This item is the archived peer-reviewed author-version of:

Impact of childhood trauma on postpartum depression : a prospective study

Reference:

De Venter Maud, Smets Jorien, Raes Filip, Wouters Kristien, Franck Erik, Hanssens Myriam, Jacquemyn Yves, Sabbe Bernard, Van Den Eede Filip.- Impact of childhood trauma on postpartum depression : a prospective study
Archives of women's mental health - ISSN 1434-1816 - (2015), p. 1-6
DOI: <http://dx.doi.org/doi:10.1007/s00737-015-0550-z>

Abstract

Objective: Studies on the impact of childhood trauma on postpartum depression show inconsistencies and methodological limitations. The present study examines the effect of childhood trauma on depression 12 and 24 weeks after childbirth, while controlling for history of depression, depression symptoms during pregnancy and type D personality.

Method: During the third trimester of pregnancy, 210 women completed self-report questionnaires assessing depression (current and/or past episodes), childhood trauma and type D personality, of whom 187 participated in the postpartum follow-up, with depression symptoms being reassessed at 12 and 24 weeks after delivery with three depression outcome measures.

Results: Eventually, 183 participants were retained for analysis. Results indicated no predictive value of childhood trauma on postpartum depression in the univariate analyses, nor after controlling for previous depression, depression symptoms during pregnancy and type D personality. However, past depression and depression symptoms during pregnancy did independently and convincingly predict postpartum depression, especially at 12 weeks and to a lesser extent at 24 weeks following childbirth.

Conclusion: Overall, we found no significant association between childhood trauma and postpartum depression. Past depression and depression symptoms during pregnancy are more relevant factors to assess before childbirth.

Keywords

postpartum depression, childhood trauma, major depressive disorder, type D personality

1. Introduction

Postpartum depression, a major depressive episode after childbirth, affects on average 7.1% of women in the first three months after delivery ([Gavin et al. 2005](#); [Robertson et al. 2004](#)). Because of this high prevalence rate and the associated negative consequences for both, mother and child, many studies have been exploring potential risk factors for this condition. The most consistently identified risk factors include previous postpartum depression; a history of depression, anxiety, stress, and depression during pregnancy; personality style; stressful life events; lack of social support; and low self-esteem ([Robertson et al. 2004](#); [Bloch et al. 2006](#); [Dennis et al. 2004](#); [Robertson-Blackmore et al. 2006](#)).

Several studies have suggested childhood trauma to be a predisposing factor for prenatal and postpartum depression ([Meltzer-Brody et al. 2013a](#); [Meltzer-Brody et al. 2013b](#)), but this relationship has to be nuanced. Plaza et al. ([2012](#)) showed that early (24-48h) postpartum depressive symptomatology was significantly related to all assessed types of childhood abuse (physical, emotional and sexual), although only physical abuse remained significantly associated when the other variables were controlled. Furthermore, several authors ([Robertson-Blackmore et al. 2013](#); [Cohen et al. 2002](#)) found no association between childhood abuse and postpartum depression. Seng et al. ([2013](#)) reported in a prospective cohort study that pre-existing major depression disorder and/or PTSD mediated the independent association of childhood maltreatment history with postpartum depression.

The difference in findings between these studies could be due to the timing of the assessment (24-48h after delivery versus 6 weeks to one year postpartum). Moreover, studies generally did not control for variables such as depression symptoms during pregnancy and personality factors, both highly relevant given that exposure to childhood trauma is a well-documented vulnerability factor for depression and tends to interfere with personality development, such as neuroticism and introversion ([Li et al. 2014](#)). Denollet ([2000](#); [2005](#)) concluded that a so-called type D personality, a combination of high negative affectivity and marked social inhibition, is also a risk factor for major depression, but its impact on postpartum depression and its interaction with childhood trauma requires further research. [The lack of consistent results on this topic was also confirmed in a large review article on the association between a history of abuse and perinatal depressive symptoms \(Alvarez-Segura et al. 2014\).](#)

To meet these shortcomings, in the current study we adopted a prospective research design to examine the effect of childhood trauma on depression 12 and 24 weeks postpartum while controlling for a history of depression, depression symptoms during pregnancy, and type D personality. We predicted an effect of childhood trauma on postpartum depression, [even after controlling for the co-factors mentioned above.](#) ~~although this effect could be mediated by one of the co-factors.~~

