

MATERNAL MENTAL HEALTH
&
CHILD HEALTH AND DEVELOPMENT

Literature review of risk factors and interventions on
Postpartum Depression

DEPARTMENT OF MENTAL HEALTH AND SUBSTANCE ABUSE



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POSTPARTUM DEPRESSION: LITERATURE REVIEW OF RISK FACTORS AND INTERVENTIONS

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EXECUTIVE SUMMARY

This Postpartum Depression Literature Review of Risk Factors and Interventions, commissioned by Toronto Public Health, is a comprehensive review of the literature from 1990-2002 in four related areas: 1) risk factors for postpartum depression, 2) its detection, prevention and treatment 3) the effects of the illness on the mother- infant relationship and child growth and development and 4) public health interventions and strategies which reduce or mitigate the impact of postpartum depression on the mother-infant relationship and the growth and development of children. This report critically evaluates the literature, lists gaps and formulates conclusions based on the best available current evidence.

OVERALL MESSAGES

Depression is a major public health problem that is twice as common in women as men during the childbearing years. Postpartum depression is defined within this report as an episode of non-psychotic depression according to standardized diagnostic criteria with onset within 1 year of childbirth.

1. RISK FACTORS FOR POSTPARTUM DEPRESSION

Research studies have consistently shown that the following risk factors are strong predictors of postpartum depression: depression or anxiety during pregnancy, stressful recent life events, poor social support and a previous history of depression. Moderate predictors of postpartum depression are childcare stress, low self-esteem, maternal neuroticism and difficult infant temperament. Small predictors include obstetric and pregnancy complications, negative cognitive attributions, single marital status, poor relationship with partner, and lower socioeconomic status including income. No relationship was found for ethnicity, maternal age, level of education, parity, or gender of child (in Western societies).

2. DETECTION, PREVENTION AND TREATMENT

While postpartum depression is a major health issue for many women from diverse cultures, this condition often remains undiagnosed. Although several measures have been created to detect depressive symptomatology in women who have recently given birth, the development of a postpartum depression screening program requires careful consideration. Evidence-based decisions need to be made regarding: (1) the most effective screening test that not only has good sensitivity and specificity, but is quick, easy to interpret, readily incorporated into practice, and culturally sensitive; and (2) health care system issues such as cost-effectiveness, potential harm, and policies for referral. Auspiciously, preliminary research suggests postpartum depression is amenable to treatment interventions thus providing a rationale for the development of a screening program. However, few well-designed randomized controlled trials have been conducted to effectively guide practice and policy recommendations and further research is required before evidence-based programs are widely implemented. One certainty is that there is no single aetiological pathway by which women develop postpartum depression, thus it is improbable that a single preventive/treatment modality will be effective for all women.

3. THE EFFECTS OF THE ILLNESS ON THE MOTHER-INFANT RELATIONSHIP AND CHILD GROWTH AND DEVELOPMENT

Current research suggests that postpartum depression has salient but selective effects on the mother-infant relationship, and child growth and development. Young children of mothers with postpartum depression have greater cognitive, behavioural, and interpersonal problems than children of non-depressed mothers. With regard to emotional growth and development, studies support an early effect of postpartum depression on infant affect, but do not support longer effects. Overall, it is exposure to prolonged episodes of postpartum depression or to recurrent episodes of maternal depression that are most likely to have long term effects on the child.

4. PUBLIC HEALTH INTERVENTIONS AND STRATEGIES WHICH REDUCE OR MITIGATE THE IMPACT OF POSTPARTUM DEPRESSION ON THE MOTHER-INFANT RELATIONSHIP AND THE GROWTH AND DEVELOPMENT OF CHILDREN

The potential adverse effect of postpartum depression upon the maternal-infant relationship and child development reinforces the need for early identification and effective treatment models. Unfortunately, there are few studies of public health interventions that can prevent or mitigate the impact of postpartum depression on these outcomes. A few studies, of variable quality, have explored the impact of interventions such as home visiting, telephone counseling, interactive coaching, group interventions, and massage therapy. The results of these studies are still very preliminary and must be interpreted with caution. Large, well-controlled longitudinal studies that specifically measure maternal-infant relations and child development are required.

METHODOLOGY FOR REVIEW

A critical literature review of English language peer-reviewed publications from 1990-2002 was undertaken by an academic research team at University Health Network Women's Health Program (see pp. 5-8 and Appendix D). A list of search terms, databases, key journals that were hand searched and search strategy is found in Appendices A to D. All relevant articles were critically appraised and their quality graded on levels of evidence and strength of recommendation based on standardized methodology developed by the Canadian Task Force on Preventive Health Care (see pp.7-8).

CAVEATS

Findings in this report are based on studies of variable size and quality which sometimes reach differing conclusions. Most were conducted outside of Canada and need to be interpreted and applied within a Canadian context. Only the studies published since 1990 and in English or with an English abstract were included. A rigorous effort was made through expert opinion and personal contacts to include early seminal studies.

