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Association of Perinatal Depression and Postpartum Contraception Intent, Choice, and Actual Use

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Abstract

Objectives: Depression is common during pregnancy and the year following childbirth (the perinatal period). This study assessed the association of depressive symptoms and contraception decisions in perinatal individuals.

Study Design: We conducted a secondary analysis using data from the PRogram in Support of Moms (PRISM) study, a cluster randomized controlled trial of active interventions which aimed to address perinatal depression. This analysis included 191 individuals aged 18–45 who screened positive for depression on the Edinburgh Postnatal Depression Scale (EPDS, score ≥10) during pregnancy or up to 3-months postpartum. We assessed contraception intent and method choice at 1–3 months postpartum. At 5–7 months postpartum, we assessed contraceptive method used and EPDS depression scores. We used logistic regressions to examine the relationship between depression and contraceptive use/method.

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Results: At 1–3 months postpartum, the majority of participants (76.4%) expressed an intention to use contraception. Of those, over half (53.4%) indicated a preference for higher effectiveness contraception methods. Participants with persistent depression symptoms (positive EPDS) at 5–7 months were significantly less likely to report using higher effectiveness contraceptive methods (aOR=0.28, 95% CI=0.11–0.70) compared to those without. Among participants with persistent depressive symptoms, 21.1% reported using a contraception method of lower effectiveness than had originally intended.

Conclusion: Perinatal individuals with persistent depressive symptoms at 5–7 months postpartum reported greater use of less-effective contraception methods than originally planned.

Implications: We found associations between perinatal depression and use of less effective contraception use. Provider discussions regarding contraception planning is important, particularly in those with perinatal depression symptoms.

Keywords

Contraception Use; Postpartum Depression; Reproductive Planning

1. Introduction

Mental health conditions are a common complication of pregnancy and the year following childbirth (the perinatal period) and the leading cause of maternal mortality in the US [1]. Perinatal depression affects one in five individuals, and left untreated, can incur societal costs of over 14 billion dollars annually [2]. The perinatal period is characterized by frequent interactions with the healthcare system and presents opportunities to address mental health and contraception use as key components of comprehensive perinatal care [3–6]. As such, comprehensive and culturally responsive perinatal care should include discussions about patients' postpartum reproductive planning goals (e.g. consideration around contraception and intent to optimize inter-pregnancy intervals) [7].

Conflicting evidence has emerged on the association between depressive symptoms and the use of less effective contraception methods, contraception non-use, and reliance on less effective methods among reproductive-aged individuals [8]. Inconsistencies in the existing literature pose challenges in understanding the relationship between postpartum depression and contraception use, potentially affecting the development of an evidence base that can inform clinical practice. The association between sustained depressive symptoms over an extended postpartum period and contraception use among perinatal individuals also remains limited, and to our knowledge no studies have examined differences in intended use and actual use of contraceptive methods among perinatal individuals with depressive symptoms [8]. These insights can be particularly valuable as contraceptive choice and decision-making are inherently tied to social, cultural, and psychological factors, and differences between intent and use may illustrate broader inequities [9].

This study aims to further explore relationships between perinatal depression and contraception intent, choice, and actual use in the postpartum period. In individuals with depressive symptoms at study recruitment, we assessed whether depressive symptoms were

associated with contraception intent and if the persistence of depressive symptoms was associated with changes in self-reported postpartum contraception use. As a secondary objective, we examined differences in contraception method choice between reported contraception intent and actual use.

2. Material and Methods

2.1 Data source and participants

This was a secondary analysis of a cluster randomized controlled trial (Clinical Trials #: NCT02760004), conducted between October 2015 and March 2022. The trial evaluated two interventions for perinatal depression in 10 obstetric practices across Massachusetts. The first intervention was the Massachusetts Child Psychiatry Access Program (MCPAP) for Moms, a state-wide, population-based program. The second was the PRogram In Support of Moms (PRISM) which included MCPAP for Moms services along with practice-level intervention and implementation support. Both intervention groups were associated with reduction in perinatal depression symptoms from baseline to 11–13 months postpartum for participants, with no statistically significant differences in depression symptomatology or treatment initiation (manuscript under review). Complete study methods have been detailed elsewhere [10]; relevant procedures are included here.

