

Depression Screening and Breastfeeding Support in a Community Breastfeeding Clinic

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## Abstract

**Purpose:** Implementation of a postpartum depression (PPD) screening while using evidence-based interventions to improve depressive symptoms, enhance breastfeeding (BF) self-efficacy, and strengthen the mother-infant dyad (MID). **Background and Significance:** PPD is highly prevalent among women living in the United States and threatens the physical and psychological health of MIDs. Many of these women go undiagnosed and without treatment, further worsening symptoms and outcomes. This has inspired world healthcare leaders and organizations to address maternal mental health among postpartum women. **Methods:** A 12-week evidenced-based project consisted of two-sets of participants including mothers and staff. A *comprehensive maternal support program* guided by an *informational pamphlet* (IP) and implementation of PPD screening using the Edinburgh Postnatal Depression Scale served as the two-part intervention for this project. Goals were to decrease PPD, enhance BF satisfaction, and strengthen the MID. *Comprehensive maternal support* encompasses interventions proven to meet the project goals and includes tailored BF education and care to maternal needs, social support by peer/family involvement, skin-to-skin contact during BF, emotion-regulation strategies, and availability of community resources. **Outcomes:** The BSES-SF scores did result in statistical significance based on an alpha value of 0.10,  $t(3) = -2.98$ ,  $p = .059$ , proving a positive effect was seen in breastfeeding self-efficacy post intervention. The results did not show statistical significance ( $t(3) = 0.60$ ,  $p = .591$ ) in regard to pre and post-depression scores. However, the mean pre-score ( $M = 3.50$ ,  $SD 3.11$ ) did decrease post-intervention ( $M = 2.75$ ,  $SD 1.26$ ) and exemplifies clinical significance. **Conclusion:** The outcomes of this Quality-Improvement project showed improved scores for depression and BF self-efficacy post-intervention. This demonstrates the value in

screening for PPD using a validated screening tool and instituting comprehensive maternal support guided by evidence-based practice in a community setting.

*Keywords:* postpartum depression, breastfeeding, screening, support

### Depression Screening and Breastfeeding Support in a Community Breastfeeding Clinic

The prevalence of depression in the postnatal period is often underdiagnosed and threatens aspects of maternal-child wellness. According to the Center for Disease Control and Prevention (CDC) (2017), six out of ten women living with depression are undiagnosed and, therefore, fail to receive adequate help. Researchers in a recent study revealed that PPD affects up to 20% of women in the postnatal period (Webber & Benedict, 2017). This alarming percentage may even underrepresent the true statistic of women experiencing this mood disorder. In order to effectively care for these women, PPD must first be identified. This highlights the importance of screening in practice to avert the harmful effects of PPD. Mental Health America and the National Center for Children in Poverty (2008) emphasize the importance of screening for maternal depression in community health clinics to ensure early identification and support for the child-mother dyad. Postpartum Support International (2019) endorses the Edinburgh Postnatal Depression Screen (EPDS) (Cox, Holden, & Sagovsky, 1987) as an effective tool and encourages its use in a variety of healthcare settings such as breastfeeding (BF) clinics.

### **Problem Statement**

Maternal depression is a mental health concern that threatens the wellness of the mother and child. If prolonged, it can negatively impact mother-baby bonding, BF, and care of the child (World Health Organization (WHO), 2019). This draws attention to the importance of screening for depression in BF women in not only primary care provider offices, but in community and public health clinics as well. Unfortunately, 60% of women with postpartum depression (PPD) symptoms fail to obtain a clinical diagnosis which increases the risk for low BF rates, decreased duration, and impaired infant-maternal bonding (Ko, Rockhill, Tong, Morrow, & Farr, 2017).

Just as MD can affect BF, ineffective BF can potentiate depression. In a recent study, Bascom and Napolitano (2016) discovered women with PPD symptoms to have earlier cessation of BF than women without PPD symptoms. The authors emphasize the importance of increasing efforts to screen for PPD and improving healthcare provider training to identify and connect women with suitable care.

### **Purpose**

Mothers to newborns experience stress, frustration, and depressive-like symptoms when unable to successfully breastfeed. The purpose of this project paper is to explore MD and its impact on BF and maternal-baby bonding. Ideally, if MD or PPD is better identified in office, treatment and care can be better tailored to enhance quality of life and bonding between the mother and child. Benefits to addressing MD in lactating women include potentially increasing effectiveness of BF education, efficiency in appointment time utilization, and improving patient satisfaction. Benefits to the mothers include mood stabilization, enhanced feelings of wellness, and improved maternal-child bonding.

### **Background/Significance**

#### **Depression Symptoms and Maternal Bonding**

PPD, a subset of perinatal depression, is reported as the most commonly occurring obstetric complication in the nation (Earls, 2019). Many factors contribute to worsening depression in postnatal women and may include lack of financial or social resources, familial history of psychiatric illness, and first-time parenthood (American Psychological Association, 2019). Lactating mothers who wish to breastfeed but are not successful in doing so may even furthermore feel the burden of stress and its effects on the body. This calls great attention to the prevalence of this issue. Mothers experiencing PPD have more intense and longer lasting

symptoms than a mother with *baby blues* (CDC, 2018). The American Pregnancy Association (2015) reports *baby blues* to be highly common, affecting nearly 80% of women, with symptoms that peak several days after giving birth and resolve within two weeks. For this brief period, these mothers experience emotional lability that may include tearfulness, sleeping difficulty, anxiousness, and dysphoria. Women who experience PPD face more intense feelings of sadness and hopelessness that may last up to one year following birth. For this reason, a more significant impact is felt among mothers living with PPD. This also gives insight as to why PPD is the leading cause of maternal mortality in the United States within the first year following birth (Maxwell, Robinson, & Rogers, 2018).

### **Impact**

Any disease, illness, disability, or complication can be costly to treat. However, the cost of not addressing a health problem may far outweigh any financial expense incurred from early detection and intervention. One group of researchers looked at the cost associated outcomes for screening and treating PPD compared to standard of care, not screening. Their analysis of the data showed that screening and treating women with PPD produced a greater number of healthy women over a two-year period and cost significantly less than associated fees with standard of care (Wilkinson, Anderson, & Wheeler, 2017). These results are both impactful and meaningful in providing guidance on how to manage mental health. Another team looked at the estimated cost of MIDs untreated for PPD five years postpartum from the year 2017. The researchers estimated a cost of \$14.2 billion, or \$32,000 for each dyad left untreated (Luca, Garlow, Staatz, Margiotta, & Zivin, 2019). This level of effect is strongly significant and illustrates the true economic impact of untreated mental health in the United States.

It may also be interesting to better understand long-term consequences of untreated PPD for MIDs. One team of researchers looked at the association between mothers who experienced PPD and their child's emotional and behavioral development at eight years of age (Closa-Monasterolo et al., 2017). Authors of this study discovered that children whose mothers previously experienced PPD and who currently have mental health problems showed the most significant psychological problems later in life. Interestingly, it was observed that children whose mothers experienced PPD without current mental health problems had similar outcomes as children whose mothers were depression-free (Closa-Monasterolo et al., 2017). These results indicate that children's exposure to PPD and ongoing maternal mental health issues directly impact emotional development and behavioral functioning by age eight. Although PPD alone, without ongoing mental health problems did not significantly impact the child's outcomes, unresolved PPD can certainly progress into ongoing mental health issues. In fact, researchers have been able to determine that mothers who experience PPD were twice as likely to suffer from depression and develop chronic disease four years after birth (Abdollahi & Zarghami, 2018).

### **Supporting Interventions & Initiatives**

One may question which method of intervention is best for detecting PPD. Accortt and Wong (2017) in a recent review of literature found best practices for early detection of perinatal mood disorders to be routine screening with authorized screening tools. They continued by endorsing the use of EPDS and acknowledging its appropriateness of use in postpartum women. According to the American College of Obstetricians and Gynecologists (ACOG) (2015), the EPDS is the most widely used screening tool for detection of PPD and has gained popularity for its literacy appropriateness, short completion time, and ease of access in 50 languages.

Many world healthcare leaders and organizations are taking notice of the importance in addressing maternal mental health among postpartum women. The World Health Organization (WHO) developed the *Mental Health Action Plan 2013-2020* in hopes of leading global action. This was created to strengthen leadership, provide comprehensive care services, implement prevention strategies, and grow research for psychological wellbeing (WHO, 2020). Further initiative has been taken by congress. In 2015, congress signed the *Bringing Postpartum Depression Out of the Shadows Act* to produce grant funding for maternal depression screening and treatment (Postpartum Support International, 2020). Furthermore, the Office of Disease Prevention and Health Promotion (ODPHP) have issued a Healthy People 2020 aim to *increase the proportion of employers that have worksite lactation support programs* by 2020 (ODPHP, 2018). The efforts exemplify the importance of addressing postpartum depression to support the MIDs affected by it.

### **Current Practice**

A policy released by the American Academy of Pediatrics (AAP) states that PPD screening for the mother should be implemented at the one, two, four, and six-month well-child appointments (Earls, Yogman, Mattson, & Rafferty, 2019). Unfortunately, not all parents are judicious at attending these appointments. Screening mothers in the community where they tend to gather, such as BF clinics, may help in achieving the recommended regularity of PPD screening efforts.

Depression in the postnatal period continues to be a challenge for the nation with 12.8% of United States women reporting PPD symptoms and only 15.6% of infants solely BF in the first six months of life in 2018 (United Health Foundation, 2019). There is much room for improvement in these rates and many organizations are striving to pursue a change to benefit the



women and children affected. The ODPHP issued a Healthy People 2020 goal to *decrease the proportion of women who experience postpartum depressive symptoms following a live birth* (2019). Recent measures set by The Agency for Healthcare Research and Quality (AHRQ) aim to identify and treat PPD in post-partum care visits to resist negative health impacts of the child and mother (AHRQ, 2018). The AHRQ explain that PPD is associated with risks including increased infant mortality and improper growth and development. It is further stressed that identification and follow-up for these women is needed to reduce these adverse effects. Following evidenced-based guidelines to achieve goals such as this will aid efforts towards accomplishing enhanced breastfeeding and self-efficacy.

### **Internal Evidence**

A BF clinic located in the Southwest region of the United States is comprised of a group of certified, educated individuals who counsel women to enhance BF and support the mother-baby dyad. Initial consultations, follow-up appointments, latch consults, group education sessions, and prenatal visits are all available services and range between thirty minutes to two hours in length. Tongue tie and lip tie revisions are another offered service and may be performed by the family nurse practitioner (FNP) onsite to enhance BF and achieve a good latch. Children requiring this service account for a large majority of children seen in clinic.