The literature varied in terms of the quality of the sampling procedures employed. Issues of bias selection, lack of randomized frameworks and studies being under-powered to detect effects were common limitations. This may be a reflection of the difficulty in recruiting and retaining large samples for intervention studies, or the difficulty of obtaining longitudinal data on mother-child relationships and child development. The results and recommendations made in this report must be evaluated in the light of a dearth of evidence-based literature.

CONCLUSIONS

Postpartum depression (PPD) is a significant public health problem which affects approximately 13% of women within a year of childbirth. Although rates of depression do not appear to be higher in women in the period after childbirth compared to age matched control women (10-15%), the rates of first onset and severe depression are elevated by at least three-fold. Depression at this critical period of life carries special meanings and risks to the woman and her family. It is possible to identify women with increased risk factors for PPD, but the unacceptably low positive predictive values of all currently available antenatal screening tools make it difficult to recommend them for routine care. Several postpartum screening tools exist but the optimal time for screening and their applicability to multicultural populations are not yet established. Meta-analysis of depression screening programs generally conclude that depression screening must be combined with systemic paths for referral of cases and well defined and implemented care plans to achieve outcome benefits. Unfortunately PPD remains underdiagnosed and undertreated. Research suggests that PPD is amenable to the same treatment interventions as general depression but few randomized controlled trials exist to guide practice and policy for this population.

Evidence exists for short term negative effects of maternal PPD on the emotional, behavioural, cognitive, and interpersonal development of young children, but these appear to be time limited. However, prolonged or recurrent periods of maternal depression appear to be more likely to cause longer term effects on children. Public health interventions to reduce or mitigate the impact of PPD on the mother-infant relationship or growth and development of children are nascent and current evidence makes it difficult to recommend them as standard practice.

NEXT STEPS

This report highlighted a number of gaps in the literature that need to be addressed in future research to develop optimal evidence based policy decisions and service provision. This includes research regarding the best way to prevent, detect and treat postpartum depression and research which examines the sequelae of postpartum depression for the mother and child within diverse ethnic and socioeconomic groups. Large, well-controlled longitudinal studies that specifically measure the effects of promising interventions on the woman, maternal-infant relations and child development are urgently needed.

Next steps in policy and practice include the need for greater awareness among the public and healthcare professionals of postpartum depression and the local resources available for the optimal treatment of women suffering from it. Programs related to prevention, early detection, optimal treatments, and amelioration of the effects of postpartum depression on the mother-infant relationship and child growth and development should be based on sound evidence as it emerges.

OVERALL METHODOLOGICAL FRAMEWORK

PLAN

This critical literature appraisal from 1990 to 2002 was undertaken by academic researchers at University Health Network Women’s Health Program. The multidisciplinary team from a variety of backgrounds, including women’s health, psychiatry, psychology, sociology, public health and nursing, met during the project to compare findings and ensure consistency was maintained throughout the report. This section will describe the methods used by the authors to appraise and synthesize literature pertaining to postpartum depression and its effects on the mother and child.

The review has four related chapters:

CHAPTER	TITLE
1	Risk Factors for Postpartum Depression
2	The Detection, Prevention and Treatment of Postpartum Depression
3	The Effect of Postpartum Depression on the Mother-Infant Relationship and Child Growth and Development
4	Public Health Interventions and Strategies which Reduce or Mitigate the Impact of Postpartum Depression on the Mother-Infant Relationship and the Growth and Development of Children

Overall Inclusion Criteria

- English Language
- 1990 onwards – unless it is a classic or significant piece of work as identified by expert opinion
- Peer reviewed
- Grey literature to identify ongoing or promising programs

Overall Exclusion Criteria

- Maternal depression with an onset greater than 1 year postpartum
- Article not readily available without significant expense and deemed unhelpful (i.e. unpublished dissertation with an abstract that did not add new information and cost over \$100USD each)

- Article not written in English and without an English abstract

Search Terms & Databases Used to Identify Literature

In consultation with Marina Englesakis (MLIS) an Information Specialist in Libraries & Information Services at the University Health Network, the research team identified search terms and strategies which would retrieve articles pertinent to the focus of each chapter (See Appendix A).

The research team searched on-line databases which contain and reflect the medical, nursing, allied health, psychological and social science literature (See Appendix B for a complete list of databases used). They also reviewed references in retrieved articles for any additional papers that met our criteria.

Review of Tables of Contents in Key Journals

Although a thorough literature search of databases should have identified all relevant papers, for completeness we hand-searched the table of contents for 42 key journals for the last two years, to ensure that suitable papers had not been omitted. All relevant papers within these journals were forwarded to the appropriate chapter author. A list of these key journals is given in Appendix C.

