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The Racial Disparities in Maternal Mortality and Impact of Structural Racism and Implicit Racial Bias on Pregnant Black Women: A Review of the Literature

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Abstract

Background The maternal mortality rate (MMR) in the United States (USA) continues to increase despite medical advances and is exacerbated by stark racial disparities. Black women are disproportionately affected and are three times more likely to experience a pregnancy-related death (PRD) compared to Non-Hispanic White (NHW) women.

Methods A literature review was conducted to examine the racial disparities in the United States' MMR, specifically among pregnant Black women. PubMed and key organizations (World Health Organization, Center for Disease Control and Prevention, American College of Obstetricians and Gynecologists, Alliance for Innovation on Maternal Health, Association of American Medical Colleges, U.S. Census Bureau, and U.S. Congress) were searched for publications after 2014.

Result Forty-two articles were reviewed to identify the role of structural racism, implicit biases, lack of cultural competence, and disparity education on pregnant Black women. This review highlights that maternal health disparities for Black women are further impacted by both structural racism and racial implicit biases. Cultural competence and educational courses targeting racial disparities among maternal healthcare providers (MHCP) are essential for the reduction of PRDs and pregnancy-related complications (PRC) among this target population. Additionally, quality and proper continuity of care require an increased awareness surrounding the risk of cardiovascular diseases for pregnant Black women.

Conclusions The surging MMR for Black women is a public health crisis that requires a multi-tiered approach. Interventions should be implemented at the provider and healthcare institution level to dismantle implicit biases and structural racism. Improving patient-provider relationships through increased cultural competency and disparity education will increase patient engagement with the maternal healthcare (MHC) system.

Keywords Racial disparities · Maternal mortality · Black women · Pregnancy · Implicit bias · Racism

Introduction

The maternal mortality rate (MMR) in the United States (USA) is 23.8 maternal deaths per 100,000 live births — a rate that has doubled since 1987 and that surpasses many developing countries [1, 2]. The World Health Organization (WHO) declares that the majority of maternal deaths are preventable and treatable in regions with adequate resources and access to maternal healthcare (MHC) services [3]. However, over the past three decades, the MMR of the USA has continued to surge despite the enhancements in the diagnostic and acute critical care capacities of maternal healthcare providers (MHCP) [4]. From 1990 to 2015, the USA was the only country among several high-income countries that had an increase in its MMR [5–7]. Stark racial disparities persist in the MMR of the USA, as Black women continue to be disproportionately affected and are approximately three times more likely to suffer a pregnancy-related death (PRD) in comparison to Non-Hispanic White (NHW) women in the USA [2]. As of 2020, an average of 55.3 deaths per 100,000 live births occurred among Non-Hispanic Black (NHB)

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women compared to 19.1 deaths per 100,000 live births among NHW women [1].

Reports published as early as 1946 aimed to improve the inconsistencies in obstetric outcomes by addressing the racial and ethnic disparities in obstetrics and gynecology (OB/GYN) medicine; however, more than half a century later, the USA still struggles to effectively address this public health crisis [8]. Interestingly, a study where no racial differences were found among the five most prevalent pregnancy-related complications (PRC) demonstrated that the mortality rate for Black women with each condition was two to three times more likely, compared to their NHW counterparts [9]. The variability in the risk of a PRD by race suggests that understanding the complexities involved is essential to effectively reducing the MMR among Black women.

Structural Racism, Implicit Racial Biases, and Lack of Culturally Competent Care

Potential causes for the disparities in MMRs include structural racism and implicit racial biases [10]. Although most physicians and healthcare providers (HCP) strive to treat all patients equally, they operate in an inherently racist system [11]. Bailey et al. define structural racism as "the totality of ways in which societies foster racial discrimination, via mutually reinforcing inequitable systems (including but not limited to housing, education, employment, earnings, benefits, credit, media, healthcare and criminal justice) that in turn reinforce discriminatory beliefs, values, and distribution of resources, reflected in history, culture, and interconnected institutions" [12]. Implicit bias among HCPs is stated as behaviors that are implemented in reaction to the characteristics such as age, race, ethnicity, gender, sexual orientation, physicality, and disability of a patient which outlines their behaviors and actions and advises their clinical decisions [10]. Unfortunately, these systems and behaviors pose a harmful risk of adverse pregnancy outcomes for Black women. Many of the biases among HCPs stem from the lack of cultural competence, disparity education — specifically the health disparities that exist among different racial groups, and/or the acknowledgment of personal implicit racial biases against pregnant Black women [13, 14].

Contributing risk factors for adverse outcomes include the lack of diversity within MHC and incongruent medical treatment during the child birthing process, including inadequate pain management and medical history reports for Black women [15, 16]. For example, most women who give birth in the USA receive medication to alleviate the intense pain associated with labor, and the most common method for pain relief during this period is epidural analgesia; however, the rate of administration differs depending on race [15, 16]. Approximately 74% of NHW women receive an epidural in comparison to only 63% of Black women [15]. A study conducted demonstrated that Black women were recognized as one of the racial groups that experienced higher rates of epidural failure [15]. The results suggested that anesthesiologists may take less time to perform this intricate procedure on this target group compared to their NHW counterparts [15]. Delayed epidural administration among Black women has commonly led to inadequate pain relief. Additionally, the refusal of HCPs to acknowledge the complaints of insufficient relief occurs more often for Black women in comparison to NHW women [15]. Addressing these issues and implementing strategies to combat these disparities in MHC is vital.

Establishing an extensive previous medical history report and assessing the baseline for end-organ damage due to chronic diseases are fundamental to the overall success of equitable MHC delivery [14, 17]. This is especially pertinent as many Black women have increased risk factors for certain chronic health conditions during their pregnancy and postpartum period compared to NHW women, which can lead to end-organ damage [8, 14]. Treatment settings that lack a clinical protocol for the identification of these high-risk pregnancies as well as a treatment protocol most appropriate for this target population may impede the ability to provide equitable care [14]. For example, Black women frequently have higher risk factors for cardiovascular diseases and are more likely to suffer from peripartum cardiomyopathy with severe disease at both diagnosis and at 6–12 months postpartum [8]. Additionally, pregnant Black women are more prone to end-organ damage due to hypertension, irrespective of the duration of their condition. Furthermore, during the postpartum period, they are more likely to have variable responses to hypertensive treatment compared to NHW women [14]. Failure to anticipate the complications or treatment variabilities associated with the chronic conditions exclusive to this target population will inevitably lead to unfortunate outcomes.

Gap in Research

Various socioeconomic factors such as education attainment and income status have been identified as potential factors that have led to the stark differences between the MMR among Black women compared to their NHW counterparts. However, they are not exclusively at fault, being that subpar maternal outcomes exist for Black women with higher socioeconomic statuses than their NHW counterparts [18].

While the overall impact of structural racism has been investigated, there is inadequate research that validates the correlation between subpar maternal outcomes among Black women and structural racism as well as the role of racial and implicit biases among HCPs. This analysis reviews how these issues impact pregnant Black women and examines strategies for health systems to dismantle these obstacles.

Summarizing the current state of maternal health research in this field is a necessary first step to understanding this connection and identifying potential interventions and avenues of future research to reduce PRD among Black women.

