**The humanistic burden of postpartum depression: a systematic literature review**

Supplemental Appendix

## Appendix A. Search Strategy

### MEDLINE

Via Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

|  |  |
| --- | --- |
| # | Search terms |
| 1 | exp Depression, Postpartum/ |
| 2 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).ab,ti. |
| 3 | 1 or 2 |
| 4 | Animals/ not Humans/ |
| 5 | 3 not 4 |
| 6 | limit 5 to english language |
| 7 | limit 6 to yr="2012 -Current" |
| 8 | quality of life.ti. |
| 9 | patient reported outcome.ab,ti. |
| 10 | ((disease or patient or caregiver) adj2 burden).ab,ti. |
| 11 | exp "Activities of Daily Living"/ |
| 12 | (Edinburgh Postnatal Depression Scale or EPDS or Hamilton Depression Rating Scale or HAM-D or Center for Epidemiological Studies Depression or CES-D or CESD or Beck Depression Inventory or BDI or Patient Health Questionnaire or PHQ or Montgomery-Asberg Depression Rating Scale or MADRS).ab,ti. |
| 13 | or/8-12 |
| 14 | 7 and 13 |
| 15 | limit 14 to (case reports or comment or editorial or letter) |
| 16 | 14 not 15 |
| 17 | limit 16 to "review" |
| 18 | limit 16 to (meta analysis or systematic reviews) |
| 19 | 17 not 18 |
| 20 | 16 not 19 |

### Embase

Via Ovid Embase 1974 to 2018 Week 07

|  |  |
| --- | --- |
| # | Search terms |
| 1 | exp puerperal depression/ |
| 2 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).ab,ti. |
| 3 | 1 or 2 |
| 4 | animal/ not human/ |
| 5 | 3 not 4 |
| 6 | limit 5 to (conference abstract or conference paper or conference proceeding) |
| 7 | 5 not 6 |
| 8 | limit 7 to english language |
| 9 | limit 8 to yr="2012 -Current" |
| 10 | quality of life.ti. |
| 11 | patient reported outcome.ab,ti. |
| 12 | ((disease or patient or caregiver) adj2 burden).ab,ti. |
| 13 | exp daily life activity/ |
| 14 | (Edinburgh Postnatal Depression Scale or EPDS or Hamilton Depression Rating Scale or HAM-D or Center for Epidemiological Studies Depression or CES-D or CESD or Beck Depression Inventory or BDI or Patient Health Questionnaire or PHQ or Montgomery-Asberg Depression Rating Scale or MADRS).ab,ti. |
| 15 | or/10-14 |
| 16 | 9 and 15 |
| 17 | limit 16 to (editorial or letter) |
| 18 | 16 not 17 not case report.mp. |
| 19 | limit 18 to "review" |
| 20 | limit 18 to (meta analysis or "systematic review") |
| 21 | 19 not 20 |
| 22 | 18 not 21 |

### PsycINFO

Via Ovid PsycINFO 1806 to February Week 1 2018

|  |  |
| --- | --- |
| # | Search terms |
| 1 | exp Postpartum Depression/ |
| 2 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).ab,ti. |
| 3 | 1 or 2 |
| 4 | limit 3 to (all journals and human and english language) |
| 5 | limit 4 to yr="2012 -Current" |
| 6 | quality of life.ti. |
| 7 | patient reported outcome.ab,ti. |
| 8 | ((disease or patient or caregiver) adj2 burden).ab,ti. |
| 9 | exp "Activities of Daily Living"/ |
| 10 | (Edinburgh Postnatal Depression Scale or EPDS or Hamilton Depression Rating Scale or HAM-D or Center for Epidemiological Studies Depression or CES-D or CESD or Beck Depression Inventory or BDI or Patient Health Questionnaire or PHQ or Montgomery-Asberg Depression Rating Scale or MADRS).ab,ti. |
| 11 | or/6-10 |
| 12 | 5 and 11 |
| 13 | limit 12 to ("comment/reply" or letter) |
| 14 | 12 not 13 |

### Cochrane

Via Ovid Cochrane Central Register of Controlled Trials March 2017 and Cochrane Database of Systematic Reviews 2005 to May 4, 2017

|  |  |
| --- | --- |
| # | Search terms |
| 1 | exp Depression, Postpartum/ |
| 2 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).ab,ti. |
| 3 | 1 or 2 |
| 4 | Animals/ not Humans/ |
| 5 | 3 not 4 |
| 6 | limit 5 to english language |

### HTA Database

Via Ovid Health Technology Assessment 4th Quarter 2016

|  |  |
| --- | --- |
| # | Search terms |
| 1 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).mp. |

### NHS EED

Via Ovid NHS Economic Evaluation Database 1st Quarter 2016

|  |  |
| --- | --- |
| # | Search terms |
| 1 | ((postpartum or post partum or post-partum or birth or maternal or perinatal) adj2 depress\*).mp. |

### EconLit

Via EBSCO

|  |  |
| --- | --- |
| # | Search terms |
| 1 | postpartum depression |
| 2 | peripartum depression |
| 3 | maternal depression |
| 4 | S1 OR S2 OR S3; Limiters - Published Date: 20120101-20161231 |

### Congress abstracts

Searches of 2016–2018 congress abstracts for the following:

* American Academy of Pediatrics (AAP)
* American College of Obstetrics and Gynecology (ACOG)
* Academy of Managed Care Pharmacy (AMCP)
* American Psychiatric Association (APA)
* American Society of Health-Systems Pharmacists (ASHP)
* College of Psychiatric and Neurologic Pharmacists (CPNP)
* International Society for Pharmacoeconomics and Outcomes Research (ISPOR; all locations)
* Postpartum Support International (PSI)

### Clinical Trial Registries

* ClinicalTrials.gov
* International Standard Randomised Controlled Trial Number Register
* International Clinical Trials Registry Platform (WHO)

### Patient Support/Advocacy Websites

* Postpartumprogress.org
* Postpartum.net
* Postpartumhealthalliance.org

### Other HTA and Regulatory Sites

* NICE
* CADTH
* PBAC
* INAHTA
* European Medicines Agency
* US Food and Drug Administration

## Appendix B. Inclusion and Exclusion Criteria

|  |  |  |
| --- | --- | --- |
|  | **Inclusion Criteria** | **Exclusion Criteria** |
| **Population** | Females ≥ 15 years of age  Patients with PPD1 | Females < 15 years old  Patients without PPDa or studies evaluating patients with postpartum psychosis only |
| **Intervention** | Any or none | No restrictions |
| **Comparator** | Any or none | No restrictions |
| **Outcomes**  **/Measures** | Quality of life measures as assessed using different questionnaires/tools (e.g. HAMD, MADRS, CGI, EPDS, GAD-7, PHQ-9, BIMF, SF-36, EQ-5D)  Downstream effects of PPD on children (e.g. bonding, growth, development, cognition, etc.) or on spouses (e.g. bonding, relationship conflict, etc.) | No outcomes listed in inclusion criteria. |
| **Study Design** | Interventional or observational studies assessing humanistic burden of PPD | Studies not assessing humanistic burden of PPD |
| **Language** | English only | Non-English |
| **Other** | Minimum N = 300  Published 2012 or later | N < 300  Published prior to 2012 |
| aFor this systematic literature review PPD includes patients described as having postpartum depression, postnatal depression, or perinatal depression.  BIMF, Barkin index of maternal functioning; CGI,Clinical Global Impression; EPDS,Edinburgh Postnatal Depression Scale; EQ-5D, EuroQol five dimension questionnaire; GAD-7, generalized anxiety disorder-7 item scale; HAMD, Hamilton depression rating scale; MADRS, Montgomery–Åsberg Depression Rating Scale; PHQ-9, patient health questionnaire-9; PPD, postpartum depression; SF-36, 36-item short form survey. | | |

## Appendix C. Quality Assessment Checklist

|  |  |  |
| --- | --- | --- |
| Quality Assessment of the Relevance and Credibility of Prospective and Retrospective Observational Studies[1] | | |
|  | **Study Question** | **Study Assessment** |
|  | ***Study Relevance*** |  |
| 1 | Is the population relevant? | Yes, No, NA, not clear |
| 2 | Are any relevant interventions missing? | Yes, No, NA, not clear |
| 3 | Are the outcomes relevant? | Yes, No, NA, not clear |
| 4 | Is the context (settings and practice patterns) applicable? | Yes, No, NA, not clear |
|  | ***Study Credibility - Design*** |  |
| 5 | Were the study hypotheses or goals prespecified a priori?? | Yes, No, NA, not clear |
| 6 | If one or more comparison groups were used, were they concurrent comparators or did they justify the use of historical comparison group(s)? | Yes, No, NA, not clear |
| 7 | Was there evidence that a formal study protocol including an analysis plan was specified before executing the study? | Yes, No, NA, not clear |
| 8 | Were sample size and statistical power to detect differences addressed? | Yes, No, NA, not clear |
| 9 | Was a study design used to minimize or account for confounding? | Yes, No, NA, not clear |
| 10 | Was the follow-up period of sufficient duration to detect differences addressed? | Yes, No, NA, not clear |
| 11 | Were the sources, criteria, and methods for selecting participants appropriate to address the study questions/hypotheses? | Yes, No, NA, not clear |
| 12 | Were the study groups selected so that comparison groups would be sufficiently similar to each other (e.g., either by restriction or recruitment based on the same indications for treatment)? | Yes, No, NA, not clear |
|  | ***Study Credibility - Data*** |  |
| 13 | Were the data source sufficient to support the study? | Yes, No, NA, not clear |
| 14 | Was exposure defined and measured in a valid way? | Yes, No, NA, not clear |
| 15 | Were the primary outcomes defined and measured in a valid way? | Yes, No, NA, not clear |
| 16 | Was the follow-up time similar among comparison groups or were the differences in follow-up accounted for in the analyses? | Yes, No, NA, not clear |
|  | ***Study Credibility - Analyses*** |  |
| 17 | Was there a thorough assessment of potential measured and unmeasured confounders? | Yes, No, NA, not clear |
| 18 | Were analyses of subgroups or interaction effects reported for comparison groups? | Yes, No, NA, not clear |
| 19 | Were sensitivity analyses performed to assess the effect of key assumptions or definitions on outcomes? | Yes, No, NA, not clear |
|  | ***Study Credibility - Reporting*** |  |
| 20 | Was the number of individuals screened or selected at each stage of defining the final sample reported? | Yes, No, NA, not clear |
| 21 | Were the descriptive statistics of the study participants adequately reported? | Yes, No, NA, not clear |
| 22 | Did the authors describe the key components of their statistical approaches? | Yes, No, NA, not clear |
| 23 | Were confounder-adjusted estimates of treatment effects reported? | Yes, No, NA, not clear |
| 24 | Did the authors describe the statistical uncertainty of their findings? | Yes, No, NA, not clear |
| 25 | Was the extent of missing data reported? | Yes, No, NA, not clear |
| 26 | Were absolute and relative measures of treatment effect reported? | Yes, No, NA, not clear |
|  | ***Study Credibility - Interpretation*** |  |
| 27 | Were the results consistent with prior known information or if not was an adequate explanation provided? | Yes, No, NA, not clear |
| 28 | Are the observed treatment effects considered clinically meaningful? | Yes, No, NA, not clear |
| 29 | Are the conclusions supported by the data and analysis presented? | Yes, No, NA, not clear |
| 30 | Was the effect of unmeasured confounding discussed? | Yes, No, NA, not clear |
|  | ***Study Credibility - Conflicts of Interest*** |  |
| 31 | Were there any potential conflicts of interest? | Yes, No, NA, not clear |
| 32 | If there were potential conflicts of interest, were steps taken to address these? | Yes, No, NA, not clear |
| NA, not applicable. | | |

