Supplemental Online Content

Nelson HD, Darney BG, Ahrens K, et al. Associations of unintended pregnancy with maternal and infant health outcomes: a systematic review and meta-analysis. JAMA. doi:10.1001/jama.2022.19097

This supplemental material has been provided by the authors to give readers additional information about their work.

eMethods

Search Terms
Database: Ovid MEDLINE(R) ALL <1946 to June 17, 2020> Updated June 15, 2022
Search Strategy (KQ4):
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1 pregnancy, unplanned/ or pregnancy, unwanted/ (4341)
2 (unintended or unintentional or unplanned or unwanted or accidental or (contraceptive adj3 fail*) or ("not" adj3 planned) or ("not" adj3 wanted)).ti,kf. (18265)
3 2 and (pregnant or pregnancy or birth*).ti,kf. (2326)
4 1 or 3 (5512)
5 Mothers/ (43332)
6 women/ or pregnant women/ (22608)
7 (mother or maternal or woman or women).ti,ab,kf. (1379043)
8 exp Infant/ (1134191)
9 (infant* or infancy or child* or baby or neonate*).ti,ab,kf. (1798714)
10 or/5-9 (3380913)
11 4 and 10 (3815)
12 limit 11 to english language (3509)
13 limit 12 to humans (3116)
14 limit 13 to yr="2000 -Current" (2358)
15 "in-process".st. (340437)
16 "aheadofprint".pp. (245247)
17 12 and (15 or 16) (67)
18 14 or 17 (2425)

U.S. Preventive Services Task Force Criteria for Rating Study Quality of Cohort Studies[1]

- Initial assembly of comparable groups: Consideration of potential confounders, with either restriction or measurement for adjustment in the analysis; consideration of inception cohorts
- Maintenance of comparable groups (includes attrition, cross-overs, adherence, contamination)
- Important differential loss to follow-up or overall high loss to follow-up
- Measurements: equal, reliable, and valid (includes masking of outcome assessment)
- Clear definition of interventions
- All important outcomes considered
- Analysis: adjustment for potential confounders for cohort studies.

Definition of ratings based on above criteria:

Good: Meets all criteria: Comparable groups are assembled initially and maintained throughout the study (follow-up ≥80%); reliable and valid measurement instruments are used and applied equally to all groups; interventions are spelled out clearly; all important outcomes are considered; and appropriate attention to confounders in analysis. In addition, intention-to-treat analysis is used for RCTs.

Fair: Studies are graded "fair" if any or all of the following problems occur, without the fatal flaws noted in the "poor" category below: Generally comparable groups are assembled initially, but some question remains whether some (although not major) differences occurred with follow-up; measurement instruments are acceptable (although not the best) and generally applied equally; some but not all important outcomes are considered; and some but not all potential confounders are accounted for. Intention-to-treat analysis is used for RCTs.

Poor: Studies are graded "poor" if any of the following fatal flaws exists: Groups assembled initially are not close to being comparable or maintained throughout the study; unreliable or invalid measurement instruments are used or not applied equally among groups (including not masking outcome assessment); and key confounders are given little or no attention. Intention-to-treat analysis is lacking for RCTs.

[1] U.S. Preventive Services Task Force. Methods and Processes. Accessed September 15, 2022. https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes

Grading Strength of Evidence[1]

Grades are based on:

- Study limitations (low, medium, or high level)
- Consistency (consistent, inconsistent, or unknown/not applicable)
- Directness (direct or indirect)
- Precision (precise or imprecise)
- Reporting bias (suspected or undetected)

The strength of evidence is assigned an overall grade of high, moderate, low, or insufficient by evaluating and weighing the combined results of the above domains.

High: high confidence that the estimate of effect lies close to the true effect for the outcome; the body of evidence has few or no deficiencies; and the findings are stable, (i.e., another study would not change the conclusions).

Moderate: moderate confidence that the estimate of effect lies close to the true effect for the outcome; the body of evidence has some deficiencies; and the findings are likely to be stable, but some doubt remains.

