



SYSTEMATIC REVIEW

Interventions for Mothers with Postpartum Depression: A Systematic Review

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Abstract

Background and Aim: Women may go through a wide range of emotional experiences during pregnancy and the year following birth. In some cases it can result in depressive symptoms which need treatment and supportive interventions. Interventions like individual psychotherapy and counseling with an exploratory, participative approaches were most commonly practiced in low- and middle-income (LAMI) countries. The aim of this study is to investigate systematically the evidence surrounding the impact of such interventions on improving women and infant mental health in mothers with postpartum depression.

Methods: Systematic review included twelve quantitative studies from different countries like America (4), Iran (3), Europe (2), India (1), Pakistan (1), and China (1). Socio-demographic characteristics of the study subjects, characteristics, type and components of the intervention, and recommendations were reviewed from the retrieved studies.

Results: Mean depression prevalence among the postpartum mothers identified in different studies was 38.6%. In majority of the studies the main components the interventions dealt with were, infant and child care, breastfeeding, problem solving, use of play and quality time with the infant, immunization and contraception, psycho-education about the illness, role transitions to motherhood, sensory motor stimulation and ways to deal with practical issues.

Conclusion: Majority of studies recommended for cost-effective and accessible postnatal care as a routine, follow up practices through telephone, direct education to supporters of new mother, and ensuring the availability of community resources and manpower.

Keywords

Postpartum depression, Intervention, Women and infant mental health

Background

Psychiatric or psychological issues are quite common in antenatal, natal, and postnatal (perinatal) period with varying severity and manifestations. Postpartum psychiatric disorder occurs more in low and middle income countries, among women with gender based risks or with a psychiatric history. No clear etiology is responsible for the development of perinatal psychiatry disorders. It may be caused by a combination of genetic susceptibility and hormonal changes, influenced by various risk factors like, unplanned pregnancy, living without partner, financial problems, stressful life events, child care related stressors and congenitally malformed infant [1,2].

Epidemiological Data

One of the most common perinatal mental health problems is postnatal depression, with rates ranging between 13% in the first few weeks to 20% of women in the first year after the birth of their child. A significant number of women will first become depressed in pregnancy. Postpartum depression affects approximately 10-15% of all mothers in western societies. Recent epidemiological inquiries have reported prevalence rates for postpartum depression of 15.8% in Arab women, 16% in Zimbabwean women, 34.7% in South African woman, 11.2% in Chinese women, 17% in Japanese women and 23% in Goa Women in India [2]. The birth of a female child also has been associated with about

34.7% of Postpartum depression reported in South Africa. The study conducted by Michelle (1997) indicates that postpartum depression affects nearly 8-26% of new mothers [3].

The level of PPD is comparatively higher for the women with certain conditions like previous history of major depression or mood disorder and/or a family history of major depression or psychiatric illness, teenage pregnancy, less or not adequately literate mothers, mothers with smoking habit, history of thyroid abnormality, mothers with a low birth weight baby etc. Women with perfectionist or obsessive-compulsive personality traits are also at risk [4].

A number of studies have documented the negative impact that prolonged, severe postnatal depression can have on relationships, families and children. This ranges from depression in partners to higher rates of divorce, less strong bonding with the infant and reduced emotional adjustment and cognitive development among children [5].

Maternal mental health problems are not only detrimental to a woman's health; they have also been linked to reduced sensitivity and responsiveness in caregiving and to higher rates of behavioural problems in young children. The day-to-day interactions between neonates and their primary caregivers influence neurological, cognitive, emotional and social development throughout childhood [4].