## Appendix D. Quality Assessment Results

Quality Assessment of the Relevance and Credibility of Prospective and Retrospective Observational Studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Study Relevance | | | | Study Credibility - Design | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Pearson et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | yes | yes | yes | yes | yes |
| Abbasi et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Cheng et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Eastwood et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | NA |
| Evans et al. 2012 | yes | NA | yes | yes | yes | yes | not clear | no | yes | NA | yes | yes |
| Gagliardi et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Garcia-Esteve et al. 2016 | yes | NA | yes | yes | yes | yes | not clear | no | not clear | NA | yes | yes |
| Hanington et al. 2011 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Jain et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | yes | not clear | NA | yes | yes |
| Kawai et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | no | yes | yes | yes | yes |
| Kerstis et al. 2016b | yes | NA | yes | yes | yes | yes | not clear | no | not clear | NA | yes | yes |
| Kerstis et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | yes | not clear | NA | yes | yes |
| Kerstis et al. 2016a | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Koutra et al. 2013 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| Leahy-Warren et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | yes | not clear | NA | yes | yes |
| Lilja et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Moe et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| Nishimura et al. 2015 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Ohoka et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Rossen et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | not clear |
| Sadat et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| Safadi et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | yes | not clear | NA | yes | yes |
| Savage-McGlynn et al. 2015 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Silva et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | yes | yes | NA | yes | yes |
| Surkan et al. 2014 | yes | NA | yes | yes | yes | yes | not clear | no | not clear | NA | yes | yes |
| Valla et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| van der Waerden et al. 2015 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| Verkuijl et al. 2014 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | yes | yes | yes |
| Vismara et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Woolhouse et al. 2016a | yes | NA | yes | yes | not clear | yes | not clear | no | yes | yes | yes | yes |
| Woolhouse et al. 2016b | yes | NA | yes | yes | yes | yes | not clear | no | yes | yes | yes | yes |
| Yamaoka et al. 2016 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Yoshida et al. 2012 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Kaneko et al. 2014 | yes | NA | yes | yes | yes | yes | not clear | no | not clear | NA | yes | yes |
| Morais et al. 2013 | yes | NA | yes | yes | not clear | yes | not clear | no | not clear | NA | yes | yes |
| Piteo et al. 2012 | yes | NA | yes | yes | yes | yes | not clear | not clear | yes | yes | yes | yes |
| Balbierz et al. 2015 | yes | NA | yes | yes | yes | yes | not clear | not clear | yes | NA | yes | yes |
| Closa-Monasterolo et al. 2017 | yes | NA | yes | yes | yes | yes | not clear | not clear | yes | yes | yes | yes |
| Flynn et al. 2017 | yes | NA | yes | yes | yes | yes | not clear | no | yes | NA | yes | yes |
| Wolford et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | not clear | yes | yes | yes | yes |
| Koutra et al. 2017 | yes | NA | yes | yes | yes | yes | not clear | no | yes | yes | yes | yes |
| Goyal et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | yes | not clear | no | yes | yes |
| Abdollahi et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | yes | yes | yes | yes | yes |
| Haga et al. 2017 | yes | NA | yes | yes | yes | yes | not clear | not clear | not clear | yes | yes | yes |
| Junge et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | no | yes | yes | yes | yes |
| Koukounari et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | not clear | not clear | yes | yes | yes |
| Netsi et al. 2018 | yes | NA | yes | yes | yes | yes | not clear | no | yes | yes | yes | yes |
| El-Heis et al. 2017 | yes | NA | yes | yes | not clear | yes | not clear | no | yes | yes | yes | yes |
| NA, not applicable. | | | | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Study Credibility - Data | | | | Study Credibility - Analyses | | | Study Credibility - Reporting | | | | | | |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| Pearson et al. 2014 | yes | NA | yes | yes | not clear | no | yes | not clear | no | yes | NA | yes | yes | NA |
| Abbasi et al. 2014 | not clear | NA | yes | yes | no | no | no | no | yes | yes | NA | yes | not clear | NA |
| Cheng et al. 2016 | yes | NA | yes | yes | no | no | yes | no | yes | yes | NA | yes | yes | NA |
| Eastwood et al. 2012 | yes | NA | yes | yes | no | no | no | no | no | yes | NA | yes | not clear | NA |
| Evans et al. 2012 | yes | NA | yes | yes | not clear | no | yes | yes | yes | yes | NA | yes | yes | NA |
| Gagliardi et al. 2012 | yes | NA | yes | yes | no | no | no | yes | no | no | NA | yes | not clear | NA |
| Garcia-Esteve et al. 2016 | yes | NA | yes | yes | no | yes | no | no | yes | yes | NA | yes | not clear | NA |
| Hanington et al. 2011 | yes | NA | yes | yes | not clear | no | no | no | yes | yes | NA | yes | not clear | NA |
| Jain et al. 2014 | yes | NA | yes | yes | no | yes | no | no | yes | no | NA | yes | not clear | NA |
| Kawai et al. 2017 | yes | NA | yes | yes | not clear | no | no | yes | yes | no | NA | yes | yes | NA |
| Kerstis et al. 2016b | yes | NA | yes | yes | not clear | yes | yes | no | no | yes | NA | yes | not clear | NA |
| Kerstis et al. 2012 | yes | NA | yes | yes | no | yes | no | yes | no | yes | NA | not clear | yes | NA |
| Kerstis et al. 2016a | yes | NA | yes | yes | no | no | no | yes | yes | yes | NA | yes | not clear | NA |
| Koutra et al. 2013 | yes | NA | yes | yes | not clear | no | yes | no | yes | yes | NA | yes | not clear | NA |
| Leahy-Warren et al. 2012 | yes | NA | yes | yes | no | no | no | no | no | yes | NA | yes | not clear | NA |
| Lilja et al. 2012 | yes | NA | yes | yes | no | yes | no | yes | yes | yes | NA | yes | not clear | NA |
| Moe et al. 2016 | yes | NA | yes | yes | no | no | no | no | yes | yes | NA | yes | yes | NA |
| Nishimura et al. 2015 | yes | NA | yes | yes | no | no | yes | yes | yes | yes | NA | yes | not clear | NA |
| Ohoka et al. 2014 | yes | NA | yes | yes | no | yes | no | no | no | no | NA | not clear | not clear | NA |
| Rossen et al. 2016 | yes | NA | yes | yes | not clear | no | no | no | yes | yes | NA | not clear | yes | NA |
| Sadat et al. 2014 | yes | NA | yes | yes | no | no | no | yes | yes | yes | NA | not clear | not clear | NA |
| Safadi et al. 2016 | yes | NA | yes | yes | no | no | no | no | yes | no | NA | not clear | not clear | NA |
| Savage-McGlynn et al. 2015 | yes | NA | yes | yes | no | yes | no | yes | yes | yes | NA | yes | yes | NA |
| Silva et al. 2016 | yes | NA | yes | yes | not clear | yes | no | no | yes | yes | NA | yes | not clear | NA |
| Surkan et al. 2014 | yes | NA | yes | yes | no | no | yes | yes | yes | yes | NA | yes | yes | NA |
| Valla et al. 2016 | yes | NA | yes | yes | no | no | no | yes | yes | yes | NA | yes | yes | NA |
| van der Waerden et al. 2015 | yes | NA | yes | yes | no | no | no | no | yes | yes | NA | yes | yes | NA |
| Verkuijl et al. 2014 | yes | NA | yes | yes | not clear | no | no | no | yes | yes | NA | yes | yes | NA |
| Vismara et al. 2016 | yes | NA | yes | yes | no | yes | no | no | yes | yes | NA | yes | not clear | NA |
| Woolhouse et al. 2016a | yes | NA | yes | yes | not clear | no | no | no | yes | yes | NA | yes | yes | NA |
| Woolhouse et al. 2016b | yes | NA | yes | yes | not clear | yes | no | yes | yes | yes | NA | yes | yes | NA |
| Yamaoka et al. 2016 | yes | NA | yes | yes | not clear | yes | no | yes | yes | yes | NA | yes | yes | NA |
| Yoshida et al. 2012 | yes | NA | yes | yes | no | no | no | yes | no | yes | NA | not clear | not clear | NA |
| Kaneko et al. 2014 | yes | NA | yes | yes | no | no | no | no | no | yes | NA | not clear | not clear | NA |
| Morais et al. 2013 | yes | NA | yes | yes | no | no | no | no | yes | no | NA | not clear | not clear | NA |
| Piteo et al. 2012 | yes | NA | yes | yes | no | not clear | no | not clear | yes | yes | NA | yes | yes | yes |
| Balbierz et al. 2015 | yes | NA | yes | NA | yes | yes | no | no | yes | yes | NA | yes | yes | NA |
| Closa-Monasterolo et al. 2017 | yes | NA | no | yes | yes | yes | no | yes | yes | yes | NA | not clear | yes | NA |
| Flynn et al. 2017 | yes | NA | no | NA | yes | yes | no | yes | yes | yes | NA | yes | yes | NA |
| Wolford et al. 2017 | yes | NA | yes | yes | yes | yes | yes | yes | yes | yes | NA | yes | yes | NA |
| Koutra et al. 2017 | yes | NA | yes | yes | yes | yes | yes | yes | yes | yes | NA | yes | yes | NA |
| Goyal et al. 2017 | yes | NA | yes | yes | yes | yes | no | yes | no | yes | NA | not clear | no | NA |
| Abdollahi et al. 2017 | yes | NA | yes | yes | yes | no | no | yes | yes | yes | NA | yes | not clear | NA |
| Haga et al. 2017 | yes | NA | yes | yes | yes | not clear | no | yes | yes | yes | NA | yes | yes | NA |
| Junge et al. 2017 | yes | NA | yes | yes | yes | no | no | yes | yes | yes | NA | yes | yes | NA |
| Koukounari et al. 2017 | yes | NA | yes | yes | no | no | no | no | no | yes | NA | yes | yes | NA |
| Netsi et al. 2018 | yes | NA | yes | yes | no | yes | no | no | no | yes | NA | yes | not clear | NA |
| El-Heis et al. 2017 | yes | NA | yes | yes | yes | no | yes | yes | yes | yes | NA | yes | yes | NA |
| NA, not applicable. | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Study | Study Credibility - Interpretation | | | | Study Credibility - Conflict of Interest | |
| 27 | 28 | 29 | 30 | 31 | 32 |
| Pearson et al. 2014 | not clear | NA | yes | yes | no | NA |
| Abbasi et al. 2014 | yes | NA | yes | no | no | NA |
| Cheng et al. 2016 | yes | NA | yes | no | no | NA |
| Eastwood et al. 2012 | yes | NA | yes | no | no | NA |
| Evans et al. 2012 | yes | NA | yes | yes | no | NA |
| Gagliardi et al. 2012 | yes | NA | yes | no | no | NA |
| Garcia-Esteve et al. 2016 | yes | NA | yes | no | not clear | NA |
| Hanington et al. 2011 | yes | NA | yes | no | no | NA |
| Jain et al. 2014 | yes | NA | yes | no | no | NA |
| Kawai et al. 2017 | yes | NA | yes | no | no | NA |
| Kerstis et al. 2016b | yes | NA | yes | no | no | NA |
| Kerstis et al. 2012 | yes | NA | yes | no | no | NA |
| Kerstis et al. 2016a | yes | NA | yes | no | not clear | NA |
| Koutra et al. 2013 | yes | NA | yes | no | no | NA |
| Leahy-Warren et al. 2012 | yes | NA | yes | no | no | NA |
| Lilja et al. 2012 | yes | NA | yes | no | not clear | NA |
| Moe et al. 2016 | yes | NA | yes | no | not clear | NA |
| Nishimura et al. 2015 | yes | NA | yes | no | no | NA |
| Ohoka et al. 2014 | yes | NA | yes | no | no | NA |
| Rossen et al. 2016 | yes | NA | yes | no | no | NA |
| Sadat et al. 2014 | yes | NA | yes | yes | no | NA |
| Safadi et al. 2016 | yes | NA | yes | no | no | NA |
| Savage-McGlynn et al. 2015 | yes | NA | yes | no | no | NA |
| Silva et al. 2016 | yes | NA | yes | no | no | NA |
| Surkan et al. 2014 | yes | NA | yes | no | no | NA |
| Valla et al. 2016 | yes | NA | yes | no | no | NA |
| van der Waerden et al. 2015 | yes | NA | yes | no | no | NA |
| Verkuijl et al. 2014 | yes | NA | yes | yes | no | NA |
| Vismara et al. 2016 | yes | NA | yes | no | no | NA |
| Woolhouse et al. 2016a | yes | NA | yes | no | no | NA |
| Woolhouse et al. 2016b | yes | NA | yes | no | no | NA |
| Yamaoka et al. 2016 | yes | NA | yes | no | not clear | NA |
| Yoshida et al. 2012 | yes | NA | yes | no | no | NA |
| Kaneko et al. 2014 | yes | NA | yes | no | no | NA |
| Morais et al. 2013 | yes | NA | yes | no | not clear | NA |
| Piteo et al. 2012 | yes | NA | yes | no | yes | not clear |
| Balbierz et al. 2015 | yes | NA | yes | no | no | NA |
| Closa-Monasterolo et al. 2017 | yes | NA | yes | yes | no | NA |
| Flynn et al. 2017 | yes | NA | yes | yes | no | NA |
| Wolford et al. 2017 | yes | NA | yes | yes | no | NA |
| Koutra et al. 2017 | yes | NA | yes | yes | not clear | NA |
| Goyal et al. 2017 | yes | NA | yes | yes | no | NA |
| Abdollahi et al. 2017 | yes | NA | yes | yes | not clear | NA |
| Haga et al. 2017 | yes | NA | yes | yes | no | NA |
| Junge et al. 2017 | yes | NA | yes | yes | no | NA |
| Koukounari et al. 2017 | yes | NA | yes | yes | no | NA |
| Netsi et al. 2018 | yes | NA | yes | yes | no | NA |
| El-Heis et al. 2017 | yes | NA | yes | yes | not clear | NA |
| NA, not applicable. | | | | | | |

