**Supplementary Online Content**

**eTable 1: Search terms**

**eMethods: Search strategy for each database**

**eFigure 1: Publication bias; Funnel plot**

**eFigure 2: Publication bias; Egger’s plot**

**eTable 2: Level of bias in included studies**

**eTable 1**. Search terms

|  |  |  |
| --- | --- | --- |
| **Hypertension**  | **Depression/Anxiety** | **Population** |
| Hypertens\*, hyper-ten\* | Anxiety, anxious | Antenatal, ante-natal |
| High blood pressure | Anxiety disorder\* | Perinatal, peri-natal |
| Preeclampsia, pre-eclampsia | Worry | Pregnan\* |
| Gestational hypertension | Depress\*  | Prenatal, pre-natal |
| Prenatal hypertension | Mental health | Gestation\* |
| Pregnancy induced hypertension, pregnancy-induced hypertension | Mental stress, stress | Obstetric\* |
| Eclampsia | Psychological distress |  |
| Hypertensive disorders of pregnancy | Pregnancy anxiety |  |
| HELLP syndrome | Panic |  |

**eMethods.** Search strategy for each database

Medline

(Pregnancy/ OR pregnant women/ OR pregnan\*.tw,kf OR gestation\*.tw,kf OR antenatal.tw,kf OR ante-natal.tw,kf OR prenatal.tw,kf OR pre-natal.tw,kf OR perinatal.tw,kf OR peri-natal.tw,kf)

AND

((hypertension/ or hypertension, pregnancy-induced/) OR pregnancy complication, cardiovascular/ OR hyperten\*.tw.kf OR hyper-ten\*.tw,kf OR high blood pressure.tw,kf OR ((blood pressure or bp) adj1 (elevated or increase\*)).tw,kf OR pre-eclamp\*tw,kf OR preeclamp\*.tw,kf OR eclampsia.tw,kf OR eclamp\*.tw,kf OR HELLP syndrome/ OR help\*.tw,kf)

AND (mental disorder\*.tw,kf OR anxi\*.tw,kf OR depress\*.tw,kf OR Stress, Psychological/ OR ((emotional\* or life\* or mental\* or psycho\* or social\* or socio\* or pregnan\* or environment\* or trauma\* or family\* or maternal\* or chronic) adj3 (stress\* or anguish\* or suffer\* or distress\*)).tw,kf OR worry.tw,kf OR Anxiety/ Anxiety Disorders/ OR Depression/)

PyscINFO

(pregnancy/ OR pregn\*.tw,hw OR gestation\*.tw,hw OR perinatal period/ OR antepartum period/ OR antenatal.tw,hw OR ante-natal.tw,hw OR prenatal.tw,hw OR pre-natal.tw,hw OR perinatal.tw,hw OR peri-natal.tw,hw)

AND

(PREECLAMPSIA OR hypertension/ OR hyperten\*.tw,hw OR hyper-ten\*.tw,hw. OR high blood pressure.tw,hw OR ((blood pressure or bp) adj1 (elevated or increase\*)).tw,hw OR pre-eclamp\*.tw,hw OR preeclamp\*.tw,hw OR eclamp\*.tw,hw OR hellp.tw,hw)

AND

((stress/ or psychological stress/ or distress/) OR (anxiety disorders/ or generalized anxiety disorder/ or panic disorder/ or post-traumatic stress/ or anxiety/ or panic attack/ or social anxiety/) OR (major depression/ or "depression (emotion)"/ or dysthymic disorder/) OR mental disorder\*.tw,hw OR anxi\*.tw,hw OR depress\*.tw,hw OR worry.tw,hw OR ((emotional\* or life\* or mental\* or psycho\* or social\* or socio\* or pregnan\* or environment\* or trauma\* or family\* or maternal\* or chronic) adj3 (stress\* or anguish\* or suffer\* or distress\*)).tw,hw)

Embase

((pregnancy/ OR pregnant woman/ OR pregnan\*.tw,kw OR gestation\*.tw,kw OR antenatal.tw,kw OR ante-natal.tw,kw OR prenatal.tw,kw OR pre-natal.tw,kw OR perinatal.tw,kw OR peri-natal.tw.kw)

AND

(hypertension/ OR maternal hypertension/ OR hyperten\*.tw,kw OR hyper-ten\*.tw,kw OR high blood pressure.tw,kw OR ((blood pressure or bp) adj1 (elevated or increase\*)).tw,kw OR preeclampsia/ OR preeclamp\*.tw,kw OR pre-eclamp\*.tw,kw OR eclampsia/ OR eclamp\*.tw,kw OR HELLP syndrome/ OR hellp\*.tw,kw)

