

Associations Between Food Insecurity, Psychological Distress, and Disordered Eating Across the Perinatal Period

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Abstract

Purpose

Food insecurity (uncertain access to sufficient food; FI), psychosocial distress, and disordered eating are common across the perinatal period, but their associations are understudied. This study examined relationships of prenatal and postpartum FI to depressive symptoms, anxiety, perceived stress, and disordered eating in late pregnancy and at 12-months postpartum.

Methods

This secondary analysis included data from 177 perinatal individuals enrolled in a health promotion trial for individuals with pre-pregnancy body mass index (BMI) ≥ 25 , who had data from at least one FI assessment during pregnancy or the postpartum year. Depressive symptoms, anxiety, perceived stress, and disordered eating were assessed in late pregnancy and at 12-months postpartum. Linear regression models evaluated associations of prenatal and postpartum FI with psychological distress and disordered eating in late pregnancy and 12-months postpartum, adjusting for intervention assignment, pre-pregnancy BMI, educational attainment, and household income.

Results

Across pregnancy assessments, 26.1% of participants endorsed FI, and 25.7% across postpartum assessments. Prenatal FI was associated with higher anxiety ($b = 9.48, p = .02$) but not depressive symptoms or perceived stress. Postpartum FI was associated with higher anxiety ($b = 5.64, p = .03$), depressive symptoms ($b = 3.95, p < .01$), and perceived stress ($b = 5.22, p < .0$). Neither prenatal nor postpartum FI were significantly associated with disordered eating ($p \geq .16$).

Conclusions

FI affected approximately one-quarter of participants across both pregnancy and postpartum and was associated with psychological distress but not disordered eating. Larger studies, including those with disordered eating measures validated in the perinatal period, are needed to clarify the mental health correlates of perinatal FI.

Introduction

The perinatal period, spanning pregnancy through the first postpartum year, is a high-risk window for psychiatric symptoms and adverse health events (Henderson et al., 2025; Paschetta et al., 2014), and presents an opportunity to identify and address psychological distress and maladaptive health behaviors. Perinatal individuals have more frequent healthcare contact than do individuals in other life

phases (Feijen-de Jong et al., 2013) and may be especially motivated to engage in health promotion to support fetal and infant development (Sui et al., 2013). Because perinatal mental and physical health also impact offspring outcomes, identifying modifiable determinants of perinatal wellbeing can inform efforts to improve intergenerational health (D'Ascenzi et al., 2021; Newton et al., 2022).

Food insecurity (FI), defined as limited or uncertain access to sufficient nutritious food, is a key social determinant of health (Radimer & Radimer, 2002). Nationally representative 2024 data suggest FI impacts approximately 14% of the U.S. population, and 18% of households with children (USDA Economic Research Service, n.d.). Data exploring the prevalence of FI in pregnancy suggest rates of up to 20% in nationally-representative U.S. samples (Gamba et al., 2016). Black and Hispanic households experience disproportionate FI because longstanding structural inequities, including redlining, have shaped neighborhood food access, economic mobility, and related determinants (Crear-Perry et al., 2021; Gamba et al., 2016; USDA Economic Research Service, n.d.). Thus, FI is common and disproportionately affects perinatal individuals, parents, and people with racially and ethnically marginalized identities.

FI may be especially relevant across the perinatal period when eating, appetite, and weight change to support fetal development (Haddad-Tovolli & Claret, 2023). Increased nutritional needs (Kominiarek & Rajan, 2016) may exacerbate FI, which may in turn affect mental health. In nonpregnant samples, FI is associated with mood, anxiety, and eating disorders (Arenas et al., 2019; Bruening et al., 2017; Elgar et al., 2021; Hazzard et al., 2020). Although mechanisms remain unclear, malnutrition, stress, shame, and social isolation may link FI to adverse mental health outcomes (Arenas et al., 2019; Bruening et al., 2017; Hazzard et al., 2020).

