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Prenatal Care Initiation and Psychological Well-being in Black Women

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Abstract

Purpose: The purpose of this study was to examine if timing of prenatal care initiation was related to psychological well-being of Black women.

Study Design and Methods: Using a cross-sectional design, a sample of 197 pregnant Black women completed a self-reported survey between 8 weeks and less than 30 weeks gestation as part of the Biosocial Impact on Black Births (BIBB) study. The questions asked about the initiation of

prenatal care, perceived stress, depressive symptoms, and psychological well-being. Multiple linear regression was used to examine if timing of prenatal care initiation was related to psychological variables.

Results: Sixty-three women (32%) reported they were not able to initiate their first prenatal care visit as early as women wanted due to various barriers. After adjusting for cofounders, not initiating prenatal care as early as women wanted predicted lower levels of psychological well-being.

Keywords

prenatal; psychological; barriers; well-being

Introduction

Black women are less likely to initiate prenatal care in the first trimester (up to 13 weeks gestation) of pregnancy (67.1% and 82.5%, respectively) and more likely to initiate prenatal care in the second (23.0% and 13.1%, respectively) and third (6.8% and 3.3%, respectively) trimesters of pregnancy compared with non-Hispanic white women (Martin et al., 2019). Approximately 3.1% of Black women do not receive any prenatal care (Martin et al.). These national data are reflected in a study that examined prenatal care timing distribution for Black women. Among a sample of 762 low-income Black women from Baltimore, 41% (n=313) started prenatal care during their first trimester and 42% (n=319) began prenatal care during their second trimester (Slaughter-Acey et al., 2013). The remaining 17% (n=130) of women initiated prenatal care during their third trimester or had no prenatal care visits (Slaughter-Acey et al.).

There are numerous barriers to initiation of prenatal care, some of which may be more prominent among Black women in the U.S. In a recent review of 54 studies (published between 1987 and 2016) in countries with similar economic and cultural situations as well as levels of healthcare provisions (United Kingdom, Western Europe, United States, Canada, Australia and New Zealand), researchers reported two core concepts of women's perceptions about delayed initiation of prenatal care: acceptance of personal pregnancy and acceptance of public pregnancy (Haddrill et al., 2018). Acceptance of personal pregnancy included not knowing or late recognition of pregnancy; unplanned pregnancy; depression, anxiety, or stress due to pregnancy or difficult life circumstances; and fear of negative reaction to the pregnancy from the father of the baby, family, or others close to them (Haddrill et al., 2018). Acceptance of public pregnancy included the opinion that prenatal care is not necessary; lack of social support; issues with transportation, childcare, scheduling appointments, and taking time off work; being unable to afford prenatal care or insurance; and poor organization of care such as poor quality appointments and negative attitudes towards healthcare providers (Haddrill et al., 2018). These results reveal some of the barriers Black women may experience when seeking prenatal care.

Black women are more likely to experience depressive symptoms compared with non-Hispanic white women (Seng et al., 2011). Stress and depressive symptoms are specifically risk factors for late initiation of prenatal care among expectant Black women. Results from a

sample of 331 women (87.9% Black; 12.1% Hispanic) show that approximately 22% of women reported being *under stress* and 20% of women reported feeling *depressed* as barriers to prenatal care initiation (Johnson et al., 2011). A recent paper also reported that denial of lifetime experiences of racism for the friends and family of the woman (not personally experienced) were related in a complex way to receiving late or no prenatal care (Slaughter-Acey et al., 2013); racism may be a determinant of stress and depressive symptoms. Although research in the field has identified depressive symptoms as a potential barrier to initiating prenatal care among Black women, there is limited data on how Black women's perceptions of initiating prenatal care when desired influences their psychological well-being. The purpose of this study was to examine if timing of prenatal care initiation was related to psychological well-being of Black women.

Methods

Design and Sample

Pregnant Black women participating in the Biosocial Impact on Black Births (BIBB) study were recruited by trained research assistants from outpatient prenatal care clinics in Michigan and Ohio. Women were enrolled in the study if they self-identified as Black or African American, were between 18 and 45 years old, had singleton pregnancies, were between 8 weeks, 0 days and 29 weeks, 6 days gestation, and were able to read and write in English. Exclusion criteria included current multifetal pregnancies. Using a cross-sectional design, for these analyses we used data for the initial sample of 208 women enrolled in the BIBB study.