Eligible participants were English-fluent, aged 18–45, screened positive for depression symptoms (Edinburgh Postnatal Depression Scale [EPDS], score ≥10, details below) [10, 11], and either pregnant or up to three months postpartum [10, 11]. Exclusion criteria included a positive score on the Parents, Partner, Past, and Present Plus active substance use screen [12], or a positive screen for bipolar disorder on the Mood Disorder Questionnaire [13].

Participants were recruited for initial assessment if they had a positive EPDS screen at one of three timepoints: 0–24 and 32–40 weeks gestational age or 1–3 months postpartum, Follow-up interviews occurred at five to seven months postpartum and 11–13 months postpartum. Interview questionnaires consisted of structured assessments regarding obstetric and psychiatric care, validated screening instruments (including the EPDS for depression), and demographic questions [10].

Data from both intervention arms were pooled and examined cross-sectionally for this secondary analysis.

The study was approved by UMass Chan Medical School Institutional Review Board and all participants provided informed consent.

2.2 Measures of depression symptomatology

Perinatal depression symptoms were assessed with the EPDS, a 10-item screening questionnaire validated in pregnant and postpartum individuals [11]. All participants initially screened positive for depressive symptoms at recruitment. EPDS scores were collected at all study timepoints and categorized as a binary variable: positive (EPDS score ≥10) or negative (EPDS score <10) [10, 11]. For this analysis, we examined EPDS scores at 1–3 months

postpartum and at 5–7 months postpartum (Table 1); participants with a positive EPDS score at 5–7 months were considered to have persistent depressive symptoms.

2.3 Measures of contraception intent and use

As part of the assessment of obstetric care, participants were asked about contraception plans. We queried *intended* use of contraception at 1–3 months postpartum and *actual* use of contraception at 5–7 months postpartum (Table 1). Only participants with complete data on both intended contraception use at 1–3 months and reported actual contraception use at 5–7 months were included (Table 1). We excluded 121 (39%) participants of the initially enrolled primary study population, due to missing data either at 1–3 months or 5–7 months for the present analysis. Intended and actual contraception use was operationalized as binary variables (yes/no). For participants who intended or reported to use contraception, their method was ascertained and categorized into tiers based on the World Health Organization (WHO) Model of Tiered Contraception Effectiveness [14]. These categories range from most to least effective (Table 2). Abstinence was also included as a possible contraception option in the PRISM interviews.

2.4 Covariates

Baseline demographic variables, considered time-invariant for analysis, were examined, and included: age, race, ethnicity, marital status, annual income, education level, insurance coverage, and intervention arm in the RCT (categorized in Table 3). Clinical variables, including gravidity, parity, pregnancy planning, and number of prenatal visits, were collected at 1–3 months. Current sexual activity and breastfeeding status were collected at both postpartum interviews.

2.5 Statistical Analyses

Associations of: (1) EPDS score and intended contraception use (both collected at 1–3 months) and (2) EPDS score, and actual contraception use (both collected at 5–7 months) were examined using chi-square and logistic regression models. Regression models examined associations of depressive symptoms (positive EPDS score) and any contraception use (yes/no), and contraception method use (more effective methods/less effective). Models were adjusted for aforementioned covariates.

Differences in intended contraception use at 1–3 months versus reported use at 5–7 months were analyzed using paired t-tests. Results were examined both overall and by EPDS score at 5–7 months.

Sensitivity analyses were conducted with and without abstinence as a contraception method, as abstinence is not included in the WHO contraception tiers. Concordance in reporting sexual activity and use of abstinence as primary contraceptive method were also examined.

Analyses were conducted using STATA 14.2.

3. Results

A total of 191 participants were included in this analysis. Table 3 displays participant demographics, categorized by a positive or negative EPDS score at 5–7 months; characteristics stratified by EPDS score at 1–3 months were similar. More than one-third of participants continued to have depressive symptoms at 5–7 months (positive EPDS score, EPDS≥10). The majority of the study population identified as White (69%), non-Hispanic/Latina (71%), and married or living with a partner (65.5%). Demographics were similar in participants regardless of having a positive or negative EPDS score; an exception was current sexual activity, where individuals with a positive EPDS score at 5–7 months were significantly less likely to report being sexually active than those with EPDS<10 (64.9% vs. 81.2%, p=0.01).