Data on FI, psychosocial distress, and disordered eating in pregnancy remain limited. A 2025 meta-analysis found 18 studies examining FI during pregnancy and anxiety or depression (Biete et al., 2025). Pooled data from ten studies indicated FI was associated with 2.5-fold higher odds of depressive symptoms, but evidence quality was low. Five studies also showed a consistent positive association between FI and anxiety, although meta-analysis was not possible. Most studies were rated as high risk of bias because they used non-validated FI measures and did not adjust for confounders. Evidence on prenatal FI and disordered eating is even more limited. Prior work has linked late-pregnancy FI to postpartum disordered eating on a composite score (Laraia et al., 2015) and WIC participation (a correlate of FI) to restrictive but not binge-type disordered eating in pregnancy (Call et al., 2023). However, another study found no association between FI and emotional eating, external eating, or restrained eating during pregnancy (Shriver et al., 2023).

Postpartum evidence is similarly limited. A 2026 scoping review found 20 studies of postpartum FI and depressive symptoms (Stone & Amiri, 2026). Overall, findings suggest FI is related to greater postpartum depressive symptoms, although many studies used depression measures not validated in the postpartum period and lacked key covariates (Stone & Amiri, 2026). Fewer data address postpartum FI

and anxiety, but available studies generally suggest a positive relationship (Adynski et al., 2019; Whitaker et al., 2006). No published studies have examined postpartum FI and disordered eating.

In summary, FI is prevalent during the perinatal period and may contribute to depressive symptoms, anxiety, and disordered eating, although existing studies have important limitations. The present study described FI prevalence across pregnancy and the first postpartum year and examined associations between FI, psychological distress, and disordered eating. We hypothesized that FI would be associated with higher depressive and anxiety symptoms, perceived stress, and disordered eating behaviors and attitudes, and that these associations would persist after adjusting for sociodemographic factors relevant to perinatal wellbeing.

Methods

Participants and procedures

Participants were individuals from a larger cardiovascular health and wellbeing promotion trial (MASKED FOR REVIEW), who completed at least one FI assessment. The parent trial was pre-registered on ClinicalTrials.gov (MASKED FOR REVIEW). Eligibility criteria for the parent trial included pre-pregnancy body mass index (BMI) $\geq 25\text{kg/m}^2$, ≤ 18 weeks' gestation, ≥ 14 years old, and singleton pregnancy. Exclusion criteria were weight-affecting medications or medical conditions, participation in weight-management programming, type 1 diabetes, or psychiatric symptoms requiring immediate treatment (e.g., suicidality).

Participants were recruited into the parent trial between December 2016 and September 2022 from the community, social media, and local birthing centers. The FI assessment was added to the parent study in July 2020, resulting in an analytic sample of 177 participants with FI data from at least one timepoint, including 69 with pregnancy FI data, and 167 with postpartum FI data. Data for the present analyses were collected between July 2020 and February 2024.

Participants completed a baseline assessment in early pregnancy (T0) before randomization to pregnancy intervention (Health and Behaviors in Transition [HABIT]preg) or treatment-as-usual (TAUpreg). They were reassessed in late pregnancy (T1), before second-stage randomization to postpartum intervention (HABITpost) or treatment as usual (TAUpost), and again at two, six, and 12 months postpartum (T2, T6, T12).

Assessments

Demographic and pregnancy information. At T0, participants self-reported age, racial and ethnic identities, annual household income, educational attainment, and number of previous births. Pre-pregnancy BMI was calculated using self-reported pre-pregnancy weight, a common and valid method of obtaining pre-pregnancy weight (23), and height measured at T0 via calibrated stadiometer.

