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Author(s)	Taniguchi, Hatsumi
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A Review of Studies Seeking Evidence-Based Mother-Friendly Care for Preventing Postpartum Depression

Hatsumi TANIGUCHI

INTRODUCTION

Childbirth can be both a difficult as well as joyful time for a new family. Although women are physically and mentally tired from childbirth, becoming a mother inevitably forces them to transition to parenthood, a role that in most cases is totally unfamiliar^{1,2)}. Women jump into an unknown world and become unknown selves from the moment they give birth to a baby³⁾. Childbirth is a transformative experience, and the burden of physical, psychological and social changes in the perinatal period leave women vulnerable and easily exposed to psychiatric morbidity.

Kendell et al⁴⁾ reported that among primipara women, the risk of psychiatric dysfunction is 35 times greater during the first month of motherhood than during any other life period. Cox et al⁵⁾ also reported that during the first three months of motherhood, the incidence of postpartum depression without delusion and hallucination is two to three times higher than in other life periods. Current research reports that 10% of all pregnant women experience some type of depression during pregnancy. Furthermore, 25–40% of women experience a depressed mood during pregnancy, and approximately 15–20% of all women experience postpartum depression^{6–9)}. The prevalence of perinatal depression significantly demonstrates that women are highly vulnerable, physically and psychologically, during childbearing.

Postpartum depression (PPD) is a major mental dysfunction, and it is severe. Many studies have been conducted to determine the causes of PPD. There are numerous etiological factors associated with PPD, including those that are cultural, social, psychological, and biological. Recent life stresses, marital problems, a lack of support, and financial challenges are known to be associated with causing episodes of PPD^{10–13)}.

Childbirth is the first step in establishing a family for a couple, and mothers are typically expected to be the nucleus

of the family unit. PPD thus poses a problem not only for mothers, but also for other members of the family unit. The partners of wives with PPD experienced fear, and confusion, even after their spouses overcame PPD¹⁴⁾. They tended to be uncertain of the future having seen their wives become very different from the persons they had previously known. Partners were more likely to have psychiatric morbidity if their wives also screened positively¹⁵⁾. However, it is not known how often separation or divorce occurs as a result of PPD.

Children of mothers with PPD suffer physical and mental development delays, such as higher rates of depression, attention deficit, behavior problems, anxiety, poor social skills and peer relations, insecure attachment, and academic difficulties¹⁶⁾. Even worse, severe PPD can lead a mother to infanticide as well as maternal death, often by suicide¹⁷⁾.

The public has gradually become aware of PPD through the media and childbirth preparation classes. However, expectant parents usually focus on their childbirth, and not their postpartum. The detection of PPD is often further delayed because childbearing mother is usually alone at home and isolated from society. Furthermore, the partner is often unaware of the symptoms of PPD in the present nuclear family, and even when they are aware of unusual behavior, they tend to deny PPD and not to seek treatment and support^{14,18)}. Many mothers also do not go to the doctor and others refuse to take medicine out of fear of addiction or the effects on breastfeeding¹⁹⁾. Finally, it is difficult for medical staff to distinguish PPD from anxiety resulting from childbearing.

At present, what are the most effective interventions for women with PPD? Storytelling and continuous care have been addressed as the most ideal forms of postpartum care for helping women smoothly transit to motherhood^{20,21)}. It is important for health care providers to know updated evidence-based maternity cares for the prevention of PPD. The objective of this study is to critically review the literature, to investigate updated effective interventions concerning the prevention of PPD, and to consider women-centered services such as mother friendly care.

METHODS

A literature search was performed using Kyoto University library online database. PubMed database is searched from June 2004 to May 2009 using combinations of the terms “postpartum depression”, “prevention”, “intervention”, and “randomized controlled trial”. The research articles selected had to meet the following inclusion criteria : 1) focus on primary prevention of PPD using specific intervention, 2) implement randomized controlled trial, 3) use the Edinburgh Postnatal Depression Scale (EPDS) or others to measure mental status, 4) provide statistical analysis of the study results, and 5) English-language articles. Literature reviews, meta-analyses, and case studies were excluded.

