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The Impact of Midwifery on Infant and Maternal Outcomes Among Black Mothers

Joann Honoré
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Walden University

College of Health Professions

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Joann Honoré

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2021

Abstract

The Impact of Midwifery on Infant and Maternal
Outcomes Among Black Mothers

by

Joann Honoré

MPH, Florida International University, 2014

BHS, University of Florida, 2011

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Public Health

Walden University

November 2021

Abstract

According to recent studies, disparities are prevalent in maternal and fetal outcomes between Black and White mothers in the United States. Researchers have established that using a midwife versus other healthcare practitioners can elicit positive maternal and fetal outcomes for Black mothers. However, no within-race research has been conducted exploring midwifery as an insulating factor against these disparities. The purpose of this quantitative retrospective cohort study was to explore the impact of midwifery on infant and maternal outcomes compared to outcomes associated with other prenatal care models/caregivers among Black mothers in California using secondary data. The ecological model was used as the theoretical framework. Although the findings were not statistically significant, a post-analysis of the secondary data set using additional data from 2013 yielded statistically significant findings regarding differences in birth weight between Black mothers who chose to use midwives versus other healthcare providers. The post hoc analysis consisted of the same methods applied in the original analysis when possible and adapted when necessary to include a Pearson-chi square and Mann-Whitney U test. Namely, Black mothers who used a midwife had a statistically significantly lower frequency of having infants with a low birth weight than Black mothers who chose a different prenatal care provider. Implications of these findings for positive social change include that Black mothers may benefit from the results of this study through health practitioners' implementation of practices to bolster monitoring of Black mothers' prenatal care to mitigate factors that may contribute to this disparity.

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Dedication

This doctoral capstone is dedicated to God, who gave me the vision, the strength, and the knowledge to undertake this study.

To my husband, Dr. Lorant, thank you for all of your support and words of encouragement during my journey. Failure is not an option, and you made sure I was victorious by God's grace. To my sons LJ and Xavi, I am eternally grateful that God brought you both into our lives. May you both continue to grow into God-fearing, successful men and continue to shine your light wherever you are.

To my siblings and their spouses, thank you for going on this journey with me emotionally and providing laughter whenever I needed it. To my nephews and one niece, remember that you can accomplish any goals you set forth.

To my parents, Bethuel and Wilda Pierre, thank you for showing up for me regardless of what was going on in your personal lives. You've both taught my siblings and I at an early age to always push through no matter our circumstances and to remain fervently in prayer during unknown moments. Thank you for all of your prayers, support, and, most importantly, instilling God in me. Thank you from the bottom of my heart.

Lastly, to my late grandfather, Joicint Descorbeth, who instilled boldness and character in me that I could be who I wanted to be and always to be the best version of me. I am today because of you.

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Section 1: Foundation of the Study and Literature Review

Introduction

Although an extensive amount of research has been conducted on the disparities in birth outcomes between Black mothers and their White counterparts (Attanasio & Kozhimannil, 2015; Cox et al., 2011; Davis, 2019; Ely & Driscoll, 2019; Howell & Zeitlin, 2017; National Academies of Sciences Engineering and Medicine, 2020; Smith et al., 2018; Wallace et al., 2017), “more within-race research is necessary to isolate the factors that specifically improve outcomes for Black women” (Smith et al., 2018, p. 12). Further, it is suggested by the literature that Black women seek prenatal, intrapartum, and postpartum care from midwives and doulas to avoid obstetric racism experienced in hospital facilities to promote positive birth outcomes (Davis, 2019; National Academies of Sciences Engineering and Medicine, 2020; Sperlich et al., 2017).

However, research has not been conducted exploring the birthing outcomes between Black women who have used doctors, physician assistants, or nurse practitioners versus midwives or doulas to identify whether the use of midwifery for this population could be an insulating mechanism against obstetric racism, thereby warranting further research (Davis, 2019; Yoder & Hardy, 2018). This doctoral study is original in its contribution to the literature by being the only known study to explore within-race birthing outcomes between Black mothers using midwives and doulas versus other healthcare practitioners (doctors, physician assistants, nurse practitioners). Further, research findings could lead to identifying an insulating mechanism or protective factor that specifically improves birthing outcomes for Black women. Therefore, research

findings could potentially inform hospital practices to reduce the overall racial-ethnic gap in negative birthing outcomes for this population.

Problem Statement

It was not known whether the use of midwife services by Black women in the United States positively impacts infant and maternal outcomes compared to other prenatal care models among Black mothers. A large body of literature clearly demonstrated that there are disparities tied to infant and maternal outcomes between mothers and children who are Black and White (Attanasio & Kozhimannil, 2015; Cox et al., 2011; Davis, 2019; Ely & Driscoll, 2019; Howell & Zeitlin, 2017; National Academies of Sciences Engineering and Medicine, 2020; Smith et al., 2018; Wallace et al., 2017).

Although this body of literature was large and clearly established, there were notable gaps that needed exploration. Those gaps were related to within-race research designed to identify and explore the impact of factors that influence differences in infant and maternal outcomes between Black mothers (Smith et al., 2018). In fact, Smith et al. (2018) called specifically for research to identify and explore factors that influence differences in infant and maternal outcomes between Black mothers and their children.

Another gap identified in the literature was related to the impact of midwifery on infant and maternal outcomes among Black mothers. The literature has consistently demonstrated positive impacts associated with the use of midwives for at-risk mothers, as well as the historical prevalence of midwifery within the Black culture, and suggested that midwifery could be a mediating mechanism between elements of systemic and

structural racism and individual risk factors in mothers (Allen et al., 2019; Alliman & Bauer, 2020; Altman et al., 2020; Davis, 2019; Kalata et al., 2020; Luke, 2018; Phillippi et al., 2016; Smith et al., 2018; Suarez, 2020; Yoder & Hardy, 2018). The study of the impact of midwifery on infant and maternal outcomes was necessary as it provided knowledge and was hoped to describe a practice that could lead to a positive impact within Black maternal healthcare outcomes.

Purpose of the Study

The purpose of this study was to quantitatively examine, using a retrospective cohort research approach, the impact of midwifery on infant and maternal outcomes compared to outcomes associated with other prenatal care models/caregivers among Black mothers. The literature clearly demonstrated that disparities relating to infant and maternal outcomes exist between mothers of color and White mothers (Attanasio & Kozhimannil, 2015; Cox et al., 2011; Davis, 2019; Ely & Driscoll, 2019; Howell & Zeitlin, 2017; National Academies of Sciences Engineering and Medicine, 2020; Smith et al., 2018; Wallace et al., 2017). However, there was little literature published that specifically explored the impact of factors that influence differences in infant and maternal outcomes among Black mothers (Smith et al., 2018). Therefore, it was crucial to identify and understand factors that could influence and improve infant and maternal outcomes among Black mothers.

Additionally, the literature clearly indicated the historical prevalence of midwifery within the Black community and the positive outcomes associated with midwifery in prenatal care (Davis, 2019). However, there was little to no research that

demonstrated whether there are any differences between Black mothers who are primarily cared for by midwives and Black mothers who are primarily cared for by other types of prenatal treatment providers (National Academies of Sciences Engineering and Medicine, 2020). As a result, research that explores the value and impact of midwifery as a treatment model that could impact the disparities in outcomes associated with systemic and structural racism was warranted (Smith et al., 2018). The independent variables identified within this study were the primary modality of treatment received by Black mothers during their birth experience (e.g., midwife vs. other treatment modality). The dependent variables identified within this study were key infant and maternal outcomes identified as being predictive of mortality (e.g., preterm births and low birth weights), outcomes related to quality of care (e.g., involvement in the care process), and experiences relating to prejudice and racism while receiving care in the place of the child's birth.

Significance of the Study

This was the first study to compare outcomes between Black mothers who primarily receive prenatal care from midwives compared to Black mothers who primarily receive prenatal care from other providers such as medical doctors, physician assistants, or nurse practitioners. As such, this study addressed several gaps within the literature. Those gaps were the lack of literature identifying and exploring factors impacting differences in infant and maternal outcomes between mothers who are Black, the gap related to differences in outcomes between mothers who received care from midwives and other types of treatment providers, and lastly the gap related to the consistent calls

within the literature for additional exploration of midwifery as a mechanism for reducing the impact of structural and systemic racism. This research had the potential to provide positive social change and evidence to (a) drive awareness of the best practitioner to use for Black mothers to ensure optimal infant and maternal outcomes, (b) support the use of the identified practitioner to reduce disparities in infant and maternal outcomes, and (c) provide evidence to shape policies and procedures aimed at providing Black mothers the opportunity to choose care modalities better suited to reduce disparities relating to infant and maternal outcomes.

Research Questions and Hypotheses

RQ1: Are there differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor (OB-GYN or general practitioner), physician assistant, or nurse practitioner)?

*H*₀: There are no significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

*H*₁: There are significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

RQ2: Are there differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor [OB-GYN or general practitioner], physician assistant, or nurse practitioner)?

H₀: There are no significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

H₁: There are significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

Theoretical Framework

This doctoral study was grounded in the theory of the ecological model (Bronfenbrenner, 1979). This model incorporates components such as individual (knowledge, attitudes, and skills), interpersonal (family, friends, social network), organizational, community, and public policy (Bronfenbrenner, 1979). This model, as adjusted by Alio et al. (2010), provided an explanation for the difference in infant mortality rate based on maternal race. The ecological study model further uncovers

factors that contribute to the increased Black infant mortality rate. Alio et al. identified several components that branch toward this racial-ethnic disparity in infant deaths:

- infant characteristics: preterm births and low birth weights
- parent and family characteristics: health of mother, usage of drugs, maternal age
- community and society: access to and perceptions of quality care

The ecological model was used to examine the impact of midwifery and other prenatal care modalities on infant and maternal outcomes among Black mothers and provided pertinent information on how to reduce disparities relating to infant and maternal outcomes. Using this type of model could further inform the development and implementation of prenatal care programs and models rooted in midwifery that are tailored to Black mothers.

Nature of the Study

This study was a retrospective cohort research design based on secondary data from the *Listening to Mothers in California* survey (Sakala, Declercq, et al., 2020). The data were already identified and available to the public for research use. A cursory review of the sample counts within the platform on which the data were hosted indicated that there is a sizeable sample of Black mothers within the data set. Furthermore, the cursory review also indicated that there are Black mothers within the data set whose primary caregivers were identified as being a midwife. Descriptive and frequency statistics were conducted to explore characteristics of the mothers within the survey. Additionally,

Mann-Whitney U tests were used to test specific hypotheses related to the research questions posed above.

Secondary Data Types and Sources of Information

The secondary data was obtained from the *Listening to Mothers in California* survey (see Appendix A;(Sakala, Braveman, et al., 2020; Sakala, Declercq, et al., 2020). This secondary dataset was open to the public and therefore publicly accessible (Sakala, Braveman, et al., 2020). In collaboration with several agencies, a stratified random sample of participants were pulled from eligible participants for the study by drawing a representative sample of births that occurred in California hospitals from September 1, 2016, through December 15, 2016 (Sakala, Declercq, et al., 2020). Exclusion criteria consisted of women with birth certificates indicating that the infant died, “teens less than 18, women with out-of-hospital births, women with multiple births and non-residents of California” (Sakala, Declercq, et al., 2020, p. 15). The survey was conducted from February 22 through August 15, 2017. Participants were invited to participate in the study through mailings, “and then emails, text messages and telephone calls, as possible,” which included information to direct them to an online survey where they could use a preferred device to fill it out, or they were given the option to complete the survey over the phone with an interviewer (Sakala, Declercq, et al., 2020, p. 15). A 54% response rate was calculated using methods of the American Association of Public Opinion Research (AAPOR) Response Rate 2 method (Sakala, Declercq, et al., 2020).

The secondary dataset is located on the University of North Carolina (UNC) Dataverse website (Sakala, Braveman, et al., 2020). The survey was a self-reporting

questionnaire wherein California mothers within the study provided responses to several survey questions pertaining to (a) planning for pregnancy, (b) the pregnancy experience, (c) participants experiences giving birth, (d) experiences home with a new baby, (e) choice, control, knowledge, and decision-making regarding pregnancy and the birthing process, and (f) differences in modes of birth between demographics (Sakala, Declercq, et al., 2020). Data collection took place from September 1 through December 15, 2016 and consisted of online surveying (National Partnership for Women and Families, 2020). Data related to infant outcomes, maternal outcomes, involvement in prenatal care, quality of care, and involvement in postpartum care were used for this endeavor and within the analysis.

Literature Search Strategy

Several databases were used to find peer-reviewed literature published within the last 5 years (2015-2020). Databases used included Academic Search Premier, PsycINFO, EBSCOhost, PubMed, and Google Scholar. Several key terms were used in the search and included the following: *prenatal care disparities, low birth rate racial-ethnic disparities, pre-term birth racial-ethnic disparities, racial-ethnic disparities in birthing outcomes, structural racism and infant mortality, infant mortality rates, overcoming birthing outcome disparities, midwifery and birthing disparities, perinatal birthing outcome disparities, antenatal birthing outcome disparities, and overcome birthing disparities*. In addition to using the key terms for the search, the references of articles of interest were also scanned for literature relevant to the research topic. Further, Google

Scholar was used to search for other articles that referenced articles of interest. Both quantitative and qualitative studies were reviewed.

Literature Review Related to Key Variables and Concepts

The following literature review focuses on relevant literature demonstrating the prevalence of disparities in infant birthing outcomes and disparities, factors affecting these inequities, and research exploring ways to address them. Prior research suggests that racial-ethnic disparities in birthing outcomes exist because of several factors, including structural racism, and that improving birthing outcomes for Black mothers requires a higher quality modality of care wherein these women can establish a more personal connection with their caregiver, obtain the emotional support necessary, and be actively involved in the decision-making process. However, within-race research exploring the outcome of different birthing modalities is limited, warranting further research (Smith et al., 2018).