It was an observation among staff that BF mothers demonstrate depression-like symptoms when unable to successfully breastfeed. This was notably seen in appointments when mothers exhibited frustration from poor latching, inadequate milk supply, or physical obstacles of a child's anatomy (tongue/lip-tie). It was estimated among staff that an average of two to five patients were counseled weekly for PPD and anxiety. This counseling was performed in-office after self-identification from the patient or concerns were expressed by patient's family. With

ongoing support and achievement of a successful latch, many mothers no longer demonstrated depression-like symptoms. Unfortunately, without screening in place to detect PPD, there was a lack of hard data to support the effectiveness of interventions performed.

### **PICOT Question**

Staff at the organization wanted to more easily identify PPD and see how follow-up appointments and education currently offered affected the progression of MD. However, without a screening tool, identifying depression in these BF women would be difficult to assess and may rely solely on clinician judgement. This inquiry led to the clinically relevant PICO question, in breastfeeding women (P) how does comprehensive breastfeeding support (I) compared to standard of care (C) affect maternal depression, breastfeeding satisfaction, and the mother-baby dyad (O)?

## **Evidence Synthesis**

### **Search Strategy**

An exhaustive search of the literature was performed using the PICO question to help guide search methodology in several scholarly databases. The databases searched included CINAHL, PubMed, and PsycInfo. A variety of different keywords were used to represent each part of the PICO question to maximize results.

Articles collected after database search were run through rapid critical appraisal (RCA) to detect appropriateness of use in project development. A search for grey literature was performed and resulted in a variety of policy statements, issue papers, and informational review articles. It was determined after further assessment that these were not appropriate for use due to low levels of evidence and unsupported clinical assumptions.

### **CINAHL**

The keywords *breastfeeding* and *breastfeeding support* were searched and resulted in 13,831 and 1,791 references respectively. The Boolean connector “OR” was then used in combination with *maternal depression*, *satisfaction*, and *dyad* which resulted 123,124 references. Additional keywords were used in conjunction with Boolean connectors to further benefit search strategy and resulted 228 citations. Findings continued to marginalize to 16 after setting limits to English language, humans, and being published from 2009-2019. After completing RCA on these final studies, five were kept for further evaluation.

### **Pubmed**

Keywords including *breastfeeding*, *breastfeeding support*, *maternal depression*, *satisfaction*, and *dyad* were first searched independently and later combined with Boolean connectors to result 359 citations. The keywords *lactation*, *education*, *postpartum/postnatal depression*, *self-efficacy*, and *quality of life* were included in the search and filtered to include work published in the last 10 years, humans, and English language. The keywords *breastfeeding clinic* and *breastfeeding services* were later added to result 230 citations. Adding *standard of care* and *traditional care* narrowed findings ultimately to 16, three of which were kept after RCA.

### **PsychInfo**

Initial database search included the keyword *breastfeeding* which resulted 4,068 findings. After inclusion of the keywords *mothers*, *breastfeeding women*, *support*, *counseling*, *depression*, *satisfaction*, and *dyad*, 628 citations became available for retrieval. *Efficacy* along with *standard of care*, *traditional care*, and *education* was added to search criteria. Limits were applied to include work published in the last 10 years, English language, and human involvement. A total of 24 citations resulted and after RCA, one was retained.

### **Critical Appraisal & Synthesis of Evidence**

Of the studies retained after RCA, ten were chosen to include in this literature review due to their high level of evidence and clinical relevance to this project purpose. They were then each categorized into an evaluation table to further analyze structure of design, findings, and feasibility of application to practice (Appendix A). The strength of the studies' evidence ranged from level one to three and included one systematic review (SR), four randomized control trials (RCT), one secondary exploratory analysis, one non-randomized control trial, two cross-sectional studies (CSS), and one longitudinal cohort study. Of the ten studies, only three clearly stated the theoretical or conceptual framework used to guide study design. This called for careful review of the seven remaining studies to appropriately discover the inferred use of individual frameworks.

There was a strong degree of homogeneity among the studies' demographic characteristics and use of screening measures (Appendix B). All studies included BF women with a relatively similar mean maternal age ranging between 27 and 32 years. The EPDS was utilized as a screening tool to identify PPD in nine of the 12 studies of the SR and six of the remaining nine studies. The high frequency of this screening tool among researchers demonstrates its reliability in clinical practice. Appropriate population sample sizes were a common theme among the studies which further endorses their validity and reliability.

A common theme of intervention and outcome variables emerged among the studies after thorough examination in a synthesis table (Appendix B). Maternal support by peer and family involvement, increased BF duration, and enhanced community resources including lactation education and MID support was largely in favor among the studies reviewed. Skin-to-skin contact and emotion regulation strategies including positive self-talk was also observed among

several studies. With measured outcome variables varying among studies, particular interest was paid to outcomes coinciding with this project's PICO question and is detailed in the synthesis table (Appendix B).

Data was analyzed using multivariate statistical measures (Appendix A) which was disseminated through standard deviations (SD), level of significance (p), odds ratio (OR), and confidence intervals (CI). Mental illness was criteria for exclusion in all except two studies with other inclusion and exclusion criteria varying among studies. No bias was detected in six of the ten studies. However, selection bias was detected among four studies due to reasons such as lack of allocation concealment. Despite the limitations identified in these studies, strong reliability and validity is demonstrated through use of reliable measurement tools, high quality research design, and key findings that are both statistically and clinically significant, further endorsing this project's relevance.

### **Influence of Evidence**

The research suggests numerous interventions that may constitute a comprehensive strategy, all which place emphasis on education and maternal support (Appendix B). Evidence indicates that interventions of various lengths can benefit project outcomes. Although heterogeneity is noted among interventions of the studies reviewed, several stand out for having the greatest impact on outcomes. These interventions include tailored BF education and care for maternal needs, maternal social support in the form of peer/family involvement, and measures aiming to enhance MID such as skin-to-skin contact during BF and availability of community resources. These interventions are intermittently utilized by staff in the BF clinic. Educating on the importance of their regular, consistent use during appointments would benefit outcomes.

### **Theoretical Framework & Implementation Framework**

### **Theory Application**

The Attachment Theory created in collaboration by John Bowlby and Mary Ainsworth (1991) was the theoretical framework chosen to help guide this project's design. The main concepts of this theory support the idea that a child's personal development and growth is largely influenced by the strength of the bond created between the child and his or her mother or caretaker. The sense of security and attachment a child feels towards the mother is foundational to personality development and their ability to make decisions and form relationships later in life. It is also theorized that just as the child requires a nurturing relationship, a mother benefits from supportive social networks as she learns to navigate the social, economic, and health factors that affect her and her child (Bretherton, 1992). This Attachment Theory was chosen due to its' emphasis on strengthening the MID to improve overall maternal-child wellness.

### **Evidence-Based Practice Model**

The Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBP) (Newhouse, Dearholt, Poe, Pugh, & White, 2007) (Appendix C) is a comprehensive, evidence-based practice (EBP) model that aims to use best available research and clinical practice evidence to guide project change and enhance participant outcomes. This model is composed of three-steps that include: 1) Identifying a practice question using a team approach; 2) Analyzing evidence with recommendations for change; and 3) Translating findings into practice by determining feasibility, building an action plan, implementing, evaluating, and communicating findings (Schaffer, Sandau, & Diedrick, 2012). The acronym "PET" is used to describe this step-by-step process and stands for *practice question, evidence, and translation* (Gawlinski & Rutledge, 2008). The JHNEBP model was chosen for its ease of transferability among different practice settings and its' use of a team-based approach during problem solving.

The JHNEBP model is complementary to this project design and served as a guiding framework throughout each of its' phases. A visual aid serves to represent this model (Appendix C) and in it demonstrates the possible external and internal influences that may affect outcomes. These influences must always be considered and require critical thinking on behalf of the individual using the framework to navigate around potential obstacles that may arise (Newhouse et al., 2007). Implementation of steps one and two of this model were completed when the EBP question was identified and documented by means of PICO question and evidence thoroughly analyzed (Appendix A & B) to highlight recommendations for change. The beginning portion of the translation phase was completed when feasibility of the project was determined and an action plan was created and approved by expedited review through Arizona State University's International Review Board (IRB). Implementation of the project took place over a 12-week long period in Fall, 2019 just before proceeding the final steps of evaluating and communicating findings which took place in Spring, 2020. Overall, this model allowed fluidity back and forth between steps and continued reassessment as needed to compliment the needs of a smaller, growing organization.

## **Methods**

### **Intervention**

A comprehensive maternal support program guided by an informational pamphlet (IP) (Appendix D) and implementation of PPD screening using the EPDS (Appendix E) served as the two-part intervention for this project. Goals were to decrease PPD, enhance BF satisfaction, and strengthen the MID. The connection a mother feels with her child along with her BF experience is likely to be reflected in a measure such as self-efficacy. For this reason, the BSES-SF (Dennis, 2003) was chosen as the measure to identify self-efficacy in the BF participants. *Comprehensive*

*maternal support* is encompassing of the interventions proven to meet the project goals and includes tailored BF education and care to maternal needs, social support by peer/family involvement, skin-to-skin contact during BF, emotion-regulation strategies, and availability of community resources.

This project was implemented over the course of 12-weeks and included a pre-post design to evaluate the impact of the intervention. Staff and mothers made up the two sets of participants incorporated into the project's methodology which enhanced rigor of the project framework. Staff participants were counseled by the co-investigator on how to implement and manage all parts of the intervention which benefits the project sustainability.

Staff participant recruitment took place during a staff meeting week one where consent was obtained, and project details explained to staff by the co-investigator. Education regarding the use of the IP (Appendix D) during appointments and scoring the EPDS to detect mothers at risk for PPD was then performed. The co-investigator was available to answer participant questions via phone and e-mail. Multiple onsite appearances to the project site were also made by the co-investigator.

Mother participant recruitment and intervention began week two with recruitment closing at the end of week eight and intervention ongoing through the end of week 12. New presenting mothers to the clinic received a consent form and demographic questionnaire from front office staff upon arriving to their initial appointment. Implied consent was granted upon the mother filling out the demographic questionnaire. Participating mothers were given the opportunity to attend two or more appointments and were asked to fill out an EPDS and Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) at their first and last appointment at the BF clinic. The



staff participants were expected to address the mother's individual needs and concerns while utilizing the IP (Appendix D) to help guide each appointment.

