

Move and Mingle: A Postpartum Depression Intervention

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Abstract

Background: 11.5% of women are diagnosed with postpartum depression (PPD) within the first few months after delivery, and 50% go untreated. Effective and accessible treatment options for PPD are greatly needed to improve the health of the postpartum community.

Purpose: The purpose of the Move and Mingle project was to implement an evidence-based PPD program using yoga and group social support therapy in a weekly class format over six weeks to significantly reduce the symptoms of postpartum depression.

Methods: The program offered a weekly, six session combined yoga and social support therapy class to postpartum women diagnosed with PPD.

Sample: 5 women began the program, and 4 completed the pre and post intervention Edinburgh Postnatal Depression Score.

Results: Participant scores on the EPDS scale before and after the Move and Mingle intervention improved an average of 7.25 points. Using an alpha level of .05, the EPDS score changes were statistically significant ($p = .03684$).

Conclusions: The results demonstrate the effectiveness of yoga and group therapy on the improvement of mental health in postpartum women suffering from PPD. Providers are encouraged to utilize the intervention for their patients in the community.

Keywords: Postpartum depression, yoga therapy, group social support

Move and Mingle: A Postpartum Depression Intervention

Overview

Background

Postpartum depression (PPD) is a national issue. Self-assessment results reveal nearly 85% of women report some type of mood dysregulation during the postpartum period, with 10% categorizing symptoms as “disabling” (Walsh & Karakashian, 2018). The need for effective interventions is apparent nationwide.

PPD results from a complex interplay of factors, including hormone changes after delivery, genetic predisposition for depression, stresses of childcare, and poor health (Beckmann et al., 2014). Postpartum depression has a multitude of negative effects impacting new mothers, usually surfacing within the first 6 weeks after delivery. Symptoms include anxiety, insomnia, suicidality, depressed mood, tearfulness, psychosis, racing thoughts, anhedonia, impaired attachment to the child, and child neglect (Walsh & Karakashian, 2018). PPD affects multiple community members from employers, to children.

Risk factors for PPD include low socioeconomic status, history of depression, prior pregnancy loss, poor social support, stressors (financial, relationship, physical) during pregnancy, and history of abuse (Walsh & Karakashian, 2018). Numerous obstacles prevent proper treatment of the disorder, including cultural stigma surrounding PPD, inability to access adequate treatment, fear of medications, previously negative experiences with mental health treatment, lack of community knowledge about PPD, failure of healthcare providers to screen for the disorder, isolation of mothers at home with a new baby, and lack of postpartum care (Walsh & Kardashian, 2018).

Multiple PPD treatment approaches exist. Pharmacological therapy is a widely used method to treat PPD, however, the stigma surrounding medications and PPD prevents women from seeking treatment, or acknowledging the disorder (Ko et al., 2017). Even though pharmacologic interventions are effective and frequently prescribed for PPD, many women do not want to take antidepressants (Field, Diego, Delgado, & Medina, 2013). Additionally, other methods of treatment such as counseling and psychotherapy are often too expensive, too time consuming, or simply unwanted (Field et al., 2013).

Many women have expressed a desire to focus on alternative methods for addressing depression, which may have less stigma attached (Buttner, Brock, O'Hara, & Stuart, 2015). Group therapy has proven successful in improving symptoms (Scope et al., 2013), as has exercise therapy, specifically yoga (Buttner et al., 2015). Alternative approaches are often less threatening than pharmacological therapy, and well tolerated. Creating a natural, and holistic approach to treat PPD is an emerging concept, and may be the solution to improving patient outcomes. The use of a combined yoga and group therapy intervention is an innovative approach and has yet to be tested.

Problem Statement

The clinical question for the project was: In women diagnosed with postpartum depression during the first six months after delivery, does participation in the Move and Mingle program, a six-week group support therapy and Iyengar yoga class, significantly impact symptoms of postpartum depression?

Purpose Statement

The purpose of the Move and Mingle project was to implement an evidence-based PPD program using yoga and group social support therapy in a weekly class format over six weeks, to

significantly reduce the symptoms of postpartum depression.

Target Population and Stakeholders

The target population for the program was women who had given birth within the last six months, and had been diagnosed with postpartum depression.

Stakeholders included primary care providers, obstetricians, mental health providers, women in the community, families of women in the community, public health officials, women's health registered nurses, and the community as a whole.

Outcomes

Outcome 1: 85% of participants will participate in yoga and group therapy on a weekly basis for the duration of the 6-week course.

Outcome 2: 85% of participants with postpartum depression (as evidence by an Edinburgh Postnatal Depression Scale rating of 7 or higher) who completed the EPDS scales before and after the program will experience an improvement in EPDS score by the end of the 6-week program.

Outcome 3: Participants who completed the exit survey will report satisfaction with the intervention, as evidenced by the post-intervention satisfaction survey results. At least 85% of participants will rate eight or higher on a 0-10 scale.

Outcome 4: By the end of the 6-week intervention, at least 85% of participants who completed the exit survey will report feelings of empowerment and social support as evidenced by responses of 8 or higher on the post-intervention survey questions "I felt social support during the group" and "I feel empowered to cope with my depression, and obtain help if needed".

Review of the Literature

In order to fully prepare for the implementation of a PPD intervention, reviewing current research surrounding the issue was necessary. A literature review revealed the positive effects of exercise and group therapy on postpartum depression. Articles for the review were found using the COCHRANE Database of Systematic Reviews, CINAHL Plus, and PubMed (*Appendix A*).

The COCHRANE Database was searched with the terms “postpartum depression” AND “yoga” OR “group therapy”, and yielded no results.

CINAHL Plus (C) and PubMed (P) were searched with the terms “postpartum women” OR “women”, yielding 212,495 (P) and 496,713 (C). The terms “postpartum depression” OR “postnatal depression” yielded 9,786 (P) and 7,487 (C) articles. When the terms “yoga” OR “group therapy” OR “combined exercise and group therapy” were used, 682,799 (P) and 59,982 (C) articles were listed. The final search included [“postpartum women” OR “women”] AND [“postpartum depression” OR “postnatal depression”] AND [“yoga” OR “group therapy” OR “combined exercise and group therapy”]. There were 429 articles found on PubMed and 474 through CINAHL.

Articles containing the following were excluded: studies about treatments other than yoga or group therapy; depression studies not related to the postpartum period; and articles not addressing the clinical question. Articles included were research-based, peer-reviewed clinical trials or systematic reviews, which focused on yoga and group therapy for PPD. Limits included human subjects, English language, published since 2013, and a population focus on postpartum women. After addressing the criteria, 7 articles were appropriate for the literature review (*Appendix B*).

Several themes emerged upon reviewing the included articles. Yoga significantly improved depression (Buttner et al., 2015; Ko et al., 2013). Cognitive behavioral group therapy demonstrated effectiveness in improving PPD symptoms (Hall & Grundy, 2014; Van Lieshout, Yang, Haber, & Ferro, 2017; Scope et al., 2013), and basic group therapy improved depression rates (Meschino, Philipp, Israel, & Vigod, 2016; Naysmith, Wells, Newson, & Webb, 2015).

Yoga

Buttner et al. (2015), as well as Ko et al. (2013) conducted research studies on the effects of yoga on postpartum depression. The studies both indicated significant decreases in depression, but were slightly different in the methods used.

Buttner et al. (2015) conducted a randomized controlled trial of a biweekly 8-week yoga course for 55 Iowa women who had given birth within the last 12 months and rated high on the Hamilton Depression Rating Scale (HDRS). After controlling for age and social anxiety, the researchers found 78% of the experimental group experienced improvement in depression scores. HDRS levels improved over time, $t(55) = -10.17, p < .001$.

Ko et al. (2013) also found statistically significant ($p = 0.21$) improvements in depression among postpartum participants. The researchers used a quasi-experimental design, with a convenience sampling of only 23 women in Taipei. The 3-month intervention was a weekly yoga and Pilates class. All 23 women completed the program, with pretest and posttest data obtained using the Epidemiologic Studies depression Scale (ESDS).

While the sample sizes of the two studies were relatively low, both studies were able to demonstrate statistically significant improvements in depression ratings, using either the HDRS or ESDS scales. Strengths of the studies included valid measurement tools and significant

results. Furthermore, Buttner et al. (2015) used randomization and a control group, which further increased the strength and generalizability of the results.

Several weaknesses emerged in the two studies. Both studies utilized relatively small sample sizes (Buttner et al, 2015; Ko et al, 2013), as well as strict limits on inclusion criteria (Buttner et al., 2015) which made it difficult to generalize results to a larger population. Furthermore, several women were lost to follow up which reduced the number of available posttest results (Ko et al., 2013).

Because the Move and Mingle program uses yoga as the specific treatment modality, the two studies were important. The interventions were carried out over a longer period than Move and Mingle's 6-week layout, but the positive impact of yoga on PPD was promising.

Cognitive Behavioral Group Therapy

Cognitive behavioral therapy (CBT) involves the recognition of negative thought processes, and the reorientation of cognitive patterns to positively change behavior. Three studies specifically examined the impact of group CBT on postpartum depression. The results of the articles showed significant improvement in depression (Hall & Grundy, 2014; Scope et al., 2013; Van Lieshout et al., 2017).

Hall and Grundy (2014) examined a case report for a multi-interventional approach utilizing weekly peer support, instruction, and CBT over the course of eight weeks. A convenience sampling of 54 mothers who completed a patient health questionnaire before and after the course demonstrated improvement from "severe" depression to "moderate" depression. No statistical analyses were run on the case report, so results cannot be categorized as statistically significant. However, the intervention has proceeded since the 2014 report, and participants continue to show improvement (Hall & Grundy, 2014).

Unlike Hall and Grundy's (2014) case report, Van Lieshout et al., (2017) conducted a quasi-experimental study, which demonstrated 79.3% of participants experienced a clinically significant decrease in EPDS scores, and 82.8% decreased in BDI-II (Beck's Depression Inventory) scores. The sample included 34 women in the first 9 months postpartum. The researchers completed a weekly CBT group intervention over a 9-week period, and took both an EPDS and BDI-II test before and after the intervention. The positive results highlighted the potential improvement group CBT has on the mental health of postpartum women.

Scope et al. (2013) completed a systematic review of seven randomized controlled trials involving CBT. Statistical analyses were run on each included study. Researchers found statistically significant improvement in depression ratings (either the EPDS or BDI) for each study, but findings were not consistent over time. The authors failed to identify a specific period when improvement would be most significant. Additionally, the actual implementation of the group CBT was slightly different for each article, so generalizing the results was difficult.

The three articles addressing group CBT all showed improvement in depression ratings (Hall & Grundy, 2014; Scope et al., 2013; Van Lieshout et al., 2017). Unfortunately, generalizing results is difficult, as each research article implemented the group CBT in a slightly different manner. Furthermore, Hall and Grundy (2014) only used a case report to generate results, and Van Lieshout et al. (2013) neither randomized participants, nor included a control group, which reduces the strength of the findings. Scope et al. (2013) was the strongest of the three articles (utilizing level I evidence), but was unable to provide evidence of consistent results over time. The researchers admitted there was a chance improvement could be related to time elapsed since delivery, rather than directly related to the intervention.

