

**EXAMINING THE TREATMENT OF PREECLAMPSIA AMONG WOMEN
RECEIVING CARE IN A RURAL CLINIC USING THE AMERICAN COLLEGE OF
OBSTETRICIANS AND GYNECOLOGISTS' GUIDELINES**

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Dedication and Acknowledgements

There are so many people I would like to express my gratitude to as I complete my DNP Capstone Project. First, I would like to thank God for his sovereignty and for his presence in my life. I thank God for his infinite wisdom, his guidance, and his provision for my daily mental and physical health, especially throughout this program.

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Last and certainly not least, my late grandmother Mamie Washington, I say to you in heaven, your prayers and the words to me, your granddaughter, live forever. I feel your spirit daily. In your memory, I dedicate this project to you. It was you who instilled hard work and an "I can do it," attitude in me. Thank you for praying for me.

Abstract

The United States (US) has the highest maternal and infant mortality rates among developed countries. Yearly, 50,000 women experience life-threatening pregnancy-related complications including preeclampsia. Preeclampsia is a major contributor to maternal morbidity with an incidence of 69.8 per 1,000 deliveries among African American women compared with 43.3 per 1,000 in white women. African American women are dying from childbirth complications more than any other racial group, **Purpose:** The purpose of this DNP project was to examine the maternal care of women diagnosed with preeclampsia using the American College of Obstetricians and Gynecologists (ACOG) Guidelines. **Methods:** A retrospective descriptive design was used to examine electronic medical records of women with a diagnosis of preeclampsia (gestational-induced hypertension [GIH])) using an assessment tool created by the PI. ACOG guidelines were used to examine the preeclampsia treatment plan. **Results:** Sixteen electronic medical records (EMR) of women were examined that included, 7 African Americans, 3 Hispanics, and 6 Whites, 16-40 years old. Seventy-one percent (n=5) of African American women were diagnosed with GIH, chronic hypertension, or elevated blood pressure; all of the Hispanic women (n=3) had a GIH diagnosis; fifty percent of White women (n= 3) had a diagnosis of GIH. Fifty-six percent (n= 9) of women with GIH were prescribed low-dose aspirin & antihypertensive therapy consistent with ACOG guidelines. **Conclusion:** This project indicates that preeclampsia may occur in various groups. Treatment for preeclampsia based on the ACOG guidelines may not be followed for all patients. More work is needed to ensure that evidence-based practice guidelines are used for patients with a diagnosis of preeclampsia.

Keywords - preeclampsia, pregnancy, women, racial disparities, maternal care, maternal deaths, mortality rates, infant deaths, birth outcomes, prenatal care, quality prenatal care, equity, inequities in birth outcomes, ethnic/racial disparities in obstetrical care

Background and Significance

The United States (US) has the highest maternal and infant mortality rates among developed countries (Taylor et al., 2019). Fifty thousand women yearly experience life-threatening pregnancy-related complications (Taylor et al., 2019). Preeclampsia is a major contributor to maternal morbidity with an incidence of 69.8 of every 1,000 deliveries among African American women compared with 43.3 per 1,000 in white women (Johnson & Louis, 2020). The Centers for Disease Control and Prevention [CDC (2019)] reports that pregnancy-related deaths per 100,000 live births for African American, American Indian, Asian, and Alaskan women older than 30 years old was four to five times higher compared to white women. These disparities are consistent and have not changed between 2007-2008 and 2015-2016 (CDC, 2019). African American women are dying from childbirth complications more than any other racial group (CDC, 2019).

Maternal outcomes are impacted by the social determinants of health such as housing, transportation, neighborhood, racism, discrimination, education, job opportunities, low income, crime, and access to nutritious food and physical activity opportunities (Howell & Zeitlin, 2017). High blood pressure, gestational diabetes, obesity, and other underlying diseases are believed to be contributors to the high incidence of postpartum morbidity and mortality among African American women (Johnson & Louis, 2020).

In the US, childbirth is the largest category of hospital admissions for commercial insurance payers and Medicaid with over \$100 billion in annual hospital costs for childbirth and newborns (Howell & Zeitlin, 2017). A national focus has been on the quality of care by patients and the medical community. The US spends more on maternity care than any other developed

country but has the highest maternal and infant mortality rates (Howell & Zeitlin, 2017). A woman who develops gestational hypertension with a blood pressure $\geq 140/90$ on two occasions at least 4 hours apart after 20 weeks of pregnancy is considered to have preeclampsia (ACOG, 2020). The American College of Obstetricians and Gynecologists has developed evidence-based guidelines for the treatment of preeclampsia.

Purpose

The purpose of this DNP project was to examine the maternal care of women diagnosed with preeclampsia (GIH) using the guidelines from the American College of Obstetricians and Gynecologists outlined in the ACOG Practice Bulletin (2021).