The initial search yielded 36 abstracts that appeared to meet the key words for the past five years, June 2004 to May 2009. Upon closer review, of these 36 studies, nine were excluded because they were not in accordance with the objective of this study²²⁻³⁰, seven were excluded because they reported the systematic review of literatures³¹⁻³⁷, three were excluded because they reported effects of pharmacological treatment³⁸⁻⁴⁰, two were excluded because they were case study and pilot study^{41,42}, five were excluded because the results were of no significant difference⁴³⁻⁴⁸, three were excluded as the statistical power was low because the sample size was too small⁴⁹⁻⁵¹, and two were excluded because they were specifically dealt with mothers with infants who were admitted to NICU^{52,53}. Out of 36 studies, there were four studies which focused on

Table 1 Characteristics of included studies

Study	Location	Study type/ dates	N	Sample description	Intervention condition	Times & period	Intervention provider	Control condition
Dip Teach & Edwards 2004	Australia	Treatment	19 (9, 10)	The Gold Coast region, EPDS ≥ 12	Pram-walking: Approximately 40 min walking session twice a week	Twice a week for 12 weeks	A child health social worker	Social support group: meeting with their babies at the local community center once a week, free talking
Tezel & Gozum 2005	Turkey	Treatment Feb.-Nov. 2002	62 (30, 32)	Urban community sample, EPDS ≥ 11 at high risk without exhibiting major symptoms and also pharmacological treatment	Care group: home visiting, using a symptom check list and providing nursing intervention using NANDA, NOC, and NIC.	Weekly for 6 weeks	Research nurses	Teaching self problem solving skills sessions weekly
Van Doesum, et al 2008	Netherlands	Treatment	71 (35, 36), Mother-infant pair, BDI > 14, Infants > 12 months	A major depressive episode and BDI > 14 with exception of psychotic disorder, manic depression, and substance dependence	Experimental group: home visiting, taking videos of mother-infant interaction, video feedback and baby massage.	8-10 times for 3-4 months	Home visitors (qualified prevention specialists)	Parenting support by telephone.
Dennis, et al 2009	Canada	Treatment Nov. 2004-Sep. 2006	701 (349, 352), EPDS > 9	EPD > 9 predicting postpartum depression	Proactive individualized telephone call services.	> four contacts until 12 weeks postpartum	Mothers (peer supporters) who were experienced PPD	Routine care.

Table 2 Timing of outcome assessment, statistical analysis, and results of included studies

Study	Timing of outcome assessment	Statistical analysis	Results
Dip Teach & Edwards 2004	Pretest/week 1, week 6, week 12 EPDS	Effective in both interventions	The result of EPDS revealed a significant main effect for time (p < 0.001) and interaction of time and group (p < 0.02), but no effect for group (P > 0.05). The pram-walking group pre-depression score decreased significantly by week 6 (p < 0.001), week 12 (P < 0.05).
Tezel & Gozum 2005	Pre, and post (6 weeks): The Beck Depression Inventory (BDI)	Effective in both interventions	Nursing care was effective (p < 0.001). Control group (p < 0.05). Nursing care was more effective than the control group in BDI (p < 0.05).
Van Doesum, et al 2008	Pre, post and follow-up after 6 months BDI, MINI Quality of the mother-infant interaction: EAS, AQC, ITSEA	Effective in both interventions	The score of BDI decreased in both groups (p < 0.01). The intervention had positive effects on the quality of mother-infant interaction. Infants in the experimental group had a higher score for attachment security and competence.
Dennis, et al 2009	12, 24 weeks EPDS Structured clinical interview-depression, state-trait anxiety inventory, UCLA loneliness scale	Significant Difference at 12 weeks	EPDS p < 0.001 at 12 weeks. No significant difference at 24 weeks. Over 80% of women in the intervention group were satisfied.

effective methods of intervention supported by evidence-based practices meeting criteria for preventing PPD⁵⁴⁻⁵⁷).

RESULTS

Table 1 displays author & year, implemented country, sample size, intervention condition, times & period, intervention provider, and control condition for each of the four articles reviewed. Table 2 also displays timing of outcome assessment, statistical analysis, and results. Well-controlled interventions verified by this literature review were used to treat PPD with low and mild symptoms. There was no well-controlled intervention to prevent PPD during pregnancy in the literature review. The measures used to assess depression level were Edinburgh Postnatal Depression Scale (EPDS), the Beck Depression Inventory (BDI), Mini International Neuropsychiatric Interview (MINI), and so on. Three studies used women with PPD who had EPDS >9, ≥ 11 , and 12 without major symptoms^{54,55,57}. Another study used women with the BDI >14, with exception of pharmacological treatment⁵⁶.

