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FACTORS RELATED TO ENTRY INTO PRENATAL CARE AMONG WOMEN IN A
RURAL AREA OF A SOUTHERN STATE

by

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Abstract

Background: Infant mortality among racial and ethnic minorities is disproportionately higher than that of White infants; a trend that has persisted and increased over time (Center for Disease Control and Prevention, 2015). Research suggests this disparity may be due to timing of entry into prenatal care (PNC) later, as well as numerous other individual and systems factors (Mazul, Salm-Ward, & Ngui, 2017). The purpose of this study was to: 1) collect and analyze data to identify differences in entry into PNC among racial and ethnic groups and 2) determine what characteristics (age, race/ethnicity, marital status, and insurance status) influence entry into PNC.

Methodology: A program evaluation was conducted during a 7-week community health clinical practicum. Maternity records from January through December 2016 from a health department in a rural area of a southern state were reviewed. Microsoft Excel was used to organize the following variables: age, race and ethnicity, marital status, and insurance status. Entry into PNC was defined as first trimester (<14 weeks), second trimester (14-27 weeks), and third trimester (>27 weeks). Data was collected over a four-week period.

Findings: The sample of 628 was composed of Black/Haitian 46.82%, Hispanic/Latino 29.0%, and White 24.2% women. The majority of women (71.3%) entered PNC in the first trimester. Women ages 30-39, married women, and women of Hispanic/Latino heritage were more likely to enter PNC late. Medicaid recipients were more likely to enter PNC in the first trimester.

Conclusion: A targeted outreach initiative to women ages of 30-39, women who are married, and Hispanic/Latino women in local churches, schools, daycares, and places of employment may be beneficial. Social marketing should include information about the new midwife initiative.

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Introduction

Timing of entry into prenatal care (PNC) is important in foreseeing maternal and infant health outcomes (Partridge, Balayla, Holcroft, & Abenheim, 2012). Unfortunately, racial disparities in PNC utilization and birth outcomes have been identified as a continual problem in the United States (Center for Disease Control and Prevention, 2017). Because birth outcomes are influenced by antenatal care, the Center for Disease Control and Prevention (CDC) (2017) recommends that women take steps to ensure they remain healthy throughout their pregnancy. These recommendations include: entering into PNC early in pregnancy, receiving routine screenings, prevention and management of diseases through regular PNC visits (CDC, 2017).

Racial and ethnic differences in infant mortality are the largest health disparities found in health research and have persisted over time (CDC, 2015). Disparities related to race and ethnicity are evident as infant mortality among Black infants in some geographic regions is twice that of White infants (National Center for Health Statistics, 2017). Black women are also at greater risk for delivering preterm infants, infants born with congenital anomalies, and unintentional injuries resulting in infant death within the first year of life (CDC, 2017).

In North Carolina (NC), the rate of Black infants with congenital anomalies increased from 919 in 2007 to 1039 in 2009 (North Carolina State Center for Health Statistics, 2007; 2009). Further, the percentage of Black women who began PNC during their first trimester decreased from 71.3% between 2001-2003 to 62.6% between 2006-2008 (North Carolina State Center for Health Statistics, 2006; 2010). One of the major goals of the Healthy People 2020 guidelines is to eliminate health disparities such as these. Therefore, the purpose of this study is

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to explore and understand the factors that influence PNC utilization among Black women in one rural county of a southern state.

Literature Review

The purpose of this literature review was to understand factors influencing PNC utilization among Black women. The two databases used in the search were PubMed and CINAHL. Key search words were, “African American,” “Black,” “PNC Utilization,” “PNC Entry,” “Disparities,” “Barriers,” and “Facilitators.” Results were filtered to only include articles published within the last five years and peer reviewed. The literature is organized in the following three categories: Perceptions of Race, Cultural Care, and Physical and Structural Barriers. The category Perception of Race included 12 articles about discrimination and being of Black race. The category of Cultural Care included 11 articles about provider relationships, support systems, quality of care, and specific cultural influences. The category of Physical and Structural Barriers included 8 articles related to socioeconomic status, education, transportation, and access to care.