The findings all demonstrated improvement in participant depression, and should be considered. Elements of CBT will be utilized in the group intervention portion of the project, as evidence suggests effectiveness. Furthermore, Hall and Grundy's (2014) use of social support is important, as social support is a central focus of the Move and Mingle program's methods.

Basic Group Therapy

Two more articles utilized generic group therapy as an intervention for postpartum depression (Meschino et al., 2016; Naysmith et al., 2015). Naysmith et al. (2015) conducted a quasi-experimental study with 41 postpartum women who had an EPDS score of 10 or greater. The results demonstrated the 10 weekly group talk sessions supervised by community psychiatric RNs improved depression ratings from "moderate" to "mild", with an average satisfaction rating of 9/10. The groups were based on a detailed instruction manual, making the study easily reproducible.

Meschino et al. (2016) also conducted a 12-week basic group therapy study for mothers 6-12 months postpartum seeking care for PPD. The study was also a quasi-experimental design, so no control group was used, and the 13 participants were referred from a single hospital. Results revealed statistically significant ($p = .01$) improvement in EPDS scores, as well as improvement in anxiety, parent isolation, and parenting stress index.

Both studies indicated improvement in depression scores from the pretest and posttest data (Meschino et al., 2016; Naysmith et al., 2015). However, neither study used a randomized design with a control group (Meschino et al., 2016; Naysmith et al., 2015), which made results difficult to generalize. The findings are applicable to the Move and Mingle project, which utilizes a combination of basic group therapy techniques with CBT for the intervention. The articles provide evidence of improvement from group therapy techniques.

Conclusion

Women turn to holistic treatment for PPD for numerous reasons. Whether the stigma of medication, the expense of individual therapy, or the fear of diagnosis, women are often hesitant to seek treatment for symptoms, as evidenced by the 50% of diagnosed women going untreated (Ko et al., 2017). Clearly, a need for alternative treatment options exists.

Group therapy is less expensive than individual therapy, provides social support, and has been shown to improve PPD symptoms, as demonstrated by Hall and Grundy (2014), Meschino et al. (2016), Naysmith et al. (2015), Scope et al. (2013), and Van Lieshout et al. (2017). The available articles do have limitations. The studies use only convenience sampling and a quasi-experimental design (Meschino et al., 2016; Naysmith et al., 2015; Van Lieshout et al., 2017), or case report data (Hall & Grundy, 2014), with just one article being a systematic review (Scope et al., 2013). Furthermore, the researchers assessed CBT and therapist led group programs, rather than group social support approaches. However, after controlling for specific topics and inclusion criteria, the identified studies still contribute to the body of evidence for PPD program resources. More research needs to be done in order to provide a stronger base of evidence.

Group exercise therapy, specifically yoga, shows statistically significant improvement on PPD symptoms as well (Buttner et al, 2015; Ko et al., 2013). While the studies included have relatively small sample sizes, and one occurred outside the United States where culture may impact results (Ko et al., 2013), both used valid measurement tools and conducted appropriate statistical analyses. Furthermore, Buttner et al. (2015) performed a randomized controlled trial, which was the highest level of study in the research reviewed. Although weaknesses existed with the strengths in each article, findings from both were statistically significant.

Exercise therapy, specifically yoga and group therapy are effective treatment options for postpartum women. The combination of the two has not been documented in the research reviewed. However, based on positive findings from the separate interventions, the two combined are likely to improve symptoms for women with PPD in the first six months postpartum. The possibility of positive outcomes drove the development of the Move and Mingle program.

Theoretical Framework

The Clinical Scholar Model (*Appendix C*) was an appropriate framework for the application of the Move and Mingle program. The framework focuses on encouraging a spirit of inquiry and utilizing current research at the point of care (Dang et al., 2015). The model has several goals: to challenge current practice, to empower providers with the ability to utilize and understand research, and to encourage the critique and synthesis of research (Dang et al., 2015). Major concepts in the Clinical Scholar framework include observation, analysis, synthesis, application, evaluation, and dissemination (Dang et al., 2015).

Research indicates yoga improves symptoms of PPD (Buttner et al., 2015; Dang et al., 2015; Ko et al., 2013), as does group therapy (Meschino et al., 2016; Naysmith et al., 2015; Van Lieshout et al., 2017). However, what if the two methods were combined into a single intervention? Would the new approach improve outcomes? Curiosity and reflective thinking while making observations were the beginning components of the Clinical Scholar Model application (Dang et al., 2015).

After observations are made, the model moves to analysis and synthesis of information. The framework directed a review of evidence, and analysis of the problem's significance (Dang et al., 2015). A review of the literature regarding yoga and group therapy for PPD indicated more

research is necessary, as well as a detailed look at local population characteristics, community needs, and applicability of current research.

The Clinical Scholar Model prompts application and evaluation of research, for the purpose of filling gaps in knowledge and challenging current practice (Dang et al., 2015). The evaluation and application of research is where the Move and Mingle project fit into the model.

Finally, when the project is completed, results will be disseminated to the community, prompting processes for PPD treatment to improve through routine utilization of yoga and group social support therapy. The model encourages an ongoing process, with a cycle of questions, curiosity, and improvement.

Organizational Assessment

Nationwide, 85% of women report mood disturbance during the postpartum period, with 10% categorizing symptoms as “disabling” (Walsh & Karakashian, 2018). The issue needed attention, and many areas have started working toward improvement. May 1st has been designated as World Maternal Mental Health Awareness day. Many initiatives are taking place nationwide, including programs such as Baby Your Baby, Power Your Life, and the Pregnancy Risk Assessment Monitoring System (PRAMS) (Utah Maternal Mental Health Collaborative, 2017).

The country’s focus on mental health helped facilitate the implementation of the PPD program. The increasing awareness of PPD encouraged provider referrals to the program and postpartum mothers to participate in treatment. Participants were exposed to education about PPD in providers’ offices as well as at delivery in the hospital, and therefore were aware of the significance of the condition. The nation is becoming more open to change, as awareness increases and stigma decreases.

In addition, many states have support groups for PPD patients, which are very helpful to the postpartum population (Postpartum Support International, n.d.). The groups offer regular meetings for the community, but none in the target area combined a group therapy and exercise therapy program. The lack of a combined exercise and social support therapy intervention made the Move and Mingle program appropriate for initiation, where such a program is not available.

Several limitations present barriers to promoting change. Gaps in current care need to be addressed. First, more state-wide campaigns to promote change would improve awareness and possibly treatment rates. Regrettably, the cost of public education campaigns is expensive, and many states do not have the funding needed to promote such an initiative. Second, while some improvement toward reducing stigma is being made, many women who are diagnosed still do not receive treatment, and fear stigma. Third, there is a lack of data on how clinicians are screening for PPD and what tools are utilized to treat the disorder. The lack of data makes it difficult to accurately assess current treatment conditions and community needs. And fourth, specialized treatment for PPD may be inaccessible to many patients. Only a limited number of providers specially trained to treat PPD practice, and such therapy is expensive (UMMHC, 2017). The barriers to care are significant.

There were a few risks identified prior to initiating the Move and Mingle program. First, there was a possibility of injury during participation, which is a risk in any exercise program. Before joining the group, women needed to receive clearance from a provider to engage in physical activity in order to reduce the risk of injury. Second, it was essential to be cautious when dealing with postpartum depression. Postpartum depression can be dangerous, and must be monitored closely. At each session participants were encouraged to continue professional medical care, and seek immediate, emergency care for any suicidal or homicidal thoughts. The

third risk was more people would wish to participate than the classroom had capacity.

Methodology

The Move and Mingle program was a practice intervention—the implementation of an evidence-based intervention into clinical practice. The format included six weekly, 90-minute classes. Each class consisted of 30 minutes of group discussion, 45 minutes of Iyengar yoga, and 15 minutes of socializing. As previously described, research demonstrates yoga and group therapy improve depression scores. It was postulated the two together would improve the EPDS scores of postpartum participants.

Setting

The Move and Mingle program took place in a room donated by a local yoga studio. The yoga classroom had plenty of space for all participants to spread out, and provided mats and props for use. There were cushions and bolsters to sit on during the group discussion portion of each session. The building was easily accessible, with adequate parking. The studio was staffed throughout the day, so employees directed program participants to the correct room.

Other personnel required for the Move and Mingle program included a yoga instructor to lead each yoga session, and a social worker to facilitate the week four class discussion. Compensation for the professionals was paid for by the program director, a Doctor of Nursing Practice Student.

Sampling

Participants were postpartum women in the first one to six months post-delivery, who had been diagnosed with postpartum depression. Recruitment occurred through local providers' offices and mental health clinics. Letters were sent to offices for providers to review (*Appendix D*). Handouts for patients were also included, so providers could refer patients to the program

(*Appendix E*). Local libraries were also provided with the handouts. Patients who were interested contacted the program director via e-mail for prescreening before admittance. A total of 10 women contacted the program director. Three had babies more than 6 months old, and were therefore excluded, one did not qualify as depressed, and one did not respond to the program director's inquiries about qualifications after the initial contact.

Participants had to be 18 years or older, diagnosed with PPD, in reasonably good health, and cleared for physical activity. Further inclusion criteria are listed in the implementation section.

The nation is culturally diverse. The demographic spread of the participants may have affected the program results. While the majority of the population is Caucasian, 18.3% of the United States population is Hispanic, 13.4% is African-American, and 1.7% is Asian (United States Census Bureau, 2017). Cultural differences may have impacted how interested patients were in the treatment. Furthermore, the class was held in English, so exclusion criteria included women who did not speak English. Approximately 87.3% of Americans have a high school education or higher, which may have improved the effectiveness of the promotional, written materials (United States Census Bureau, 2017). 12.3% of the national population lives in poverty (United States Census Bureau, 2017) which has many implications, including reduced access to care and transportation.

Implementation Procedures

According to the Clinical Scholar Model, steps for research include observation, analysis, synthesis, application, evaluation, and dissemination (Dang et al., 2015). The model's process guided the Move and Mingle program implementation.

Observation included gathering data about depression rates, and community needs (see organizational assessment). After analyzing publicly available data, it was clear postpartum depression was a significant problem, and the community needed an effective intervention for treating the condition. Furthermore, synthesis of current research involving group therapy and exercise therapy indicated the two interventions were independently effective. Combining the two had not been trialed in the research reviewed.

Application is the next step in the clinical scholar model. The Move and Mingle program involved three phases: recruitment, implementation, and evaluation (*Appendix F*). The program started with recruitment at the beginning of 2019, and the class began at the end of February 2019. Data was reviewed and analyzed at the conclusion of the 6-week program in April 2019.