The types of interventions differed in each study: the pram-walking exercise program vs. social support program, home visiting vs. self problem skills sessions, home visiting vs. telephone call services, and telephone services added to routine care vs. routine care. The intervention providers included child health social workers, research nurses, qualified master level specialists, and mothers who previously experienced PPD and recovered. With each study, the period of the intervention varied, ranging from 6 weeks to 4 months. The frequency of the intervention was also from twice a week to monthly, depending on the period of the program. The timing of outcome assessment was from one week after intervention to the middle and the end of the intervention. Of four well-controlled trial studies, three studies showed that the good outcomes of PPD had both the intervention groups and the control groups, even though the intervention groups were more effective than the control groups⁵⁴⁻⁵⁶.

The first study was the pram-walking exercise program vs. social support program⁵⁴. There was only one study that physical exercise was added to the program. The participants were women who showed EPDS ≥ 12 without major symptoms. They attended the pram-walking session twice a week under the guidance of child health social workers. Women walked for approximately 40 min with moderate intensity on flat walking paths, the Gold Coast, Australia. On the other hand, the control group held their meeting at the local community center once a week. At that time, women brought their babies and had free talking

time. The EPDS of both groups decreased from the pretest score to week 6, and week 12. The score of pram-walking group, however, decreased the more significantly of the two, dropping by week 6 ($p < 0.001$) and, week 12 ($p < 0.05$).

The second study was home visiting services vs. self problem solving skills sessions set in Turkey⁵⁵, they provided tailored flexible nursing care to individual on a weekly basis. Based on the symptom check list at the first home visit, they made a care plan for each woman according to the North American Nursing Diagnosis (NANDA), implemented nursing care according to the Nursing Intervention Classification (NIC), and assessed their cares with the Nursing Outcomes classification (NOC). The control group provided the self problem solving skills in the same period by the nurse researcher. Both interventions effectively decreased the BDI score, but nursing care showed better results than the control ($p < 0.05$).

The third study evaluated effective home visiting intervention vs. telephone call services set in the Netherlands⁵⁶, this study focused on mother-infant relationships, and the implementation of home visiting over a 3 to 4-month period. They took video footage of mother-infant interaction during every home visit and then showed the video back to the mother and other family members, encouraging the mothers to point out their behaviors and responses to their babies' eye movements, body movements, or voice. Baby massaging techniques were also introduced to the mothers to order to improve the quality of physical contact between mother and infant. The control group received practical parenting advice from child therapists over three telephone calls over a period of three months. Each lasted a maximum of 15 minutes. The level of depression decreased over time for both the intervention group and control group ($p < 0.01$). The home visiting intervention had positive effects on the quality of mother-infant interaction.

The final study, set in Canada, focused on intervention through telephone calls services that were added to the routine service for PPD women by peer supporters who previously experienced PPD⁵⁷. They made a minimum of four contacts, and then provided effective telephone based services and made referrals to health professionals as necessary. At 12 weeks, the outcome showed notable difference ($p < 0.001$), but these differences were no longer significant at 24 weeks. However, over 80% of women in the intervention group were satisfied with the peer telephone calls services.

DISCUSSION

On the well-controlled clinical trial studies, three effective interventions were revealed: pram-walking exercise program, two kinds of home visiting interventions (using video, and nursing care process), and telephone call services by peer supporters. An effective intervention to prevent PPD during pregnancy was not found in this literature review. All effective interventions were implemented to women with minor symptoms of PPD, with the exception of pharmacological treatment, EPDS > 9 and BDI > 14. The EPDS and the BDI are commonly used measures to assess postpartum depression level. The EPDS is a 10-item, self-report questionnaire which is user-friendly, simple, and can be filled out by women in a short time. A score of EPDS \geq 12 is an indicator that a woman suffers from PPD. However, they said that a cutoff point of 9/10 was optimal for use in research setting⁵⁾. The BDI cutoff score is as follows: a score < 10 signifies no or minimal depression, 10–18 mild to moderate depression, and 19–29 moderate to severe depression⁵⁸⁾. These interventions showed significant difference in their ability to decrease the symptoms of PPD. All the above well-controlled trial studies involved different methods of intervention, period and frequency, providers, sample sizes and location. The medical intervention has primarily focused on sick mothers. However, it must also provide comprehensive women-centered or mother friendly care that focuses on mother-infant relationship involving the family members. Out of the four studies, three provided interventions focused on mother-infant interaction which involved husbands⁵⁴⁻⁵⁶⁾. Out of the four studies, two focused on mother-infant interaction and improving mother-infant and woman-husband relationships through home visiting intervention^{55,56)}. Their effective interventions were an elaborate service that involved the recording of mother-infant interaction at the home, and using the footage to coach and encourage the mother and her family. This is a new method using visual and audio to address the challenges of PPD⁵⁶⁾. Another intervention was a systematic intervention tailored to meet the individual needs of the postpartum mother and family using a nursing process based on NANDA, NIC, and NOC⁵⁵⁾. The pram-walking exercise program was the only one method of intervention to involve maternal physical exercise. It is widely accepted that physical exercise refreshes the mind and body. This study noted that only 16–42% of childbearing women engaged in a sufficient amount of physical activity to maintain health. For childbearing