Infant Mortality Rates

Infant mortality rates were reported to be 5.79 deaths per 1,000 live births in the United States in 2018 (Ely & Driscoll, 2019). These numbers are no different than the numbers reported in 2016. The results also indicated that the “infant mortality rate for infants of non-Hispanic Black women (10.97)” were nearly twice as high compared to the infant mortality rate of non-Hispanic White (4.67) women (Ely & Driscoll, 2019, p. 2). Weeks of gestation is indicated as being a strong predictor of infant mortality. Infants born very preterm, less than 28 weeks’ gestation, had a significantly higher mortality rate (384.39) as compared to infants born at term, 37–41 weeks gestation (2.10; (Ely &

Driscoll, 2019). There were differences related to race and causes of infant death. This research study supported the notion that there are still disparities in infant mortality rates based on ethnicity. The following section explores racial-ethnic disparities in birthing outcomes.

Racial and Ethnic Disparities in Birthing Outcomes

Prior research has assessed racial-ethnic disparities in key patient outcomes in maternity care between mothers of color and White mothers (Attanasio & Kozhimannil, 2015; Reno & Hyder, 2018; Smith et al., 2018; Wallace et al., 2017). Specifically, Attanasio and Kozhimannil (2015) leveraged a publicly available data set referred to as the *Listening to Mothers III* survey (Declercq et al., 2013). The outcomes measured within the study relate to reluctance to ask questions, barriers to open discussion, and perceived discrimination during hospitalization. The result indicated, even after controlling for a multitude of covariates, that there were significant differences on these key outcome measures between racial-ethnic minorities and White mothers. Furthermore, the results indicated discrepancies between Black and White mothers. Although these results reaffirm previously cited research indicating disparities in maternal outcomes between Black and White mothers, the data set leveraged within the study provided promising avenues for future exploration of the quantitative impact of midwifery and other prenatal caregivers for Black mothers given that data set is publicly available for analysis.

Another research study tackled common misconceptions related to racial-ethnic disparities, infant mortality rates, risky behaviors, and systemic barriers to positive

birthing outcomes (Smith et al., 2018). Specifically, they reported that risky behaviors are not strong determinants of infant mortality. Namely, when risky behaviors are controlled, disparities in outcomes persist between Black and White mothers. Smith and colleagues argued that structural racism is the factor that accounts for these differences. They also reported evidence suggesting that differences in perinatal and postpartum care between White and Black women influenced differences in perinatal and postpartum outcomes. Smith et al. also presented evidence to suggest that there are differences in low birth rates between Black and White mothers based on their primary perinatal care providers. Specifically, midwives are reported as being a mechanism through which disparities could be mitigated for Black mothers. However, despite the Affordable Care Act (ACA) making midwives more accessible, Black mothers are still less likely than White mothers to use these services. Most importantly, Smith et al. made a call for more research on within race factors that improve outcomes for Black women.

Structural Racism

Research has also been published exploring the intersection of structural racism and infant mortality in the United States (Bailey et al., 2017; Bishop-Royse et al., 2021; Pabayo et al., 2019; Wallace et al., 2017). Structural racism is characterized as inequities in ratios of races within the population, differences in education attainment, household income, employment, incarceration rates, and custody of juveniles. Increases in unemployment, across states, resulted in 5% increases in infant mortality (Bishop-Royse et al., 2021; Pabayo et al., 2019; Wallace et al., 2017). Additionally, research suggested that increases in education resulted in a significant decrease in infant mortality, 10%

reductions (Wallace et al., 2017). The results indicated that there were not any differences for White people relating to measures of structural racism and infant mortality (Wallace et al., 2017).

Further, the National Academies of Sciences, Engineering, and Medicine (2020) provided an extensive review related to the systemic influences on outcomes in pregnancy and childbirth. They argued two points: first, that individual level risk factors shape outcomes in pregnancy and childbirth, and second, that system level risk factors exacerbate the impact of individual risk factors or even worse create new and unmitigated risk factors. As described by the author, system level factors include structural inequalities, biases, and social determinants of health.

Other research has also pointed to structural racism as a cause for disparities in birthing outcomes. However, disparities in birthing outcomes for non-Hispanic Black women were reported to be “independent of educational attainment or socioeconomic status” (Kalata et al., 2020, p. 1). Kalata et al. (2020) qualitatively explored community perspectives on racial-ethnic disparity and perinatal outcomes in Black women residing in Denver, Colorado. The specific purpose of this research study was to discover conditions that led to disparities and explore ways to address them through a community perspective. One of the largest themes to emerge related to the relationship Black women had with their prenatal care providers, social support provided by the caregivers, and the sense of autonomy in decision making while receiving prenatal care. The results of this research study affirmed that any intervention that could positively impact the relationships Black women have with their prenatal care providers, the social support

they receive from caregivers, and the feeling of autonomy in making decision during prenatal care would be worthwhile. Further, it is important to note that participants of this study reported more positive views about their pregnancy when they had reported using a doula during their pregnancy (Kalata et al., 2020). Therefore, it is evident that the type of practitioner can affect birthing outcomes. However, as discussed in the next section, there are many factors to consider when aiming to improve birthing outcomes for Black mothers and quality-of-care.

Improving Birthing Outcomes

Prior research exploring birthing outcomes for racial-ethnic minorities suggested that antenatal, quality of, and delivery of care are important factors to explore when aiming to improve birthing outcomes (Altman et al., 2020; Howell, 2018; Howell & Zeitlin, 2017). In addition, researchers suggested that the only way to effectively research the birthing outcomes of Black mothers would be through the lens of racism (Davis, 2019). Specifically, Altman et al. (2020) stated that there is a pressing need to find solutions to the quality-of-care women of color receive given the increasing rate of maternal mortality in the United States. The authors described and analyzed recommendations for improving the pregnancy and birth care outcomes for women of color in the United States.

Altman et al. (2020) leveraged a qualitative method to collect data related to the shared experiences and recommendations for improving care throughout the perinatal process. Respondents indicated that spending quality time, building meaningful relationships, individualized care, and feeling like they were partnered in decision-

making could improve care at the individual health provider level. Respondents also indicated that continuity of care, racial concordance with providers, supportive structures, and interventions designed to reduce discrimination were needed to improve care at the system level. The recommendations related to improving care at the individual healthcare provider level are not new. However, recommendations related to issues at the systems level such as care navigation and continuity of care lack exploration and support within the literature. Although this work provided insights and recommendations related to experiences with perinatal care for women of color, the authors did not indicate or explore any factors that might differentiate differences of experiences between women of color as they navigate their perinatal care. As such, there is a need to explore factors that differentiate experiences within perinatal care for women of color.

In addition, another research study explored and reviewed drivers of and mechanisms for reducing racial-ethnic disparities in severe maternal and morbidity and mortality. One insight that emerged within this work related to onset and quality of antenatal care and maternal outcomes (Howell, 2018). Howell argued that the relationship between antenatal care and maternal outcomes was not clearly established within the literature and that there is a need to further explore this relationship as “access to high quality antenatal care ... is likely an important part of the pathways explaining disparities” (p. 394). Postpartum care is also considered to be equally as important to both infant and maternal outcomes. Contrary to Kalata et al.’s (2020) findings that SES status had a role in birthing outcome disparities, Howell presented evidence that suggested disparities related to involvement in postpartum care were linked to ethnicity and

socioeconomic status (SES). According to Howell, given that ethnicity and SES were linked to postpartum outcomes, there is a need to better understand the pathways and mechanisms that either prohibit or facilitate involvement in postpartum care for Black mothers. One such mechanism, presented within the work, that could reduce disparities is shared decision-making. Therefore, there is a need to explore attitudinal differences between mothers who are Black based on where these mothers received their prenatal care since where care is received influences the mothers decision-making powers. Another mechanism presented within this study that could reduce disparities are mothers' involvement in various models of prenatal care. As a result of the implications of this research study, there is a need to explore the degree to which involvement in various forms of prenatal care influences specific outcomes related to both infant and mother mortality and morbidity.

Another research study exploring ways to reduce racial-ethnic disparities in birthing outcomes suggested a focus on the quality and delivery of care (Howell & Zeitlin, 2017). The authors reviewed literature relating to disparities in maternal and child outcomes between ethnic minority and White patients due to system level and quality of care issues. Howell and Zeitlin (2017) concluded that many of the disparities in maternal and child outcomes between ethnic minority and White patients could be explained by factors associated with the facilities where patients received care and the quality of care delivered within a specific facility. However, the studies reviewed within the systemic review focused solely on evaluating disparities between ethnic minorities and White patients as opposed to between Black patients. Therefore, there is a need to explore

differences in both infant and maternal outcomes within Black populations based upon factors relating to the facilities in which they received care and the quality of care received.

Similarly, Davis (2019) wrote a book on her research on preterm birth and neonatal intensive care units within the United States. Davis argued that research on the birth experiences of Black women could not happen unless conducted and viewed through the lens of racism. She argued that many of the ideas regarding Black people conditioned into society during the slavery era still influence the treatment of Black people today, especially Black mothers during the birthing process. She argued that the use of midwifery is one solution that can directly and positively impact the disparities in infant and maternal outcomes for Black mothers and their children.

Midwifery

Midwifery has been suggested by the literature to have more favorable maternal and infant health outcomes for racial-ethnic minorities as compared to the outcomes reported when cared for by other providers (Allen et al., 2019; Alliman & Bauer, 2020; Phillippi et al., 2016). Using a qualitative research method, Phillippi et al. (2016) explored perinatal outcomes in a nurse-led clinic with excellent preterm birth rates as compared to the surrounding urban area. One of the key results found was that women in the clinic preferred the personal connections they developed with midwives. The participants believed that the connection with midwives resulted in better quality of care. The participants also valued feeling unrushed in their appointments as this artifact fostered an environment of information sharing. Although the data were qualitative, the

researchers argued that their results suggested that access to prenatal care models that provide midwives could help reduce adverse outcomes for Black mothers.

Allen et al. (2019) explored the intersection of patient experience and health care quality by conducting a randomized control trial comparing midwifery and standard care among women. The researchers conducted the study in Australia with mothers in any risk category by sending a questionnaire to mothers 6 weeks postpartum. The results indicated that participants in the midwifery group reported significantly higher scores across all measures related to antenatal care compared to mothers from the standard care group. Additionally, mothers in the midwifery group who were higher risk reported significantly higher levels of emotional support, quality care, and feeling actively involved in decision making related to their care. These results further support the notion that midwifery provides a unique prenatal and postnatal care modality that impacts outcomes related to postnatal care, quality of care, feeling emotionally supported, and feeling actively involved in care decision making, more so amongst higher risk mothers.

Similarly, Alliman and Bauer (2020) explored the impact of birth center and midwifery led perinatal care models on health outcomes for women who experience disparities related to birth outcomes. They evaluated the Strong Start for Mothers and Newborns Initiative, which is a Medicare and Medicaid innovation. The results of their study suggested that for outcomes related to preterm birth, low birth weight, and cesarean birth, the birth center prenatal care recipients fared better than participants from other models. The results also indicated that, although all mothers who participated in the midwifery-led perinatal care models saw reductions in the percentage of preterm birth,

Black mothers saw a greater reduction in low birth weights compared to White and Hispanic mothers. This research provides additional support suggesting that midwifery may be a care model to help mediate the impact of systemic and structurally racist policies and procedures on infant and maternal outcomes for Black mothers. One criticism of this research is that there were no intraracial comparisons between the care models. As such, there is a need for additional research comparing infant and maternal outcomes between perinatal care models amongst Black mothers.

Several other studies have suggested the use of midwifery to reduce racial-ethnic disparities in birthing outcomes in the United States (Suarez, 2020; Yoder & Hardy, 2018). Suarez (2020) presented a sociological analysis of Black midwifery in the United States. Specifically, Suarez pointed out that the birthing experiences of Black women are largely ignored in the United States. Suarez also noted that midwifery was once a standard of practice in the United States that was slowly eradicated due to the medicalization of hospital births, a practice deemed to have at the very least a marginalizing effect on the birthing experiences of Black women. Suarez concluded that, given the deep history of cultural connection to and outcomes associated with midwifery for Black mothers, there is a need for policy and regulatory interventions that allow more Black mothers to choose midwifery to alleviate disparities related to ethnicity and infant and maternal outcomes.

Similarly, Yoder and Hardy (2018) specifically explored the lack of literature related to the impact of midwifery on disparities in Black mothers. Yoder and Hardy conducted a systematic review of the literature related to Black women's experiences in

antenatal care. Their review identified care disparities and perceptions of antenatal care outcomes as two key themes that need further exploration within the literature. Most importantly, their review uncovered a consistent theme suggesting (a) that midwifery has a longstanding historical tradition within Black culture, (b) that midwifery has a positive impact on antenatal outcomes, (c) that there are gaps within the literature related to Black women's perceptions of midwifery, and (d) that midwifery is available as a care option. The conclusion of this work was that additional research that demonstrates the positive impact of midwifery on infant and maternal outcomes was needed to support access to and use of midwifery among black mothers.

Definitions

A general practitioner is a physician (either M.D. or D.O.) also referred to as a primary care doctor that “treats common medical conditions and perform routine exams. They refer you to other medical services or doctors if you need urgent or specialized treatment” (Jenkins, 2021, p. 1). A general practitioner's goal is to keep patients healthy and conduct preventative healthcare screening to keep clients out of the hospital.

Gestation is defined as “the carrying of young in the uterus from conception to delivery” (Merriam-Webster, 2020, p. 1).

Low birth weight (LBW) is characteristic of infants weighing 2,500 g (5.5 lb) or less in the United States (Martin et al., 2017).