There is growing evidence that, in low- and middle-income (LAMI) countries, the negative effects of maternal mental disorders on the growth and develop-

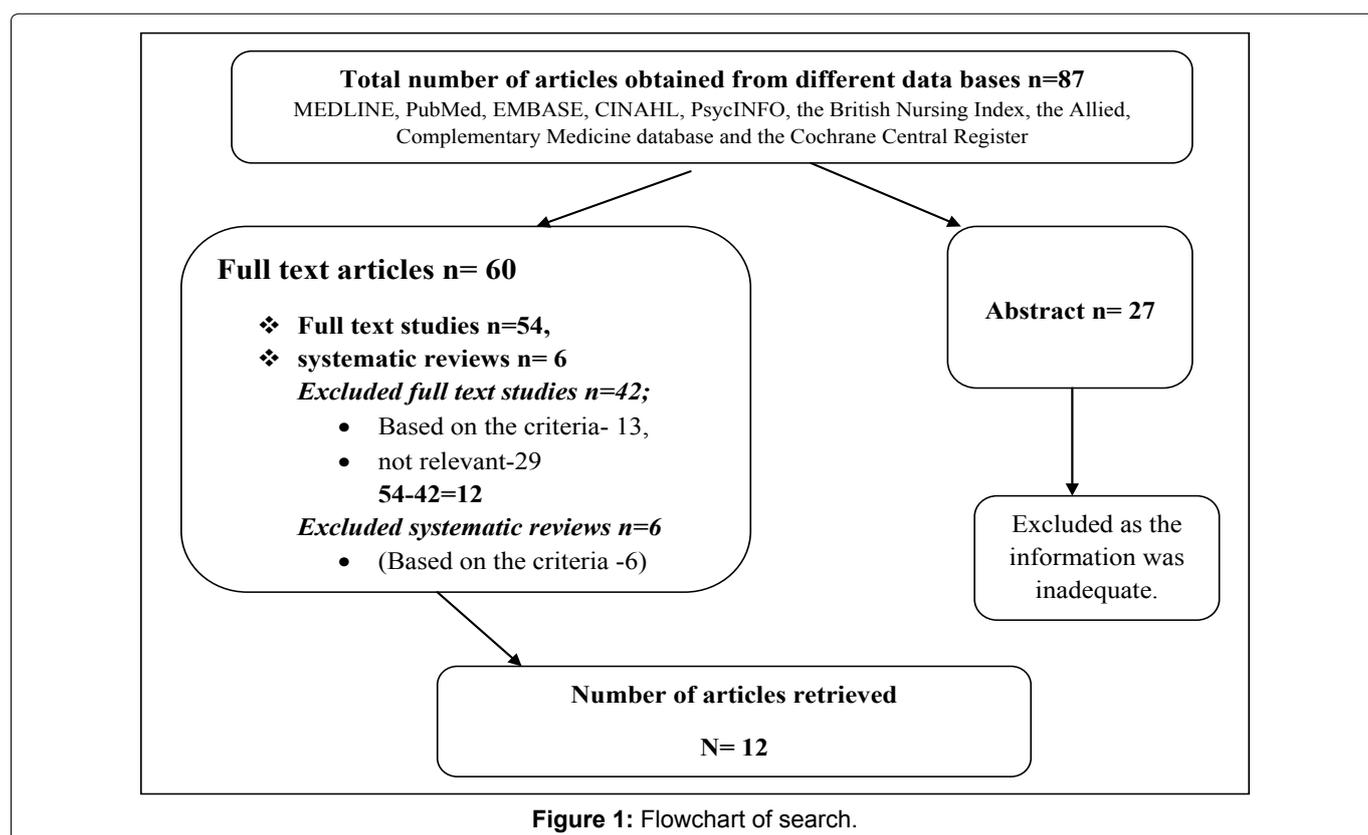
ment of infants and young children are independent of the influence of poverty, malnutrition and chronic social adversity. In low-income settings, maternal depression has been linked directly to low birth weight and under nutrition during the first year of life, as well as to higher rates of diarrhoeal diseases, incomplete immunization and poor cognitive development in young children [6].

Intervention Approaches

Psycho-educational interventions that promote problem solving, coping skills, role transitions, interpersonal skills, addressing need for support systems, frames a sense of personal agency and help to reframe unhelpful thinking patterns, including cognitive behaviour therapy and interpersonal therapy, have consistently proven effective in the management of common perinatal mental disorders (CPMD) [6].