3.1 Associations of positive EPDS score (≥10) with intended contraception use (both measured at postpartum 1–3 months)

At 1–3 months, most participants (76.4%) reported that they intended to use contraception, with more than half (53.4%) saying they intended to use higher effectiveness contraception methods postpartum, regardless of presence of depression symptoms.

Compared to those that had a negative EPDS score at 1–3 months, participants that had a positive EPDS screen reported decreased intent for contraception use (70.5% EPDS≥10 vs. 80.5% EPDS<10, p=0.11, Table 4a) and had lower odds of intended contraception use in adjusted models (adjusted odds ratio [aOR]=0.76, 95% confidence interval [CI]: 0.34–1.74, Table 4b), although these results were not statistically significant.

3.2 Associations of positive EPDS score with actual contraception use (both measured at 5–7 months)

At 5–7 months, most participants (81.7%) reported that they were using contraception. More participants that screened negative on the EPDS reported using higher effectiveness contraception (58.9%) than those that screened positive (40.5%, p=0.041). Compared to those that had a negative EPDS score at 5–7 months, participants that screened positive had a lower odds of reported contraception use in adjusted models (adjusted odds ratio [aOR]=0.44, 95% confidence interval [CI]: 0.18–1.09, Table 4b), although these results were not statistically significant.

In adjusted multinomial models, individuals with a positive EPDS score were significantly less likely to report use of a higher effectiveness contraceptive method over lower effectiveness contraceptive methods (aOR=0.28, 95% CI: 0.11–0.70, Table 4b) than those who screened negative.

3.3 Differences between intended contraception use at 1–3 months versus actual contraception use at 5–7 months

Overall, participants had a non-statistically significant increase in actual contraception use at 5–7 months than their previously reported intended use at 1–3 months, regardless of EPDS score (Table 5). However, participants with a positive EPDS score at 5–7 months had a

significant decrease in reported use of higher effectiveness contraception methods and an increased use of lower effectiveness methods (percent change=21.1, p=0.003) compared to their intended use.

4.4 Sensitivity analyses

All analyses were run with and without abstinence included as a method of contraception. Results did not differ significantly whether abstinence was included (Tables 4 and 5) or analyzed separately (latter not shown). Of participants who reported using abstinence as their primary contraceptive method, 83.3% also reported no current sexual activity and responses did not differ significantly based on EPDS screening outcome.

4. Discussion

This study examined the association between perinatal depression symptoms and postpartum contraception intent, choice, and actual use. In our sample of perinatal individuals with sustained depressive symptoms at five to seven months postpartum, we observed that participants were more likely to report use of less effective contraceptive methods, compared to those without sustained depressive symptoms. Furthermore, they reported significantly higher use of these methods than initially planned.

Our findings align with prior research in non-perinatal populations, indicating an association between depressive symptoms and non-use or less effective contraceptive methods [15–18]. This association likely arises from a combination of patient-level factors, such as decreased sexual activity in individuals with depression, as seen in our sample, and system-level factors, like barriers to accessing contraception. These are important areas of future research.

An interesting finding in our work was that over one-fifth of individuals with sustained depression symptoms used less effective methods than previously reported intended contraception plans. The reasons for these changes are unknown and warrant further investigation. Additionally, our results highlight that these differences from intended plans as well as the resumption of sexual activity can extend well beyond the typical postpartum care period (four to 12 weeks). While initiating early and ongoing conversations between patients and providers in the postpartum period may support reproductive goals and ongoing mental health concerns [7, 15, 19–21]. potential challenges due to social issues like insurance coverage may impact feasibility. Literature indicates that being insured is strongly associated with more effective contraceptive use [22]. As such, Medicaid’s extension of postpartum coverage to 12-months in 19 states [23] holds promise for addressing the mental health and contraceptive needs of this population and merits future study.

Our study adds to the evidence demonstrating an association between depressive symptoms and contraceptive choice. It extends our understanding to a unique phase in the lives of childbearing individuals, enhancing the generalizability of existing data. Our findings help underscore the pivotal role of obstetricians in postpartum mental health care and emphasize the significance of supporting reproductive autonomy and family planning goals, regardless of mental health status.