Food Insecurity (FI). At each assessment, participants completed the 18-item USDA Household Food Security Survey Module to assess past 12-month FI. At T6 and T12, a subset of participants ($N = 88$) was asked about FI since their last assessment rather than over the past 12 months due to a methodological change partway through the study. Affirmative responses were summed and food security level (high, marginal, low, very low) was determined following USDA scoring guidelines (Bickel et al., 2000). Based on data suggesting even marginal food security impacts health outcomes in pregnancy (Laraia et al., 2015), FI was dichotomized as any (very low/low/marginal food security) or none (high food security). FI reported during pregnancy (T0 or T1) and FI reported during the postpartum period (T2, T6, or T12) were additionally collapsed into “prenatal FI” and “postpartum FI,” respectively, to minimize overlap in FI assessment across timepoints.

Psychological distress. Participants completed the Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987), the State Anxiety Inventory (SAI; Spielberger et al., 1970), and the Perceived Stress Scale (PSS; Cohen et al., 1983) in late pregnancy (T1) and postpartum (T12). The EPDS is validated in pregnancy and postpartum (Bergink et al., 2011; Eberhard-Gran et al., 2001). The SAI and PSS demonstrate adequate psychometric properties among perinatal individuals (Evans et al., 2015; Solivan et al., 2015).

Eating Disorder Examination–Questionnaire (EDE-Q). In late pregnancy (T1) and postpartum (T12), participants completed the EDE-Q, a self-report measure of eating disorder psychopathology and associated features that produces a global score and four subscale scores: Restraint, Eating Concerns, Shape Concerns, and Weight Concerns. The EDE-Q also assesses number of loss of control eating (LOC) episodes, the core psychopathology underlying binge eating, over the past 28 days, which we additionally dichotomized into presence or absence of LOC.

Analytic Plan

Descriptive statistics were calculated to characterize the sample. Separate linear regression models were run to examine the relationship between prenatal FI and postpartum FI and each psychological distress and disordered eating outcome. Fisher’s exact tests examined the relationship between FI and presence of LOC. Among participants with LOC at the assessment of interest, linear regression models examined the relationship between FI and frequency of LOC episodes. All regression models adjusted for pre-pregnancy BMI, intervention assignment (HABITpreg vs. TAUpreg or HABITpost vs. TAUpost), educational attainment (collapsed into less than a four-year degree, a four-year degree, and a postgraduate degree), and household income (dichotomized as more or less than \$40,000 annually, based on the median household income in MASKED FOR REVIEW during the study; CITATION MASKED FOR REVIEW).

Results

Tables 1 and 2 summarize sample characteristics and FI prevalence, respectively. FI prevalence ranged from 20.2% to 25.4% across each assessment point, with 26.1% (18/69) endorsing prenatal FI (FI at any

pregnancy timepoint) and 25.8% (43/167) endorsing postpartum FI (FI at any postpartum timepoint).

Table 1
Sociodemographic characteristics of the sample (N = 177)

Characteristic	M (SD)
Age	31.6 (4.8)
Pre-pregnancy body mass index (BMI)	32.0 (6.4)
Parity (number of previous births)	0.9 (1.1)
	n (%)
Racial identity	3 (1.7%)
Asian	33 (18.6%)
Black or African American	1 (0.6%)
Native Hawaiian or Other Pacific Islander	136 (76.8%)
White	4 (2.3%)
More than one racial identity	
Hispanic/Latine ethnic identity*	8 (4.5%)
Annual household income	47 (26.6%)
<\$40,000	130 (73.4%)
≥\$40,000	
Educational attainment	55 (31.1%)
Less than a four-year college degree	57 (32.2%)
Four-year college degree	65 (36.7%)
Postgraduate degree	
<i>Note. *1 participant did not report their ethnic identity.</i>	

Table 2
Prevalence of FI across the perinatal period

Timepoint		<i>M (SD) weeks gestation/months postpartum</i>	<i>n</i> ¹	Rate of FI
Early pregnancy	T0	14.78 (3.35)	16/63	25.40%
Late pregnancy	T1	37.28 (1.86)	12/50	24.00%
At any point during pregnancy			18/69	26.09%
Immediate postpartum	T2	1.56 (0.66) ²	13/59	22.03%
Six-months postpartum	T6	7.00 (1.40)	22/109	20.18%
12-months postpartum	T12	13.60 (1.81) ²	35/162	21.88%
At any point during postpartum			43/167	25.75%
Note. FI = food insecurity. ¹ Reflects the number of participants who endorsed FI at timepoints relative to the total number of participants with FI data at respective timepoints. ² Delivery date data were missing for 1 participant who completed the FI measure at T2 and 2 participants who completed the FI measure at T12.				