The recruitment phase began by supplying 2 local obstetrician offices, 9 mental health offices, 5 pediatric clinics, and 2 local libraries with information regarding the program. Providers were given a letter detailing the program (*Appendix D*), as well as brochures to distribute to qualifying patients (*Appendix E*). In order to participate, patients had to be within the first one to six months postpartum, physically able to participate (as determined by their doctor), willing to complete the 6-week program, be 18-years-old or older, free from serious comorbid psychiatric or physical conditions, speak English, and have a PPD diagnosis from a provider. Physical conditions excluding participation included anything the provider deemed as dangerous with exercise. Serious psychiatric conditions were defined as severe personality disorders, psychosis or psychotic illnesses, active suicidal tendencies, and aggressive behavior.

The brochures included information which patients used to contact the program director for sign up. The program director ensured inclusion criteria was met, then reserved a space in the class for appropriate participants. Five of the 10 women who reached out to the program director

met inclusion criteria and were included in the project. Additionally, due to low recruitment rates, a modification was completed to the study to incentivize participation. Women who attended at least four of the six sessions were given a \$50.00 gift card to a local restaurant. The recruitment modification was accepted by the IRB as an addendum prior to program implementation.

Once recruitment was completed, participants began the free, weekly Move and Mingle class, which occurred every Friday night for 6 weeks, starting on February 28, 2019. The class began at 7:00 pm, and ran for 90 minutes (*Appendix F*). The first class began with participants completing the EPDS rating scale (*Appendix G*). The initial testing gave a baseline starting point from which to measure program effectiveness.

Each class started with 30 minutes of group discussion led by the program director. Topics and questions for group discussion were reviewed by a social worker prior to program initiation. The review ensured material was appropriate for use in patients with PPD. The questions for group discussion, weekly topics, and weekly objectives allowed for thoughtful discussion (*Appendix F*). Cushions were arranged in a circle in the yoga room to facilitate social interaction during the group discussion. During week 4, a licensed clinical social worker lead the group discussion about coping mechanisms.

The group discussion involved the group leader (program director) asking questions (*Appendix F*). Participants then took turns voluntarily answering the questions, and discussing thoughts with one another. The program director facilitated the discussion, directing the conversation to enhance feelings of social support. The goal was for participants to feel comfortable expressing feelings, and connecting with one another, which reduced feelings of isolation, and promoted a sense of social support. The program director offered basic PPD

information within the scope of a registered nurse, but did not offer treatment beyond her scope. Week 4, which was led by a social worker, was a cognitive behavioral therapy type instruction session instead of a group discussion. During the fourth class, the therapist reviewed coping mechanisms participants could use to deal with PPD symptoms.

After the group discussion portion of the class was completed, cushions were cleared from the center of the room. The program director distributed yoga mats and props to the participants, and a 45-minute yoga session commenced. A certified yoga therapist who is experienced in perinatal yoga instruction led the yoga portion of the program.

A specific type of yoga known as Iyengar yoga was utilized for the yoga sessions. Iyengar yoga is characterized by the precise practice of asana (body posture), with attention to timing, duration, and sequencing of poses. Props (blankets, bolsters, straps, etc) are often used. Iyengar yoga encourages mindfulness, or focus on the present moment, and assesses the quality of mind during practice. Somatic (body-mind) practice during sessions is a significant component of Iyengar yoga, with attention directed on body awareness, breath awareness, and coordination of breath and movement. A sample of the poses utilized during the program is listed below:

1. Mountain Pose
2. Palm Tree
3. Tree Balance
4. Half-Forward Fold
5. Pushing Warrior
6. Child's Pose
7. Cat-Cow
8. Downward-Facing Dog
9. Lunge
10. Standing-Forward Fold
11. Warrior 1
12. Warrior 3
13. Wide-Leg Forward Fold
14. Bridge Pose

15. Legs up the Wall

17. Relaxation Pose

16. Reclining Bound Angle

Throughout the session, participants utilized deep breathing, meditation, and mindfulness as the women were guided through the asana poses. Participants were also provided simple exercises to practice at home between sessions. The women were able to bring their babies if needed, to facilitate breastfeeding.

A 15-minute post group mingling activity followed the yoga session. Healthy snacks were provided, as well as bottled water. The participants were given the opportunity to freely socialize with peers, share feelings, and feel supported.

Move and Mingle's three-part class occurred weekly for six weeks. At the conclusion of the final class, participants again completed the EPDS test, as well as an exit survey (*Appendix H*). The yoga instructor and program director also completed an exit survey at the conclusion of the program (*Appendix H*). The social worker only provided one instruction session, so she was not required to complete an exit survey.

Measurement Instruments

To measure the effectiveness of the Move and Mingle program, each participant completed the Edinburgh Postnatal Depression Scale (EPDS) before starting, and after completing the program (*Appendix G*). The simple, 10-item questionnaire is the most commonly used screening instrument for postpartum depression, and has demonstrated high sensitivity and specificity (Walsh & Karakashian, 2018). When first developed, the scale was tested and found to exhibit satisfactory validity and was sensitive to changes in PPD over time (Cox, Holden, & Sagovsky, 1987). Cox, Holden and Sagovsky (1987) demonstrated a sensitivity of 85%, a specificity of 77%, and a positive predictive value of 83%

Based on a recent study by McCabe-Beane, Segre, Perkhounkova, Stuart, and O'Hara (2016), severity levels were assigned to EPDS results. A value of 0-6 indicates minimal or no depression, 7-13 mild, 14-19 moderate depression, and severe depression is indicated by a level of 19-30. The scores help to identify the severity of the symptoms, and guide providers in appropriate care.

Permission to use the EPDS rating scale is stated in Cox, Holden, and Sagovsky's article (1987): "users may reproduce the scale without further permission providing they respect copyright by quoting the names of the authors, the title, and the source of the paper in all reproduced copies" (p. 786). Copies of the EPDS tool used during the program included the appropriate citation.

In addition to the EPDS testing, the participants, yoga instructor, and group leader all completed one of 3 exit surveys upon program completion, which were role specific (*Appendix H*). The questions were developed specifically for the Move and Mingle program, so the surveys have not been evaluated for sensitivity or specificity. While not yet officially validated, the simple surveys provided valuable information regarding satisfaction and participant self-evaluation.

Data Collection Procedures

Post intervention data collection included the EPDS scale as well as exit surveys given to all participants during the last session of the program (*Appendix H*). The surveys were administered to the participants, the yoga instructor, and the program director to determine if the program outcomes were met, and if the intervention was satisfactory to the parties involved.

Data was then synthesized after the completion of the program. As previously discussed, the goal of Move and Mingle was for 85% of participants to improve EPDS scores, report

feelings of empowerment and social support, and rank satisfaction with the program at 8/10 or higher.

Using the EPDS score to evaluate the program was straightforward, as it has an objective, numerical score, and improvement was determined from pre and post-test results. The exit surveys (*Appendix H*) were analyzed using numerical test results. Ideally, 85% of participants would answer questions with an 8/10 or higher. Survey question ten (“I was satisfied with this group”), assessed satisfaction from participants. Questions four (“I felt supported by my peers in this group”) and five (“I feel empowered to make positive changes since participating in this group”) assessed feelings of support and empowerment. Additional questions in the exit surveys gave valuable information about how the group was conducted, and if changes needed to be made to the program to more effectively and efficiently serve the community.

Data Analysis & Dissemination

Once the data from the surveys and EPDS testing were gathered, analysis began. Post-intervention EPDS scores were compared to pre-intervention results to determine if significant improvement was made. Exit surveys were important in the program evaluation. The surveys included questions about intervention effectiveness, participant satisfaction, and participant performance. Some questions inquired if changes needed to be made to the format or content of the Move and Mingle program.

Once information was synthesized, results were prepared for dissemination as directed by the clinical scholar model. The prepared presentation will allow the community to learn from the Move and Mingle program findings.

The timetable for the Move and Mingle program allowed appropriate time for implementation (*Appendix I*)

Ethical Considerations and Protection of Human Subjects

Protection of participants was important in the application of the Move and Mingle program. It was essential participants were given proper ethical considerations. The ethical measures protected the participants, as well as improved the validity of the project findings.

Institutional Review Board (IRB) approval was obtained prior to initiating the Move and Mingle project. The program was classified as an expedited board review project, because it posed minimal risk to participants. Furthermore, due to issues with recruitment, a modification to the IRB proposal (inclusion of a \$50 gift card) was also granted.

The HIPAA Standards of Care were used to protect participants during the study, which involved balancing the need for information necessary to carry out the intervention, with the protection of participants' personal health information (United States Department of Health and Human Services, 2003). Several steps were taken in order to protect participant information. First, all paper information gathered was kept secure by the program director. All paper information was immediately scanned or copied into digital form, and stored on a password protected USB drive. Paper information was then shredded. Only the program director had access to the USB drive contents. Any information used in reporting was devoid of identifying personal information, including names and birthdates, which protected the privacy of the participants.

The Move and Mingle program had the potential to benefit participants in several ways. Participants could experience improved mood, feelings of social support, and healthy outcomes associated with exercise. Risks of participation included injury during exercise, and emotional vulnerability during group discussion. No adverse effects occurred during implementation. Participation was completely voluntary, and women could withdraw at any point. The program

could not offer any compensation for injury or negative outcomes. The program director encouraged women to continue receiving treatment from current providers during the duration of the intervention, as well as seek emergency medical care for suicidal thoughts. Prompting treatment outside of the program ensured participants had additional help and resources.

Participants were given an informed consent document (*Appendix J*) prior to beginning the program, which included a summary of the program, measures put in place to protect privacy, and a list of the risks and benefits of participation. The program was completely voluntary, but group members were required to sign the form before participation.

There were few conflicts of interests in the Move and Mingle project. The program director has worked in the postpartum setting, and therefore has some personal connection to the subject of the project. Furthermore, blinding was impossible due to the face-to-face nature of the intervention. However, data was objectively gathered, and analyzed with statistical software in order to minimize potential bias. The program director did not directly benefit from the conclusions of the study, so there was no risk of reporting bias.

Results

The results of the Move and Mingle program were encouraging. Four of the five initial participants completed the program and filled out the post-intervention tests and surveys. EPDS and survey scores were analyzed through SPSS software to determine if findings were statistically significant. The results of program outcome measures are displayed in *Table 1*, and further discussed below.

Table 1
Move and Mingle Program Outcome Results

Outcome 1	Outcome 2	Outcome 3	Outcome 4 part 1	Outcome 4 part 2
Percentage of participants who completed 6/6 classes	Percentage of participants who completed both pre and post EPDS tests experienced an improvement in score.	Percentage of participants who completed the survey and rated satisfaction \geq 8/10 (survey question 10)	Percentage of participants who completed the survey and rated “I feel empowered to cope with my depression, and obtain help if needed” \geq 8/10 (survey question 5)	Percentage of participants who completed the survey and rated “I feel supported by my peers in this group” \geq 8/10 (survey question 4)
2/5 (40%)	4/4 (100%)	4/4 (100%)	4/4 (100%)	4/4 (100%)

Note. Percentages from outcomes 2-4 are based upon the average results from the four participants who completed the program. The outcome 1 percentage is based upon the average of the 5 participants who started the program.