Similarly, mental health professionals caring for childbearing age individuals can play a crucial role in addressing family planning goals and facilitating such care. Based on our findings, individuals that may wish to avoid pregnancy with sustained depressive symptoms are less likely to use more effective contraception. Given the Dobbs v. Jackson ruling, which may force women in some states to carry unplanned pregnancies to term and is associated with negative maternal and child outcomes [24, 25], psychiatric providers can and should ensure access to contraception in individuals who desire it. Expanding their scope of practice to include contraceptive care can help promote better outcomes for perinatal individuals and their children.

It is important to acknowledge that these results lack an in-depth understanding of why participants chose particular contraception methods and how this relates to their preferences, access, and/or other decision-making factors. Concerns about directive or coercive contraception counseling, particularly around long acting reversible contraception, remain relevant, especially for historically marginalized populations [26]. Professionals caring for postpartum individuals should prioritize offering services aligned with their family planning aspirations. Future research should strive to better understand the intricate relationship between perinatal depression, contraception choices, and patient decision-making. This will help to ensure that individuals choose the best contraception method for themselves, and that providers take a patient-centered approach and respect patient autonomy when helping them [27].

A strength of this study was that it included participants from across Massachusetts, mirroring state demographics [28]. However, given the disproportionate degree to which perinatal depression affects underrepresented and marginalized populations, future research should focus on oversampling these populations. This includes those with higher rates of mental health comorbidities, lower income, education levels, comorbid substance use, and limited English proficiency [18]. Our analysis examining differences in intended and actual use beyond the standard postpartum follow up period may also point to areas where providers can enhance patient self-efficacy, capacity and promote resources to support reproductive goals.

Several limitations are noted. This study has potential for selection bias, particularly as this was a secondary analysis of a larger parent study, and all participants had a positive EPDS score at baseline. Intended contraception use was retrospectively queried and subject to recall bias. Our smaller size raises the possibility that our observed outcomes could be due to chance or missed opportunities to find significant relationships in the data. Lastly, the generalizability of our findings may be limited, as this study enrolled individuals who screened positive for depression (EPDS≥10), and thus may be applicable to a specific subset of perinatal individuals.

Finally, our analyses are grounded in the underlying assumption that, of those who planned or reported use of contraception, prevention of pregnancy was universally desired within our sample. However, contraceptive intent is dynamic in nature and many individuals face compounded obstacles to accessing contraception. Contraception use can also be influenced

by a range of factors and cultural practices including barriers due to side effects. Together, these factors influence both the intent and the practical use of contraceptives.

Our study demonstrates a relationship between perinatal depressive symptoms and contraception method choice, with persistent symptoms associated with reported use of less effective methods. Both obstetric and mental health professionals stand poised to address the complex interplay between mental health and proactive family planning.

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Table 1.

Timepoints and relevant measurements for this secondary analysis of perinatal individuals in Massachusetts.

Analysis includes a subset of patients recruited to the PRogram In Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n=212).

Measurement	Timepoint		
	Initial enrollment[a]	1–3 months postpartum	5–7 months postpartum
Edinburgh Postpartum Depression Scale	X	X	X
Contraception intent (yes/no, methodology)		X	
Reported actual contraception use (yes/no, methodology)			X

[a]Initial enrollment occurred with first positive Edinburgh Postpartum Depression Scale (EPDS) screen (where a positive EPDS score was ≥10), be it at 0–24 weeks gestational age in pregnancy, 32–40 weeks gestational age, or 1–3 months postpartum (postpartum timepoint one). Most of this sample (n=191, 90%) were recruited prior to 1–3 months postpartum, however, initial enrollment and the 1–3 month postpartum follow-up timepoint overlapped for some participants (n=21). For the overarching PRISM study, follow-up also includes a 11–13 month postpartum interview that is not included in this analysis.

Table 2.

Contraception effectiveness categories

used for this secondary analysis of perinatal individuals in Massachusetts, recruited to the PRogram In Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n=212).

Effectiveness		Examples
Higher effectiveness methods	Tier 1 (most effective)	Contraception implant, intrauterine device (IUD), female/male sterilization
	Tier 2 (moderately effective)	Contraception injection, lactational amenorrhea method (exclusive breastfeeding), birth control pill, contraceptive patch, contraceptive vaginal ring
Lower effectiveness methods	Tier 3 (less effective)	Male/female condoms, diaphragms, fertility awareness methods (i.e., natural family planning)
	Tier 4 (least effective)	Withdrawal, spermicides

Effectiveness levels adapted from the World Health Organization Model of Tiered Contraception Effectiveness

Table 3.