Perinatal FI and Psychological Distress

Prenatal FI was significantly associated with higher anxiety symptoms, but not depressive symptoms or perceived stress, in late pregnancy (Table 3). Postpartum FI was significantly associated with higher symptoms of depression, anxiety, and perceived stress at 12-months postpartum (Table 4).

Table 3
Associations between prenatal FI and psychological distress in late pregnancy

Variable	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
EPDS score	Prenatal FI	46	2.67	1.72	.092	.05	[0.00, 0.17]
	Randomized to treatment during pregnancy	46	0.58	0.42	.675	.00	[0.00, 0.03]
	Four-year college degree	46	1.97	1.04	.303	.03	[0.00, 0.11]
	Postgraduate degree	46	0.29	0.14	.888	.03	[0.00, 0.11]
	Annual household income ≥ \$40,000	46	1.95	1.01	.318	.02	[0.00, 0.09]
	Pre-pregnancy BMI	46	0.15	1.41	.165	.04	[0.00, 0.13]
SAI score	Prenatal FI	43	9.48	2.38	.022*	.11	[0.00, 0.28]
	Randomized to treatment during pregnancy	43	1.16	0.34	.737	.00	[0.00, 0.03]
	Four-year college degree	43	-1.47	-0.31	.756	.00	[0.00, 0.03]
	Postgraduate degree	43	-0.55	-0.11	.917	.00	[0.00, 0.03]
	Annual household income ≥ \$40,000	43	5.86	1.22	.228	.03	[0.00, 0.12]
	Pre-pregnancy BMI	43	-0.23	-0.83	.408	.01	[0.00, 0.07]
PSS score	Prenatal FI	44	6.49	1.93	.060	.07	[0.00, 0.21]
	Randomized to treatment during pregnancy	44	1.09	0.36	.719	.00	[0.00, 0.03]
	Four-year college degree	44	-3.97	-0.96	.340	.03	[0.00, 0.11]
	Postgraduate degree	44	-0.65	-0.14	.886	.03	[0.00, 0.11]
	Annual household income ≥ \$40,000	44	3.94	0.94	.353	.02	[0.00, 0.08]
	Pre-pregnancy BMI	44	-0.16	-0.67	.506	.01	[0.00, 0.06]

Variable	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
Note. FI = FI; EPDS = Edinburgh Postnatal Depression Scale; SAI = State Anxiety Inventory; PSS = Perceived Stress Scale. Reference groups for categorical variables: Randomized to treatment as usual during pregnancy; less than a four-year college degree; annual household income < \$40,000. * <i>p</i> < .05, ** <i>p</i> < .01, *** <i>p</i> < .001							

Table 4. Associations between postpartum FI and psychological distress at 12-months postpartum