Several controlled studies have shown the efficacy of various psychotherapeutic methods such as cognitive [7,8], dynamic [8], and interpersonal therapy [9] in the treatment of mild to moderate depression. Both a Cochrane meta analysis [10] and a meta analysis by Cuijpers, et al. [11] of randomized controlled trials of treatments of postpartum depression conclude that both psychosocial and psychological interventions are effective in decreasing depression and have a moderate positive effect in the treatment of postpartum depression [12].

While numerous quantitative methods studies exist exploring effect of psychological and psycho social interventions, this review seeks to identify the same from the recent quantitative evidences. A literature search



and systematic review were therefore conducted with the aim of investigating systematically the evidence surrounding the impact of such interventions on improving women and infant mental health in mothers with postpartum depression.

Methods

Databases including MEDLINE, PubMed, EMBASE, CINAHL, PsycINFO, the British Nursing Index, the Allied and Complementary Medicine database and the Cochrane Central Register were searched over time period 2000-2015 for quantitative studies with the implementation of psycho-social interventions on postpartum depression cases. The search strategy matched the following criteria: (1) Studies describing postpartum depression, (2) Studies presenting interventions for reducing the severity of postpartum depression, (3) Literature published from the year 2000 and (4) Literature published

in English. Exclusion criteria included: (1) Studies with inadequate information on the research methodology, (2) Qualitative and mixed method studies; (3) Studies related to effectiveness of interventions in other postpartum mental illness and (4) Studies showing effectiveness of pharmacotherapy alone in postpartum depression. The selection process is illustrated in [Figure 1](#).

The extracted data were assessed based on the eligibility criteria for all retrieved papers. The quantitative studies were evaluated on the basis of relevance, appropriateness, clarity and methodology as specified by the quality assessment tool for quantitative studies. The relevant articles were studied and the data were extracted. The data so obtained were tabulated and classified as: Author, journal, year of publication, setting, method, sample size, tools and techniques used, intervention used and major findings ([Table 1](#)) [12-23].

Table 1: List of studies included in the review N = 12.

SI No.	Author, Journal Year & Setting	Approach/ Research Design & Sample Size	Tool & Techniques Used	Intervention Used	Major Findings
1	Michael, et al. [12] JAVA Psychiatry 2000 United States	Quantitative Randomized controlled trial 120 postpartum women	SCID ^a , HRSD ^b BDI ^c Postpartum Adjustment Questionnaire Social Adjustment Scale <i>Direct and telephonic interview</i>	Interpersonal psychotherapy (IPT) <i>Control: waiting list group</i>	HRSD scores of women receiving IPT declined from 19.4 to 8.3 waiting list group (19.8 to 16.8). BDI scores of women who received IPT declined from 23.6 to 10.6 over 12 weeks, waiting list group (23.0 to 19.2)
2	Claudia, et al. [13] The Journal of Psychotherapy Practice and Research 2001 Austria	Quantitative- one group pre- test post test method 17 postpartum women with depression	SCID-I ^a , SCID-II ^a HRSD ^b , EPDS ^d , IIP ^e , DAS ^f <i>Direct clinical interview</i>	Interpersonal psychotherapy adapted for group setting in an interactive approach with therapeutic focus	10 of 17 women (58%) demonstrated a full remission (post-treatment score > 9) and the 6-month follow-up were significantly lower than the baseline
3	Rojas, et al. [14] The Lancet Psychiatry 2007 Santiago, Chile	Quantitative randomized controlled trial 230 mothers with major depression	EPDS ^d , MINI ^g , DSM- IV ^a <i>Direct clinical interview</i>	Multi-component intervention (psycho- education, structured pharmaco-therapy, systematic monitoring of clinical progress and treatment compliance) <i>Control: usual care</i>	The decrease in the number of women taking antidepressants after 3 months was greater in the intervention group than in the usual care group (multi- component intervention from 60/101 to 38/106. Usual care from 18/108 to 11/102)
4	Rahman, et al. [15] Child: Care, Health and Development Journal 2008 Pakistan	Quantitative cluster-RCT 903 postpartum women	DSM-IV diagnosis, HRSD ^b , 100 point- brief disability questionnaire, Global assessment of functioning scale <i>Interview method.</i>	Cognitive behavioral therapy: <i>Thinking Healthy Programme</i> through 40 specially trained Lady Health Workers. <i>Control group received routine postnatal visit</i>	Mothers in the intervention group had lower depression scores and lower disability scores at 6 & 12 month time points than did mothers in the control group
5	Tripathy, et al. [16] Lancet Psychiatry 2010 Jharkhand and Orissa	Quantitative cluster-RCT 814 mothers with moderate to severe postpartum depression	Kessler-10 depression scores <i>Interview method</i>	Participatory approach with women group <i>Control: usual home based care</i>	Overall maternal depression reduction in moderate depression was 57% in third year (0.43, 0.23-0.80)