Review of Current Evidence

The review of current evidence examined pregnant women, pregnancy complications, maternal morbidity and mortality rates, African American women's birth outcomes, and the diagnosis and treatment of preeclampsia. The databases accessed were CINAHL, Pubmed, and Google Scholar databases. Search terms included pregnancy, women, preeclampsia, racial disparities, maternal care, maternal deaths, mortality rates, infant deaths, birth outcomes, prenatal care, quality care, and equity. Exclusion criteria included studies published before 2016, non-peer-reviewed articles, and populations outside the US. The themes derived from the review of 15-20 articles include inequities in birth outcomes, complications of pregnancy, preeclampsia, ethnic/racial disparities in obstetrical outcomes, socioeconomic status, access to care, education, structural and organizational measures, policy impacts of what, and provider-patient interactions.

Pathophysiology of Preeclampsia

Preeclampsia is defined as gestational hypertension with a blood pressure of $\geq 140/90$ on two occasions at least 4 hours apart after 20 weeks of pregnancy (American College of Obstetricians and Gynecology, 2020). Although the exact etiology of preeclampsia is unknown, current research suggests that reduced placental perfusion and vascular changes cause a rise in blood pressure (Fasanya et al., 2020). Preeclampsia evolved into a state of toxemia with circulating protein in the urine (proteinuria) (Phipps et al., 2016). Proteinuria has cardiovascular and renal implications (Phipps et al., 2016). Liver and pulmonary edema may occur which may lead to headaches, visual changes, and lower extremity edema. Eclampsia characterized as a seizure may also occur (Fasanya et al., 2020). When preeclampsia is not controlled eclampsia occurs which further puts the mother at risk due to the disruption of oxygen and blood to the brain (Fasanya et al., 2020). Magnesium sulfate is the drug of choice to treat eclampsia. Generally, women who experience preeclampsia are at risk for severe hypertension, hemorrhage, placenta abruptio, and increased risk of mortality (Zhang et al., 2020). In addition, the fetus may be impacted by preeclampsia with growth restriction, preterm delivery, low birth weight, or even death (Zhang et al., 2020). African American mothers are twice as likely to experience maternal morbidities compared to non-Hispanic whites. Similarly, just as African American infants die by their first birthday (Taylor et al., 2019).

Racial Disparities in Maternal Health

Racism manifests in several ways that impact health. For example, social determinants of health such as one's income level, education, and socio-economic status are not protective factors from maternal morbidities; Racism manifests in community resources, access to quality care,

food security, and exposure to environmental factors that impact African American neighborhoods (Taylor et al., 2019). Differences in organizational structures, hospitals, and provider bias also contribute to racial disparities in maternal morbidity and mortality (Howell & Zeitlin, 2017).

A survey entitled, *Listening to Mothers*, published by the National Partnership for Women and Families in 2018, reports birthing experiences shared by women. The survey revealed English speaking white women were shown better treatment (Taylor, 2020). Differences in treatment revealed that African American women were given cesarean section (C-section) at a rate 40% compared to 29% for white women increasing their risks of infections, hemorrhage, and blood clots (Taylor, 2020). Continuing this practice further increases African American women's risk of maternal morbidity and mortality.

The CDC reports awarding \$45 million over five years from 2019 to support the work of state and local maternal mortality review committees (MMRC) to further identify strategies to reduce disparities in pregnancy-related mortality (CDC, 2019). MMRC data from 13 states determined that each pregnancy-related death was associated with access to high-quality care, missed or delayed diagnoses, lack of knowledge among providers, and patients recognizing warning signs (CDC, 2019). Taylor's (2020) qualitative studies report numerous stories of patients with postpartum eclampsia symptoms not recognized or treated properly.

Implementing standardized evidence-based protocols, identifying biases, addressing high-risk social determinants in healthcare, and improving patient-provider interaction are all factors that could reduce disparities in pregnancy-related morbidity and mortality (CDC, 2019)

Mitigating Inequities in Prenatal Care

Early and adequate prenatal care promotes healthy pregnancy outcomes (Oribhabor et al., 2020). Early prenatal care will allow for screenings and identifying risk factors such as elevated blood pressure readings early to manage conditions that impact birth outcomes. Further, several studies have shown most maternal morbidities and fatalities are preventable, necessitating healthcare efficiency and the need to identify ways to mitigate the existing inequalities (Oribhabor et.al, 2020). Several steps have been identified to improve the maternal health of African American women.

People living with social, environmental, and structural disadvantages typically have a higher incidence of underlying medical conditions and experience worse health outcomes (Taylor et al, 2019). Health risks such as obesity, diabetes, and other chronic conditions contribute to the development of preeclampsia along with other comorbidities and negative maternal outcomes (Oribhabor et al., 2020). Addressing these conditions during preconception and pregnancy will help decrease the incidence of preeclampsia. Evidence-based care should include proper screenings for blood pressure at every prenatal care visit, monitoring labs, and urine screenings to allow for early diagnosis and treatment of preeclampsia (Fasanya et al., 2020).

