

## **Appendix**

### **The prevalence of antenatal and postnatal comorbid anxiety and depression: A meta-analysis**

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Table S1: PubMed search strategy made on January 13, 2016

Search	Query	No of items found
#1	Postpartum period[MeSH Terms] OR postpartum[Text Word] OR puerperium[Text Word] OR pregnancy[MeSH Terms] OR pregnancy[Text Word] OR gestation[Text Word] OR postbirth[Text Word] OR post-birth[Text Word] OR antenatal[Text Word] OR prenatal[Text Word] OR postnatal[Text Word]	964,783
#2	Mood disorders[MeSH Terms] OR mood disorders[Text Word] OR depressive disorder[MeSH Terms] OR depression, postpartum[MeSH Terms] OR depression[MeSH Terms] OR depressive symptoms[Text Word] OR depression[Text Word] OR anxiety disorders[MeSH Terms] OR anxiety[MeSH Terms] OR anxiety[Text Word]	477,403
Final	#1 AND #2	21,487

**Table S2.** Risk of bias assessment

<b>Type of domain</b>	<b>Criteria definition</b>	<b>Classification (potential for bias)</b>
Selection bias	Sampling method of the study population, representativeness (response rate, difference between responders and non-responders)	<b>Low:</b> Target population defined as representative of the general population or subgroup of the general population (specific age group, specific geographic area, and specific occupational group) and response rate is 80% or higher. <b>Moderate:</b> Target population defined as somewhat representative of the general population, a restricted subgroup of the general population, response rate 60%-79%. <b>High:</b> Target population defined as self-referred/ volunteers, or response rate less than 60%.
Detection bias	Clear definition of outcome Standard method for outcome assessment	<b>Low:</b> The outcome was defined by clinical diagnosis. <b>Moderate:</b> The outcome was assessed by a validated questionnaire. <b>High:</b> Self-reported outcome.
Attrition bias	Withdrawal and dropout rates Size of missing data	<b>Low:</b> Follow-up participation rate of more than 80%, or missing data of less than 20%. <b>Moderate:</b> Follow-up participation rate of 60%-79%, or missing data of 20%-40%. <b>High:</b> Follow-up participation rate of less than 60%, or missing data of more than 40%.

**Table S3.** Characteristics of the included studies on the prevalence of antenatal comorbid depression and anxiety

Author, Year	Country	Study population	Sample size (in analysis)	Anxiety Assessment			Quality Rating for Risk of Bias			Results
				Measure	Cut-off	Time	Selection	Detection	Attrition	
<b>Cross sectional studies</b>										
Aaron 2015 <sup>1</sup>	USA	Pregnant women from an obstetrics clinic affiliated with a hospital in Philadelphia	113	CES-D STAI –S & T	≥16 CES-D ≥39 STAI	2 <sup>nd</sup> to 3 <sup>rd</sup> trimesters	High	Moderate	Moderate	19.5% (n = 22)
Cheng 2015 <sup>2</sup>	Singapore	Women attending an antenatal ultrasound at two major public maternity units	1062	EPDS STAI-S STAI-T	≥15 EPDS ≥41 state ≥43 trait	2 <sup>nd</sup> trimester	High	Moderate	Low	6.0% (n=64) state 6.5% (n=69) trait
DiPietro 2015 <sup>3</sup>	USA	Women with uncomplicated pregnancy who gave birth to a healthy and term infant	136	CES-D STAI-S & T	≥20 > 40	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	State 7.3% (n = 10) Trait 8.1% (n =11)
Flynn 2015 <sup>4</sup>	USA	Women attending an obstetrical clinic located in Northwest Florida	404	PHG-9 + physician-diagnosed depression, physician diagnosed anxiety	≥10 PHG-9	3 <sup>rd</sup> trimester	Moderate	moderate	Low	6.7% (n = 27)
Fontein-Kuipers 2015 <sup>5</sup>	Netherlands	Pregnant women from 140 midwife-led primary care practices	458	EPDS STAI-T	≥10 EPDS 1 <sup>st</sup> trimester, ≥11 EPDS 2 <sup>nd</sup> or 3 <sup>rd</sup> trimester ≥41 STAI	All trimesters	High	Moderate	Low	5.46% (n = 25)
Mahenge 2015 <sup>6</sup>	Tanzania	Pregnant women attending a hospital-based prenatal clinic in Dar es Salaam	1180	HSCL-25	1.75	All trimesters	Moderate	Moderate	Low	5.25% (n = 62)
Pazzagli 2015 <sup>7</sup>	Italy	Pregnant women were recruited from a hospital's Operative Unit of Obstetrics and Gynecology in central Italy	158	EPDS STAI-S STAI-T	>10 EPDS >40 STAI	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	4.4% (n = 7) state 4.4% (n = 7) trait