Aims

The aims of this literature review are the following:

(1) To assess the evidence of the adverse impacts of structural racism and the implicit racial biases of HCPs on pregnant Black women.
(2) To examine the disparities within MHC access/quality and medical treatment and investigate how implicit racial biases of HCPs affect treatment plans and collection of accurate previous medical history/risk factors among Black women.
(3) To develop recommendations for educating HCPs on the importance of cultural competency, MHC diversity, the impact of their personal implicit racial biases, and increasing awareness of existing MHC disparities for Black women both during the prenatal and child birthing period. Recommendations will support patient awareness of the public health issue and encourage patient engagement with HCPs regarding their MHC decisions and birthing plans. Furthermore, recommendations will highlight the best practices for precise medical history collection to deliver quality and adequate care in an effort to reduce PRCs and PRDs among this target population.

Methods

Literature Search

A literature review was conducted to assess evidence of how structural racism and implicit bias affect pregnant Black women and racial disparities in OB/GYN Medicine. The PubMed database was searched for peer-reviewed healthcare journals in English, published after 2014, and exclusive to the USA. Reference lists were also hand-searched for key articles. Gray literature, including reports from relevant organizations such as the WHO, CDC (Pregnancy Mortality Surveillance System (PRMSS) in the Division of Reproductive Health), U.S. Census Bureau, and the Association of American Medical Colleges (AAMC) were searched. Furthermore, the database of the American College of Obstetricians and Gynecologists (ACOG) and the Alliance for Innovation on Maternal Health (AIM) implemented by ACOG was accessed for evidence-based best practices. A report from the New York City Department of Health and Mental Hygiene (NYC DOHMH) Bureau of Maternal Health was accessed to highlight the adoptable efforts that have been implemented to address the stark racial disparity that exists among their MMR. Additionally, the U.S. Congress database was accessed for current legislative policies related to the disparity in MMRs specifically among Black women in the USA. This was performed to gauge the overall efforts being executed at the government level to address this public health crisis and to bring forth more awareness of the importance of their involvement by highlighting it within this literature review. Table 1 outlines the PubMed database search strategy implemented and the search terms used to garner results for each aim.

Inclusion Criteria

This literature review aims to be inclusive and uses Black to define race but refers to women who identify as African American as well. The term women are used but also include pregnant/birthing people regardless of gender identity. The inclusion criteria comprised of peer-reviewed articles published after 2014 in English and studies conducted within the USA that addressed the impact of implicit bias, racial disparities, and/or structural racism on pregnant Black women. All healthcare disciplines were considered, as Black women may encounter various HCPs during pregnancy. Studies which solely focused on socioeconomic factors as the main contributor of maternal mortality among this target group were excluded as were those performed outside of the USA. Table 2 depicts in-depth details regarding the inclusion and exclusion criteria.

Results

Article Selection Process and Study Designs

The initial PubMed search yielded 5722 articles, whose titles and abstracts were screened for relevance according to the public health issue and aims of the present analysis. Duplicate articles and those that failed to meet the inclusion criteria were eliminated which led to a total of 165 potential articles. A full-text review of these articles was performed, and 31 peer-reviewed articles were identified as meeting the inclusion criteria for this analysis.

Relevant statistics on racial disparities associated with MMRs were extracted from 11 reports from the CDC, AIM, AAMC, NYC DOHMH Bureau of Maternal Health, U.S. Census Bureau, U.S. Congress, and WHO databases. Within the present analysis, two articles from the WHO database were used, two articles from the CDC, one report from the NYC DOHMH Bureau of Maternal Health, one report from ACOG, one report from the AAMC, one report from the U.S. Census Bureau, two legislative bills from the U.S. Congress, and resources from one safety toolkit from AIM was

Table 1 Database search strategy

Database Aims of literature review	Search strategy
PubMed	
Aim 1. Adverse impacts of structural racism and implicit bias	(Maternal mortality) AND (structural racism) (Maternal health) AND (racism) (Maternal health) AND (racial bias) (Maternal mortality) AND (Black) (Maternal mortality) AND (Black women) (((maternal mortality rates) OR (maternal deaths rates)) AND (health inequities)) OR (racial disparity gap)
Aim 2. Disparities in treatment	((maternal mortality) AND (Black women)) AND (racial disparities) ((maternal mortality) AND (Black women)) AND (racial disparities) ((maternity care) AND (quality)) AND (race) ((maternal health care access) AND (quality)) AND (disparities) ((maternal deaths) AND (healthcare disparities)) ((obstetrics anesthesia) OR (epidural)) AND (racial disparities) ((delivery of care) AND (structural racism)) AND (Black) (Healthcare disparities) AND (racism)
Aim 3. Recommendations	((((maternal mortality) AND (racial disparities)) OR (racial inequalities)) OR (racial bias)) AND (recommendations) ((maternal mortality) OR (pregnancy related deaths)) AND (racial disparity education) (((maternal mortality) OR (maternal deaths)) OR (pregnancy related deaths)) AND (reduce racial disparities)
Gray Literature	
Aim 1	Maternal mortality
WHO, CDC-PRMSS, ACOG	
Aim 2	Disparities
WHO, CDC-PRMSS	
Aim 3	Maternal mortality education, maternal care
AIM, AAMC, U.S. Census Bureau, U.S. Congress Database	

Table 2 Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Year published	
After 2014	Prior to 2014
Publication type/study design	
Systematic reviews, original research, non-experimental observational studies, ecological studies, cohort studies, cross-sectional studies, qualitative studies, quantitative studies, literature reviews, special report, consensus statement, perspective, editorial, viewpoint, and practice guidelines	Abstracts-only, case reports, and case studies
Setting	
USA/American	Outside of the USA
Healthcare disciplines	
OB-GYN and maternal–fetal medicine medical residents, fellows, attendings, nurses, other healthcare providers, faculty, medical students, and other physicians	Research training
Area of focus	
Emphasis on racism among Black/African American women (structural, historical, perceived), anti-racism, racial implicit bias, racial disparities in maternal healthcare and outcomes, diversify healthcare workforce, healthcare equity, healthcare quality and access, strategies and practical guidelines, toolkits, awareness, equity and quality maternal care, education, teaching, training, and cultural competence	Excludes Black/African American women, focuses on non-racial implicit bias, stigma, and solely socioeconomic factors

utilized. Figure 1 depicts a PRISMA flow chart diagram of the article selection process.

The Study Designs of Selected Articles

Table 3 summarizes the included studies' design, purpose, and the relevant findings. Of the 31 peer-reviewed articles, 61% ($n=19$) examined or addressed disparities within MHC access/quality or medical treatment, 58% ($n=18$) assessed the impact of implicit racial bias on Black women or population, 45% ($n=14$) focused on the impact of structural racism/racism on Black women or population, and approximately 9.7% ($n=3$) investigated how implicit racial biases of HCPs affect treatment plans and/or collection of accurate