Maternal Qualitative Experiences

Taylor (2020) completed qualitative research highlighting personal stories of women's birthing experiences and determined black women's poor maternal outcomes could be, in part, associated with provider bias. Taylor (2020) detailed the experiences of two highly educated black women who had a network of support, access to medical care, and access to nutritious food

leading to a healthy diet. These factors are considered protective against maternal complications, yet both of these women died during their peripartum period. In both cases, the providers were slow to respond to the patient's complaints and did not address their complications in a timely manner. One patient hemorrhaged and the other mother died from eclampsia complications.

Evaluating the quality of care within institutions, and medical care policies is another way to address increased maternal morbidity and mortality. Healthcare providers must be trained to provide culturally sensitive care and care that is free from bias that affirms cultural differences (Taylor, 2020). Another factor that may be associated with increased maternal morbidity and mortality is the limited care of patients with Medicaid. Medicaid coverage previously limited postpartum care to 60 days when the CDC estimates a third of maternal deaths occur a week to a year postpartum (Taylor, 2020). The extension of Medicaid coverage in 2021 for maternal care beyond two months saves lives and allows for postpartum complications to be diagnosed and treated promptly.

Guidelines for Treatment of Preeclampsia

American College of Obstetricians and Gynecologists (ACOG) 2021 guidelines follow the National High Blood Pressure Education Program (NHBPEP) in the management and treatment of preeclampsia and eclampsia which may include low-dose aspirin, antihypertensives, magnesium, bedrest, in patient monitoring and a referral to a high-risk obstetrician. The US Preventive Services Task Force (USPSTF) updated guidance recently on preventive measures for women with moderate risk factors for preeclampsia.

Specifically, the USPSTF now recommends low-dose aspirin for individuals with more than one moderate-risk factor. Additionally, the USPSTF added one new moderate-risk

factor, “In vitro conception,” and modified the previous “Sociodemographic characteristics” risk factor by splitting it into two distinct factors: “Black persons (due to social, rather than biological, factors)” and “lower income.” The USPSTF notes that “Black persons” and “lower income” are associated with increased risk due to environmental, social, and historical inequities shaping health exposures, access to health care, and the unequal distribution of resources, not biological propensities; low-dose aspirin can be considered without any additional moderate-risk factor if the patient has either of these risk factors. (ACOG & SMFM, 2021)

The director of CDC’s Division of Reproductive Health states, “There are many complex drivers of maternal mortality. This report shows the critical need to accelerate efforts and to identify the initiatives that will be most effective.” Approximately 700 women die each year from pregnancy-related complications (CDC, 2019).

This literature review highlights the health disparities associated with the prevalence of morbidity and mortality due to preeclampsia. The problem is multifactorial and will take layers of mitigating steps to address the issue. Gaps identified in this literature review include examining the long-term impact of maternal education. Singh (2021) states it is not known if maternal education and socioeconomic patterns in maternal mortality differ by ethnicity and race. Taylor’s (2020) qualitative research revealed although social determinants like maternal education, poverty, and environments are attributed to poor maternal outcomes among black women, they are not the sole determinants. Taylor (2020) asserts that other factors such as structural racism may also impact birth outcomes. Other gaps in the literature include limited studies on provider training and tools to ensure evidence-based obstetrical guidelines are

followed. This DNP project will examine how preeclampsia is being treated in practice compared to the current guidelines as outlined by ACOG.

Conceptual Framework

The Socio-Ecological model (SEM) was used as the conceptual framework for this project. SEM was introduced in the 1970s by Urie Bronfenbrenner to understand human development and later formalized into a theory in the 1980s (Kilanowski, 2017). The SEM conceptualizes health and focuses on five factors that affect one's health. The model describes the interaction of the individual, interpersonal, organizational, community, and public policy levels of society which were initially symbolized by nesting circles with the individual in the middle (Bronfenbrenner, 1979). The model is a framework to understand the multifaceted levels within society and how the individual and environment interact within a social system (Staniford et al, 2012; Brofenbrenner, 1979). The individual level examines an individual's knowledge, skills, and some of their interactions and strongest influences (Staniford et al, 2012). The interpersonal level explores a person's relationship with other people. The organizational level and community levels examine the different sectors in the community that the person may encounter such as their work and church (Staniford, et al, 2012). Lastly, the public policy includes societal policies and/or mandates that impact one's health such as insurance coverage or policies mandating the number of days for postpartum care. Policies that promote health and safety are policies that affect pregnant women.