Perceptions of Race and Discrimination

Numerous studies with large sample sizes associated woman *of Black race* at higher risk for inadequate PNC, pregnancy complications, and adverse birth outcomes (Coley & Aronson, 2013; Cox, Zhang, Zotti, & Graham, 2011; El-Sayed, Paczkowski, Rutherford, Keyes, & Galea, 2015; Holland, Young, & Jiroutek, 2016; Kothari, Zielinski, James, Charoth, & Carmen-Sweezy, 2014; Slaughter-Acey, Caldwell, & Misra, 2013; Thomas et al., 2014). Race and ethnicity are important constructs that encompass complex features that affect one’s health beliefs and practices (Cox et al., 2011). Attanasio and Kozhimannil (2015) reported that *being Black* is associated with a higher likelihood of experiencing discrimination by race, language, or culture.

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In an eight year, retrospective cohort study consisting of over 28 million U.S. birth outcomes, Black women had the highest percent of inadequate PNC (18.4%) and lowest percent of adequate PNC (34%) (Partridge et al., 2012). A second retrospective cohort study from 2000-2009 examined over 150,000 singleton births in St. Louis City and found that 79.01% of Black women received inadequate PNC versus 20.99% White women, and Black women's risk for delivering a very low birth weight (VLBW) infant increased by 85% when they received inadequate PNC (Xaverius et al., 2016).

Investigators using a community-based qualitative design uncovered a reoccurring theme of perceived discrimination among Black women by health care providers and clinic staff (Salm-Ward, Mazul, Ngui, Bridgewater, & Harley, 2013). These perceptions of discrimination among Black women were more often based on their insurance type, income, and race and some women perceived that it was assumed they were on medical assistance, not married, or that they used drugs (Salm-Ward et al., 2013). However, the study design had major flaws in that the investigators went into the study with preconceived notions of discrimination among Black women. Still, Black women who are uninsured were nearly twice as likely to perceive discrimination and women report feeling discriminated against when using medical assistance cards rather than women with private insurance (Attanasio & Kozhimannil, 2015; Salm-Ward et al., 2013). Slaughter-Acey et al. (2013) found that Black women deny group racism or discrimination to preserve their mental and emotional wellbeing, which in turn increased their risk for poor mental and physical health outcomes. However, these results should be interpreted with caution due to a low Cronbach Alpha score of 0.61 for the denial of group racism sub-index (Slaughter-Acey et al., 2013). Multiple studies have contradicted Slaughter-Acey et al. (2013), through findings of increased perceptions of racial discrimination associated with increased

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levels of depressive symptoms, reluctance to ask questions about care, lower levels of provider trust, and underutilization of PNC (Ertel et al., 2012; Attanasio & Kozhimannil, 2015; Peters, Benkert, Templin, & Cassidy-Brushrow, 2014; Salm-Ward et al., 2013).

Cultural Care

The Office of Minority Health in the U.S. Department of Health and Human Services (2016) describes the principle standard for providing unbiased and respectable quality care as providing services that respect the diversity of cultural health beliefs and practices, languages, literacy, and communication requirements. A recent study used photovoice methods to examine the cultural care given to Black women who were pregnant (Nypaver & Shambley-Ebron, 2015). Although the study had limitations in research design and sampling strategy, authors found that inadequate cultural care for Black women remains a problem (Nypaver & Shambley-Ebron, 2015). Inadequate cultural care was perceived when patients felt rushed and unable to gain understanding about their care and when building a trustworthy relationship with their provider is not prioritized (Nypaver & Shambley-Ebron, 2015). Dahlem, Villarruel, and Ronis (2015) also found that there is a strong positive correlation between patient-provider communication and PNC satisfaction, and that communication with the provider is more important than race concordance. Other investigators, using focus group methods, explored what Black women prioritized and valued during PNC and found feelings of dissatisfaction due to an absence in personal relationships with obstetric providers (Edmonds, Mogul, & Shea, 2015).

Physical and Structural Barriers

Physical and structural barriers affecting PNC utilization by Black women include lack of transportation, type of health insurance, perceptions of support, and educational level (Nypaver & Shambley-Ebron, 2015; Edmonds, Mogul, & Shea, 2015; Partridge et al., 2012; Adejoke &

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Zandee, 2013). Edmonds et al. (2015) examined what Black women ranked as the greatest barriers to PNC and found that transportation and inadequate health insurance were ranked the highest. Numerous investigators using various study designs found a positive correlation between perceptions of support, educational status and PNC utilization (Edmonds et al., 2015; Nypaver & Shambley-Ebron, 2015; Partridge et al., 2012; Adejoke & Zandee, 2013). However, a study by Straughen, Caldwell, Young, & Misra, (2013) contradicted the previous studies with its conclusion that there is no correlation between perception of support and PNC utilization. This quantitative study had a strong study design with 713 Black women participants.