### **Ethical Considerations**

To safeguard participant privacy, no personal identifying information was collected from participants. Instead, a six-digit unique identifier number was used to link participant's pre and post intervention data. All project forms were kept in a file cabinet in a protected area of the BF clinic until able to be retrieved from the project co-investigator. Prior to implementation, approval was gained from both the project site (Appendix F) and Arizona State University IRB on July 15<sup>th</sup>, 2019 and July 30<sup>th</sup>, 2019, respectively. A modification to the IRB protocol to permit more than two appointments for mother participants was submitted for review and granted by ASU IRB on September 10<sup>th</sup>, 2019.

### **Participants**

One nurse practitioner, two registered nurses (RNs), three registered lactation consultants (RLCs), one certified BF specialist (CBS), and one speech language pathologist (SLP) were staffed employees of the BF clinic at time of project implementation. All eight were invited to attend a one-hour meeting for recruitment and education. Seven of these employees attended and agreed to participate in the project. However, two employees dropped out of the project related to prior obligations and lack of time, respectively. First time presenting mothers to the BF clinic were recruited to participate in the project. Eight mothers enrolled and participated in the project. Four of these eight mothers completed post-intervention screening at their last appointment. Therefore, only the data of the four women who had completed pre and post data were used during data analysis of this project.

Staff participants were employed at the BF clinic, at least 18 years old, and English speaking. Mother participants included in the project were at least 18 years old, English speaking, and breastfeeding or willing to breastfeed. Exclusion criteria included individuals younger than 18 years old and unable to understand, read, or write in the English language. No intent to breastfeed and non-female individuals was additional exclusion criteria for mother participants.

### **Instruments**

**Edinburgh Postnatal Depression Scale.** According to the American College of Obstetricians and Gynecologists (ACOG) (2015), the EPDS is the most widely used screening tool for detection of PPD and has gained popularity for its literacy appropriateness, short completion time, and ease of access in 50 languages. This tool is formatted as a ten-item questionnaire with each question measured on a four-point scale. A score can range from zero to 30, with scores of 10 or higher indicating increased risk for depression and lower scores signifying less risk (Dennis, 2003). A score of 10 or greater raises awareness for possible depression. Use of this scale is permitted given the user respects copyright and credits the authors (Cox, Holden, & Sagovsky, 1987).

**Breastfeeding Self Efficacy Scale-Short Form.** The BSES-SF is a 14-item tool revised from the original 33-item Breastfeeding Self-Efficacy Scale (BSES) (Dennis & Faux, 1999). Since the development of the BSES-SF, its' use in research has become widely favored and highly appraised. In the original research study, the Cronbach's alpha coefficient after psychometric assessment was noted to be 0.94 (Dennis, 2003). The original study did not report sensitivity and specificity at time of publication, as it was not yet determined.

Each of the 14-items in the scale start with the phrase, “I can always” and are followed by a five-point Likert scale. Number one in the Likert scale represents *not confident at all* and five represents *very confident*. The scale can be completed in under ten minutes and produces a score between 14 and 70, with the higher scores demonstrating greater efficacy of the mother. Permission to use the BSES-SF (Appendix G) was granted by its’ author, Dr. Cindy Lee Dennis on July 19<sup>th</sup> 2019.

**Additional measures.** A demographic questionnaire was used in both sets of project participants prior to implementation. A post-intervention satisfaction questionnaire (Appendix ) was also given to staff participants to complete. This questionnaire was a self-developed, five-point Likert scale with two items to score and one open-ended question to initiate dialogue on parts of the project that could be improved for its ongoing success.

### **Data & Budget**

Participant pre and post project forms were collected and input into the data program, Intellectus Statistics™. This project used descriptive statistics to meaningfully summarize the demographic questionnaires and the staff post-intervention satisfaction questionnaire. A two-tailed paired sample t-test was used to compare pre and post screening data, while a two-tailed Wilcoxon signed rank test was performed to identify the significance of one question on the EPDS. After data was analyzed, project findings were disseminated to staff participants in a scheduled meeting. No grants or financial aid was attained for this project. All associated costs of project development and implementation were incurred by the co-investigator.

## **Results**

### **Outcomes & Significance**

**Demographics.** The most frequently observed category of gender for staff participants was female ( $n=7$ , 100%) with the majority of staff participants having five to ten years ( $n=3$ , 42.857%) or greater than fifteen years ( $n=1$ , 14.286%) of work experience. All mother participants were Caucasian ( $n=4$ , 100%) and either married or in a domestic partnership ( $n=4$ , 100%). Three of the mothers were experiencing breastfeeding for the first time ( $n=3$ , 75%) and one mother had prior experience ( $n=1$ , 25%). The average age of the mother participants was 27.50 ( $SD = 2.08$ ).

**Edinburgh Postnatal Depression Scale.** A two-tailed paired sample t-test was conducted to examine whether the mean difference of the pre and post EPDS score was significantly different from zero. The results showed no significance based on an alpha value of 0.10,  $t(3) = 0.60$ ,  $p = .591$ , indicating the null hypothesis cannot be rejected. However, the total mean score did decrease from pre ( $M = 3.50$ ,  $SD 3.11$ ) to post depression score ( $M = 2.75$ ,  $SD 1.26$ ). Considering the small sample size ( $n=4$ ), these results show clinical significance.

After close examination of the pre and post EPDS forms, it was observed that *question six*, which questions the mother's ability to cope, had an interesting outcome when evaluating pre and post scores. Two mothers ( $n=2$ , 50%) showed no difference in scores and evaluated themselves as  *coping as well as ever*  before and after intervention. Whereas, the other two mothers ( $n=2$ , 50%) showed enhanced coping ability post intervention. The results of the two-tailed Wilcoxon signed rank test were not significant based on an alpha value of 0.10,  $V = 3.00$ ,  $z = -1.41$ ,  $p = .157$ . However, the results of these scores do show that the intervention either improved, or helped maintain healthy coping skills in the mothers.

**Breastfeeding Self-Efficacy Scale-Short Form.** Breastfeeding self-efficacy scores showed overall improvement from pre-scores ( $M=29.50$ ) to post-scores ( $M=35.00$ ). The results

also showed statistical significance based on an alpha value of 0.10,  $t(3) = -2.98$ ,  $p = .059$ , proving a positive effect was seen in breastfeeding self-efficacy post intervention.

**Staff Post-Satisfaction Questionnaires.** Results from the staff post-satisfaction questionnaire demonstrated that majority of staff ( $n=3$ , 60%) thought *lack of time to screen* was the biggest obstacle to overcome to meet the needs of the clinic. It was expressed among staff that many mothers would show up on time or late for their appointments, leaving the clinic little time to incorporate screening in workflow.

### **Sustainability**

Evidence highlights the importance of identifying PPD and implementing comprehensive education and support for BF mothers to enhance BF satisfaction, resist MD, and strengthen the MID. Health professionals specially trained in skilled techniques regarding maternal-infant care are especially important in the construct of such design. Therefore, all parts of project implementation were taught to staff by the co-investigator to ensure ongoing success of the project. Sustainability of the project will continue to be enhanced by the staff addressing obstacles and using innovative approaches to maintain trends towards achieving positive patient outcomes. Sustainability is likely with the clinic owner being a site champion for the quality improvement project and serving as a motivating leader towards achieving positive outcomes.

### **Discussion**

A large majority of the children seen at the BF clinic are treated for tongue-tie/lip-tie revision which is commonly performed at the first visit. The procedure may cause the child to be upset and have mild discomfort during the healing process. This can potentially reflect negatively on a mother's depression score during re-screening at the follow-up visit. It is understood that with ongoing support and evidence-based practice interventions, depression

scores will improve. This statement is supported by the research used to design this project intervention. One of these supporting research articles involves a group of researchers who conducted a longitudinal study to evaluate how various psychological interventions affect postpartum depression scores over time (Haga et al., 2012). This team concluded that mean EPDS scores decrease over time with maternal support while the most significant change occurs between six weeks and three months. It was difficult to trend this amount of data in the time constraints of a 12-week project timeline. For this reason, it is suggested that future projects of similar construct consider trending data over a longer period of time to identify how various factors impact outcomes.

Another challenge involved intertwining aspects of the project to support and compliment clinic workflow. Staff feedback indicated that many mothers showed up either on-time or late for their appointments. This left the staff with little time to enroll mothers in the project. Therefore, many potential mother participants were not awarded the opportunity to participate in the project, resulting a small sample size. In order to enhance system workflow and support clinic needs, it is suggested that organizations remain flexible to adjust system processes and prevent unwanted outcomes. It would be of benefit to implement pre-appointment screening through means of e-mail or mail to enhance productivity and efficiency of clinic workflow. Alternatively, designing appointments to include an earlier check-in time would allot more time needed for screening.

### **Conclusion**

Maternal depression in the postpartum period can be devastating to the mental and physical wellness of mother-infant dyads. Although PPD affects nearly 20% of U.S. women, this obstetric complication remains under diagnosed and treated for many of those affected. An in-depth review of high-quality literature was foundational to this project's development and

highlights the importance of using a combination of evidence-based practice interventions to decrease PPD, enhance BF satisfaction, and strengthen the mother-infant dyad. With research providing a supportive foundation to propose and build value change, the outcomes of this quality-improvement project show improved scores for depression and BF self-efficacy post-intervention. This demonstrates the value in screening for PPD using a validated screening tool and instituting comprehensive maternal support guided by evidence-based practice in a community setting.

