

ABSTRACT

The expected experiences of postpartum mothers have been widely focused on happiness, dangerously leading to stigma and shame when experiencing postpartum depression (PPD). About 15% of women experience PPD due to a variety of factors. Consequences that affect the mother and infant include suicide and infanticide. The current study assessed the relationship between maternal depression and race/ethnicity, maternal depression and substance use, and maternal depression and childcare support. This study was a secondary analysis composed of 1,050 mothers who had just given birth. This cross-sectional study used self-report questionnaires from the baseline interview. Participants were recruited from 12 hospitals in the United States. The Mann-Whitney U tests indicated that participants with childcare support had significantly higher depression scores than those who did not, and participants who did not experience substance use had significantly lower depression scores than those who experienced substance use. Results from the Kruskal-Wallis H Test indicated that four ethnic groups differed from each other in levels of depression. This study further added to the existing literature by highlighting the impacts of postpartum mental health. It provides a basis for early intervention programs that increase psychoeducation of PPD.

INTRODUCTION

Significance of the Study

- U.S has highest prevalence of maternal depression compared to other developed countries. Current prevalence is slightly over 80% (Slomian et al; 2019).
- Maternal deaths by suicide account for approximately 20% of postpartum deaths. The leading cause of death in the first year following the birth of the child (NSPL, 2020).

Research Question

- What is the relationship between maternal depression and race/ethnicity among mothers?
- Is there a relationship between maternal depression and substance use?
- Does maternal depression decrease with childcare support?

Hypothesis

- It is hypothesized that levels of depression will be different across different ethnic groups
- It is hypothesized that maternal depression will be higher in mothers who engage in substance use
- It is hypothesized that lower levels of depression will be associated with childcare support.

LITERATURE REVIEW

- Approximately 400,000 infants born yearly to mothers diagnosed with anxiety or clinical depression (Prevatt et al., 2017).
- The consequence is the negative impact of mother-infant bonding, which can have a lifelong effect on the infant. (Brummelte & Galea, 2016)
- Ethnic groups can be affected by immigration status and discrimination, posing higher risk for PPD (Pao et al., 2019).
- Substance use/depression may be interconnected, influencing each other (Chapman & Wu, 2013).
- First time mothers may have difficult time looking for social support (childcare) due to societal views, feelings of shame/guilt (De Sousa Machado et al., 2020)

Gaps

- Insensitivity of screening questions/tools for ethnic groups, poorly representative of ethnic minorities versus Caucasians (Liu & Tronik, 2012; Liu et al., 2016; Norhayati et al., 2015).

MATERIALS AND METHODS

Research Design

- The current study is a secondary analysis of the data from the Baby's First Years Study, New York City, New Orleans, Omaha, and Twin Cities
- The longitudinal study was a randomized controlled trial taking place from May 2018 to June 2019 with qualitative and quantitative data collection (Noble et al., 2021).
- The current study is a cross-sectional study where baseline data were used.

Sampling Method

- The sample in the study included mother-infant dyads with a sample size of 1,050 mothers, who had just given birth.
- Inclusion criteria: 18 or older in NY, MN, LA, 19 or older in NE, per age of consent in each state, reside in respective state, household income below federal poverty, infant not admitted to NICU, not moving states/countries within 12 months, infant discharged in mother's custody, mother to speak English/Spanish

Measures

Independent Variable

- Substance Use:** Two questions compiled to assess alcohol and tobacco use during pregnancy.
- Childcare Availability:** Questions asked, "Do you have any plans for getting help with childcare?"
- Ethnicity:** Nominal variable coded as, White as 1, Black as 2, Other as 3, and Hispanic as 4.

Dependent Variable

- Maternal Depression:** Utilized the Center for Epidemiological Studies-Depression (CES-D) scale, which measured the levels of depression in past week, utilizing four-point Likert scale.
- All response options were recoded from 1-4 range to 0 -3, and then ten recoded items were added to create a sum scale.
- Range was from 0 to 30 with the higher score indicating a higher level of maternal depression.