Transportation. All women living in rural areas face more challenges related to transportation to health services as compared with women living in urban areas (Cox et al., 2011). Still, there are difficulties with transportation in urban areas as public transportation is perceived as unreliable (Mazul, Salm-Ward, & Ngui, 2017). Black women who utilize public transportation, such as the bus or a taxi, expressed problems with timing or bus schedules, and waiting in adverse weather conditions (Mazul et al., 2017). Edmonds et al. (2015) found that Black women in Philadelphia believed that transportation vouchers and increasing the public's knowledge concerning available resources would improve transportation to PNC.

Health insurance. Two qualitative and five quantitative articles identified lack of, or inadequate, health insurance as a barrier to PNC utilization (Edmonds et al., 2015; Mazul et al., 2017; Johnson et al., 2011; Attanasio & Kozhimannil, 2015; Straughen et al., 2013; Xaverius et al., 2016; Kothari et al., 2014). In a quantitative study, investigators surveyed both Black and Hispanic women and health care providers (nurses, physicians, midwives, and social workers) and found that both groups identified no or inadequate health insurance and insufficient copays as barriers to PNC utilization for all minority women (Johnson et al., 2011). Other investigators

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concluded that having Medicaid as a source of health insurance was positively correlated with adequate PNC and healthy? infant birth outcomes (Xaverius et al., 2016; Attanasio & Kozhimannil, 2015). Yet, many participants who used medical assistance reported that obtaining and retaining Medicaid, and finding providers who accept Medicaid is a problem (Mazul et al., 2017).

Perceptions of support. Black women who are unmarried or have a poor support system were less likely to enter PNC early and are at increased risk for poor birth outcomes (Partridge et al., 2012; Nypaver & Shambley-Ebron, 2015). Edmonds et al. (2015) reported that Black women more frequently desired increasing social support groups for women who are both pregnant and/or already mothers. However, contradicting the findings of a positive association between support systems and entry into PNC, several investigators found no correlation between partner involvement and maternal health or birth outcomes, and suggest that Black couples, although married or cohabitating, still have the highest infant mortality rate (IMR) Straughen et al., 2013; El-Sayed et al., 2015). Straughen et al. (2013) reported that the Black IMR is more than twice the White IMR , and El-Sayed et al., (2015) found that infant mortality among Black couples was 1.2% compared to 0.5% in White couples.

Educational level. Maternal education may play an important role in entry into PNC. Investigators found women with lower educational levels don't understand the changes in their body during pregnancy, thus initiating PNC late (Adejoke & Zandee, 2013). Three other studies identified minority women with less than 13 years of education were at higher risk for inadequate PNC and poor birth outcomes (Partridge et al., 2012; Xaverius et al., 2016; Attanasio & Kozhimannil, 2015). Xaverius et al. (2016) concluded that 77.9% of Black women with less than 13 years of education received inadequate PNC, while 22.0% of Black women with greater

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than 13 years of education received adequate PNC. High quality patient education during PNC visits and awareness of a patient's educational level facilitated adequate PNC (Johnson et al., 2011; Adejoke & Zandee, 2013). Finally, a study by Kothari et al., (2014) suggested that Black women significantly benefit from maternal health programs that offer detailed education and support more than White women.

Perception of Pregnancy. Pregnant women who perceive an abundance of barriers to care or uncertain about their pregnancy may only seek medical care as an emergency or enter PNC late (Cox et. Al., 2011; Mazul et al., 2017). Johnson et al. (2011) surveyed both patients and providers and found that providers were more likely to identify barriers to PNC than patients. Barriers described by providers included: negative attitudes towards pregnancy, consideration of pregnancy termination, unplanned or unwanted pregnancy, and desire to hide pregnancy (Johnson et al., 2011).