6	Barbara, et al. [17] Annals of Family Medicine 2012 United States	Quantitative RCT 2343 women between 5 and 12 weeks' postpartum	EPDS ^d , PHQ-9 ^h <i>Structured interview technique through telephone and direct contact</i>	Practice-based effectiveness study, (28 practices on diagnosis, follow-up, and management of postpartum depression were randomized intervention (n = 14) group <i>Control: usual care</i>	Among the 654 women, those in the intervention practices had lower depressive symptom levels at 6 ($P = 0.07$) and 12 months' ($P = 0.001$) postpartum
7	Heather, et al. [18] Journal of Affective Disorders 2013 UK	Quantitative RCT 910 women with postnatal depression	EPDS ^d <i>Online questionnaire method</i>	Internet-based behavioral activation (iBA) program. <i>Control: treatment-as- usual (TAU)</i>	Of those who completed 15- week assessment, fewer exceeded the depression cutoff in the Postnatal-iBA group (n = 66/181) compared to TAU (n = 91/162)
8	Horowitz, et al. [19] Journal of Obstetric Gynecologic & Neonatal Nursing 2013 Washington, DC	Quantitative RCT 134 postpartum women and their infants	Mother's Information Tool (MIT), EPDS ^d , PDSS ⁱ , SCID ^a , NCATS ^j <i>Direct clinical interview</i>	Communicating and Relating Effectively (CARE), a relationship- focused behavioral nursing intervention. <i>Control: usual psychiatric medications and follow up</i>	Treatment group (12.15 to 7.19) and control groups (12.53 to 6.40) had significant increase in quality of mother-infant interaction and decrease in depression severity
9	Mahin, et al. [20] Journal of Caring Sciences 2013 Iran	Quantitative Single blind RCT 100 participants (50 in each group)	EPDS ^d <i>Telephone based interview</i>	Peer support programme <i>Control group: routine care</i>	In week 8 after delivery, mean score of depression in control group was reduced from 13.92 to 13.29 but in the intervention group it was reduced from 14.06 to 10.25
10.	Mohammad, et al. [21] Journal of Caring Sciences 2013 Iran	Quantitative RCT 366 postpartum women	EPDS ^d , BDI ^c <i>Pre test by telephone interview and post tests through direct interview</i>	Telephone support programme <i>Control: routine postpartum care</i>	There was no significant difference regarding frequency of depression between the intervention and control groups after the intervention
11.	Fei-Wan, et al. [22] Psycho- therapy and Psychosomatics Journal 2015 China	Quantitative RCT 397 women with depression on the second or third day postpartum	EPDS ^d <i>Pre-test by direct interview method and post-tests through post method</i>	Telephone-administered CBT <i>Control group: usual psychiatric standard care</i>	At 6 weeks postpartum in the subgroups of mothers with minor depression [EPDS 10-12;] 10.86 ± 0.10 (baseline) reduced to 6.94 ± 0.41 ; $p = 0.034$] and major depression (EPDS ≥ 13 ; 14.48 ± 0.15 (baseline) to 8.33 ± 0.66 ; $p < 0.064$)
12.	Hourieh, et al. [23] International Journal of Fertility and Sterility 2015 Iran	Quantitative RCT 54 eligible mothers (n = 27 per group) with mild and moderate depression	EPDS ^d <i>Direct clinical interview</i>	Routine postpartum care plus telephone based support <i>Control: routine postpartum care</i>	Depression scores of the intervention and control groups showed a significant difference after 6 weeks ($p = 0.035$)