Outcome 1: 85% of participants will participate in yoga and group therapy on a weekly basis for the duration of the 6-week course. The first outcome was measured in the exit survey. Participation results are reported in *Table 2*. Two of the 5 participants completed all 6 classes (40%). On average, participants completed 4.6 out of 6 classes. This outcome was not met.

Table 2
Participant Exit Survey Results

Exit Survey Question	Participant 1	Participant 2	Participant 3	Participant 4
1	9	9	9	10
2	10	9	10	10
3	9	10	10	10
4	10	10	10	10
5	10	10	10	10
6	10	10	10	10
7	10	10	10	10
8	8	9	7	6
9	10	10	10	10
10	10	10	10	10
Class length appropriate?	Too short	Too short	Too short	Just right
Classes attended	5/6	6/6	6/6	5/6

Note. Participants responded to questions 1-10 on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements. |

Outcome 2: 85% of participants who completed the EPDS scales before and after the program with symptoms of postpartum depression will experience an improvement in EPDS scores by the end of the 6-week program. The second outcome was measured using a paired t-test on SPSS with an alpha level of .05, and was statistically significant ($p = .03684$). On average, participants who completed both EPDS tests noticed a 7.25-point improvement in EPDS scores. A capstone statistician was consulted and agreed upon the appropriate use of the paired t-test. By the conclusion of the program, the outcome was met, as displayed in *Table 3*.

Table 3
Edinburgh Postnatal Depression Scale (EPDS) Changes Before and After Program Participation

Participant Number	EPDS Pre-Program	EPDS Post-Program	EPDS change
1	14	2	12
2	11	6	5
3	14	5	9
4	13	10	3

Note. scores of 0-6 indicate minimal or no depression, 7-13 mild depression, 14-19 moderate depression, 19-30 severe depression.

Outcome 3: Participants who complete the exit survey will report satisfaction with the intervention, as evidenced by the post-intervention satisfaction survey results where at least 85% of participants will rate eight or higher on a 0-10 scale on question ten, “I was satisfied with this group”. On average, participant satisfaction rated 10 out of 10, indicating 100% of participants were satisfied by the conclusion of the program and the outcome was met (*Table 2*).

Outcome 4: By the end of the 6-week intervention, at least 85% of participants who completed the exit survey will report feelings of empowerment and social support. The fourth outcome was measured by questions on the post-intervention survey indicating “I felt social support during the group” and “I feel empowered to cope with my depression, and obtain help if needed”. For the question “I felt social support during the group”, the percentage of women who

rated eight or higher on a 0-10 scale was 100%, with an average rating of 10/10. For the question “I feel empowered to cope with my depression, and obtain help if needed”, the percentage of women who rated eight or higher on a 0-10 scale was 100%, with an average rating of 10/10. By the conclusion of the program, the outcome was met (*Table 2*).

Discussion

Findings

The Move and Mingle program met three of the four outcomes. Participation was 80%, because only 4 of the 5 women completed the program. Of the women who did complete the program, only 50% attended all six sessions.

While the Move and Mingle findings makes it impossible to attribute the improvement in symptoms to either the group social support, or yoga therapy in isolation, the two combined are statistically significant ($p = 0.03684$).

General attitudes of participants were positive regarding the program. Feelings of empowerment and social support, as well as program satisfaction were higher than the 8 out of 10 outcome goal. The women enjoyed the program, and were satisfied with the way it was carried out.

Participants did mention several suggestions for improvement (*Appendix K*). Three of the 4 participants completing the survey felt the class was not long enough. Several participants also noted some of the yoga poses were difficult to follow while at home. Finally, the 6-week rotation was shorter than the women would have liked. Additionally, both the yoga instructor and program director filled out surveys, and the results can be found in *Table 4* and *Table 5*. The yoga instructor had no recommendations, but the program director agreed that the class length was too short.

Table 4
Yoga Instructor Exit Survey Results

Question Number	Response
1	10
2	10
3	10
4	10
5	10

Note: Instructor responded to questions on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements.

Table 5
Group Leader Exit Survey Results

Question Number	Response
1	10
2	10
3	10
4	10
5	8
6	10
7	8
Was class length appropriate?	Too short

Note. Director responded to questions 1-7 on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements.

Strengths and Limitations

The Move and Mingle program exhibited several strengths. Minimal bias was noted, as the program director did not have any financial or professional advantage for a particular outcome of the study. The low chance of bias reduced the likelihood of unreliable results. Additionally, the EPDS is a well validated tool, and is highly sensitive and specific (Walsh, & Karakashian, 2018), which strengthens the results of the pre and post test scoring.

The inclusion criteria were strict, enabling the project to target a specific population of women and thereby reduce some confounding variables. The women had to be free from other

comorbid conditions, experiencing significant PPD, have given birth within the last 6 months, and be cleared for exercise from a healthcare provider. The required qualifications reduced the chance of unstable or inappropriate participants from confounding the results. The strict criteria were also a weakness, however, because the results cannot be generalized to women outside the listed boundaries.

Several limitations were identified during implementation of the Move and Mingle program. First, was the small sample size. Only 4 women completed at least 4 of the 6 sessions. There were far fewer participants than originally expected, and after a month of recruiting attempts, a \$50.00 gift card incentivization was added for participation. The reasons for difficulty with recruitment are unknown, but further investigation is warranted if sustained yoga treatment groups are to be encouraged. Additionally, the incentive may have biased the participants' reported results.

The roadblocks to change and access to care may also have affected the implementation of the Move and Mingle program. The lack of adequate education for both providers and the community regarding PPD, as well as patient fear of stigma, may have contributed to the low recruitment numbers. However, because the program was free, it was a popular option for treatment once patients were educated about the opportunity.

Another limitation was the infant age range of participant mothers. Only mothers who were 1-6 months postpartum could join the program, which disqualified several hopeful applicants. It may have been beneficial to include mothers who were up to one year postpartum.

Finally, the class timeframe was an issue. Only 30 minutes was allotted for group discussion, and the program director often found the time was too short for adequate peer discussion. Women often were unable to sufficiently reflect in only 30 minutes.

Implications and Sustainability

The Move and Mingle program results will be disseminated to the community, so other healthcare providers can utilize both yoga and group social support in the treatment of postpartum depression. Because the results indicated positive outcomes, practice implications include promotion of a combined form of treatment for postpartum depression. Fifty percent of women who receive a clinical diagnosis of postpartum depression go untreated (Ko et al., 2017). There is room for improvement in treatment rates. Yoga with group therapy is a treatment option which healthcare providers can recommend to patients.

While the program director will no longer run the program after the project conclusion, the principles validated through supporting data can be implemented and sustained in the community. The results will be presented to providers within the Postpartum Support context, and providers attending will be encouraged to share the results with colleagues, as well as implement and recommend the intervention in practice. The principles of the Move and Mingle program can be sustained even though the program itself is discontinued.

Suggestions for Future Research

More research is needed to validate outcomes of the Move and Mingle program. With only a 5-participant sample size, a larger study would strengthen implications. Encouraging the healthcare community to continue further investigation into the effectiveness of a combined exercise and group therapy treatment approach is important.

When promoting yoga and group therapy to the community, and considering future studies, several changes to the layout of a combined program may be beneficial. First, allotting more time during discussion may increase effectiveness, as the participants of the Move and Mingle program reported the 30-minute allotment for group talk was insufficient. A possible

solution involves alternating weeks of 90 minutes yoga and 90 minutes social support, and would make an interesting follow-up study. Additionally, inclusion of women through the first year postpartum may yield more participants and benefit the community.

Conclusion

The Move and Mingle program positively impacted the PPD symptoms of participants, and has the potential to impact the postpartum community as a whole. Both yoga and group therapy have shown evidence of successfully improving depression symptoms in the postpartum population (Ko et al., 2017; Meschino et al., 2016). The combined approach of yoga and group social support was trialed with the Move and Mingle program. The purpose of the project was to implement an evidence-based PPD program using yoga and group therapy in a weekly class format over six weeks, to significantly reduce the symptoms of postpartum depression in participants. The results of the program demonstrated statistically significant improvement in EPDS scores after program completion.

Ideally, the positive findings of the Move and Mingle program will affect the recommended treatment therapies for PPD in the community, so women with the condition can find symptom relief and an improved quality of life. Results will now be disseminated to providers in the community, with recommendations to implement the findings of the Move and Mingle program.

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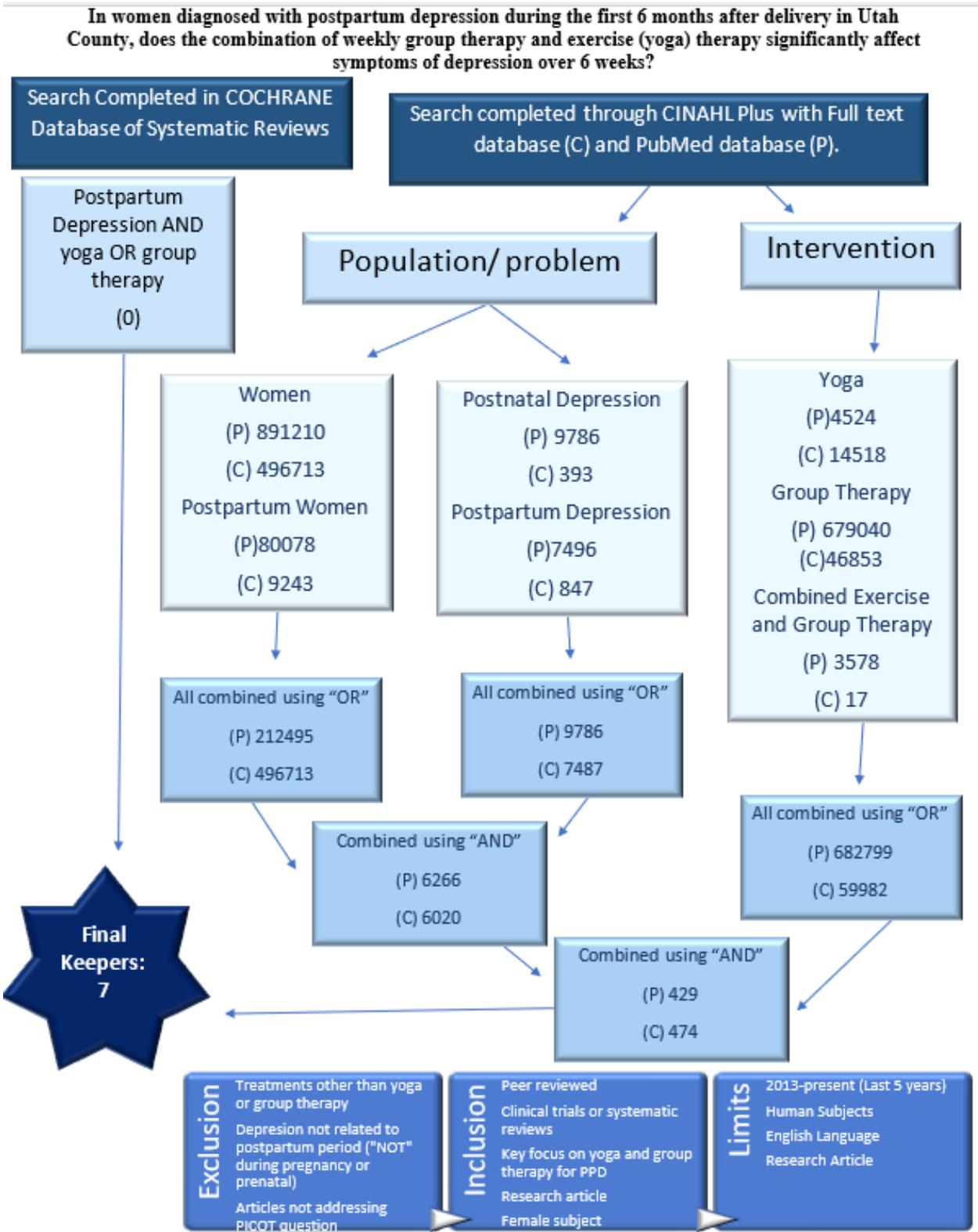
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Appendix A