Summary

Common barriers for Black women entering PNC are being of Black race, inadequate cultural care, and physical and structural barriers. Under the social determinate of "being Black," Black women often face racial discrimination and suffer numerous health disparities in comparison to White women. Additionally, Black women report feelings of inadequate culture care, poor communication and relationships with providers, and being rushed during PNC visits. Finally, more Black women experience physical and structural barriers such as: lack of or inadequate transportation, having no or insufficient insurance, being of low socioeconomic class, having poor support systems, and lower educational levels.

Methodology

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A program evaluation of one PNC program in a local health department serving a rural population in eastern North Carolina was conducted between August and October 2017. During a seven-week community health clinical rotation, I worked in collaboration with a public health nurse preceptor to examine the time PNC began, age, marital status, race/ethnicity, and type or lack of insurance for women who received services at this local health department. The program evaluation questions were:

1. Is entry into PNC (weeks gestation) different among diverse racial/ethnic groups in rural Eastern North Carolina.
2. What characteristics (marital status, age, health insurance, and race) influence entry into PNC in rural eastern North Carolina?

Sample and Setting

The sample included all women who received PNC at a local health department between January and December 2016. A total of 674 records were evaluated, however, due to incomplete records, the final sample size was 628. The population in this county was reported in 2015 at 125,681; comprised of three predominant racial/ethnic groups, White (56.8%), Black (31.5%), and Hispanic/Latino (10.5%). The median age is 36.7 and 39% of the population is between the ages of 25 and 54. The poverty rate in the county is higher than the state rate.

Data Collection

Data was collected from maternity records between January and December 2016. A Microsoft excel program was created to enter data on key variables of: age, race and ethnicity, marital status, and insurance status. Entry into PNC was defined as first trimester (<14 weeks), second trimester (14-27 weeks), and third trimester (>27 weeks) according to the health department's billing codes for each trimester. Data was collected over a 4- week period and

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entered into a Microsoft excel sheet where each variable was given its own column and data sets were separated by month of entry into PNC.

Findings

Descriptive statistics were used to describe the population demographics and analysis of entry into PNC. Demographics of the total sample of 628 maternity patients who received PNC at a health department in a rural area of eastern North Carolina are presented in Table 1. Most women in this sample were Black/Haitian (n = 294; 46.82%), 20-29 years of age (n = 400; 63.69%), Medicaid recipients (n = 320; 50.96%), and single (n = 472; 75.16%).

Table 1 Demographics: 2016 maternity clinic cohort

(N = 628)	(n)	%
Race/Ethnicity		
• Black/Haitian	294	46.82%
• Hispanic/Latino	182	28.98%
• White	152	24.20%
Age		
• <20 years of age	88	14.01%
• 20-29 years of age	400	63.69%
• 30-39 years of age	125	19.90%
• 40-49 years of age	15	2.39%
Insurance Status		
• Medicaid	320	50.96%
• Presumptive Medicaid	251	39.97%
• Pending Medicaid	36	5.73%
• No Insurance (self-pay)	12	1.91%
• Medicaid and Medicare	5	0.80%
• Medicaid and Private	1	0.16%
• Private Insurance	3	0.48%
Marital Status		
• Single	472	75.16%
• Married	115	18.31%
• Divorced/Widowed/Separated	41	6.53%

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Trimester Entry into Prenatal Care

The majority of all women (71.34%) entered into PNC in the first trimester (see Table 2).

Women entering PNC in the third trimester had the lowest percentage (8.28%).

Table 2 Percent by trimester: 2016 maternity clinic cohort

TRIMESTER	(n)	%	Total
1st Trimester	448	71.34%	448
2nd Trimester	128	20.38%	128
3rd Trimester	52	8.28%	5
			628

Age

Entry into PNC by maternal age are presented in Table 3. Women 30-39 had the lowest percentage of women who entered PNC in the first trimester (68%) and the highest percentage entering PNC in the second trimester (24%). Women ages 20-29 had the highest percentage of women who entered PNC in the third trimester (8.75%).