2. Methods

2.1. Participants

Pregnant women receiving prenatal care in the Belgian University Hospitals of Leuven ($n = 155$) and Antwerp ($n = 55$) were invited to participate. There were three moments of measurement in which participants were asked to fill in a questionnaire booklet: prenatal (during the third trimester of pregnancy; T1) and postpartum: 12 weeks (T2) and 24 weeks (T3) after delivery. The participants were at least 18 years old, fluent in Dutch, had never experienced a (hypo)manic episode, and were in their 24th to 34th week of uncomplicated pregnancy. Of the 210 women, 18 dropped out ahead of time. We excluded the data of one woman who, unfortunately, lost her baby after delivery because our main interest was in depression not acute grief. The data of another eight women was also removed because they did not fully complete the *Traumatic Experiences Checklist* used to assess childhood trauma. The final study sample consisted of 183 women.

2.2. Dependent variables

2.2.1. Edinburgh Postpartum Depression Scale (EPDS) [\(Cox et al. 1987\)](#)

The EPDS is the most widely used 10-item self-report questionnaire specifically developed to assess emotional and cognitive postpartum depression symptoms. It minimizes confounding of somatic symptoms of major depressive disorder with the demands inherent to parenting an infant (e.g. insomnia). [\(Cox et al. 1987; Boyd et al. 2005\)](#) We used the Dutch adaptation [\(Pop et al. 1992\)](#) and participants were asked to fill in the EPDS at T2 and T3. Cronbach's alpha in this sample was 0.85 for the first (EPDS 12w) and 0.86 for the second postpartum measurement (EPDS 24w). We adopted a

cut-off score of 13 points or more ([Matthey et al. 2006](#)), which is based upon the reported receiver operating characteristics found in various studies, and is recommended as it is optimum for the properties of sensitivity (correctly classifying women who meet diagnostic criteria for depression) and specificity (correctly classifying women who do not meet the diagnostic criteria for depression).

2.2.2. Major Depression Questionnaire (MDQ) ([Van der Does et al. 2003](#))

The MDQ is a self-report scale that gauges the presence of past and current major depressive episodes using questions covering DSM-IV criteria ([APA 2000](#)). The MDQ has a good convergent validity with diagnoses based on the Structured Clinical Interview for DSM-IV. We used the original Dutch version ([Van der Does et al. 2003](#)). The data of the MDQ was collected at baseline (T1), 12 (T2) and 24 (T3) weeks postpartum.

2.2.3. Depression Anxiety and Stress Scales (DASS) ([Lovibond and Lovibond 1995](#))

With the DASS-21 respondents can self-assess three negative emotional states over the past week: depression, anxiety, and stress. We only administered the Dutch version of its depression scale ([De Beurs et al. 2001](#)), collected at baseline (T1), 12 (T2) and 24 (T3) weeks postpartum. Cronbach's alpha in this sample was 0.94 for the Depression subscale (DASS-D).

2.3. Independent variable

2.3.1. Traumatic Experiences Checklist (TEC) ([Nijenhuis et al. 2002](#))

The TEC is a Dutch self-report inventory inquiring about 29 potentially traumatic experiences and was measured at baseline (T1). Its format allows the presence and severity of childhood trauma to be assessed using four variables: 1. Presence of the event(s); 2. Duration of the event(s); 3. Relationship to the perpetrator; 4. Subjective response. The variables are given a score of 0 or 1 and scores classified for three age bands in which the event(s) occurred (0-6, 7-12, and 13-18 years). The main outcome variable is the total composite score (continuous), which is the sum of the item scores of five subscales (emotional neglect, emotional abuse, sexual harassment, sexual abuse, and bodily threat). The internal consistency and test-retest reliability of the TEC were shown to be good. ([Nijenhuis et al. 2002](#); [Näring and Nijenhuis 2005](#))

2.4. Covariates

2.4.1. Major Depression Questionnaire (MDQ) [\(Van der Does et al. 2003\)](#)

The MDQ will also serve as a covariate in this study to indicate previous depression.

2.4.2. Type D Personality (DS-14) [\(Denollet 2005\)](#)

The DS-14 is a brief self-report questionnaire to help determine the presence of a type D (distressed) personality. It comprises two 7-item scales, i.e. negative affectivity (NA) and social inhibition (SI), with respondents rating their personality on a 5-point Likert scale. In this sample these scales were internally consistent ($\alpha=0.88$ and 0.86), stable over time (3-month test-retest reliability= 0.72 and 0.82 , respectively), and validated against standard personality scales. Participants were classified as type D based on a cut-off of 10 ($NA \geq 10$ and $SI \geq 10$). The original Dutch version was used.