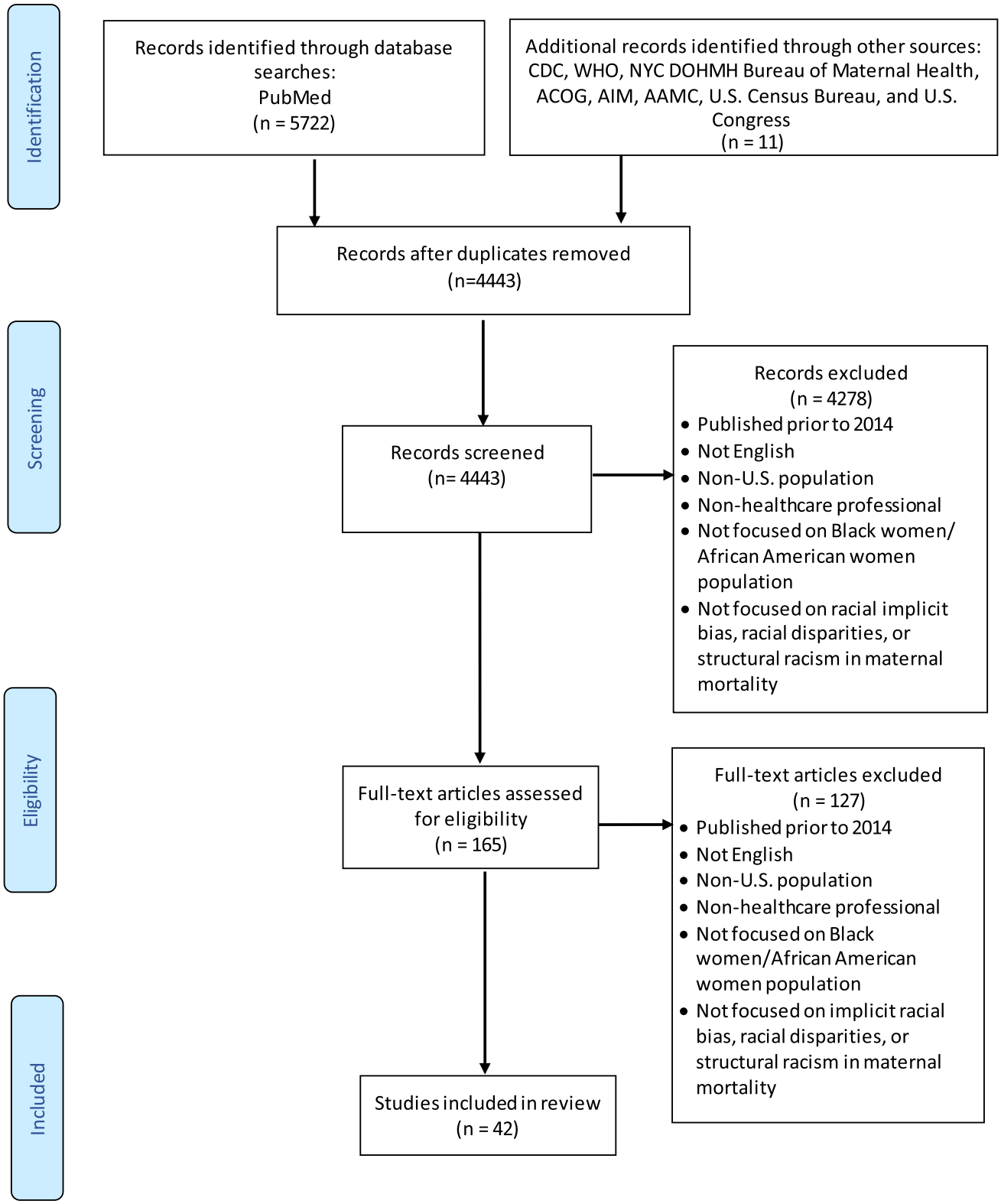

Fig. 1 PRISMA flowchart of article selection process

Table 3 Peer-reviewed article elements

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Amankwaa et al	2018	Practice guidelines	None	Outline the issues and recommend policies that promote maternal and infant health and to decrease health disparities among disadvantaged populations	Racial disparity education, racial implicit bias training, policy interventions, and healthcare workforce diversity are pertinent to reducing maternal healthcare disparities [13]
Bailey et al	2017	Review article	None	Addresses research and interventions that combat the implications of structural racism on population health and health inequities	Impact of structural racism and implicit bias on healthcare access quality and equity. Importance of anti-racism teachings and systems among healthcare professionals [12]
Cerdeña et al	2020	Viewpoint	None	Introduction of race-conscious medicine and the importance of emphasizing racism as a key determinant of illness and health	Emphasizes that racial health disparities are a consequence of structural racism and recognizes the extent in which the healthcare institutions have been plagued by structural racism [38]
Coley et al	2018	Qualitative study/thematic analysis	Prenatal care providers ($n=20$). Mothers who recently gave birth ($n=19$)	To compare the different perceptions of prenatal care quality among pregnant Black and mixed-race women and prenatal care providers	Mothers felt that lack of providers' cultural competence could lead to implicit bias and erroneous assumptions by providers. Communication issues were seen due to negative assumptions of providers and their disregard for the preferred option of care [26]
Collier & Molina	2019	Original research/research article	None	Provide key interventions to improve maternal health outcomes	Emphasizes the importance of recognizing structural racism as one of the key strategies to improve maternal safety, quality, and equity [18]
Cox	2018	Editorial	None	Address the negative consequences that occur when healthcare providers, health systems, and payors fail to utilize evidence-based practices in maternal healthcare	Positive outcomes have been recorded after implementation of the gold standard practices outlined in the Alliance for Innovation in Maternal Health Program [36]
Fryer et al	2021	Prospective cohort study	Multiparous Black women, Hispanic, and NHW women ($n=298$ participants)	Describe barriers to prenatal care experienced by race and ethnicity	Multiparous Black women reported encountering more barriers to prenatal care than NHW women. To achieve early and racial equity in prenatal care, policy changes are necessary at the clinical, local, and state levels [27]

Table 3 (continued)

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Gadson et al	2017	Original research/research article	None	Introduce theoretical framework that connects the complex factors that may link race, social context, prenatal care utilization, and maternal morbidity/mortality	Racism and discrimination likely play a role in prenatal care usage among vulnerable population. Exploring the potentially independent role of racism and stress on racial disparities in maternal healthcare is crucial [24]
GBD 2015 Maternal Mortality Collaborators	2016	Systematic analysis	None	Quantify maternal mortality worldwide by underlying cause and age from 1990 to 2015	The USA was the only country among several high-income countries that had an increase in its MMR between 1990 and 2015 [5]
Hardeman et al	2016	Perspective	None	Address the impact of structural racism in healthcare and the role healthcare providers can play to dismantle it	Acknowledges the inherently racist healthcare system that physicians and healthcare providers operate within irrespective of their views on race [11]
Hirshberg & Srinivas	2017	Review article	None	Explore common indicators of severe maternal morbidity and the disparities among the indicators	Highlights the racial disparities seen among maternal morbidity indicators among Black women [6]
Hoffman et al	2016	Quantitative study	Study 1: NHW laypeople ($n=92$) Study 2: medical students and residents (n=222)	Examine the beliefs associated with racial bias in pain management	A significant number of NHW laypeople, medical students, and residents maintain false ideologies about biological differences between Black and NHW individuals. Racial bias in pain perception is correlated with racial bias in pain treatment recommendations [29]
Holdt-Somer et al	2017	Review article	None	To review the common indicators associated with the racial disparities seen in severe maternal morbidity	Black women are more likely to both have peripartum cardiomyopathy and to suffer from more severe disease once diagnosed at 6 to 12 months postpartum [8]
Howell & Ahmed	2019	Literature review	None	Address the stark racial and ethnic disparities that exist in maternal healthcare and provide actionable steps for improvement	Tackling implicit bias, individual, and systemic racism is required to promote a culture of equity within maternal healthcare. Quality improvement tools, communication enhancements, and key stakeholder engagement can aid in narrowing the disparity gap within maternal outcomes [10]

Table 3 (continued)