As with many health issues, a multilevel approach is required in the treatment of preeclampsia. Using the levels of SEM to consider factors associated with the risk factors and treatment of preeclampsia. An individual's knowledge about a disease helps with understanding

the condition. Although knowledge alone is not enough, it informs the person of the possible course of illness and complications. Knowledge may help influence attitudes and decisions to improve adherence to treatment and improve health outcomes. The interpersonal level explores a person's relationship with other people. At this level, the patient-provider relationship would be necessary to examine. Does the patient trust the provider and is the patient respected by the provider? Is the healthcare provider rendering evidence-based care for preeclampsia? Developing good rapport with patients and fostering an open communication environment is supportive during pregnancy and the treatment of any condition such as preeclampsia.

Various community resources, and healthcare resources, such as the healthcare department and clinics fall into the organizational level of society. These organizations may have nutritionists, health coaches, and pharmacists who can provide counseling on diet, monitoring of symptoms, exercise, and medication management of preeclampsia. Hospitals' internal metrics may reveal a need to provide education or take other mitigating steps to improve the treatment of preeclampsia and the maternal care of African American mothers. The organizational level overlaps with the community level and refers to various organizations (Staniford et al, 2012). Public policy plays a monumental role in the care of women not only during pregnancy but after delivery. As aforementioned, Medicaid coverage provides only 60 days for postpartum care. The extension will allow for continued access to care and the ability to address any complications that may occur a year after giving birth, therefore, decreasing maternal morbidities and mortalities. This DNP project will focus on components of the interpersonal level of SEM. The project will examine the medical care provided to patients with risk factors and/or diagnosis of preeclampsia, compared to evidence-based care for pre-eclampsia.



Figure 1.2. The Social-Ecological Model: A Framework for Prevention.

Methods

Design

The DNP project used a retrospective descriptive design. This project examined the maternal care of women diagnosed with preeclampsia using the treatment guidelines established by the American College of Obstetricians and Gynecologists (ACOG, 2021).

Translational Model

Kurt Lewin's 3-step Theory of Change Model was the translational model chosen for this DNP project. The theory of change model is a 3-step change model that facilitates collaborative efforts to introduce evidence-based practices to healthcare professionals (Manchester et al., 2014). When looking at implementing new protocols or changing practices, Lewin's Model outlines 3 steps called unfreezing, movement, and refrozen (Manchester et al., 2014). Unfreezing first alters the current or traditional clinical approach. Movement introduces new practice guidelines or refines providers' behaviors. Lastly, refreezing reinforces the new guidelines through organizational changes and structure (Manchester et al., 2014).

The DNP project will use unfreezing to first assess the current practices and treatments in place for the treatment of preeclampsia. This is the step where deficiencies, problems, and awareness of old patterns are identified (Lewin, 1951; Manchester et al., 2014). Movement refers to examining the ACOG practice guidelines for preeclampsia and determining if providers' behavior needs refinement. Unfreezing refers to integrating new information or the needed change of behavior into practice. This project will not include the unfreezing component of the change model. Using Lewin's 3 step Model as a guide to introduce and evaluate changes serves as a framework to help implement the practice guidelines for treating preeclampsia. The diagram illustrated below provides a visual of the framework.

Population

The project inclusion criteria included medical records of patients seen by the clinic healthcare providers within the last 19 months, January 2021 -August 2022, who was diagnosed after 20 weeks of preeclampsia consistent with the American College of Obstetricians and Gynecologists guidelines. The exclusion criteria included patients who have a history of kidney disease and a chronic history of hypertension.

Setting

The DNP project was conducted at a rural clinic in the Southeastern region of the United States. The clinic offers medical care to both genders across all developmental stages of life in the surrounding communities. Primary care, pediatric care, dental care, preventative screenings, family planning, and obstetrical care are services provided at the facility. Approximately 400 patients are seen weekly. Nurse practitioners, obstetricians, and gynecologists are the providers on staff. The clinic accepts Medicaid, Medicare, and private insurance.

Project Implementation

Instrument

The data collection tool used for this project was created by the PI for a cross-sectional assessment of ENR for preeclampsia signs, symptoms, and treatment based on the American College of Obstetricians and Gynecologists' preeclampsia guidelines. De-identified data were extracted from electronic medical records that included demographics (race, age, SES, health insurance), hypertension diagnosis, blood pressure measurements, aspirin or antihypertensive medications administered or prescribed, past medical history, health behaviors, gestational-induced hypertension signs and symptoms present during a prenatal visit.

Timeline and Critical Milestones - Gantt Chart

Task	Mar 2022	April 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2022
Finalize Methods/Procedures	x	x													
Dev Assessment Tool	x	x													
Submit IRB			x												
Chart Reviews/Data Collection				x	x	x									
Appointment w/Statistician						x	x								
Data Analysis						x	x	x							
Write Report								x	x	x	x	x	x		

IRB Approval

The completed data collection tools were kept in a locked file cabinet at the clinical site. Data from the documents was transferred and stored in a password-protected Excel file on the principal investigator's (PI) password-protected and firewalled personal laptop. The file was uploaded to BOX.uncg.edu for faculty team members to review data and for backup during the DNP project. Box is rated as a "1-lock" system that is secure as long as files are not synchronized to a hard drive.