Table 3 Trimester Entry into PNC by age: 2016 maternity clinic cohort

AGE	1st Trimester		2nd Trimester		3rd Trimester		Total
	(n)	%	(n)	%	(n)	%	
<20 years of age	63	71.59%	19	21.59%	6	6.82%	88
20-29 years of age	289	72.25%	76	19.00%	35	8.75%	400
30-39 years of age	85	68.00%	30	24.00%	10	8.00%	125
40-49 years of age	11	73.33%	3	20.00%	1	6.67%	15

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Race and Ethnicity

Entry into PNC by race and ethnicity is presented in Table 4. Hispanic/Latino women had the lowest percentage of women who entered PNC in their first trimester (63.74%) and the highest percentage who entered in their second trimester (28.02%). The Black/Haitian population had the largest percentage of women who entered PNC in their third trimester (8.50%). White women had the greatest percentage of women who entered PNC in their first trimester (78.29%).

Table 4 Trimester entry into PNC by race/ethnicity: 2016 maternity clinic cohort

Race/Ethnicity	1st Trimester		2nd Trimester		3rd Trimester		Total (n)
	(n)	%	(n)	%	(n)	%	
Black/Haitian	213	72.45%	56	19.05%	25	8.50%	294
Hispanic/Latino	116	63.74%	51	28.02%	15	8.24%	182
White	119	78.29%	21	13.82%	12	7.89%	152

Insurance Status

The majority of women had Medicaid (n = 320) and 72.50% of this population entered into PNC in the first trimester (see Table 5). The number of women who had presumptive Medicaid was 251 and 36 had pending Medicaid status. These populations entered PNC in the first trimester at 70.52% and 75.00% respectively. Women who had no insurance or were self-pay (n = 12) had the smallest percentage of women who began PNC in their first trimester (41.67%) and the largest percentage of women who initiated PNC in their third trimester (33.33%).

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Table 5 Trimester by insurance status: 2016 maternity clinic cohort

Insurance Status	1st Trimester		2nd Trimester		3rd Trimester		Total (n)
	(n)	%	(n)	%	(n)	%	
Medicaid	232	72.50%	57	17.81%	31	9.69%	320
Presumptive	177	70.52%	58	23.11%	16	6.37%	251
Pending	27	75.00%	8	22.22%	1	2.78%	36
None (Self-Pay)	5	41.67%	3	25.00%	4	33.33%	12
Medicaid and Medicare	3	60.00%	2	40.00%	0	0.00%	5
Private Insurance	3	100.00%	0	0.00%	0	0.00%	3
Medicaid + Private	1	100.00%	0	0.00%	0	0.00%	1

Marital Status

Entry into PNC by marital status is presented in Table 6. Most women identified as single (n = 472) and the majority of this population entered PNC in the first trimester at 71.82%.

Married women (n = 115) had the lowest percentage of PNC initiation in the first trimester (67.83%). Women who are divorced, widowed, or separated (n = 41) had the highest percentage that entered PNC in the first trimester (75.61%) and the lowest percentage that entered PNC in the second and third trimesters at 17.07% and 7.32%, respectively.

Table 6 Trimester by marital status: 2016 maternity clinic cohort

Marital Status	1st Trimester		2nd Trimester		3rd Trimester		Total (n)
	(n)	%	(n)	%	(n)	%	
Married	78	67.83%	26	22.61%	11	9.57%	115
Single	339	71.82%	95	20.13%	38	8.05%	472
Divorced/Widowed/Separated	31	75.61%	7	17.07%	3	7.32%	41

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Discussion

This program evaluation sought to better understand entry into PNC for over 600 women receiving care at a local health department in 2016. Overall, 71.34% of women in this cohort entered PNC in the first trimester during the 2016; lower than the state percent of first trimester entry into PNC (84.2%) (North Carolina State Center for Health Statistics, 2017). Factors associated with early entry into PNC were, women who have Medicaid insurance, women ages 20-29, and women who identified as single, divorced, widowed, or separated, and being of White race. Hispanic/Latino women had the smallest percent who entered PNC in the first trimester. Unique to this program evaluation were the low percentages of first trimester PNC entry among women between the ages of 30-39, and those who were married. This suggests the need for further understand these variables among targeted population groups.

Many findings were congruent with the reviewed literature that identified barriers, such as race and ethnicity, as having an effect on PNC entry. This health department is experiencing a growing population of Latino women who many not know where, when, and how to access PNC services of the health department. In addition, Hispanic women are likely living in rural areas, as a result of work on farms or poultry and pork factories, where public transportation is not available.