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Howell et al	2018	Consensus statement	None	Provide fundamental contextual resources that will support awareness into racial and ethnic disparities for healthcare providers and healthcare systems that care for pregnant women	Establishes and develops a patient safety bundle on Reduction of Peripartum Racial and Ethnic Disparities [34]
Howell & Zeitlin	2017	Review article	None	Review the evidence that highlights that hospital quality is associated with maternal mortality and morbidity	A comprehensive approach to quality improvement in all hospitals while emphasizing on improving lower performing hospitals will increase benefits and aid in alleviating the racial disparities in maternal morbidity and mortality [39]
Howell & Zeitlin	2017	Review article	None	Review the definitions of quality of care, health disparities, and health equity and their associations with obstetric/maternal care and outcomes	Proposes the use of disparity dashboards to supervise and intervene on racial and ethnic disparities in OB/GYN quality measures, utilization of a common quality framework to assess quality issues associated with disparities, and implementation of disparities sensitive metrics in OB/GYN to reduce current quality gaps in patient care [4]
Jain & Moroz	2017	Literature review	None	Address the importance of provider and patient education to reduce disparities in maternal morbidity and mortality	Presents strategies to address disparities education at the provider level (Ex. SMFM online fellowship lecture series, interactive digital media on disparities education) and patient level (Ex. patient activation, utilize resources developed at an appropriate literacy level for patients) [25]
Jain et al	2018	Special report	None	To review and make recommendations about immediate actions in clinical care and research that will serve to reduce racial and ethnic disparities in maternal morbidity and mortality rates in the USA	Implicit racial bias among physicians regarding treatment decisions exists, even when physicians do not portray conscious bias. Few interventions and implementation studies relate it to disparities in maternal morbidity and mortality rates, which highlights a research gap [14]

Table 3 (continued)

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Kozhimannil et al	2017	Review article	None	Portray the relationship among access and quality in maternity care and propose a systems-level assessment on the innovations and strategies required in research, clinical care, and policy to improve equity in maternal and infant healthcare	Equitable maternity care access requires appropriate and timely labor and delivery care, access to emergency obstetric care, and ongoing postpartum care, which are vital to maternal health outcomes. Perceived discrimination and past experiences of discrimination when accessing healthcare services may impede care seeking, including during the prenatal period [28]
Kramer et al	2019	Literature review	None	Propose an equity framework that integrates the individual level biomedical and behavioral causes of maternal death, with the population-level differences in socio-contextual environment, which may explain the disparities in maternal mortality rates	Disparities in maternal morbidity or mortality by race, class, and geography may develop when social and economic factors such as structural racism, residential segregation, and transgenerational poverty produce between-group differences in exposures and opportunities across the life course of women [9]
Lange et al	2017	Literature review	None	To provide an overview of the racial disparities seen in obstetric anesthesia	Increasing the diversity of the healthcare workforce is proposed as one solution for eliminating racial and ethnic disparities and improving the quality of care delivered to minority groups [16]
Liese et al	2019	Retrospective cross-sectional study	13-year study period—58.7 million maternal hospitalizations among women aged 15–49 years	To examine the racial and ethnic disparities in severe maternal morbidity during antepartum, intrapartum, and postpartum hospital admissions in the USA between 2002 and 2014	The results demonstrate that Black women had the highest proportions of severe maternal morbidity compared to Hispanic and NHW women [31]
Lister et al	2019	Review article	None	To address the rise in maternal mortality among Black women in the USA that cannot be entirely explained by socioeconomic factors and limited access to care	Reducing the MMR among Black women encompasses a multi-tiered approach involving the patient, provider, and public health policy [22]

Table 3 (continued)

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Mehra et al	2020	Qualitative study	Pregnant Black women ($n=24$)	To depict the experiences of Black women during pregnancy, their experiences of gendered racism, and concerns related to pregnancy and parenting Black children	Black women reported encountering assumptions of low income, single motherhood, and multiple children, regardless of socioeconomic status, marital status, or parity. Racialized pregnancy stigma is noted as a source of stress encountered daily in healthcare, social services, and housing settings [23]
Morris & Schulman	2014	Qualitative study	Postpartum women ($n=83$)	Explore the organizational processes that may lead to racial disparity in epidural use and regional anesthesia failure in labor and birth	Women of color, including Black women, were more likely to experience failure of pain medication and were less likely to have their pain and anxiety taken seriously by medical providers [15]
Moroz et al	2018	Special report	None	To address maternal outcome and care inequities from three perspectives, education, clinical care, and research	Improving the awareness of all who influence healthcare (from providers to nurses to staff to policymakers) about the existence and potential consequences of implicit biases, will be critical towards limiting negative effects [17]
Oribhabor et al	2020	Review article	None	To identify how the quality of medical care, specifically delivery and clinical care, leads to racial inequalities in extreme maternal morbidity and mortality, their underlying causes, and the prospective controls to alleviate them throughout the continuum of maternity care	Eliminating disparities will necessitate a nationwide obligation to ensure healthcare equity via enhanced health insurance coverage, resource investment, public accountability centered on time-limited aims, and adequately provisioned quality improvement tactics that engage patients, communities, physicians, and healthcare institutions [37]
Ozimek & Kilpatrick	2018	Review article	None	To address the significant racial disparities that exist in the rates of maternal mortality in the USA	Multiple studies have demonstrated that approximately half of PRDs in the USA are preventable, yet NHB women experienced higher rates of PRD compared to NHW women [19]

Table 3 (continued)

Author	Year	Study design/article type	Sample/data	Purpose	Relevant findings
Vilda et al	2019	Ecological study	Estimated total population and race-specific 5-year pregnancy-related mortality ratios in each state based on national death and live birth records from 2011 to 2015. Samples of 51, 48, and 31 states for total population, NHW women, and Black women, respectively	Examine the associations between state-level income inequality and pregnancy-related mortality among NHB and NHW populations across the USA	The joint effects of structural racism and areal-level income inequality require specific attention, as higher levels of co-occurring racial and socioeconomic inequality have been shown to increase the risk of adverse birth outcomes [20]
White & Stubblefield-Tave	2017	Literature review	None	To review non-socioeconomic factors, including unconscious bias, stereotyping, racism, gender bias, and limited English proficiency and the clinician's role in addressing these factors to reduce their impact on the quality of healthcare	Race is a powerful factor in clinical communications: A study showed that physicians were 23% more verbally dominant in conversation and engaged in 33% less total conversation with Black patients than with NHW patients [21]

previous medical history/risk factors among Black women or population.

Table 4 provides a detailed overview of the peer-reviewed articles which targeted these specific areas. This table shows the gap in research that specifically targets the impact of structural racism and implicit bias on healthcare provider treatment plan, quality of MHC, and maternal outcomes of pregnant Black women.

Impacts of Structural Racism and Implicit Racial Bias on Pregnant Black Women

While many factors are associated with PRDs and PRCs, including increased maternal age, socioeconomic factors, environmental factors, and inadequate MHC access, evidence continues to indicate that race and racism are associated with an increased risk for maternal death, specifically among pregnant Black women [19]. Fourteen articles described how structural racism has shaped the realm of MHC for Black women throughout history and continues today. Extensive historical and socioeconomic factors dating back to slavery have played an intricate role in the current provision of MHC services to Black women [10]. The legacy of structural racism profoundly affects the daily lives of Black women and their experiences within the overall MHC system of the USA, leading to suboptimal social conditions such as inequitable dispersal of income and resources which compel Black women to reside in low-income/segregated neighborhoods comprised of low-quality housing, inadequate healthcare resources, increased exposure to crime and detrimental environmental pollutants [20]. The difficulties that Black women experience in relation to their housing opportunities, career options, or educational prospects have led to excess marginalization and inequality in MHC outcomes [10].