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Appendix A

Table 1

Evaluation Table

Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
<p>Labiberte, C., et al. (2016). A randomized controlled trial of innovative postpartum care model for mother-baby dyads</p> <p><b>Funding:</b> Received from Ontario Ministry of Health and Long-Term Care to CHEORI,</p>	<p>Inferred to be Health belief model</p>	<p><b>Design:</b> RCT</p> <p><b>Purpose:</b> To assess the effects of a comprehensive postpartum community clinic compared to standards of care on maternal satisfaction and breastfeeding rates.</p>	<p>N=472 n=157(CG) n=315(IG)</p> <p><b>Demographics:</b> <u>Age:</u> 30yrs or &gt; <u>Edu:</u> Majority university grads IG=72.1% CG=77.6% <u>Primiparous:</u> IG=61.9% CG=61.8%</p>	<p><b>IVI:</b> Comprehensive community-based PP clinic <b>IVII:</b> SOC <b>DVI:</b> Exclusive BF at 2,4,12, &amp; 24 wks. PP <b>DVII:</b> BF self-efficacy at 2,4, &amp; 12wks <b>DVIII:</b> PPD at 3 wks. PP <b>DIV:</b> Maternal Satisfaction</p>	<p>RAs collecting data via hospital charts and phone interview; SRWBS; BFQ; BSES; EPDS; SDS; MSS</p>	<p>Logistic regression; Univariate tests, Pearson Chi-squared; Student's t test; SAS 9.4 software</p>	<p><b>DVI:</b> No SSD <b>OR</b>=1.28; 95% <b>CI</b>= 0.84-1.95 Exclusive BF rates &gt; in IG (51.7%) than CG (46.4) at 24 wks.</p> <p><u>At wk. 2</u> <b>IG:</b> 32.9% <b>CG:</b> 25%</p> <p><u>At wk. 4</u> <b>IG:</b> 32.7% <b>CG:</b> 24.6%</p> <p><u>At wk. 12</u> <b>IG:</b> 33.2%</p>	<p><b>Level of Evidence:</b> Level II</p> <p><b>Strengths:</b> Pilot study prior to study. Inc. &amp; Exc. Criteria stated. Consent obtained. Randomized group designation with 2:1 AR. Reliable measurement tools. External statistician</p> <p><b>Weaknesses:</b> Non-blinded study post randomization. Tests measuring 2° outcomes</p>

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<p>OHRI, &amp; BORN</p> <p><b>Bias:</b> non-blinded study after group randomization</p> <p><b>Country:</b> Canada</p>			<p><b>Setting:</b> Outpatient PP clinic</p> <p><b>Inclusion:</b> -Admit to birth unit of OH between Jan-Jul 2014 -Birth to 1 healthy child -Gest age &gt;36 wks. -Mom &gt;18yrs -Mom w/ no medical prob -Breastfeeding w/ plan to cont. -Avail via phone or email</p> <p><b>Exclusion:</b> -Non-English/ Non-French speaking -No transport -Birthed twins or pre-term -No plan to breastfeed -Adoptive mother -Breast Sx -Psych Dx -Out-of-province</p>	<p><b>“Comprehensive community-based PP clinic”</b> Multi-disciplinary outpatient clinic staffed with professionals working together to help mothers with PP care as needed.</p> <p><b>“Breastfeeding”</b> feeding solely from mother’s breastmilk for 2 wks. prior to final outcome.</p>			<p><b>CG:</b> 26.1%</p> <p><u>At wk. 24</u> <b>IG:</b> 51.7% <b>CG:</b> 46.4%</p> <p><b>DVII:</b> No SSD; Stable scores=high efficacy</p> <p><u>BSES 12 wks.</u> <b>IG:</b>52.3(10.7) <math>\rho</math> =0.0001 <b>CG:</b>50.8(11.8) <math>\rho</math>=0.0001 <u>BSES 24 wks.</u> <b>IG:</b>50.3(11.5) <math>\rho</math> =0.0001 <b>CG:</b> 48.8(11.7) <math>\rho</math> =0.0520</p> <p><b>DVIII:</b> <b>IG:</b> M(SD):4.47(3.49) response=68.9% <b>CG:</b> M(SD):4.67(2.65) response=38.9%</p> <p><b>DVIV:</b> Showed a SSD <b>OR:</b>1.96; 95% <b>CI:</b>3.50-6.88</p>	<p>not powered. Poor RR for EPDS from CG.</p> <p><b>Feasibility/Application to Practice:</b> Implementation of a CBMPPC feasible to implement and may increase maternal satisfaction and mother-baby dyads</p>
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Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
Brown, A., et al. (2015). Understanding the relationship between breastfeeding and postnatal depression: The role of pain and physical difficulties  <b>Funding:</b> No grants <b>Bias:</b> Selection bias. -Online recruitment leading to educated, older, proactive applicants	Inferred to be Theory of Caregiving Dynamics	<b>Design:</b> CSS with self-report survey  <b>Purpose:</b> To evaluate relationship between PPDS and reasoning behind BF cessation	N=505 n=217  <b>Demographics:</b> <u>Age:</u> 32.09 (SD4.88) (range 22-44)  <u>M yrs in edu:</u> 15.1 (SD 3.96) (Range 12-20)  64.1% married Prof. Job: 29.5% Skilled: 30.4%  <b>Setting:</b> SWW local Mother/Baby groups & Online parenting forums	<b>IV I:</b> Reasons for BF cessation -Physical Difficulty -Pain -Inconvenience -Body image -Embarrassment -Peer pressure -Lack of support -Medical reasons  <b>IVII:</b> BF duration  <b>DV:</b> EPDS Score /PPD  <b>“Physical Difficulty”:</b> Inadequate milk supply, fatigued	EPDS: >12=PPD BFQ PQI Five-point likert scale	LRA; PCA; EFA; CA; PCC; SPSS version 20; EPDS used in analysis to evaluate continuous score.	<b>IVII:</b> Sig negative correlation Pearson’s $r = -0.267$ , $p < 0.001$ M duration 4.19wks (SD 4.33) (range=1-20wks)  <b>DV:</b> M score= 7.26 (SD3.94) (range 1-18) [F(8,208)=5.839, $p < 0.001$ ]  <b>IVI effects of DV:</b> <u>Difficulty:</u> $r = -0.295$ , $p < 0.001$ <u>Pain:</u> $r = -0.239$ , $p < 0.001$ <u>Inconvenience:</u> $r = -0.146$ , $p = 0.016$ <u>Embarrassment:</u> $r = -0.038$ , $p = 0.290$	<b>LOE:</b> Level III  <b>Strengths:</b> Consent obtained prior to inclusion; valid & reliable screening tools; preliminary qualitative interviews performed; Thorough discussion involving data findings.  <b>Weaknesses:</b> Potential selection bias with narrowed sample population <b>Conclusions:</b> Longer maternal BF= lower EPDS scores; BF experience > BF duration in identifying PPDS; BF cessation r/t pain or physical difficulty > probability of PPD

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<p><b>Country:</b> UK</p>			<p><b>Inclusion:</b> -BF mothers at birth who no longer BF -Mothers w/ infant 0-6mo. <b>Exclusion:</b> -Low BW &lt;2500g -PB &lt;37wks -Multiparous -Inability to consent -Infant/maternal HI</p> <p><b>Attrition:</b> Not mentioned</p>	<p>“<b>Inconvenience</b>” interference of maternal lifestyle</p>			<p><u>Body image:</u> r=0.059, p=0.195 <u>Peer pressure:</u> r=0.200, p=0.002 <u>Lack of support:</u> r=0.208, p=0.001 <u>Medical reasons:</u> r=0.083, p= 0.113</p>	<p><b>Feasibility/Application to Practice:</b> Appropriate for use in clinical practice. Results show need for enhanced BF support to resist maternal PPD &amp; need to assess reasoning for unsuccessful BF</p>
Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
<p>Tully, K. P., et al. (2017). The relationship between infant feeding outcomes and maternal emotional well-being among</p>	<p>Inferred to be the Health Belief Model</p>	<p><b>Design:</b> Quantitative Secondary, exploratory analysis</p> <p><b>Purpose:</b> Compare exclusive BF after</p>	<p><b>N=105</b> <b>n=54</b> (LPTMID) <b>n=51</b> (FTMID)</p> <p><b>Demographics:</b> <u>M maternal age:</u> LPT mother: 29.3 FT mother:28.1 <u>Ethnicity:</u> % White:</p>	<p><b>IV</b>-exclusive breastfeeding</p> <p><b>DV:</b> Maternal Emotional Well-being (EPDS score)</p>	<p>In-person &amp; telephone assessments; PP medical records; EPDS, STAI-S, PPQ, CHWS, IFI, Likert scale</p>	<p>Descriptive statistics, cross-sectional outcome analyses, p&lt;0.05(2-tailed tests); SAS 9.3; Cronbach;</p>	<p><b>DVI:</b> <u>LPTMID BF only:</u> (hospitalization) n=27 M(SD) 4.5(5.4) Median: 2  (1-mo PP) n=8 M(SD) 0.8(0.9)</p>	<p><b>LOE:</b> Level II</p> <p><b>Strengths:</b> Sensitivity analysis performed; Confirmed eligibility; Incentive provided to participate</p>

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<p>mothers of late preterm and term infants</p> <p><b>Funding:</b> Supported by North Carolina Translational and Clinical Science Institute. Grant received from Eunice Kennedy Shriver National Institute for Child Health and Human Development Training</p> <p><b>Bias:</b> none detected</p> <p><b>Country:</b> United States</p>		<p>childbirth &amp; evaluate the relation between infant feeding and emotional wellness of the mother.</p>	<p>LPT mother: 50.9% FT mother: 49% % Black: LPT mother: 34% FT mother: 35.3% Hispanic: LPT mother: 15.1% FT mother: 15.7%</p> <p><b>Setting:</b> Southeastern US medical center</p> <p><b>Inclusion:</b> Maternal age 18 or &gt;; custody of child; no hx of HIV, psychosis, or bipolar disease; speaks English, single infant; FT or LPT birth.</p> <p><b>Exclusion:</b> Non-English-speaking Hispanic mothers</p> <p><b>Attrition:</b> Not mentioned</p>	<p>“LPT”: born at 34-37 gestational wks “FT”: born &gt;37 wks.</p>		<p>Cochran-Mantel-Haenszel test, Wilcoxon 2-sample tests; Kruskal-Wallis tests; Fisher exact test; non-parametric tests</p>	<p>Median 0.5</p> <p><u>LPTMID BF w/ formula supplementation</u> (hospitalization) n=32 M(SD) 6.7(5.1) Median: 6 (1-mo PP) N=17 M(SD) 2.9(2.6) Median 3</p>	<p><b>Weaknesses:</b> Limited demographic participation r/t strict exclusion criteria</p> <p><b>Conclusions</b> Comprehensive BF support is needed for both LPTMID and LT MID. LPTMID may particularly benefit from early PPD screening and lactation education support teams.</p> <p><b>Feasibility/Application to practice:</b> Exclusive BF in LPTMID can improve PPD symptoms and enhance the mother-baby dyad.</p>
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Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
Bigelow, A. E., et al. (2013). Breastfeeding, skin-to-skin contact, and mother-infant interactions over infants' first three months  <b>Funding:</b> Grant from Nova Scotia Health Research Foundation  <b>Bias:</b> None detected  <b>Country:</b> Canada	Inferred to be the Attachment Theory	<b>Design:</b> Non-RCT (Quasi-experimental)  <b>Purpose:</b> To evaluate the effects of SSC & BF on MID and MD	N= 77 n= 26(IG) n= 51 (CG)  <b>Demographics:</b> Pairs of MIDs <u>M maternal age:</u> IG: 32.1 (SD 5.7) CG: 28.8 (SD 4) <u>Infant sex:</u> IG: 50% male 50% female CG:45% male 55% female <u>Maternal Race:</u> IG: 100% non-Hispanic White CG: 98% non-Hispanic White, 2% Asian  <b>Setting:</b> Perinatal clinic inside hospital setting and at participant's homes	<b>IVI-SSC</b> <b>IVII: BF</b>  <b>DVI- MID</b> interactions <b>DVII: MD</b>  "SSC criterion for inclusion": SSC > 4,000 min in infant's 1 <sup>st</sup> month in the IG; >4,000 min of SSC in infant's 1 <sup>st</sup> month in the CG  "SSC": Mother holding infant close, chest to chest and directly on skin of mother with child only dressed in diaper	SES by a Canadian Index; Nursing Child Assessment Feeding Scale; EPDS; research assistants for live coding	ANOVA; Pairwise Bonferroni corrected comparisons; Cochran Q test; McNemar's test; Point-biserial correlations; bivariate correlations; NCAFS Caregiver subscale	<b>IVII:</b> BF mothers (partial/exclusive) > scores on NCAFS Caregiver subscale. <u>2 months</u> $F(1, 67) = 5.316, p = .024, \eta^2 = .074$ <u>3 months</u> $F(1, 69) = 6.640, p = .012, \eta^2 = .088$  <b>DVI:</b> Significant effect w/ visits $F(3, 212) = 32.794, p < .001, \eta^2 = .442$  <b>DVII:</b> IG w/ lower EPDS scores wk 1 $rpb = .239, p = .029$ Non-breastfeeding mother's EPDS > at 1 month $rpb = .363, p = .005$	<b>LOE:</b> Level III  <b>Strengths:</b> High reliability for research assistant's coding >0.80 and NCAFS instructors scale producers >0.90  <b>Weaknesses:</b> Narrow population sample, coders not blinded to groups  <b>Conclusions:</b> Longer BF duration at 2 & 3 months in dyads who participated in SCC. BF dyads have more positive interactions during BF. BF dyads have lower EPDS scores than non-BF dyads at 1 month but SCC does not affect MD.  <b>Feasibility/Application to practice:</b> BF support