SCID^a- The Structured Clinical Interview for DSM; HRSD^b- Hamilton Rating Scale for Depression; BDI^c- The Beck Depression Inventory; EPDS^d- Depression 10-item self-rating scale; IIP^e- Inventory of Interpersonal Problems; DAS^f- Dyadic Adjustment Scale; MINI^g- Mini International Neuropsychiatry Interview; PHQ-9^h -9-item Patient Health Questionnaire; PDCSⁱ- Postpartum Adjustment Questionnaire Social Adjustment Scale; NCATCS^j- Nursing Child Assessment Teaching Scale.

The studies were identified with their setting, method, setting, scales used and sample size. The interventions were described and quantified with duration, number of sessions, facilitator, mode of interventions and techniques used for each intervention. The main components of interventions and suggested recommendations were also noted. The characteristics and main components of the intervention were listed, counting was done and the percentage distribution was calculated. The major

interventions or points for preventing or treating postpartum depression, recommended or suggested were identified, and the studies were categorized in order to determine the percentage distribution.

Results

The sample size varied across different studies from 17 to 6348, with a mean sample of 993.5. Study participants were selected from various settings like postnatal

wards, Primary health centers, Perinatal OPDs', clinics, community programmes, households etc. Subjects included were antenatal and postnatal mothers with a viable pregnancy or newborn. Majority of the studies were large scale studies, used depression scales like Edinburgh Postnatal Depression scale [EPDS (11)], Hamilton-Rating Scale for Depression (21 items) scale (3), Structured Clinical Interview for DSM-IV (5), Kesslers depression scale (1), and postpartum depression screening tool (1) to identify the prevalence and severity of depression in perinatal mothers.

Sample characteristics varied widely across the studies. Majority of the studies cited shows 27.83 as a mean age for the postpartum women, most of them were married (67.6%), unemployed (67.7%), and 37.4 were primi mothers. Depression prevalence was measured by calculating the mean percentage of prevalences of depression among the postpartum mothers (n = 6348) identified in 12 different studies which was 38.6% (mean of the sample was 993.5 and median was 413). The characteristics of the interventions used were reviewed and tabulated (Table 2).

Majority of studies cited that the interventions should consist of at least 6-7 hours (6.55 hrs) of intervention with approximate 10 sessions, can be nurse/trained midwife-driven programme, through telephone (41.6%) or direct group interaction (41.6%). Simple verbal interaction with or without audio-visual aids can be used in the sessions (Table 2).

Volunteer support interventions, interpersonal psychotherapy and cognitive behavioral therapy were the type of interventions the majority of the researchers used (Table 3).

In majority of the studies the main components the interventions dealt with were, infant and child care, breastfeeding, problem solving, use of play and quality time with the infant, immunization and contraception, psycho-education about the illness, role transitions to motherhood, sensory motor stimulation and ways to deal with practical issues (Table 4).

Majority of studies recommended for cost-effective and accessible postnatal care as a routine, follow up practices through telephone, direct education to sup-

Table 2: Characteristics of the interventions N = 12.

SI no.	Characteristics of Intervention	No of studies	Mean %
1	Total duration	< 5 hours	Mean duration 6.55 hours
		5-10 hours	
		10-15 hours	
		> 15 hours	
2	No. of sessions	1-5 sessions	Total Mean = 10 sessions
		6-10 sessions	
		11-20 sessions	
3	Facilitators	Nurse/trained midwife	50%
		Health visitor	16.6%
		Health volunteer	16.6%
		Psychiatrist	8.3%
		Peer mothers	8.3%
4	Mode of intervention	Telephone based	41.6%
		Direct group interaction	41.6%
		Internet based	8.3%
		Direct personal interaction (one to one basis)	8.3%
5	Techniques used are	Simple verbal interaction	83.3%
		Video/audio materials	25%
		Written materials	16.6%
		Picture cards/visual aids	16.6%
		Role play/simulation	16.6%
		Story telling	8.3%

Table 3: Types of interventions for postpartum depression.