Limitations

Patient records were limited in providing information distinguishing between women entering PNC later than the first semester (> 14 weeks) were initiating their PNC, or if they were transferring their care from a different facility. This lack of information is significant because the data that shows women entered care after the first trimester could be misconstrued due to the inability to determine if care was transferred or first initiated when they came to the health

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department. Information about the outcome of the mother and baby was not assessed. Further, patient data about race and ethnicity for Black and Haitian women was combined, which did not provide a clear understanding of racial and ethnic variation. The best estimate of Haitians in the health department patient population in a given year is 7-10% of the overall Black population (personal communication, October 3, 2017, S. Peacock).

Conclusion

Program improvements may be warranted in the area of outreach to the growing Hispanic/Latino population. Outreach to local churches, schools, daycares, and places of employment through health fairs with information regarding PNC services, location, and hours. Education should be available in Spanish and at an understandable reading level. Additional efforts should be made to understand barriers affecting older, married women.

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References

- Adejoke A. & Zandee G. (2013). Low-income women's recommendations for promoting early pregnancy recognition. *Journal of Midwifery & Women's Health, 58*(4), 416-422.
doi:10.1111/jmwh.12078
- Attanasio L. & Kozhimannil K. (2015). Patient-reported communication quality and perceived discrimination in maternity care. *Medical Care, 53*(10), 863-871.
doi:10.1097/MLR.0000000000000411
- Center for Disease Control and Prevention (2015). *CDC Health Disparities & Inequalities Report (CHDIR)*. Retrieved from <https://www.cdc.gov/minorityhealth/chdireport.html>
- Center for Disease Control and Prevention (2017). *Pregnancy and prenatal care*. Retrieved from <https://www.cdc.gov/healthcommunication/toolstemplates/entertainmented/tips/pregnancy prenatalcare.html>
- Coley S., & Aronson R. (2013). Exploring birth outcome disparities and the impact of prenatal care utilization among North Carolina teen mothers. *Women's Health Issues, 23*(5), 287-294. <http://dx.doi.org/10.1016/j.whi.2013.06.004>
- Cox R., Zhang L., Zotti M., & Graham J. (2011). Prenatal care utilization in Mississippi: Racial disparities and implications for unfavorable birth outcomes. *Maternal Child Health Journal, 15*(7), 931-942. doi:10.1007/s10995-009-0542-6
- Dahlem, C., Villarruel, A., & Ronis, D. (2015). African American women and prenatal care: Perceptions of patient-provider interaction. *Western Journal of Nursing Research, 37*(2), 217-235. doi:10.1177/0193945914533747

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- Edmonds B., Mogul M., & Shea J. (2015). Understanding low-income African American women's expectations, preferences, and priorities in prenatal care. *Family and Community Health, 38*(2), 149-157. doi:10.1097/FCH.0000000000000066
- El-Sayed A., Paczkowski M., Rutherford C., Keyes K., & Galea S. (2015). Social environments, genetics, and Black–White disparities in infant mortality. *Paediatric and Perinatal Epidemiology, 29*(6), 546-551. doi:10.1111/ppe.12227
- Ertel K., James-Todd T., Kleinman K., Krieger N., Gillman M., Wright R., & Rich-Edwards J. (2012). Racial discrimination, response to unfair treatment, and depressive symptoms among pregnant Black and African American women in the United States. *Annals of Epidemiology, 22*(12), 840-860. <http://dx.doi.org/10.1016/j.annepidem.2012.10.001>
- Holland M., Young M., & Jiroutek M. (2016). Racial and ethnic disparities in infant mortality in North Carolina, 2008–2009. *North Carolina Medical Journal, 77*(6), 373-377. doi:10.18043/ncm.77.6.373
- Johnson A., Wesley B., El-Khorazaty M., Utter J., Bhaskar B., Hatcher B., . . . Laryea H. (2011). African American and Latino patient versus provider perceptions of determinants of prenatal care initiation. *Maternal & Child Health Journal, 15*(1), 27-34. doi:10.1007/s10995-011-0864-z
- Kothari C., Zielinski R., James A., Charoth R., & Carmen-Sweezy L. (2014). Improved birth weight for Black infants: Outcomes of a healthy start program. *American Journal of Public Health, 104*(1), 96-104. doi:10.2105/AJPH.2013.301359
- Mazul M., Salm-Ward T., & Ngui E. (2017). Anatomy of good prenatal care: Perspectives of low income African-American women on barriers and facilitators to prenatal care.