Low: limited confidence that the estimate of effect lies close to the true effect for the outcome; the body of evidence has major or numerous deficiencies (or both); and additional evidence is needed before concluding either that the findings are stable or that the estimate of effect is close to the true effect.

Insufficient: no evidence, unable to estimate an effect, or there is no confidence in the estimate of effect for the outcome; and no evidence is available or the body of evidence has unacceptable deficiencies, precluding conclusions.

[1] Berkman ND, Lohr KN, Ansari MT, et al. Grading the strength of a body of evidence when assessing health care interventions: an EPC update. *J Clin Epidemiol*. 2015;68(11):1312-24. doi:10.1016/j.jclinepi.2014.11.023

eTable. Strength of Evidence

Outcome	Outcome measure	Studies; design; participants (*N*)	Summary of findings	Consistency; directness; precision	Reporting bias	Study Limitations	Strength of evidence
Maternal depression	Prenatal depression	7 cohort and 8 cross-sectional studies (302,633)	Higher rates of prenatal depression with unintended vs intended pregnancies (aOR, 1.59 [95% CI, 1.35-1.92]; 15 studies [*n* = 41,054]).	Consistent; indirect; precise	Undetected	Medium: multiple measures of depression used; adjustment for confounders varied across studies	High
	Postpartum depression	4 cohort and 6 cross-sectional studies (157,198)	Higher rates of postpartum depression with unintended vs intended pregnancies (aOR, 1.51 [95% CI, 1.40-1.70]; 10 studies [*n* = 82,673])	Consistent; indirect; precise	Undetected	Medium: multiple measures of depression used; adjustment for confounders varied across studies	High
Maternal interpersonal violence	Interpersonal violence during pregnancy	5 cross-sectional studies (186,503)	Higher rates of interpersonal violence with unintended vs intended pregnancies (aOR, 2.22 [95% CI, 1.41-2.91]; 5 studies [*n* = 42,306])	Consistent; indirect; precise	Undetected	Medium: few studies although high enrollment; difficulty measuring experience of violence	Moderate
Preterm birth	<37 weeks gestation	4 cohort and 6 cross-sectional studies (294,553)	Higher rates of preterm birth with unintended vs intended pregnancies (aOR, 1.21 [95% CI, 1.12-1.31]; 10 studies [*n* = 94,351])	Consistent; indirect; precise	Undetected	Medium: adjustment for confounders varied across studies	Moderate
Low birth weight	<2500 grams birth weight	3 cohort and 5 cross-sectional studies (281,720)	Higher rates of low birth weight with unintended vs intended pregnancies (aOR, 1.09 [95% CI, 1.02-1.21]; 8 studies [*n* = 87,547])	Consistent; indirect; precise	Undetected	Medium: adjustment for confounders varied across studies	Moderate

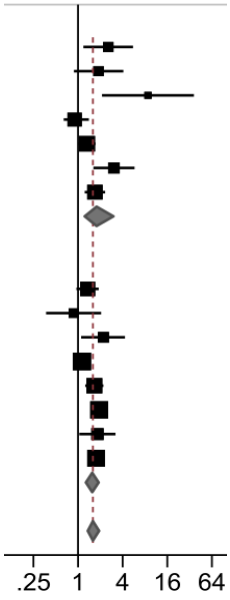
Abbreviations: CI, confidence interval; aOR, adjusted odds ratio.