Variables and Measures

Sample characteristics.—Socio-demographic characteristics (e.g., maternal age, levels of education, employment) were collected by self-reported survey data. Medical and obstetrical history were collected by self-report and medical record abstraction.

Initiation of Prenatal Care.—We asked women a question from the Pregnancy Risk Assessment Monitoring System (PRAMS) about prenatal care initiation: *Did you get your first prenatal care visit as early as you wanted?* (yes vs. no) (Centers for Disease Control and Prevention, 2016). Women who responded that they did not have the first prenatal care visit as early as they wanted were provided a list of 11 options and asked to select as many barriers for initiation of prenatal care as they felt applied to them (see Table 1).

Depressive symptoms.—The Center for Epidemiologic Studies Depression Scale (CES-D) assesses the presence of prominent symptoms of depression within the past seven days (e.g., bothered by things more than usual, felt lonely) (Radloff, 1977). The CES-D has 20 items on a 4-point Likert scale (0=*rarely*, 1=*some of the time*, 2=*a lot of the time*, to 3=*most of the time*) with a total score ranging from 0-60. A higher score represents more depressive symptoms. Scores ≥ 16 represent clinically relevant depressive symptoms. In the current study, the Cronbach's α was 0.89.

Perceived stress.—The Cohen's Perceived Stress Scale (PSS) asks about feelings and thoughts during the prior month (e.g., felt upset, stressed out) (Cohen et al., 1983; Cohen & Wills, 1985). The instrument contains 14 items on a 5-point Likert scale (1=*never* to 5=*very often*) with a total score ranging from 14-70. Higher scores represent higher levels of perceived stress. In the current study, the Cronbach's α was 0.80.

Psychological well-being.—The Psychological General Well-Being (PGWB) Index assesses subjective feelings of psychological well-being within the past month (e.g., *How have you been feeling in general*) (Dupuy, 1984). The PGWB consists of 22 items on a 6-point Likert scale (*most distress* to *least distress*) with the total score ranging from 0-110. Scores of 72 or lower represent psychological distress. In the current study, the Cronbach's α was 0.91.

Procedures

The study was approved by the Institutional Review Board at participating sites in Ohio and Michigan. We obtained an IRB waiver to access prenatal records for women at the participating sites to determine eligibility for the study. Women who were eligible for the study were approached by the research staff at their prenatal appointments and invited to participate in the study. Women completed an informed consent process before data collection. Women were given the option to skip any questions they felt to be uncomfortable or stressful. The surveys took approximately 30 minutes to complete on an iPad or Samsung tablet during their prenatal appointment. A sample of 208 women were enrolled in the study. Data on the 197 women with complete data (197/208; ~95%) on the variables of interest (prenatal care initiation, depressive symptoms, perceived stress, psychological well-being) were included in the analytic sample. Women were reimbursed a \$30 store gift card for their participation.

Data Management

Data were entered into Qualtrics Research Suite, a web-based platform for creating online surveys. Password-protected survey data were captured in real-time and stored on Qualtrics' secure and Transport Layer Security encrypted servers.

Statistical Analysis

Descriptive statistics were used to describe the sample and the variables of interest. Independent samples *t*-test for continuous variables and chi-square test for categorical variables were used to examine differences in sample characteristics, depressive symptoms, perceived stress and psychological well-being between women who initiated prenatal care as early as they wanted and women who did not initiate prenatal care as early as they wanted. Both bivariate linear regression and multiple linear regression were performed. Based on the literature (Ayoola et al., 2010) and bivariate analyses within our cohort, we identified the following covariates as potential confounders: maternal age, marital status, level of education, and inter-pregnancy interval. Specific to our study, we also considered gestational age at data collection as a potential confounder. Unadjusted and adjusted regression coefficients, standard errors (SE) and 95% confidence interval (CI) were calculated. In the

multiple linear regression analysis, we controlled for covariates as confounders when the regression coefficient changed by 10 percent or more after adjustment.

Results

Sample Characteristics

Of 197 women, sixty-three women (32%) reported that they did not have their first prenatal visit as early as they wanted. Women who did not initiate prenatal care as early as they wanted reported 2.45 ± 1.55 (range 0-6) barriers (see Table 1).