Search Trail



Appendix B

Reference Matrix

<p>PICOT In women diagnosed with postpartum depression during the first one to six months after delivery in Utah County, does the combination of weekly group therapy and exercise (yoga) therapy significantly affect symptoms of depression over 6 weeks?</p>					
Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Meschino, D., Philipp, D., Israel, A., & Vigod, S. (2016). Maternal-infant mental health: postpartum group intervention. <i>Archives Of Women's Mental Health, 19</i>(2), 243-251. doi:10.1007/s00737-015-0551-y</p> <p>Level III; quasi-experimental</p>	<p>Participants</p> <ul style="list-style-type: none"> Mothers (6-12 months postpartum) with mood or anxiety disorders (DSM-IV). Patients seeking care for postpartum anxiety or PPD at women's college hospital 15 referrals with 13 mother-infant dyads eventually participating <p>Exclusion:</p> <ul style="list-style-type: none"> required inpatient treatment; were unstable; limited English comprehension <p>*Recruitment barriers limited participation (travel, medical complications, illness, time)</p>	<p>To assess the feasibility, acceptability, and preliminary efficacy of a newly developed maternal-infant dyadic group therapy intervention on postpartum depression</p>	<p>Procedures/methods</p> <ul style="list-style-type: none"> Participants referred from a single hospital Pretreatment tests and consent obtained Tests included EPDS, BAI, PSI, IS (see findings) 12-week, weekly group sessions (mindfulness training, psychotherapy, didactic infant-led play, group discussion) Posttreatment testing and interviews (10 participants completed the exit interview in addition to postintervention tests) <p>Limitations</p> <ul style="list-style-type: none"> Quasi-experimental. No randomization or control group. Convenience sampling with referrals from a single hospital 	<p>Findings/strengths</p> <ul style="list-style-type: none"> Most participants found the intervention acceptable and reported subjective improvement. Reduction in mean depressive symptom scores (EPDS) with $p=0.01$. Decrease in anxiety scores (BAI) with $p=0.08$. Parenting stress index (PSI) score lowered ($t=2.2$; $p=0.057$). Statistically significant improvement in the parent IS (isolation) subscale ($p= 0.007$) <p>Weaknesses</p> <ul style="list-style-type: none"> "Open label pilot study" Quasi experimental design with pretest and posttest data gathered on all participants. No randomization or control group (participants tested pre and post test). Reduces generalizability and strength of results. 	<p>This article outlines a quasi-experimental study that shows improvement in postpartum depression symptoms after group therapy. It supports my project because group therapy is part of my intervention, and it has proven effective in treating PPD.</p>

Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Ko, Y., Yang, C., Fang, C., Lee, M., & Lin, P. (2013). Community-based postpartum exercise program. <i>Journal Of Clinical Nursing</i>, 22(15/16), 2122-2131. doi:10.1111/jocn.12117</p> <p>Level III; quasi-experimental</p>	<ul style="list-style-type: none"> Subjects taken from a single postpartum hospital in Taipei. Women included were at 6 weeks postpartum with no complications Women were referred from the hospital via nursing staff (convenience sampling) 28 women started, with 23 completing the program 	<p>Can an exercise program for postpartum depression reduce depression, relieve fatigue, and help women lose weight?</p>	<p>Procedures/methods</p> <ul style="list-style-type: none"> Convenience sampling from hospital Consent obtained Pretest information gathered 3 months of group exercise (Pilates and yoga) once a week performed Postintervention tests administered Statistical analysis <p>Measurement tools</p> <ul style="list-style-type: none"> Self-designed structured questionnaire Body composition analyzer Fatigue symptoms checklist Epidemiologic studies depression scale/ESDS (has been tested for validity as noted in the article) <p>Limitations</p> <ul style="list-style-type: none"> ESDS used instead of BDI or EPDS. Convenience sampling Quasi-experimental 	<p>Findings</p> <ul style="list-style-type: none"> Significant decrease in BMR, fat percentage, weight Depression improved significantly with $p = 0.095$. Fatigue was not shown to be significantly improved. <p>Strengths</p> <ul style="list-style-type: none"> Statistically significant results Validity of measurement tools <p>Weaknesses</p> <ul style="list-style-type: none"> Performed in Taipei No control group No randomization Convenience sampling 	<p>The results of this study show statistically significant improvement when women participate in a postpartum exercise program. Since my intervention (group therapy + exercise therapy) includes yoga in particular, it is a useful study to reference, because they use yoga and Pilates as their exercise of choice.</p>

Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Scope, A., Leaviss, J., Kaltenthaler, E., Parry, G., Sutcliffe, P., Bradburn, M., & Cantrell, A. (2013). Is group cognitive behaviour therapy for postnatal depression evidence-based practice? A systematic review. <i>BMC Psychiatry, 13</i>(1), 1-19. doi:10.1186/1471-244X-13-321.</p> <p>Level I: systematic review of RCT</p>	<p>17 articles initially found, but only 7 used. If the reviewers had placed more strict limitations on inclusion criteria, they may not have had enough articles to utilize.</p> <p>Data was gathered at a variety of points in the postpartum period for different articles (10 weeks – 6 months)</p> <p>Statistical analysis run on the available data for each article</p> <p>Studies included with populations of women with a standardized PND diagnosis using the DSM-IV or were screened for PPD using the EPDS</p>	<p>The purpose of this study was to determine if group cognitive behavioral therapy is more effective than conventional treatment for postpartum depression.</p> <p>Aim: identify all references relating to the clinical effectiveness of group CBT for PPD.</p>	<p>Seventeen electronic bibliographic databases were searched including: Medline, CINAHL, Cochrane, Embase and PsycINFO.</p> <p>Population search terms: depression, postpartum, postnatal depression, and post pregnancy depression</p> <p>All settings were included and all comparators considered, including routine primary care, waiting list, individual CBT, group-based counselling, medication, group behavior therapy and group IPT.</p> <p>All full papers were read and quality was assessed by two reviewers</p> <p>Studies included if EPDS or BDI was used as measurement tools</p>	<p>Strengths/weaknesses</p> <ul style="list-style-type: none"> • Cochrane Risk of Bias Tool was used to prevent distortion of results. Two reviewers were used to reduce bias as well. • The studies utilized could not blind participants, as the intervention required subjects to participate. • Only 3 studies were RCT (comparing group CBT to a usual care group). The other 4 articles compared the intervention group to a waiting list group. The quality of available studies is limited. • There was no way to ensure the CBT was exactly the same in all articles included. There may be variation in implementation <p>Findings</p> <p>Improvement in depression was identified as statistically significant, but not consistent over time. Use caution, as results could be due to time elapsed since delivery, instead of intervention effects.</p> <p>Data was gathered at a variety of points in the postpartum period for different articles (10 weeks – 6 months), making it difficult to link results to the intervention period with a high level of certainty. However each article did show symptom improvement at each point of assessment.</p>	<p>This review looked at group CBT as a potential intervention for PPD. Using a group approach makes it applicable to my PICOT, as I am utilizing a group therapy component in my capstone intervention. While the article is level 1 evidence, it does have several weaknesses so findings should be used with caution. Findings were not consistent over time, and CBT could not be standardized, however the results did show a general improvement in symptoms.</p>

Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Van Lieshout, R., Yang, L., Haber, E., & Ferro, M. (2017). Evaluating the effectiveness of a brief group cognitive behavioural therapy intervention for perinatal depression. <i>Archives Of Women's Mental Health, 20</i>(1), 225-228. doi:10.1007/s00737-016-0666-9</p> <p>Level III; quasi-experimental</p>	<p>Participants referred from Women’s Health Concerns Clinic (WHCC) at St. Joseph’s Healthcare, Hamilton</p> <p>Participants</p> <ul style="list-style-type: none"> • Pregnant women or in their first 9 months postpartum • Have a diagnosis of depression • Women could have additional psychiatric comorbidities and still participate <p>sample size: 34</p> <ul style="list-style-type: none"> • 7 pregnant • 27 postpartum 	<p>Goal: evaluate the effectiveness of a short group CBT intervention for PND in women referred to a specialized perinatal mental health clinic. This study also assessed the CBT intervention impact on mother-infant bonding, social support, and partner relationship quality, as well as participant satisfaction.</p>	<p>Methods/design</p> <ul style="list-style-type: none"> • Baseline evaluation with EPDS, BDI, postnatal bonding questionnaire, and social provisions scale before the intervention starts, as well as after the conclusion • Post group assessment also included a satisfaction survey. • 2-hour weekly 9-week CBT intervention. All participants underwent intervention. No control group <p>Limitations</p> <ul style="list-style-type: none"> • Small sample size • Not a controlled environment (no restriction on other therapies or comorbidities while participating) • No control group 	<p>Findings</p> <ul style="list-style-type: none"> • 79.3 % of patients experienced a clinically significant decrease in EPDS score, & 82.8 % in BDI-II score • Also found significant improvements in social support, mother-infant bonding, and partner relationship quality <p>Strengths</p> <ul style="list-style-type: none"> • Simple intervention (easily reproducible) • Allowed women with psychiatric comorbidities to participate, so findings can be generalized to these patients as well. (this is a strength and a weakness) <p>Weaknesses</p> <ul style="list-style-type: none"> • No control group • Only a single location for sampling • 7 participants were still pregnant, so the results are not as generalizable to the postpartum population in particular • No restriction for comorbidities or concurrent therapies 	<p>Relates to the group component of my research project. Utilizing CBT in the group portion of my intervention may be useful, as it has proven effective here. Especially if I plan to use the PEDS or BDI to screen my patients.</p>