eFigure 1. Sensitivity Analysis for Depression by Study Design

Prenatal Depression

Study	Unintended pregnancy n/N	Unintended pregnancy Absolute risk, %	Intended pregnancy n/N	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Chee et al,[1] 2005	35/195	17.9	33/364	9.1	2.56 (1.18-5.52)
Rich-Edwards et al,[2] 2006	22/84	26.2	73/1036	7.0	1.89 (0.88-4.09)
Bunevicious et al,[3] 2009	NA/25	NA	NA/205	NA	8.79 (2.11-36.58)
Maxson et al,[4] 2011	NA/245	NA	NA/498	NA	0.90 (0.64-1.40)
Bahk et al,[5] 2015	NA/525	NA	NA/1551	NA	1.32 (1.01-1.72)
Bayrampour et al,[6] 2015	37/653	5.7	35/2335	1.5	3.05 (1.61-5.79)
Gariepy et al,[7] 2016	131/987	13.3	91/1664	5.5	1.69 (1.23-2.32)
Subgroup, PL (P = .002, I^2 = 71.1%)					1.78 (1.23-3.00)
Cross-sectional					
Blake et al,[8] 2007	109/237	46.0	135/347	38.9	1.35 (0.95-1.90)
Escriba-Aguir et al,[9] 2008	NA/73	NA	NA/612	NA	0.87 (0.37-2.05)
Dhillon et al,[10] 2010	58/218	26.6	34/82	41.5	2.20 (1.10-4.30)
Dudas et al,[11] 2012	92/407	22.6	203/1312	15.5	1.13 (1.03-1.20)
Redshaw et al,[12] 2013	130/829	15.7	294/3970	7.4	1.66 (1.25-2.20)
Fellenzer et al,[13] 2014	646/1551	41.7	2542/11249	22.6	1.93 (1.71-2.18)
Cruz-Bendezu et al,[14] 2020	36/341	10.6	27/529	5.1	1.83 (1.04-3.20)
Moreau et al,[15] 2022	279/1245	22.4	792/7685	10.3	1.75 (1.51-2.02)
Subgroup, PL (P < .001, I^2 = 90.3%)					1.55 (1.28-1.89)
Overall, PL (P < .001, I^2 = 85.0%)					1.59 (1.35-1.92)

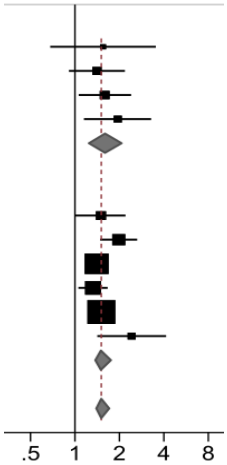
NA, not available; PL, profile likelihood.



Postpartum Depression

Study	Unintended pregnancy n/N	Unintended pregnancy Absolute risk, %	Intended pregnancy n/N	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Rich-Edwards et al,[2] 2006	12/63	19.0	88/833	10.6	1.55 (0.68-4.09)
Abbasi et al,[16] 2013	64/952	6.7	87/2020	4.3	1.41 (0.91-2.18)
Bahk et al,[5] 2015	NA/525	NA	NA/1551	NA	1.59 (1.06-2.40)
Chan,[17] 2019	30/178	16.9	71/905	7.8	1.95 (1.15-3.28)
Subgroup, PL (P = .83, I^2 = 0.0%)					1.60 (1.24-2.07)
Cross-sectional					
Gross et al,[18] 2002	NA/NA	NA	NA/NA	NA	1.50 (1.00-2.20)
Cheng et al,[19] 2009	291/1062	27.4	789/5798	13.6	1.98 (1.48-2.64)
McCrory et al,[20] 2013	603/4118	14.6	464/6022	7.7	1.40 (1.21-1.61)
Suh et al,[21] 2016	NA/881	NA	NA/2681	NA	1.33 (1.06-1.67)
Gauthreaux et al,[22] 2017	NA/11965	NA	NA/43119	NA	1.51 (1.34-1.71)
Mark et al,[23] 2022	NA/NA	NA	NA/NA	NA	2.42 (1.42-4.14)
Subgroup, PL (P < .13, I^2 = 41.7%)					1.50 (1.37-1.75)
Overall, PL (P = .38, I^2 = 7.1%)					1.51 (1.40-1.70)

NA, not available; PL, profile likelihood.

