial risks benefitted more from a group setting approach than individual prenatal care. Strengths: Contributions from this study were made for prenatal care literature including the benefits of group prenatal care on at risk women. Weaknesses: Small study size, several limitations	This study is significant to my topic as a group setting is proposed for my capstone over traditional education regarding postpartum depression. This article does show benefit on psychosocial aspects mover individual care.

0737-015-0564-6 Quantitative, cohort study (Cullen et al., 2018).			benefit as there were more appointments after it was completed.		
Chen, J., Mullins, C. D., Novak, P., & Thomas, S. B. (2016). Personalized strategies to activate and empower patients in health care and reduce health disparities. *Health Education & Behavior*, *43*, 25-34. https://doi.org/10.1177/1090198155799415 Other literature, (Cullen et al., 2018).	No participants or studies	The purpose of this article is to discuss personalized patient activation and empowerment (P-PAE) interventions to help improve population health and reduce racial or ethnic disparities.	No methods or designs.	Models like personalized patient activation and empowerment (P-PAE) interventions are discussed to change policies within organizations to help engage patients to be an active participant in their treatment, manage their own health, and empower them to ask questions and communicate effectively with their providers. These have been recent goals outlined in healthcare and the interventions would hopefully help reduce existing disparities. Strengths include a multitude of references and previous research related to this topic and how it can help those with disparities show improvement in not only their personal health but in communities as well Weaknesses include that this is just an informational article and while it provides good information there is not a trial or study that reflects a quantitative or qualitative improvement. Bias may also exist.	This research is important to my capstone as it includes significant data regarding additional educational models that may be beneficial to the target patient population and be utilized to empower women to speak openly about symptoms related to postpartum depression

Appendix C


The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care
Identify Triggering Issues / Opportunities
Clinical or patient identified issue
Organization, state, or national initiative
Data / new evidence
Accrediting agency requirements / regulations
Philosophy of care
State the Question or Purpose
Is this topic a priority?
No
Consider another issue / opportunity
Yes
Form a Team
Assemble, Appraise and Synthesize Body of Evidence
Conduct systematic search
Weigh quality, quantity, consistency, and risk
Reassemble
Is there sufficient evidence?
No
Conduct research
Yes
Design and Pilot the Practice Change
Engage patients and verify preferences
Consider resources, constraints, and approval
Develop localized protocol
Create an evaluation plan
Collect baseline data
Develop an implementation plan
Prepare clinicians and materials
Promote adoption
Collect and report post-pilot data
Redesign
Is change appropriate for adoption in practice?
No
Consider alternatives
Yes
Integrate and Sustain the Practice Change
Identify and engage key personnel
Hardwire change into system
Monitor key indicators through quality improvement
Reinfuse as needed
Disseminate Results