Razurel 2015 <sup>8</sup>	Switzerland	Women attending their last prenatal visit at the maternity hospital in Geneva	235	EPDS STAI-S	≥10 EPDS ≥40 STAI	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	11.2%
Rosenthal 2015 <sup>9</sup>	USA	Women attending in prenatal care at 7 sites community hospitals and health centers across all boroughs of New York City	1229	CES-D GAD-7	≥16 CES-D ≥10 GAD-7	2 <sup>nd</sup> trimester	Moderate	Moderate	Low	13.8% (n = 170)
Rwakarema 2015 <sup>10</sup>	Tanzania	Women attending antenatal care at one hospital, one health center and one dispensary in Mwanza city	397	EPDS Pregnancy related anxiety	≥13 EPDS “very much worried” response to ≥3 items on the 10 items pregnancy related anxiety	All trimesters	Moderate	Moderate	Low	5.3% (n=21)
van der Waerden 2015 <sup>11</sup>	France	Women from two maternity wards (Poitiers and Nancy University hospitals)	1796	CES-D STAI-S&T	≥16 CES-D ≥80 <sup>th</sup> percentile anxiety	2 <sup>nd</sup> trimester	High	Moderate	Low	14.3% (n = 256)
Waldie 2015 <sup>12</sup>	New Zealand	Pregnant women lived in the geographical area where covered by three contiguous District health Board regions	5659	EPDS Self-reported diagnosis of anxiety	>12 EPDS	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	1.38% (n = 78)
Broekman 2014 <sup>13</sup>	Singapore	Women from the two major hospital maternity units	1034	EPDS BDI STAI-S STAI-T	EPDS ≥13 BDI ≥20 STAI-S ≥40 STAI-T ≥40	2 <sup>nd</sup> trimester	Moderate	Moderate	Low	EPDS/state: 9.05% (n=93/1028) EPDS/trait: 10.04% (n=103/1026) BDI/state: 5.8% (n=58/1003) BDI/trait: 5.9% (n= 59/1001) Severe BDI (≥29)/state: 1.3% (n=13/1003) Severe BDI (≥29)//trait: 1.5% (n= 15/1001)
Koutra 2014 <sup>14</sup>	Greece	Women were recruited at four maternity clinics in Heraklion, Crete	438	EPDS STAI-T	≥13 ≥48	3 <sup>rd</sup> trimester	High	Moderate	Moderate	11.4 % (n = 50)

Tendais 2014 <sup>15</sup>	Portugal	Women from an obstetrics out-patients unit in Oporto	148	EPDS STAI-S	≥10 EPDS ≥12 EPDS ≥40 STAI-S	All trimesters	Moderate	Moderate	Low	29.1% for EPDS ≥10 18.2% for EPDS ≥12
Verreault 2014 <sup>16</sup>	Canada	Women were recruited at the offices of obstetrician or gynaecologists affiliated with the McGill University Health Centre or at the ultrasound department at the Jewish General Hospital in Montreal	364	EPDS STAI-S	≥10 EPDS ≥40 STAI-S	2 <sup>nd</sup> and 3 <sup>rd</sup> trimester	Moderate	Moderate	Low	15.8%
Bindt 2013 <sup>17</sup>	Ghana	Women attending their antenatal care at two large hospitals in Ghana and Côte d'Ivoire were consecutively recruited	717	PHQ-9 GAD-7	≥ 10 PHQ-9 ≥ 10 GAD-7	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	10.6% (n = 76)
Enfoux 2013 <sup>18</sup>	France	Women were consecutively approached at third trimester of pregnancy	314	EPDS STAI-S & T	≥11.5 EPDS ≥40 STAI	3 <sup>rd</sup> trimester	Moderate	Moderate	Low	17.51% (n =55))
Farias 2013 <sup>19</sup>	Brazil	Women receiving prenatal care at a public health center in Rio de Janeiro	239	MINI	DSM-IV	1 <sup>st</sup> trimester	Moderate	Low	Low	Comorbid major depressive disorder and generalized anxiety disorder = 3.7% (n = 9). Comorbid major depressive disorder and at least one anxiety disorder = 9.2% (n =22)
van Batenburg-Eddes 2013 <sup>20</sup>	England	Women residing in three health districts in the South West of England (ALSPAC study)	3442	EPDS CCEI	≥13 EPDS ≥85 <sup>th</sup> percentile	2 <sup>nd</sup> trimester	Moderate	Moderate	High	9.7%
Fisher 2010 <sup>21</sup>	Vietnam	Pregnant women in two northern Vietnamese provinces (random sample)	199	SCID	DSM-IV	3 <sup>rd</sup> trimester	Low	Low	Low	4.0% (n = 8)
Field 2010 <sup>22</sup>	USA	Women were recruited during their ultrasound examination at a large urban university hospital	911	SCID (research version)	DSM-IV	2 <sup>nd</sup> trimester.	High	Low	Low	33.8% (n = 308)
Goodman 2010 <sup>23</sup>	USA	Women attending two hospital-affiliated obstetrical clinics on days when research staff were present	491	EPDS PHQ	EPDS>10 DSM-IV for anxiety	3 <sup>rd</sup> trimester	High	Moderate	Low	Depressive symptoms comorbid with any anxiety disorder 3.46% (n = 17/491)
Uğuz 2010 <sup>24</sup>	Turkey	Women attending a university affiliated obstetric clinic in Selcuk	309	SCID-I	DSM-IV	All trimesters	Moderate	Low	Low	5.5% (n = 17)