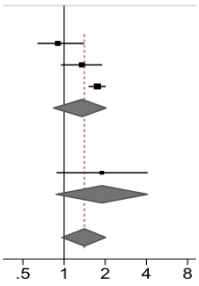


eFigure 2. Sensitivity Analysis for Depression by Unwanted Pregnancy

Prenatal Depression

Study	Unwanted pregnancy *n/N*	Unwanted pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Not controlled for history of depression					
Maxson et al,[4] 2011	NA/245	NA	NA/498	NA	0.90 (0.64-1.40)
Blake et al,[8] 2007	109/237	46.0	135/347	38.9	1.35 (0.95-1.90)
Moreau et al,[15] 2022	279/1245	22.4	792/7685	10.3	1.75 (1.51-2.02)
Subgroup, PL (P = .005, I^2 = 81.2%)					1.35 (0.84-2.03)
Controlled for history of depression					
Rich-Edwards et al,[2] 2006	22/84	26.2	73/1036	7.0	1.89 (0.88-4.09)
Overall, PL (P = .01, I^2 = 72.3%)					1.41 (0.97-2.01)

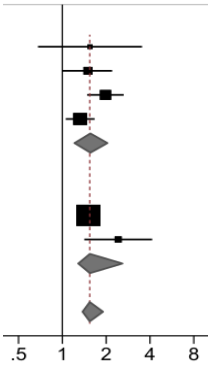
NA, not available; PL, profile likelihood.



Postpartum Depression

Study	Unwanted pregnancy *n/N*	Unwanted pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Not controlled for history of depression					
Rich-Edwards et al,[2] 2006	12/63	19.0	88/833	10.6	1.55 (0.68-4.09)
Gross et al,[18] 2002	NA/NA	NA	NA/NA	NA	1.50 (1.00-2.20)
Cheng et al,[19] 2009	291/1062	27.4	789/5798	13.6	1.98 (1.48-2.64)
Suh et al,[21] 2016	NA/881	NA	NA/2681	NA	1.33 (1.06-1.67)
Subgroup, PL (P = .21, I^2 = 34.3%)					1.56 (1.21-2.04)
Controlled for history of depression					
Gauthreaux et al,[22] 2017	NA/11965	NA	NA/43119	NA	1.51 (1.34-1.71)
Mark et al,[23] 2022	NA/NA	NA	NA/NA	NA	2.42 (1.42-4.14)
Subgroup, PL (P = .09, I^2 = 64.7%)					1.55 (1.29-2.59)
Overall, PL (P = .19, I^2 = 32.4%)					1.54 (1.38-1.90)

NA, not available; PL, profile likelihood.

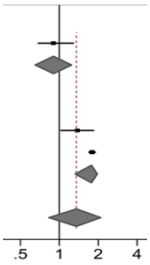


eFigure 3. Sensitivity Analysis for Depression by Mistimed Pregnancy

Prenatal Depression

Study	Mistimed pregnancy n/N	Mistimed pregnancy Absolute risk, %	Intended pregnancy n/N	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Maxson et al,[4] 2011	NA/578	NA	NA/498	NA	0.90 (0.68-1.30)
Cross-sectional					
Blake et al,[8] 2007	199/423	47.0	135/347	38.9	1.38 (1.02-1.86)
Fellenzer et al,[13] 2014	2173/5288	41.1	2542/11249	22.6	1.79 (1.67-1.93)
Subgroup, PL (P = .10, I^2 = 64.2%)					1.77 (1.33-1.97)
Overall, PL (P < .001, I^2 = 89.4%)					1.36 (0.83-2.09)

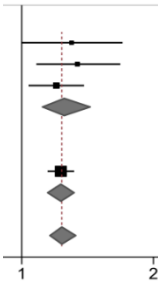
NA, not available; PL, profile likelihood.



Postpartum Depression

Study	Mistimed pregnancy n/N	Mistimed pregnancy Absolute risk, %	Intended pregnancy n/N	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Not controlled for history of depression					
Gross et al,[18] 2002	NA/NA	NA	NA/NA	NA	1.30 (1.00-1.70)
Cheng et al,[19] 2009	438/2188	20.0	789/5798	13.6	1.34 (1.08-1.68)
Suh et al,[21] 2016	NA/1987	NA	NA/2681	NA	1.20 (1.04-1.39)
Subgroup, PL (P = .68, I^2 = 0.0%)					1.25 (1.12-1.43)
Controlled for history of depression					
Gauthreaux et al,[22] 2017	NA/11965	NA	NA/43119	NA	1.23 (1.15-1.32)
Overall, PL (P = .84, I^2 = 0.0%)					1.23 (1.16-1.33)

NA, not available; PL, profile likelihood.