Demographic data

for this secondary analysis of perinatal individuals in Massachusetts, recruited to the PRogram In Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n=191).

Characteristic	Overall	Positive EPDS screen (≥10)[a]	Negative EPDS screen (<10)[a]	p-value
Total (n, %)	191 (100)	74 (38.7)	117 (61.3)	-
Age (mean, SD)[b]	31.2 (5.8)	31.8 (6.2)	30.8 (5.6)	0.26
Race (n, %)[b]				
Black/African American	25 (14.6)	8 (12.5)	17 (15.9)	0.17
White	118 (69.0)	50 (78.1)	68 (63.6)	
Asian	10 (5.9)	3 (4.7)	7 (6.5)	
Other/More than one race	18 (10.5)	3 (4.7)	15 (14.0)	
Hispanic ethnicity (n, %)[b]	55 (29.0)	25 (34.3)	30 (25.6)	0.20
Marital Status (n,%)[b]				
Never married	47 (24.6)	22 (29.7)	25 (21.4)	0.12
Divorced/widowed/separated	19 (10.0)	10 (13.5)	9 (7.7)	
Married/living with partner	125 (65.5)	42 (56.8)	83 (70.9)	
Annual Income (n, %)[b]				
Less than $20,000	31 (18.0)	13 (19.1)	18 (17.3)	0.93
$20,000 - $59,999	62 (36.1)	25 (36.8)	37 (35.6)	
$60,000 - $99,999	40 (23.3)	14 (20.6)	26 (25.0)	
More than $100,000	39 (22.7)	16 (23.5)	23 (22.1)	
Education level (n, %)[b]				
Less than HS	5 (2.6)	2 (2.7)	3 (2.6)	0.98
HS/GED	40 (21.1)	17 (23.3)	23 (19.7)	
Some college/Associate's	64 (33.7)	24 (32.9)	40 (34.2)	
Bachelor's Degree	34 (17.9)	13 (17.8)	21 (18.0)	
Master's/Doctoral Degree	47 (24.7)	17 (23.3)	30 (25.6)	
Insurance status (n, %)[b]				
Private insurance	94 (49.2)	37 (50.0)	57 (48.7)	0.46
Medicaid/ MassHealth	93 (48.7)	37 (50.0)	56 (47.9)	
Military/Other	3 (1.6)	0	3 (2.6)	
None	1 (0.5)	0	1 (0.9)	
Gravidity (mean, SD)[b]	3.4 (1.9)	3.7 (2.2)	3.2 (1.6)	0.14
Parity (mean, SD)[b]	1.3 (1.2)	1.3 (1.2)	1.3 (1.2)	0.72
Planned pregnancy (n, %)[b]	96 (50.3)	35 (47.3)	61 (52.1)	0.52
# Prenatal visits (mean, SD)[c]	6.2 (3.6)	6.5 (4.2)	6.1 (3.1)	0.52
Currently sexually active (n, %)[d]	143 (74.9)	48 (64.9)	95 (81.2)	**0.01**
Currently breastfeeding (n, %)[d]	100 (56.5)	35 (51.5)	65 (59.6)	0.29
Intervention Arm (n.%)				

Characteristic	Overall	Positive EPDS screen (≥10)[a]	Negative EPDS screen (<10)[a]	p-value
MCPAP for Moms	100 (52.4)	39 (52.7)	61 (52.1)	0.94
PRISM	91 (47.6)	35 (47.3)	56 (47.9)	

EPDS = Edinburgh Postpartum Depression Scale. Total percentages may not sum to 100.0% because of rounding

[a]EPDS measured at 5–7 months postpartum, results did not significantly differ when stratified by EPDS measured at 1–3 months postpartum

[b]Characteristic collected during baseline interview

[c]Characteristic collected at the 1–3 months postpartum interview

[d]Characteristic collected at all postpartum interviews (1–3 months, 5–7 months, 11–13 months).

Table 4a.