## Appendix E. Supplementary Tables

Table S1. Detailed summary of characteristics for included studies reporting the humanistic burden of PPD

| Author, year | Country | Population | Sample size | Follow-up duration | Definition of PPD | Outcomes of interest measured |
| --- | --- | --- | --- | --- | --- | --- |
| ***RCTs*** | | | | | | |
| Piteo et al. 2012a | Australia | Mothers in South Australia completed the EPDS at 6 weeks and 6 months postpartum from the control group of docosahexaenoic acid DOMInO Trial | 360 | 18 months | EPDS ≥ 12 | BSID-III (Cognitive, Language, Motor) |
| Closa-Monasterolo et al. 2017b | Germany, Belgium, Italy, Poland, Spain | Mothers who delivered singleton, term infants between 10/2002 and 07/2004 and fed their infants higher- or lower- protein formula | 473c | 8 years | EPDS ≥ 10 | CBCL |
| Balbierz et al. 2015d | US | Postpartum mothers who delivered at a large tertiary inner-city hospital located in East Harlem in New York City (04/2009–04/2010) | 945 | 3 months | EPDS ≥ 10 | Parenting practice, feeding, healthcare |
| ***Cross-sectional studies*** | | | | | | |
| Eastwood et al. 2012 | Australia | Mothers of infants born in SWSAHS (2002–2003) | 15,389 | NA | EPDS > 9, 12 | Infant characteristics |
| Silva et al. 2016 | Brazil | Mothers and children under 1 year, from the priority municipalities according to the Infant Mortality Reduction Plan during the child multi-vaccination campaign in 9 states in the Northeast region and 8 in the Amazon region in 06/12/2010 | 2259c | NA | EPDS ≥ 12 | Breastfeeding |
| Jain et al. 2014 | India | Mothers delivering normally with their babies roomed-in at St Stephen’s Hospital, Delhi (08/2010–07/2011) | 1537 | NA | EPDS > 11 | Breastfeeding behavior |
| Yamaoka et al. 2016 | Japan | Mothers who were participating in a 3- or 4-month health check-up program (10–11/2012) in the included 45 municipalities in Aichi prefecture | 6534 | NA | EPDS ≥ 9 | Injuries among children |
| Nishimura et al. 2015 | Japan | Couples (one mother and one father) with a 4-month old infant between 01 and 04 2013 who answered self-report questionnaires | 807 | NR | EPDS ≥ 8/9 | Paternal depression |
| Safadi et al. 2016 | Jordan | Participants were selected from 5 maternal child healthcare centers and 1 major hospital in Amman, Jordan | 315 | NA | PHQ-9 | Breastfeeding, infant behavior |
| Flynn et al. 2017 | Mexico | Mother-child pairs who were selected from the Mexican National Social Welfare Survey of 506 communities from 7 states in the poorest 20% of the Mexican population | 4442 | NA | CES-D | Child behavior |
| ***Cohort studies*** | | | | | | |
| Woolhouse et al. 2016a | Australia | Women registered to give birth at 6 metropolitan public hospitals in Melbourne Australia (04/1/2003–12/31/2005) | 1507 | 4 years postpartum | EPDS ≥ 13 | SDQ |
| Woolhouse et al. 2016b | Australia | Women registered to give birth at 6 metropolitan public hospitals in Melbourne Australia (04/1/2003–12/31/2005) | 1258 | 6 months postpartum | EPDS ≥ 13 | Breastfeeding |
| Rossen et al. 2016 | Australia | Women recruited during their pregnancy through the Royal Prince Alfred Hospital, Royal Hospital for Women and Liverpool Hospital (11/2010–06/2012) | 372 | 12 months | EPDS ≥ 9 | Stress, anxiety, depression, mother–infant bonding |
| Morais et al. 2013 | Brazil | Pregnant women in prenatal care who intended to give birth at the University Hospital of the University of São Paulo were enrolled in Basic Health Units of the West area of the city of São Paulo (2006–2008) | 241c | Through 36 months of baby's life | EPDS ≥ 12 | Neuro-psychomotor development |
| Wolford et al. 2017 | Finland | Participants of the PREDO study recruited during first ultrasound screening at one of ten study hospitals between 2006 and 2010, and followed-up between 2011 and 2012 | 1799 | Child’s age of 3 to 6 years | BDI-II ≥ 14 | Conners' Hyperactivity Index, ADHD symptoms |
| van der Waerden et al. 2015 | France | Participants of the EDEN mother-child birth cohort study were recruited between 2003 and 2006 among pregnant women (24 weeks of amenorrhea) followed in 2 maternity wards in Poitiers and Nancy University hospitals (France) | 1183c | Child's 5th birthday | CES-D score ≥ 16 and an EPDS score ≥ 12 | Children’s behavioral scores at age 5 years |
| Koutra et al. 2013 | Greece | Female residents (Greek and immigrants) who had become pregnant during the 12-month period starting from 02/2007 at four maternity clinics in Heraklion Greece | 470c | 18 months | EPDS ≥ 13 | EPQ-R, STAI-Trait, BSID |
| Koutra et al. 2017 | Greece | Mother-child pairs (Greek and immigrants) from the Rhea study were recruited when they were pregnant during a 12-month period starting from 02/2007 at four maternity clinics in Heraklion Greece | 642c | 4 years | EPDS ≥ 13 | Neuropsychological development, ADHD symptoms, SDQ |
| Goyal et al. 2017 | India | Parents of all babies born through normal vaginal delivery and who were roomed-in with their mother within the first 24 hours of life in Delhi between 06/2014 and 06/2015 | 479e | 7 days | EPDS > 11 | Breastfeeding |
| Abbasi et al. 2014 | Iran | Persian men and women receiving prenatal care in 2 teaching university hospitals in Tehran | 1026 | 3 months | Iranian version of the EPDS with score of ≥ 13 | SF-36 |
| Sadat et al. 2014 | Iran | Mothers who were referred to health centers for the prenatal care (08/2007–10/2008) at 25 health centers in Kashan city, Iran | 321 | 4 months | EPDS ≥ 13 | SF-36 |
| Abdollahi et al. 2017 | Iran | Pregnant women who attended primary health centers in Iran and who were assessed for PPD from 2 to 12 weeks postpartum | 671 | 4 years | EPDS > 12 | Breastfeeding, ASQ, child acute and chronic illness, child medications |
| Leahy-Warren et al. 2012 | Ireland | First-time mothers whose baby was born in a large maternity unit in the Republic of Ireland | 410 | 6 weeks | EPDS ≥ 11 | Measures of self-efficacy and social support |
| Gagliardi et al. 2012 | Italy | Italian-speaking mothers admitted to a special care baby unit at Versilia Hospital, Lido di Camaiore, Tuscany (12/2005–11/2006) | 592 | 14 weeks | EPDS > 9, 12 | Breastfeeding |
| Vismara et al. 2016 | Italy | Sub-analysis of a larger ongoing study on maternal and paternal depression in first-time parents | 181e | 6 months | EPDS ≥ 8/9 or 12/13 | STAI–State, STAI–Trait, PSI Parental Distress score |
| Kaneko and Honjo 2014 | Japan | Mothers, recruited at their infants’ 3-month check-ups at the public health center in Hekinan City, Aichi Prefecture, Japan (05/2008-01/2011) | 1786 | NR | EPDS ≥ 9 | PBQ |
| Kawai et al. 2017 | Japan | All pregnant women who were expected to give birth in Hamamatsu City at either Hamamatsu University Hospital or Kato Maternity Clinic (12/1/2007–11/30/2011) | 857f; 951g | 10 years | EPDS > 9 | McArthur-Bates CDI |
| Ohoka et al. 2014 | Japan | Participants were recruited randomly at 2 obstetrical hospitals in Nagoya, Japan (08/2004–10/2009) | 389 | NR | EPDS ≥ 8/9 | Mother–infant bonding |
| Yoshida et al. 2012 | Japan | Pregnant women who reached 30 weeks of gestation and who were scheduled to give birth at a maternity hospital located in an urban area in Kyushu, Japan | 554 | 4 months postpartum | EPDS ≥ 9 | MIBS-J |