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- Journal of Racial and Ethnic Health Disparities*, 4(1), 79-86. doi:10.1007/s40615-015-0204-x
- National Center for Health Statistics (2017). *Understanding racial and ethnic disparities in U.S. infant mortality rates*. Retrieved from <https://www.cdc.gov/nchs/data/databriefs/db279.pdf>
- North Carolina State Center for Health Statistics. (2006). 2001-2003 *North Carolina pregnancy risk assessment monitoring system survey results; Prenatal care-timing*. Retrieved from http://www.schs.state.nc.us/data/prams/2001-2003/State/PNC_1TRM.html
- North Carolina State Center for Health Statistics. (2007). *N.C. birth defects, statewide tools*. Retrieved from <http://www.schs.state.nc.us/schs/data/bdefects/defectsbystate.cfm>
- North Carolina State Center for Health Statistics. (2009). *N.C. birth defects, statewide tools*. Retrieved from <http://www.schs.state.nc.us/schs/data/bdefects/defectsbystate.cfm>
- North Carolina State Center for Health Statistics. (2010). 2006-2008 *North Carolina pregnancy risk assessment monitoring system survey results; Prenatal care-timing*. Retrieved from http://www.schs.state.nc.us/data/prams/2006-2008/State/PNC_1TRM.html
- North Carolina State Center for Health Statistics. (2017). 2015 *North Carolina pregnancy risk assessment monitoring system survey results; Prenatal care-timing*. Retrieved from <http://www.schs.state.nc.us/data/prams/2015/PNC1TRM2.html>
- Nypaver C., & Shambley-Ebron D. (2015). Using community-based participatory research to investigate meaningful prenatal care among African American women. *Journal of Transcultural Nursing*, 27(6), 558-566. doi:10.1177/1043659615587587

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- Peters R., Benkert R., Templin T., & Cassidy-Bushrow A. (2014). Measuring African American women's trust in provider during pregnancy. *Research in Nursing and Health*, 37(2), 144-154. doi:10.1002/nur.21581
- Partridge S., Balayla J., Holcroft C., & Abenhaim H. (2012). Inadequate prenatal care utilization and risks of infant mortality and poor birth outcome: A retrospective analysis of 28,729,765 U.S. deliveries over 8 years. *American Journal of Perinatology*, 29(10), 787-794. doi:10.1055/s-0032-1316439
- Salm-Ward, T., Mazul, M., Ngui, E., Bridgewater, F., & Harley, A. (2013). "You learn to go last": Perceptions of prenatal care experiences among African-American women with limited incomes. *Maternal and Child Health Journal*, 17(10), 1753-1759. doi:10.1007/s10995-012-1194-5
- Slaughter-Acey, J., Caldwell, C., & Misra, D. (2013). The influence of personal and group racism on entry into prenatal care among African American women. *Women's Health Issues*, 23(6), 381-387. doi:10.1016/j.whi.2013.08.001
- Straughen J., Caldwell C., Young A., & Misra D. (2013). Partner support in a cohort of African American families and its influence on pregnancy outcomes and prenatal health behaviors. *BMC Pregnancy Childbirth*, 13(187), 1-9. doi:10.1186/1471-2393-13-187
- Thomas M., Spielvogel A., Cohen F., Fisher-Owens S., Stotland N., Wolfe B., & Shumway M. (2014). Maternal differences and birth outcome disparities: Diversity within a high-risk prenatal clinic. *Journal of Racial and Ethnic Health Disparities*, 1(1), 12-20. doi:10.1007/s40615-013-0002-2

FACTORS RELATED TO ENTRY INTO PRENATAL CARE

United States Department of Health and Human Services, Office of Minority Health. (2016). *The national CLAS standards*. Retrieved from

<https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=2&lvlid=53>

Xaverius P., Cameron A., Holtz L., & Yarber L. (2016). Risk factors associated with very low birth weight in a large urban area, stratified by adequacy of prenatal care. *Maternal Child Health Journal*, 20(3), 623-629. doi:10.1007/s10995-015-1861-4