SI. No	Types of intervention used	No. of studies	%
1	Volunteer support intervention	3	25%
2	Interpersonal psychotherapy	2	16.6%
3	Cognitive based therapy	2	16.6%
4	Practice based intervention	1	8.3%
5	Behavioral activation treatment	1	8.3%
6	Relationship focused behavioral nursing intervention	1	8.3%
7	Peer support	1	8.3%
8	Group psycho-education	1	8.3%

Table 4: Main Components of interventions.

Sl. no.	Components	No of studies	%
a. Psychological/mental health interventions			
1	Problem solving	5	41.6%
2	Psycho-education about illness	4	33.3%
3	Identification of depressive thoughts	3	25%
4	Behavioral modification	3	25%
5	Decision making	3	25%
6	Communication strategy	3	25%
7	Building alternative solution	3	25%
8	Relation with partner, and family members	3	25%
9	Cognitive restructuring/changing dysfunctional thoughts	3	25%
10	Dealing with interpersonal issues	3	25%
11	Medication adherence	3	25%
12	Relapse prevention	3	25%
13	Interpersonal skills and negotiation	2	16.6%
14	Goal oriented behavior	2	16.6%
15	Functional analysis of support needs	2	16.6%
16	Conflict resolution	2	16.6%
17	Positive coping mechanism	2	16.6%
18	Follow up	2	16.6%
19	Rumination strategy	1	8.3%
20	Contingency planning	1	8.3%
21	Self monitoring	1	8.3%
b. Mother-infant care interventions			
22	Infant/child care	6	50%
23	Breastfeeding	6	50%
24	Play/quality time with infant	5	41.6%
25	Immunization and contraception	5	41.6%
26	Role transition to motherhood	4	33.3%
27	Sensory-motor stimulation	4	33.3%
28	Dealing with practical issues	4	33.3%
29	Postnatal care	3	25%
30	Identification of cues	2	16.6%

porters of new mother, and ensuring the availability of community resources and manpower.

Discussion

The systematic review was undertaken to understand prevalence of depression among postnatal mothers, their socio-demographic profile, the interventions used, the main components incorporated and the interventions recommended for the Common Perinatal Mental Disorders (CPMD).

According to Dennis, et al. the prevalence of perinatal depression is higher in low- and middle-income countries (LMIC), with a mean prevalence 19.8% (95% CI 19.5 to 20.0) postnatally, but in current systematic reviews it is found to be 38.6% [10].

In high income countries, evidence shows that psychosocial and psychological interventions compared with usual postpartum care are effective in reducing perinatal depression, but the study done in India, by Tripathy, et al. [16] proposed a group based intervention by a community based approach, with focus on postnatal care, breastfeeding, infant care, and practical support through problem solving and group psychotherapy techniques found quite effective in Indian setting, both

in reducing maternal depression and improving infant health.

In majority of places in India, where the women live in joint families and crowded households, deliveries will be common, and the interventions involving entire family and community, will be more beneficial for not only the targeted postnatal women but for a number of women in reproductive age. Furthermore, the fear of stigma can make women and their families reluctant to seek care. Along with the concerned areas, the facilitators can explore and correct the myths, misconceptions, and gender stereotypes, prevalent in the community, especially for Indian setting.

In the studies included in this review, health workers integrated the mental health interventions into their regular work activities, which may prove less stigmatizing to women. Maternal mental health and infant development interventions appear to act synergistically and the perinatal period provides an opportunity to deliver them in an integrated fashion.