| Moe et al. 2016 | Norway | Full-term infants (N = 238) and their mothers from well-baby clinics in the four districts in the municipality of Trondheim, Norway and group of premature infants born gestational week 30–36 (N = 64) and their mothers from well-baby clinics in Trondheim | 302c | 12 months | EPDS ≥ 10/11 | ADBB, ITSEA, ASQ |
| Valla et al. 2016 | Norway | Mothers recruited between 05/2011 and 05/2012 by midwives at nine well-baby clinics in five Norwegian municipalities (Larvik, Nøtterøy, Tønsberg, Hamar, and Løten), including both urban and rural areas | 1555 | 24 months | EPDS ≥ 10 | ASQ |
| Haga et al. 2017 | Norway | Mothers recruited between 05/2011 and 05/2012 by midwives at nine well-baby clinics in 5 Norwegian municipalities (Larvik, Nøtterøy, Tønsberg, Hamar, and Løten), including both urban and rural areas | 1396 | 12 months | EPDS, immediate follow-up discussion | Breastfeeding |
| Junge et al. 2017 | Norway | Women who participated in the Akershus Birth Cohort study, received their routine fetal ultrasound at pregnancy weeks 17 to 19 and gave birth at Akershus University Hospital between 11/2008 and 04/2011 | 1235 | 2 years | EPDS ≥ 10 | ASQ |
| Verkuijl et al. 2014 | South Africa | Birth to Twenty cohort, which includes singleton children born within a 7-week period (03/1990–06/1990) in the metropolitan Soweto area of Johannesburg in South Africa, and their mothers | 1866 | 10 years | CES-D ≥ 16 | SACAS |
| Garcia-Esteve et al. 2016 | Spain | Mothers recruited in the postpartum visit (4–6 weeks postpartum), over a 5-year period (2008–2013) at a gynecology unit and mothers enrolled on a perinatal psychiatry program treated for a psychiatric disorder during their pregnancy or in the postpartum period | 840 | 4–6 weeks postpartum | EPDS ≥ 11 | PBQ |
| Kerstis et al. 2012 | Sweden | Swedish-speaking parents of children born 2004–2006 in Child Health Centers in Sweden | 305e | 3 months | EPDS > 9 | DCS |
| Kerstis et al. 2016a | Sweden | All women and their partners delivering at the Uppsala University Hospital (05/2006–06/2007) | 727e | 6 months postpartum | EPDS ≥ 10 | PBQ |
| Kerstis et al. 2016b | Sweden | Swedish-speaking parents of children born in the years 2004–2006 from 8 Child Health Centers in Sweden | 797 | 18 months | EPDS ≥ 10 | SPSQ |
| Lilja et al. 2012 | Sweden | First-time mothers at 2 clinics in Sweden | 419 | 12 months | EPDS ≥ 10 | Relationship scales (child and partner) |
| Evans et al. 2012 | UK | ALSPAC-enrolled women who were resident in Avon, England and in the early stages of pregnancy between (04/1/1991–12/31/1992) | 5029 | NR | EPDS > 12 | Full-scale IQ (WISC score) |
| Hanington et al. 2011 | UK | ALSPAC, pregnant women who were resident in Avon and had an expected delivery date (04/1/1991–12/31/1992) were eligible to participate | 11,954f; 9846h | 42 months postpartum | EPDS > 12 | Total child difficulties, conduct difficulties, emotional difficulties, maternal conflict, paternal conflict |
| Pearson et al. 2014 | UK | ALSPAC, pregnant women residents with an estimated date of delivery (04/1991–12/1992) | 8937 | 18 years | EPDS > 12 | Child depression |
| Savage-McGlynn et al. 2015 | UK | ALSPAC, pregnant women who were resident in Avon and had an expected delivery date (04/1/1991–12/31/1992) were eligible to participate | 6500 | 11 years | EPDS > 10 | SDQ |
| Koukounari et al. 2017 | UK | ALSPAC, pregnant women who were resident in Avon and had an expected delivery date (04/1/1991–12/31/1992) were eligible to participate | 6456i; 6917j | 18 years | EPDS | CIS-R, conduct and emotional problems |
| Netsi et al. 2018 | UK | ALSPAC, pregnant women who were resident in Avon and had an expected delivery date (04/1/1991–12/31/1992) were eligible to participate | 9848 | Child’s age of 3.5, 16, and 18 years | EPDS ≥ 13 | CIS-R, school-leaving mathematics grades, behavioral problems |
| El-Heis et al. 2017 | UK | Women participating in the UK Southampton Women's Survey conducted by general practitioners between 1998 and 2002 on women aged 20–34 years who were not pregnant in Southampton, UK and surrounding area | 3008c | 12 months | EPDS ≥ 13; PHQ-9 | Child atopic eczema |
| Cheng et al. 2016 | US | Data from nationally-representative Early Childhood Longitudinal Study-Birth Cohort from births registered in the National Center for Health Statistics vital statistics system | 5350k | 24 months  9 months | CES-D ≥ 9 | BSF-R |
| Surkan et al. 2014 | US | ECLS-B, a nationally representative sample of approximately 10,700 children born in the US in 2001 | 6550 | 5 years | CES-D ≥ 10 | Child physical development |
| No studies identified in this systematic review included patients with a confirmed clinical diagnosis of PPD. All patients were identified using a screening tool, such as the EPDS, rather than a diagnostic tool.  aStudy data were derived from the control group of an RCT and examined in an observational manner; b Study data were derived from an RCT and examined in an observational manner; cMother-child dyads included in study; dStudy data were derived from two RCTs and examined in an observational manner; eCouples; fMothers; gInfants; hFathers; iChildren (girls); jChildren (boys); kFamilies.  Abbreviations: ADBB, Alarm Distress Baby Scale; ADHD, Attention Deficit/Hyperactivity Disorder; ALSPAC, Avon Longitudinal Study of Parents and Children; ASQ, Ages and Stages Questionnaire; BDI, Beck Depression Inventory; BDI-II, Beck Depression Inventory II; BSID, Bayley Scales of Infant and Toddler Development; CBCL, Child's Behavior Checklist; CDI, Communicative Development Inventories; CES-D, Center for Epidemiologic Studies Depression Scale; CIS-R, Clinical Interview Schedule–Revised; CPQ, Close Persons Questionnaire; DASS-21, Depression and Anxiety Scales; DCS, Dyadic Consensus Subscale; DOMInO, Docosahexaenoic acid to Optimise Maternal Infant Outcome; EAS, Emotionality, Activity, and Shyness; EBF, Exclusive Breast Feeding; ECLS-B, Early Childhood Longitudinal Study - Birth Cohort; EPDS, Edinburgh Postnatal Depression Scale; EPQ-R, Eysenck Personality Questionnaire-Revised; ESB, English speaking background; HRQoL, Health-related quality of life; ITSEA, Infant-Toddler Social and Emotional Assessment; MAAS, Maternal Antenatal Attachment Scale; MCS, mental component summary; MIBS-J, Mother-to- Infant Bonding Scale Japanese version; NESB, Non-English speak background; PBQ, Postpartum Bonding Questionnaire; PCS, Physical component summary; PHQ-2/9, Patient Health Questionnaire-2 and 9; PMP S-E, Perceived maternal parental self-efficacy tool; PPD, Postpartum Depression; PPDS, Postpartum Depression Screening Scale; PREDO, Prediction and Prevention of Preeclampsia and Intrauterine Growth Restriction; PSI-SF, Parenting Stress Index—Short Form; QoL, Quality of Life; SACAS, South African Child Assessment Schedule; SADS, Schedule for Affective Disorders and Schizophrenia; SCL-90-R, Symptom Checklist-90-Revised; SCID-5, Structured Clinical Interview for DSM-5; SDQ, Strengths and Difficulties Questionnaire; SF-36, 36-Item Short Form Survey; SPSQ, Swedish Parenthood Stress Questionnaire; STAI, State-Trait Anxiety Inventory Scale; SWSAHS, South Western Sydney Area Health Service; UK, United Kingdom; US, United States; WHO-QOL-BVm, World Health Organization Quality of Life-Brief Version modified; WPSSI-III , Wechsler Preschool and Primary Scale of Intelligence Third Edition. | | | | | | |