Variable	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
EPDS score	Postpartum FI	155	3.95	3.52	.001***	.07	[0.00, 0.15]
	Randomized to treatment during postpartum	155	-1.17	-1.26	.209	.01	[0.00, 0.04]
	Four-year college degree	155	-0.17	-0.13	.898	.01	[0.00, 0.03]
	Postgraduate degree	155	0.83	0.60	.550	.01	[0.00, 0.03]
	Annual household income ≥ \$40,000	155	-0.77	-0.57	.568	.00	[0.00, 0.01]
	Pre-pregnancy BMI	155	0.05	0.64	.521	.00	[0.00, 0.02]
SAI score	Postpartum FI	154	5.64	2.17	.032*	.03	[0.00, 0.08]
	Randomized to treatment during postpartum	154	-2.67	-1.24	.217	.01	[0.00, 0.04]
	Four-year college degree	154	3.94	1.27	.208	.03	[0.00, 0.07]
	Postgraduate degree	154	6.81	2.10	.037*	.03	[0.00, 0.07]
	Annual household income ≥ \$40,000	154	-3.61	-1.16	.247	.01	[0.00, 0.03]
	Pre-pregnancy BMI	154	0.22	1.32	.190	.01	[0.00, 0.04]
PSS score	Postpartum FI	154	5.22	2.79	.006**	.05	[0.00, 0.11]
	Randomized to treatment during postpartum	154	-2.29	-1.48	.140	.01	[0.00, 0.05]
	Four-year college degree	154	-0.78	-0.35	.729	.00	[0.00, 0.01]
	Postgraduate degree	154	-1.20	-0.52	.606	.00	[0.00, 0.01]
	Annual household income ≥ \$40,000	154	-0.04	-0.02	.987	.00	[0.00, 0.00]
	Pre-pregnancy BMI	154	-0.05	-0.41	.679	.00	[0.00, 0.01]

Note. FI = food insecurity; EPDS = Edinburgh Postnatal Depression Scale; SAI = State Anxiety Inventory; PSS = Perceived Stress Scale. Reference groups for categorical variables: Randomized to

treatment as usual during postpartum; less than a four-year college degree; annual household income < \$40,000.

* $p < .05$, ** $p < .01$, *** $p < .001$

Perinatal FI and Disordered Eating Attitudes and Behaviors

Prenatal FI was not significantly associated with late pregnancy EDE-Q global or subscale scores (Table 5). In late pregnancy, 20 of 51 participants with available data (39.2%) reported at least one LOC episode (range: 1–20 episodes). LOC was more common among participants with prenatal LOC relative to those without, but the difference was not statistically significant (43% vs. 38%; $p = .76$). Among those reporting LOC in late pregnancy, prenatal FI was not associated with LOC episode frequency, $F(1, 13) = 0.75, p = .43$. Postpartum FI was not significantly associated with EDE-Q global or subscale scores at 12-months postpartum (Table 6). At T12, 62 of 160 participants with available data (38.75%) reported experiencing at least one episode of LOC (range: 1–35 episodes). Postpartum LOC was more common among participants with postpartum FI relative to those without, but the difference was not significant (50% vs. 35%; $p = .10$). Among participants endorsing LOC at 12-months postpartum, postpartum FI was not significantly associated with LOC episode frequency, $F(1, 55) = 0.54, p = .70$.

Table 5

Associations between prenatal FI and disordered eating attitudes/behaviors in late pregnancy

EDE-Q Score	Predictor	df	b	t	p	sr ²	95% CI
Global	Prenatal FI	45	0.21	0.71	.478	.01	[0.00, 0.06]
	Randomized to treatment during pregnancy	45	0.11	0.40	.694	.00	[0.00, 0.03]
	Four-year college degree	45	0.14	0.38	.709	.00	[0.00, 0.04]
	Postgraduate degree	45	0.16	0.39	.700	.00	[0.00, 0.04]
	Annual household income ≥ \$40,000	45	0.16	0.42	.679	.00	[0.00, 0.04]
	Pre-pregnancy BMI	45	-0.03	-1.32	.194	.04	[0.00, 0.13]
Restraint	Prenatal FI	45	-0.39	-1.24	.223	.03	[0.00, 0.11]
	Randomized to treatment during pregnancy	45	0.61	2.15	.037*	.08	[0.00, 0.22]
	Four-year college degree	45	0.01	0.03	.974	.03	[0.00, 0.11]
	Postgraduate degree	45	0.40	0.95	.347	.03	[0.00, 0.11]
	Annual household income ≥ \$40,000	45	-0.47	-1.19	.242	.03	[0.00, 0.10]
	Pre-pregnancy BMI	45	-0.02	-0.92	.361	.02	[0.00, 0.08]
Eating Concerns	Prenatal FI	45	0.22	0.76	.451	.01	[0.00, 0.07]
	Randomized to treatment during pregnancy	45	-0.05	-0.19	.853	.00	[0.00, 0.01]
	Four-year college degree	45	-0.24	-0.68	.502	.01	[0.00, 0.07]
	Postgraduate degree	45	-0.26	-0.65	.518	.01	[0.00, 0.07]
	Annual household income ≥ \$40,000	45	0.54	1.47	.150	.04	[0.00, 0.15]
	Pre-pregnancy BMI	45	-0.02	-0.78	.437	.01	[0.00, 0.07]