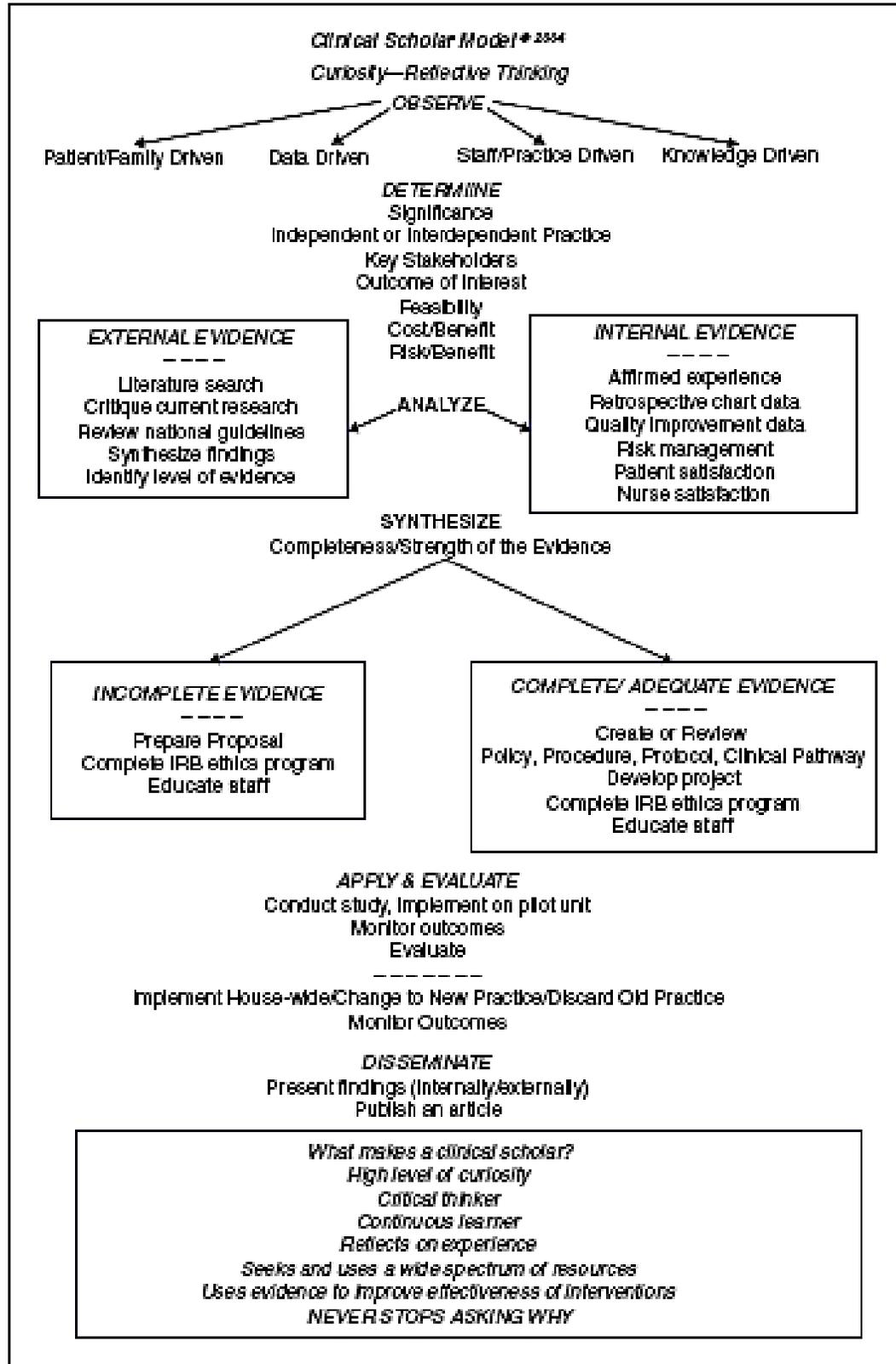
Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Naysmith, C., Wells, M., Newson, S., & Webb, J. (2015). Development and outcomes of a therapeutic group for women with postnatal depression. <i>Community Practitioner</i>, 88(3), 35-38.</p> <p>Level III; quasi-experimental</p>	<p>Participants</p> <ul style="list-style-type: none"> • 41 postpartum women • Thirteen different groups between May 2011 and July 2013. • The age range of women attending the group was 19-41 years old • Participants must have given birth within 1 year • EPDS score of 10+ <p>Recruitment: groups were advertised at local GP surgeries and Children’s Centers. Patients referred by providers or by self-referral Once identified, patients were screened for suitability.</p>	<p>This paper describes how a therapeutic group was developed by Health Visitors for mothers with postnatal depression in Oxfordshire.</p> <p>Expected outcome: women who participated would feel better, be able to manage mood, and be provided with social support.</p>	<p>Methods/design</p> <ul style="list-style-type: none"> • BDI-II and the EPD before and after the intervention • 10 weekly sessions + 1 session for partners • content was reviewed and manualised by a clinical psychologist from the Family Assessment and Safeguarding Service. • Clinical supervision for group facilitators provided by two experienced community psychiatric RNs <p>Limitations</p> <ul style="list-style-type: none"> • Limited demographic data • Missing data about reasons for dropouts • Limited ability to control the participant environment outside the intervention 	<p>Findings</p> <p>Average satisfaction with group was 9/10. Women moved from “moderate” depression to “mild” depression after the group. Average BDI-II prior to group was 25, and 16 after completion of the intervention. EPDS score lowered from 14 to 11 after the intervention</p> <p>Strengths</p> <ul style="list-style-type: none"> • Easily reproducible with an instruction manual and clear directions • High patient satisfaction • Referrals from numerous sources, not just one healthcare facility <p>Weaknesses</p> <ul style="list-style-type: none"> • No control group • Missing information about where women were referred from and why some did not choose to complete the intervention • Missing demographic data (need more robust data collection methods) 	<p>Positive outcomes from a CBT group may translate to my research. If participants benefit from a group CBT approach, they may improve even more from a combine group and exercise program.</p>

Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Hall, K., & Grundy, S. (2014). An analysis of time 4U, a therapeutic group for women with postnatal depression. <i>Community Practitioner</i>, 87(9), 25-28.</p> <p>Peer reviewed Level V: Case-report</p>	<p>Participants</p> <ul style="list-style-type: none"> • Bury Primary Care Mental Health Service referrals, and Self-referrals • 132 referred, but 54 mothers completed the course • Ages 19-42 <p>criteria:</p> <ul style="list-style-type: none"> • postnatal depression, willing to engage in group therapy, and have a baby under a year of age 	<p>Aim: to “increase mothers’ understanding of PND and how many of the signs and symptoms are interlinked in depression... provide mothers with strategies and coping mechanisms to aid recovery, and to offer peer, social and partner support in that process”</p> <p>This article examines the evidence that the Time 4U project gathered in 2012</p>	<p>Methods/design</p> <ul style="list-style-type: none"> • Retrospective data analysis • Generalized Anxiety Disorder 7-item scale, patient health questionnaire, and work and social adjustment scale administered before and after intervention, as well as weakly throughout the intervention • Eight- week course • Data was gathered retrospectively through case reports • No statistical analysis completed, only basic analysis of data gathered in 2012 <p>The group: lead by a health facilitator and primary care mental health nurse. Offers a combination of group therapy, cognitive behavioral therapy, peer support and social support.</p>	<p>Findings</p> <ul style="list-style-type: none"> • Depression reduced from “severe” before treatment to “moderate” after. • Anxiety scores reduced from “moderate” to “mild” • Reduction in Generalized Anxiety Disorder 7-item scale, patient health questionnaire, and work and social adjustment scale scores <p>Weaknesses:</p> <ul style="list-style-type: none"> • This was not a controlled study— there was no randomization or blinding • No statistical data available in the article. While they demonstrated a reduction in depression and anxiety, they did not prove statistical significance <p>Strengths:</p> <ul style="list-style-type: none"> • Sample size • Effective intervention • High patient satisfaction • Length of study shows continued efficacy • Measurement tools have been validated in practice • Multiple points of measuring symptoms (weekly) 	<p>Time 4U combines CBT, peer support, and instruction. It is similar to the group portion of the intervention I plan to implement. The positive results from this group show that group therapy is an effective intervention.</p>

Citation/ Level of Evidence	Participants/Setting/ Sample size	Purpose/Background	Methods/Design & Limitations	Findings/Summary Strengths/Weakness	Applicability to Own Research
<p>Buttner, N. M., Brock, R. L., O'Hara, M. W., & Stuart, S. (2015). Efficacy of yoga for depressed postpartum women: A randomized controlled trial. <i>Complement therapy clinical practice</i>, 21(2), 94-100. doi: 10.1016/j.ctcp.2015.03.003.</p> <p>Level II: Randomized controlled trial</p>	<p>Participants</p> <ul style="list-style-type: none"> Fifty-seven postpartum women recruited via Iowa birth records <p>Inclusion</p> <ul style="list-style-type: none"> Score of ≥ 12 on the Hamilton Depression Rating Scale Postpartum women between the ages of 18-50 Gave birth within the past 12 months Able to speak and read English Reside within a 30 mile radius of Iowa City <p>exclusion:</p> <ul style="list-style-type: none"> Psychotic disorder Alcoholism Anorexia Suicidality Psychotropic medications 	<p>To determine if yoga will significantly improve depression, anxiety, and quality of life for women with postpartum depression when compared with a control group</p>	<p>Methods/design</p> <ul style="list-style-type: none"> Iowa birth records used to obtain potential participants who were contacted via post, and then interviewed over the phone for eligibility Participants randomly assigned to yoga (n = 28) or waitlist control (n = 29) group The yoga intervention (Gentle Vinyasa Flow yoga) consisted of 16 classes over 8 weeks Participants also asked to practice yoga once a week at home with a DVD Guidelines from ACOG used to determine standards for yoga outcomes, including depression, anxiety, and HRQOL. The HDRS (Hamilton depression rating scale) and The Structured Clinical Interview (SCID) were administered over the phone by blinded raters at baseline and after 2, 4, 6, and 8 weeks Inventory of Depression and Anxiety Symptoms (IDAS) was also used for measurement <p>Limitations: exclusion criteria are rigid, sample size limited</p>	<p>Findings</p> <ul style="list-style-type: none"> The yoga group experienced a significantly greater rate of improvement in depression, anxiety, and HRQOL, relative to the control group (moderate to large effects) Reliable Change Index analyses revealed that 78% in the yoga group showed a clinically significant change after controlling for age and social anxiety On average, depression (assessed via the HDRS) decreased systematically over time for with $t(55) = -10.17, p < .001$. <p>Strengths</p> <ul style="list-style-type: none"> Randomization of participants increases the strength of the findings Control group (waitlist) present to compare results Appropriate sample size Blinded data assessors Manual for yoga to facilitate replication studies Treatment fidelity <p>Weaknesses</p> <ul style="list-style-type: none"> Needs to be reproduced with larger sample size Exclusion criteria (may limit generalizability) Several women lost to follow up assessment Follow up was only 2 weeks after 8-week intervention 	<p>Because my intervention will include yoga for the treatment of PPD, this article is valuable in showing the positive outcomes PPD patients exhibit after a yoga intervention. This intervention goes for 8 weeks with 16 sessions, so it is longer than my proposed schedule, but the results are statistically significant, and demonstrate a high level of evidence.</p>

Appendix C

Clinical Scholar Model



Appendix D

Provider Recruitment Letter

To whom it may concern,

My name is Lisa Peterson. I am a Doctor of Nursing Practice student at Nebraska Methodist College. I am conducting a research-based intervention for postpartum depression. Did you know that 11.3% of postpartum women in the state develop Postpartum Depression¹? Many of these women do not receive treatment because they don't want to take medications, or they are afraid of the stigma attached with PPD. Alternative treatments such as group support and exercise therapy may be better tolerated by the community.