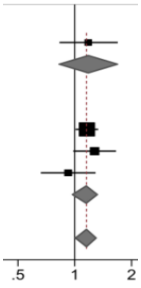


eFigure 4. Sensitivity Analysis for Preterm Birth by Unwanted and Mistimed Pregnancy

Unwanted Pregnancy

Study	Unwanted pregnancy *n/N*	Unwanted pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Lindberg et al,[24] 2015	125/891	14.0	496/4133	12.0	1.18 (0.83-1.69)
Cross-sectional					
Mohllajee et al,[25] 2007	1133/9684	11.7	3578/44178	8.1	1.16 (1.01-1.33)
Afable-Munsuz et al,[26] 2008	NA/827	NA	NA/6114	NA	1.28 (0.98-1.66)
Mark et al,[23] 2022	NA/NA	NA	NA/NA	NA	0.92 (0.66-1.29)
Subgroup, PL (P = .32, I^2 = 12.3%)					1.15 (0.97-1.32)
Overall, PL (P = .51, I^2 = 0.0%)					1.15 (1.01-1.30)

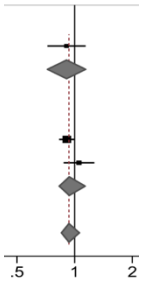
NA, not available; PL, profile likelihood.



Mistimed Pregnancy

Study	Mistimed pregnancy *n/N*	Mistimed pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Lindberg et al,[24] 2015	165/1492	11.0	496/4133	12.0	1.91 (0.72-1.14)
Cross-sectional					
Mohllajee et al,[25] 2007	2345/27271	8.6	3578/44178	8.1	0.91 (0.83-1.00)
Afable-Munsuz et al,[26] 2008	NA/2381	NA	NA/6114	NA	1.05 (0.88-1.27)
Subgroup, PL (P = .16, I^2 = 48.8%)					0.94 (0.83-1.14)
Overall, PL (P = .36, I^2 = 1.0%)					0.93 (0.85-1.06)

NA, not available; PL, profile likelihood.

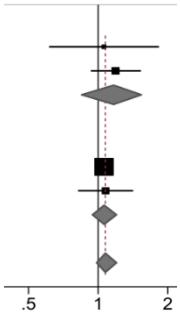


eFigure 5. Sensitivity Analysis for Infant Low Birth Weight by Unwanted and Mistimed Pregnancy

Unwanted Pregnancy

Study	Unwanted pregnancy *n/N*	Unwanted pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Joyce et al,[27] 2000	NA/NA	NA	NA/NA	NA	1.06 (0.61-1.83)
Lindberg et al,[24] 2015	73/916	8.0	297/4247	7.0	1.19 (0.93-1.53)
Subgroup, PL (P = .71, I^2 = 0.0%)					1.17 (0.85-1.54)
Cross-sectional					
Mohllajee et al,[25] 2007	755/9684	7.8	2209/44178	5.0	1.06 (0.97-1.16)
Mark et al,[23] 2022	NA/NA	NA	NA/NA	NA	1.08 (0.82-1.42)
Subgroup, PL (P = .91, I^2 = 0.0%)					1.06 (0.94-1.20)
Overall, PL (P = .86, I^2 = 0.0%)					1.07 (0.99-1.20)

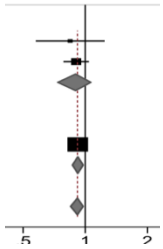
NA, not available; PL, profile likelihood.