Associations of intended contraception use and actual contraception use and depression scores.

Data from a secondary analysis of perinatal individuals in Massachusetts, recruited to the Program IN Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n =191)

	Intended use 1–3 months postpartum				Actual Use 5–7 months postpartum			
	Overall	**Positive EPDS screen (≥10)**	**Negative EPDS screen (<10)**	**p-value**	**Overall**	**Positive EPDS screen (≥10)**	**Negative EPDS screen (<10)**	**p-value**
Any method (n, %)	146 (76.4)	55 (70.5)	91 (80.5)	0.11	156 (81.7)	56 (75.7)	100 (85.5)	0.08
Most effective (n, %)	68 (35.6)	27 (34.6)	41 (36.3)	0.81	59 (30.9)	20 (27.0)	39 (33.3)	0.36
Moderately effective (n, %)	34 (17.8)	11 (14.1)	23 (20.4)	0.16	40 (20.9)	10 (13.5)	30 (25.6)	**0.045**
Higher effectiveness (n, %)	102 (53.4)	38 (48.7)	64 (56.7)	0.84	99 (51.8)	30 (40.5)	69 (58.9)	**0.041**
Less effective (n, %)	27 (14.1)	11 (14.1)	16 (14.2)	0.92	40 (20.9)	19 (25.7)	21 (18.0)	0.24
Least effective (n, %)	1 (0.5)	0	1 (0.9)	0.41	6 (3.1)	3 (4.1)	3 (2.6)	0.57
Lower effectiveness (n, %)	28 (14.6)	11 (14.1)	17 (15.1)	0.84	46 (24.0)	22 (29.8)	24 (20.6)	**0.041**
Abstinence	12 (6.3)	5 (6.4)	7 (6.2)	0.86	11 (5.8)	4 (5.4)	7 (6.0)	0.51

EPDS = Edinburgh Postpartum Depression Scale. EPDS associated with 1–3 months postpartum timepoint also measured at 1–3 months postpartum; EPDS associated with 5–7 months postpartum timepoint also measured at 5–7 months postpartum. Results are in sample size, with percentage in parentheses. Summation of columns may not add up to exact total of “any method” as participants may have declined to report method type. Contraception method categories include the following: most effective (contraception implant, intrauterine device (IUD), female/male sterilization); moderately effective (contraception injection, lactational amenorrhea method (exclusive breastfeeding), birth control pill, contraceptive patch, contraceptive vaginal ring); less effective (male/female condoms, diaphragms, fertility awareness methods (i.e., natural family planning); least effective (withdrawal, spermicides). Most and more effective and less and least effective groups were collapsed for simplicity and to increase cell sizes. Table also created with abstinence analyzed separately (not included in “Any method”); results are similar and not statistically significantly different.

Table 4b.
Associations of positive EPDS with intended and actual contraception use.

EPDS score at 1–3 months postpartum associated with intended contraception use at 1–3 months postpartum; EPDS score at 5–7 months postpartum associated with actual contraception use at 5–7 months postpartum. Data from a secondary analysis of perinatal individuals in Massachusetts, recruited to the PRogram In Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n=191).