EDE-Q Score	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
Shape Concerns	Prenatal FI	45	0.61	1.29	.203	.03	[0.00, 0.13]
	Randomized to treatment during pregnancy	45	-0.12	-0.30	.769	.00	[0.00, 0.02]
	Four-year college degree	45	0.38	0.65	.518	.01	[0.00, 0.06]
	Postgraduate degree	45	0.14	0.21	.832	.01	[0.00, 0.06]
	Annual household income ≥ \$40,000	45	0.24	0.41	.682	.00	[0.00, 0.03]
	Pre-pregnancy BMI	45	-0.03	-1.03	.308	.02	[0.00, 0.10]
Weight Concerns	Prenatal FI	45	0.42	0.89	.377	.02	[0.00, 0.08]
	Randomized to treatment during pregnancy	45	-0.01	-0.03	.972	.00	[0.00, 0.00]
	Four-year college degree	45	0.40	0.71	.480	.01	[0.00, 0.06]
	Postgraduate degree	45	0.34	0.55	.585	.01	[0.00, 0.06]
	Annual household income ≥ \$40,000	45	0.31	0.53	.599	.01	[0.00, 0.05]
	Pre-pregnancy BMI	45	-0.04	-1.23	.227	.03	[0.00, 0.12]
<i>Note.</i> FI = food insecurity; EDE-Q = Eating Disorder Examination-Questionnaire. Reference groups for categorical variables: Randomized to treatment as usual during pregnancy; less than a four-year college degree; annual household income < \$40,000. * $p < .05$, ** $p < .01$, *** $p < .001$							

Table 6
Associations between postpartum FI and disordered eating attitudes/behaviors at 12-months postpartum

EDE-Q Score	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
Global	Postpartum FI	154	0.24	1.12	.266	.01	[0.00, 0.03]
	Randomized to treatment during postpartum	154	-0.36	-2.03	.044*	.03	[0.00, 0.07]
	Four-year college degree	154	-0.03	-0.12	.901	.00	[0.00, 0.02]
	Postgraduate degree	154	-0.18	-0.68	.498	.00	[0.00, 0.02]
	Annual household income ≥ \$40,000	154	0.48	1.89	.061	.02	[0.00, 0.07]
	Pre-pregnancy BMI	154	0.02	1.68	.095	.02	[0.00, 0.06]
Restraint	Postpartum FI	154	0.12	0.53	.594	.00	[0.00, 0.01]
	Randomized to treatment during postpartum	154	-0.25	-1.34	.181	.01	[0.00, 0.04]
	Four-year college degree	154	-0.37	-1.37	.172	.01	[0.00, 0.04]
	Postgraduate degree	154	-0.22	-0.81	.419	.01	[0.00, 0.04]
	Annual household income ≥ \$40,000	154	0.62	2.35	.020*	.03	[0.00, 0.09]
	Pre-pregnancy BMI	154	-0.00	-0.23	.822	.00	[0.00, 0.01]
Eating Concerns	Postpartum FI	154	0.07	0.33	.744	.00	[0.00, 0.01]
	Randomized to treatment during postpartum	154	-0.13	-0.74	.459	.00	[0.00, 0.02]
	Four-year college degree	154	-0.19	-0.77	.440	.01	[0.00, 0.03]
	Postgraduate degree	154	-0.24	-0.93	.355	.01	[0.00, 0.03]
	Annual household income ≥ \$40,000	154	0.30	1.22	.226	.01	[0.00, 0.04]