Women who did not initiate prenatal care as early as they wanted were more likely to be younger (25.1 years and 27.5 years, respectively; $p < .01$) and have shorter inter-pregnancy interval (3.1 years and 4.6 years, respectively; $p < .05$) compared with women who initiated prenatal care as early as they wanted. There were no other differences in sociodemographic characteristics or medical/obstetrical history variables between women who did not initiate prenatal care as early as they wanted and women who initiated prenatal care as early as they wanted (see Table 2).

Initiation of Prenatal Care When Wanted and Psychological Well-Being

Women who did not initiate prenatal care as early as they wanted were more likely to report higher levels of perceived stress (20.68 and 18.10, respectively; $p < .01$) and lower levels of psychological well-being (67.14 and 72.84, respectively; $p < .05$) than women who initiated prenatal care as early as they wanted. There were no differences in CES-D scores between women who did not initiate prenatal care as early as they wanted and women who initiated prenatal care as early as they wanted (see Table 2).

In bivariate linear regression analysis, not initiating prenatal care as early as women wanted predicted higher levels of perceived stress and lower levels of psychological well-being, but did not predict depressive symptoms. The association between initiating prenatal care and psychological well-being remained significant after adjustment for maternal age, level of education, marital status, inter-pregnancy interval and gestational age at data collection. However, the association between initiating prenatal care as early as women wanted and perceived stress was diminished after controlling for these covariates and was no longer significant (see Table 3).

Clinical Nursing Implications

One third of women in our study did not initiate prenatal care as early as they wanted. Overall, women in our study reported high levels of depressive symptoms and perceived stress and lower levels of psychological well-being. Women who did not initiate prenatal care as early as they wanted reported lower levels of psychological well-being compared with women who initiated prenatal care as early as they wanted. These findings suggest that there are unmet needs in both prenatal care and psychological well-being among pregnant Black women.

Among women who wanted to initiate care earlier than occurred, slightly more than half reported that they could not schedule a prenatal care appointment when they wanted. Approximately one-quarter stated that their doctor or health care plan would not initiate prenatal care as early as they wanted; and about one quarter reported that they did not have health insurance coverage to initiate prenatal care as early as they wanted. Our data suggest the existence of institutional barriers to prenatal care.

There are a few limitations to the study that may influence our findings. We enrolled women at less than 30 weeks gestation from three prenatal clinics in the Midwest. Therefore, by design, women with initiation of prenatal care at more than 30 weeks gestation and women with no prenatal care were not represented in our study. It is also important to note the study's inability to determine temporal associations between women's wishes to initiate care earlier and measures of psychological well-being. Data were collected at a single time point (less than 30 weeks gestation). The woman's depressive symptoms may have interfered with her ability to get care when she wanted or not receiving care could have increased her levels of depressive symptoms. Our data cannot differentiate between the timing of depressive symptom onset and initiation of prenatal care.

Important to the concepts studied, but also a possible limitation is that our study used self-report measures. Women's perceptions of late initiation of prenatal care may not align with objective measures of late care that are based on professional guidelines. For example, women may believe they began care late when they were actually within recommended guidelines. It is recommended to initiate prenatal care within the first trimester by 12 weeks gestation (WHO, 2016).

Perinatal nurses need to assess the psychological well-being of pregnant women and recommend the appropriate referrals. The Association of Women's Health, Obstetrics and Neonatal Nurses (AWHONN, 2015) recommends that nurses should perform routine screening to identify women at risk for depression during the perinatal period; initiate effective interventions to ensure safety of the woman; and improve access to community-based, perinatal mental health providers and support groups. Some of AWHONN recommendations include: (1) encouraging pregnant women to share their experiences; (2) assessing for risk factors for perinatal mood disorders; (3) screening for perinatal mood disorders at various points during the pregnancy; (4) referring women, as appropriate, for follow up evaluation, diagnosis and treatment with a mental health provider; and (5) increasing women's knowledge of community resources for women with perinatal mood disorders (AWHONN, 2015).