Table S2. Summary of the main findings for the effects of PPD symptoms on outcomes in children

| Study name | N (PPD definition)  Population | Effects of PPD on offspring |
| --- | --- | --- |
| ***Breastfeeding/parenting behaviors and infant eating/sleeping behaviors*** | | |
| Abdollahi et al. 2017 | 671 (EPDS > 12)  *Pregnant women who attended primary health centers in Iran* | Mean (SD) breastfeeding duration in PPD symptoms vs. PPD symptoms and depression at year 4: 18.79 (6.99) vs.18.01 (7.75) months; p = NR  Child health outcomes at age 4 years (mother with vs. without PPD symptoms), n (%)  With vs. without chronic disease: 21 (16.7) vs. 105 (83.3); p < 0.001  With vs. without acute disease: 14 (18.4) vs. 112 (18.8); p < 0.001  With vs. without daily medication: 17 (27) vs. 109 (17.9); p < 0.001 |
| Balbierz et al. 2015 | 78a; 867b  (EPDS ≥ 10)  *Postpartum mothers who delivered at a single center in New York* | Parenting practices at 3 months postpartum in women with vs. without PPD symptoms, n (%)  *Safety*  Infant use back sleep position: 47 (60) vs. 681 (79); adjusted OR: 0.37 (95% CI: 0.22–0.61); p = 0.0001  Always use car seat: 52 (67) vs. 729 (84); adjusted OR: 0.44 (95% CI: 0.25–0.79); p = 0.006  Working smoke alarm: 67 (86) vs. 835 (96); adjusted OR: 0.26 (95% CI: 0.12–0.56); p = 0.0006  *Feeding and healthcare*  Currently breastfeeding at 3 months: p = NS  Early introduction of water/juice/cereal: p = NS  Routine childcare visits ≥ 3 visits: p = NS  Baby ER visits ≥ 1 visit: p = NS |
| Eastwood et al. 2012 | 15,389 (EPDS > 12)  *Mothers of infants born in SWSAHS (2002–2003)* | Multivariate adjusted logistic regression analysis of baby characteristics in relation to EPDS score  *EPDS > 12*  Baby Trouble Sleeping: OR, 1.197 (95% CI: 1.049–1.365)  Baby Demanding: OR, 1.179 (95% CI: 1.051–1.321)  Baby Content: OR, 1.177 (95% CI: 1.012–1.369)  Baby Difficult Feeder: OR, 0.981 (95% CI: 0.870–1.106)  Baby Difficult to Comfort: OR, 0.972 (95% CI: 0.847–1.114)  Health of Child: OR, 0.886 (95% CI: 0.780–1.006) |
| Gagliardi et al. 2012 | 592 (EPDS > 9, > 12)  *Italian-speaking mothers who delivered a healthy baby at a single center in Italy* | OR of bottle feeding associated with a 1-point increase in EPDS score: 1.06 (95% CI: 1.01−1.11); p = 0.02 |
| Goyal et al. 2017 | 479 (EPDS > 11)  *Parents of all babies born through normal vaginal delivery and who were roomed-in with mother within the first 24 hours of life* | Exclusive breast feeding rates with EPDS ≥ 11 vs. < 11, n (%)  Male child: 0/5 (0) vs. 214/253 (84.58); p < 0.0001  Female child: 0/52 (0) vs. 118/169 (69.82); p < 0.0001  Multiple logistic regression analysis of lower odds of exclusive breastfeeding  High EPDS score in mothers: OR, 0.080 (95% CI: 0.026–0.249); p = NR  High EPDS score in fathers: OR, 0.096 (95% CI: 0.031–0.299); p = NR |
| Haga et al. 2017 | 1229 (EPDS, immediate follow-up discussion)  *Mothers from 9 well-baby clinics in 5 urban and rural Norwegian municipalities* | Parameter estimates in a structural model evaluating the association between depression and breastfeeding, standardized estimates (SE)  Depression at month 4 and breastfeeding at month 6: 0.04 (0.04); p = NS  Depression at month 6 and breastfeeding at month 12: −0.03 (0.08); p = NS  Depression at month 4 and breastfeeding at month 4: −0.09 (0.06); p = NS  Depression at month 6 and breastfeeding at month 6: −0.00 (0.11); p = NS  Depression at month 12 and breastfeeding at month 12: −0.03 (0.12); p = NS |
| Jain et al. 2014 | 1537 (EPDS > 11)  *Mothers delivering babies at a single center in India* | Rate of exclusive breastfeeding by EPDS  < 11 vs ≥ 11: 67.9% vs 51.4%; OR, 0.50 (95% CI: 0.34–0.75); p = 0.001  Multiple logistic regression analysis:  OR, 0.53 (95% CI: 0.36–0.80) |
| Safadi et al. 2016 | 315 (PHQ-9)  *Mothers and children from 5 maternal child healthcare centers and 1 major hospital in Jordan* | Relationship between PPD symptoms and infant factors  Infant sleep: r = 0.12; p ≤ 0.05  Infant mood: r = −0.01; p = NS  Breastfeeding: r = 0.12; p ≤ 0.05 |
| Silva et al. 2016 | 2259 (EPDS ≥ 12)  *Mother-child pairs identified during a child multi-vaccination campaign in Brazil* | Multivariate adjusted logistic regression analysis on absence of exclusive breastfeeding:  Mothers with vs. without PPD symptoms: OR, 1.63 (95% CI: 1.2–2.2); p < 0.001 |
| Woolhouse et al. 2016b | 1258 (EPDS ≥ 13)  *Women registered to give birth at 6 metropolitan public hospitals in Australia* | Association between depressive symptoms at 3 months postpartum and breastfeeding status at 6 months postpartum  *Depressive vs. no depressive symptoms*  Breastfeeding: 48.7% vs. 61.3%; adjusted OR, 0.55 (95% CI: 0.34–0.90) |
| ***Neurocognitive development*** | | |
| Cheng et al. 2016  ECLS-B | 5350 (CES-D ≥ 9)  *Nationally-representative US cohort* | Mean difference per CES-D point increase in children's 24-month cognitive function (BSF-R), adjusted regression models  Maternal CES-D scores at month 9: −0.06 (95% CI: −0.13 to 0.02); p = NS  Paternal CES-D scores at month 9: −0.11 (95% CI: −0.18 to −0.03); p = NR |
| Closa-Monasterolo et al. 2017 | 473 (EPDS ≥ 10)  *Mothers who fed their infants higher- or lower- protein formula in 5 European countries in between 10/2002 and 07/2004* | Women with vs. without PPD symptoms  Child mental problems at year 8: 45.9% vs. 26.4%; p < 0.017  Effect of PPD on Total, Internalizing and Externalizing Problems of the CBCL questionnaire, β coefficient; R2  *Child’s Total Behavior Problems*  EPDS score at month 2: 0.352; p = 0.049; 14.9%  EPDS score at month 3: 0.670; p < 0.001; 17.7%  EPDS score at month 6: p = NS  *Child’s Internalizing Problems*  EPDS score at month 2: p = NS  EPDS score at month 3: 0.172; p = 0.005; 14.1%  EPDS score at month 6: p = NS  *Child’s Externalizing Problems*  EPDS score at month 2: p = NS  EPDS score at month 3: 0.232; p = 0.001; 13.1%  EPDS score at month 6: p = NS |
| Flynn et al. 2017 | 4442 (CES-D)  *Mother-child pairs from 7 states in the poorest 20% of the Mexican population* | Fully adjusted model, examining maternal depressive symptoms and child behavior (CES-D), β coefficient  Total child behavior score: 0.114 (95% CI: 0.101–0.127); p < 0.0001  Internalizing child behavior score: 0.069 (95% CI 0.061–0.076); p < 0.0001  Externalizing child behavior score: 0.045 (95% CI: 0.038–0.052); p < 0.0001 |
| Evans et al. 2012  ALSPAC | 5029 (EPDS > 12)  *Pregnant women who were residents in Avon, UK* | Child IQ at 8 years, women with vs. without PPD symptoms  Mean difference: −2.4 points (95% CI: −3.6 to −1.1)c |
| Hanington et al. 2011  ALSPAC | 11,954; 9846 (EPDS > 12)  *Pregnant women who were residents in Avon, UK* | Mean (SD), at 42 months  Total child difficulties: 12.53 (5.72)  Conduct difficulties: 3.63 (2.36)  Emotional difficulties: 2.55 (1.74)  Association between parental depressive symptoms at 8 months and child outcomes at 42 months, N total (% with poor outcome)d  *Total child problems*  Mother not depressed vs. depressed: 8598 (7.92) vs. 769 (19.38); OR, 2.79 (95% CI: 2.30–3.40); p < 0.001  Father not depressed vs. depressed: 6036 (8.35) vs. 180 (16.67); OR, 2.20 (95% CI: 1.47–3.28); p < 0.001  *Conduct difficulties*  Mother not depressed vs. depressed: 8598 (10.50) vs. 769 (21.20); OR, 2.29 (95% CI: 1.90–2.76); p < 0.001  Father not depressed vs. depressed: 6036 (10.22) vs. 180 (17.22); OR, 1.83 (95% CI: 1.23–2.72); p < 0.05  *Emotional difficulties*  Mother not depressed vs. depressed: 8598 (12.20) vs. 769 (20.55); OR, 1.86 (95% CI: 1.54–2.24); p < 0.001  Father not depressed vs. depressed: 6036 (12.77) vs. 180 (16.11); OR, 1.31 (95% CI: 0.88–1.97); p = NS |
| Koukounari et al. 2017  ALSPAC | 6456; 6917 (EPDS)  *Pregnant women who were residents in Avon, UK* | Zero order correlations between EPDS at 8 weeks and 8 months postpartum and variable for boys, n, Spearman correlation, respectively  *Boys, conduct problems*  Age 4: 4559, 0.153 and 4511, 0.172  Age 16: 2504, 0.111 and 2480, 0.129  *Boys, emotional problems*  Age 4: 4559, 0.165 and 4511, 0.172  Age 16: 2504, 0.190 and 2480, 0.174  Young adult depression at age 18, boys: 1751, 0.110 and 1746, 0.091  *Girls, conduct problems*  Age 4: 4230, 0.170 and 2042, 0.177  Age 16: 3665, 0.149 and 2650, 0.153  *Girls, emotional problems*  Age 4: 4252, 0.171 and 4230, 0.166  Age 16: 3112, 0.189 and 3074, 0.182  Young adult depression at age 18, girls: 2248, 0.108 and 2242, 0.110 |
| Pearson et al. 2014  ALSPAC | 8937 (EPDS > 12)  *Pregnant women who were residents in Avon, UK* | Risk of child depression according to a 5-point increase in EPDS score  Whole sample: OR, 1.24 (95% CI: 1.03–1.49); p = 0.022  High maternal education: OR, 1.09, 95% CI: 0.88–1.36); p = 0.420  Low maternal education: OR, 1.26 (95% CI: 1.06–1.50); p = 0.009 |