Mistimed Pregnancy

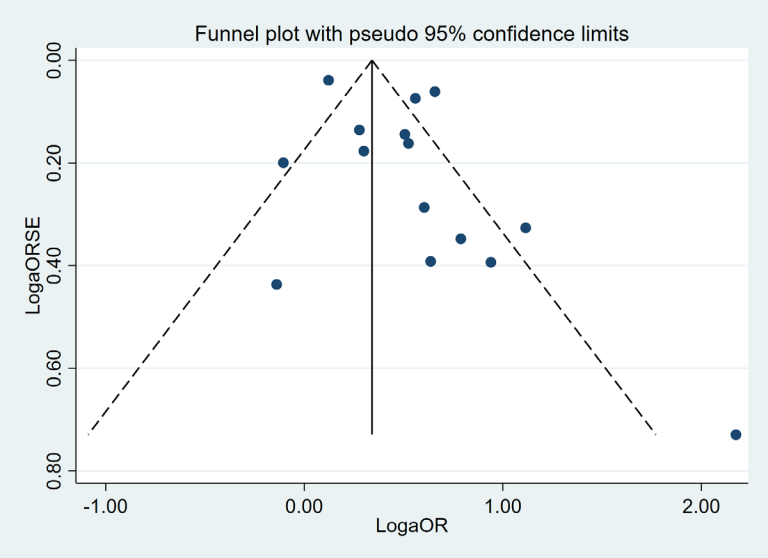
Study	Mistimed pregnancy *n/N*	Mistimed pregnancy Absolute risk, %	Intended pregnancy *n/N*	Intended pregnancy Absolute risk, %	Adjusted odds ratio (95% CI)
Cohort					
Joyce et al,[27] 2000	NA/NA	NA	NA/NA	NA	0.85 (0.58-1.24)
Lindberg et al,[24] 2015	240/3164	7.6	297/4247	7.0	0.90 (0.78-1.04)
Subgroup, PL (P = .75, I^2 = 0.0%)					0.90 (0.74-1.06)
Cross-sectional					
Mohllajee et al,[25] 2007	1718/27271	6.3	2209/44178	5.0	0.92 (0.86-0.97)
Overall, PL (P = .90, I^2 = 0.0%)					0.92 (0.85-0.98)

NA, not available; PL, profile likelihood.