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			<p><b>Inclusion:</b> Infant &gt;37wks &amp; no medical problems, no maternal medical problems; mother meets SSC criterion for inclusion</p> <p><b>Exclusion:</b> Medical problems with infant, premature, experimenter error, Failed complete participation in all four visits</p> <p><b>Attrition:</b> 32%</p>					is needed for MIDs to increase BF duration. With increased BF duration, MIDs are enhanced. SSC during BF may aid in the decision to continue BF among mothers.
Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
Lutenbacher, M., et al. (2018). The efficacy of using peer mentors to improve maternal and infant health	MIHOW model.	<p><b>Design:</b> RCT</p> <p><b>Purpose:</b> To identify if MIDs in a MIHOW Program (IG) have &gt; health</p>	<p><b>N= 178</b> n= 91 (IG) n= 87 (CG)</p> <p><b>Demographics:</b> <u>M maternal age:</u> All participants: 29.6 (SD 6.5) IG: 30.4 (SD 6.6)</p>	<p><b>IV-</b> Home visits by MIHOW to implement MIHOW protocols</p> <p><b>DVI:</b> BF self-efficacy <b>DVII:</b> MD</p>	<p>Monthly, 1 hr home visits for data collection interview</p> <p>BSES-SF, PSI-SF, EPDS, &amp; HOME-IT</p>	<p>SPSS software; Descriptive statistics; plots; Frequency distributions; Means; SD; Median; IQR,</p>	<p><b>DVI:</b> d=0.76, <math>\rho &lt; 0.001</math></p> <p><b>IG:</b> Baseline: 54.0[50-61]61 2 mo. PP: 62.0[56-65]61 <b>CG:</b></p>	<p><b>LOE</b> Level II</p> <p><b>Strengths:</b> IRB approval; blind study; Power analysis ran before start of study; Randomized group assignments</p>

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<p>outcomes in Hispanic families: Findings from a randomized clinical trial</p> <p><b>Funding:</b> Received from the Affordable Care Act Maternal, Infant, and Early Childhood Home Visiting Program; National Center for Advancing Translational Sciences of the National Institute of Health</p> <p><b>Bias:</b> Non-detected</p> <p><b>Country:</b> United States</p>		<p>outcomes than MID allocated to a MEI (CG)</p>	<p>CG: 28.7 (SD 6.3) <u>Nation of Origin:</u> All participants: 66.9% IG: 65.9% Mexico CG: 67.8% Mexico <u>&lt; HS Education:</u> All participants: 80.6% IG: 84.2% CG: 77%</p> <p><u>Unemployed &amp; not looking:</u> All participants: 73.6% IG: 84.6% CG: 62.1%</p> <p><b>Setting:</b> Participant's home</p> <p><b>Inclusion:</b> Eligible for MIHOW services; Hispanic; confirmed pregnancy of &lt; or = 26 wks gestation; Lives within 30 miles of study office; agrees to</p>	<p><b>“Minimal education intervention”</b> Education offered via printed material only.</p> <p><b>“MIHOW”</b> Trained community worker with good health knowledge and access to community resources whose goal is to improve MID health and access to care.</p> <p><b>“MIHOW Protocols”</b> Evaluating maternal concerns, providing child-related education (BF &amp; attachment), and linking MID with</p>		<p>Power analysis; Cohen's d</p>	<p>Baseline: 53.0[50-60]66 2 mo. PP: 51.0[46-56]60</p> <p><b>DVII:</b> Statistically significant decrease in MD scores d=0.57, ρ &lt;0.001</p> <p><u>IG:</u> Baseline: 7.0[2-10]91 2 mo. PP: 0.0[0-0]90</p> <p><u>CG:</u> Baseline: 7.0[3-9]87 2 mo. PP: 3.0[0-6]86</p>	<p>computer-generated w/ a permuted block program; secured, password protected database; low attrition rate</p> <p><b>Weaknesses:</b> All participants of IG &amp; CG received printed education material; Short length of study (6 mo.) r/t limited funding</p> <p><b>Conclusions:</b> Trained MIHOWs are highly recommended to provide culturally sensitive care, evaluate MID wellness, and educate dyads to improve health outcomes such as MD and BF self-efficacy.</p> <p><b>Feasibility/Application to practice:</b> Trained professionals such as lactation consultants are highly specialized in evaluating, educating, and providing needed</p>
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			group randomization  <b>Exclusion:</b> Received MIHOW services in the past; mental/physical disability of severe nature; <18 yrs  <b>Attrition:</b> 5%	medical/social services as needed.				care to breastfeeding mothers.
Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
Haga, S. M., et al. (2012). A longitudinal study of postpartum depressive symptoms: multilevel growth curve analyses of emotion regulation strategies, breastfeeding self-efficacy, and social support	Inferred to be the Health Belief Model	<b>Design:</b> Longitudinal Cohort Study  <b>Purpose:</b> To identify how BFSE, social support, and psychological variables impact PPD	N= 344  <b>Demographics:</b> <u>M maternal age:</u> 32 (SD 4.32) <u>Education:</u> College graduates: 84% <u>Ethnicity:</u> Norwegian: 85% Other: 15%  <b>Setting:</b> Hospital  <b>Inclusion:</b> >or= 18yrs; Able to read and write in Norwegian;	<b>IVI:</b> Emotion Regulation Strategies <b>IVII:</b> Social Support  <b>DV-</b> PPD (EPDS scores > or = 10)  <b>“Emotion Regulation Strategies”</b> Using positive reappraisal and assisting in problem solving	Web-based survey questionnaire (6wks, 3 mo, & 6 mo); EPDS; CERQ; BSES; BSSS	Multilevel modeling; -2 log likelihood statistics; ordinary chi-square distribution; ANOVA; Pairwise Bonferroni corrected comparisons	<b>DV:</b> <u>1.5 months PP:</u> 5.82(4.02), 15.1%  <u>3 months PP:</u> 4.77(4.20), 11.6%	<b>LOE:</b> Level III  <b>Strengths:</b> High sensitivity/specificity of instruments used; Consent prior to study; follow-up to minimize attrition  <b>Weaknesses:</b> Higher attrition rate for length of study (6 mo.). Selection bias noted.  <b>Conclusions:</b> Negative emotion regulation strategies are

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<p><b>Funding:</b> Not disclosed</p> <p><b>Bias:</b> Selection bias (more appealing to women)</p> <p><b>Country:</b> Norway</p>			<p>Internet access w/ email account</p> <p><b>Exclusion:</b> Child in ICU</p> <p><b>Attrition:</b> 28.5%</p>					<p>associated with high EPDS scores and PPD. Positive appraisal and strong social support can help prevent this and lead to strengthened MID and maternal well-being.</p> <p><b>Feasibility/Application to practice:</b> Encouraging positive self-talk and including supportive peers/family in education during lactation appointments can prevent PPD symptoms and strengthen the MID.</p>
Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
<p>Abbass-Dick, J., et al. (2015). Coparenting Breastfeeding support and exclusive breastfeeding: A randomized controlled trial</p>	<p>Inferred to be the Health Belief model</p>	<p><b>Design:</b> RCT</p> <p><b>Purpose:</b> To evaluate the effects of a co-parenting support intervention in improving</p>	<p>N=214 n=107 (IG) n=107 (CG)</p> <p><b>Demographics:</b> <u>M maternal age:</u> IG: 30.4 (SD3.7) CG: 30.7(SD3.8) <u>Plan to Exclusively BF:</u></p>	<p><b>IVI:</b> Multidimensional co-parenting BF support intervention Components: -face-face discussion w/ lactation consultant.</p>	<p>In-person assessments, Self-report online questionnaire or telephone interview by research assistant; workbook;</p>	<p>Cronbach's <math>\alpha</math>; SPSS version 2; Pearson's X2; Fisher Exact test; independent 2-sided independent <math>t</math> tests; Mann-</p>	<p><b>DVI:</b> <u>6wks:</u> IG: n=75, 72.1% CG: n=62, 60.8% <math>\rho =0.09</math> <u>12wks:</u> IG: n=70, 67.3% CG: n=63, 60% P=0.27 <b>DVII:</b></p>	<p><b>LOE:</b> Level II</p> <p><b>Strengths:</b> Assured concealment and blinding of study design. Piloted intervention w/ feedback for</p>