| Savage-McGlynn et al. 2015  ALSPAC | 6500 (1009e; 5491f) (EPDS ≥ 10)  *Pregnant women who were residents in Avon, UK* | Mean (SD) SDQ total difficulties score at age 11  All children of women with PPD symptoms: 8.78 (5.7)  Children of women with PPD symptoms, resilient subgroup: 3.2g  Children of women with PPD symptoms, nonresilient subgroup: 11.4g  Mean difference: 8.2 (95% CI: 7.8–8.6); p < 0.001 |
| Netsi et al. 2018  ALSPAC | 9848 (EPDS ≥ 13)  *Pregnant women who were residents in Avon, UK* | Logistic and ordinal logistic regression investigating the association with severe persistent PPD symptoms and learning/behavioral problems in children  Child behavioral problems (n = 7917):OR, 4.84 (95% CI: 2.94–7.98); p < 0.001  Low child GCSE mathematics grades (n = 4941): OR, 2.65 (95% CI: 1.26-5.57); p = 0.01  Offspring depression at 18 years (n = 3486): OR, 7.44 (95% CI: 2.89–19.11); p < 0.001 |
| Junge et al. 2017 | 1235 (EPDS ≥ 10)  *Women who received their routine fetal ultrasound during pregnancy weeks 17 to 19 and gave birth at Akershus University Hospital* | Maternal factors on children's social-emotional problems (ASQ-SE ≥ 50) 2 years after birth, n (%)  *Depressive symptoms at 8 weeks postpartum (n = 96)*  ASQ-SE ≤ 50 vs. ASQ-SE > 50: 85 (88.5) vs. 11 (11.5)  Adjusted OR, 3.8 (95% CI: 1.7–8.6); p ≤ 0.01  *Depressive symptoms at 32 gestational week and 8 weeks postpartum (n = 58)*  ASQ-SE ≤ 50 vs. ASQ-SE > 50: 51 (87.9) vs. 7 (12.1)  Adjusted OR, 3.7 (95% CI: 1.3–10.1); p ≤ 0.01 |
| Kawai et al. 2017 | 857; 951 (EPDS < 9: low; 9–12: medium ≥ 13: high)  *All pregnant women who were expected to give at 1 of 2 sites in Japan* | Association between EPDS score and Early Gesture scores (McArthur-Bates CDI)  *EPDS during the first month postpartum*  Magnitude of effect (moderate vs. low EPDS): −0.01 (95% CI: −0.25 to 0.23)  Magnitude of effect (high vs. low EPDS): −0.50 (95% CI: −0.85 to −0.14)  Association coefficient: −0.025 (95% CI: −0.048 to −0.002); p < 0.05  *EPDS at 10 weeks postpartum: coefficient*  Magnitude of effect (moderate vs. low EPDS): 0.02 (95% CI: −0.37 to 0.41)  Magnitude of effect (high vs. low EPDS): −0.46 (95% CI: −1.19 to 0.25)  Association coefficient: −0.012 (95% CI: −0.045 to 0.021); p = NS  Association between EPDS score and Later Gesture scores  *EPDS during the first month postpartum*  Magnitude of effect (moderate vs. low EPDS): 0.03 (95% CI: −0.21 to 0.27)  Magnitude of effect (high vs. low EPDS): −0.46 (95% CI: −0.79 to −0.13)  Association coefficient, −0.023 (95% CI: −0.045 to −0.001) ; p < 0.05  *EPDS at 10 weeks postpartum*  Magnitude of effect (moderate vs. low EPDS): 0.06 (95% CI: −0.26 to 0.37)  Magnitude of effect (high vs. low EPDS): −0.74 (95% CI: −1.40 to −0.08)  Association coefficient, −0.025 (95% CI: −0.058 to 0.008); p = NS |
| Koutra et al. 2013 | 470 (EPDS ≥ 13)  *Women during pregnancy and 8 weeks postpartum at 4 maternity clinics in Greece* | Association of postpartum EPDS ≥ 13 with infant neurodevelopment outcomes,  β-coefficient (95% CI)  Cognitive: −5.64 (−9.56, −1.72); p < 0.05  Receptive communication: p = NS  Expressive communication: p = NS  Fine motor: −4.90 (−8.92, −0.88); p < 0.05  Gross motor: p = NS  Social–emotional: p = NS  Association of a per-unit increase in postpartum EPDS score with infant neurodevelopment outcomes, β-coefficient (95% CI)  Cognitive: −0.33 (−0.58, −0.08); p < 0.05  Receptive communication: p = NS  Expressive communication: p = NS  Fine motor: −0.29 (−0.55, −0.03); p < 0.05  Gross motor: p = NS  Social–emotional: −0.28 (−0.57, 0.00); p < 0.05 |
| Koutra et al. 2017 | 642 (EPDS ≥ 13)  *Pregnant women at four maternity clinics in Heraklion, Greece* | Association between maternal postnatal depressive symptoms (EPDS ≥ 13) and children's strengths and difficulties at 4 years (SDQ), fully adjusted model, β-coefficient  Emotional symptoms: 0.15 (95% CI: −0.29 to 0.59); p = NS  Conduct problems: 0.42 (95% CI: 0.02–0.83); p < 0.05  Hyperactivity/inattention: 0.55 (95% CI: 0.02–1.08); p < 0.05  Peer relationships: 0.61 (95% CI: 0.27–0.96); p < 0.05  Pro-social behavior: −0.27 (95% CI: −0.75 to 0.20); p = NS  Total difficulties: 1.74 (95% CI: 0.55–2.93); p < 0.05  More pronounced effect of postnatal depression on ADHD symptoms in children whose mothers were smoking during pregnancy: β = 0.37 (95% CI: 0.09–0.83)  Significant negative association between postnatal depressive symptoms and child outcome at 4 years, adjusted for maternal non-verbal intelligence, β-coefficient  Perceptual-Performance: −0.39 (95% CI: −0.67 to −0.11)  General Cognitive Index: −0.28 (95% CI: −0.56 to −0.01) |
| Moe et al. 2016 | 302 (EPDS ≥ 10, ≥ 11)  *Mothers and infants from well-baby clinics in Norway* | Association with maternal signs of depression at 3 months postpartum  Infant social withdrawal: p = NS  Infant gestational age: significant negative association; p = 0.006  Multiple linear regression analysis of association with EPDS at 3 months postpartum and 3 ITSEA domains and ASQ  Externalizing domain: coefficient, 0.37 (95% CI: 0.06–0.67); p = 0.018  Internalizing domain: coefficient, 0.45 (95% CI: 0.07–0.84); p = 0.020  Dysregulation domain: coefficient, 0.55 (95% CI: 0.05–1.05); p = 0.030  ASQ SE: coefficient, 0.60 (95% CI: 0.11–1.10); p = 0.017 |
| Morais et al. 2013 | 76 (EPDS ≥ 12)  *Mothers who gave birth in Brazil with babies at age 4 months* | Neuro-psychomotor development for children of mothers without vs. with PPD symptoms  Mother talks to a child by using short phrases: 94.3% vs. 73.9%; p < 0.05  Child actively seeks the mother’s gaze: p = NS  Screams: p = NS |
| 87 (EPDS ≥ 12)  *Mothers who gave birth in Brazil with babies at age 8 months* | Neuro-psychomotor development for children of mothers without vs. with PPD symptoms  Sitting without support: p = NS  Accepting solid, semi-solid, and varied foods: p = NS |
| 78 (EPDS ≥ 12)  *Mothers who gave birth in Brazil with babies at age 12 months* | Neuro-psychomotor development for children of mothers without vs. with PPD symptoms  Putting syllables together: 74.1% vs. 94.7%; p = 0.05  Holding cubes with their hands and bumping them at each other: 77.2% vs. 100.0%; p < 0.05  Imitating vocal sounds: p = NS  Starting to walk held by an adult: p = NS |
| Piteo et al. 2012 | 69 (EPDS > 12)  *Mothers from the DOMInO Trial with PPD at 6 weeks and/or 6 months* | Mean (SD) BSID-III scores at 18 months  Cognitive 102.6 (11.9); adjusted p = 0.50 vs. non-depressed mothers  Language: 99.0 (13.5); adjusted p = 0.73 vs. non-depressed mothers  Motor: 104.8 (12.3); adjusted p = 0.12 vs. non-depressed mothers |
| 291 (EPDS > 12)  *Mothers from the DOMInO Trial with no PPD at 6 weeks and/or 6 months* | Mean (SD) BSID-III scores at 18 months  Cognitive: 101.8 (12.6)  Language: 98.0 (15.7)  Motor: 102.1 (11.5) |
| Valla et al. 2016 | 1555 (EPDS ≥ 10)  *Families expecting a baby or who had recently given birth from well-baby clinics in Norway* | Relationship between EPDS scores and infants’ communication skills (ASQ)  *ASQ 12 months*  EPDS at 6 weeks: p = NS  EPDS at 4 months: coefficient, −0.37 (95% CI: −0.63 to −0.12); p = 0.004  EPDS at 6 months: p = NS  EPDS ≥ 10, ≥ 2 time points, 1 vs. 0: p = NS  EPDS ≥ 10, ≥ 2 time points, 2 vs. 0: coefficient, −6.12 (95% CI: −11.14 to −1.09); p = 0.017  *ASQ 24 months*  EPDS at 6 weeks: p = NS  EPDS at 4 months: coefficient, −0.34 (95% CI: −0.56 to −0.13); p = 0.002  EPDS at 6 months: p = NS  EPDS ≥ 10, ≥ 2 time points, 1 vs. 0: p = NS  EPDS ≥ 10, ≥ 2 time points, 2 vs. 0: p = NS |
| van der Waerden et al. 2015  EDEN | 1183 (CES-D ≥ 16 and EPDS ≥ 12)  *Mothers and children from a birth cohort study in France* | Association between depressive symptoms in postpartum period and child behavior at 5 years  Emotional symptoms: β coefficient, 0.31 (95% CI: 0.00–0.61); p = 0.04  Conduct problems: β coefficient, 0.39 (95% CI: 0.06–0.71); p = 0.02  Peer relationship problems: β coefficient, 0.31 (95% CI: 0.10–0.52); p = 0.005  Prosocial behavior: p = NS  Symptoms of hyperactivity/Inattention: β coefficient, 0.41 (95% CI: 0.04–0.78); p = 0.03  Overall problem behavior: β coefficient, 1.41 (95% CI: 0.61–2.22); p = 0.001 |
| Verkuijl et al. 2014 | 1866 (CES-D ≥ 16)  *Mothers and children from the South African Birth to Twenty cohort* | Association between maternal PPD symptoms at 6 months and clinically significant psychological difficulties (SACAS) in children at age 10 years  *Mothers with vs. without depression*  Total SACAS score in top 10%: 16% vs. 8%; adjusted OR: 2.26 (95% CI: 1.23–4.16)  Externalizing subscale score in top 10%: 14% vs. 9%; adjusted OR, 1.71 (95% CI: 0.95–3.10)  Internalizing subscale score in top 10%: 14% vs. 9%; adjusted OR, 1.38 (95% CI: 0.77–2.48) |