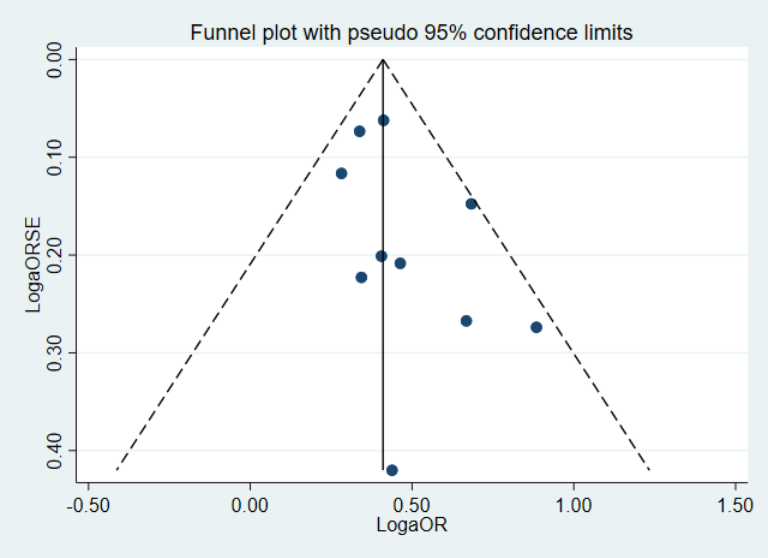
eFigure 6. Funnel Plots

Prenatal Depression



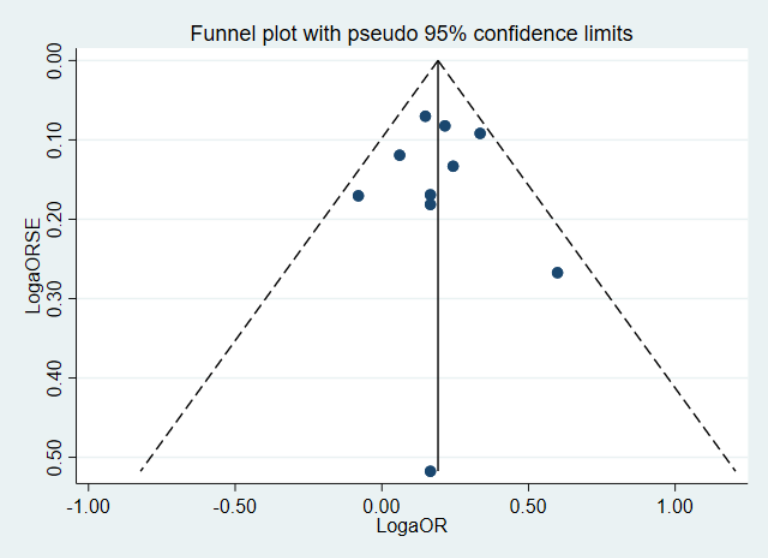
Egger's test: *P* = .14 indicates no small-study effects.

Postpartum Depression



Egger's test: *P* = .16 indicates no small-study effects.

Preterm Birth



Egger's test: *P* = .94 indicates no small-study effects.

References

1. Chee CY, Lee DT, Chong YS, Tan LK, Ng TP, Fones CS. Confinement and other psychosocial factors in perinatal depression: a transcultural study in Singapore. *J Affect Disord*. Dec 2005;89(1-3):157-66. doi:10.1016/j.jad.2005.09.004
2. Rich-Edwards JW, Kleinman K, Abrams A, et al. Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *J Epidemiol Community Health*. Mar 2006;60(3):221-7. doi:10.1136/jech.2005.039370
3. Bunevicius R, Kusminskas L, Bunevicius A, Nadisauskiene RJ, Jureniene K, Pop VJ. Psychosocial risk factors for depression during pregnancy. *Acta Obstet Gynecol Scand*. 2009;88(5):599-605. doi:10.1080/00016340902846049
4. Maxson P, Miranda ML. Pregnancy intention, demographic differences, and psychosocial health. *J Womens Health (Larchmt)*. Aug 2011;20(8):1215-23. doi:10.1089/jwh.2010.2379
5. Bahk J, Yun SC, Kim YM, Khang YH. Impact of unintended pregnancy on maternal mental health: a causal analysis using follow up data of the Panel Study on Korean Children (PSKC). *BMC Pregnancy Childbirth*. Apr 03 2015;15:85. doi:10.1186/s12884-015-0505-4
6. Bayrampour H, McDonald S, Tough S. Risk factors of transient and persistent anxiety during pregnancy. *Midwifery*. Jun 2015;31(6):582-9. doi:10.1016/j.midw.2015.02.009
7. Gariepy AM, Lundsberg LS, Miller D, Stanwood NL, Yonkers KA. Are pregnancy planning and pregnancy timing associated with maternal psychiatric illness, psychological distress and support during pregnancy? *J Affect Disord*. Nov 15 2016;205:87-94. doi:10.1016/j.jad.2016.06.058
8. Blake SM, Kiely M, Gard CC, El-Mohandes AA, El-Khorazaty MN, Initiative N-D. Pregnancy intentions and happiness among pregnant Black women at high risk for adverse infant health outcomes. *Perspect Sex Reprod Health*. Dec 2007;39(4):194-205.
9. Escribe-Aguir V, Gonzalez-Galarzo MC, Barona-Vilar C, Artazcoz L. Factors related to depression during pregnancy: are there gender differences? *J Epidemiol Community Health*. May 2008;62(5):410-4. doi:10.1136/jech.2007.063016
10. Dhillon N, Macarthur C. Antenatal depression and male gender preference in Asian women in the UK. *Midwifery*. Jun 2010;26(3):286-93. doi:10.1016/j.midw.2008.09.001
11. Dudas RB, Csatordai S, Devosa I, et al. Obstetric and psychosocial risk factors for depressive symptoms during pregnancy. *Psychiatry Res*. Dec 30 2012;200(2-3):323-8. doi:10.1016/j.psychres.2012.04.017
12. Redshaw M, Henderson J. From antenatal to postnatal depression: associated factors and mitigating influences. J Womens Health (Larchmt). 2013/06/12 ed2013. p. 518-25.
13. Fellenzer JL, Cibula DA. Intendedness of pregnancy and other predictive factors for symptoms of prenatal depression in a population-based study. *Matern Child Health J*. Dec 2014;18(10):2426-36. doi:10.1007/s10995-014-1481-4
14. Cruz-Bendezu AM, Lovell GV, Roche B, et al. Psychosocial status and prenatal care of unintended pregnancies among low-income women. *BMC Pregnancy Childbirth*. Oct 12 2020;20(1):615. doi:10.1186/s12884-020-03302-2
15. Moreau C, Bonnet C, Beuzelin M, Blondel B. Pregnancy planning and acceptance and maternal psychological distress during pregnancy: results from the National Perinatal Survey, France, 2016. *BMC Pregnancy Childbirth*. Feb 28 2022;22(1):162. doi:10.1186/s12884-022-04496-3
16. Abbasi S, Chuang CH, Dagher R, Zhu J, Kjerulff K. Unintended pregnancy and postpartum depression among first-time mothers. *J Womens Health (Larchmt)*. May 2013;22(5):412-6. doi:10.1089/jwh.2012.3926
17. Chan KL. The role of father involvement and intimate partner violence on postnatal depression among women with unintended pregnancy. *J Interpers Violence*. Jul 11 2019:886260519862274. doi:10.1177/0886260519862274
18. Gross KH, Wells CS, Radigan-Garcia A, Dietz PM. Correlates of self-reports of being very depressed in the months after delivery: results from the Pregnancy Risk Assessment Monitoring System. *Matern Child Health J*. Dec 2002;6(4):247-53. doi:10.1023/a:1021110100339
19. Cheng D, Schwarz EB, Douglas E, Horon I. Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. *Contraception*. Mar 2009;79(3):194-8. doi:10.1016/j.contraception.2008.09.009