2.4.3. Depression Anxiety and Stress Scales (DASS) [\(Lovibond and Lovibond 1995\)](#)

The 3rd-trimester depression scores (DASS-D1; T1) will be used as a covariate reflecting depressive symptoms during pregnancy.

2.5. Power and statistical analyses

A sample size of 200 achieves 81% power to detect a correlation of at least .20 at a significance level of .05. Statistical analyses were conducted using SPSS version 22.0. The normality distribution of the variables was checked with Shapiro-Wilk tests and QQ-plots. The continuous variables EPDS at T2 (12 weeks postpartum), EPDS at T3 (24 weeks postpartum), DASS-D-12w and DASS-D-24w were log-transformed to obtain normality. Univariate general linear models and binary logistic regression were used to examine the effect of childhood trauma (TEC) on depression at 12 (T2) and 24 weeks (T3) postpartum. In multivariate analyses, we controlled for the following covariates: history of a major depressive episode (MDQ formerly depressed T1), type D personality (DS-14) and depression symptoms during pregnancy (DASS-D1). Collinearity diagnostics (variance inflation factor) and normality of the residuals was checked for each model. A p -value of $<.05$ was considered significant.

3. Results

The participants' mean age was 30 years ($N=183$; range 19-45). Sample description and clinical characteristics can be found in Table 1. Nineteen per cent had suffered a major depressive disorder at least once in their lifetime (MDQ) and 24.6% had lived through at least one traumatic childhood experience. About 28% showed a type D personality.

The prevalence rates for postpartum depressive disorder were 8.7% at 12 weeks and 7.1% at 24 weeks postpartum (EPDS), which is in line with the existing literature ([Gavin et al. 2005](#)). Correlations among the three measurements of depression (EPDS; MDQ; DASS-D) at 12 and 24 weeks postpartum were significant. Also, childhood trauma was found to be significantly correlated with depression in the past ($r=.22$; $p<.01$), depressive symptoms during pregnancy ($r=.20$; $p<.01$) and type D personality ($r=.18$; $p<.05$). The presence of interaction effects between the predictive variables was also checked, but was non-significant.

Table 2 summarizes the results of the statistical analyses, with each dependent variable shown separately. No significant association between childhood trauma and 12- and 24-week postpartum depression as measured with EPDS, MDQ and DASS-D was found. When analysing the EPDS as a continuous variable in a multivariate model, there was no significant effect of childhood trauma either.

In the multivariate model a past episode of major depression was significantly correlated with depression 12 weeks (EPDS; MDQ) and 24 weeks (MDQ) postpartum. The same is found when considering depression symptoms during pregnancy (T2: EPDS, DASS-D; T3: DASS-D). Type D personality characteristics did predict postpartum depression in the univariate models at T2 and T3 (EPDS and DASS-D), but there was no significant effect in the multivariate models. It seems to be mediated by depression in the past and depression symptoms during pregnancy.

4. Discussion

We investigated the impact of childhood trauma on 12- and 24-weeks postpartum depression in a prospective design while controlling for a history of major depression, depressive symptoms during pregnancy, and type D personality. Results showed no effect of childhood trauma on postpartum depression. Though, our findings are mainly in line with a previous exploratory study showing that childhood trauma is an important risk factor for depression and that depression history can predict postpartum depression ([Cohen et al. 2002](#); [Seng et al. 2013](#)). In addition, Robertson-Blackmore et al. ([2013](#)) reported that childhood sexual abuse predicted antenatal, but not postpartum depression in a prospective, longitudinal cohort study. [A review article on the association between abuse and perinatal depression confirmed that childhood abuse is associated with depressive symptoms during pregnancy, but not during postpartum period \(Alvarez-Segura et al. 2014\).](#)

Some studies did show a significant association between childhood trauma and postpartum depression. Meltzer-Brody et al. ([2013](#)), for instance, recently concluded childhood trauma to be a significant independent risk factor for perinatal depression (EPDS-Lifetime) in a large study population, comparing women with a history of a live birth and histories of major depression with women with a history of a live birth and both histories of major depression and perinatal depression. However, the retrospective nature of their assessment of lifetime perinatal depression affects the solidity of their results.