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<p><b>Funding:</b> Canadian Institutes of Health Research</p> <p><b>Bias:</b> Selection bias: High enrollment of potentially qualified mothers</p> <p><b>Country:</b> Canada</p>		<p>breastfeeding outcomes among primiparous parents.</p>	<p>IG: 95 (88.8%) CG: 95 (88.8%) <u>Married:</u> IG: 98 (91.6%) CG: 94 (87.9%)</p> <p><b>Setting:</b> Hospital</p> <p><b>Inclusion:</b> PP; Primiparous prior to this birth; Single infant &gt; or = 37wks gestation; maternal age &gt; or = 18yrs; Fluent in English language; Living with male partner</p> <p><b>Exclusion:</b> Hospital co-rooming with another participant; medical problem preventing BF; Infant unable to D/C; Lack of internet/telephone access; Plan to BF &lt;12 wks; unwilling to participate partner</p>	<p>-Co-parenting/BF booklet -Video -Informational Website -E-mail/ Telephone F/U</p> <p><b>IVII:</b> care as usual -Standard Hospital BF support -Community BF support sought out independently</p> <p><b>DVI:</b> BF Exclusivity <b>DVII:</b> BF duration <b>DVIII:</b> Maternal BF support satisfaction</p> <p><b>“Co-parenting”</b> Supporting one another to achieve parental and child health goals.</p>	<p>video; website; CRS ( <math>\alpha</math> =0.94); PP Partner Support Scale (<math>\alpha</math> =0.95-0.97); Likert Scale</p>	<p>Whitney <i>U</i> tests; ANOVA</p>	<p><u>BF duration at 12 wks</u> <u>PP</u> IG:96.2% CG: 87.6% p=0.02 9% increase</p> <p><b>DVIII:</b> <u>Satisfaction w/ partner’s involvement w/ BF</u> IG: (n=89, 89%) &gt; CG: (n=75, 78.1%) <math>\rho</math> =0.04</p> <p><u>Satisfaction w/ BF information received</u> IG: (n=81, 81%)&gt; CG: (n=60, 62.5%) <math>\rho</math> &lt;0.001</p>	<p>modification; power analysis performed.</p> <p><b>Weaknesses:</b> Limited variability between CG and IG r/t high motivation to BF; Uncertain which component of the intervention has the greatest effect on the outcomes r/t its’ multifaceted design.</p> <p><b>Conclusions:</b> Lack of statistical significance in many outcomes. However, clinical significance is evident r/t positive trends of the IG rates throughout course of study. Increased maternal satisfaction and BF duration demonstrates clinical importance.</p> <p><b>Feasibility/Application to practice:</b> Including a supportive person such as a paternal figure into the plan care during</p>
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			<b>Attrition:</b> 8.4%	<b>“BF Exclusivity”</b> NPO except for breastmilk in last 24 hrs  <b>“BF duration”</b> Receival of any breastmilk in last 24hrs.				MID lactation support may improve BF satisfaction and duration.
<b>Citation</b>	<b>Theory/ Conceptual Framework</b>	<b>Design/ Method</b>	<b>Sample/ Setting</b>	<b>Major Variables &amp; Definitions</b>	<b>Measurement / Instrumentation</b>	<b>Data Analysis (stats used)</b>	<b>Findings/ Results</b>	<b>Level/Quality of Evidence; Decision for practice/ application to practice</b>
Ngo, L. T. H, et al. (2019). Breastfeeding self-efficacy and related factors in postpartum Vietnamese women  <b>Funding:</b> No grants received from public funding agencies, commercial, or not-for-profit sectors.	Breastfeeding self-efficacy Theory	<b>Design:</b> CSS with controls  <b>Purpose:</b> To explore multiple variables (PPD, social support) relating to BFSE and its predictors in PP women.	N= 164  <b>Demographics:</b> <u>M maternal age:</u> 28.5 yrs (SD=5.3) <u>Parity:</u> Multipara: n=99 (60.4%) <u>Education level:</u> College graduate or >: n=55 (33.6%) <u>SSC:</u> n=139 (84.8%) <u>Partial BF:</u> n=97 (59.1%) <u>Full BF:</u> N=63 (38.4%)	<b>IVI:</b> Participant characteristics -maternal age -occupation -mode of delivery -BF experience -SSC -Extent of BF in hospital <b>IVII:</b> PPD <b>IVIII:</b> Social Support  <b>DV:</b> BF self-efficacy	BSES; MSPSS; EPDS; Self-administered questionnaire	Independent t-test; ANOVA; PCC; Hierarchical Linear Regression; SPSS version 20	<b>IVI:</b> (F(7,156)=5.64, p<0.001 <b>SCC:</b> t=-2.00, p=0.047 <b>BF:</b> t=4.42, p=0.014  <b>IVII:</b> (F(8,155)=6.37, p<0.001) r=-0.254, p<0.01 <b>IVIII:</b> F(9, 154)=9.98, p< 0.001) r=0.358, p<0.01  <b>DV:</b> 141.1+/(SD15.9)	<b>LOE:</b> Level III  <b>Strengths:</b> Informed consent before enrollment; Rights of participants explained; no conflicts of interest  <b>Weaknesses:</b> Not generalizable to preterm MID; Unable to evaluate progression of BF self-efficacy r/t cross-sectional data design; narrow ethnicity margin

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<p><b>Bias:</b> None detected</p> <p><b>Country:</b> Vietnam</p>			<p><b>Setting:</b> Hospital in Vietnam</p> <p><b>Inclusion:</b> Plan to BF; Vaginal or cesarean birth; maternal age &gt; or = 18yrs; Fluent in Vietnamese; agreed participation in study</p> <p><b>Exclusion:</b> Child born at &lt; 37wks gestation</p> <p><b>Attrition:</b> Not discussed</p>					<p><b>Conclusions:</b> Reduced EPDS scores and high social support can increase BF self-efficacy. It is important to screen for PPD to evaluate the mother's emotional state. This along with social support inclusion will help tailor BF education to the mother's needs and maximize effectiveness.</p> <p><b>Feasibility/Application to practice:</b> Early PPD screening w/ repeat screen will help trend usefulness in intervention implementation. Interventions to increase BFSE such as inclusion of maternal social support during education will help reduce PDD.</p>
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Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentati on	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
Ravn, I. H., et al. (2012). Effects of early mother-infant intervention on outcomes in mothers and moderately and late preterm infants at age 1 year: A randomized controlled trial  <b>Funding:</b> Grant from -The South-Eastern Norway Regional Health Authority; -Royal Norwegian Ministry of Health; -Centre for Child and	Inferred to be the Theory of Caregiver Dynamics	<b>Design:</b> RCT (partially blinded)  <b>Purpose:</b> To evaluate what affect MITP (IV) has on MD, BF duration, maternal perception of child’s temperament and communication skills (DV).	N=83 n= 42 MID (IG) n= 41 MID (CG)  <b>Demographics:</b> <u>M maternal age:</u> IG: 31 (SD4.0) CG: 30.8 (SD 4.9) <u>Non-Norwegian origin:</u> IG: 14 (25%) CG: 5 (10%) <u>M gestational age:</u> IG: 33.3 wks (SD 1.5) CG: 33 wks (SD 1.6)  <b>Setting:</b> Hospital NICU; Participant’s home  <b>Inclusion:</b> Fluent in Norwegian; No hx of drug/alcohol abuse; no psychiatric dx hx;	<b>IV:</b> MITP <b>DV1:</b> MD <b>DV7:</b> BF  “MITP” Intervention program consisting of 11, one-hour sessions that aimed to assist parents in valuing their child’s unique characteristics and to enhance MID. 7 sessions complete 1 wk to 1.5wks prior to discharge; 4 sessions finished within the first 3 months post discharge on outpatient basis.	Hearing screen; CES-D; PSI-LF; Likert scale; PDS; PCDIS; DCS; IBQ; PICS	Cronbach’s alpha; two-tailed independent sample t-test; paired t-test descriptive statistics; Chi-square test; SPSS version 15.0	<b>DVI:</b> <u>IG:</u> 1 month: M=8.3, SD=5.1 p=0.04 <u>CG:</u> 1 month: M=10.9, SD=6.7 p=0.04  <b>DVII:</b> <u>IG:</u> 9 months: n=14 (34.1%) not BF 12 months: n=26 (61.9%) not BF  <u>CG:</u> 9 months: n= 24 (60%), p=0.02 12 months: n=32 (80%), p=0.07	<b>LOE:</b> Level II  <b>Strengths:</b> Design focus in an under-researched group population; Inclusion of non-Norwegian participants increased generalizability of study; credibly trained HCPs implementing intervention; High reliability for most screening tools  <b>Weaknesses:</b> Small sample size; Low reliability for IBQ subscales  <b>Conclusions:</b> IG had < PPD 1-month post discharge compared to CG. No significant effect between 6-12 months for IG in PPD suggests greatest impact of MITP

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<p>Adolescent Mental Health; -East and Southern Norway; -Woman &amp; Children's Division Oslo University Hospital, Ullevaal; -Department of Nursing research in Oslo University Hospital, Ullevaal; -Norwegian Nurses Association</p> <p><b>Bias:</b> none detected</p> <p><b>Country:</b> Norway</p>			<p>anticipated LOS = or &gt;8 days <b>Exclusion:</b> Congenital anomalies, neurological sequelae, hearing loss, chromosome disorders of infant <b>Attrition:</b> 22%</p>				<p>is 1<sup>st</sup> month PP when depression sx are high. Higher rates of BF noted at 9 and 12 months for IG &gt; CG.</p> <p><b>Feasibility/Application to practice:</b> Slight timeline modification of MIFP to become all sessions implemented on an outpatient basis opposed to inpatient may more easily fit with project design. Use of MITP may improve MD and lengthen BF duration which would in turn improve BF satisfaction.</p>
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Citation	Theory/ Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables & Definitions	Measurement / Instrumentation	Data Analysis (stats used)	Findings/ Results	Level/Quality of Evidence; Decision for practice/ application to practice
<p>Thomas, L., et al. (2018). Interventions for mothers with postpartum depression: A systematic review</p> <p><b>Funding:</b> Not mentioned</p> <p><b>Bias:</b> None detected</p> <p><b>Country:</b> United States</p>	<p>Care model for the mother with perinatal mental illness</p>	<p><b>Design:</b> SR of RCTs</p> <p><b>Purpose:</b> To systematically investigate interventions that improve MID mental health outcomes in mothers with PPD.</p>	<p>N=12</p> <p><b>DS:</b> MEDLINE, PubMed, EMBASE, CINAHL, PsychINFO, British Nursing Index, AMED, Cochrane</p> <p><b>Inclusion:</b> Studies discussing PPD and interventions to decrease it as well as Published after 2000 and in the English language.</p> <p><b>Exclusion:</b> Inadequate research methodology; Qualitative and MMS; Studies discussing interventions for other PP mental</p>	<p><b>IVI:</b> Volunteer Support  <b>IVII:</b> IPT  <b>IVIII:</b> CBT  <b>IVIV:</b> Practice based Intervention  <b>IVV:</b>BAT  <b>IVVI:</b> Relationship focused behavioral nursing intervention  <b>IVVII:</b> Peer support  <b>IVVIII:</b> Group psycho-education</p> <p><b>DV:</b> PPD</p>	<p>EPDS; Hamilton-Rating Scale for Depression; Structured Clinical Interview for DSM-IV; Kesslers depression scale; PP Depression Screening Tool</p>	<p>Evaluated for relevance, appropriateness, clarity, and methodology with use of QAT</p>	<p><b>DV:</b> Recommended Interventions to decrease PPT  <u>M Intervention Duration in total:</u> 6.55 hrs  <u>M # of sessions:</u>10  <u>Intervention:</u>                      -Telephone based 41.6%                      -Direct interaction 41.6%                      -Internet based 8.3%                      -One to One 8.3%  <u>Techniques:</u>                      10 (83.3%)                      recommend simple verbal interaction</p>	<p><b>LOE</b> Level I</p> <p><b>Strengths:</b> SR design that evaluated high level RCTs; Project model implemented into design; Recent articles after 2000 reviewed</p> <p><b>Weaknesses:</b> Limited articles meeting inclusion data (n=12). Lack of inclusion for SRs, qualitative studies, or MMS</p> <p><b>Conclusions:</b> Consensus of articles indicate need for cost-effective, accessible treatment strategies through routine follow-up practices that include direct education to mother, her support system, and providing community resources.</p>

