




Racial disparities in intrapartum care experiences and birth hospital characteristics

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ABSTRACT

Policymakers and researchers have posited intrapartum care as a potential mediator of racial inequities in perinatal outcomes. However, few studies have measured patient-centered quality of intrapartum care or explored differences by race. To address this gap, we developed a survey supplement using cognitive interviewing and administered it to a probability-based race-stratified random sample of people who recently gave birth in Wisconsin in 2020, including oversamples of non-Hispanic Black and Indigenous birthing people. We estimate overall and race-specific prevalences of intrapartum care experiences and use survey-weighted mixed effects ordinal and logistic regression to estimate differences in intrapartum care experiences by race/ethnicity and hospital characteristics. We find significant racial differences in the population prevalence of negative experiences of intrapartum care providers, including disrespect, lack of responsiveness, inclusion in decision-making about care, and pressure to use epidural analgesia. In unadjusted models, both non-Hispanic Indigenous (American Indian/Alaska Native) and non-Hispanic Black respondents had higher odds (than non-Hispanic White birthing people) of reporting several negative intrapartum experiences, including feeling disrespected by providers and experiencing a lower level of care team responsiveness. In adjusted models, Indigenous respondents had significantly higher odds of reporting that intrapartum care providers withheld information, showed disrespect, and were less responsive. Giving birth at a low birth-volume hospital was associated with higher odds of reporting greater participation in decision-making.

Conclusion: While all birthing people are entitled to respectful and person-centered care, in practice, Indigenous and Black birthing persons are more likely than their white counterparts to endure negative intrapartum experiences including disrespect and lack of responsiveness to their needs. Equitable implementation of person-centered care principles will require concerted efforts to institutionalize practices that preserve patient dignity and autonomy.

1. Introduction

Black-White differences in perinatal health in the United States are well-documented; for example, Black birthing people and their infants have higher rates of morbidities and mortality (Ely and Driscoll, 2020; Petersen et al., 2019; Rossen et al., 2020). Indigenous birthing people experience similar inequalities—compared to their White peers, they are

more likely to die or nearly die due to pregnancy-related causes (Leonard et al., 2019; Petersen et al., 2019), experience an infant death (Ely and Driscoll, 2020), and experience postpartum depression (Hayes et al., 2010). However, these differences have received less attention in the literature. Identifying the underlying causes of these racial disparities is critical to designing changes in policy and practice to achieve the Healthy People 2030 goals for pregnancy and childbirth

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(HealthyPeople.gov).

Disparities in perinatal and infant health outcomes may be driven in part by race- and ethnicity-based disparities in medical treatment. Existing evidence suggests that within the United States, healthcare is not equitable (invariable in quality across personal characteristics) and often not patient-centered (i.e., respectful and responsive to the individual.) For example, Black and Hispanic/Latinx patients are less likely than non-Hispanic (NH) White patients to receive effective medical interventions for diseases such as arthritis and cardiovascular disease (Saha et al., 2008) and for the treatment of pain (Green et al., 2003). Further, there is direct evidence that healthcare providers exhibit bias for NH White patients at the expense of their NH Black, Hispanic/Latinx, and Indigenous counterparts; researchers have demonstrated, via direct observations, that health care providers both hold implicit racial bias and have differing perceptions of patients and medical decision-making based on race using clinical vignettes (Puumala et al., 2016; Sabin et al., 2008).

There is growing evidence of racial disparities in perinatal care specifically (i.e., conception through postpartum). McLemore et al. found that birthing people of color frequently experience disrespect, stress, and unmet information needs during perinatal care encounters (McLemore et al., 2018). Another qualitative study revealed that among people of color, perceived racial discrimination figured prominently in birth hospitalization experiences and was associated with lower quality patient-provider communication (Janevic et al., 2020). While quantitative research on this phenomenon is scarce, the Listening to Mothers survey found that Black respondents were more likely than White respondents to report communication barriers and poor treatment during their birth hospitalization (Attanasio and Kozhimannil, 2015), and the Giving Voices to Mothers survey found more frequent reports of mistreatment during intrapartum care among Hispanic and NH Black patients than among White patients (Vedam et al., 2019).