While these are influential factors, they do not completely explain the higher rate of PRDs among Black women [10]. Non-Hispanic Black women experience increased PRCs compared to NHW women, irrespective of their socioeconomic status and comorbidities [18]. A noteworthy example of this is in NYC, where NHB women with a college education/degree are approximately three times as likely to suffer a severe PRD or complication compared to NHW women with an education level lower than high school [10].

Although advanced maternal age increases the risk of PRD in women of all racial groups, this is exacerbated among pregnant Black women. A study conducted from 2006 to 2010 on PRDs in the USA revealed significant racial disparities in the MMR irrespective of maternal age [19]. The study indicated that pregnant Black teenagers were 1.4 times more likely to die compared to their NHW counterparts, pregnant Black women ages 20 to 24 were 2.8 times more likely to die, and Black women of all other age groups were more than 4 times more likely to die from PRCs

Table 4 Aims targeted in peer-reviewed articles

Article information		Aims targeted			
Author	Year	Address impact of structural racism/racism on Black women or population	Address impact of implicit racial bias on Black women or population	Examines or addresses disparities within maternal healthcare access/quality or medical treatment	Investigates how implicit racial biases of healthcare providers affect treatment plans and/or collection of accurate previous medical history/risk factors among Black women or population
Amankwaa et al	2018		X		
Bailey et al	2017	X	X		
Cerdeña et al	2020	X	X		
Coley et al	2018		X	X	
Collier & Molina	2019	X	X	X	
Cox	2018		X		
Fryer et al	2021			X	
Gadson et al	2017	X		X	
GBD 2015 Maternal Mortality Collaborators	2016			X	
Hardeman et al	2016	X	X		
Hirshberg & Srinivas	2017			X	
Hoffman et al	2016		X		X
Holdt-Somer et al	2017			X	
Howell & Ahmed	2019	X	X	X	
Howell et al	2018	X	X	X	
Howell & Zeitlin	2017		X	X	
Howell & Zeitlin	2017			X	
Jain & Moroz	2017		X		
Jain et al	2018		X	X	
Kozhimannil et al	2017	X		X	
Kramer et al	2019	X			
Lange et al	2017			X	
Liese et al	2019	X	X	X	
Lister et al	2019	X	X	X	
Mehra et al	2020	X		X	
Morris & Schulman	2014			X	X
Moroz et al	2018		X	X	
Oribhabor et al	2020		X		
Ozimek & Kilpatrick	2018			X	
Vilda et al	2019	X			
White & Stubblefield-Tave	2017	X	X		X

compared to NHW women [19]. These results highlight that apart from maternal age, the evaluation of how race plays a role in the cumulative risk for PRDs and PRCs over time should be prioritized.

Research has shown that racism is a powerful influence in clinical communications. For example, an analysis of the Listening to Mothers III survey consisting of more than 2000 participants revealed that pregnant Black women were more likely to report experiencing communication challenges while receiving their prenatal care services and experienced a higher rate of perceived racism and discrimination during their birth hospitalizations [18]. Another study of 458 participants revealed that physicians were 23% more verbally dominant in their conversations with Black patients compared to NHW patients [21]. The total time of interactions and conversations between physicians

and Black patients were also 33% shorter compared to NHW patients [21]. Poor patient-provider communication can lead to distrust in the medical system as well as patients delaying seeking care, whereas effective communication can lead to an increase in trust and patient engagement which may ultimately lead to a reduction in maternal mortality [22].

Healthcare providers must recognize and actively address the distrust that the Black community has in the MHC system based on historical and present-day discrimination [18]. For Black Americans, historic events such as the Tuskegee Syphilis Trial confirm that the healthcare community is untrustworthy. Providers must recognize that many pregnant Black women believe that their lives are not valued or respected [22]. Results from semi-structured interviews conducted among 24 pregnant Black women further demonstrated that racialized pregnancy stigmas led participants to perceive that society devalued their pregnancies [23]. Irrespective of their socioeconomic status, participants recalled detrimental assumptions that were made about their pregnancy in the healthcare, social services, or day-to-day settings, such as low-income status, marital status (assuming they were single mothers), and implied dependence on government resources [23]. Additionally, racialized pregnancy stigma was found to be extensive regarding the fertility of Black women, as participants recalled being advised on permanent contraceptive measures regardless of their total number of children [23]. The racialized stigmas that pregnant Black women experience within the healthcare setting are particularly detrimental as it may lead to reduced access to quality care and subpar healthcare interactions [23]. This contributes to an increased level of stress that may lead towards negative consequences for pregnant Black women, such as poor maternal outcomes [23]. Failure to address the complexities associated with the racial background of this target population will continue to perpetuate this vicious cycle of preventable maternal deaths.

Recent research from 18 studies validates the prevalence of implicit racial bias among MHCPs and the tremendous impact it has on pregnant Black women [13]. Implicit racial biases are deeply rooted behaviors that are unintentionally executed. Questionnaires completed by 29 Black women described discrepancies in their treatment and quality of prenatal care due to biased, racist, and prejudiced interactions with their providers [22]. Perceived racism, discrimination, and implicit bias are relevant factors which serve as barriers for pregnant Black women to actively engage in prenatal care and the MHC system. Evidence from a study conducted of 872 pregnant Black women demonstrated that delayed initiation of prenatal care was associated with experienced racism [24]. The results emphasized that while late prenatal care was correlated with personal experience of racism, advice from family/community members who experienced racism was pivotal in their decisions to initiate or avoid prenatal care [24].

Conversely, HCPs are often not aware that they are biased in their treatment of patients based on their race [22]. Research shows that HCPs tend to underestimate the degree of disparity in the outcomes between Black women and NHW women [25]. A survey to assess the knowledge and attitudes about disparities administered to 2700 members of the Society for Maternal–Fetal Medicine (SMFM) found that most providers considered themselves at least "somewhat knowledgeable" about healthcare outcome disparities, yet they underestimated the three-to-five-fold difference in maternal mortality risk among Black women compared to NHW women with identical complications [25]. A significant finding was the discrepancy between their eagerness to acknowledge disparities in their practices versus disclosing personal implicit bias. The survey revealed that 83% of the participants agreed that disparities impact their practice, whereas only 29% believed that implicit biases affect how they care for patients [17, 25]. Implicit biases and racism have caused Black women to disengage with the MHC system. There are many qualities they believe are lacking within the relationships and interactions they encounter with HCPs [22]. A qualitative study which included 22 NHB women highlighted that the qualities necessary for effective MHC include demonstrating quality patient-provider communication, providing continuity of care, treating women with respect, and delivering compassionate care [22]. Evidence from a research study of 204 NHB pregnant women and their HCPs demonstrated that patient-provider communication had a positive effect on their trust in providers and on prenatal care satisfaction [22]. Effective communication skills and cultural competence from providers are crucial factors that may improve patient trust, increase their engagement with prenatal care and result in better maternal outcomes, and reduce PRDs.