The PI managed the data within the cloud and did not synchronize to a hard drive. In addition, the PI did not use the drive in any unsecured areas, such as coffee shops, where data could be viewed by unauthorized personnel. Data analysis was on the PI's personal password-protected and firewalled laptop or secure computers on the UNCG campus. All Excel files and Box.uncg files for the project will be deleted after 5 years using an Eraser program. Only the PI and the DNP faculty project team will have access to the anonymous raw data. The clinical site will receive summary data upon the PI's program completion.

How was data collected/Steps Implemented?

After IRB approval, the primary investigator (PI) used the clinic's electronic medical record (EMR) system and compiled approximately 16 electronic medical records of patients who were seen in the clinic, in January 2021-August 2022, meeting inclusion/exclusion criteria. The electronic medical records were de-identified with a 3-digit code. The codes with the patient names were placed on a list and secured in an electronic folder separate from the project data. This list will be destroyed after 5 years.

The PI reviewed the de-identified charts and recorded information from the EMR on the data collection tool including demographic information such as race, age, ethnicity, education level, past medical history, health behaviors, and GIH treatment. The PI reviewed and recorded the treatment plan documented in the medical record of women diagnosed with gestational-induced hypertension (preeclampsia) and compared the plan with the American College of Obstetricians and Gynecologists (ACOG) guidelines.

Data Analysis

The de-identified data from EMR was organized into an Excel spreadsheet. Descriptive statistics were used to describe the data collected and compared to the ACOG guidelines for the

diagnosis and treatment of preeclampsia. Sample characteristics were estimated using frequency and percentage and averages. The frequency and percentages of patients diagnosed with GIH, chronic hypertension, and elevated blood pressure were examined by race. The average systolic and diastolic blood pressures were also examined by race. Lastly, the percentage of patients diagnosed with GIH who received aspirin, or an antihypertensive medication based on the ACOG guidelines was examined.

Results

Evaluate Outcomes

The sample was composed of 16 EMRs that included 7 African American women, 3 Hispanic women, and 6 White women ages 16-40 years old. Half of the women reported completing high school; 3 reported attending some college. Fifty-six percent of the women were unemployed and used Medicaid as their medical insurance. Seventy-five percent (n=12) of the women presented with an underlying chronic condition including diabetes, asthma, hypertension, obesity, or depression. Four of the 16 women had a history of substance abuse. No participant reported ETOH use. Approximately 63% (n= 10) of the women presented to the clinic during the first trimester for prenatal care. One participant presented in the third trimester for prenatal care (see Table 1).

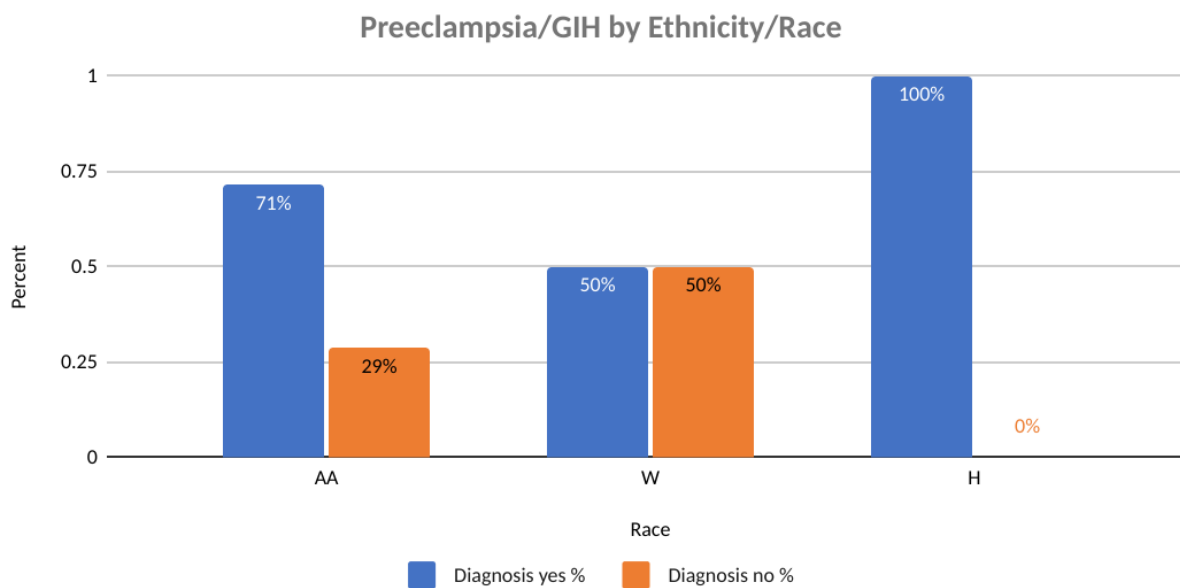
Table 1: Demographics

<u>Patient Characteristics</u>	<u>N = 16</u>	<u>Percent (%)</u>
Ethnicity/Race		
Black/African American	7	43.75
Whites/Caucasian	6	37.5
Hispanics	3	18.75