van Dijk 2010 <sup>25</sup>	Netherland	Women attending antenatal care for their first check-up in Amsterdam	8066	CES-D STAI-S	≥ 16 CES-D >44 STAI-S	1 <sup>st</sup> to 2 <sup>nd</sup> trimester	Moderate	Moderate	Low	7.1% (n = 572/8104)
Couto 2009 <sup>26</sup>	Brazil	Women receiving routine prenatal care at two municipal healthcare clinics in Campinas (control group)	120	HADS	≥ 8	2 <sup>nd</sup> trimester	Moderate	Moderate	Low	2.0%
Fairlie 2009 <sup>27</sup>	USA	Women from eight obstetric offices in eastern Massachusetts	1436	EPDS Pregnancy-related anxiety	≥13 EPDS. “very much” responses to 3 or more questions on anxiety	1 <sup>st</sup> and 2 <sup>nd</sup> trimesters	High	Moderate	Low	2.1% (n =30)
Faisal-Cury 2009 <sup>28</sup>	Brazil	Women in 10 public primary health care units in São Paulo	831	CIS-R	≥ 12	2 <sup>nd</sup> to 3 <sup>rd</sup> trimester	Low	Moderate	Low	15.5% (n =129)
Marchesi 2009 <sup>29</sup>	Italy	Women from the Centers for prenatal Care of the Public Health Service District in Mantova	154	PRIME-MD HADS	Major depression and anxiety disorder	All trimesters	Moderate	Low	Low	6.49% (n=10)
van Batenburg-Eddes 2009 <sup>30</sup>	Netherlands	Pregnant women resident in Rotterdam between April 2002 and January 2006 were invited to participate ( population-based study the Generation R Study)	2280	BSI, depression and anxiety scales	≥85 <sup>th</sup> percentile	2 <sup>nd</sup> trimester	Moderate	Moderate	High	2.3%
Mann 2008 <sup>31</sup>	USA	Women receiving care at two obstetrics practices in a South-eastern U.S. state capital and one practice in a Gulf South state capital	344	EPDS HADS	≥10 EPDS ≥12 EPDS >10 HADS	All trimesters,	Moderate	Moderate	Low	6.4% (n = 22) for EPDS ≥10 6.1% (n =21) for EPDS ≥12
Sutter-Dallay 2004 <sup>32</sup>	USA	Women attending antenatal clinics at a hospital in Bordeaux	496	MINI	DSM-IV	3 <sup>rd</sup> trimester	Moderate	Low	Low	Generalized anxiety disorder and major depression = 1.8% (n =9)
<b>Cohort studies</b>										
Tomfohr 2015 <sup>33</sup>	Canada	Low risk pregnant women with healthy life style were recruited in Calgary and Edmonton.	281	EPDS Pregnancy related anxiety	> 12 EPDS >85 <sup>th</sup> percentile	< 22 and 32 weeks	Moderate	Moderate	High	5.3% (n=15/281) at < 22 weeks. 2.4% (N=6/252 ) at 32 weeks

Garthus-Niegel 2014 <sup>34</sup>	Norway	Women who attended a hospital near Oslo for routine ultrasound	2217	SCL EPDS	$\geq 10$ or $\geq 12$ for EPDS and $\geq 1.75$ for SCL	3 <sup>rd</sup> trimester	Low	Moderate	High	5.35% for EPDS $\geq 10$ 4.06% for EPDS $\geq 12$
Khashan 2014 <sup>35</sup>	New Zealand, Australia, UK; and Ireland	Women attending antenatal care in six centres: Auckland, New Zealand; Adelaide, Australia; Manchester, London and Leeds in the UK; and Cork, Ireland	5597	EPDS STAI-S & T	$\geq 10$ EPDS $\geq 75$ th percentile anxiety	15 $\pm$ 1 and 20 $\pm$ 1 weeks of gestation	Moderate	Moderate	Low	15 $\pm$ 1 weeks: 14.22% (n = 796/5597)  20 $\pm$ 1 weeks: 11.55% (n = 629/5448)
McDonald 2014 <sup>36</sup>	Canada	Women who attended antenatal care in the 1 <sup>st</sup> trimester of gestation in Calgary, Alberta	3233	EPDS STAI-S	$\geq 13$ EPDS $\geq 40$ State	1st and 2 <sup>nd</sup> trimester	Low	Moderate	Low	6.28% (n = 203)
Meijer 2014 <sup>37</sup>	The Netherlands	Women visiting 116 primary and secondary obstetric care centres in the Netherlands	4051	EPDS STAI	$\geq 10$ EPDS $\geq 12$ EPDS $\geq 40$ STAI	1st and 2nd trimesters	Moderate	Moderate	Moderate	7.1% (287/4049) for EPDS >10 and 4.7% (190/4051) for EPDS >12
Yonkers 2014 <sup>38</sup>	USA	Women from 137 obstetrical practices in Connecticut and Western Massachusetts	2350	CIDI	DSM-IV	2 <sup>nd</sup> trimester	Moderate	Low	Low	Major depression and generalized anxiety disorder = 0.64% (n = 15)
Bödecs 2013 <sup>39</sup>	Hungary	Women attending their first antenatal visit to the district nurse's office in town of Szombathely, Western Hungary	498	BDI STAI	$\geq 48$ STAI, >25 BDI	1 <sup>st</sup> trimester	High	Moderate	Low	2.81% (n = 14) for severe
Makara-Studzińska 2013 <sup>40</sup>	Poland	Women attending state or private gynecological and obstetric clinics in Lublin province and Mazowieckie voivodship	314	HADS	$\geq 11$	All trimesters	Moderate	Moderate	Low	1 <sup>st</sup> trimester: 12.7% 2 <sup>nd</sup> trimester: 10.8% 3 <sup>rd</sup> trimester: 12.4%
Martini 2013 <sup>41</sup>	Germany	Women from gynaecological outpatient clinics in the area of Dresden	306	CIDI-V	DSM-IV	1 <sup>st</sup> 2 <sup>nd</sup> and 3 <sup>rd</sup> trimesters	Moderate	Low	Low	1.3% at weeks 10–12 (n = 4/306), 0.3% at weeks 22–24 (n = 1/293) and 1.1% at weeks 35–37 (n = 3/278)
Grant 2012 <sup>42</sup>	Australia	Women recruited during routine antenatal assessment at a major obstetric hospital in Sydney	88	MINI	DSM-IV	all trimesters	High	Low	Moderate	Minor or major depression and any anxiety disorder 7.95% (n = 7/88)
Figueiredo 2011 <sup>43</sup>	Portugal	Women from a public hospital obstetrics out-patients unit in Porto (random sample)	260	EPDS STAI-S	$\geq 10$ EPDS $\geq 45$ STAI-S	1st, 2 <sup>nd</sup> , and 3 <sup>rd</sup> trimesters	Moderate	Moderate	Low	1 <sup>st</sup> trimester= 9.2 % 2 <sup>nd</sup> trimester= 7.9% 3 <sup>rd</sup> trimester= 10.1%