AND

(anxiety/ OR (anxiety disorder/ or anxiety neurosis/ or generalized anxiety disorder/ or "mixed anxiety and depression"/) OR anxi\*.tw,kw OR (depression/ or major depression/ or minor depression/ or perinatal depression/) OR depress\*.tw,kw OR mental stress/ OR ((emotional\* or life\* or mental\* or psycho\* or social\* or pregnan\* or environment\* or trauma\* or family\* or maternal\* or chronic) adj3 (stress\* or anguish\* or suffer\* or distress\*)).tw,kw OR worry.tw,kw OR mental disorder\*.tw,kw))

CINAHL

((MH "Pregnancy") OR (MH "Expectant Mothers") OR (TI pregnan\* OR AB pregnan\*) OR (TI pregnan\* OR AB pregnan\*) OR (TI antenatal OR AB antenatal) OR (TI ante-natal OR AB ante-natal) OR (TI prenatal OR AB prenatal) OR (TI pre-natal OR AB pre-natal) OR (TI perinatal OR AB perinatal) OR (TI peri-natal OR AB peri-natal))

AND

(((MH "Hypertension") OR (MH "Pregnancy-Induced Hypertension") OR (MH "Pregnancy Complications, Cardiovascular") OR (TI hyperten\* OR AB hyperten\*) OR (TI hyper-ten\* OR AB hyper-ten\*) OR (TI high blood pressure OR AB high blood pressure) OR (TI ( ((blood pressure or bp) N1 (elevated or increase\*)) ) OR AB ( ((blood pressure or bp) N1 (elevated or increase\*))) OR ((MH "Pre-Eclampsia") OR (MH "HELLP Syndrome")) OR (TI pre-eclamp\* OR AB pre-eclamp\*) OR (TI preeclamp\* OR AB preeclamp\*) OR (MH "Eclampsia") OR (TI eclamp\* OR AB eclamp\*) OR (TI hellp\* OR AB hellp\*)

AND

(MH "Anxiety") OR ((MH "Anxiety Disorders") OR (MH "Generalized Anxiety Disorder") OR (MH "Social Anxiety Disorders")) OR (TI anxi\* OR AB anxi\*) OR ((MH "Dysthymic Disorder") OR (MH "Depression")) OR (TI depress\* OR AB depress\*) OR ((MH "Stress, Psychological") OR (MH "Pregnancy Complications, Psychiatric")) OR (TI ( ((emotional\* or life\* or mental\* or psycho\* or social\* or environment\* or trauma\* or family\* of maternal\* or chronic) N3 (stress\* or anguish\* or suffer\* of distress\*)) ) OR AB ( ((emotional\* or life\* or mental\* or psycho\* or social\* or environment\* or trauma\* or family\* of maternal\* or chronic) N3 (stress\* or anguish\* or suffer\* of distress\*)))) OR (TI ((pregnan\*) N2 (stress\*)) OR AB ((pregnan\*) N2 (stress\*))) OR (TI mental disorder\* OR AB mental disorder\*)

ClinicalTrials.gov

Hypertensive disorders of pregnancy AND stress, depression, anxiety, mental health