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			illness; Pharmacotherapy alone as an intervention.					<b>Feasibility/Application to practice:</b> Providing breastfeeding support and child care education to mothers and their support systems through follow-up appointments can help decrease PDD
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=-equal to; >-greater than; 2° -Secondary; **Admit**-Admission; **AMED**-Allied and Complementary Medicine Database; **AR**-Allocation ratio; **Avail**-available; **BAT**-Behavioral Activation treatment; **BF**-Breastfeeding; **BFQ**-Breastfeeding questionnaire; **BFSE**-breastfeeding self-efficacy; **BSES**-Breastfeeding self-efficacy scale; **BSES-SF**-Breastfeeding Self-Efficacy Scale-Short Form; **BSSS**-Berlin Social Support Scale; **BW**-birth weight; **CA**-Cronbach's alpha; **CBMPPC**-Community-based multidisciplinary postpartum clinic; **CBT**-Cognitive based therapy; **CERQ**-Cognitive Emotion Regulation Questionnaire; **CES-D**-The Center for Epidemiological Studies Depression Scale; **CG**-Control group; **CHEORI**-Children's Hospital of Eastern Ontario Research Institute; **CHWS**-Child Health Worry Scale; **CI**-Confidence Interval; **cont.**-continue; **CRS**-Co-parenting Relationship Scale; **CSS**-Cross-sectional study; **DCS**-Difficult child subscale; **DS**-Databases Searched; **DV**-Dependent Variable; **Dx**-Diagnosis; **Edu**-Education; **EFA**-exploratory factor analysis; **EPDS**-Edinburgh Postpartum Depression Scale; **Exc**-Exclusion; **F/U**-follow-up; **FTM**-Full term ; **FTMID**-Full term mother-infant dyad; **g**-grams; **Gest**-gestational; **Grads**-graduates; **HCP**-health care provider; **HI**-health issues; **HOME-IT**-Home Observation for measurement of the environment-infant-toddler; **Hx**-History; **IBQ**-Infant behavior questionnaire; **IFI**-Infant feeding intention; **IG**-Intervention group; **Inc**-Inclusion; **IPT**-Interpersonal psychotherapy; **IQR**-inter-quartile range; **IV**-Independent Variable; **Jan**-January; **Jul**-July; **LOE**-Level of Evidence; **LOS**-Length of stay; **LPT**-later pre-term ; **LPTMID**-late pre-term mother-infant dyad; **LRA**-Linear regression analysis; **M**-Mean; **m**-minutes; **MID**-Mother- infant dyad; **MIHOH**-Maternal Infant Health Outreach Worker; **MITP**-Mother-Infant Transaction Program; **MMS**-Mixed-method studies; **Mo**-months; **MSPSS**-Multidimensional Scale of Perceived Social Support; **MSS**-Mean Satisfaction Score; **N**-Sample (population); **n**-sample size (studies); **OD**-Odds ratio; **OH** -Ottawa Hospital ; **OHRI**-Ottawa Hospital Research Institute; **PB**-premature birth; **PCA**-Principal components analysis; **PCC**-Pearson's correlation coefficient; **PCDIS**-Parent-child dysfunctional interaction subscale; **PDS**-Parental distress subscale; **PICS**-Pictorial Infant Communication Scales; **PP**-Postpartum; **PPD**-Postpartum depression; **PPDS**-Postpartum depression symptoms; **PPQ**-Perinatal PTSD Questionnaire; **PQI**-Preliminary qualitative interviews; **PSI-LF**-Parenting Stress Index-Long Form; **PSI-SF**-Parenting Stress Index-Short Form; **Psych**-Psychological; **QAT**-Quality assessment tool; **r/t**-related to; **RA**-Research assistant; **RCT**- Randomized Control Trial; **RR**-Response rate; **SD**-Standard Deviation; **SDS**-Socio-Demographics Survey; **SES**-socioeconomic status; **SOC**-Standard of Care; **SR** -Systematic Review; **SRWBS**-Self-report web-based survey; **SSC**-skin-to-skin contact; **SSD**-Statistically significant difference; **STAI-S**-State Anxiety subscale of the State-Trait Anxiety Inventory; **SWW**-South West Wales; **Sx**-Surgery; **UK**-United Kingdom; **w/-**-with; **wks**-weeks

**Appendix B**

Table 2

*Synthesis Table*

	Labiberte, C., et al.	Brown, A., et al.	Tully, K. P., et al.	Bigelow, A. E., et al.	Lutenbacher, M., et al.	Haga, S. M., et al.	Abbass-Dick, J., et al.	Ngo, L. T. H, et al.	Ravn, I. H., et al.	Thomas, L., et al.
<b>Study Characteristics</b>										
Year	2016	2015	2017	2013	2018	2012	2015	2019	2012	2018
Design/ LOE	RCT/ II	CSS/ III	2° EA/ II	RCT/ III	RCT/ II	LCS/ III	RCT/ II	CSS/ III	RCT/ II	SR/ I
PPD Screening: EPDS	√	√	√	√		√		√		√ (9 of 12 studies)
BF Women	√	√	√	√	√	√	√	√	√	√ (12 of 12 studies)
<b>IV</b>										
Maternal support by peer/family involvement		√			√	√	√	√	√	√
BF		√	√	√			√	√		
Community BF education & support for MID	√				√		√		√	√
SSC				√				√		
Emotion Regulation Strategies						√				
<b>DV</b>										
MD		↓	↓	↓	↓	↓			↓	↓
Maternal satisfaction	↑						↑			
MID			↑	↑						
BFSE	↑				↑			↑		

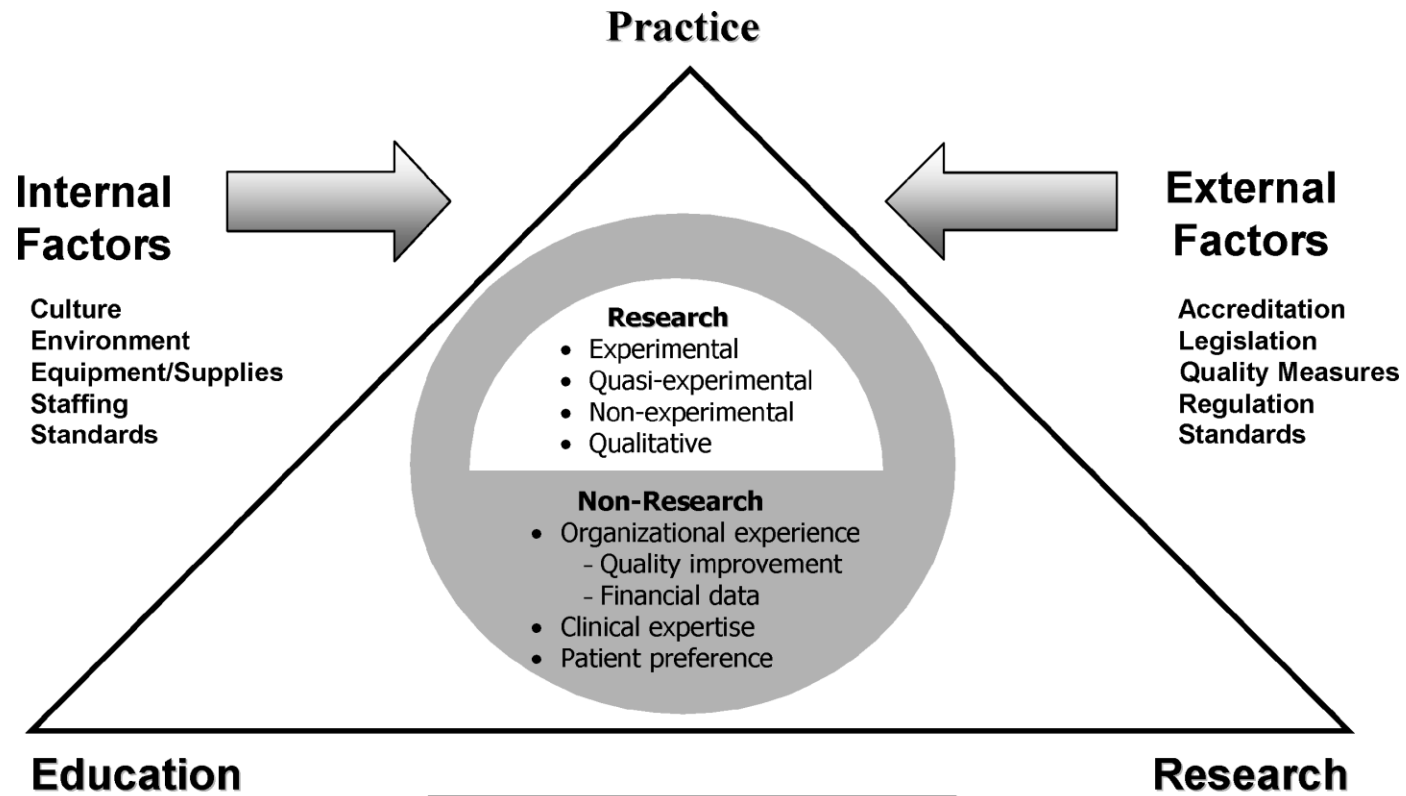
2° EA-Secondary Exploratory Analysis; **BF**-Breastfeeding; **BFSE**-breastfeeding self-efficacy; **CSS**-Cross-sectional study; **DV**-Dependent Variable; **EPDS**-Edinburgh Postpartum Depression Scale; **LOE**-Level of Evidence; **LCS**-Longitudinal Cohort Study; **MID**- Mother-infant dyad; **RCT**- Randomized Control Trial; **SCC**- Skin-to-skin; **SR**- Systematic Review



Appendix C

Figure 1

*Johns Hopkins Nursing Evidence-based Practice Conceptual Model*



**Appendix D**

Figure 2

*Informational Pamphlet (IP)*

**Support & Resources**

La Leche League of Arizona

<https://www.llofaz.org/>

La Leche League meetings are held across the valley, are free to attend, and offer ongoing support from other breastfeeding families. Leaders are trained on evidence-based practices to support common questions and situations in breastfeeding, and have also breastfed their own child(ren).