I am recruiting participants for a combined yoga and group support intervention that lasts for 6 weeks. Yoga¹ and group therapy² have both been shown to benefit women with PPD in separate studies, and I am hopeful the combination of the two will yield positive results. If you have a patient that meets the following criteria, they can be referred to this free program! There are program brochures enclosed in this packet for distribution to possible candidates.

Participant Inclusion Criteria

1. Delivered a baby in the last 1-6 months
2. Have been diagnosed with PPD
3. Are otherwise healthy and cleared for exercise
4. Are able to commit to a 6-week class
5. Have transportation available
6. Live in the target county
7. Are 18-years-old or older
8. Can speak English

Thank you for your commitment to the community. Please contact me with any questions. I look forward to hearing from your patient referrals.

Lisa Peterson
moveandmingle@gmail.com
801-358-3173

¹ Ko, J. Y., Rockhill, K. M., Tong, V. T., Morrow, B., & Farr, S. L. (2017). Trends in postpartum depressive symptoms—27 States, 2004, 2008, and 2012. *Morbidity and Mortality Weekly Report*, 66(6), 153–158.

² Meschino, D., Philipp, D., Israel, A., & Vigod, S. (2016). Maternal-infant mental health: postpartum group intervention. *Archives Of Women's Mental Health*, 19(2), 243-251.

Appendix E

Participant Recruitment Handout

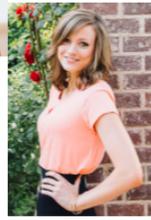
Where to Get Help

1. Start by seeing your primary care provider.
2. Seek family or social support.
3. Seek community support through support groups or programs.
4. Seek emergency care if you have thoughts about hurting yourself or the baby.

Move and Mingle is a great program to get free treatment!



Dana Levy
Perinatal Yoga Instructor



Lisa Peterson
Nebraska Methodist College
Move & Mingle Program Director

References

¹Schub, T., & Walsh, K. (2017). Postpartum depression: Assessment and screening. *Obstetrics, Gynecology, & Reproductive Information Systems*.

²Ko, J. Y., Rodhill, K., Ma-Tong, Y. T., Morrow, B., & Fair, S. L. (2017). Trends in postpartum depressive symptoms—27 states, 2004, 2008, and 2012. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report*, Vol. 66 (8), pp 153-158.

³Newland, R. P., & Palisoc, S. H. (2018). Screening and treatment of postpartum depression: Impact on children and families. *Brown University Child & Adolescent Behavior Letter*, 32(1), 1-6. doi:10.1002/obl.30092.

⁴Messinger, D., Philipp, D., Israel, A., & Yagci, S. (2018). Maternal-infant mental health: postpartum group intervention. *Archives Of Women's Mental Health*, 19(2), 243-251.

If you think you might have PPD, contact your health provider!

Move and Mingle

A Group Program For Postpartum Depression



Treatment is available!

You may be eligible to join a FREE support program to treat your Postpartum Depression

Postpartum Depression is real, and it is treatable

What is it?

Postpartum depression (PPD) is an disturbance of mood that happens after delivering a baby

- 85% of women report they notice low mood after birth² (called postpartum blues) and if mild, it is *normal*
- 10% report it is disabling², and this is *not normal*
- 60% of women with PPD do not receive a diagnosis or treatment ²
- May happen anytime during the 12 months following childbirth¹

What are the symptoms?¹

- Stress
- Sadness or hopelessness
- Loss of interest in hobbies
- Trouble sleeping
- Racing thoughts
- Feeling overwhelmed

How is PPD treated?³

- Counseling with your primary care doctor
- Possible medication
- Therapy with a mental health professional
- Connections to support systems
- Support groups⁴
- Exercise is effective in improving symptoms³

Postpartum blues are normal- Postpartum depression is **NOT** normal.



It is treatable!

Join a FREE postpartum depression support class!

You may be eligible for a FREE PPD support class if you:

- Delivered a baby in the last 1-6 months
- Have been diagnosed with PPD
- Are otherwise healthy and cleared for exercise
- Are able to commit to a 6 week class
- Live in Utah County
- Are at least 18-years-old
- Can speak English

Move and Mingle

A Postpartum Depression Support Group

What is it?

- A weekly exercise support group class that lasts for 6 weeks
- Yoga and group therapy will be practiced at each session
- Free admission

Email moveandmingle@gmail.com for more information and to sign up

Appendix F

Move and Mingle Program Outline

PROGRAM SESSION	SESSION DESCRIPTION	SESSION DISCUSSION QUESTIONS	SESSION LEARNER OBJECTIVES	TIMEFRAME	FACILITATOR/SPEAKER OR INSTRUCTOR
Week 1	Introduction	<ul style="list-style-type: none"> Introduce yourself. What do you hope to gain from this group? What makes you happy? What is difficult for you right now? 	<ul style="list-style-type: none"> Participants will understand program format and objectives Participants will introduce themselves. Participants will verbalize questions, fears and hopes for the course. Participants will participate in yoga session led by an instructor Participants will feel social support through group discussion and post session interaction. 	90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing	Group discussion: program director Exercise: yoga instructor
Week 2	Postpartum Depression Symptoms	<ul style="list-style-type: none"> What is the hardest thing about being the mother of an infant? What is your mood like? 	<ul style="list-style-type: none"> Participants will identify personal struggles. Participants will discuss personal emotional status and mood. Participants will participate in yoga session led by an instructor. Participants will feel social support through group discussion and post session interaction. 	90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing	Group discussion: program director Exercise: yoga instructor
Week 3	Postpartum Depression Treatment	<ul style="list-style-type: none"> How do you feel about seeking treatment for PPD? Have you ever gone to therapy before? Have you ever been on a medication before? Did treatment help? 	<ul style="list-style-type: none"> Participants will verbalize feelings surrounding PPD treatment. Participants will identify how they are seeking help for their symptoms. Participants will participate in yoga session led by an instructor. Participants will feel social support through group discussion and post session interaction. 	90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing	Group discussion: program director Exercise: yoga instructor

<p>Week 4</p>	<p>Postpartum Depression Coping Mechanisms</p>	<p>Presentation by therapist</p> <ul style="list-style-type: none"> • How can you use these coping mechanisms in your daily life? 	<ul style="list-style-type: none"> • Participants will verbalize understanding of instruction regarding coping mechanisms. • Participants will identify potentially effective mechanisms they can use. • Participants will identify situations appropriate for implementation of specific coping mechanisms. • Participants will participate in yoga session led by an instructor. • Participants will feel social support through group discussion and post session interaction. 	<p>90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing</p>	<p>Group discussion: Guest speaker LCSW or therapist</p> <p>Exercise: yoga instructor</p>
<p>Week 5</p>	<p>Coping Mechanisms part 2</p>	<ul style="list-style-type: none"> • Which coping mechanisms did you use this past week? • Did they help? 	<ul style="list-style-type: none"> • Participants will discuss how they have used coping mechanisms this week. • Participants will participate in yoga session led by an instructor. • Participants will feel social support through group discussion and post session interaction. 	<p>90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing</p>	<p>Group discussion: program director</p> <p>Exercise: yoga instructor</p>
<p>Week 6</p>	<p>Postpartum Depression review and action plan</p>	<ul style="list-style-type: none"> • How has your mood changed these past 6 weeks? • What have you learned? • What are you going to do going forward? • What goals do you have for the future regarding your mental health? 	<ul style="list-style-type: none"> • Participants will verbalize what they have learned throughout the course. • Participants will report feeling empowered to deal with current or potential symptoms of PPD. • Participants will demonstrate understanding of exercise principles learned throughout course. • Participants will write an action plan to address current or potential symptoms. • Participants will express feelings of social support. 	<p>90 minutes: 30 minutes group discussion 45 minutes exercise 15 minutes refreshments and socializing</p>	<p>Group discussion: program director</p> <p>Exercise: yoga instructor</p>

Appendix G

Edinburgh Postnatal Depression Scale¹ (EPDS)

Name: _____ Address: _____

Your Date of Birth: _____

Baby's Date of Birth: _____ Phone: _____

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

Administered/Reviewed by _____ Date _____

¹Source: 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 .

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

Users may reproduce the scale without further permission providing they respect copyright by quoting the names of the authors, the title and the source of the paper in all reproduced copies.

Appendix H: Exit Surveys

Participant Exit Survey

Thank you for your participation!
The answers to these questions are anonymous.

On a scale of 0 to 10 how much do you agree with each statement, with 0 being not at all, and 10 being completely agree? Please circle your answer. (Additional comments optional)

1. I understand what postpartum depression is
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

2. I can identify my own feelings and beliefs about postpartum depression
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

3. I have tools for combatting the symptoms of postpartum depression
0—1—2—3—4—5—6—7—8—9—10
Comment: _____
What are these tools? _____

4. I feel supported by my peers in this group
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

5. I feel empowered to cope with my depression, and obtain help if needed
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

6. I was able to share my thoughts/fears/concerns during this group therapy
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

7. This group was a safe space to share my thoughts
0—1—2—3—4—5—6—7—8—9—10
Comment: _____

8. I feel confident in my ability to practice yoga at home
0—1—2—3—4—5—6—7—8—9—10

Comment: _____

9. My mood has improved over the last 6 weeks
0—1—2—3—4—5—6—7—8—9—10

Comment: _____

10. I was satisfied with this group
0—1—2—3—4—5—6—7—8—9—10

Comment: _____

11. I wish we had been given more time for
○ Group therapy
○ Yoga
○ Socializing

Did you think the amount of time (1 ½ hours) was appropriate? _____

12. How many of the 6 classes did you attend? _____

13. Is there anything you wish was done differently during this group? Anything you would change? Do you have any other comments?

Yoga Instructor Exit Survey

Thank you for your participation!

On a scale of 0 to 10 how much do you agree with each statement, with 0 being not at all, and 10 being completely agree. Please circle your answer. Additional comments are optional.