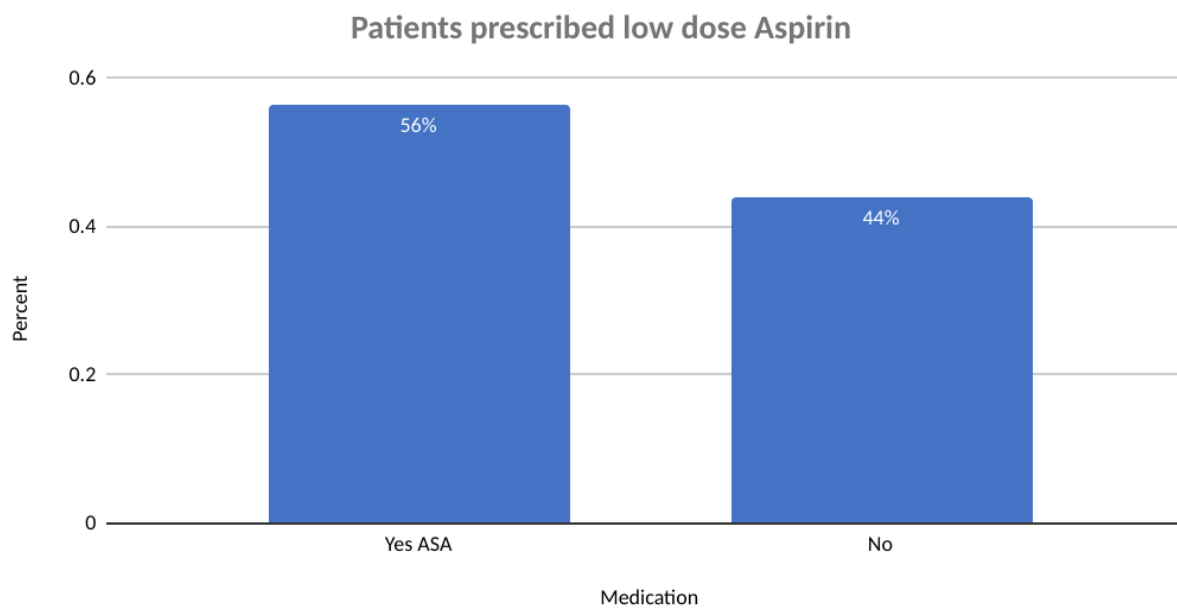
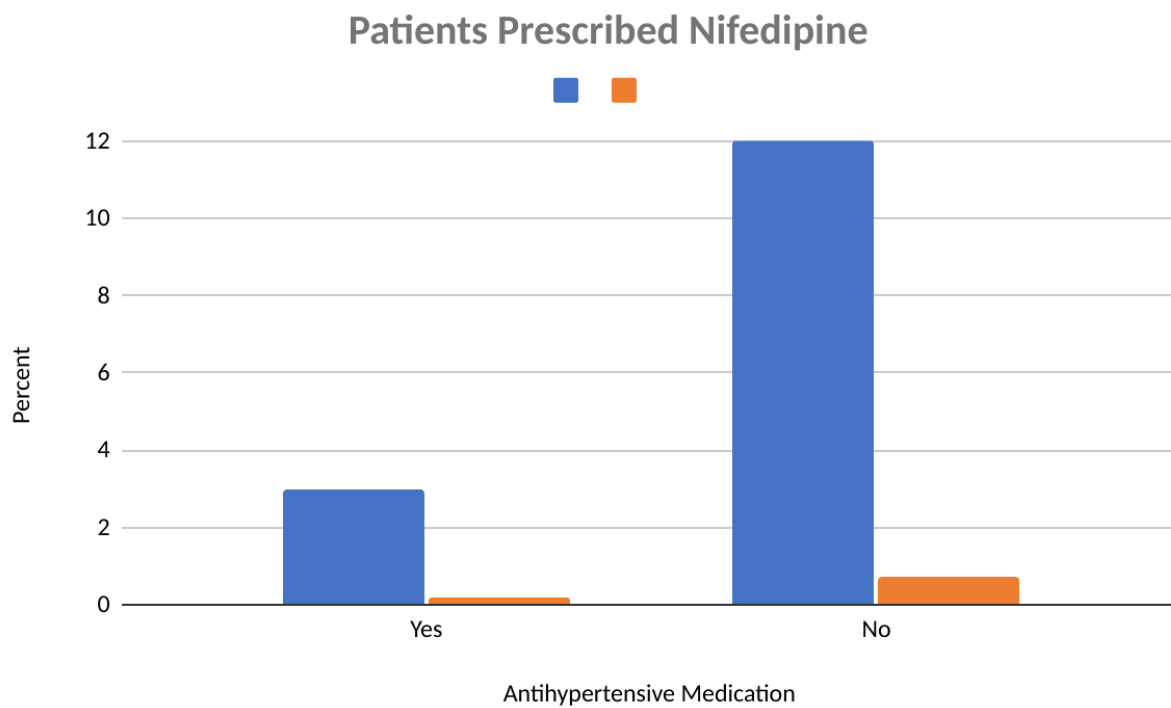
Age		
16 --25	4	25
26 -35	9	56.25
36 - 45	3	18.75
Education		
Some High School	5	31.25
High School Graduate	8	50
Some College	3	18.75
Medical Insurance		
Medicaid	9	56.25
Private Insurance	3	18.75
Not Reported	4	25
First Prenatal Visit		
1st Trimester	10	62.5
2nd Trimester	5	31.25
3rd Trimester	1	6.25
New Diagnoses		
Gestational Induced HTN (Preeclampsia)	9	56.25
No Diagnosis	5	31.25
Elderly Multigravida	2	12.5
Health History		
Diabetes	5	31.25
Asthma	2	12.5
Obesity	3	18.75
Chronic HTN	3	18.75
Lifestyle Behaviors		
Cigarette Smoking	1	6.25
Marijuana Use	1	6.25
Heroin Use	1	6.25
ETOH Use	0	0