A midwife is a certified healthcare practitioner that is either a Certified Nurse Midwife or a Certified Midwife. The certification exam is the same for both. Midwives provide “a full range of primary health care services for women from adolescence beyond

menopause. These services include the independent provision of primary care, gynecologic and family planning services, preconception care, care during pregnancy, childbirth and the postpartum period, care of the normal newborn during the first 28 days of life, and treatment of male partners for sexually transmitted infections. Midwives provide initial and ongoing comprehensive assessment, diagnosis and treatment” (American College of Nurse-Midwives, 2011, p. 1).

An obstetrician-gynecologist (OB-GYN) is a physician (M.D. or D.O.) who “specializes in women’s health. The female body experiences many different biological functions, including menstruation, childbirth, and menopause. OB-GYNs provide care for all of this and more” (Jackson, 2021, p. 1)

A physician assistant (PA) is a mid-level medical practitioner that has obtained a Master’s level degree from an accredited Physician Assistant school and “works under the supervision of a licensed doctor (M.D. or D.O.)” providing care to patients in various fields and specialties (Stoppler, 2021, p. 1).

Preterm birth is defined as “babies born alive before 37 weeks of pregnancy are completed” (World Health Organization, 2018, p. 1).

Racial disparity is defined as “racial or ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention” (Egede, 2006, p. 667).

Structural racism is defined as “the totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education,

employment, earnings, benefits, credit, media, health care, and criminal justice” (Bailey et al., 2017, p. 1453).

Assumptions

Key assumptions made in this study include the following:

- Participants answered the survey questions honestly and to the best of their abilities.
- The secondary data used within this study was collected using best research practices.
- Participants of the initial study were not coerced into participating.
- Participants expressed themselves freely and did not withhold information because of attempting to respond in a way that was socially desirable (social desirability bias).
- There is value in conducting this research study.

Limitations, Challenges, and/or Barriers

There are two limitations, challenges, and/or barriers that need to be considered within this study. The first limitation within this study was related to the use of secondary data. In an ideal setting, primary data collection would be the mechanism of choice for this research endeavor. Primary data collection would allow the researcher to design or select the measures included within the study. Instead, the measures chosen for inclusion in the secondary data had to suffice for the analyses within this endeavor. The second limitation was the size of the sample. Although the sample of Blacks mothers was large enough to conduct the analyses, in an ideal setting, there would be an even split between

mothers who do and do not use midwives in their birthing processes. However, recruiting such a sample would be very costly and time consuming and was not feasible for this study.

Summary and Conclusion

Racial disparities in birthing outcomes continue to persist in the current healthcare platform (Ely & Driscoll, 2019). The literature review revealed several studies exploring the factors contributing to these inequalities and provided suggestions on how to reduce them. However, none of the research studies explored birthing outcomes among Black mothers only. Namely, most of the research presented explored inequalities and mitigating practices between White and minority or Black mothers, not among Black mothers. Although it was evident from the literature presented that Black mothers requires a higher quality of care to enable a more personalized connection, emotional support, and involvement in decision-making, none of the research studies explored which birthing modality between Black mothers provided the best outcome. Therefore, within-race research was warranted on the effect of birthing modalities on birthing outcomes in a population of Black mothers (Smith et al., 2018).

Section 2: Research Design and Data Collection

The purpose of this retrospective cohort study was to quantitatively examine the impact of midwifery on infant and maternal outcomes compared to outcomes associated with other prenatal care models/caregivers among Black mothers residing in California. The literature clearly demonstrated that disparities relating to infant and maternal outcomes exists between racial-ethnic minority mothers and White mothers (Attanasio & Kozhimannil, 2015; Cox et al., 2011; Davis, 2019; Ely & Driscoll, 2019; Howell & Zeitlin, 2017; National Academies of Sciences Engineering and Medicine, 2020; Smith et al., 2018; Wallace et al., 2017). However, there is little literature published that specifically explores the impact of factors that influence differences in infant and maternal outcomes among Black mothers (Smith et al., 2018). This was the first study to compare outcomes between Black mothers who primarily receive prenatal care from midwives and those who primarily receive prenatal care from other providers such as medical doctors, physician assistants, or nurse practitioners. In this section, I describe the research design and rationale, methodology, data analysis plan, threats to validity, and ethical considerations.

Research Design and Rationale

This study was a retrospective cohort research design based on secondary data from the *Listening to Mothers in California* survey (Sakala, Declercq, et al., 2020). The data were already identified and available to the public for research use. Therefore, obtaining and using the secondary data for this study was both time efficient and cost effective (Clow & James, 2014). Based on the research question and available data, a

retrospective cohort research design was chosen because it was best suited to answer the research questions in a time and cost-effective manner.

Methodology

Population

The target population for the *Listening to Mothers in California* survey were pregnant women ages 18 to over 35 in California (Sakala, Declercq, et al., 2020).

Participants came from nine different counties in California. Namely, Los Angeles, San Francisco Bay, San Diego, Orange, San Joaquin Valley, Sacramento, Southeastern California, Central Coast, and North/Mountain counties.

Sampling and Sampling Procedure

Listening to Mothers in California, a survey administered to mothers who gave birth in California in 2016, is unique in that the data collected during the project is a statewide population representation of mothers who gave birth in the state during that year (Sakala et al., 2020). Although the dataset is large ($n = 2,539$), the mothers surveyed in this dataset only represent those from California at a specific point in time. Given that this research is focused on the impact of midwifery on infant and maternal outcomes between various prenatal care models/caregivers among Black mothers, the sample used in this research project consisted of respondents in the survey who indicated their ethnicity to include Black. A preliminary examination of the data set revealed that 281 participants indicated their ethnicity to include Black. The literature clearly demonstrated a need to compare Black mothers who use midwives as primary prenatal caregivers with Black mothers who use other types of primary prenatal caregivers. An examination of the

sample indicated that 6% ($n = 17$) of the Black mothers in the sample reported using a midwife as the type of maternity care provider that provided care most often during their pregnancy. The incidence of care providers among the remaining mothers who identified their ethnicity as Black is shown in Table 1.

Table 1

Incidence of Maternal Care Provider Among Black Mothers in 2016

| Provider type | Frequency | Percent |
|-------------------------|-----------|---------|
| OB-GYN | 219 | 78% |
| Family medicine | 7 | 2% |
| Doctor - unsure of type | 10 | 4% |
| Midwife | 17 | 6% |
| Nurse practitioner | 24 | 9% |
| Physician's assistant | 3 | 1% |
| Missing | 1 | 0.4% |
| Total | 281 | 100% |

I tested two hypotheses in this research project. The first was concerned with infant outcomes relating to preterm birth and low birth weights between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers. The second hypothesis was concerned with maternal outcomes relating to prenatal care involvement, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers. In both hypotheses, the dependent variables were interrelated. Regarding the first hypothesis, research indicated that preterm birth rates and low birth weights are many times synonymous (World Health Organization, 2004). Regarding the second hypothesis, research also indicated that Black mothers have quantitatively different

experiences, compared to their White counterparts, relating to prenatal care involvement, quality of care, and experiences with prejudice and racism while hospitalized after giving birth (Attanasio & Kozhimannil, 2015). To this point, both these hypotheses were tested using Mann-Whitney U tests with a Bonferroni correction given the interconnected and interrelated nature of both sets of dependent variables within the respective hypotheses.

Given that this study used a retrospective cohort research design based on secondary data from the *Listening to Mothers in California* survey, a post hoc G*Power analysis was conducted to estimate the actual power obtained from the available sample ($n = 280$). Based on the sample size provided in the dataset, a two-tailed Mann-Whitney U test with a 95% confidence level (Type I error = 0.05) and a moderate effect size of 0.5, I had a 49% chance of correctly rejecting the null hypothesis, or power.

Instrumentation and Operationalization of Constructs

The survey used in this study to garner information regarding the experiences and perspectives of childbearing women in California is only a small part of a larger national series of *Listening to Mothers* surveys that began in 2002 (Sakala, Declercq, et al., 2020). Surveying was carried out through the collaboration of various investigators from two universities and public health entities. Namely, the National Partnership for Women & Families, the Boston University School of Public Health, the University of California, San Francisco (UCSF) Center on Social Disparities in Health, and the Quantum Market Research, Inc. survey research firm. Investigators targeted potential participants by systematically drawing contact information from state birth certificates and contacting potential participants through email, text messaging, and telephone. Questionnaires were

made available in both Spanish and English and could be administered to participant via tablet, laptop, desktop, smartphone, or as a phone interview. Investigators also accessed participant data through the Medi-Cal (California Medicaid) claims database and the 2016 California Birth Statistical Master File (Sakala, Declercq, et al., 2020).

Operationalization

The following operational definitions were used for this study:

Labor induction: as described by the survey, when the “care provider used medication and/or procedures to try to start labor before it had started on its own” (Sakala, Declercq, et al., 2020, p. 106).

Labor augmentation: was defined as “stimulation of established labor with synthetic oxytocin and/or artificial rupture of membranes [AROM] if preceded by labor induction rather than spontaneous onset of labor” (Sakala, Declercq, et al., 2020, p. 107).

Electronic fetal monitoring (EFM): is defined as “a procedure in which instruments are used to continuously record the heartbeat of the fetus and the contractions of the woman’s uterus during labor” (American College of Obstetricians and Gynecologists, 2020, p. 1).

Ultrasound: this procedure is used in pregnancy to “view the fetus inside the uterus” (American College of Obstetricians and Gynecologists, 2020, p. 1).

Low birth weight: an infant born weighing less than 2,500 g or less than 5 lb 8 oz (Sakala, Declercq, et al., 2020, p. 34).

Normal birth weight: an infant born weighing between 2,500 g to 3,999 g or 5 lb 8 oz and 8 lb 12 oz (Sakala, Declercq, et al., 2020, p. 34).

High birth weight: an infant born weighing equal to or greater than 4,000 g or more than 8 lb 13 oz (Sakala, Declercq, et al., 2020, p. 34).

Prenatal care: is defined as “the health care you get while you are pregnant” (Medline Plus, 2020, p. 1).

Prenatal care provider: prenatal care providers within this study consisted of obstetricians, midwife, nurse practitioner, family physician, and physician assistant (Sakala, Declercq, et al., 2020).

Reliability and Validity of Survey

The survey used within the *Listening to Mothers* study was created specifically for the study and therefore did not use commercialized or previously validated surveys. The researchers of that study also did not report a Cronbach’s alpha score or any statistical analysis relating to the reliability or validity of the scales used. However, they did list some measures they took to increase the validity of survey results.

In developing the questionnaire, the researchers took efforts to increase the validity of survey results by (a) avoiding technical topics requiring specialized knowledge and information that women might not have been apprised of in the first place; (b) developing clear, unambiguous language for survey items; (c) pilot testing and revising questionnaire items over several rounds, in English and then, following translation from English to Spanish, in Spanish; and (d) when asking questions about women’s experiences of procedures and other care practices, frequently providing both a description of what would have taken place in layperson’s terms and the medical term (Sakala, Declercq, et al., 2020).

Finally, a series of validation studies have been done to examine the accuracy of women's recall and reporting about pregnancy and childbirth (Sakala, Declercq, et al., 2020). Overall, these studies provide support for the validity of data from childbearing women themselves. The studies found that it is inappropriate to assume that medical records are consistently more accurate, that childbearing women may be more reliable sources for many data items, that maternal reporting can provide complete information than medical records, that sensitive topics may be more accurately reported with data collection that is not face to face, and that the accuracy of maternal recall can persist over many years (Sakala, Declercq, et al., 2020).

Ecological Model Relationships with Measures

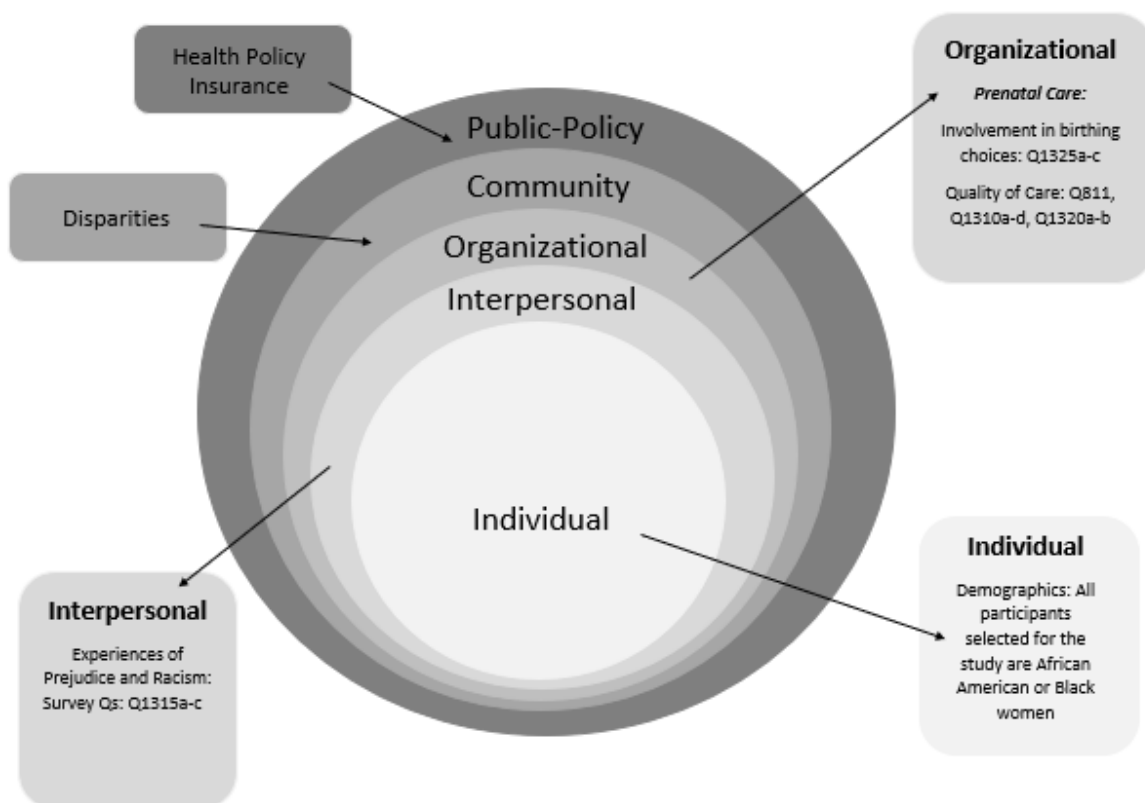
As illustrated in Figure 1, based on the ecological model and a prior research study exploring social determinants of health as risk factors for infant mortality (Reno & Hyder, 2018), the measure collected within this study that represents the "individual" construct of the ecological model is participants' race. Specifically, only Black women's responses on the survey were analyzed.