EDE-Q Score	Predictor	<i>df</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>sr</i> ²	95% CI
Shape Concerns	Pre-pregnancy BMI	154	0.01	0.88	.381	.00	[0.00, 0.03]
	Postpartum FI	154	0.44	1.43	.155	.01	[0.00, 0.05]
	Randomized to treatment during postpartum	154	-0.49	-1.93	.055	.02	[0.00, 0.07]
	Four-year college degree	154	0.21	0.57	.569	.01	[0.00, 0.03]
	Postgraduate degree	154	-0.07	-0.19	.849	.01	[0.00, 0.03]
	Annual household income ≥ \$40,000	154	0.55	1.49	.139	.01	[0.00, 0.05]
Weight Concerns	Pre-pregnancy BMI	154	0.04	2.04	.043*	.03	[0.00, 0.07]
	Postpartum FI	154	0.32	1.10	.273	.01	[0.00, 0.03]
	Randomized to treatment during postpartum	154	-0.56	-2.32	.022*	.03	[0.00, 0.08]
	Four-year college degree	154	0.22	0.63	.529	.01	[0.00, 0.04]
	Postgraduate degree	154	-0.18	-0.50	.620	.01	[0.00, 0.04]
	Annual household income ≥ \$40,000	154	0.44	1.28	.204	.01	[0.00, 0.04]
	Pre-pregnancy BMI	154	0.04	2.29	.023*	.03	[0.00, 0.08]
<i>Note.</i> FI = FI; EDE-Q = Eating Disorder Examination-Questionnaire. Reference groups for categorical variables: Randomized to treatment as usual during pregnancy; less than a four-year college degree; annual household income < \$40,000. * $p < .05$, ** $p < .01$, *** $p < .001$							

Discussion

This study examined FI from early pregnancy to 12-months postpartum, a period of increased risk for psychological distress and disordered eating (Call et al., 2026; Paschetta et al., 2014). As hypothesized, endorsing FI postpartum was associated with greater anxiety, perceived stress, and depressive symptoms, after adjusting for educational attainment, household income, and pre-pregnancy BMI.

Endorsing FI prenatally was associated with greater prenatal anxiety after adjusting for covariates, but not depressive symptoms or perceived stress. Counter to hypotheses, perinatal FI was not significantly associated with disordered eating, although LOC was more common among those with prenatal and postpartum FI.

In this sample, approximately one-quarter of participants endorsed FI at some point during pregnancy or the postpartum year, consistent with other U.S. estimates. For example, NHANES data from 1998–2008 demonstrated that, among a sample of 1,158 pregnant individuals, 21% reported FI (i.e., marginal, low, or very low food security) in the past 12 months (Gamba et al., 2016). Our sample was comprised of individuals with pre-pregnancy BMI ≥ 25 , which is associated with FI (Dinour et al., 2007; Laraia et al., 2010), and data collection overlapped with the COVID-19 pandemic, when FI increased nationally, especially among perinatal individuals (Ujah et al., 2023). While rates of food insecurity may be especially high in our sample, these data reinforce the need to increase access to programs that reduce FI and improve perinatal outcomes, including federal food assistance and unconditional cash transfers (Hanna et al., 2025; McKay et al., 2022).