Health care providers should advocate for education regarding reproductive and mental health in addition to prenatal care prior to pregnancy. Basic education before becoming pregnant can be used to help bridge the knowledge gap from when a woman discovers she is pregnant to the time she is able to obtain prenatal care. We recommend health care providers at primary health appointments and gynecologic appointments provide education and resources to women of reproductive age both desiring and not desiring pregnancy about what to do if she suspects she is pregnant. Nurses can also provide a list of pregnancy-related resources, such as community support groups or educational groups, for women who

know they are pregnant, but cannot begin their care due to barriers reported in this manuscript and those not discussed here. Support groups may help improve the psychological well-being of pregnant women who are unable to initiate prenatal care when desired. Nurses can lead support groups in tandem with mental health providers to help connect women in the community going through similar hardships during their pregnancy. Perinatal nurses should also advocate for women of reproductive age to prioritize their psychological well-being and recognize depressive symptoms as well as when to reach out to their provider. Handbooks about pregnancy care and mental health care should be provided at the woman's general primary care or women's health care visit. Perinatal nurses can be at the forefront of implementing practice changes to improve the psychological well-being of Black women of reproductive years.

Clinical Implications

Perinatal nurses need to assess for the psychological well-being of pregnant Black women and Black women of reproductive age. Handbooks including pregnancy care and mental health care could be provided at the woman's general primary care or women's health care visit.

Nurses should recommend referrals for women, as appropriate, for follow-up evaluation, diagnosis and treatment with mental health providers.

Nurses should inform women about community resources and help to lead support groups for women with high levels of perceived stress, depressive symptoms or psychological distress.

Nurses can also provide a list of pregnancy-related resources for Black women seeking pregnancy or women who know they are pregnant, but cannot begin their care for institutional reasons.

Perinatal nurses should advocate for Black women of reproductive age to prioritize their psychological well-being and provide education on depressive symptoms.

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Callouts:

- Late initiation of prenatal care has been related to adverse pregnancy and birth outcomes.
- Black women who did not initiate prenatal care as early as desired were more likely to report lower levels of psychological well-being.
- Perinatal nurses should assess psychological well-being for pregnant Black women.
- Perinatal nurses should recommend referrals and provide community resources as needed to support the mental health of Black women who are in their reproductive years.
- Perinatal nurses should support the prioritization of psychological well-being in Black women during the perinatal period.

Clinical Implications:

Perinatal nurses should assess psychological well-being in Black women throughout pregnancy; advocate for Black women who report high levels of stress, psychological distress, and/or depressive symptoms for further mental health evaluation by their health care provider; and provide resources and education (e.g., support groups, counseling) for these women.

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Table 1.

Barriers to Initiation of Prenatal Care (N=63)

Barriers for first prenatal care visit as early as women wanted	^a n	%
a. I couldn't get an appointment when I wanted one	34	54.8
b. I didn't have enough money or insurance to pay for my visits	12	19.4
c. I didn't have any transportation to get to the clinic or doctor's office	10	16.1
d. The doctor or my health plan would not start care as early as I wanted	15	24.2
e. I had too many other things going on	17	27.4
f. I couldn't take time off from work or school	9	14.5
g. I didn't have my Medicaid card	15	24.2
h. I didn't have anyone to take care of my children	5	8.3
i. I didn't know that I was pregnant	17	27.4
j. I didn't want anyone else to know I was pregnant	14	22.6
k. I didn't want prenatal care	4	6.6
Total number of barriers		
0	5	8.1
1	16	25.8
2	12	19.4
3	12	19.4
4	11	17.7
5	4	6.5
6	2	3.2
Total, mean (SD)	2.5 (1.6)	-

^aNote: Women were instructed to select as many barriers as they perceived; thus, n>63

Table 2.