Experiences of prejudice and racism are at the interpersonal level. For this study, I used three survey questions pertaining to this topic to answer the research questions. The survey asked questions such as, "During your recent hospital stay when you had your baby, how often were you treated unfairly because of your race or ethnicity?" and "During your recent hospital stay when you had your baby, how often were you treated unfairly because of the language you spoke?" Responses for this scale were presented on a 4-point Likert scale from 1 (*never*) to 4 (*always*).

Prenatal care is suggested to occur at the organizational level. Therefore, participants' involvement in birthing choices and quality of care scales constitute this level of the ecological model. Survey items involving birthing choices included, "the delivery room staff encouraged me to make decisions about how I wanted my birth to progress" and consisted of a 5-point Likert scale of 1 (*agree strongly*) to 5 (*strongly disagree*). Quality of care questions included, "Would you have preferred a different type of maternity care provider?" and consisted of a "yes" or "no" answer.

Figure 1

Ecological Model's Relationships With Measures



At the community level of the ecological model are disparities, which are what this study is exploring, and at the public-policy level are healthcare policies and

insurance. This study aims to make a difference as it relates to healthcare policy. Other measures collected in this study were preterm birth and low birth weight.

Data Analysis Plan

Upon obtaining Walden University Institutional Review Board (IRB) approval to conduct the study (IRB approval number 06-07-21-0671805), I executed the following data analysis plan. Using data collected in the survey, scores for each of the respective measures within this research project were calculated as described in Table 2.

Participants with missing data on each scale item were excluded from the analysis. Once the scale scores were calculated, internal reliability was assessed using Cronbach's alpha (α). Descriptive analyses regarding the mean scores for each measure and assessments of normality using the Shapiro-Wilk test were conducted. Additionally, frequency analyses for Likert-scale items were conducted, where appropriate. Both the descriptive and frequency analyses were used to determine if there are any outliers or abnormalities in the data that may negatively influence the analyses conducted for each of the hypotheses.

The results of both analyses are reported and discussed within the results section.

A Mann-Whitney U test for each of the respective hypotheses within this research project was performed with a Bonferroni correction applied to test the hypotheses. The first set of Mann-Whitney tests determined if there were significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who used midwives as primary prenatal caregivers and Black mothers who used other types of primary prenatal caregivers. The second set of Mann-Whitney tests determined whether there were significant differences in maternal outcomes relating to prenatal care

involvement, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who used midwives as primary prenatal caregivers and Black mothers who used other types of primary prenatal caregivers. I elected to use the Mann-Whitney test as a nonparametric alternative to the two-sample t -test because of the failed assumption of normal data distribution. Even after standardizing the scale variables to z -scores, the data failed the Shapiro-Wilk test of normality. The Bonferroni correction was applied to reduce Type I errors that may result from conducting multiple individual tests for group differences on measures (e.g., infant and maternal outcomes) separately. Instead of using the traditional p value of significance of .05, the Bonferroni correction makes this adjustment by dividing the original p value of .05 by the number of tests performed. Therefore, tests related to Hypothesis 1 (infant outcomes) were considered significant at the $p < .025$ level, and tests related to Hypothesis 2 (maternal outcomes) were considered significant at the $p < .017$ level.

Research Questions and Hypotheses

RQ1: Are there differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor [OB-GYN or general practitioner], physician assistant, or nurse practitioner)?

H_0 : There are no significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

*H*₁: There are significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

RQ2: Are there differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor [OB-GYN or general practitioner], physician assistant, or nurse practitioner)?

*H*₀: There are no significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

*H*₁: There are significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

Table 2*Independent and Dependent Variables*

| Variable | RQ addressed | Question | Description | Responses | Calculation of scale or value |
|---------------------------------|--------------|--------------|--|--|---|
| Independent variable | | | | | |
| Modality of treatment | RQ1; RQ2 | Q805 | Which type of maternity care provider most often provided your care during pregnancy? | Midwife = 1 All other providers = 0 | N/A |
| Dependent variables | | | | | |
| Preterm birth | RQ1 | calcguestage | Gestational age in weeks based on self-reported due date and birth date | Number of weeks (whole number) | Births occurring at 37 weeks or less were considered preterm births. |
| Low birth weight | RQ1 | babywtgm | Baby weight in grams | Grams | Birth weights less than 2,500 g were considered low birth weight. |
| Involvement in birthing choices | RQ2 | Q1325a | The delivery room staff encouraged me to make decisions about how I wanted my birth to progress. | Agree strongly = 1 Agree somewhat = 2 Neither agree nor disagree = 3 Disagree somewhat = 4 Disagree strongly = 5 | The responses to these three items will be reverse coded and summed to create an overall involvement score wherein a higher score indicates a higher degree of involvement. |
| | | Q1325b | I felt well supported by staff during my labor and birth. | Agree strongly = 1 Agree somewhat = 2 Neither agree nor disagree = 3 Disagree somewhat = 4 Disagree strongly = 5 | |
| | | Q1325c | The staff communicated well with me during labor. | Agree strongly = 1 Agree somewhat = 2 Neither agree nor disagree = 3 Disagree somewhat = 4 Disagree strongly = 5 | |

| Variable | RQ addressed | Question | Description | Responses | Calculation of scale or value |
|-----------------|---|----------------------|--|---|--|
| Quality of care | RQ2 | Q811 | Would you have preferred a different type of maternity care provider? | Yes = 1 No = 0 | The responses to these seven items will be reverse coded and summed to create an overall quality of care score, wherein a higher score indicates a higher quality of care. |
| | | Q1310a | Did you feel pressure from any health professional to induce labor? | Yes = 1 No = 0 | |
| | | Q1310b | Did you feel pressure from any health professional to use epidural for pain relief? | Yes = 1 No = 0 | |
| | | Q1310c | Did you feel pressure from any health professional to have a c-section? | Yes = 1 No = 0 | |
| | | Q1310d | Did you feel pressure from any health professional to breastfeed? | Yes = 1 No = 0 | |
| | | Q1320a | During your recent hospital stay when you had your baby, did a nurse or maternity care provider ever use harsh, rude, or threatening language? | Yes = 1 No = 0 | |
| | | Q1320b | During your recent hospital stay when you had your baby, did a nurse or maternity care provider ever handle you roughly? | Yes = 1 No = 0 | |
| | | Prejudice and racism | RQ2 | Q1315a | |
| Q1315b | During your recent hospital stay when you had your baby, how often were you treated unfairly because of the language you spoke? | | | Never = 1 Sometimes = 2 Usually = 3 Always = 4 | |
| Q1315c | During your recent hospital stay when you had your baby, how often were you treated unfairly because of the type of health insurance you had or because you didn't have health insurance? | | | Never = 1 Sometimes = 2 Usually = 3 Always = 4 | |

Threats to Validity

The study's limitations define several threats to validity within the current proposed research study. Namely, this study used secondary data collected through surveys for analysis. There are several limitations associated with surveys to include response bias, wherein participants may respond to survey questions in a way they perceived to be more socially desirable. Another response bias is that of careless or random responses, guessing, and those referred to as yea- or nay-sayers that respond more preferably to yes or no irrelevant of the question being asked. As a result, response bias can negatively affect research findings (Furr, 2013). Another threat to the study's validity is associated with limitations associated with the research design of the original study collecting the data. Namely, women who could not speak either English or Spanish and women who did not have their infant living with them during the time of the survey were ineligible to participate. However, there was no way to ensure they were excluded from the sample since the surveys were self-reporting. In addition, not all the women contacted to participate in the study responded. Therefore, there may be characteristics associated with groups of women that chose to respond versus those that did not. Therefore, the research findings are not generalizable to the entire population of pregnant women and should be considered estimates (Sakala, Declercq, et al., 2020).

Ethical Procedures

The secondary data obtained for this study was available to the public and therefore had already been de-identified to protect the privacy and anonymity of participants of the study. To ensure that the data and research study are handled most

ethically, IRB approval was received before data analysis. All data and findings were stored on a password-protected zip drive which will be electronically erased a maximum of two years after completion of the study.

Summary

The research design and rationale were discussed in this section, along with the chosen methodology, data analysis plan, threats to validity, and ethical procedures. The methodology discussed the population, the sample, and sampling procedure, instrumentation, and operationalization. The data analysis plan presented the research questions and hypothesis with the plan for data analysis. The research findings and results will be presented in the following section.

Section 3: Presentation of the Results and Findings

In Section 3, I present the research findings. Namely, I review the data collection, descriptive statistics, and a summary of the research findings. The purpose of this study was to examine, using a retrospective cohort research approach quantitatively, the impact of midwifery on infant and maternal outcomes compared to outcomes associated with other prenatal care models/caregivers among Black mothers. Prior research demonstrated that disparities relating to infant and maternal outcomes exist between racial-ethnic minority mothers and White mothers (Attanasio & Kozhimannil, 2015; Cox et al., 2011; Davis, 2019; Ely & Driscoll, 2019; Howell & Zeitlin, 2017; National Academies of Sciences Engineering and Medicine, 2020; Smith et al., 2018; Wallace et al., 2017). However, few studies were found that specifically explored the impact of factors that influence differences in infant and maternal outcomes among Black mothers (Smith et al., 2018). Therefore, the research questions explored in this study and the hypotheses were as follows:

RQ1: Are there differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor [OB-GYN or general practitioner], physician assistant, or nurse practitioner)?

H₀: There are no significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

*H*₁: There are significant differences in infant outcomes relating to preterm birth and low birth weight between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

RQ2: Are there differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers (doctor [OB-GYN or general practitioner], physician assistant, or nurse practitioner)?

*H*₀: There are no significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

*H*₁: There are significant differences in maternal outcomes relating to involvement in birthing choices, quality of care, and experiences with prejudice and racism while hospitalized between Black mothers who use midwives as primary prenatal caregivers and Black mothers who use other types of primary prenatal caregivers.

Accessing the Data Set for Secondary Analysis

The secondary data used within this study was publicly accessible and part of an ongoing survey of women in California (Sakala et al., 2020). Specifically, the *Listening*

to Mothers survey has been conducted from 2002 until the present (University of Northern Carolina, 2021). The secondary data was downloaded from Dataverse and consisted of mothers in California who had reported a live delivery within the 12 months of 2016. Those excluded from the sample were women who delivered more than one child, delivered a stillborn, were under 18 years old, or delivered outside of the hospital (Sakala et al., 2020).

Results

A total of 281 study participants identified themselves as Black. Of these, 17 (6.0%) reported that a midwife most often provided care during their pregnancy, whereas 263 (93.6%) reported that another type of health care provider (i.e., an OB-GYN, family medicine or other doctors, nurse practitioner, or physician assistant) most often provided care during pregnancy. One participant (0.3%) did not respond to this question and was excluded from further analysis, as treatment modality is the independent variable of interest in this study. The final sample size included 280 Black women who gave birth in California in 2016.

RQ1: Infant Outcomes by Treatment Modality

Table 3 shows responses by modality of treatment as well as for the overall sample. Slight differences in infant outcomes between Black women who utilized a midwife versus those who used another health care professional were found. However, none of the differences were statistically significant using a Fisher's exact test (for categorical variables) or a Mann-Whitney *U* test (for continuous variables). Therefore, I failed to reject the null hypotheses that no significant differences in infant outcomes exist

between Black mothers who use midwives and Black mothers who use other primary prenatal caregivers.

Table 3

RQ1: Descriptive Statistics by Modality of Treatment for 2016 Data Set

| Condition | Midwife (<i>n</i> = 17) | Other healthcare provider (<i>n</i> = 263) | Total (<i>n</i> = 280) | <i>p</i> value |
|----------------------------------|-----------------------------|--|----------------------------|----------------|
| Preterm birth (≤ 37 weeks) | | | | .45 |
| Yes | 1 (6.7%) | 30 (12.1%) | 31 (11.8%) | |
| No | 14 (93.3%) | 218 (87.9%) | 232 (88.2%) | |
| Low birth weight (< 2,500 g) | | | | .28 |
| Yes | 0 (0.0%) | 19 (7.5%) | 19 (7.0%) | |
| No | 17 (100.0%) | 234 (92.5%) | 251 (93.0%) | |

RQ2: Maternal Outcomes by Treatment Modality

Table 4 shows responses by the modality of treatment as well as for the overall sample. Internal reliability estimates showed that the scale measuring involvement in birthing choices (*n* = 229) and experiences with prejudice and racism while hospitalized (*n* = 273) had sufficient reliability ($\alpha = 0.81$ and $\alpha = 0.70$, respectively), while the scale measuring the quality of care (*n* = 271) was slightly lower than desired ($\alpha = 0.56$). All scales were skewed left and failed the Shapiro-Wilk test of normality (involvement $W = 0.86$; quality of care $W = 0.90$; racism $W = 0.50$; $p = .000$); therefore, nonparametric statistical tests were used for the remainder of the analysis. Overall scores for birthing choices, quality of care, and prejudice and racism are illustrated in Figures 2, 3, and 4.