Lee 2007 <sup>44</sup>	Hong Kong	Women attending an antenatal clinic of a regional hospital	335	HADS	≥ 7	1st, 2 <sup>nd</sup> , and 3 <sup>rd</sup> trimesters	Moderate	Moderate	Low	1st trimester= 14.2% 2nd trimester= 12.6% 3rd trimester=16.9%
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BDI, Beck Depression Inventory  
BSI, Brief Symptom Inventory  
CCEI, Crown-Crisp Experiential Index  
CIDI, Composite International Diagnostic Interview  
CIS-R = Clinical Interview Schedule Revised  
EPDS, Edinburgh Postnatal Depression Scale  
HADS, Hospital Anxiety and Depression Scales  
HSCL, Hopkins Symptoms Checklist  
GADS = Generalized Anxiety Disorder Scale  
GDAS, Goldberg Depression and Anxiety Scales  
MINI, Mini-International Neuropsychiatric Interview  
PRIME-MD Primary Care Evaluation of Mental Disorders  
PSEI, Prenatal Social Environment Inventory  
PHQ, Patient Health Questionnaire  
SCL, Symptom Distress Checklist  
STAI, State-Trait Anxiety Inventory  
CES-D, Center for Epidemiological Studies–Depression

**Table S4.** Characteristics of the included studies on the prevalence of postnatal anxiety

First author and year of publication	Country	Study population	Sample size (in analysis)	Anxiety			Assessment of quality: Risk of bias			Results
				Tool	Cut-off	Time	Selection	Detection	Attrition	
<b>Cross sectional studies</b>										
Enatescu 2014 <sup>45</sup>	Romania	Women attended a single clinic for their regular postpartum care in Timisoara, Romania	80	EPDS BAI	≥10 EPDS ≥16 BAI	6–8 weeks	Moderate	Moderate	Low	40% (n = 32)
Wynter 2013 <sup>46</sup>	Australia	Women were recruited in five local government areas in the Australian state of Victoria	172	CIDI	DSM–IV	First 24 weeks	Moderate	Low	Low	0.6% (n = 1)
Amr 2010 <sup>47</sup>	Saudi Arabia	All primigravid teenage women (age 16-20 yrs.) attending the primary health care centers for postnatal visits in Al-Ahsa	190	MINI	DSM–IV	Within 8 weeks	Moderate	Low	Low	6.3% (n= 12)
Fisher 2010 <sup>21</sup>	Vietnam	A random sample of mothers of young infants in two northern Vietnamese provinces	165	SCID	DSM–IV	4 to 8 weeks	Low	Low	Low	3.0% (n = 5)
Yelland 2010 <sup>48</sup>	Australia	Women who gave birth in a four week period in Victoria and an eight week period in South Australia	4269	DASS	≥10 depression ≥8 anxiety	24 weeks	High	Moderate	Low	8.1% (n = 344/4269)
Rowe 2008 <sup>49</sup>	Australia	Consecutive women attending with their infants two centres in Melbourne	138	CIDI	DSM-IV	Mean 29 ± 10.3 weeks postpartum	Moderate	Low	Low	10.9% (n = 15)
Adewuya 2005 <sup>50</sup>	Nigeria	All women who delivered in the five government health centres in Ilesa town were consecutively recruited	632	SRDS SRAS	>40	1, 4, 8, 12, 24, and 36 weeks	Moderate	Moderate	Moderate	Week 1: 9.8% (n =62/632), week 4: 5.2% (n = 33/630), week 8: 7.2% (n = 43/600), week 12: 5.3% (n = 29/547), week 24: 4.1% (n = 21/512),

week 36: 2.5% (n = 12/480)

**Cohort studies**

Falah-Hassani 2016 <sup>51</sup>	Canada	Pregnant women attending antenatal or postnatal care in a health region near Vancouver, British Columbia	500	EPDS STAI-S	≥10 EPDS ≥40 STAI-S	1 to 8 weeks	Moderate	Moderate	Low	13.0% (n =65)
Aaron 2015 <sup>1</sup>	USA	Women recruited from an Obstetrics/gynecology clinic affiliated with an urban university hospital	113	CES-D STAI	≥16 CES-D ≥39 STAI	Up to 24 weeks	High	Moderate	Moderate	15% (n = 17)
DiPietro 2015 <sup>3</sup>	USA	Women with uncomplicated pregnancy who gave birth to a healthy and term infant	119	CES-D STAI-S & T	≥20 >40	6 weeks	Moderate	Moderate	Low	State 10.1% ( N=12) Trait 10.9% ( N=13)
Razurel 2015 <sup>8</sup>	Switzerland	Nulliparous women attended their last prenatal care at the maternity hospital within the University Hospitals Geneva	176	EPDS STAI-S	≥12 EPDS ≥40 STAI-S	6 weeks	Moderate	Moderate	Low	14.0%
Betts 2014 <sup>52</sup>	Australia	Pregnant women attending their first prenatal care at Brisbane's Mater Misericordiae Hospital	4891	DSSI	10% of the highest score	24 weeks	Moderate	Moderate	Moderate	7.4%
Broekman 2014 <sup>13</sup>	Singapore	Pregnant women were recruited from the two major Singaporean hospital maternity units	707	EPDS BDI STAI-S STAI-T	EPDS ≥13 BDI ≥20 STAI-S ≥40 STAI-T ≥40	12, 52 weeks	Moderate	Moderate	Moderate (12weeks). High (52 weeks)	At 12 weeks: EPDS/state: 9.9% (n=70/707) EPDS/trait: 10.97% (n=76/693) BDI/state: 5.4% (n=38/698) BDI/trait: 6.1% (n= 42/684) Severe BDI (≥29)/state: 1.7% (n=12/698) Severe BDI (≥29)//trait: 1.9% (n= 13/684)  At 52 weeks: BDI/state: 4.1% (n=14/344)