Sample Characteristics by Initiation of Prenatal Care as Early as Women Wanted (N=197)

Variable	Initiation of prenatal care as early as wanted		
	No n ₁ =63	Yes n ₂ =134	
	<i>M</i> ± <i>SD</i>	<i>M</i> ± <i>SD</i>	<i>t</i> -value
Maternal age (years)	25.1±5.2	27.5±5.6	2.834 **
Gestational age (weeks)	15.5±5.3	15.8±6.0	0.324
Inter-pregnancy interval (years)	3.2 ±3.00	4.6±4.2)	2.007 *
CES-D	17.9±10.1	15.6±10.5	1.432
Perceived Stress	20.68±6.10	18.10±6.09	2.749 **
Psychological Well-Being	67.14±15.71	72.84±17.67	2.183 *
	N (%)	N (%)	χ ² value
Maternal age categories			7.917 *
18-24 years old	33 (42.3)	45 (57.7)	
25-29 years old	15 (25.9)	43 (74.1)	
30-34 years old	12 (30.0)	28 (70.0)	
35 years old	3 (14.3)	18 (70.0)	
Household income			1.346
< \$10,000	26 (33.8)	51 (66.2)	
\$10,000 - \$19,999	8 (23.5)	26 (76.5)	
\$20,000 - \$29,999	11 (28.9)	27 (71.1)	
\$30,000 - \$39,999	7 (33.3)	14 (66.7)	
\$40,000	7 (33.3)	14 (66.7)	
Level of Education			0.235
Less than high school	9 (33.3)	18 (66.7)	
Graduated high school/GED	30 (31.3)	66 (68.8)	
Technical/vocational training	5 (27.8)	13 (72.2)	
Some college/above	18 (33.3)	36 (66.7)	
Employment			0.061
Not working	28 (32.6)	58 (67.4)	
Working	34 (30.9)	76 (69.1)	
Marital status			1.889
Ever married	23 (27.1)	62 (72.9)	
Never married	40 (36.4)	70 (63.6)	
Living with father of the baby (FOB)			0.043
Not living with FOB	42 (32.8)	86 (67.2)	
Living with FOB	21 (31.3)	46 (68.7)	
Current family financial situation			4.747

Variable	Initiation of prenatal care as early as wanted		
	No n ₁ =63	Yes n ₂ =134	
	<i>M</i> ± <i>SD</i>	<i>M</i> ± <i>SD</i>	<i>t</i> -value
Very poor, not enough to get by	6 (60.0)	4 (40.0)	
Barely enough to get by	7 (24.1)	22 (75.9)	
Have enough to get by but no extras	30 (32.6)	62 (67.4)	
Have more than enough to get by	13 (30.2)	30 (69.8)	
Well to do	6 (27.3)	16 (72.7)	
Health insurance			1.978
Privately insured	3 (33.3)	6 (66.7)	
Publicly insured	52 (30.4)	119 (69.6)	
Don't know/Unsure	8 (47.1)	9 (52.9)	
Chronic conditions by self-report			
Asthma (yes%)	13 (28.3)	33 (71.7)	0.382
Hypertension (yes%)	4 (26.7)	11 (73.3)	0.211
Thyroid (yes%)	2 (20.0)	8 (80.0)	0.695
Diabetes (yes%)	4 (33.3)	8 (66.7)	0.011
Heart disease (yes%)	0 (0.0)	5 (100.0)	2.412
Kidney disease (yes%)	1 (33.3)	2 (66.7)	0.003
Primigravida			1.772
No	46 (29.7)	109 (70.3)	
Yes	17 (40.5)	25 (59.5)	

Note:

*
p < 0.05

**
p < 0.01

M= mean; SD = standard deviation; CES-D= Center for Epidemiological Studies-Depression

Table 3.

Initiation of Prenatal Care and Psychological Well-Being (N=197)

Variable	CES-D ^a		Perceived stress		Psychological well-being	
	Unadjusted regression coefficient (95% CI)	Adjusted regression coefficient ^I (95% CI)	Unadjusted regression coefficient (95% CI)	Adjusted regression coefficient ^I (95% CI)	Unadjusted regression coefficient (95% CI)	Adjusted regression coefficient ^I (95% CI)
Initiation of prenatal care as early as wanted	-2.28 (-5.42, 0.86)	-3.15 (-7.02, 0.72)	-2.57 (-4.42, -0.73) **	-2.18 (-4.45, 0.09)	5.69 (2.61); (0.55, 10.84) *	6.70 (0.45, 13.0) *

^aNote:

* p < 0.05

** p < 0.01

CES-D: Center for Epidemiological Studies-Depression; CI = confidence interval.

^I Adjusted for maternal age (years), maternal education (less than high school, graduated high school/GED, technical/vocational, some college or higher), marital status (married vs. not), inter-pregnancy interval (months), and gestational age at data collection (weeks)