Figure 2

Overall Scores on Involvement in Birthing Choices

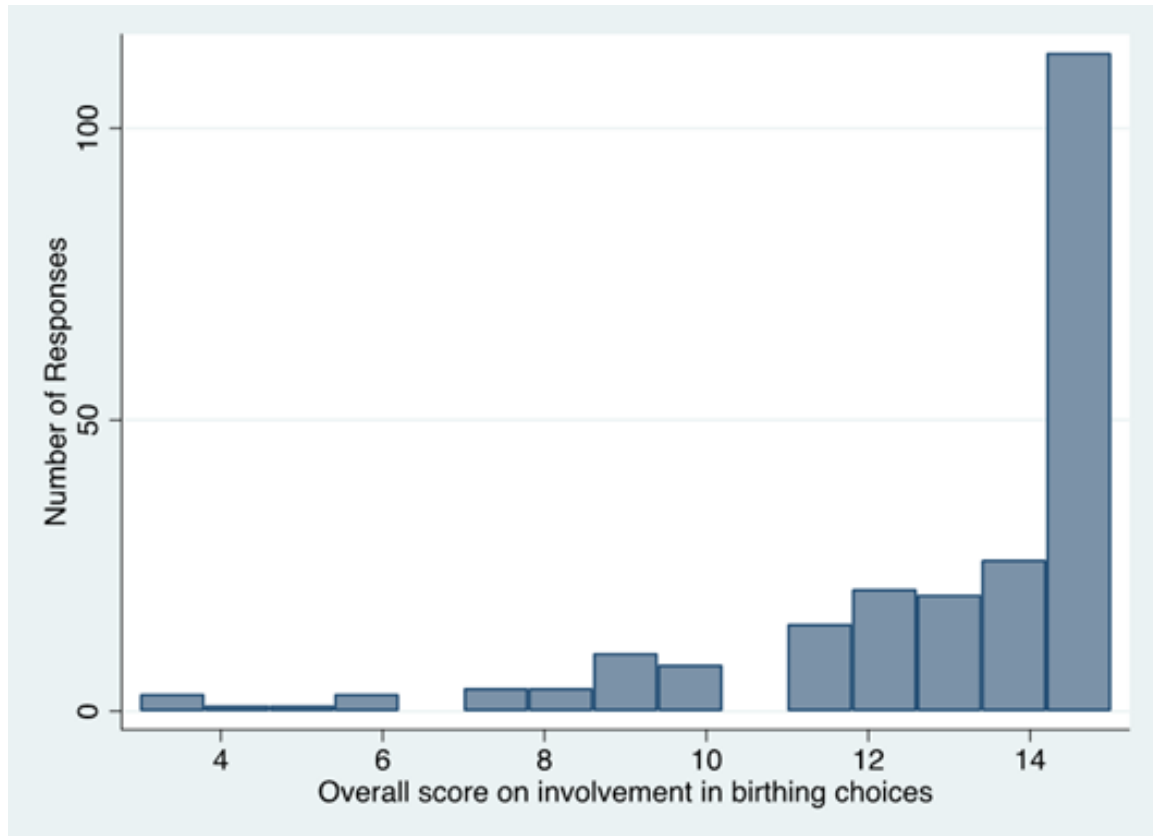


Figure 3

Overall Scores on Quality of Care

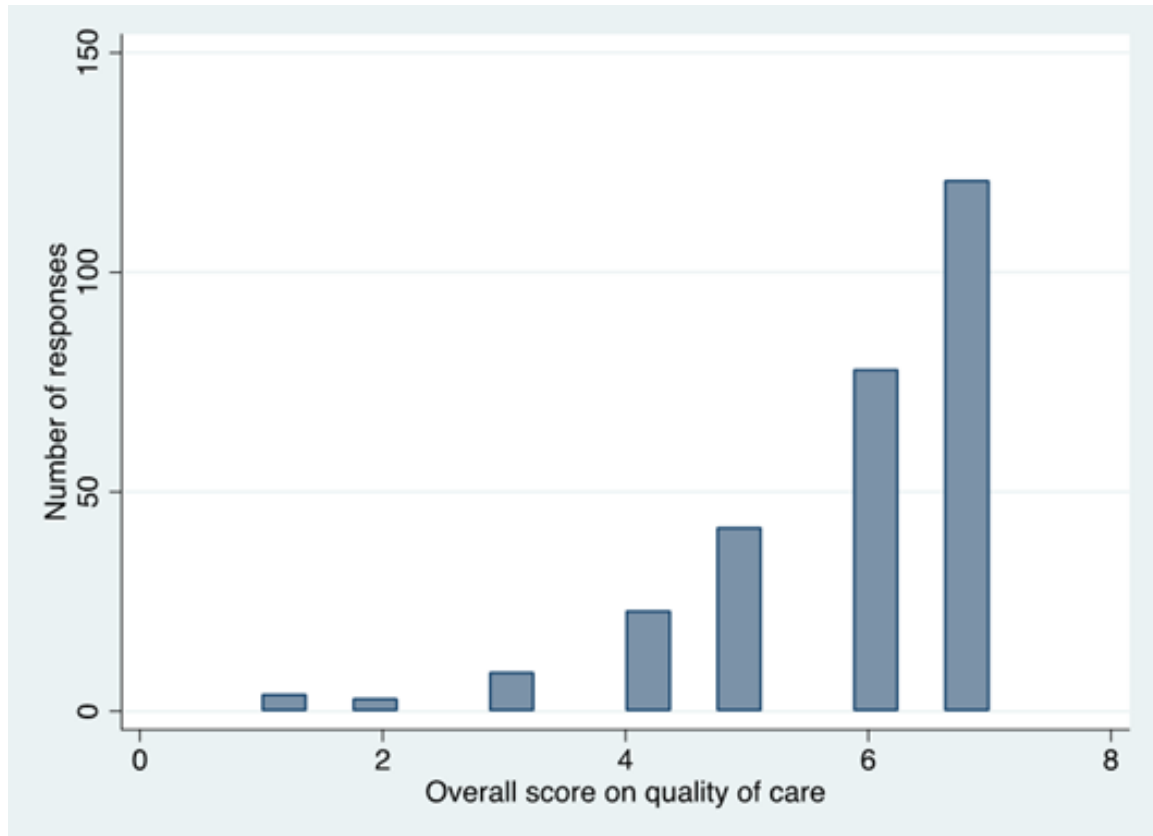


Figure 4

Overall Scores on Prejudice and Racism

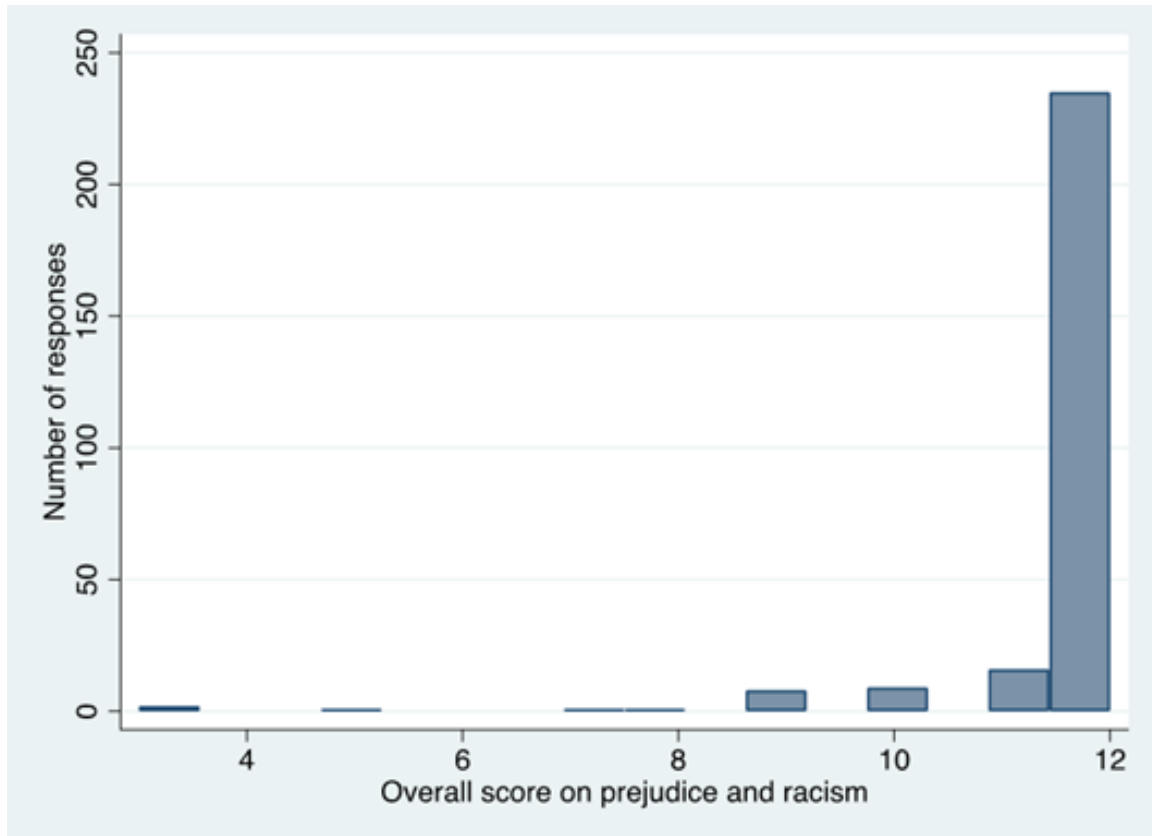


Table 4*RQ2 Descriptive Statistics by Modality of Treatment for 2016 Data Set*

| Participants' Possible Responses | Midwife (n = 17) | Other healthcare provider (n = 263) | Total (n = 280) | p value |
|--|---------------------|---|--------------------|---------|
| Involvement in birthing choices (mean and standard deviation of scale) | 12.62 (2.85) | 13.15 (2.65) | 13.11 (2.66) | .36 |
| The delivery room staff encouraged me to make decisions about how I wanted my birth to progress. | | | | .49 |
| Agree strongly | 7 (43.7%) | 115 (54.0%) | 122 (53.3%) | |
| Agree somewhat | 4 (25.0%) | 37 (17.4%) | 41 (17.9%) | |
| Neither agree nor disagree | 2 (12.5%) | 37 (17.4%) | 39 (17.0%) | |
| Disagree somewhat | 1 (6.2%) | 13 (6.1%) | 14 (6.1%) | |
| Disagree strongly | 2 (12.5%) | 11 (5.2%) | 13 (5.7%) | |
| I felt well supported by staff during my labor and birth. | | | | .22 |
| Agree strongly | 12 (75.0%) | 156 (73.2%) | 168 (73.4%) | |
| Agree somewhat | 1 (6.2%) | 35 (16.4%) | 36 (15.7%) | |
| Neither agree nor disagree | 3 (18.7%) | 9 (4.2%) | 12 (5.2%) | |
| Disagree somewhat | 0 (0.0%) | 8 (3.8%) | 8 (3.5%) | |
| Disagree strongly | 0 (0.0%) | 4 (1.9%) | 4 (1.7%) | |
| The staff communicated well with me during labor. | | | | .34 |
| Agree strongly | 9 (56.2%) | 156 (73.2%) | 165 (72.0%) | |
| Agree somewhat | 4 (25.0%) | 30 (14.1%) | 34 (14.8%) | |
| Neither agree nor disagree | 1 (6.2%) | 9 (4.2%) | 10 (4.4%) | |
| Disagree somewhat | 2 (12.5%) | 11 (5.2%) | 13 (5.7%) | |
| Disagree strongly | 0 (0.0%) | 6 (2.8%) | 6 (2.6%) | |
| Quality of care (mean and standard deviation of scale) | 5.50 (1.37) | 5.98 (1.26) | 5.96 (1.27) | .10 |
| Would you have preferred a different type of maternity care provider? | | | | .74 |
| Yes | 3 (17.6%) | 41 (15.7%) | 44 (15.8%) | |
| No | 14 (82.3%) | 220 (84.3%) | 234 (84.2%) | |
| Did you feel pressure from any health professional to induce labor? | | | | .73 |
| Yes | 3 (17.6%) | 40 (15.3%) | 43 (15.5%) | |
| No | 14 (82.3%) | 221 (84.7%) | 235 (84.5%) | |
| Did you feel pressure from any health professional to use epidural for pain relief? | | | | 1.00 |
| Yes | 2 (11.8%) | 35 (13.4%) | 37 (13.3%) | |
| No | 15 (88.2%) | 226 (86.6%) | 241 (86.7%) | |

| Participants' Possible Responses | Midwife (n = 17) | Other healthcare provider (n = 263) | Total (n = 280) | p value |
|---|---------------------|---|--------------------|---------|
| Did you feel pressure from any health professional to have a c-section? | | | | .18 |
| Yes | 5 (29.4%) | 42 (16.1%) | 47 (16.9%) | |
| No | 12 (70.6%) | 219 (83.9%) | 231 (83.1%) | |
| Did you feel pressure from any health professional to breastfeed? | | | | .40 |
| Yes | 6 (37.5%) | 73 (28.0%) | 79 (28.5%) | |
| No | 10 (62.5%) | 188 (72.0%) | 198 (71.5%) | |
| During your recent hospital stay when you had your baby, did a nurse or maternity care provider ever use harsh, rude, or threatening language? | | | | .35 |
| Yes | 2 (11.8%) | 18 (6.9%) | 20 (7.2%) | |
| No | 15 (88.2%) | 244 (93.1%) | 259 (92.8%) | |
| During your recent hospital stay when you had your baby, did a nurse or maternity care provider ever handle you roughly? | | | | .17 |
| Yes | 3 (17.6%) | 21 (8.0%) | 24 (8.6%) | |
| No | 14 (82.3%) | 242 (92.0%) | 256 (91.4%) | |
| Prejudice and racism (mean and standard deviation of scale) | 11.75 (0.77) | 11.66 (1.15) | 11.66 (1.13) | .86 |
| During your recent hospital stay when you had your baby, how often were you treated unfairly because of your race or ethnicity? | | | | .42 |
| Always | 1 (5.9%) | 5 (1.9%) | 6 (2.2%) | |
| Usually | 0 (0.0%) | 1 (0.4%) | 1 (0.4%) | |
| Sometimes | 1 (5.9%) | 17 (6.6%) | 18 (6.5%) | |
| Never | 15 (88.2%) | 235 (91.1%) | 250 (90.9%) | |
| During your recent hospital stay when you had your baby, how often were you treated unfairly because of the language you spoke? | | | | 1.00 |
| Always | 0 (0.0%) | 6 (2.3%) | 6 (2.2%) | |
| Usually | 0 (0.0%) | 2 (0.8%) | 2 (0.7%) | |
| Sometimes | 0 (0.0%) | 10 (3.8%) | 10 (3.6%) | |
| Never | 16 (100.0%) | 242 (93.1%) | 258 (93.5%) | |
| During your recent hospital stay when you had your baby, how often were you treated unfairly because of the type of health insurance you had or because you didn't have health insurance? | | | | .67 |
| Always | 0 (0.0%) | 3 (1.1%) | 3 (1.1%) | |
| Usually | 0 (0.0%) | 3 (1.1%) | 3 (1.1%) | |
| Sometimes | 1 (6.2%) | 11 (4.2%) | 12 (4.3%) | |
| Never | 15 (93.7%) | 243 (93.5%) | 258 (93.5%) | |

As illustrated in Table 4, slight differences in maternal outcomes between Black women who utilized a midwife versus those who used another health care professional were found. However, none of the differences were statistically significant using a Fisher's exact test (for categorical variables) or a Mann-Whitney *U* Test (for continuous variables). Therefore, I failed to reject the null hypotheses that no significant differences maternal outcomes exist between Black mothers who use midwives and Black mothers who use other primary prenatal caregivers.