											BDI/trait: 4.4% (n=15/344)
Garthus-Niegel 2014 <sup>34</sup>	Norway	Pregnant women who attended Akershus University Hospital, located near Oslo for routine fetal ultrasound examination	2217	EPDS SCL	$\geq 10$ or $\geq 12$ EPDS $\geq 1.75$ SCL	8 weeks	Low	Moderate	High	3.89% for EPDS $\geq 10$ 3.18% for EPDS $\geq 12$	
McDonald 2014 <sup>36</sup>	Canada	Pregnant women who attended antenatal care in the 1 <sup>st</sup> trimester of gestation in Calgary, Alberta	2926	EPDS STAI-S	$\geq 13$ EPDS $\geq 40$ STAI-S	16 weeks	Low	Moderate	Low	4.27% (n =125)	
Meijer 2014 <sup>37</sup>	The Netherlands	Women visiting 116 primary and secondary obstetric care centres in the Netherlands	3936	EPDS STAI-S	$\geq 10$ EPDS $\geq 12$ EPDS $\geq 40$ STAI	Mean 20 weeks	Moderate	Moderate	Moderate	8.8% (345/3929) for EPDS >10 and 5.6% (219/3936) for EPDS >12	
Miller 2014 <sup>53</sup>	USA	Women before discharge from Northwestern Memorial Hospital in Chicago, Illinois after delivery were included in the study	461 at 2 weeks 329 at 6 months	PHQ-9 STAI-S	$\geq 10$ PHQ-9 $\geq 40$ STAI	2 and 24 weeks	Moderate	Moderate	Moderate	3.47% (n =16) at 2 weeks and 4.86% (n =16) at 24 weeks postpartum	
Polachek 2014 <sup>54</sup>	Israel	Women who were hospitalized at Chaim Sheba Medical Center maternity ward	89	EPDS Modified STAI-S	> 10 EPDS $\geq 5$ STAI-S	4 weeks	Moderate	Moderate	Low	3.4% (n = 3)	
Radoš 2014 <sup>55</sup>	Croatia	Pregnant women were recruited from the Department of Obstetrics and Gynaecology of the University Hospital Centre in Zagreb	272	SCID STAI-S	DSM-IV STAI >40	6 weeks	Moderate	Moderate	Moderate	6.25%	
Tendais 2014 <sup>15</sup>	Portugal	Pregnant women were recruited from an Obstetrics Out-patients Unit in Oporto	99	EPDS STAI-S	$\geq 10$ EPDS $\geq 12$ EPDS $\geq 40$ STAI-S	12 weeks	Moderate	Moderate	Moderate	12.1% for EPDS $\geq 10$ and 11.1% for EPDS $\geq 12$	
Verreault 2014 <sup>16</sup>	Canada	Pregnant women were recruited at the offices of obstetrician/gynaecologists affiliated with the McGill	228	EPDS STAI-S	$\geq 10$ EPDS $\geq 40$ STAI-S	12 weeks	Moderate	Moderate	Moderate	11.9%	

		University Health Centre or at the ultrasound department at the Jewish General Hospital in Montreal								
Enfoux 2013 <sup>18</sup>	France	Primiparous women were consecutively approached following delivery at the hospital	211	EPDS STAI-S & T	$\geq 11.5$ EPDS $\geq 40$ STAI-	12-24 weeks	Moderate	Moderate	Moderate	12.32% (n = 26)
Martini 2013 <sup>41</sup>	Germany	Pregnant women were recruited during early pregnancy in the area of Dresden from gynecological outpatient clinics	283	CIDI	DSM-IV	8 and 16 weeks	Moderate	Low	Low	1.8% at 8 weeks (n = 5/281) and 1.1% at 16 weeks (n = 3/283)
Paul 2013 <sup>56</sup>	USA	Mother delivered at the Penn State Milton S. Hershey Medical Center and attempting to breastfeed during the maternity hospital stay and with intent to continue breastfeeding after discharge	1123 at baseline, 1050 at 2 weeks, 986 at 8 weeks, and 937 at 24 weeks	EPDS STAI-S	$\geq 12$ EPDS $\geq 40$ STAI-S	3-5 days, 2, 8 and 24 weeks	Moderate	Moderate	Low	3-5 days: 42 (3.7%) 2 weeks: 24 (2.3%) 8 weeks: 17 (1.7%) 24 weeks: 23 (2.5%)
Taylor 2013 <sup>57</sup>	Australia	A convenience sample of women who gave birth to a healthy and term infant. Women were recruited from two public tertiary hospitals, one private hospital maternity unit, and one birth centre	503	EPDS STAI-S	$\geq 12$ EPDS $\geq 40$ STAI-S	1, 6, 12 and 24 weeks	High	Moderate	Low	1 week: 8.2% (n = 41/500). 6 weeks: 8.1% (n = 41/502). 12 weeks: 7.3% (n = 37/502). 24 weeks: 6.7% (n = 34/503)
Grant 2012 <sup>42</sup>	Australia	Women recruited during routine antenatal assessment at a major obstetric hospital in Sydney	88	MINI	DSM-IV	28 weeks	High	Low	Low	Major depression and any anxiety disorder 12.5% (n = 11/88)
Tavares 2012 <sup>58</sup>	Brazil	Women whose children were born in maternity wards in the city of Pelotas	871	MINI	DSM-IV	4 to 12 weeks	Low	Low	Low	13.2% (n = 115/871)
Edhborg 2011 <sup>59</sup>	Bangladesh	Pregnant women in two rural areas of Mymensingh district	674	EPDS STAI-S	$\geq 10$ $\geq 46$	8 to 12 weeks	Moderate	Moderate	Low	N=23 [3.4%]
Figueiredo 2011 <sup>43</sup>	Portugal	A random sample of pregnant women from a public hospital	260	EPDS STAI-S	$\geq 10$ EPDS $\geq 45$ STAI-S	Birth, 12 weeks	Moderate	Moderate	Low	At birth = 9.5 % 12 weeks = 3.2%