Table 1
Sample Characteristics (N=1,050)

Characteristics	f	%
Gender		
Female	1050	100
Age in years	M = 27.09	SD = 5.844
Racial origin		
White	107	10.3
Black	424	40.4
Other	77	7.3
Hispanic	440	41.9
Highest level of education attained		
Less than a high school diploma	244	23.2
High school diploma or GED	535	51.0
Some college, no degree	178	17.0
Associate's degree	34	3.2
Bachelor's degree or higher	55	5.2
Marital status		
Never married	468	44.6
Single, living with partner	254	24.2
Married	228	21.7
Separated/divorced	44	4.2
Other	42	4.0
Married to biological father		
No	828	78.8
Yes	221	21.0
Biological father living in household		
No	649	61.8
Yes	401	38.2
Combined household income	M=21,857.16	SD=19,277.42

RESULTS

Descriptive Analysis

Demographics: Hispanic (41.9%) Black or African/American (40.4%), White (10.2%) and 7.3% identified as 'Other' ethnicity. Mean age for participants was 27.09 years (SD = 5.84).

Childcare Support: 58.7% help with childcare, 39.8% did not have help with childcare, 1.5% unsure if they would have help with childcare.

Substance Use: 86.4% denied substance use during pregnancy and 13.6% reported substance use.

Maternal Depression: Mean was 6.86 (SD = 4.54).

Inferential Statistics

A Kruskal-Wallis H Test was conducted comparing mean depression scores among study participants from different ethnicities.

- A significant result was found ($H(3) = 37.09, p < .001$), indicating that four ethnic groups differed from each other.
- Follow-up pairwise comparisons indicated Hispanic study participants were significantly less depressed (Mean Rank = 455.44) than Black participants (Mean Rank = 563.88) and Other participants (Mean Rank = 613.04).

Two Mann-Whitney U test were conducted. One to to examine the difference in depression of participants who had childcare support and those who did not have childcare support. The other to examine difference in the depression of participants who used substances and those who did not use substances.

- Participants who did not have childcare support had significant lower depression scores (Mean Rank = 487.65) than those who did (Mean Rank = 529.29; $U = 136,432.500, p = .026$).
- Participants who did not experience substance use had significantly lower depression scores (Mean Rank = 502.47) than those who experienced substance use (Mean Rank = 630.73; $U = 79,410, p < .001$).

Table 2

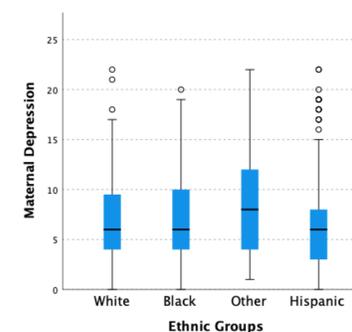
Differences in Mean Ranks of Depression Among Mothers with Different Race/Ethnicity.

	White (1)	Black (2)	Other (3)	Hispanic (4)	Post Hoc
	MR	MR	MR	MR	
Maternal Depression	533.36	563.88	613.04	455.44	4 < 2, 3

Note. The numbers in parentheses in column heads refer to the numbers used for illustrating significant differences in the "Post hoc" column. Only significant relationships at $p < .01$ level were presented in the "Post hoc" column. MR= mean rank.

Figure 1

Race/Ethnicity Differences in Maternal Depression



DISCUSSION

- Existing research indicates that Black mothers may have difficult time disclosing mental health concerns due to the perceived racial discrimination/mistrust they have developed with medical care settings (Pao et al., 2019; Ponting et al., 2019).
- White mothers more accepting of professional treatment (Liu et al., 2018).
- Various factors pertaining to mothers turning to alcohol use, such as stress/changes of postpartum and utilizing as a form of self-medication (Pentecost et al., 2021).
- Mothers not exclusively worried about childcare, overwhelmed with their new life, which could further explain the results (Corrigan et al., 2015).

Strengths and Limitations

Strength: Current study examined instrumental support, specifically childcare availability, as limited information is available in the existing literature.

Limitations: Ethnic groups primarily comprised of two groups, while others were smaller in sample size, not representing the population of mothers overall.

Implications

- More studies are needed to examine the possible correlation between maternal depression and substance use, and long-term effects.
- On the macro level, solutions would be to uphold medical settings and personnel responsible for discrimination to further avoid these experiences for minorities.

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