We found a history of one or more major depressive episodes and depressive symptoms during pregnancy to independently predict postpartum depression, especially at 12 weeks and less consistently at 24 weeks following childbirth. This is in line with other findings in the postpartum depression literature: without fail studies show that having suffered depressive symptoms at any time during their lives, i.e. not solely in relation to childbirth, significantly increases the risk of postpartum and perinatal depression ([Robertson et al. 2004](#); [Robertson-Blackmore et al. 2006](#); [Meltzer-Brody et al. 2013](#)).

The effect of type D personality characteristics on postpartum depression (EPDS and DASS-D at both times) was mediated by past depression and depression symptoms during pregnancy. Previously, Verkerk et al. ([2005](#)) found that personality traits such as neuroticism and introversion are stable determinants of both clinical depression and depression symptoms in the first year postpartum,

but the authors did not control for depression during pregnancy, which may have influenced their results.

Thus, the findings of this analysis challenge some prior evidence that childhood trauma is significantly associated with postpartum depression. Our findings underscore the need for attention for depression in the past and during pregnancy.

The main limitation of the present study is that we exclusively relied on retrospective self-reports of childhood trauma and history of depressive episode(s). Yet, although several studies using retrospective reports of major adverse childhood experiences indeed showed a memory bias, this bias was never sufficiently great to invalidate the reports ([Hardt and Rutter 2004](#)). We furthermore did not control for potentially relevant covariates, such as maternal age, socio-economic status, current stressful life events, re-traumatization in adulthood and partner support ([Verkerk et al. 2005](#); [Milgrom et al. 2008](#)).

In conclusion, our present findings suggest that there is no predictive value of childhood trauma on postpartum depression. A lifetime history of depression and depression symptoms during pregnancy, especially at 12 weeks following childbirth, are more relevant predictors.

Some authors argue that existing guidelines that recommend depression screening during pregnancy or postpartum should be re-considered, but to date there is no consensus on this controversial topic ([Thombs et al. 2014](#); [Chaudron and Wisner 2014](#)). For now, our results underscore the importance of actively screening in the period during pregnancy and postpartum for lifetime major depressive disorder and depression symptoms during pregnancy, if we are to identify women at (increased) risk of depression in the postpartum periods.

Acknowledgments

We would like to thank Dirk Armée for his contribution. We are grateful to the participants for their cooperation in our study. Moreover, we would like to thank the staff of the Departments of Obstetrics and Gynaecology of the Leuven and Antwerp University Hospitals. We also thank E.R.S. Nijenhuis for his permission to use the original Dutch version of the TEC.

Financial support

This work was supported by the Research Foundation - Flanders (FWO; fellowship grant numbers 1176613N and 11322812N) and by AstraZeneca (Grant for Scientific Research).

References

[Alvarez-Segura M, Garcia-Esteve L, Torres A, Plaza A, Imaz ML, Hermida-Barros L, Burtchen N \(2014\) Are women with a history of abuse more vulnerable to perinatal depressive symptoms? A systematic review. Arch Womens Ment Health 17:343-357.](#)

American Psychiatric Association (2000) Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Washington DC: American Psychiatric Press.

Bloch M, Rotenberg N, Koren D, Klein E (2006) Risk factors for early postpartum depressive symptoms. Gen Hosp Psychiatry 28:3-8.

Boyd RC, Le HN, Somberg R (2005) Review of screening instruments for postpartum depression. Arch Womens Ment Health 8:141-153.

Chaudron LH, Wisner KL (2014) Perinatal depression screening: Let's not throw the baby out with the bath water! J Psychosom Res 76:489-491.

Cohen MM, Schei B, Ansara D, Gallop R, Stewart DE (2002) A history of personal violence and postpartum depression: Is there a link? Arch Womens Ment Health 4:83-92.

Cox JL, Holden JM, Sagovsky R (1987) Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. British Journal of Psychiatry 150:782-786.

De Beurs E, van Dyck R, Marquenie LA, Lange A, Blonk R (2001) De DASS: Een vragenlijst voor het meten van depressie, angst en stress. Gedragstherapie 34:35-53.

Dennis CLE, Janssen PA, Singer J (2004) Identifying women at-risk for postpartum depression in the immediate postpartum period. Acta Psychiatr Scand 110:338-346.

Denollet JKL (2000) Type D personality: A potential risk factor refined. *Journal of psychosomatic research* 49:255-266.

Denollet JKL (2005) DS14: Standard Assessment of Negative Affectivity, Social Inhibition, and Type D personality. *Psychosomatic Medicine* 67:89-97.

Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T (2005) Perinatal depression: a systematic review of prevalence and incidence. *Am J Obstet Gynecol* 106:1071-1083.