	Intended use 1–3 months postpartum		**Actual Use 5–7 months postpartum**	
	aOR	**95% CI**	**aOR**	**95% CI**
Association of **positive EPDS** and use of **<u>any</u>** contraception method *(ref: no contraception use)*	0.76	0.34 – 1.74	0.44	0.18 – 1.09
Age *(continuous)*	0.95	0.88 – 1.03	0.99	0.91 – 1.07
PRISM Intervention arm *(ref = MCPAP)*	1.20	0.52 – 2.76	0.73	0.30 – 1.82
Non-white race *(ref = white)*	0.62	0.25 – 1.50	0.42	0.16 – 1.13
Hispanic ethnicity *(ref = non-Hispanic)*	0.83	0.28 – 2.51	1.73	0.54 – 5.58
Unmarried *(ref = married)*	1.35	0.48 – 3.83	1.83	0.61 – 5.52
Less than college education *(ref =college)*	1.43	0.57 – 3.60	0.73	0.24 – 2.20
Public insurance *(ref =private)*	1.69	0.62 – 4.62	0.92	0.33 – 2.56
Currently sexually active *(ref =no)*	0.70	0.29 – 1.70	1.16	0.43 – 3.12
Currently breastfeeding *(ref =no)*	0.96	0.36 – 2.60	1.88	0.77 – 4.58
Association of **positive EPDS** and use of **<u>more effective</u>** contraception method category *(ref: less effective contraception types)*	1.04	0.35 – 3.08	**0.28**	**0.11 – 0.70**
Age *(continuous)*	0.98	0.89 – 1.09	0.96	0.87 – 1.05
PRISM Intervention arm *(ref = MCPAP)*	0.38	0.13 – 1.15	0.98	0.39 – 2.49
Non-white race *(ref = white)*	1.88	0.50 – 6.99	1.09	0.36 – 3.28
Hispanic ethnicity *(ref = non-Hispanic)*	1.16	0.24 – 5.69	0.84	0.25 – 2.79
Unmarried *(ref = married)*	**10.48**	**1.84 – 59.70**	2.79	0.85 – 9.14
Less than college education *(ref =college)*	**3.56**	**1.04 – 12.20**	1.30	0.48 – 3.53
Public insurance *(ref =private)*	1.75	0.50 – 6.10	**3.39**	**1.11 – 10.32**
Currently sexually active *(ref =no)*	2.06	0.60 – 7.11	1.53	0.43 – 5.35
Currently breastfeeding *(ref =no)*	**4.11**	**1.03 – 16.39**	1.19	0.47 – 3.01

Logistic regression models were used to estimate adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) of the effects of depression on contraception use. Association of positive EPDS and any method of contraception (yes/no) was run as a logistic regression, with negative EPDS being the reference. Association of positive EPDS and contraceptive method type (more effective type vs less effective type) was run as a logistic regression, with less effective methods being the reference group. Contraception method categories include the following: most effective (contraception implant, intrauterine device (IUD), female/male sterilization); moderately effective (contraception injection, lactational amenorrhea method (exclusive breastfeeding), birth control pill, contraceptive patch, contraceptive vaginal ring); less effective (male/female condoms, diaphragms, fertility awareness methods (i.e., natural family planning); least effective (withdrawal, spermicides). Most and more effective and less and least effective groups were collapsed for regressions for simplicity and to increase cell sizes. All adjusted models included covariates listed in Table 3; some were collapsed into binary categories, given small cell sizes. This included: race (white, non-white); insurance (public, private), marital status (married, unmarried), income (<100,000, ≥100,000), education (less than college, college educated or higher). Models also created with abstinence analyzed separately; results were similar and not statistically significantly different.

Table 5.

Difference between intended contraception use (measured at 1–3 months postpartum) and actual contraception use (measured at 5–7 months postpartum), categorized by Edinburgh Postnatal Depression Scale (EPDS) score at 5–7 months postpartum.

Data from a secondary analysis of perinatal individuals in Massachusetts, recruited to the PRogram In Support of Moms (PRISM) randomized controlled trial, conducted from 2015–2022 (n=191).

Contraception Use	**Overall** ***(n=191)***	**Positive EPDS (≥10)** ***(n=74)***	**Negative EPDS (<10)** ***(n=117)***
Use of any contraception method[a]	+ 5.2%	+ 2.7%	+ 6.8%
Higher effectiveness methods	**− 8.8%** **	**− 21.1%** **	− 2.6%
Lower effectiveness methods	**+ 8.8%** **	**+ 21.1%** **	+ 2.6%

Measured as the difference between intended use (%) and reported use (%) using paired t-tests. Least effective contraception types were not included in models, given their minimal overall utilization. Negative percentage values indicate that there is less use than planned, while positive percentage values indicated more use than planned. Contraception method categories include the following: most effective (contraception implant, intrauterine device (IUD), female/male sterilization); moderately effective (contraception injection, lactational amenorrhea method (exclusive breastfeeding), birth control pill, contraceptive patch, contraceptive vaginal ring); less effective (male/female condoms, diaphragms, fertility awareness methods (i.e., natural family planning); least effective (withdrawal, spermicides). Most and more effective and less and least effective groups were collapsed for regressions for simplicity and to increase cell sizes. Table also created with abstinence analyzed separately (not included in “Any method”); results are similar and not statistically significantly different.

* $p<0.05$

** $p<0.01$