These infrequently measured dimensions of care quality may be contributing to the intractable racial inequities in outcomes (Tunçalp et al., 2015). Obstetric racism, as conceptualized by Davis, refers to the abuse experienced by Black and other birthing people of color because of their identities as birthing people, making them vulnerable to obstetric violence, and as members of marginalized racial groups (Davis, 2019). The “Data to Save Moms Act,” one of the 12 bills introduced as part of the Black Maternal Omnibus Act, would review how current maternal health quality measures “promote safe, culturally congruent, patient-centered maternity care” and study maternal mortality and morbidity among Native American birthing people, who, like Black birthing people, experience higher rates of perinatal and infant morbidity and mortality due to historical and ongoing structural racism (Asher BlackDeer, 2023; Black Maternal Health Caucus). Nonetheless, we currently lack sufficient data to adequately assess how intrapartum care performs on these dimensions.

Without robust measures of intrapartum care experiences among birthing people, including the priority populations of Black and Indigenous people, researchers and policymakers will not have the necessary tools to 1) determine whether intrapartum care experiences are associated with negative outcomes, or to 2) make targeted, evidence-based investments in quality improvement efforts. This research advances possible measures of intrapartum care experiences and reports race-specific prevalence estimates for negative intrapartum experiences in a Midwest state.

In summary, extant research indicates that intrapartum care quality is multi-dimensional and likely varies by race/ethnicity, but population-level measures of birthing people’s experiences are lacking. Traditional data sources including medical records, hospital discharge data, and administrative records rarely, if ever, capture information on shared decision-making or other indicators of patient-centered care. Further, most survey data on this topic are drawn from non-probability samples, compromising researchers’ ability to generalize to the U.S. population with a known level of confidence (Cornesse et al., 2020). In addition, the

relatively small size of the Indigenous birthing population in the United States makes it costly to gather data from sufficiently large samples to adequately describe their experiences. Finally, because of persistent race-based residential segregation and economic inequality, births to Black and Indigenous people are unevenly distributed across birthing facilities (Perdue, 2012; Seitles, 1998), but population-level data on hospital-level differences in the treatment of birthing people are scarce. Importantly, hospital-level effects related to organizational policies, staffing, or other resources (Howell et al., 2016; Howell and Zeitlin, 2017; Saha et al., 2008), may contribute to racial differences in intrapartum care. For example, lower provider volume and treatment by obstetrics residents have been associated with higher risk of maternal complications (Asch et al., 2009; Janakiraman et al., 2011; Kyser et al., 2012). Therefore, in order to assess the drivers of differential quality of care by race, it is important to understand whether observed differences are driven by variability between hospitals, which result in differences by race due to racial birth distributions, or whether racial differences in treatment occur due to other factors such as provider bias.

The current study builds on prior research to estimate racial/ethnic differences in patient experiences of intrapartum care in a racially diverse, population-based random sample of Wisconsin birthing people. Analyses examine feelings of safety, disrespect, pressure to accept medical interventions, information sharing, and shared decision-making during intrapartum care. We secondarily explore whether birth hospital characteristics, including birth volume, percentage of Medicaid-paid births, and teaching hospital status, mediate the relationship between race/ethnicity of the birthing person and intrapartum experiences.

2. Materials and methods

2.1. Data

We used data from a supplement on intrapartum care included in the 2020 Wisconsin Pregnancy Risk Assessment Monitoring System (PRAMS), a survey of a monthly, race-stratified random sample of individuals who gave birth two to four months earlier (Shulman et al., 2018). The 2020 survey oversampled NH Black birthing people and included a census of Indigenous birthing people, based on racial self-identification on the birth record.