women, pram-walking was the most popular activity in Australia⁵⁴⁾. Field⁵⁹⁾ suggested that it was important for health providers to tailor their coaching to the mother's interaction style, to promote frequency of touching (e.g., by baby massage), and to encourage the partner or other family members to offer the mother more social support. These effective interventions based on well-controlled trials were implemented in Australia, Turkey, Netherlands, and Canada. Postpartum healthcare systems differ in each country. The current major health policy is to provide high quality care based on evidence-based practice, cost effectiveness, and accessibility. Based on the above, significant conclusions can be drawn regarding feasible interventions for new mothers and their families under current healthcare policies in each country.

One of the aims of this study is to consider women-centered services such as maternal mother friendly care. Postpartum depression occurs between a few weeks to a few months after childbirth. The peak onset was reported at the end of the first month after childbirth¹⁷⁾. In each country after discharged from the hospital, mothers return to an Ob/Gyn for a four-week checkup. At that time, health care providers should take time to discuss PPD with new mothers and her husband or her mother, and assess the level of postpartum depression with a questionnaire of EPDS or BDI. The four-week checkup after childbirth is a good time to screen for PPD. If new mothers show a high score of each measure, health care providers have to provide mother friendly care tailored to each woman's family based on effective interventions, and also refer them to a specialist. As many women hesitate to take medicine for reason of breastfeeding or out of fear of addiction, health care providers need to provide proper information and consider feasible mother friendly care methods with new mothers and their families.

CONCLUSION

In the well-controlled clinical trial studies, three effective interventions were revealed: pram-walking exercise program, two kinds of home visiting intervention, and telephone call services by peer supporters. A four-week checkup is a good chance to screen for PPD, using an EPDS or BDI questionnaire. Using healthcare policies in each country, health care providers need to offer postnatal services for the prevention of PPD such as revealed in this study.