Hardt J, Rutter M (2004) Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of child psychology and psychiatry* 45:260-273.

Li X, Wang Z, Hou Y, Wang Y, Liu J, Wang C (2014) Effects of childhood trauma on personality in a sample of Chinese adolescents. *Child Abuse & Neglect* 38:788-796.

Lovibond SH, Lovibond PF (1995) *Manual for the Depression Anxiety Stress Scales*. 2nd ed. Sydney: Psychology Foundation.

Matthey S, Henshaw C, Elliott S, Barnett B (2006) Variability in use of cut-off scores and formats on the Edinburgh Postnatal Depression Scale: Implications for clinical and research practice. *Arch Womens Ment Health* 9:309-315.

Meltzer-Brody S, Bledsoe-Mansori SE, Johnson N, Killian C, Hamer RM, Jackson C, Wessel J, Thorp J (2013a) A prospective study of perinatal depression and trauma history in pregnant minority adolescents. *Am J Obstet Gynecol* 208:211.e1-211.e7.

Meltzer-Brody S, Boschloo L, Jones I, Sullivan PF, Penninx BW (2013b) The EPDS-Lifetime: assessment of lifetime prevalence and risk factors for perinatal depression in a large cohort of depressed women. *Arch Womens Ment Health* 16:465-473.

Milgrom J, Gemmill AW, Bilszta JL, Hayes B, Barnett B, Brooks J, Ericksen J, Ellwood D, Buist A (2008) Antenatal risk factors for postnatal depression: A large prospective study. *J Affect Disord* 108:147-157.

Näring G, Nijenhuis ERS (2005) Relationships between self-reported potentially traumatizing events, psychoform and somatoform dissociation, and absorption, in two non-clinical populations. *Australian and New Zealand Journal of Psychiatry* 39:982-988.

Nijenhuis ERS, Van der Hart O, Kruger K (2002) The psychometric characteristics of the traumatic experiences checklist (TEC): first findings among psychiatric outpatients. *Clinical psychology and psychotherapy* 9:200-210.

Plaza A, Garcia-Esteve L, Torres A, Ascaso C, Gelabert E, Imaz ML, Navarro P, Valdès M, Martin-Santos R (2012) Childhood physical abuse as a common risk factor for depression and thyroid dysfunction in the earlier postpartum. *Psychiatry Research* 200:329-335.

Pop VJ, Komproe IH, van Son MJ (1992) Characteristics of the Edinburgh Postnatal Depression Scale in the Netherlands. *J Affect Disord* 26:105-110.

Robertson E, Grace S, Wallington T, Stewart DE (2004) Antenatal risk factors for postpartum depression: A synthesis of recent literature. *Gen Hosp Psychiatry* 26:289-295.

Robertson-Blackmore E, Carroll J, Reid A, Biringer A, Glazier RH, Midmer D, Permaul JA, Stewart DE (2006) The use of the Antenatal Psychosocial Health Assessment (ALPHA) Tool in the detection of psychosocial risk factors for postpartum depression: a randomized controlled trial. *J Obstet Gynaecol Can* 28:873-878.

Robertson-Blackmore E, Putnam FW, Rubinow DR, Matthieu M, Hunn JE, Putnam KT, Moynihan JA, O'Connor TG (2013) Antecedent trauma exposure and risk of depression in the perinatal period. *J Clin Psychiatry* 74:942-948.

Seng JS, Sperlich M, Kane Low L, Ronis DL, Muzik M, Liberzon I (2013) Childhood abuse history, posttraumatic stress disorder, postpartum mental health and bonding: A prospective cohort study. *J Midwifery Womens Health* 58:57-68.

Thombs BD, Arthurs E, Coronado-Montoya S, Roseman M, Delisle VC, Leavens A, Levis B, Azoulay L, Smith C, Ciofani L, Coyne JC, Feeley N, Gilbody S, Schinazi J, Stewart DE, Zekowitz P (2014) Depression screening and patient outcomes in pregnancy or postpartum: a systematic review. *J Psychosom Res* 76:433-446.

Van der Does AJW, Barnhofer T, Williams JMG (2003) The Major Depression Questionnaire (MDQ). Available from: <http://www.douza.nl/publications>.

Verkerk GJM, Denollet J, Heck GL, van Son MJM, Pop VJM (2005) Personality Factors as Determinants of Depression in Postpartum Women: A Prospective 1-Year Follow-up Study. *Psychosomatic Medicine* 67:632-637.