The census survey of Indigenous birthing people was made possible by partnership with tribal leadership and staff. The study team, which included staff from the Great Lakes Inter-Tribal Epidemiology Center, met with the Tribal Health Directors on multiple occasions before seeking and receiving a resolution in support of the research from the Great Lakes Inter-Tribal Council. The team also commissioned culturally specific art for the survey, and Tribal health clinics were instrumental in promoting participation in the survey.

Published measures of satisfaction with intrapartum care (Nilvér et al., 2017; Sawyer et al., 2013) were reviewed to identify recurring key constructs for inclusion in a special survey supplement: disrespect, safety, information sharing, shared decision-making, accompaniment, and pressure by providers to receive an intervention. A brief instrument based on these constructs was developed and tested using cognitive interviews, a widely used method for creating reliable questionnaires, that is questionnaires that yield reproducible results (Beatty and Willis, 2007). People who recently gave birth in Wisconsin were first asked the closed-ended survey questions for possible inclusion in PRAMS, followed by a series of structured, open-ended probes and follow-up questions designed to reveal comprehension, retrieval, and question-answering difficulties (Cognitive Interviewing: A Tool for Improving Questionnaire Design, 2005; Willis and Miller, 2011). Questions were finalized after two rounds of interviews (n = 21) and translated into Spanish by the first author, in consultation with a group of Latina community health workers. All study activities were approved by the University of Wisconsin-Madison Institutional Review Board.

The analytic sample included all respondents to the 2020 Wisconsin

PRAMS survey, which had an overall response rate of 50.6%, and a stratum-weighted response rate of 64.1%, which exceeded the 50% weighted response rate CDC threshold for inclusion in the national PRAMS data set. We excluded individuals who gave birth outside a hospital setting (e.g., in emergency departments, free-standing birth centers, at home, n = 29) because the dynamic between providers and birthing persons in these contexts differs significantly from the dynamic within a hospital setting. We also excluded respondents who did not respond to any birth care experience questions (n = 44). The final analytic sample includes 437 NH Indigenous respondents (i.e., identified as Native American/Alaska Native on the birth record), 338 NH Black respondents, 315 Hispanic respondents, 369 NH White respondents, and 157 respondents of other races (mainly Asian identities, but also individuals who reported multiple races or write-in racial identities) (n = 1619 total).

2.2. Measures

The intrapartum care survey supplement measured dimensions of how intrapartum care was experienced, capturing feelings of safety, pressure to accept medical interventions, disrespect, information sharing, and shared decision-making. The supplement questions were tested using cognitive interviewing ([Cognitive Interviewing: A Tool for Improving Questionnaire Design, 2005](#); [Willis and Miller, 2011](#)) with the target population. [Table 1](#) presents the questions and response options.

2.3. Covariates

Covariates which have been associated with birth experiences ([Henriksen et al., 2017](#)), were obtained from birth records: marital status, age (continuous, modeled with a natural cubic spline), education at the time of the birth (ordinal: less than high school; high school diploma or GED; some college; associates, bachelors, or graduate degree); parity (binary: first birth versus second or later birth); prenatal care adequacy (Kotelchuck index) ([Kotelchuck, 1994](#)); birth payer (Medicaid, private insurance, or other). Self-rated pre-pregnancy health (excellent, very good, good, fair, or poor) was reported on the PRAMS questionnaire. Hospital-level covariates include number of annual births (≤ 300 or > 300), percentage of Medicaid-paid births, and status as a teaching hospital for obstetric care in 2020. These covariates were chosen based on previous evidence that low birth volume at the facility and provider level and treatment by obstetric residents was associated with higher maternal complications ([Asch et al., 2009](#); [Janakiraman et al., 2011](#); [Kyser et al., 2012](#)). The percent of Medicaid-paid births was also included, as it correlates with differing levels of reimbursement received for perinatal care, which in turn affects the resources of the hospital.