		obstetrics out-patients unit in Porto								
Austin 2010 <sup>60</sup>	Australia	A random sample of women delivered at midwife-based clinics of Royal Hospital, a tertiary referral centre	1289	CIDI	DSM-IV	24–32 weeks	Moderate	Low	Moderate	Major depression and anxiety disorder 2.25% (n = 29)
Goodman 2010 <sup>23</sup>	USA	Women attending two hospital-affiliated obstetrical clinics on days when research staff were present	299	EPDS PHQ	EPDS>10 DSM-IV for anxiety	6 weeks	High	Moderate	Moderate	Depressive symptoms co-morbid with any anxiety disorder = 2.34% (n = 7/299)
Giakoumaki 2009 <sup>61</sup>	Greece	Women who gave birth consecutively in the public perinatal centre 'Elena Venizelou' in Athens	228 at 2-3 days and 175 at 12 weeks	EPDS STAI-S & T	≥14 EPDS ≥40 STAI	2–3 days and 12 weeks	Moderate	Moderate	Moderate	8.37% (n = 19/227) for state anxiety and 9.21% (n = 21/228) for trait anxiety at 2-3 days postpartum.  3.43% (n = 6/175) for state anxiety and 2.86% (n = 5/175) for trait anxiety at 12 weeks postpartum
Reck 2009 <sup>62</sup>	Germany	Women who gave birth at six maternity hospitals in Heidelberg and Darmstadt	1000	SCID	DSM-IV	1-12 weeks	Moderate	Low	Low	2.1% (n = 21)
van Batenburg-Eddes 2009 <sup>30</sup>	Netherlands	Pregnant women resident in Rotterdam between April 2002 and January 2006 were invited to participate (population-based study the Generation R Study)	2724	BSI, depression and anxiety scales	≥85 <sup>th</sup> percentile	8 weeks	Moderate	Moderate	High	2.1%
Sato 2008 <sup>63</sup>	Japan	Women who had given birth in any of the 25 collaborating birth centers	1348	HADS	≥8 and ≥11	12-16 and 36 -40 weeks	Moderate	Moderate	Moderate	12-16 weeks: 6.0% (n = 81) for 8 or higher, and 1.9% (n = 26) for 11 or higher.  36 -40 weeks: 8.2% (n = 111) for ≥8, 2.9% (n = 39) for ≥ 11

Sutter-Dallay 2004 <sup>32</sup>	USA	Consecutive pregnant women attending antenatal clinics at the maternity units of the University Hospital of Bordeaux	488	MINI	DSM-IV	6, 12 and 24 weeks	Moderate	Low	Low	Generalized anxiety disorder and major depression at 6 weeks postpartum: 0.41% (n = 2/488), at 12 postpartum: 0.65% (n = 3/465) and 24 weeks postpartum: 0.67% (n = 3/447)
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AUDADIS-IV, Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV

BAI, Beck Anxiety Inventory

BDI, Beck Depression Inventory

BSI, Brief Symptom Inventory

CIDI, Composite International Diagnostic Interview

DASS, Depression, Anxiety and Stress Scales

DSSI, Delusions-Symptoms-States Inventory

EPDS, Edinburgh Postnatal Depression Scale

HADS, Hospital Anxiety and Depression Scales

HSCL, Hopkins Symptoms Checklist

MINI, Mini-International Neuropsychiatric Interview

PHQ, Patient Health Questionnaire

SCL, Symptom Distress Checklist

SRDS, Zung's Self Rating Depression Scale

SRAS, Zung's Self Rating Anxiety Scale

STAI, State-Trait Anxiety Inventory

CES-D, Center for Epidemiological Studies-Depression

**Table S5.** Characteristics of the included studies on the prevalence of antenatal or postnatal comorbid depression and anxiety

Author, Year	Country	Study population	Sample size (in analysis)	Anxiety Assessment			Quality Rating for Risk of Bias			Results
				Measure	Cut-off	Time	Selection	Detection	Attrition	
<b>Cross sectional studies</b>										
Nguyen 2015 <sup>64</sup>	Vietnam	Women who were in the last trimester of pregnancy or had recently given birth were recruited in Ha Nam province (population-based)	211	SCID-I	DSM-IV	3 <sup>rd</sup> trimester up to recently given birth	Low	Low	Low	4.7% (n = 10)
Le Strat 2011 <sup>65</sup>	USA	A population based national representative sample, the National Epidemiological Survey of Alcohol and Related Conditions	1524	AUDADIS-IV	DSM-IV	During pregnancy up to 52 weeks	Low	Low	Low	Major depression and anxiety disorder = 4.91% (CI 3.73-6.44%). (Weighted prevalence, corresponding to 45/1000, which gives 4.9%, CI 3.73-6.42%)
<b>Cohort studies</b>										
Bjørk 2015 <sup>66</sup>	Norway	A population-based study of pregnant women without epilepsy and chronic medical conditions	87,468	HSCL	>2.0 SD above mean in both domains	3 <sup>rd</sup> trimester up to 24 weeks postpartum	High	Moderate	Low	Severe depression and severe anxiety 6.3%