Preeclampsia AND stress, depression, anxiety, mental health

**Additional plots displaying results of publication bias**

**eFigure 1**. Publication bias; Funnel Plot

**eFigure 2.** Publication bias; Egger’s Plot



**eTable 2**. Level of bias in included studies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cohort Studies** | **Selection** | **Comparability** | **Outcome** | **Overall Quality** |
| Avalos et al.28 2015 | Representative sample, ascertainment of exposure from medical record, excluded women with pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, no report of missing data | High |
| Avraham et al. 2020 | Representative sample, ascertainment of exposure from medical record, excluded pregestational hypertension from HDP | Did not Adjust for BMI | Assessment from medical record, followed full course of pregnancy, no missing data | High |
| Bandoli et al. 29 2017 | Somewhat representative sample, exposure self-reported, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from self-report, followed full course of pregnancy, no report of missing data  | Low |
| Banhidy et al.48 2006 | Somewhat representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, attrition >10% and no report of adjustment for missing data | Low |
| Bernard et al. 2019 | Somewhat representative sample, ascertainment of exposure assumed from medical record, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, excluded lost to follow-up but attrition <12%, adjusted for missing data | High |
| Brown et al. 74 2016 | Restricted sample, ascertainment of exposure from medical record, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment of distress from medical record, followed full course of pregnancy, no report of missing data | Low |
| Catov et al. 49 2010 | Representative sample, exposure self-reported, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, attrition <10% | Low |
| Chen et al.50 2010 | Somewhat representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no description of missing data | Low |
| Cripe et al.30 2011 | Somewhat representative sample, ascertainment of exposure from medical record, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, no description of missing data | High |
| Dayan et al.31 2006 | Somewhat representative sample, exposure self-reported, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, attrition <10% | High |
| Garza-Veloz et al.51 2017 | Somewhat representative sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no report of missing data | Low |
| Goedhart et al.33 2010 | Somewhat representative sample, self-reported exposure, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, no report of missing data | High |
| Hendryx et al. 2019 | Representative sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from self-report, followed full course of pregnancy, adjusted for missing data | Low |
| Henrichs et al.34 2010 | Somewhat representative sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, attrition <10% and report non-complete data | High |
| Heun-Johnson et al. 2019 | Representative sample, ascertainment of exposure from medical record, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, missing data <10% | High |
| Horsley et al. 2019 | Somewhat representative sample, self-reported exposure, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, attrition <10% | High |
| Hermon et al. 32 2019 | Restricted sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no report of missing data | Low |
| Ibanez et al.35 2012 | Somewhat representative sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, missing data <10% | High |
| Katon et al.36 2012 | Somewhat representative sample, self-reported exposure, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, adjusted for missing data | Low |
| Khanghah et al., 2020 | Restricted sample, self-reported exposure, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment from self-report, followed full course of pregnancy, attrition <10% | Low |
| Kim et al.37 2013 | Restricted sample, self-reported exposure, demonstrated no pre-existing hypertension | Did not control for BMI | Assessment from medical record, followed full course of pregnancy, missing data <10% | Low |
| Kurki et al.38 2000 | Restricted sample, self-reported exposure, excluded women with pre-existing hypertension | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, missing data <10% | Low |
| Lang et al. 2019 | Restricted sample, self-reported exposure, demonstrated no pre-existing hypertension | Adjusted for BMI | Assessment source not reported, followed full course of pregnancy, attrition <10% | Medium |
| Lutsiv et al. 39 2015 | Somewhat representative sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, adjusted for missing data | High |
| Malm et al.75 2015 | Representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, excluded missing data >10% | High |
| Mogos et al. 2020 | Representative sample, ascertainment of exposure from medical record but timing not reported, demonstrated no pre-existing hypertension | No adjustment for BMI | Assessment from medical record, delivery discharges capture course of pregnancy, no report of missing data | Medium |
| Navaratne et al.40 2016 | Restricted sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, excluded missing data | Low |
| Packer et al. 2019 | Restricted sample, ascertainment of exposure from medical record, adjusted for chronic hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, no report of missing data | High |
| Palmsten et al.41 2012 | Restricted sample, ascertainment of exposure from medical record, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, no report of missing data | High |
| Pavlov et al.53 2014 | Somewhat representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no missing data | Low |
| Ravid et al.54 2018 | Restricted sample, self-reported exposure, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no report of missing data | Low |
| Rejnö et al. 2019 | Representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present  | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, excluded missing data <12% | High |
| Ruiz et al.42 2012 | Restricted sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, adjusted for missing data | Low |
| Schmidt et al. 2019 | Restricted sample, self-reported exposure, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from self-report, followed full course of pregnancy, excluded missing data | Low |
| Suri et al.43 2007 | Restricted sample, ascertainment of exposure from structured interview, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, excluded missing data | Low |
| Suzuki et al.55 2015 | Somewhat representative sample, ascertainment of exposure from medical record, demonstrated no pre-existing hypertension | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no missing data | High |
| Venkatesh et al., 2018 | Restricted sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Adjusted for BMI and other confounders | Assessment source not reported, followed full course of pregnancy, excluded missing data <10%  | Medium |
| Winkel et al.19 2015 | Somewhat representative sample, ascertainment of exposure from structured interview, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, missing data <10% | High |
| Yedid Sion et al.44 2016 | Somewhat representative sample, ascertainment of exposure from medical record, no demonstration that pre-existing hypertension was not present | Did not adjust for BMI | Assessment from medical record, followed full course of pregnancy, no report of missing data | Low |
| Yonkers et al.45 2017 | Restricted sample, ascertainment of exposure from structured interview, demonstrated no pre-existing hypertension | Adjusted for BMI and other confounders | Assessment from medical record, followed full course of pregnancy, adjusted for missing data  | High |
| **Case-Control Studies** | **Selection**  | **Comparability** | **Exposure** | **Overall Quality** |
| De Vera et al.46 2011 | All eligible cases included with assessment from medical record, controls from same population with no history of hypertension | Matched cases and controls, adjusted for other covariates | Ascertainment of exposure from medical record for both groups, non response rate same for both groups | High |
| Kordi et al.52 2017 | All eligible cases included with assessment from medical record, controls from same population with no history of hypertension | Matched cases and controls, excluded BMI >30 | Self-reported exposure for both groups, non-response rate not reported | Low |
| Qiu et al.47 2007 | All eligible cases included with assessment from medical record, controls from same population with no history of hypertension | Adjusted for BMI and other covariates | Self-reported exposure for both groups, non response rate similar for both groups | High |
| Thombre Kulkarni et al. 2019 | All eligible cases included with assessment from medical record, controls from same population with not history of hypertension | Measured BMI and adjusted for other covariates | Ascertainment of exposure from medical record, non-response rate not reported by group | Medium |