The studies give an important lesson in terms of intervention which should be culturally sound with components of cognitive, interpersonal, problem solving,

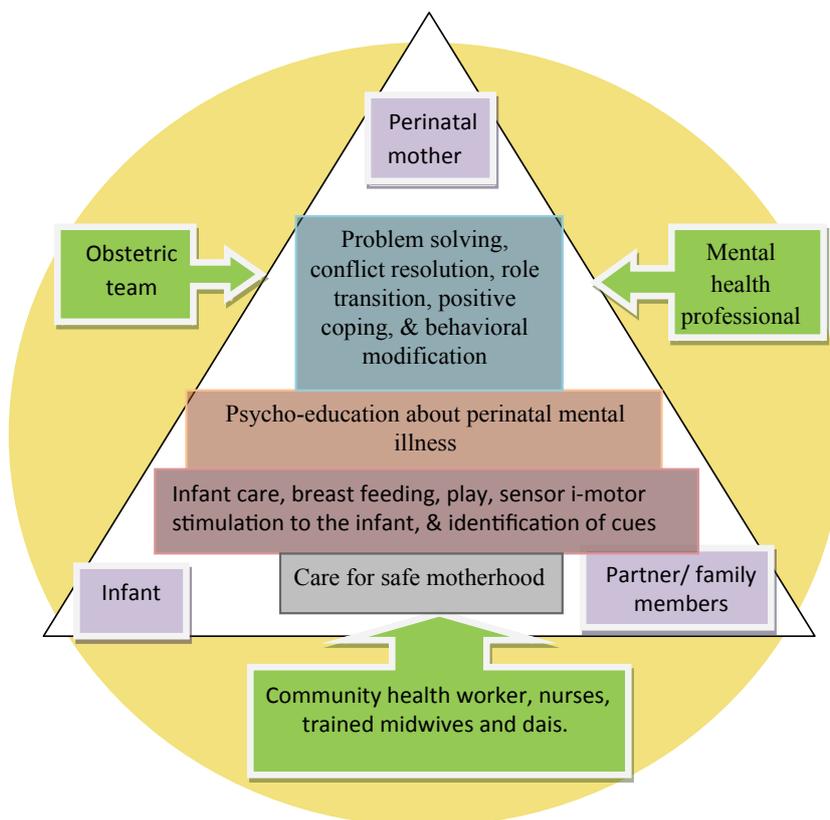


Figure 2: Care model for the mother with perinatal mental illness.

and practical oriented practices that should be administered to individuals or groups. As most of the studies were conducted in the home set up, the interventions can be adapted to the family oriented/partner included approach. A systematic review conducted by Rahman, et al. [24] also suggested the same approach with an explanation that; in settings where women live in multigenerational households, this approach will make it possible to engage the whole family in the common pursuit of caring for the new infant and mother.

From the current review finding, the researcher tried to make a model for caring the perinatal mothers with mental illness. The model ensures integrated approach by including obstetrician, mental health professional, and community health worker/nurses/trained midwives or dais which focuses on care consists of mother-infant- and family member (Figure 2).

Limitations

Limitations are acknowledged. (1) Only 12 articles that satisfied the inclusion-exclusion criteria were available for review. (2) Review was restricted to literature published from the year 2000. (3) Review was restricted to postpartum depression and (4) Review had not included systematic reviews, qualitative studies or mixed method studies.

Conclusion

Perinatal mental illnesses are common and worldwide irrespective of high, middle or low income countries. As the

precipitating or risk factors are child birth, role transitions, and/or related psycho-socio-economic conditions, the prevention strategies should be considered and implemented by integrating perinatal psychiatric component in obstetric care and make it accessible to the community as it is a right of every women to be mentally and physically comfortable before, during and after the child birth. Reviews can be done by including earlier studies also to facilitate an understanding about earlier practices in perinatal mental illness. Qualitative studies also can be included in future studies to explore the subjective experiences of mother in postpartum mental illness in regard to interventions. Reviews can be done in identifying the effectiveness of interventions in other perinatal mental illness to identify the specific interventions for each CPMD's in both partners.

Similar reviews could be an eye-opener for mental health professionals, obstetric professionals, higher authorities, and programme planners to plan and implement suitable and affordable interventions for their country or local community. The added responsibility of mental health professionals is to develop and suggest, culturally sound, affordable practices to promote and maintain safe motherhood and infant health.

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