Consistent with research in non-pregnant populations (Leung et al., 2015; Pourmotabbed et al., 2020), FI was associated with greater postpartum anxiety, stress, and depressive symptoms and prenatal anxiety after adjusting for socioeconomic factors and BMI. Although clinically significant distress was uncommon in our sample, these associations support providing mental health resources to perinatal populations at risk for FI. Food assistance programs, like WIC or SNAP, improve food security, but their mental health effects are mixed, with some studies finding no benefits (Adynski et al., 2023; Herman et al., 2024; Negi & Sattler, 2025), and others finding modest buffering effects (Leung et al., 2015). Integrated food access and mental health support, which has demonstrated feasibility and acceptability in the perinatal period (Weaver et al., 2025), may therefore be needed.

It was surprising that prenatal FI was not significantly associated with depressive symptoms or stress. The impact of FI on prenatal depressive symptoms and stress may be reduced in the context of substantial psychosocial and physiological changes that occur in pregnancy and confer risk for psychosocial distress (Luo et al., 2022; Meltzer-Brody et al., 2011). However, the small prenatal sample likely limited power, and non-significant associations were in the expected direction. Larger studies are needed to clarify whether FI relates to prenatal depressive symptoms and stress.

Although FI was not significantly associated with disordered eating, LOC –the most common perinatal disordered eating symptom (Call et al., 2026) – was 5% more common prenatally and 15% more common postpartum in those with FI than without. Indeed, half of all participants experiencing postpartum FI reported LOC. Outside of the perinatal period, FI and binge-type eating behavior are linked (Hazzard et al., 2020), possibly through a “feast-or-famine cycle” in which restricted food access contributes to disinhibited eating when food becomes available (Dinour et al., 2007). Perinatal-specific factors may alter this cycle and lessen the association between FI and disordered eating (Marshall et al., 2026), although qualitative research suggests pregnant individuals continue to experience fluctuating

food access across the month (Zinga et al., 2022). It is also possible that the small sample size, especially of participants endorsing disordered eating, contributed to null results.

This study had several strengths, including assessing FI from early pregnancy through 12-months postpartum, using a validated measure of FI, including individuals with marginal food security in our FI group given data that marginal food security confers health risk (Cook et al., 2013; Laraia et al., 2015; Laraia et al., 2010), adjusting for other variables relevant to FI and psychosocial distress, and examining understudied associations. Limitations include the small prenatal sample because the FI measure was added midway through the parent trial; limits to generalizability given that participants had pre-pregnancy BMI ≥ 25 and were enrolled in a lifestyle intervention, which we adjusted for statistically; overlapping FI reporting periods, which required collapsing repeated assessments into prenatal and postpartum indicators; and use of measures that, while validated, were not designed specifically for the perinatal period. Future studies should use larger samples, assess FI since the prior assessment to avoid overlapping timeframes, and develop measures that better capture perinatal experiences.

Conclusions

The current study addressed gaps in the limited literature on perinatal FI by examining associations between FI and several measures of psychological distress and disordered eating across pregnancy and postpartum. Results indicated prenatal FI is significantly associated with anxiety in late pregnancy and postpartum FI is significantly associated with anxiety, depressive symptoms, and stress at 12-months postpartum. LOC also appeared more common among individuals with FI during pregnancy and/or postpartum compared to those without, although these differences were not statistically significant. These findings provide evidence that perinatal FI confers risk for negative mental health outcomes and, possibly, maladaptive health behaviors. Future research is warranted to improve understanding of the consequences and correlates of FI among pregnant and postpartum individuals and to inform intervention and prevention efforts.

Declarations

Author Contribution

CCC: Conceptualization, Methodology, Writing – Original Draft and Review/Editing; RJJ: Conceptualization, Methodology, Software, Validation, Formal Analysis, Data Curation, Writing – Original Draft and Review/Editing, Visualization. RPKC: Conceptualization, Methodology, Writing – Review/Editing. JLG: Investigation, Writing – Review/Editing. GMS: Investigation, Writing – Review/Editing. MDL: Conceptualization, Resources, Writing – Review/Editing, Supervision, Project Administration, Funding Acquisition.

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Data Availability

Data are available from the authors upon reasonable request.

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