2.4. Analysis

Analyses used sample weights constructed by the Centers for Disease Control and Prevention to account for the survey’s complex sampling scheme, non-coverage, and non-response ([Shulman et al., 2018](#)). Responses to intrapartum care questions were not imputed; otherwise, missing data were imputed using chained regression and predictive mean matching with five repetitions ([Heeringa et al., 2017](#)). Missingness of covariates was very low; the covariate with the most missing values was maternal education (missing n = 15, 0.9%). Both the odds estimates and standard errors were essentially unchanged between the complete case analysis and the imputed data analysis.

We first estimated overall and race-specific prevalence of measured dimensions of intrapartum care and standard errors. To interrogate

Table 1
Survey supplement to 2020 Wisconsin Pregnancy Risk Assessment Monitoring System.

Domain	Question text	Response options
	<i>For the next few questions think about your experience during your labor and delivery of your new baby.</i>	
Safety	Did you ever feel unsafe?	Yes No
Information access	Did you ever feel that any of your health care providers withheld information from you?	Yes No
Disrespect	Did you ever feel that any of your health care providers treated you with disrespect?	Yes No
Support	Were you able to have a support person of your choice with you during your labor and delivery?	Yes No
	<i>During the labor and delivery of your new baby ...</i>	
Provider responsiveness	... how responsive were your healthcare providers to your needs?	Not at all A little Somewhat Very Extremely
Shared decision-making	... how much did you and your health care providers work together to make decisions about your care?	Not at all A little Somewhat Quite a bit A great deal
	<i>The next questions are about how much your health care providers pressured you to accept certain medical procedures during your most recent labor and delivery.</i>	
Pressure to accept medical interventions	How much did your health care providers pressure you to induce labor with methods such as IV Pitocin or breaking the water bag on purpose?	Not at all A little Somewhat Quite a bit A great deal
	How much did your health care providers pressure you to use epidural analgesia?	Not at all A little Somewhat Quite a bit A great deal
	How much did your health care providers pressure you to have a cesarean delivery?	Not at all A little Somewhat Quite a bit A great deal

whether the COVID-19 pandemic might have substantively changed the observed prevalence of the experiences under study, we also compared reported experiences for births that took place before the pandemic started (January–February 2020) to those that occurred later in the year and used a Chi-square test to check for significant differences.

We built multivariable regression models adjusting for individual birthing person characteristics to estimate racial differences before and after adjusting for characteristics of the birthing hospital, modeling birthing hospital using random intercepts and modeling other covariates with fixed effects. Logistic regression was used for binary outcomes, and ordinal logistic regression for ordinal outcomes. Where the proportional odds assumption was violated, binary logistic regression results are presented for multiple binary cutoffs of the outcome.

Finally, we explored whether hospital characteristics mediated the relationship between the birthing person’s race and intrapartum experiences by examining two-way associations between race and hospital characteristics, race and intrapartum care outcomes, and hospital characteristics and intrapartum care outcomes, and by observing how

the regression coefficients for race changed when hospital characteristics were added to models adjusted for covariates. We hypothesized that hospital characteristics would mediate the relationship between birthing person race and intrapartum care experiences, wherein race would be significantly associated with giving birth at hospitals with particular characteristics due to geographic and economic segregation (Perdue, 2012; Seitles, 1998), and those hospital characteristics would shape intrapartum experiences. It is often not possible to directly test the assumptions for a mediation analysis (Celli, 2022); however, it is clear that birthing person race temporally precedes their giving birth at a particular hospital, and that hospital characteristics temporally precede the birthing person's experiences there. Since randomization of the exposure and the mediator was not possible, our analysis does rely on the assumption of no confounding among any of the three variables. All analyses were performed in SAS version 9.4 (SAS Institute Inc, Cary, NC).

3. Results

3.1. Sample and birth hospital characteristics

The mean age of the sample is 29.5 and the mean gestational age of infants is 38.6 weeks. Among respondents, 25.2% gave birth at an obstetric teaching hospital, 14.8% gave birth at a hospital with 300 or fewer births, and 11.9% gave birth at a hospital where Medicaid pays for more than 50% of births (See Table 2 for full sample characteristics.).