Disparities in Maternity Care and Medical Treatment for Black Women

The combination of implicit biases, stereotypical assumptions, and lack of cultural competence/sensitivity in maternity care and medical treatment generates adverse pregnancy outcomes for Black women. Nineteen articles described disparities in MHC, including the effect of implicit bias on medical treatment plans and collection of accurate previous medical history/risk factors, as further widening the disparity gap [14, 17]. A qualitative study of 19 Black/mixed raced Black women and 20 prenatal care providers compared the perceptions of prenatal care quality between Black mothers and prenatal care providers and determined that Black women vastly preferred providers who showed cultural competence/sensitivity [26]. Black mothers defined cultural competence as providers recognizing the issues and

disease conditions that specifically affect them, such as a medical history of sickle cell disease (SCD), the emotional challenges associated with the disease, and the prevalence of it within the Black community [26]. Participants believed that providers' lack of cultural competence contributed to implicit biases and incongruent provision of maternity care. Firsthand experiences have led the target population to the consensus that these are key factors that should be included in the thought processes and conversations of MHCPs [26]. Additionally, participants considered cultural competence as not prematurely judging and assuming their socioeconomic circumstances. This originated from participants with private insurance who experienced clinical visits in which providers made biased assumptions about their healthcare plans, often presuming it was Medicaid [26]. These actions led them to believe that an undesirable connotation was associated with Medicaid and that clarification of their type of insurance was essential to ensure quality care [26].

The Community Child Health Research Network Study was a multi-site prospective cohort study of 298 pregnant women from 2008 to 2012 of which 43% of the participants were Black women. A secondary analysis of this study demonstrated that Black women were nearly twice as likely to report prenatal care barriers compared to NHW women [27]. The most common barriers encountered by Black participants included challenges in obtaining prenatal care appointments, lack of transportation, inadequate privacy, and competing priorities [27]. While prenatal care is fundamental to reducing the rates of adverse pregnancy outcomes, unfortunately, it does not guarantee equitable birth outcomes [28]. Data has shown that regardless of early access to prenatal care, Black women continue to be at an increased risk for pregnancy-related adverse effects compared to their NHW counterparts [28]. Incongruent medical treatment during the child birthing process and inadequate pain management present as notable risk factors for these adverse pregnancy outcomes. Evidence continues to demonstrate discrepancies in the medical treatment that Black Americans receive compared to other racial groups, such as analgesic measures [22, 29]. For example, the notion that Black patients maintain a higher threshold for pain is a falsehood that dates to slavery, but it inappropriately continues to plague the perception of many medical providers [29]. A study of 222 medical students and residents demonstrated that many NHW medical students and residents endorse the belief of biological differences between Black and NHW individuals [29]. Additionally, the data collected showed that their false beliefs were specifically related to racial bias regarding pain perception, which thereby led to inadequate pain treatment plans and recommendations [29]. Childbirth has been noted as one of the most excruciating experiences, yet Black women are less likely to receive epidural analgesia compared to NHW women [15, 16]. Due to implicit biases, HCPs are more prone to disregard the complaints of inadequate pain relief among this target population compared to NHW women [15, 16].

During childbirth, OB-GYN providers perform episiotomies, which are surgical incisions made to reduce the risk of painful vaginal and perianal ruptures. Unfortunately, NHB Americans are less likely to receive this procedure compared to women in other racial groups [18]. Racial biases have been similarly documented around family planning, for example, NHB women who required chemotherapy for cancer were less likely to be advised about fertility preservation compared to NHW women [22]. Studies have also shown that the target population had a decreased likelihood of pregnancy induction compared to NHW women [18]. These suboptimal medical treatments increase the prospect for complications, and effective as well as safe medical treatment cannot be implemented without acknowledging the negative impact implicit biases and racism imposes on this community.

Obtaining an accurate previous medical history report as well as evaluating pregnant Black patients for overall risk for severe maternal morbidity (SMM) and end-organ damage due to chronic diseases are vital for effective and equitable MHC delivery [14, 17]. Cardiovascular diseases are chronic conditions that can lead to end-organ damage and play a crucial role in the MMR disparity among NHB women [17]. Though this is the leading cause of maternal death for all pregnant women, cardiovascular diseases are more common in Black women compared to other racial groups. For example, preeclampsia cases (hypertension after 20 weeks of pregnancy) occur at a higher rate among pregnant Black women compared to NHW with similar socioeconomic status [22]. Although ACOG highlights the use of race as a proxy for racism, a moderate risk factor for preeclampsia is noted as the Black race due to social factors as opposed to biologic factors [30]. To combat this issue, low-dose aspirin can be administered to this target population as a preventative measure [30]. However, it is important for HCPs to be cognizant of these recommendations to effectively evaluate and treat pregnant Black women.

A study conducted using the National Inpatient Sample dataset from the Healthcare Cost and Utilization Project from 2002 to 2014 demonstrated a statistically significant association between race and the risk of SMM during antepartum, intrapartum, and postpartum hospitalizations [31]. Specifically, the data results showed that irrespective of time, when compared to their NHW counterparts, Black women experience a significantly higher proportion of SMM [31]. The increased risk for PRCs within this community amplifies their overall risk for developing cardiovascular diseases as well [22]. When collecting medical history, HCPs should recognize that Black women may be more likely to

have pre-existing cardiovascular conditions, which increases their overall risk for maternal mortality [22].

Adequately, addressing the prenatal care barriers that pregnant Black women encounter should be accomplished in conjunction with providing equitable care to these patients. The lack of MHCP diversity can also contribute to disparities in MHC. Currently, Black Americans represent approximately 13.6% of the total U.S. population, of which approximately 20,886,013 are reported as Black women [32]. Yet, according to the AAMC, Black OB/GYN physicians represent only 10.7% (4133) of this specialty [33], which highlights a severe disparity gap in racially concordant maternal care for this target population. Addressing the underrepresentation of Black OB/GYN providers in this field is crucial, as racially concordant maternal care has been correlated with better-quality patient-provider communication as well as improved patient satisfaction [16].

Recommendations and Best Practices

The current literature provides recommendations and best practices for improving MHC to address MMR among Black women. This includes (1) implicit bias training for MHCPs, (2) racial disparity and cultural competence education for HCPs, (3) increase patient awareness and engagement with MHC system, (4) increase diversity among the MHC Workforce, and (5) best practices for quality care. Table 5 provides a summary of all the recommendations that this literature review will highlight.

Table 5 Recommendation and best practices

Recommendations and best practices	Summary
Implicit bias training for maternal healthcare providers	Many healthcare providers are not aware of how their personal implicit biases, lack of cultural competence, and communication differences affect their patient interactions, choices, and outcomes. Therefore, implicit bias training should be implemented by all healthcare institutions. Programs/courses should address the implications of racism, highlight the significant consequences of implicit biases, and describe its correlation with cultural competence/sensitivity and racial maternal outcome disparities
Racial disparity and cultural competence education for healthcare providers	The maternal healthcare system should implement interventions such as the "Reduction of Peripartum Racial and Ethnic Inequalities Patient Safety Kit" intentionally designed to combat and educate providers about racial and ethnic disparities in maternal healthcare. Cultural competency requires that maternal healthcare providers are cognizant of the diseases/conditions that primarily affect this target population to facilitate early diagnosis and treatment. Healthcare institutions should provide and require educational courses on exploring racial disparities and the relevance of cultural competency among providers
Increase patient awareness and engagement with maternal healthcare system	Maternal healthcare providers can raise awareness and educate pregnant Black patients effectively by empowering them to advocate on their own behalf. Providers should distribute and encourage patients to participate in patient satisfaction forms that address communication challenges or perceived racism/implicit bias encountered during clinical visits
Increase diversity among maternal healthcare workforce	Healthcare institutions should promote diversity and put forth actionable efforts towards diversifying their medically trained staff. It is essential that medical institutions be transparent and take accountability for their lack of diversity, educate medical staff about the importance of diversifying their establishment, create outreach programs calling for diversity at both the provider and student level, and implement coalitions based on employing more Black healthcare providers
Best practices for quality care	Implementation of the data-driven AIM program, specifically designed to combat the issues associated with maternal healthcare, which promotes national safety and quality improvement. Clinical protocols that require an algorithm for the identification of high-risk pregnancies, accurate medical history collection, and treatment protocols that are most appropriate for this target population

Implicit Bias Training for Maternal Healthcare Providers

Since many HCPs are not aware of how their personal implicit biases, lack of cultural competence, and communication differences affect their patient interactions, choices, and outcomes, healthcare institutions should implement implicit bias training. These programs/courses should address the implications of racism, highlight the significant consequences of implicit biases, and describe its correlation with cultural competence/sensitivity and racial maternal outcome disparities. Programs should target individuals who impact the MHC system on an interpersonal and community level, such as medical providers, medical students, nurses, hospital staff members, and policy makers [17].