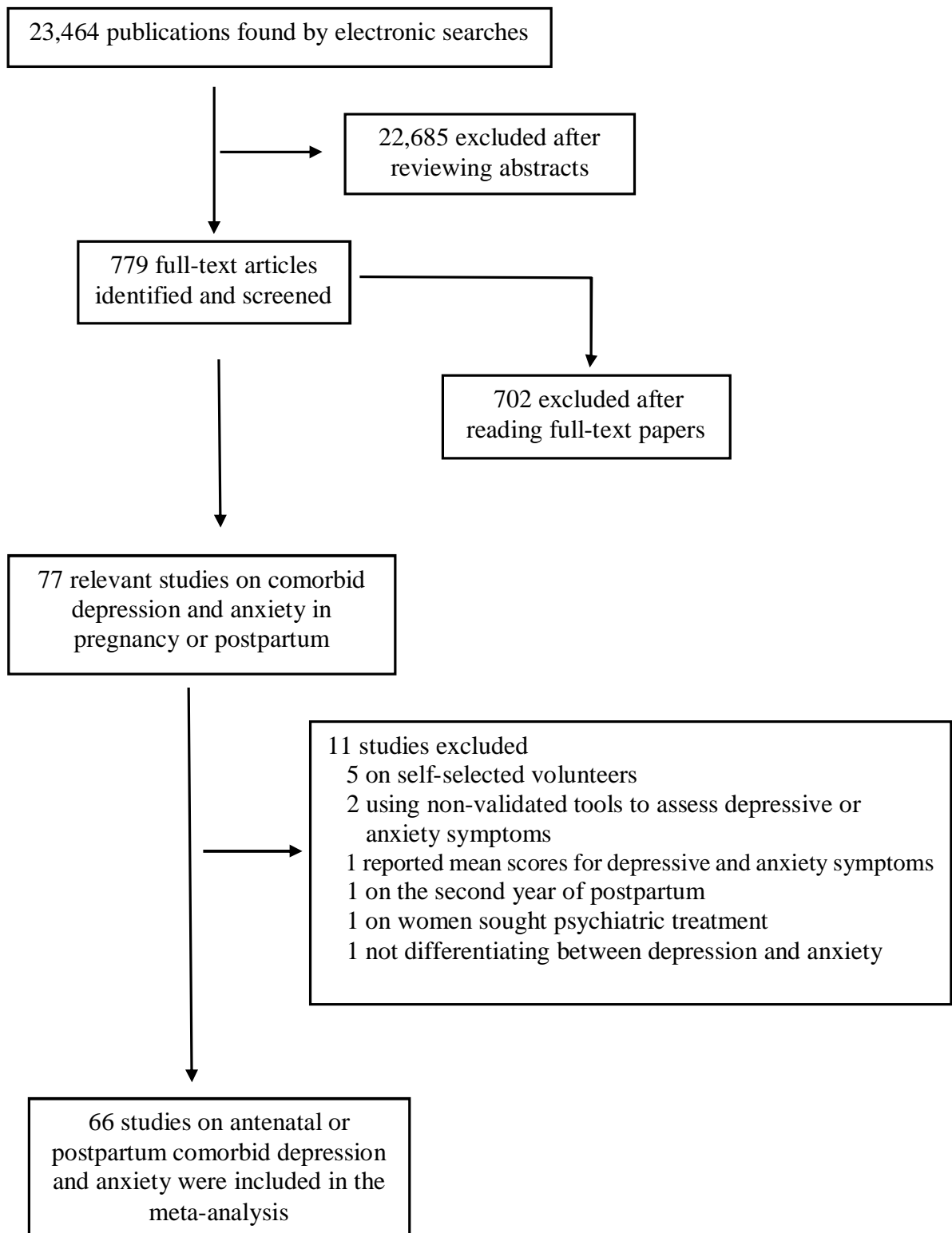


Figure S1: Flow chart of the search strategy and selection of studies

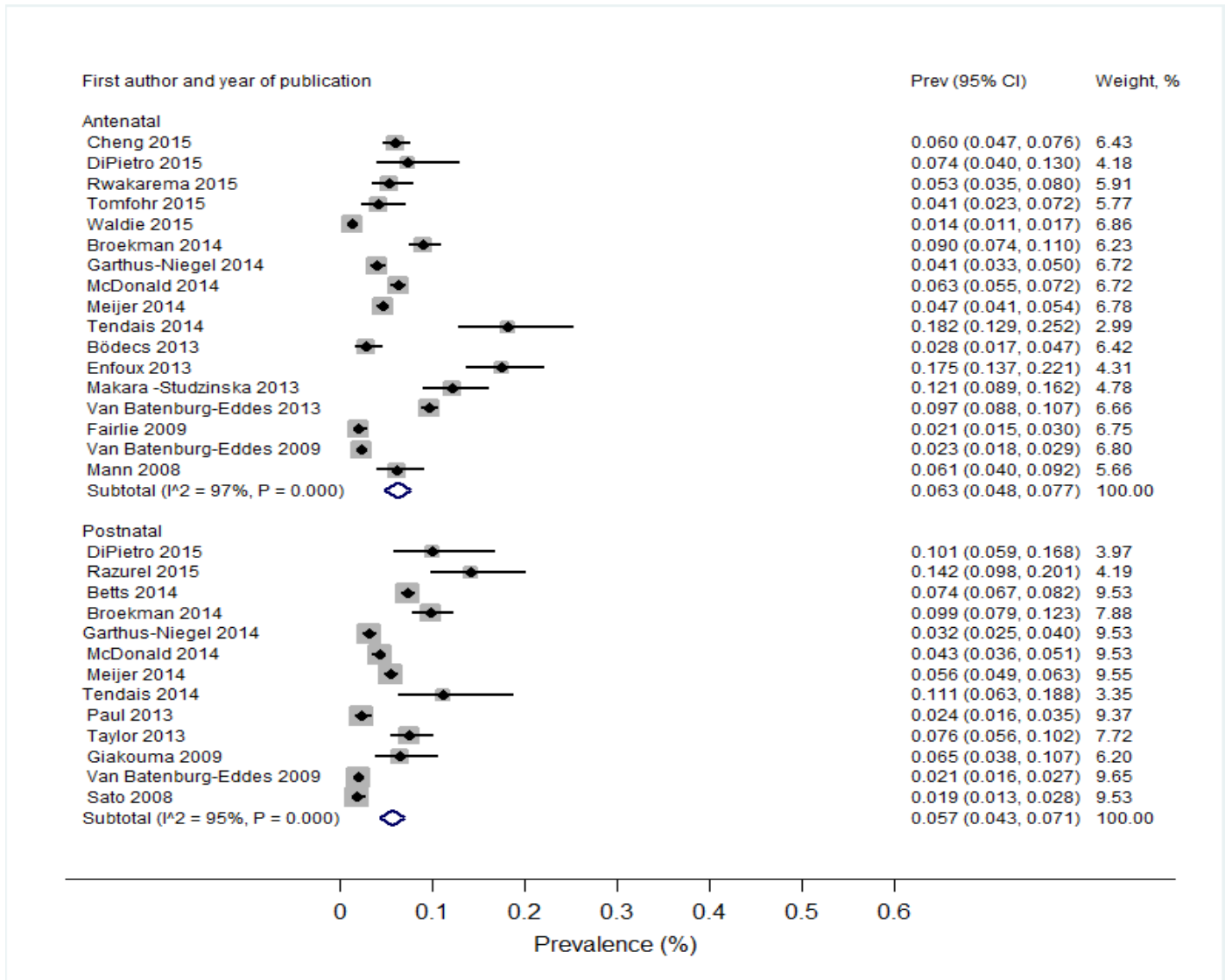


Figure S2: Prevalence of antenatal and postnatal (1-24 weeks) comorbid moderate to