Gestational Induced Hypertension (Preeclampsia) treatment		
Yes	9	56.25
No	7	43.75

Table 2



One hundred percent of the Hispanic women (n=3) were diagnosed with GIH. Seventy- one percent of African American women (n=5) were diagnosed with GIH, chronic hypertension, or elevated blood pressure. Fifty percent of white women (n= 3) had a diagnosis of GIH.

Table 3**Table 4**

Of the patients diagnosed with GIH, chronic hypertension, or elevated blood pressure, 56% (n= 9) of the women were started on low-dose aspirin or an antihypertensive such as nifedipine and 44% (n= 7) did not receive any medications. The patient's average systolic blood pressure ranged from 141 mm Hg to 153 mm Hg.

Barriers to Success

The first barrier experienced was the inability to secure a larger number of EMRs with patients diagnosed with GIH. This may be due to the project being completed in a rural clinic that only treated a small number of patients with preeclampsia. Larger healthcare systems may treat larger numbers of patients with GIH. Due to Covid-19 during the time of data collection for this project, larger hospital systems did not allow project-related activities.

Strengths to Overcome the Barriers

Once allowed to visit a clinic, a rural healthcare clinic allowed me to examine EMR for this project. The nursing clinic staff de-identified charts from the EMR that met project requirements for my review. De-identified EMR data was collected weekly over a 3-month period.

Discussion

The purpose of this DNP project was to examine the maternal care of women diagnosed with preeclampsia using the guidelines from the American College of Obstetricians and Gynecologists outlined in the ACOG Practice Bulletin (2021). Key findings from this project indicate that preeclampsia occurs in diverse groups as participants self-identified as black, African American, white, or Hispanic. Preeclampsia is defined as elevated blood pressure usually reading greater than 140/90 on two occasions after 20 weeks of pregnancy (ACOG, 2020). In the EMRs reviewed, preeclampsia was identified as gestational-induced hypertension

(GIH). Results from this project show that many people may present with chronic underlying medical conditions during pregnancy including diabetes, obesity, asthma, and chronic hypertension. These medical conditions may increase the risk of complications associated with preeclampsia such as maternal and infant morbidities or mortality (Oribhabor et al., 2020).

Findings from this project show that there are inconsistencies with initiating treatment according to the ACOG guidelines for preeclampsia. The chart review revealed a delay in treatment when elevated blood pressure readings were obtained during prenatal visits according to the ACOG guidelines.

Recommendations

Demographic factors as well as social determinants of health may contribute to the development of preeclampsia and hence a need to be evaluated at every prenatal visit. The social determinants of health such as housing, transportation, neighborhood, racism, discrimination, education, job opportunities, low income, crime, and access to nutritious food and physical activity opportunities (Howell & Zeitlin, 2017).

There is a need to recognize and treat the symptoms of preeclampsia according to the ACOG guidelines. Recognizing signs and symptoms early will impact the health of the mother and infant increasing the chances of positive maternal outcomes. As the medical community considers social determinants of health as risk factors for preeclampsia. Systemic structures must be considered such as organizational structures, public health, policies, and healthcare resources must be used to decrease the disparity of maternal morbidities and mortality rates (Staniford, et al, 2012). Addressing preeclampsia as a public health concern necessitates a multi-layered approach including the interaction of the individual, interpersonal, organizational, community, and public policy levels of society (Staniford, et al, 2012). Organizational structure within the

medical community must consider the assessment of provider biases and provider compliance with the ACOG guidelines.