Prior to beginning the courses, healthcare institutions should utilize tools that assist in gaining a precise understanding of the current level of awareness and knowledge their providers have about their implicit biases and the factors that cause exacerbation [25]. This will provide a baseline for progress tracking and will also highlight the specific areas that providers need additional training in to improve their interactions with Black women. The "Implicit Association Test" is a useful tool that HCPs can employ to raise their awareness about their specific implicit biases [21]. This tool has 14 comprehensive tests, free of cost, that specifically address race, age, disability, and sexuality [21]. Accessing resources such as the "Science Implicit Bias Review" from the Kirwan Institute can also provide clinicians with applicable methods that aid in shifting these negative perceptions [34].

Studies have found that implicit biases can be positively altered through training courses or methods that increase personal awareness about the negative effects bias imposes on patients [34]. During 2011–2015, Black women in New York City (NYC) were 12 times more likely to suffer from a PRD compared to NHW women. To mitigate this issue, in 2018, NYC funded a $12.8 million 5-year initiative to eliminate this disparity, which includes implicit bias training for medical staff at both private and public institutions [35, 36]. Cities with similar racial disparities in their MMR should emulate this initiative and plan for future implementation of implicit bias training courses for healthcare staff who impact maternal health outcomes.

Racial Disparity and Cultural Competence Education for Healthcare Providers

Providers have conflicting theories of how wide the maternal health disparity gap is between Black women and women in other racial groups. Therefore, the MHC system should implement interventions intentionally designed to improve knowledge and awareness of racial and ethnic disparities as a first step of addressing this critical issue [37]. The "Reduction of Peripartum Racial and Ethnic Inequalities Patient Safety Kit" created through the Alliance for Innovation on Maternal Health (AIM Program) implemented by the ACOG uses evidence-based practices and measures which hospitals as well as providers can apply to reduce MMR disparities. These measures include racial disparity education, cultural competence education, implicit bias training, and mutual decision-making methods for patients and providers. The safety bundle offers specific ways that providers can increase their knowledge regarding racial disparities in maternal health outcomes. Although this toolkit has been archived, the AIM program integrates its fundamental objective of respectful and equitable care as part of each safety bundle recommended for quality maternal healthcare services. Acquiring knowledge of this toolkit should be prioritized in all MHC institutions as it has been effective in reducing the MMR among Black women [40].

Cultural competency requires that MHCPs are cognizant of the diseases/conditions that primarily affect this target population to facilitate early diagnosis and treatment to prevent PRCs. Studies show that Black patients prefer providers who were equipped with these abilities [26]. Healthcare institutions should provide and require educational courses on racial disparities and cultural competency among providers. The SMFM website is readily accessible to the medical community and offers lecture series on the importance of providing culturally competent care. Providers can participate in simulation courses geared towards combatting these barriers (such as their SMFM critical care simulation course) [17]. Interactive didactic modalities and experiential learning can guide clinicians through the algorithms required to combat the barriers encountered within this population [17]. Ideally, gaining a baseline prior to incorporating these courses and tools would help track HCP progression and knowledge.

In addition to OB/GYN providers, clinicians such as cardiologists, internists, and family medicine specialists should receive racial disparity education that emphasizes the disease/conditions that disproportionately affect pregnant Black women, such as cardiovascular diseases [17, 22]. An integrative, coordinated approach will provide high-quality care and allow effective continuity of care from OB/GYN specialists to primary care clinicians to improve maternal health outcomes and benefit patients. Primary care providers should generate checklists that evaluate Black patients for cardiovascular disease risks at preconception to aid them in identifying those with substantial risk to prevent adverse pregnancy outcomes [17].

While cultural competence and racial disparity education is a necessary component for equitable healthcare, it is equally important to dismantle structural racism within the institution of medicine by shifting from race-based medicine

to race-conscious medicine at both the HCP and student level. Race-based medicine is the system by which research characterizes race as a critical, biological variable instead of recognizing that this is a social and power construct that emphasizes the biological inferiority of dark-skinned populations, such as Black Americans [38]. Practicing and teaching medicine in this manner creates an inevitable pathway towards inequitable healthcare by endorsing racial stereotyping among providers and students [38]. Cerdeña et al. highlight race-conscious medicine as an alternative approach that emphasizes racism, rather than race, as a key determinant of disease and health [38]. This practice encourages HCPs to focus on the data correlated to alleviating health inequities. Guidelines should be implemented to emphasize the barriers caused by structural racism as opposed to highlighting race as the cause of certain diseases and disparities in medicine. Pregnant Black women may benefit from interactions with HCPs that adopt an integrative approach by combining cultural competence with race-conscious medicine. Merging these methods will allow HCPs to communicate effectively with pregnant Black patients and will create a pathway towards trust and overall comfort.

Increase Patient Awareness and Engagement with Maternal Healthcare System

An effective way for MHCPs to raise awareness and educate pregnant Black patients is to empower them to advocate on their own behalf. Clinicians should provide them with the skills and confidence that promote patient engagement, which will lead to improvements in health outcomes and clinical experiences [25]. Additional methods to promote patient awareness (specifically regarding their increased risks of acquiring cardiovascular diseases) include designing patient education materials, making public service announcements, and hosting community-based events and services [17]. An adequate level of disparity education and cultural competence combined with a lack of implicit biases and racism among HCPs are key elements that will increase MHC engagement for this target population.

Healthcare institutions should compel providers to engage Black patients with respect and compassion while delivering care [22]. Providers should encourage patients to complete patient satisfaction forms that address communication challenges or perceived racism/implicit bias encountered during clinical visits. This will create a tracking system that highlights the areas of patient dissatisfaction and will hold providers accountable.

Additionally, increasing patient awareness about the high rates of maternal mortality among Black women is fundamental to allow patients the opportunity to actively engage in the decision-making processes of their birthing plans. Another component of the NYC initiative to reduce MMR includes increasing city-wide awareness of the issue, acknowledging the disparities seen in PRCs of women living in the city, and offering specific training to hospital staff members on how to identify and treat these conditions equitably [35, 36]. Implementing similar initiatives can be beneficial to other cities experiencing elevated racial disparities in their MMR.

Increase Diversity Among the Maternal Healthcare Workforce

All healthcare institutions should promote diversity in their medically trained OB/GYN staff. Medical institutions should be transparent and take accountability for their lack of diversity, educate medical staff about the importance of diversifying their establishment, create outreach programs calling for diversity at both the provider and medical student level, and implement coalitions based on employing more Black HCPs. Medical employers should collaborate with associations focused on recruiting and training Black providers such as The Society of Black Academic Surgeons, as a starting point for recruitment efforts. To uphold the mission of providing equitable healthcare to all patients, healthcare institutions must recognize the fundamental role of diversity.