Grey Literature

In order to identify work in addition to that published in academic journals (including dissertations and theses) the research team conducted a search of the ‘grey literature’. This included searching for work undertaken and published as reports by governments and charities as well as on-going projects and initiatives. Publications and information from relevant psychiatric, psychological, nursing and medical organizations were also examined. Where relevant, key international researchers were contacted to obtain further information on studies in progress. Information and new contacts were also established through attendance at key meetings, including the Marcé Society Meeting (an international society devoted to the study of postpartum depression).

Critical Evaluation & Appraisal of the Literature

The fundamental principles of critical appraisal were applied to each research study, paper or article by the individual reviewers. A summary of these principles is given below.

An assessment of the quality, relevance and contribution of the study to existing literature
The scientific rigour and appropriateness of study design
Evaluation of bias throughout the research process
Evaluation of statistical methods including data collection, use of statistical tests and reporting of data
Appropriateness of conclusions and recommendations drawn from the study

The differing aims of each chapter necessitated that different aspects of the research would be more pertinent for specific topics. The relevant critical appraisal issues are discussed within each individual chapter.

For Chapters 1 and 3, the most pertinent research issues related to study design, sampling frameworks and the use of standardized measures. Hence, the critical appraisal focused on these areas.

For Chapters 2 and 4 a different methodological framework was used to evaluate the interventions. The approach used was based on the standardized methodology for evaluating the effectiveness of interventions developed by the Canadian Task Force on Preventive Health Care (CTFPHC) (See Table I).

Table I. Quality of Evidence Guidelines from the Canadian Task Force on Preventive Health Care

CLASSIFICATION	RESEARCH DESIGN RATING
I	Evidence from randomized controlled trial(s)
II-1	Evidence from controlled trial(s) without randomization.
II-2	Evidence from cohort or case-control analytic studies, preferably from more than one centre or research group.
II-3	Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940's) could also be included in this category.
III	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

The basic premise of CTFPHC methodology, which has been created and refined in collaboration with the US Preventive Services Task Force, is that recommendations of graded strength are formed on the intervention being evaluated, based on the quality of the published evidence. The greatest weight is placed on the features of the study design and analysis that tend to eliminate or minimize biased results. The strongest evidence comes from well-designed studies with appropriate follow-up that demonstrate that individuals who received the intervention experienced a significantly better overall outcome than those who did not receive the intervention.

Therefore, the hierarchy of evidence places emphasis on study designs that are less vulnerable to bias and errors of inference such as the randomized controlled trial. Having said that, it is important to emphasize that the value of a study is not solely based on the design category to which it can be assigned. A poorly designed randomized controlled trial (RCT) may offer less value to the scientific literature than a very well designed cohort study which is more vulnerable to bias by virtue of inherent qualities in the design. As a result, all studies must be individually appraised for design strengths and weaknesses.

Accordingly, a quality or internal validity rating may also be assigned. “Good” studies (including meta-analyses or systemic reviews) meet all design-specific criteria well. “Fair” studies do not meet (or it is unclear that they meet) at least one design-specific criterion, but have no “fatal flaw”. “Poor” studies have at least one design-specific “fatal flaw” or an accumulation of lesser flaws to the extent that the results of the study are not deemed able to inform recommendations.

Once the strengths and weaknesses of each individual study for each type of intervention were determined, results were synthesized to form a comprehensive body of evidence for that given category of intervention. Finally, each intervention was given a grade based on the grading system developed by the CTFPHC task force (See Table II).

Table II. Classification of Recommendations from the Canadian Task Force on Preventive Health Care

CLASSIFICATION	DESCRIPTION OF EVIDENCE
A	There is good evidence to support the recommendation that the intervention be specifically considered.
B	There is fair evidence to support the recommendation that the intervention be specifically considered.
C	There is conflicting evidence regarding the inclusion or exclusion of the intervention but recommendations may be made on other grounds.
D	There is fair evidence to support the recommendation that the intervention be excluded from consideration.
E	There is good evidence to support the recommendation that the intervention be excluded from consideration.
I	There is insufficient evidence (in quantity and/or quality) to make a recommendation, however other factors may influence decision-making.

Clearly, the strongest recommendations A and E are reserved for interventions whose value is supported or negated by high quality evidence such as type I RCT evidence. In general, type II evidence is associated with B and D recommendations. However, it is important to emphasize that other factors were also considered in the final ranking of the evidence. As duly noted by the task force in their guidelines, there are often many other factors that go beyond the validity of a study’s design that can affect the grade of a recommendation. This will be discussed further in the methods sections of Chapters 2 and 4.

Finally, when there is conflicting evidence, a more conservative recommendation is offered, and this is represented by a C recommendation. This grade means that there is contradictory evidence regarding the intervention and that decision-making must be guided by factors other than the published scientific evidence (CTFPHC). When such a grade is given, it is up to the individual clinician or organization to decide whether or not to implement the intervention, based on both the quality of the evidence and the feasibility and need for the intervention in the defined target population. When there is insufficient evidence in quantity or quality to make a recommendation, an I grade is assigned to the intervention, however other factors may influence decision-making.