| Wolford et al. 2017  PREDO | 1799 (BDI-II ≥ 14)  *Women recruited during first ultrasound screening at one of ten study hospitals in Finland* | Marginal mean differences in child ADHD symptoms on the CHI by CES-D during pregnancy and BDI-II after pregnancy, vs CES-D < 16 and BDI-II < 14  CES-D ≥ 16 and BDI-II < 14: 0.41 (95% CI: 0.28–0.53); p < 0.001  CES-D < 16 and BDI-II ≥ 14: 0.51 (95% CI: 0.32–0.71); p < 0.001  CES-D ≥ 16 and BDI-II ≥ 14: 0.73 (95% CI: 0.55–0.92); p < 0.001  Association between children with clinically significant ADHD symptoms according to maternal CES-D trimester-weighted mean score during pregnancy and BDI-II sum score after pregnancy, vs CES-D < 16 and BDI-II < 14  CES-D ≥ 16 and BDI-II < 14: OR, 2.45 (95% CI: 1.80–3.34); p < 0.001  CES-D < 16 and BDI-II ≥ 14: OR, 0.51 (95% CI: 2.09–5.05); p < 0.001  CES-D ≥ 16 and BDI-II ≥ 14: OR, 0.73 (95% CI: 3.81–8.55); p < 0.001 |
| Woolhouse et al. 2016a | 1507 (EPDS ≥ 13)  *Women registered to give birth at 6 metropolitan public hospitals in Australia* | Association with child emotional/behavioral difficulties (SDQ ≥ 15) at 4 years  *Perinatal vs. no perinatal depressive symptoms*  During pregnancy only: p = NS  During first 12 months postpartum only: p = NS  Pregnancy and first 12 months postpartum: 36.0% vs. 8.5%; adjusted OR, 2.38 (95% C: 1.04–5.46) |
| ***Physical development or injuries*** | | |
| Surkan et al. 2014  ECLS-B | 6550 (CES-D ≥ 10)  *Nationally representative sample of children born in the US* | Association between mothers with moderate/severe PPD symptoms vs. mothers without depressive symptoms (at month 9) and child development from month 9 to year 6  Height: adjusted β coefficient, −0.26 (95% CI: −0.48 to −0.05); p < 0.05  BMI: p = NS |
| Yamaoka et al. 2016 | 6534 (EPDS ≥ 9)  *Mothers participating in a 3- or 4-month health check-up program in Japan* | Association between PPD symptoms in mothers and injuries in their children from birth to 4 months  Any unintentional injury: OR, 1.61 (95% CI: 1.26–2.07); p < 0.05  Falls: OR, 1.43 (95% CI: 1.03–1.97); p < 0.05  Near-drowning: p = NS |
| El-Heis et al. 2017 | 3008 (EPDS ≥ 13)  *Women aged 20–34 years in Southampton, UK and surrounding area* | Multivariate analyses of association between postnatal maternal mood and infant atopic eczema at age 12 months, n  EPDS: 2330; OR, 1.02 (1.00–1.05); p = 0.041  EPDS ≥ 13: 2330; OR, 1.08 (0.82–1.44); p = NS |
| ***Mother-infant bonding*** | | |
| Garcia-Esteve et al. 2016 | 840 (EPDS ≥ 11)  *Postpartum mothers recruited from the general population as well as those in a perinatal psychiatry program* | Depressive symptoms vs. no depressive symptoms, n (%)  PBQ total score ≥ 26 (“bonding disorder”): 51 (26.7) vs. 9 (1.5); p < 0.001  PBQ total score ≥ 40 (“severe bonding disorder”): 20 (10.5) vs. 0 (0); p < 0.001  Mean (SD) PBQ total score: 19.9 (15.1) vs. 8.1 (6.2); p < 0.001  Correlations between EPDS scores an PBQ scores  General factor: r = 0.59; p < 0.001  Impaired bonding: r = 0.53; p < 0.001  Anxiety about care: r = 0.51; p < 0.001  Lack of enjoyment: r = 0.40; p < 0.001  Rejection and risk of abuse: r = 0.32; p < 0.001 |
| Kaneko et al. 2014 | 1786 (EPDS ≥ 9)  *Japanese mothers recruited at their infants’ 3-month check-ups at a single center in Japan* | Association between mother–infant bonding (PBQ) and depressive symptoms  Correlation between the 25-item PBQ total score and the EPDS: r = 0.47; p < 0.001  Correlation between the 16-item PBQ total score and the EPDS: r = 0.46; p < 0.001 |
| Kerstis et al. 2016a  UPPSAT | 727 (EPDS ≥ 10)  *Mothers and fathers delivering at the Uppsala University Hospital* | Association between per-unit increase in EPDS score and impaired child bonding (PBQ), mothers  Mothers' EPDS scores, week 6: OR, 1.78 (95% CI: 1.32–2.40)  Mothers' EPDS scores, month 6: OR, 2.11 (95% CI: 1.58–2.81)  Fathers' EPDS scores, week 6: OR, 1.57 (95% CI: 1.18–2.09)  Fathers' EPDS scores, month 6: OR, 1.48 (95% CI: 1.12–1.95)  Association between per-unit increase in EPDS score and impaired child bonding (PBQ), fathers  Mothers' EPDS scores, week 6: OR, 1.45 (95% CI: 1.10–1.90)  Mothers' EPDS scores, month 6: OR, 1.34 (95% CI: 1.02–1.77)  Fathers' EPDS scores, week 6: OR, 1.82 (95% CI: 1.42–2.32)  Fathers' EPDS scores, month 6: OR, 2.01 (95% CI: 1.60–2.54) |
| Lilja et al. 2012 | 419 (EPDS ≥ 10)  *First-time mothers at 2 clinics in Sweden* | Mean (SE) child relationship scales in women with low (≤ 9) vs. high (≥ 10) EPDS  Day 3: 1.46 (0.035) vs. 1.874 (0.066); p < 0.001  Day 10: 1.305 (0.031) vs. 1.758 (0.057); p < 0.001  Month 6: 1.167 (0.028) vs. 1.361 (0.051); p = 0.001  Month 12: 1.124 (0.023) vs. 1.279 (0.044); p = 0.002 |
| Ohoka et al. 2014 | 389 (EPDS ≥ 8/9)  *Recruited randomly at 2 obstetrical hospitals in Japan* | Correlation between MIBS and EPDS scores  Day 5 postpartum: r = 0.142; p < 0.001  Month 1 postpartum: r = 0.395; p < 0.001 |
| Rossen et al. 2016 | 372 (EPDS ≥ 9)  *Women recruited during pregnancy in Australia* | All measures of mental health (stress, anxiety, depression) were significantly negatively correlated with postnatal bonding (all p < 0.01)  Multiple regression analysis for postnatal bonding at week 8  Maternal depression in trimester 1: coefficient, −3.02; p = 0.01  Maternal depression in trimester 2: coefficient, −3.64; p < 0.001  Maternal depression in trimester 3: coefficient, −3.92; p < 0.001 |
| Yoshida et al. 2012 | 554 (EPDS ≥ 9)  *Pregnant women who reached 30 weeks of gestation and who were scheduled to give birth at a single center in Japan* | Data NR; EPDS scores were positively correlated with both Lack of Affection and Anger and Rejection subscales of MIBS-J at the 3 occasions; negative affect of mothers correlated with poorer bonding (the strongest correlations were between Anger and Rejection and EPDS, especially at 1 month postpartum) |
| aDepressive symptoms; bNo depressive symptoms; cAuthors concluded that this was not clinically significant; dUnadjusted ORs are reported here; ORs adjusted for marital conflict, depression in the other parent, and both factors, are presented as well; all adjusted ORs follow the same patterns for significant differences; eChildren of mothers with depressive symptoms; fChildren of mothers without depressive symptoms; gChildren in the group of women with PPD symptoms whose total difficulties score at age 11 was at or below the median score for the group of children from women without depressive symptoms were allocated to the ‘resilient’ group; children in the ‘exposed’ group with scores that were above the median cutoff were allocated to the ‘non-resilient’ group.  Abbreviations: ADHD, Attention deficit/hypersensitivity disorder; ADHDT, Attention Deficit Hyperactivity Disorder Test; ALSPAC, Avon Longitudinal Study of Parents and Children; ASQ, Ages and Stages Questionnaire; BDI-II, Beck Depression Inventory II; BMI, body mass index; BSF-R, Bayley Short Form-Research Edition; BSID, Bayley Scales of Infant and Toddler Development; CES-D, Center for Epidemiologic Studies Depression Scale; CHI, Conners' Hyperactivity Index; CI, confidence interval; DACL, Depression Adjective Check Lists; DASS, Depression and Anxiety Scales; DOMInO, Docosahexaenic acid to Optimise Maternal Infant Outcome; ECLS-B , Early Childhood Longitudinal Study, Birth Cohort; EMKK, Questionnaire for Assessing Rearing Attitudes of Mothers of Infants and Toddlers; EPDS, Edinburgh Postnatal Depression Scale; ER, emergency room; GCSE, General Certificate of Secondary Education; HADS, Hospital Anxiety and Depression Scale; ITSEA, Infant-Toddler Social and Emotional Assessment; IQ, intelligence quotient; MIB, Mother-to-Infant Bonding; MIBS-J, Mother-to-Infant Bonding Scale, Japanese version; MSCA, McCarthy Scales of Children's Abilities; NR, not reported; NS, non-significant; OR, odds ratio; PBQ, Postpartum Bonding Questionnaire; PHQ, Patient Health Questionnaire; PPD, postpartum depression; PPDS, Postpartum Depression Screening Scale; PREDO, Prediction and Prevention of Pre-eclampsia and Intrauterine Growth Restriction study; SACAS, South African Child Assessment Schedule; SADS, Schedule for Affective Disorders and Schizophrenia; SCID-5, Structured Clinical Interview for DSM-5; SCL-90-R, Symptom Checklist-90-Revised; SD, standard deviation; SDQ, Strengths and Difficulties Questionnaire; SE, standard error; SWSAHS, South Western Sydney Area Health Service; UPPSAT, UPPSalaAThens. | | |