REFERENCES

- 1) Rogan F, et al: 'Becoming a mother'-developing a new theory

- of early motherhood. *Journal of Advanced Nursing*, 1997; 25: 877-885
- 2) Nelson MA: Transition of Motherhood. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 2003; 32: 465-477
 - 3) Rubin R: *Maternal Identity and the Maternal Experience*. New York: Springer, 1984
 - 4) Kendell RE, Chalmers JC, Platz C: Epidemiology of puerperal psychosis. *British Journal of Psychiatry*, 1987; 155: 356-362
 - 5) Cox JL, Murray D, Chapman G: A controlled study of the onset, duration and prevalence of postnatal depression. *British Journal of Psychiatry*, 1993; 163: 27-31
 - 6) Kumar R: Postnatal mental illness: a transculture perspective. *Soc Psychiatric Epidemiology*, 1994; 29: 250-264
 - 7) Evans J, Heron F, Oke S, Golding J: Cohort study of depressed mood during pregnancy and after childbirth. *BMJ*, 2001; 323: 257-260
 - 8) Hayes AB, Muller R, Bradley SB: Perinatal depression: A randomized controlled trial of an antenatal education intervention for primiparas. *Birth*, 2001; 28(1): 28-35
 - 9) Maternal Center Association: Recommendations from listening to mothers: The first U.S. survey of women's childbearing experiences. *Birth*, 2004; 31(1): 61-65
 - 10) Issokson D: Postpartum depression: Proposal for prevention through an integrated care and support network. 1997; Retrieved August 1, 2004 from <http://www.reportheart.com/resources/pro/proarticies/postpartum.html>
 - 11) Matthey S, Barnett B, Howie P, Kavanagh JD: Diagnosing postpartum depression in mothers and fathers: whatever happened to anxiety? *Journal of Affective Disorders*, 2003; 74: 139-147
 - 12) Dearing E, Taylor AB, McCartney K: Implications of family income dynamics for women's depressive symptoms during the first 3 years after childbirth. *American Journal of Public Health*, 2004; 94(8): 1372-1377
 - 13) Rivieres-Pigeon DC, Saurel-Cubizolles M, Lelong N: Considering a simple strategy for detection of women at risk of psychological distress after childbirth. *Birth*, 2004; 31(1): 34-42
 - 14) George M: Postnatal depression, relationships and men. *Maternal Health Nursing*, 1994; 16(6): 12-15
 - 15) Balloard C, et al: Postnatal depression in mothers and fathers. *British Journal of Psychiatry*, 1994; 164: 782-788
 - 16) Sohr-Preston SL, Scaramella LV: Implications of timing of maternal depressive symptoms for early cognitive and language development. *Clin Child Fam Psychol Rev*, 2006; 9: 65-83
 - 17) Almond P: Postnatal depression: a global public health perspective. *Prospect Public Health*, 2009; 129(5): 221-227
 - 18) Meighan M, et al: Living with postpartum depression: The father's experience. *The American Journal of Maternal/Child Nursing*, 1999; 24(4): 202-208
 - 19) Boarth E, Bradley E, Henshaw C: Women's views of antidepressants in the treatment of postnatal depression. *Journal of Psychosomatic Obstetric and Gynecology*, 2004; 25: 221-233
 - 20) Affonso D: Assessment of maternal postpartum adaptation. *Public health Nursing*, 1987; 4(1): 9-20
 - 21) Page AL: *The new midwifery*. London: Harcourt health Sciences, 2000
 - 22) Austin MP, Priest SR, Sullivan EA: Antenatal psychosocial assessment for reducing perinatal mental health morbidity. *Cochrane Database Syst Rev*, 2008; 8(4): CD005124
 - 23) Stuart EA, Perry DF, Le HN, Ialongo NS: Estimating intervention effects of prevention programs: accounting for noncompliance. *Prev Sci*, 2008; 9(4): 288-98
 - 24) El-Mohandes AA: An intervention to improve postpartum outcomes in African-American mothers: a randomized controlled trial. *Obstet Gynecol*, 2008; 112(3): 611-20
 - 25) Katz KS, et al: The design, implementation and acceptability of an integrated intervention to address multiple behavioral and psychosocial risk factors among pregnant African American women. *BMC Pregnancy Childbirth*, 2008; Jun 25; 8(1): 22
 - 26) McConachie H, et al: Wellbeing of new mothers. *Community Pract*, 2008; 81(3): 19-22
 - 27) Rowan C, Bick D, Bastos MH: Postnatal debriefing interventions to prevent maternal mental health problems after birth: exploring the gap between the evidence and UK policy and practice. *Worldviews Evid Based Nurs*, 2007; 4(2): 97-105
 - 28) Petrou S, Cooper P, Murray L, Davidson LL: Cost-effectiveness of a preventive counseling and support package for postnatal depression. *Int J Technol Assess Health Care*, 2006; 22(4): 443-53
 - 29) Suplee PD: The importance of providing smoking relapse counseling during the postpartum hospitalization. *J Obstet Gynecol Neonatal Nurs*, 2005; 34(6): 703-12
 - 30) Beard JL: Maternal iron deficiency anemia affects postpartum emotions and cognition. *J Nutr*, 2005; 135(2): 267-72
 - 31) Leis JA: A systematic review of home-based interventions to prevent and treat postpartum depression. *Arch Womens Ment Health*, 2009 Feb; 12(1): 3-13
 - 32) Boath E, Bradley E, Henshaw C: The prevention of postnatal depression: a narrative systematic review. *J Psychosom Obstet Gynaecol*, 2005; 26(3): 185-92
 - 33) Cuijpers P, Van Straten A, Smit F: Preventing the incidence of new cases of mental disorder: a meta-analytic review. *J Nerv Ment Dis*, 2005; 193(2): 119-125
 - 34) Dennis CL: Psychosocial and psychological interventions for prevention of postnatal depression: systematic review. *BMJ*, 2005; 2; 331(7507): 15. Review
 - 35) Dennis CL, Creedy D: Psychosocial and psychological interventions for preventing postpartum depression. *Cochrane Database Syst Rev*, 2004; 8(4): CD001134. Review
 - 36) Dennis CL: Preventing postpartum depression part II: A critical review of nonbiological interventions. *Can J Psychiatry*, 2004; 49(8): 526-38
 - 37) Dennis CL: Preventing postpartum depression part I: a review of biological interventions. *Can J Psychiatry*, 2004; 49(7): 467-75
 - 38) Dennis CL, Ross LE, Herxheimer A: Oestrogens and progestins for preventing and treating postpartum depression. *Cochrane Database Syst Rev*, 2008; 8(4): CD001690
 - 39) Howard LM: Antidepressant prevention of postnatal depression. *Cochrane Database Syst Rev*, 2005; 18(2):