Summary

I aimed to explore the differences in infant and maternal outcomes between Black mothers who chose to use a midwife versus those that did not. Specifically, infant outcomes relating to preterm birth and low birth weight and maternal outcomes associated with birthing choice, quality of care, and experiences with prejudice and racism were explored. As a result of all scales failing the Shapiro-Wilk test of normality (involvement $W = 0.86$; quality of care $W = 0.90$; racism $W = 0.50$; $p = .000$), non-parametric statistical testing to include Fisher's exact test (for categorical variables) or a Mann-Whitney *U* test (for continuous variables) were conducted. None of the findings were statistically significant, thereby limiting the types of analysis to be performed. There are several potential reasons that data was not statistically significant, which are discussed in further detail in Section 4.

Section 4: Application to Professional Practice and Implication for Social Change

The purpose of this study was to conduct a quantitative retrospective design study exploring infant and maternal outcomes associated with varied prenatal care models among Black mothers. Although disparities in infant and maternal outcomes between these two groups have been extensively explored, a gap in the literature existed regarding within-race research regarding this topic (Smith et al., 2018). Specifically, Smith et al. (2018) called for research to identify and explore factors that influence differences in infant and maternal outcomes between Black mothers and their children. Further, midwifery was suggested in the literature to mitigate some of these infant and maternal outcomes but had not been investigated as a potential mediating mechanism. Specifically, I explored infant outcomes relating to preterm birth and low birth weight and maternal outcomes associated with birthing choice, quality of care, and experiences with prejudice and racism. Research findings did not elicit statistically significant results.

Interpretation of the Findings

Although prior research consistently demonstrated that midwifery had a positive impact on the infant and maternal outcomes of at-risk mothers and suggested that midwifery could be a mediating mechanism between elements of systemic and structural racism and individual risk factors in mothers, no statistically significant associations were found in this study (Allen et al., 2019; Alliman & Bauer, 2020; Altman et al., 2020; Davis, 2019; Kalata et al., 2020; Luke, 2018; Phillippi et al., 2016; Smith et al., 2018; Suarez, 2020; Vedam et al., 2019; Yoder & Hardy, 2018). Therefore, my research findings do not support the findings of prior research studies. Therefore, I failed to reject

the null hypotheses that no significant differences in infant and maternal outcomes exist between Black mothers who use midwives and Black mothers who use other primary prenatal caregivers. I also did the same analysis comparing midwife to OB-GYN, excluding all other providers, since OB-GYNs are the standard and still found no statistically significant differences.

Post-Analysis

Because the primary analysis results were not statistically significant and the study itself had low power due to the small sample size, I performed a post hoc analysis using additional *Listening to Mothers* survey data to investigate whether increasing sample size, and thus power, would yield any statistically significant results. The same methods were applied to the post hoc analysis when possible and adapted when necessary. In 2013, the *Listening to Mothers* survey was performed nationwide. These data were merged with the 2018 *Listening to Mothers in California* data used for the primary analysis, yielding a total sample size of 654 Black participants. Of these, 43 (6.6%) reported that a midwife most often provided care during their pregnancy, whereas 611 (93.4%) reported that another type of health care provider (i.e., an OB-GYN, family medicine or other doctors, nurse practitioner, or physician assistant) most often provided care during pregnancy.

RQ1: Infant Outcomes Based on Treatment Modality in Post-Analysis

It is important to note that researchers changed the survey questionnaire between 2013 and 2018, and modifications to the analysis were needed to adjust for these changes. First, the 2018 dataset provided variables for the infant outcomes of preterm birth and

low birth weight (calcguestage and babywtgm) that had been standardized across respondents (i.e., computing gestational age from self-reported due date and birth date and baby weight from pounds and ounces to grams). These variables were not present in the 2013 dataset and were directly computed for this study. As illustrated in Table 5, a statistically significant difference was found between infant outcomes and healthcare providers in the post-analysis converging the 2016 and 2013 data sets. Namely, although infant outcomes between women who utilized a midwife versus those who used another health care professional showed mixed results, significantly fewer babies were born with low birth weight among those who used a midwife ($\chi^2 = 5.80, p = .02$). However, no significant difference was observed in terms of preterm birth ($\chi^2 = 2.42, p = .12$). Therefore, I partially rejected the null hypothesis regarding fetal outcomes when incorporating the 2013 data. It is important to note that I used a Pearson's chi-square for this analysis instead of a Fisher's exact test because the sample size was large enough to do so with the 2013 data included.

Table 5

Descriptive Statistics by Modality of Treatment for 2013 and 2016 Data Set

| Variable | Midwife (n = 43) | Other healthcare provider (n = 611) | p value |
|----------------------------------|------------------|-------------------------------------|---------|
| Preterm birth (≤ 37 weeks) | | | .12 |
| Yes | 2 (4.9%) | 79 (13.3%) | |
| No | 39 (95.1%) | 517 (86.7%) | |
| Low birth weight (< 2,500 g) | | | .02 |
| Yes | 0 (0.0%) | 72 (12.0%) | |
| No | 43 (100.0%) | 529 (88.0%) | |

RQ2: Maternal Outcomes Based on Treatment Modality in Post-Analysis

No statistically significant difference was found between maternal outcomes and healthcare providers in the post-analysis converging the 2016 and 2013 data sets. It is also important to note that the surveys between the two data sets were not exact in every question, and therefore some survey questions had to be excluded from the analysis. For example, the birthing choice questions were not available with the combined dataset. The other differences included that quality of care had three variables in the 2013 survey scale instead of seven, as was found in the 2016 survey. Also, prejudice and racism consisted of two variables instead of three. Namely, all three were represented, but two were combined into one question in the 2013 study, so I averaged those in 2018 into one variable, then made a scale with that and the other one. Therefore, I was unable to compare all variables initially assessed in the 2016 data analysis. Descriptive statistics by the treatment modality and the overall sample are described in Table 6 for RQ2 regarding maternal outcomes.

Overall, the Mann-Whitney U test showed that there remained no significant differences in maternal outcomes of quality of care ($p = .81$) and prejudice and racism ($p = .34$) between women who use midwives as a primary prenatal caregiver versus those who used another type of health care professional. I failed to reject the null hypothesis for RQ2.

Table 6RQ2: *Descriptive Statistics by Modality of Treatment for 2013 and 2016 Data Set*

| Variable | Midwife (n = 43) | Other healthcare provider (n = 611) | Total (n = 654) | p value |
|---|---------------------|---|--------------------|---------|
| Preterm birth (≤ 37 weeks) | | | | .12 |
| Yes | 2 (4.9%) | 79 (13.3%) | | |
| No | 39 (95.1%) | 517 (86.7%) | | |
| Low birth weight (<2,500 g) | | | | .02 |
| Yes | 0 (0.0%) | 72 (12.0%) | | |
| No | 43 (100.0%) | 529 (88.0%) | | |
| Quality of care (mean and standard deviation of scale) | 2.49 (0.86) | 2.51 (0.84) | 2.51 (0.84) | .81 |
| Did you feel pressure from any health professional to induce labor? | | | | .61 |
| Yes | 6 (13.9%) | 103 (16.9%) | 109 (16.7%) | |
| No | 37 (86.0%) | 506 (83.1%) | 543 (83.3%) | |
| Did you feel pressure from any health professional to use epidural for pain relief? | | | | .48 |
| Yes | 5 (11.6%) | 95 (15.6%) | 100 (15.3%) | |
| No | 38 (88.4%) | 514 (84.4%) | 552 (84.7%) | |
| Did you feel pressure from any health professional to have a c-section? | | | | .09 |
| Yes | 11 (25.6%) | 96 (15.8%) | 107 (16.4%) | |
| No | 32 (74.4%) | 513 (84.2%) | 545 (83.6%) | |
| Prejudice and racism (mean and standard deviation of scale) | 7.75 (0.74) | 7.50 (1.27) | 7.51 (1.25) | .34 |
| During your recent hospital stay when you had your baby, how often were you treated unfairly because of the type of health insurance you had or because you didn't have health insurance? | | | | .76 |
| Always | 0 (0.0%) | 20 (3.3%) | 20 (3.1%) | |
| Usually | 1 (2.4%) | 22 (3.6%) | 23 (3.5%) | |
| Sometimes | 4 (9.5%) | 44 (7.2%) | 48 (7.4%) | |
| Never | 37 (88.1%) | 522 (85.9%) | 559 (86.0%) | |

Interpretation of the Research Findings Considering Post-Analysis Findings

These research findings suggest that the sample size was too small to detect an effect within the study using just the 2016 data. As reported by the G*Power analysis, there was a 50% “probability of detecting a ‘true’ effect” if one existed in the sample (University of California Los Angeles, 2020, p. 1), in other words, a 50% chance of rejecting the null hypotheses. The subsequent G*Power analysis revealed an 87% power with the new sample size incorporating the 2016 data. Therefore, conducting the subsequent analysis with the 2013 data afforded me a better understanding of the findings for the 2016 data set, allowing me to provide a more informed interpretation of the results.

Prior research suggests a strong association between low birth weight in full-term babies and discrimination in populations of Black women in the United States (Alhusen et al., 2016). Therefore, it could be implied that the women in this study who had full-term babies that were small for gestational age (low birth weight) are experiencing discrimination. However, this implication was not captured in this study. Specifically, the statistically significant finding that women using midwives had a lower number of babies born with a low birth weight could suggest that women using other healthcare providers are experiencing discrimination not captured with the line of questions found within this survey or that some confounding variable links the Black women who choose a midwife as their care provider together. Therefore, additional research is warranted to explore these factors.

Theoretical Framework

I chose the ecological model as the theoretical framework to guide the current research study exploring differences in maternal and fetal outcomes between Black mothers who chose midwives as prenatal care providers and those who used other healthcare providers. As illustrated in Section 2, each level of the ecological model can be matched to variables within this study. Specifically, at the individual level is the participants' race. Namely, only Black mothers were included in this study. The next level is interpersonal, which consists of participants' experience of discrimination. Next is the organizational level wherein prenatal care occurs, and participants' involvement in birthing choice was measured. Finally, at the community level are the disparities explored in this study, namely, preterm birth and low birth weights of infants.

Although the findings of this study were not statistically significant, post-analysis of a 2013 data set in conjunction with the original secondary data used within this study did yield significant findings. Therefore, disparities were identified, which are at the community level of the ecological model. The ecological model was well suited for this study and describes the nested association between individuals and their environment. Namely, Black mothers experience discrimination and prejudice at an individual and interpersonal level. Such discrimination is experienced at the organizational level and is expressed as disparities at the community level. Finally, public policies often enforce structural racism, which affects the individual (Brown et al., 2019). Therefore, the ecological model served as an effective theoretical framework for this study.

Limitations of the Study

In addition to the limitations discussed under the threats to validity subsection in Section 2 of this paper, this study has a few additional limitations. For example, a significant limitation of this study was that the data set only included perceptions of Black mothers in California. As a result, the research findings are only generalized to the women of California. Further, the study consisted of a small sample size ($n = 17$) of Black women that used a midwife care provider. Therefore, the power was significantly affected, limiting the probability of rejecting the null hypotheses and finding a “true” effect (University of California Los Angeles, 2020). There are also limitations inherent with the secondary data used within this study. Namely, data were collected using self-reporting surveys. Therefore, data are based on participants’ perceptions of a past event wherein recall bias may occur. Although the period between delivery and the survey was short, the pregnancy duration is nine and a half months. Therefore, respondents may have had issues recalling information accurately when reporting their perceptions.

Recommendations

Although the research findings were not statistically significant within this study, this research is still important and could suggest other potential variables affecting Black women in prenatal care resulting in maternal and fetal outcome disparities. Therefore, I posit four recommendations for future research regarding maternal-fetal outcomes in Black populations:

1. Replication of the current study should be conducted with a larger sample size and the use of primary data as opposed to secondary. Historically, research

including Black populations has been limited due to this population's inherent distrust of the medical community and researchers (Hostetter & Klein, 2021; Washington, 2008). Therefore, conducting research focused on this population regarding this topic is warranted.