Babywearing International of Phoenix

<https://www.centralarizonababywearing.com/>

Babywearing International of Phoenix holds meetings valley wide to educate parents about the benefits of babywearing and how to use a variety of carriers. Volunteer Educators are also trained to help attendees with positioning in carriers that facilitates breastfeeding.

Websites

<https://kellymom.com>

<https://www.llli.org>

<https://azdhs.gov/prevention/nutrition-physical-activity/breastfeeding/index.php>

<https://www.medicaresupplement.com/content/womens-health-resources/>



**Cara Riek, DNP, RN, FNP-BC, IBCLC, DABLS**

[bfmedaz.com](http://bfmedaz.com) | [support@bfmedaz.com](mailto:support@bfmedaz.com)

480.208.1490 (office) | 480.208.1490 (Dr. Cara)

480.490.6005 (On Call) | 480.300.4559 (Billing)

480.447.8890 (FAX)

7730 E. Greenway Rd., Suite 101

Scottsdale, AZ 85260



## Purpose & Goals

*Thank you for choosing  
Arizona Breastfeeding Medicine & Wellness.*

*We want to tailor education to support you and  
your child's needs. Please list your reason for  
today's appointment and what you wish to get out  
of our time together.*

### Reason for Appointment

---



---

### Goals for mother/child

---



---



---

## Evidence-Based Interventions for Breastfeeding Wellness & Mother-Infant-Dyad

### Social Support (peer/family involvement)

*Feel supported in your breastfeeding journey.*

- Bring a loved-one to appointments
- Surround yourself with people who love and support you and your child
- Join peer-support groups (*ask about our offered support groups and couple classes!*)

### Skin-to-Skin Contact

*Promote bonding, reduce stress, and enhance emotional well-being*

- Child is placed on the chest of mother
- Child is unclothed or has only a diaper on
- Check for quality of the child's latch to breast

### Emotional Regulation Strategies

*Strategies to promote emotional-wellness*

- Journaling
- Exercise
- Meditation
- Therapy
- Positive Self-Talk

## Self- Reflection Activities

- Who can I ask to help support me on my breastfeeding journey?
- What healthy outlets/hobbies do I have to help reduce stress in my life?
- I am a good mother to my child because...
  - 1.
  - 2.
  - 3.
- What makes me feel bonded to my child?
- My favorite traits about my child are...
  - 1.
  - 2.
  - 3.

## Appendix E

Figure 3

### *Edinburgh Postnatal Depression Scale*

## Edinburgh Postnatal Depression Scale<sup>1</sup> (EPDS)

As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is an example, already completed.

I have felt happy:

- Yes, all the time  
 Yes, most of the time      This would mean: "I have felt happy most of the time" during the past week.  
 No, not very often      Please complete the other questions in the same way.  
 No, not at all

In the past 7 days:

- |                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. I have been able to laugh and see the funny side of things</p> <ul style="list-style-type: none"> <li>- As much as I always could</li> <li>- Not quite so much now</li> <li>- Definitely not so much now</li> <li>- Not at all</li> </ul> | <p>*6. Things have been getting on top of me</p> <ul style="list-style-type: none"> <li>- Yes, most of the time I haven't been able to cope at all</li> <li>- Yes, sometimes I haven't been coping as well as usual</li> <li>- No, most of the time I have coped quite well</li> <li>- No, I have been coping as well as ever</li> </ul> |
| <p>2. I have looked forward with enjoyment to things</p> <ul style="list-style-type: none"> <li>- As much as I ever did</li> <li>- Rather less than I used to</li> <li>- Definitely less than I used to</li> <li>- Hardly at all</li> </ul>     | <p>*7 I have been so unhappy that I have had difficulty sleeping</p> <ul style="list-style-type: none"> <li>- Yes, most of the time</li> <li>- Yes, sometimes</li> <li>- Not very often</li> <li>- No, not at all</li> </ul>                                                                                                             |
| <p>*3. I have blamed myself unnecessarily when things went wrong</p> <ul style="list-style-type: none"> <li>- Yes, most of the time</li> <li>- Yes, some of the time</li> <li>- Not very often</li> <li>- No, never</li> </ul>                  | <p>*8 I have felt sad or miserable</p> <ul style="list-style-type: none"> <li>- Yes, most of the time</li> <li>- Yes, quite often</li> <li>- Not very often</li> <li>- No, not at all</li> </ul>                                                                                                                                         |
| <p>4. I have been anxious or worried for no good reason</p> <ul style="list-style-type: none"> <li>- No, not at all</li> <li>- Hardly ever</li> <li>- Yes, sometimes</li> <li>- Yes, very often</li> <li>-</li> </ul>                           | <p>*9 I have been so unhappy that I have been crying</p> <ul style="list-style-type: none"> <li>- Yes, most of the time</li> <li>- Yes, quite often</li> <li>- Only occasionally</li> <li>- No, never</li> <li>-</li> </ul>                                                                                                              |
| <p>*5 I have felt scared or panicky for no very good reason</p> <ul style="list-style-type: none"> <li>- Yes, quite a lot</li> <li>- Yes, sometimes</li> <li>- No, not much</li> <li>- No, not at all</li> </ul>                                | <p>*10 The thought of harming myself has occurred to me</p> <ul style="list-style-type: none"> <li>- Yes, quite often</li> <li>- Sometimes</li> <li>- Hardly ever</li> <li>- Never</li> </ul>                                                                                                                                            |

Administered/Reviewed by \_\_\_\_\_ Date \_\_\_\_\_

<sup>1</sup>Source: Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786 .

<sup>2</sup>Source: K. L. Wisner, B. L. Parry, C. M. Piontek, Postpartum Depression *N Engl J Med* vol. 347, No 3, July 18, 2002, 194-199

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## Edinburgh Postnatal Depression Scale<sup>1</sup> (EPDS)

Postpartum depression is the most common complication of childbearing.<sup>2</sup> The 10-question Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way of identifying patients at risk for “perinatal” depression. The EPDS is easy to administer and has proven to be an effective screening tool.

Mothers who score above 13 are likely to be suffering from a depressive illness of varying severity. The EPDS score should not override clinical judgment. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt **during the previous week**. In doubtful cases it may be useful to repeat the tool after 2 weeks. The scale will not detect mothers with anxiety neuroses, phobias or personality disorders.

Women with postpartum depression need not feel alone. They may find useful information on the web sites of the National Women’s Health Information Center <[www.4women.gov](http://www.4women.gov)> and from groups such as Postpartum Support International <[www.chss.iup.edu/postpartum](http://www.chss.iup.edu/postpartum)> and Depression after Delivery <[www.depressionafterdelivery.com](http://www.depressionafterdelivery.com)>.

### SCORING

#### QUESTIONS 1, 2, & 4 (without an \*)

Are scored 0, 1, 2 or 3 with top box scored as 0 and the bottom box scored as 3.

#### QUESTIONS 3, 5-10 (marked with an \*)

Are reverse scored, with the top box scored as a 3 and the bottom box scored as 0.

Maximum score: 30  
Possible Depression: 10 or greater  
Always look at item 10 (suicidal thoughts)

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### Instructions for using the Edinburgh Postnatal Depression Scale:

1. The mother is asked to check the response that comes closest to how she has been feeling in the previous 7 days.
2. All the items must be completed.
3. Care should be taken to avoid the possibility of the mother discussing her answers with others. (Answers come from the mother or pregnant woman.)
4. The mother should complete the scale herself, unless she has limited English or has difficulty with reading.

<sup>1</sup>Source: Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786.

<sup>2</sup>Source: K. L. Wisner, B. L. Parry, C. M. Piontek, Postpartum Depression N Engl J Med vol. 347, No 3, July 18, 2002, 194-199

**Appendix F**

Figure 4

*Letter of Support from Project Site*

7730 E Greenway Rd. Suite 101  
Scottsdale, AZ 85260  
480-208-1490

Date: 7/15/2019

To whom it may concern:

On behalf of Arizona Breastfeeding Medicine and Wellness, I support the evidence-based project entitled *Depression Screening and Breastfeeding Support in a Community Breastfeeding Clinic* as proposed by Dr. Diane Nuñez and Sarah Refner RN, BSN, graduate student.

Please allow this letter to serve as a record of our agreement to be the project site for data collection, education sessions, and data analysis.

We look forward to working with Dr. Nuñez and Sarah Refner RN, BSN on this project and generating data to help mothers in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Cara J. Riek", followed by the text "FNP-BC" in a similar handwritten style.

Cara J. Riek, DNP, RN, FNP-BC, IBCLC, DABL

**Appendix G**

Figure 5

*Permission to use the Breastfeeding Self Efficacy Scale-Short Form (BSES-SF)*



---

Cindy-Lee Dennis [cindylee.dennis@utoronto.ca](mailto:cindylee.dennis@utoronto.ca)  
To: Sarah Refner <[sterkels@asu.edu](mailto:sterkels@asu.edu)>

Dear Sarah

Thank you for your email and interest in my Breastfeeding Self-Efficacy Scale.  
I have attached the short-form to be used in your scholarly project. Good luck with your research.

Warm regards

Cindy-Lee Dennis

Cindy-Lee Dennis, PhD, FCAHS  
Professor in Nursing and Medicine, Dept. of Psychiatry, University of Toronto;  
Women's Health Research Chair, Li Ka Shing Knowledge Institute, St. Michael's

Hospital; Fellow, Canadian Academy of Health Sciences

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**Appendix H**

Figure 6

*Staff Satisfaction Questionnaire*

**Staff Satisfaction Survey**

**\*Please rank your satisfaction as it pertains to the project**

- 1- Not at all**
- 2- Rarely ever**
- 3- Sometimes**
- 4- Most of the time**
- 5- Every time**

1.	The informational pamphlet provided to patients was helpful to guide and reinforce learning	1	2	3	4	5
2.	Screening for depression with the Edinburgh Postnatal Depression Screen has helped me better understand how to care for my patient	1	2	3	4	5

What part of the DNP Project could have gone different to better fit the needs of the clinic?

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