severe depressive and anxiety symptoms

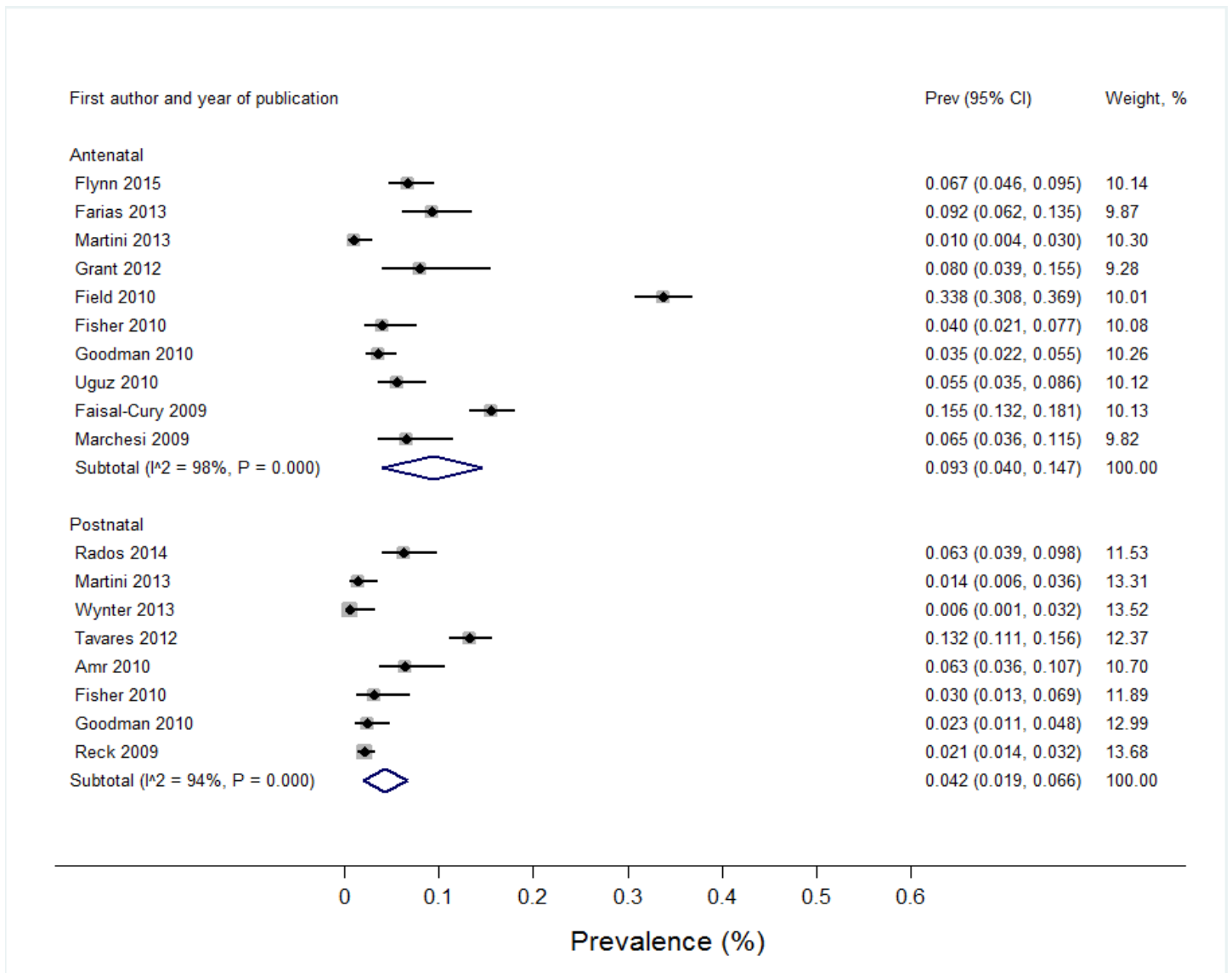


Figure S3: Prevalence of antenatal and postnatal (1-24 weeks) comorbid depression and anxiety disorder

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