Table S3. Summary of main findings for the effects of PPD symptoms on outcomes in partners

| **Study name** | **N (Definition of PPD)**  **Population** | **Effects of PPD on partners** |
| --- | --- | --- |
| Kerstis et al. 2012 | 305 (EPDS > 9)  *Mothers and fathers of children born in Child Health Centers in Sweden* | Mean rank score for relationship discord, with vs. without depressive symptoms  *Total DCS score*  Mothers: 92.73 vs. 127.37; p = 0.004  Father: 67.74 vs. 118.79; p = 0.002  Correlations between the total DCS and EPDS scores  Mothers: r = −0.253; p < 0.001  Fathers: r = −0.313; p < 0.001 |
| Kerstis et al. 2016b | 797 (EPDS ≥ 10)  *Swedish-speaking parents of children born in 8 clinics in Sweden* | Association between mother’s EPDS at 3 months and mother's SPSQ scores 18 months after childbirth: β-coefficient, 0.04 (95% CI: 0.02–0.05); p < 0.001 |
| Lilja et al. 2012 | 419 (EPDS ≥ 10)  *First-time mothers at 2 clinics in Sweden* | Mean (SE) partner relationship scales in women with low (≤ 9) vs. high (≥ 10) EPDS  Day 3: 1.184 (0.041) vs. 1.541 (0.077); p < 0.001  Day 10: 1.273 (0.048) vs. 1.955 (0.089); p < 0.001  Month 6: 1.522 (0.06) vs. 2.358 (0.111); p < 0.001  Month 12: 1.55 (0.067) vs. 2.199 (0.124); p < 0.001 |
| Nishimura et al. 2015 | 807 (EPDS ≥ 8/9)  *Couples with a 4-month old infant in Japan* | Association between partners' PPD symptoms and fathers' PPD symptoms at 4 months: adjusted OR, 1.91 (95% CI: 1.05–3.47) |
| Vismara et al. 2016 | 181 (EPDS ≥ 8/9, 12/13)  *Mothers and fathers from an ongoing study on maternal and paternal depression in first-time parents* | Pearson correlation coefficients between fathers' stress, anxiety, and depression scores with mothers' scores (EPDS/STAI-S/STAI-T/PSI total stress score month 3; month 6)  EPDS month 3: 0.54\*\*/0.33\*\*/0.28\*\*/0.33\*\*; 0.23\*\*/0.28\*\*/0.26\*\*/0.22\*\*  STAI-S month 3: 0.40\*\*/0.47\*\*/0.38\*\*/0.52\*\*; 0.21\*\*/0.30\*\*/0.28\*\*/0.29\*\*  STAI-T month 3: 0.36\*\*/0.41\*\*/0.38\*\*/0.49\*\*; 0.19\*\*/0.24\*\*/0.22\*\*/0.19\*\*  STRESS month 3: 0.38\*\*/0.33\*\*/0.29\*\*/0.74\*\*; 0.30\*\*/0.34\*\*/0.34\*\*/0.51\*\*  EPDS month 6: 0.27\*\*/0.07/0.08/0.21\*\*; 0.44\*\*/0.39\*\*/0.32\*\*/0.34\*\*  STAI-S month 6: 0.29\*\*/0.18\*\*/0.18\*\*/0.25\*\*; 0.40\*\*/0.53\*\*/0.50\*\*/0.41\*\*  STAI-T month 6: 0.32\*\*/0.11\*/0.11\*/0.29\*\*; 0.44\*\*/0.50\*\*/0.49\*\*/0.46\*\*  STRESS month 6: 0.21\*\*/0.12\*/0.10/0.35\*\*; 0.35\*\*/0.45\*\*/0.48\*\*/0.60\*\*  \*p < −0.05; \*\*p < 0.01 |
| Abbreviations: CPQ, Close Persons Questionnaire; CI, confidence interval; DCS, Dyadic Consensus Subscale; EPDS, Edinburgh Postnatal Depression Scale; OR, odds ratio; PPD, postpartum depression; PSI, Parenting Stress Index; SE, standard error; SPSQ, Standardized Patient Satisfaction Questionnaire; STAI-S, State-Trait Anxiety Inventory Scale (state); STAI-T, State-Trait Anxiety Inventory Scale (trait). | | |

## References

1. Berger ML, Martin BC, Husereau D, et al. A questionnaire to assess the relevance and credibility of observational studies to inform health care decision making: an ISPOR-AMCP-NPC Good Practice Task Force report. Value in health : the journal of the International Society for Pharmacoeconomics and Outcomes Research. 2014 Mar;17(2):143-56. doi: 10.1016/j.jval.2013.12.011. PubMed PMID: 24636373; PubMed Central PMCID: PMCPMC4217656. Eng.