20. McCrory C, McNally S. The effect of pregnancy intention on maternal prenatal behaviours and parent and child health: results of an Irish cohort study. *Paediatr Perinat Epidemiol*. Mar 2013;27(2):208-15. doi:10.1111/ppe.12027
21. Suh EY, Ma P, Dunaway LF, Theall KP. Pregnancy intention and post-partum depressive affect in louisiana pregnancy risk assessment monitoring system. *Matern Child Health J*. May 2016;20(5):1001-13. doi:10.1007/s10995-015-1885-9
22. Gauthreaux C, Negron J, Castellanos D, et al. The association between pregnancy intendedness and experiencing symptoms of postpartum depression among new mothers in the United States, 2009 to 2011: a secondary analysis of PRAMS data. *Medicine (Baltimore)*. Feb 2017;96(6):e5851. doi:10.1097/MD.0000000000005851
23. Mark NDE, Cowan SK. Do pregnancy intentions matter? A research note revisiting relationships among pregnancy, birth, and maternal outcomes. *Demography*. 02 01 2022;59(1):37-49. doi:10.1215/00703370-9710311
24. Lindberg L, Maddow-Zimet I, Kost K, Lincoln A. Pregnancy intentions and maternal and child health: an analysis of longitudinal data in Oklahoma. *Matern Child Health J*. May 2015;19(5):1087-96. doi:10.1007/s10995-014-1609-6
25. Mohllajee AP, Curtis KM, Morrow B, Marchbanks PA. Pregnancy intention and its relationship to birth and maternal outcomes. *Obstet Gynecol*. Mar 2007;109(3):678-86.
26. Afable-Munsuz A, Braveman P. Pregnancy intention and preterm birth: differential associations among a diverse population of women. *Perspect Sex Reprod Health*. Jun 2008;40(2):66-73. doi:10.1363/4006608
27. Joyce TJ, Kaestner R, Korenman S. The effect of pregnancy intention on child development. *Demography*. Feb 2000;37(1):83-94.