Best Practices for Quality Care

Emerging evidence show location-specific disparities in the MMR of the USA, as regions with a larger population of Black births are shown to have exceedingly high MMRs, such as the District of Columbia [19]. Structural differences within hospitals have been shown to contribute to the racial and ethnic disparities observed, where lower quality and organizational methods subsequently lead to suboptimal MHC [39]. The AIM program was specifically designed to combat the issues associated with maternal healthcare. It is a data-driven program that promotes national safety and quality improvement [40]. States with high MMRs can follow the lead of California, where they have successfully applied the gold standard practices outlined in the AIM safety bundle and reduced maternal complications rate by 21% in 2 years [36]. Furthermore, to identify and mitigate disparities, the revised AIM safety bundles recommend stratification of the process and outcome metrics by race, ethnicity, and payor to aid in the overall efficacy of their implementation [40].

Accurate medical history collection is critical for successful pregnancy outcomes among Black women. Best practices include clinical protocols that require an algorithm for the identification of high-risk pregnancies, accurate medical history collection as well as treatment protocols that are most appropriate for this target population [14]. Postpartum treatment of chronic hypertension for Black women includes dietary modifications and anti-hypertensive agents

that demonstrate higher effectiveness for this population, such as calcium channel blockers and thiazide diuretics [14]. Providers should be aware that Black women have different therapeutic responses to anti-hypertensive agents and that a standardized approach can lead to inequitable care [14].

Discussion

Reducing the MMR among Black women demands a multifaceted approach that encompasses the patient, healthcare provider, and public health policy [22]. This review identified barriers that structural racism and implicit bias create for pregnant Black patients at the individual and institutional levels and their influence on inequitable MHC access and quality such as inadequate treatment plans and collection of previous medical history/risk factors. Results suggest that racism, a lack of cultural competency, and provider implicit bias leads to patient disengagement with the MHC system and affects effective provider-patient communication/interactions [22]. Prior reviews and research factors that contribute to the disparate Black MMRs are mounting; this is the first review to focus on both the impact of structural racism and implicit racial bias. Exploring the effects of these behaviors and system-level barriers contribute to the literature by identifying key recommendations across patients, providers, and health systems.

Some studies showed the correlation between structural racism or implicit bias with the risk of a PRC or PRD among Black women [10, 13, 14]. Others did not measure the impact. Therefore, more evidence-based research on both the impact of structural racism and implicit bias is required for healthcare institutions to implement effective policies and programs [10]. The review demonstrated that to date, maternal/prenatal care research has focused primarily on the adequacy of services rather than the quality of care [4]. Investigating the theories and indicators of quality care that may be important to pregnant Black women is essential for developing MHC policies that will provide both adequate and high-quality care that addresses the needs of Black women [4].

Distrust of HCPs is a barrier for the Black community and leads to decreased engagement with the overall healthcare system [24]. Although distrust has been researched in the context of other public health issues, more research is required in the context of prenatal and obstetric care. Further research should focus on factors that contribute to distrust and negatively impact prenatal care initiation such as healthcare provider biases, stereotyping, and subpar provider-patient communication due to inadequate cultural competence/sensitivity [18, 22]. This will provide public health leaders, MHCPs, and policy makers the opportunity to explore these issues and aid in creating the necessary pathways for MHC engagement among the target population.

Educating HCPs on the importance of acknowledging the historical and present contexts of structural racism, personal implicit racial biases, the necessity of MHC diversity, and best practices for collecting medical history is crucial to positively impact maternal health outcomes [10, 13, 14]. The recommendations provided also call for an increase in racial diversity and cultural competency among all providers who interact with pregnant Black patients. A new approach requiring a shift from race-based medicine to race-conscious medicine is also presented, as it highlights an integrative system by focusing on the impact of racism as opposed to race [38]. Emphasis is also made on the importance of raising awareness about the public health issue among providers and patients to create pathways that will lead to more patient engagement with the MHC system and overall birthing plans.

Additional public health policies and laws based on scientific evidence that address the racial disparities in MMRs are required. In 2019, Senator Kamala Harris (D-CA), now Vice President, introduced the Maternal Care Access and Reducing Emergencies (CARE) Act, which was reintroduced to Congress by Senator Kirsten E. Gillibrand in April 2021. The bill provides $50 million in funding to address and reduce the disproportionate MMRs and PRCs for Black women in the USA [36, 41]. The bill will establish implicit bias training for HCPs, a pregnancy medical home demonstration project in up to 10 states, and a joint Health and Human Services/National Academy of Medicine Study to assess incorporating bias recognition in clinical skills testing for accredited schools of allopathic medicine and accredited schools of osteopathic medicine.

Establishing similar policies that plan to implement changes at the medical provider, student, and national levels are imperative for MMR reduction in this community. The MOMS Act of 2021 was introduced by Representative Alma S. Adams, which advocates for maternal mortality and morbidity prevention [42]. The bill will establish the *Alli*ance for Innovation of Maternal (AIM) Health Program, a national organization that will promote data-driven maternal safety and quality improvement initiative grounded on evidence-based best practices to improve maternal safety and outcomes in the USA [42]. This aims to improve state-specific maternal health outcomes and decrease disparities in maternity and postpartum care to eliminate preventable maternal mortality and morbidity. Enactment of these bills are essential to improving the trajectory of Black MMRs.

Strengths and Limitations

This review combines data that explores explanations for the increasing MMR among Black women, such as the historical

and modern-day impact of structural racism, implicit bias, lack of diversity, and cultural competency in the MHC field. Findings shift the focus towards the fundamental role that racism plays in maternal medicine rather than the race and socioeconomic status of pregnant Black women, thereby addressing current research gaps. Additional strengths of this analysis include shifting accountability towards healthcare providers and institutions rather than patients, to acknowledge the power providers yield for successful birth outcomes. The review identifies how racism has impacted treatment protocols of pregnant Black women and the necessary changes required in this field.

However, this review has several limitations. Much of the literature on MMRs among Black women focuses on the effects of socioeconomic economic status, with limited research on the impact of healthcare provider implicit bias and structural racism on pregnant Black women living in the USA. Existing research gaps include disparitiy education and the multi-level impact of implicit bias and structural racism in the MHC system, specifically towards pregnant Black women. Assessing the provider-related factors that contribute to the disparities seen in maternal morbidity and mortality among Black women is essential to combat the MMR in their community [22]. Limitations were also found regarding the strategies necessary to effectively combat and dismantle structural racism within medical institutions. Overall, future research should also identify other social conditions that affect obstetric outcomes apart from healthcare access such as community factors, specifically residential segregation [9, 24].

Conclusions

The efforts to improve the quality of maternal care should be established on the foundation that MHC providers have the power, responsibility, and opportunity to create equity in MHC for Black women. Healthcare providers serve as partners throughout the course of pregnancy, and their relationship is fundamental towards successful birth outcomes, especially for Black women. Though patient identity and its correlation with historical and modern-day racism and discrimination may be perceived as beyond the scope of clinical practice, healthcare institutions and providers are pivotal towards dismantling racism in the MHC system. Increasing awareness of and addressing disparities, racism/implicit biases in clinical practice, promoting patient empowerment, cultural competence, and increasing healthcare staff diversity among fellow colleagues are essential first steps for reducing MMR inequities. Accomplishing these steps and enacting specific policies geared towards reducing the MMR of Black women will create the positive shift that this community urgently requires.

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Declarations

Competing Interests The authors declare no competing interests.

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