2. A research study exploring Black women's perceptions of their prenatal and delivery care using a qualitative method is suggested due to the findings of this study. Specifically, seeking to identify any confounding variables that may link Black women who choose to use a midwife as their prenatal care provider compared to Black women choosing other providers is warranted.
3. A research study should be conducted to explore socioeconomic determinants associated with Black women who have identified experiencing discrimination within the healthcare system and had poor maternal and fetal outcomes compared to Black women who did not. This type of research study may provide new insights into the variables associated with poor maternal and fetal outcomes.
4. Additional research should be conducted exploring this research topic in different geographical areas.

Implications for Professional Practice and Social Change

I am currently pregnant and became aware of the maternal and fetal outcome disparities between Black and White women in the United States during this research process. As a result, my personal experiences during my pregnancy have afforded me a unique perspective on this research topic. Although the results from this study were not

statistically significant, the additional analysis done suggests a difference in infant outcomes between mothers who have chosen a midwife over other care providers. Therefore, results from this research study could inform medical practitioners related to maternal and infant care for Black women, thereby resulting in positive social change within the community of Black women in the United States and the public as a whole. Specifically, medical practitioners could implement practices to ensure the availability of midwives as a prenatal option for Black mothers. Further, ensuring Black mothers are informed of their options of caregivers and the potential benefits of using a midwife over other practitioners could potentially bolster the number of Black women who choose this type of healthcare provider. Finally, healthcare providers should implement frequent and consistent assessments of Black mothers' perceptions of the level of care they receive during their prenatal visits to identify and mitigate any forms of discrimination perceived by Black mothers during their care.

Based on the ecological model, implementing professional practices at an organizational level is warranted to mitigate maternal and infant outcome disparities. Specifically, implementing professional practices to identify and mitigate discriminatory practices in prenatal treatment could potentially reduce the frequency of preterm and low birth weights of children born to Black mothers (Alhusen et al., 2016; Attanasio & Kozhimannil, 2015; Cox et al., 2011). Improving the maternal and fetal outcomes for Black mothers could create positive social change across individual, familial, and societal levels. Based on the ecological model, these would be the individual, interpersonal, and community levels. Namely, improving maternal and fetal outcomes would suggest that

Black mothers were experiencing less discrimination and reduced stress levels, thereby positively affecting the individual. As a result of this positive effect, families could experience a more cohesive familial dynamic as the reduced stress levels of Black mothers translates over into their families. At a societal or community level, a reduction in maternal and fetal outcome disparities will reduce the financial burden on healthcare organizations, return mothers to work and contributing to society more quickly, and potentially reduce the mistrust Blacks' currently have against medical practitioners (Hostetter & Klein, 2021; Washington, 2008).

Conclusion

This study used a quantitative retrospective cohort research design to explore the maternal and fetal outcomes for a sample of Black mothers residing in California. Research findings were not statistically significant for maternal or fetal outcomes between mothers who used a midwife versus those who chose a different healthcare provider. A post-analysis was run using data from a 2013 sample of mothers from across the United States in conjunction with the 2016 data set used in this study; a statistically significant difference was found concerning low birth weight for full-term babies. Therefore, although the study did not present statistically significant findings using the 2016 data set, the additional analysis suggests that the research topic is viable and warrants further research.

Maternal and infant outcome disparities exist within the United States and are prevalent (Alhusen et al., 2016; Attanasio & Kozhimannil, 2015). Black women are at an elevated risk of experiencing complications during delivery and deliver babies with a

higher prevalence for preterm birth, low birth weights, and mortality than their White counterparts (Alhusen et al., 2016; Smith et al., 2018). This disparity is unacceptable because everyone deserves a standard level of care regardless of their race, ethnicity, or background. Identifying practices that could mitigate these disparities is essential to improve Black mothers' maternal and fetal outcomes, thereby bringing about positive social change at the individual, familial, and societal levels.

References

- Alhusen, J. L., Bower, K. M., Epstein, E., & Sharps, P. (2016). Racial discrimination and adverse birth outcomes: An integrative review. *Journal of Midwifery & Women's Health*, 61(6), 707-720. <https://doi.org/10.1111/jmwh.12490>
- Alio, A. P., Richman, A. R., Clayton, H. B., Jeffers, D. F., Washington, D. J., & Salihu, H. M. (2010). An ecological approach to understanding Black–White disparities in perinatal mortality. *Maternal and Child Health Journal*, 14(4), 557-566. <https://doi.org/10.1007/s10995-009-0495-9>
- Allen, J., Kildea, S., Tracy, M. B., Hartz, D. L., Welsh, A. W., & Tracy, S. K. (2019). The impact of caseload midwifery, compared with standard care, on women's perceptions of antenatal care quality: Survey results from the M@NGO randomized controlled trial for women of any risk. *Birth*, 46(3), 439-449. <https://doi.org/10.1111/birt.12436>
- Alliman, J., & Bauer, K. (2020). Next steps for transforming maternity care: What strong start birth center outcomes tell us. *Journal of Midwifery & Women's Health*, 65(4), 462. <https://doi.org/10.1111/jmwh.13084>
- Altman, M. R., McLemore, M. R., Oseguera, T., Lyndon, A., & Franck, L. S. (2020). Listening to women: Recommendations from women of color to improve experiences in pregnancy and birth care. *Journal of Midwifery & Women's Health*, 65(4), 466-473. <https://doi.org/10.1111/jmwh.13102>
- American College of Nurse-Midwives. (2011). *Definition of midwifery and scope of practice of certified nurse-midwives and certified midwives*.

<https://www.midwife.org/acnm/files/ccLibraryFiles/Filename/000000007043/Definition-of-Midwifery-and-Scope-of-Practice-of-CNMs-and-CMs-Feb-2012.pdf>

American College of Obstetricians and Gynecologists. (2020). *Fetal heart monitoring during labor*. <https://www.acog.org/womens-health/faqs/fetal-heart-rate-monitoring-during-labor>

Attanasio, L., & Kozhimannil, K. B. (2015). Patient-reported communication quality and perceived discrimination in maternity care. *Medical Care*, 53(10), 863-871.

<https://doi.org/10.1097/mlr.0000000000000411>

Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017, 2017/04/08/). Structural racism and health inequities in the USA: evidence and interventions. *The Lancet*, 389(10077), 1453-1463.

[https://doi.org/10.1016/S0140-6736\(17\)30569-X](https://doi.org/10.1016/S0140-6736(17)30569-X)

Bishop-Royse, J., Lange-Maia, B., Murray, L., Shah, R. C., & DeMaio, F. (2021).

Structural racism, socio-economic marginalization, and infant mortality. *Public Health*, 190, 55-61. <https://doi.org/https://doi.org/10.1016/j.puhe.2020.10.027>

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Brown, K. S., Kijakazi, K., Runes, C., & Turner, M. A. (2019). *Confronting structural racism in research and policy analysis: Charting a course for policy research institutions*. The Urban Institute.

https://www.urban.org/sites/default/files/publication/99852/confronting_structural_racism_in_research_and_policy_analysis_0.pdf

- Clow, K. E., & James, K. E. (2014). Essentials of marketing research: Putting research into practice. In *Essentials of marketing research: Putting research into practice* (pp. 62-94). SAGE Publications. <https://doi.org/10.4135/9781483384726>
- Cox, R. G., Zhang, L., Zotti, M. E., & Graham, J. (2011). Prenatal care utilization in Mississippi: racial disparities and implications for unfavorable birth outcomes. *Maternal and Child Health Journal*, *15*(7), 931-942. <https://doi.org/10.1007/s10995-009-0542-6>
- Davis, D.-A. (2019). *Reproductive injustice: Racism, pregnancy, and premature birth* (Vol. 7). NYU Press.
- Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Herrlich, A. (2013). *Listening to mothers III: Pregnancy and birth*. <https://www.nationalpartnership.org/our-work/resources/health-care/maternity/listening-to-mothers-iii-pregnancy-and-birth-2013.pdf>
- Egede, L. E. (2006). Race, ethnicity, culture, and disparities in health care. *Journal of General Internal Medicine*, *21*(6), 667-669. <https://doi.org/10.1111/j.1525-1497.2006.0512.x>
- Ely, D. M., & Driscoll, A. K. (2019). *Infant mortality in the United States, 2017: Data from the period linked birth/infant death file*. N. V. S. Reports. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_10-508.pdf
- Furr, M. R. (2013). Threats to psychometric quality. In *Scale construction and psychometrics for social and personality psychology* (pp. 67-76). Sage. <https://methods.sagepub.com/book/scale-construction-and-psychometrics-for-social-and->

[personality-psychology/n6.xml](#)

Hostetter, M., L. Klein S. (2021). *Understanding and ameliorating medical mistrust among Black Americans*. The Commonwealth Fund.

<https://www.commonwealthfund.org/publications/newsletter-article/2021/jan/medical-mistrust-among-black-americans>

Howell, E. A. (2018). Reducing disparities in severe maternal morbidity and mortality. *Clinical Obstetrics and Gynecology*, 61(2), 387-399.

<https://doi.org/10.1097/GRF.0000000000000349>

Howell, E. A., & Zeitlin, J. (2017). Improving hospital quality to reduce disparities in severe maternal morbidity and mortality. *Seminars in Perinatology*, 41(5), 266-272. <https://doi.org/j.semperi.2017.04.002>

Jackson, C. (2021). *Faces of healthcare: What is an OB-GYN?* Healthline.

<https://www.healthline.com/find-care/articles/obgyns/what-is-an-obgyn>

Jenkins, C. (2021). *What is a general practitioner?* WebMD. <https://www.webmd.com/a-to-z-guides/what-is-a-general-practitioner>

Kalata, M., Kalata, K., Yen, H., Khorshid, A., Davis, T., & Meredith, J. (2020).

Community perspectives on the racial disparity in perinatal outcomes. *The Journal of Maternal-Fetal & Neonatal Medicine*, 1-6.

<https://doi.org/10.1080/14767058.2020.1786525>

Luke, J. M. (2018). *Delivered by midwives: African American midwifery in the twentieth-century south*. University Press of Mississippi.

Martin, J., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Mathews, T. J. (2017).

Births: Final data for 2015. N. V. S. Reports.

https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_01.pdf

Medline Plus. (2020). *Prenatal care*. Medline Plus.

<https://medlineplus.gov/prenatalcare.html>

Merriam-Webster. (2020). *Gestation*. In *Merriam-Webster.com dictionary*. Retrieved

June 12, 2021, from <https://www.merriam-webster.com/dictionary/gestation>

National Academies of Sciences Engineering and Medicine. (2020). *Birth settings in*

America: Outcomes, quality, access, and choice (S. C. Scrimshaw & E. P.

Backes, Eds.). National Institute of Health.

<https://www.ncbi.nlm.nih.gov/books/NBK555488/>

National Partnership for Women and Families. (2020). *Listening to mothers in*

California: Survey methodology. [https://www.chcf.org/wp-](https://www.chcf.org/wp-content/uploads/2018/09/ListeningMothersCASurveyMethodology2018.pdf)

[content/uploads/2018/09/ListeningMothersCASurveyMethodology2018.pdf](https://www.chcf.org/wp-content/uploads/2018/09/ListeningMothersCASurveyMethodology2018.pdf)

Pabayo, R., Ehntholt, A., Davis, K., Liu, S. Y., Muennig, P., & Cook, D. M. (2019).

Structural racism and odds for infant mortality among infants born in the United

States 2010. *Journal of Racial and Ethnic Health Disparities*, 6(6), 1095-1106.

<https://doi.org/10.1007/s40615-019-00612-w>

Phillippi, J. C., Holley, S. L., Payne, K., Schorn, M. N., & Karp, S. M. (2016).

Facilitators of prenatal care in an exemplar urban clinic. *Women and Birth*, 29(2),

160-167. <https://doi.org/10.1016/j.wombi.2015.09.007>

Reno, R., & Hyder, A. (2018). The evidence base for social determinants of health as risk

factors for infant mortality: A systematic scoping review. *Journal of health care*

for the poor and underserved, 29(4), 1188-1208.

<https://doi.org/10.1353/hpu.2018.0091>

Sakala, C., Braveman, P., Declercq, E., Marchi, K., Corry, M. P., Heck, K., Shah, M., Turon, J. M., Teleki, S., & Lewis, V. (2020). *Listening to mothers in California survey, 2018*. <https://doi.org/10.15139/S3/3KW1DB>

Sakala, C., Declercq, E. R., Truron, J. M., & Corry, M. P. (2020). *Listening to mothers in California: A population-based survey of women's childbearing experiences, full survey report*. National Partnership for Women and Families.

<https://www.chcf.org/wp-content/uploads/2018/09/ListeningMothersCAFullSurveyReport2018.pdf>

Smith, I. Z., Bentley-Edwards, K. L., El-Amin, S., & Darity Jr, W. (2018). *Fighting at birth: Eradicating the Black-White infant mortality gap*. Duke University's Samuel DuBois Cook Center on Social Equity and Insight Center for Community Economic Development. <https://socialequity.duke.edu/wp-content/uploads/2019/12/Eradicating-Black-Infant-Mortality-March-2018.pdf>

Sperlich, M., Gabriel, C., & Seng, J. (2017). Where do you feel safest? Demographic factors and place of birth. *Journal of Midwifery & Women's Health*, 62(1), 88-92. <https://doi.org/10.1111/jmwh.12498>

Stoppler, M. C. (2021). *Medical definition of assistant, physician (PA)*. Medicine Net. https://www.medicinenet.com/assistant_physician_pa/definition.htm

Suarez, A. (2020). Black midwifery in the United States: Past, present, and future. *Sociology Compass*, 12. <https://doi.org/10.1111/soc4.12829>

University of California Los Angeles. (2020). *One-way ANOVA power analysis:*

*G*Power data analysis examples*. University of California Los Angeles.