Conclusion

Findings from this project indicate that preeclampsia may occur in various groups. Treatment for preeclampsia based on the ACOG guidelines may not be followed for all patients with preeclampsia. More work is needed to ensure that evidence-based practice guidelines are used for patients with a diagnosis of preeclampsia.

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Appendix –

ID# _____

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

School of Nursing

Preeclampsia Assessment Tool

Demographics:

1. Age: _____

2. Race: circle response

- a. White or Caucasian
- b. Black or African American
- c. Asian
- d. American Indian or Alaskan Native
- e. Native Hawaiian or another Pacific Islander
- f. Hispanic or Latino origin or descent

3. Education:

Education level: Highest year in school completed: 1 2 3 4 5 6 7 8 9 10 11 12;

College/Technical School _____

4. Marital Status:

- 1. Single, never married _____
- 2. Single, in committed relationship _____
- 3. Married _____
- 4. Widowed _____
- 5. Divorced _____
- 6. Separated _____

5. Employment

Work Status: circle response

- 1. Full-time
- 2. Part-time
- 3. Unemployed (temporary or lay off)

4. Unemployed (student)

5. Permanently disabled

6. Retired

6. Annual household income range:

1. Less than \$1000 _____

2. \$1000 – \$5000 _____

3. \$5000 – \$9999 _____

4. \$10,000 - \$14,999 _____

5. \$15,000 - \$24,999 _____

6. \$25,000 - \$49,999 _____

7. \$50,000 or more _____

7. Pregnancy History

1. Gravida (number of pregnancies) _____

2. Para (number of live births) _____

3. Abortion/Miscarriages (spontaneous fetal death) _____

8. Preeclampsia Risk Factors

1. Preeclampsia w/previous pregnancy a. Yes _____ b. No _____

2. Chronic hypertension a. Yes _____ b. No _____

3. Pregestational diabetes mellitus a. Yes _____ b. No _____

4. Gestational diabetes mellitus a. Yes _____ b. No _____

5. Pre pregnancy BMI > 30 kg/m² a. Yes _____ b. No _____

6. Chronic Kidney Disease a. Yes _____ b. No _____

7. Thrombophilia a. Yes _____ b. No _____

8. Antiphospholipid antibody syndrome a. Yes _____ b. No _____

9. Maternal age 35 years or older a. Yes _____ b. No _____

10. Assisted reproductive technology a. Yes _____ b. No _____

11. Obstructive sleep apnea a. Yes _____ b. No _____

12. Preeclampsia Diagnosis: a. Yes _____ b. No _____

Care of patients at risk for Preeclampsia or diagnosed with Preeclampsia

Prenatal Assessment

1. Health history at first prenatal visit

a. Yes b. No

Practice Bulletin

(A complete history helps identify pre-existing conditions and risk factors that may impact the pregnancy).

2. Blood pressure measured at each prenatal visit

a. Yes b. No

Practice Bulletin

(To facilitate timely antihypertensive therapy).

3. Blood drawn during 1st and 2nd trimester prenatal visits assessing kidney, liver, function, and platelet counts

a. Yes b. No

Practice Bulletin

(At the initial evaluation, a complete blood count with platelet estimate, serum creatinine, LDH, AST, ALT, for comprehensive clinical evaluation)

4. Patient provided verbal or written information on pregnancy-related signs and symptoms to report immediately to the provider.

a. Yes b. No

Practice Bulletin

Women should be advised to immediately report any persistent, concerning, or unusual symptoms.

5. Health behavior counseling provided for pre-existing medical conditions e.g., obesity, diabetes

a. Yes b. No

Practice Bulletin (Addressing pre-existing conditions lessens the risk of complications that may impact the pregnancy)

6. Each prenatal visit after 12 weeks fetal heart sounds assessed Practice Bulletin
(Fetal evaluation should include ultrasonographic evaluation for estimated fetal weight and amount of amniotic fluid, as well as fetal antepartum testing)

a. Yes b. No

7. Each prenatal visit included assessment of heart sounds, peripheral pulses & edema, headaches

a. Yes b. No

Practice Bulletin

(Assessing for pulmonary edema and headaches unresponsive to medication associated with preeclampsia)

8. Each prenatal visit assessed blood pressure and ASA use

a. Yes b. No

Practice Bulletin

(Control of hypertension and low dose; 81 mg/day) aspirin for preeclampsia prophylaxis, initiated between 12 weeks and 28 weeks of gestation and continuing until delivery)

9. Urine samples collected at initial visit

a. Yes b. No

Notes

Practice Bulletin

(At initial evaluation detects Protein in the urine, proteinuria indicates preeclampsia)

10. Referred to a high -risk obstetrician

a. Yes b. No

Notes

11.. Maternal Outcomes

a. Yes b. No