- CD004363
- 40) Perheentupa A, Ruokonen A, Tapanainen JS: Transdermal estradiol treatment suppresses serum gonadotropins during lactation without transfer into breast milk. *Fertil Steril*, 2004; 82(4): 903-7
 - 41) Cho HJ, Kwon JH, Lee JJ: Antenatal cognitive-behavioral therapy for prevention of postpartum depression: a pilot study. *Yonsei Med J*, 2008; 49(4): 553-62
 - 42) Zayas LH, McKee MD, Jankowski KR: Adapting psychosocial intervention research to urban primary care environments: a case example. *Ann Fam Med*, 2004; 2(5): 504-8
 - 43) Austin MP, et al: Brief antenatal cognitive behaviour therapy group intervention for the prevention of postnatal depression and anxiety: a randomised controlled trial. *J Affect Disord*, 2008; 105(1-3): 35-44
 - 44) Lumley J, et al: PRISM (Program of Resources, Information and Support for Mothers): a community-randomised trial to reduce depression and improve women's physical health six months after birth. *BMC Public Health*, 2006; 17; 6: 37
 - 45) Logsdon MC, et al: Postpartum depression and social support in adolescents. *J Obstet Gynecol Neonatal Nurs*, 2005; 4(1): 46-54
 - 46) Hayes BA, Muller R: Prenatal depression: a randomized controlled trial in the emotional health of primiparous women. *Res Theory Nurs Pract*, 2004; 18(2-3): 165-83
 - 47) Wiggins M, et al: Postpartum support for mothers living in disadvantaged inner city areas: a randomized controlled trial. *J Epidemiol Community Health*, 2005; 59: 288-295
 - 48) Cheng S, et al: The effectiveness of early intervention and the factors related to child behavioural problems at age 2: a randomized controlled trial. *Early Human Development*, 2007; 83: 683-691
 - 49) Crockett K, et al: A depression preventive intervention for rural low-income African-American pregnant women at risk for postpartum depression. *Arch Womens Ment Health*, 2008; 11(5-6): 319-25
 - 50) Le HN, Lara MA, Perry DF: Recruiting Latino women in the U.S. and women in Mexico in postpartum depression prevention research. *Arch Womens Ment Health*, 2008; 11(2): 159-69. Epub 2008 May 28
 - 51) Zlotnick C, et al: A preventive intervention for pregnant women on public assistance at risk for postpartum depression. *Am J Psychiatry*, 2006; 163(8): 1443-5
 - 52) Meinyk MB, et al: Maternal anxiety and depression after a premature infant's discharge from the neonatal intensive care unit. *Nursing Research*, 2008; 57(6): 383-394
 - 53) Hagan R, Evans SF, Pope S: Preventing postnatal depression in mothers of very preterm infants: a randomised controlled trial. *BJOG*, 2004; 111(7): 641-7
 - 54) DipTeach KA, Edwards H: The effectiveness of a pram-walking exercise programme in reducing depressive symptomatology for postnatal women. *Int J Nurs Pract*, 2004; 10(4): 177-94
 - 55) Tezel A, Gozum S: Comparison of effects of nursing care to problem solving training on levels of depressive symptoms in post partum women. *Patient Education and Counseling*, 2006; 63: 64-73
 - 56) Van Doesum K, et al: A randomized controlled trial of a home-visiting intervention aimed at preventing at relationship problems in depressed mothers and their infants. *Child development*, 2008; 79: 547-561
 - 57) Dennis C: Effect of peer support on prevention of postpartum depression among high risk women: multisite randomized controlled trial. *BMJ*, 2009; 338: a3064
 - 58) Beck AT, Steer RA, Garbin MG: Depression inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 1988; 8: 77-100
 - 59) Field T: Prenatal effects of maternal depression. In: S. H. Goodman & I.H. Gotlib, eds. *Children of depressed parents: Mechanisms of risk and implications for treatment*. Washington, DC: American psychological Association, 2002: 59-88