<https://stats.idre.ucla.edu/other/gpower/one-way-anova-power-analysis/>

University of Northern Carolina. (2021). *Listening to mothers dataverse*. U. o. N. C.

Dataverse.

<https://dataverse.unc.edu/dataset.xhtml?persistentId=doi:10.15139/S3/3KW1DB>

Vedam, S., Stoll, K., Taiwo, T. K., Rubashkin, N., Cheyney, M., Strauss, N., McLemore,

M., Cadena, M., Nethery, E., Rushton, E., Schummers, L., Declercq, E., & the,

G.-U. S. S. C. (2019). The giving voice to mothers study: Inequity and

mistreatment during pregnancy and childbirth in the United States. *Reproductive*

Health, 16(1), 77. <https://doi.org/10.1186/s12978-019-0729-2>

Wallace, M., Crear-Perry, J., Richardson, L., Tarver, M., & Theall, K. (2017). Separate

and unequal: Structural racism and infant mortality in the US. *Health & place*, 45,

140-144. <https://doi.org/10.1016/j.healthplace.2017.03.012>

Washington, H. A. (2008). *Medical apartheid: The dark history of medical*

experimentation on black americans from colonial times to the present. Knopf

Doubleday Publishing Group.

<https://books.google.com/books?id=apGhwRt6A7QC>

World Health Organization. (2018). *Preterm birth*. World Health Organization.

<https://www.who.int/news-room/fact-sheets/detail/preterm-birth>

World Health Organization. (2004). *International statistical classification of diseases and*

related health problems: Tabular list (Vol. 1). World Health Organization.

Yoder, H., & Hardy, L. R. (2018). Midwifery and antenatal care for Black women: A narrative review. *SAGE Open*, 8(1), 1-8.

<https://doi.org/10.1177/2158244017752220>

Appendix: Sample of *Listening to Mothers* Survey**BASE: ALL RESPONDENTS**

What was the date of your baby's birth? / ¿Cuál fue la fecha del nacimiento de su bebé?

Q510a

[RANGE: 09-12]

Month / mes **Q510b**

[RANGE: 1-31]

Day / día **Q510c**

2016 / 2016

BASE: ALL RESPONDENTS

Q520 Congratulations on the birth of your baby. Did you have a boy or a girl? / Felicitaciones por el nacimiento de su bebé. ¿Tuvo un niño o una niña?

- 1 Boy / Niño
- 2 Girl / Niña

SECTION 600: PARITY**BASE: ALL RESPONDENTS**

Q610 This survey asks about your experiences with your baby who was born [birth date]. We will call this your "recent" pregnancy and birth. In all, how many babies have you had? Please include your new baby. / Esta encuesta pregunta sobre sus experiencias con su bebé que nació [birth date]. Vamos a llamar a esto su "reciente" embarazo y parto. En total, ¿cuántos bebés ha tenido usted? Por favor incluya a su nuevo bebé.

[RANGE: 1-20]

 babies / bebés**SECTION 700: CHOICE OF MATERNITY CARE PROVIDER & HOSPITAL****BASE: ALL RESPONDENTS**

Q705 By "maternity care provider" we mean a doctor, midwife, or nurse practitioner who provided your health care for pregnancy and the baby's birth. Did you have a choice about which maternity care provider you had for your pregnancy care (prenatal care)? / Por "proveedor de cuidado de maternidad" queremos decir un doctor, partera o enfermera calificada para ejercer medicina, que le proporcionó cuidado de salud para su embarazo y el nacimiento de su bebé. ¿Tuvo usted la oportunidad de elegir qué proveedor de cuidado de maternidad tener para su cuidado de embarazo (cuidado prenatal)?

- 1 Yes, I had a choice / Sí, pude elegir
- 2 No, I had no choice; my maternity care provider was assigned to me / No, no pude elegir; mi proveedor de cuidado de maternidad me fue asignado
- 3 I did not get **any** prenatal care from a maternity care provider / No tuve **ningún** cuidado prenatal de un proveedor de cuidado de maternidad

BASE: ALL RESPONDENTS

Q715 During your recent pregnancy, did you **find any information** to help you compare the **quality of different maternity care services** in your area? / Durante su reciente embarazo, ¿encontró alguna información que le ayudase a comparar la **calidad de los diferentes servicios de cuidado de maternidad** en su área?

- 1 Yes, about different maternity care providers / Sí, acerca de diferentes proveedores de cuidado de maternidad
- 2 Yes, about different hospitals for giving birth / Sí, acerca de diferentes hospitales para dar a luz
- 3 Yes, about both maternity care providers **and** hospitals / Sí, acerca de ambos, proveedores de cuidado de maternidad **y** hospitales
- 4 No / No
- 5 Not sure / No estoy segura

BASE: FOUND COMPARATIVE QUALITY INFORMATION ABOUT MATERNITY CARE SERVICES (Q715 = 1, 2, or 3)

Q716 During your recent pregnancy, did you **use the information** you found to **help choose among different maternity services**? / Durante su reciente embarazo, ¿usó la **información** que encontró para **ayudarle a escoger entre servicios de maternidad**?

If Q715 = 1 or 2:

- 1 Yes / Sí
- 5 No / No
- 6 Not sure / No estoy segura

If Q715 = 3:

- 2 Yes, to choose a maternity care provider / Sí, para escoger un proveedor de cuidado de maternidad
- 3 Yes, to choose a hospital / Sí, para escoger un hospital
- 4 Yes, to choose both a maternity care provider **and** a hospital / Sí, para escoger ambos, un proveedor de cuidado de maternidad **y** un hospital
- 5 No / No
- 6 Not sure / No estoy segura

BASE: ALL RESPONDENTS

Q740 During your pregnancy, did you try to learn how often babies were delivered by c-section (cesarean) at any hospitals where you might have your baby? / Durante su embarazo, ¿trató de averiguar con qué frecuencia los bebés fueron dados a luz por cesárea, en cualquiera de los hospitales donde usted podría tener a su bebé?

- 1 Yes, I looked and found this information / Sí, busqué y encontré esta información
- 2 Yes, I looked but did not find this information / Sí, busqué pero no encontré esta información
- 3 No, I did not look / No, no la busqué

| |
|-----------------------------------|
| SECTION 800: PRENATAL CARE |
|-----------------------------------|

BASE: ALL RESPONDENTS

Q805 Which type of maternity care provider **most often** provided your care during pregnancy? / ¿Qué tipo de proveedor de cuidado de maternidad le atendió **más a menudo** durante su embarazo?

- 1 An obstetrician-gynecologist doctor (could be called OB or ob-gyn) / Un médico obstetra-ginecólogo (puede ser llamado OB)
- 2 A family medicine doctor / Un médico de medicina familiar
- 3 A doctor but I'm not sure what type / Un médico, pero no estoy segura de qué tipo
- 4 A midwife (could be called CNM) / Una partera (puede ser llamada CNM)
- 5 A nurse practitioner (NP) or other nurse who is **not** a midwife / Una enfermera calificada para ejercer medicina ("nurse practitioner" o NP) u otra enfermera que **no es** una partera
- 6 A physician assistant (PA) / Un asistente médico certificado ("physician assistant" o PA)

BASE: MOST OFTEN HAD OB-GYN FOR PRENATAL CARE (Q805 = 1)

Q806 How important was it to you to have an ob-gyn doctor rather than a different type of maternity care provider? / ¿Cuán importante fue para usted tener un médico obstetra-ginecólogo en lugar de un tipo de proveedor diferente de cuidado de maternidad?

- 1 Extremely important / Extremadamente importante
- 2 Very important / Muy importante
- 3 Moderately important / Moderadamente importante
- 4 Slightly important / Poco importante
- 5 Not at all important / Nada importante

BASE: MOST OFTEN HAD FAMILY PHYSICIAN FOR PRENATAL CARE (Q805 = 2)

Q807 How important was it to you to have a family medicine doctor rather than a different type of maternity care provider? / ¿Cuán importante fue para usted tener un médico de medicina familiar, en lugar de un tipo de proveedor diferente de cuidado de maternidad?

- 1 Extremely important / Extremadamente importante
- 2 Very important / Muy importante
- 3 Moderately important / Moderadamente importante
- 4 Slightly important / Poco importante
- 5 Not at all important / Nada importante

BASE: MOST OFTEN HAD MIDWIFE FOR PRENATAL CARE (Q805 = 4)

Q808 How important was it to you to have a midwife rather than a different type of maternity care provider? / ¿Cuán importante fue para usted tener una partera, en lugar de un tipo de proveedor diferente de cuidado de maternidad?

- 1 Extremely important / Extremadamente importante
- 2 Very important / Muy importante
- 3 Moderately important / Moderadamente importante
- 4 Slightly important / Poco importante
- 5 Not at all important / Nada importante

BASE: MOST OFTEN HAD NURSE-PRACTITIONER FOR PRENATAL CARE (Q805 = 5)

Q809 How important was it to you to have a nurse-practitioner rather than a different type of maternity care provider? / ¿Cuán importante fue para usted tener una enfermera calificada para ejercer medicina ("nurse practitioner") en lugar de un tipo de proveedor diferente de cuidado de maternidad?

- 1 Extremely important / Extremadamente importante
- 2 Very important / Muy importante
- 3 Moderately important / Moderadamente importante
- 4 Slightly important / Poco importante
- 5 Not at all important / Nada importante

BASE: MOST OFTEN HAD PHYSICIAN ASSISTANT FOR PRENATAL CARE (Q805 = 6)

Q810 How important was it to you to have a physician assistant rather than a different type of maternity care provider? / ¿Cuán importante fue para usted tener un asistente médico certificado ("physician assistant") en lugar de un tipo de proveedor diferente de cuidado de maternidad?

- 1 Extremely important / Extremadamente importante
- 2 Very important / Muy importante
- 3 Moderately important / Moderadamente importante
- 4 Slightly important / Poco importante
- 5 Not at all important / Nada importante

BASE: ALL RESPONDENTS

Q811 Would you have preferred a different type of maternity care provider? / ¿Hubiera preferido tener un tipo de proveedor de cuidado de maternidad diferente?

- 1 Yes / Sí
- 2 No / No

BASE: WOULD HAVE PREFERRED A DIFFERENT TYPE OF PROVIDER (Q811 = 1)

Q815 Which type of provider do you wish you had? / ¿Qué tipo de proveedor desearía haber tenido?

- 1 Obstetrician-gynecologist doctor (OB or ob-gyn) / Médico obstetra-ginecólogo (OB u ob-gin)
- 2 Family medicine doctor / Médico de medicina familiar
- 3 Midwife (CNM) / Partera (CNM)
- 4 Nurse-practitioner (NP) or other nurse who is **not** a midwife / Enfermera calificada para ejercer medicina ("nurse practitioner" o NP) u otra enfermera que **no** es una partera
- 5 Physician assistant / Asistente médico certificado ("physician assistant" o PA)
- 6 Other / Otro

BASE: WOULD HAVE PREFERRED BUT DID NOT HAVE A MIDWIFE (Q815 = 3)

Why didn't you have a midwife as your prenatal maternity care provider? **Please choose all that apply.** / ¿Por qué no tuvo a una partera como su proveedor de cuidado de maternidad? **Por favor escoja todo lo aplicable.**

Q816a I didn't think that my health insurance plan paid for services of a midwife / No pensé que mi plan de seguro médico pagaba por servicios de partera

Q816b I didn't think that a midwife could practice in a hospital / No pensé que una partera pudiera practicar en un hospital

Q816c I didn't think that I could have an epidural with a midwife / No pensé que podría tener una anestesia epidural con una partera

Q816d I didn't know what would happen if I needed a doctor (for example, for a c-section) / No sabía qué pasaría si necesitaba un médico (por ejemplo, para una cesárea)

Q816e Another type of maternity care provider was assigned to me / Me asignaron otro tipo de proveedor de cuidado de maternidad

Q816f A midwife was not available / No estaba disponible una partera

Q816g I needed a doctor because of health problems / Necesitaba un médico porque tenía problemas de salud

Q816h Other reason why you didn't have a midwife as your maternity care provider, please tell us: / Otra razón por la que no tuvo una partera como su proveedor de cuidado de maternidad, por favor díganos:

Write-in = Q816_TEXT

For each:

- 1 Checked this box
- 2 Did not check this box

BASE: ALL RESPONDENTS

Q850 In pregnancy, an "ultrasound" (or "sonogram") is a way to view a baby growing in a woman's womb. / En el embarazo, un "ultrasonido" (o "sonograma") es una manera de ver a un bebé crecer en el útero de una mujer.

Near the end of pregnancy, did a health professional use an ultrasound to estimate how much your baby weighed? / Cerca del final del embarazo, ¿un profesional de la salud usó el ultrasonido para estimar cuánto pesaba su bebé?

- 1 Yes / Sí
- 2 No / No
- 3 Not sure / No estoy segura

BASE: ALL RESPONDENTS

Q855 Near the end of your pregnancy, did your maternity care provider tell you that your baby might be getting quite large? / Cerca del final del embarazo, ¿su proveedor de cuidado de maternidad le dijo que su bebé podría estar poniéndose bastante grande?

- 1 Yes / Sí
- 2 No / No

BASE: ALL RESPONDENTS

A "due date" is a maternity care provider's estimate of when your baby will be born. What was your baby's final due date? If you are not sure, give your best guess. **Please fill in the 3 boxes.** / La "fecha prevista de parto" es la fecha en que el proveedor de cuidado de maternidad estima que va a nacer su bebé. ¿Cuál fue su fecha final prevista de parto? Si no está segura, dé su mejor estimado. **Por favor complete los 3 casilleros.**

Q865_month
Month / Mes [] [] []

Q865_day
Day / Día [] [] []

Q865_year
Year / Año [] [] [] [] [] []