- 1. The participants seemed engaged during the yoga classes

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 2. Participants correctly performed the yoga exercises during the group by week 6

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 3. Participants were proficient enough to perform yoga exercises independently by week 6

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 4. The location of this group was appropriate for yoga instruction

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 5. The amount of time allotted for yoga was appropriate

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 6. Is there anything you wish was done differently during this group? Anything you would change? Do you have any other comments?

Group Leader Exit Survey

Thank you for your participation!

On a scale of 0 to 10 how much do you agree with each statement, with 0 being not at all, and 10 being completely agree. Please circle your answer. Additional comments are optional.

- 1. The participants seemed engaged during the group sessions

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 2. Class members participated in the group discussion

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 3. Participants were able to verbalize fears about depression

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 4. Participants were able to verbalize feelings surrounding the stigma of PPD

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 5. Participants verbalized confidence in their ability to utilize coping mechanisms and tools

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 6. Participants expressed feelings of social support

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 7. The location of the group and the time allotted for sessions were conducive to positive participant outcomes

0—1—2—3—4—5—6—7—8—9—10

Comment: _____

- 8. Is there anything you wish was done differently during this group? Anything you would change? Do you have any other comments?

Appendix I*Move and Mingle Project Timeline*

Task	October	November	December	January	February	March	Summer 2019
Proposal review		X	X				
Recruitment of eligible participants				X	Mid-February		
Intervention; Evaluation; Toolkit					Mid-February	X	
Post-test and Analysis of outcomes						Post-test given to participant at last class	Results Analysis
Results presented to local providers							X (dissemination)

Appendix J*Consent Form***Consent Form for Participation in a Research Study**

Researchers: Program Director: Lisa Peterson, BSN, doctoral student
Faculty Mentor: Kari Wade EdD, MSN, RN, CNE

Study Title: *Move and Mingle: A postpartum Depression Intervention*

1. WHAT IS THIS FORM?

This form is called a Consent Form. It will give you information about the study so you can make an informed decision about participation in this research.

This consent form will give you the information you will need to understand why this study is being done and why you are being invited to participate. It will also describe what you will need to do to participate and any known risks, inconveniences or discomforts that you may have while participating. We encourage you to take some time to think this over and ask questions now and at any other time. If you decide to participate, you will be asked to sign this form and you will be given a copy for your records.

2. WHO IS ELIGIBLE TO PARTICIPATE?

You may participate if you meet the following criteria:

- Have a diagnosis of postpartum depression from a healthcare provider
- Be 18 years or older
- Have given birth between 1 and 6 months from the start of the program
- Be cleared for physical activity from your doctor
- Be free from serious physical or psychological health issues.
- Be able to participate in the whole 6-week course.

3. WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this project is to demonstrate that participation in a weekly, 6 week program using both group support and yoga therapy will improve symptoms of postpartum depression.

4. WHERE WILL THE STUDY TAKE PLACE AND HOW LONG WILL IT LAST?

The six sessions will take place at 3B yoga in Provo, UT. Each session each be 90 minutes long, with 30 minutes of group support discussion, 45 minutes of yoga, and 15 minutes of socializing. After the conclusion of the final session, the program will be completed, and no addition information will be needed.

5. WHAT WILL I BE ASKED TO DO?

If you agree to take part in this study, you will...

1. Be screened for inclusion in the program. Inclusion criteria include:
 - Have a diagnosis of postpartum depression from a healthcare provider
 - Be 18 years or older
 - Have given birth between 1 and 6 months from the start of the program
 - Be cleared for physical activity from your doctor
 - Be free from serious physical or psychological health issues.
 - Be able to participate in the whole 6-week course.
2. Take a simple 10-item postpartum depression test (Edinburgh Postnatal Depression Scale) before and after the 6-week program. Questions on the test include: (answered with most of the time, quite often, not very often, or not at all)
 - I have been able to laugh and see the funny side of things
 - I have looked forward with enjoyment to things
 - I have blamed myself unnecessarily when things went wrong
 - I have been anxious or worried for no good reason
 - I have felt scared or panicky for no very good reason
 - Things have been getting on top of me
 - I have been so unhappy that I have had difficulty sleeping
 - I have felt sad or miserable
 - I have been so unhappy that I have been crying
 - The thought of harming myself has occurred to me
3. Participate in 6 weeks of the program intervention including a weekly class with:
 - 30 minutes of group discussion. Active participation in discussion questions is optional. Questions for group discussion may include:
 - What do you hope to gain from this group?
 - What makes you happy?
 - What is difficult for you right now?
 - What is the hardest thing about being the mother of an infant?
 - What is your mood like?
 - How do you feel about seeking treatment for PPD?
 - Have you ever gone to therapy or taken medication before?
 - Did this help your symptoms?
 - What have you found that helps you feel better?
 - How has your mood changed over the course of this program?
 - What have you learned?
 - What are you going to do going forward?
 - What goals do you have regarding your mental health?
 - 45 minutes of yoga each session lead by an experienced perinatal yoga instructor
 - Yoga mats provided
 - 15 minutes of mingling with peers
 - Snacks and water provided
4. Fill out an Exit Survey after completion of the program. Exit survey questions will include program satisfaction, feelings of social support, and mood assessment. You may choose to skip any questions you do not wish to answer.

6. WHAT ARE MY BENEFITS FOR BEING IN THIS STUDY?

This study aims to improve symptoms of postpartum depression. Participation in the program may benefit your mood, and provide you with social support from other members of the community. Research suggests that yoga¹ and group therapy² improve symptoms of postpartum depression. You will also receive a yoga mat for the exercise portion of the class.

7. WHAT ARE MY RISKS OF BEING IN THIS STUDY?

Any exercise program can pose a risk of injury if not completed properly. You should be cleared by your doctor for exercise before engaging in the program. The yoga session is 45 minutes long, but you may choose not to participate at any time.

We will have a group discussion portion of the program where you will be invited to share thoughts and feelings if you feel comfortable doing so. This may cause some emotional upset, but you may choose to withdraw at any time.

You will need to arrange childcare for your infant and other children, as well as transportation to and from the facility.

8. HOW WILL MY PERSONAL INFORMATION BE PROTECTED?

The following procedures will be used to protect the confidentiality of your study records. Information gathered from this study (including class lists, inclusion screenings, consent forms, EPDS scores, and exit surveys) will be kept private and confidential. Paper copies of the screenings will be kept in a locked file cabinet until converted into digital form, after which it will be destroyed. The digital files will be saved on a password protected USB drive, with the program director being the sole keeper of the password. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the members of the research staff will have access to the passwords. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be personally identified in any publications or presentations

9. WHAT IF I HAVE QUESTIONS?

Take as long as you like before you make a decision. We will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the researcher, (*Lisa Peterson, RN, at 801-358-3173*). If you have any questions concerning your rights as a research subject, you may contact Nebraska Methodist College at (402) 354-7000.

10. CAN I STOP BEING IN THE STUDY?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

11.WHAT IF I AM INJURED?

The Move and Mingle program not have a system for compensating subjects for injury or complications related to this intervention. You participate in this program at your own risk. Furthermore, this class is not a substitute for medical and psychiatric treatment for your depression.

12. WHAT ARE MY RIGHTS AS A PARTICIPANT?

As a study participant, you have the right to discontinue participation at any time. You also have the right to refuse any portion of the program. You have the right to protected health information, therefore your information will be kept confidential. You have the right to continue to seek other treatments during participation in the study. You have the right to fair and respectful treatment as a participant.

13. SUBJECT STATEMENT OF VOLUNTARY CONSENT

When signing this form I am agreeing to voluntarily enter this study. I have had a chance to read this consent form, and it was explained to me in a language which I use and understand. I have had the opportunity to ask questions and have received satisfactory answers. I understand that I can withdraw at any time. A copy of this signed Informed Consent Form has been given to me.

REFERENCES

¹ Ko, J. Y., Rockhill, K. M., Tong, V. T., Morrow, B., & Farr, S. L. (2017). Trends in postpartum depressive symptoms—27 States, 2004, 2008, and 2012. *Morbidity and Mortality Weekly Report*. 66(6), 153–158.

² Meschino, D., Philipp, D., Israel, A., & Vigod, S. (2016). Maternal-infant mental health: postpartum group intervention. *Archives Of Women's Mental Health*, 19(2), 243-251.

Participant Signature:

Print Name:

Date:

By signing below, I indicate that the participant has read and, to the best of my knowledge, understands the details contained in this document and has been given a copy.

Signature of Person
Obtaining Consent

Print Name:

Date:

Appendix K

Data Analysis & Survey Results

Table 1
Move and Mingle Program Outcome Results

Outcome 1	Outcome 2	Outcome 3	Outcome 4 part 1	Outcome 4 part 2
Percentage of participants who completed 6/6 classes	Percentage of participants who completed both pre and post EPDS tests experienced an improvement in score.	Percentage of participants who completed the survey and rated satisfaction \geq 8/10 (survey question 10)	Percentage of participants who completed the survey and rated “I feel empowered to cope with my depression, and obtain help if needed” \geq 8/10 (survey question 5)	Percentage of participants who completed the survey and rated “I feel supported by my peers in this group” \geq 8/10 (survey question 4)
2/5 (40%)	4/4 (100%)	4/4 (100%)	4/4 (100%)	4/4 (100%)

Note. Percentages from outcomes 2-4 are based upon the average results from the four participants who completed the program. The outcome 1 percentage is based upon the average of the 5 participants who started the program.

Table 2
Participant Exit Survey Results

Exit Survey Question	Participant 1	Participant 2	Participant 3	Participant 4
1	9	9	9	10
2	10	9	10	10
3	9	10	10	10
4	10	10	10	10
5	10	10	10	10
6	10	10	10	10
7	10	10	10	10
8	8	9	7	6
9	10	10	10	10
10	10	10	10	10
Class length appropriate?	Too short	Too short	Too short	Just right
Classes attended	5/6	6/6	6/6	5/6

Note. Participants responded to questions 1-10 on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements.

Table 3
Edinburgh Postnatal Depression Scale (EPDS) Changes Before and After Program Participation

Participant Number	EPDS Pre-Program	EPDS Post-Program	EPDS change
1	14	2	12
2	11	6	5
3	14	5	9
4	13	10	3

Note. scores of 0-6 indicate minimal or no depression, 7-13 mild depression, 14-19 moderate depression, 19-30 severe depression.

Table 4
Yoga Instructor Exit Survey Results

Question Number	Response
1	10
2	10
3	10
4	10
5	10

Note: Instructor responded to questions on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements.

Table 5
Group Leader Exit Survey Results

Question Number	Response
1	10
2	10
3	10
4	10
5	8
6	10
7	8
Was class length appropriate?	Too short

Note. Director responded to questions 1-7 on a 0 to 10 scale (*Appendix H*), with 0 being agreed not at all, and 10 being completely agreed with statements.