In Wisconsin in 2020, NH Indigenous birthing people were significantly over-represented at hospitals with low birth volume (34.9%, 95% CI: 31.4–38.3%; versus 12.3% overall, 95% CI: 9.5–15%). NH Black birthing people were significantly over-represented at obstetric teaching hospitals (49.3%, 95% CI: 43.9–54.7%; versus 24.4% overall, 95% CI:

21.3–27.3%) and at hospitals with greater than 50% Medicaid-paid births (39.2%, 95% CI: 33.8–44.5% versus 8.0% overall, 95% CI: 6.6–9.2%). NH Black, NH Indigenous, and Hispanic birthing people were more likely to have their births paid for by Medicaid than birthing people who identified as NH White or another race (78.6%, 67.9%, and 68.7% versus 25.0% and 39.7%, respectively, $p < 0.0001$) (See Table S1b).

3.2. Intrapartum care experiences

Over a third (39%; 95% CI 35–42%) of birthing people in Wisconsin in 2020 experienced at least one of the negative intrapartum experiences, but about half of Indigenous birthing people (46%, 95% CI 45–48%) and Black birthing people (51%, 95% CI 48–54%) reported at least one negative experience.

The most common negative intrapartum experiences were not being able to have a support person of choice present (12%, 95% CI 10–14%) and feeling extremely or very pressured to induce labor (12%; 95% CI 10–15%) or have a cesarean delivery (10%, 95% CI 8–13%). Interestingly, there were not significant differences in the prevalence of these experiences before and during the -COVID-19 pandemic (See supplementary materials).

While the overall prevalence estimates of each negative birthing experience were between 3 and 13%, these estimates mask significant racial inequities in birthing experiences. Specifically, NH Black, NH Indigenous, and Hispanic birthing people in Wisconsin were all significantly more likely to report feeling unsafe during their labor and delivery, compared with their NH white counterparts (the numerical majority of the Wisconsin birthing population).

NH Indigenous birthing people were almost twice as likely as NH white peers to be disrespected by their care providers (15%; 95% CI

Table 2
Study sample characteristics by race and ethnicity, Wisconsin Pregnancy Risk Assessment Monitoring System 2020.

	Total		Non-Hispanic Indigenous		Non-Hispanic Black		Hispanic		Non-Hispanic Other		Non-Hispanic White	
	%	n	%	n	%	n	%	n	%	n	%	n
Total		1619	27	437	20.9	338	19.5	315	9.7	157	22.8	369
Hospital Characteristics												
Obstetric teaching hospital	25.2	408	10.5	46	49.4	167	22.5	71	28.0	44	21.6	80
≤300 annual births	14.8	239	32.2	141	2.0	7	10.4	33	13.5	8	5.1	50
<25% Medicaid-paid births	20.9	338	15.9	54	13.9	61	18.4	58	31.9	118	29.9	47
>50% Medicaid-paid births	11.9	192	35.8	121	2.9	13	11.1	35	1.9	7	10.1	16
Not born in the U.S.	15.3	247	0.4	2	9.1	31	35.8	113	1.6	6	13.0	95
Birthing person age												
<25 years	22.8	369	25.1	110	31.6	107	29.5	93	10.5	39	12.7	20
>35 years	16.8	271	17.6	77	14.7	50	14.6	46	17.8	66	20.3	32
Birth mode												
Cesarean	28.9	467	31.5	138	29.2	99	30.7	97	25.7	95	24.2	38
Instrumental vaginal	3.3	54	2.0	9	2.0	7	4.1	13	4.3	16	5.7	9
Birth payer												
Medicaid	54.6	878	64.7	281	74.7	252	66.9	209	21.4	79	36.3	57
Private insurance	43.2	694	31.1	135	24.6	83	30.7	96	76.3	281	63.0	99
Intrapartum experiences												
Felt unsafe	5.6	91	6.8	30	7.6	26	7.3	23	1.6	6	3.8	6
Felt provider withheld info	7.7	124	9.8	43	9.3	31	7.9	25	5.1	19	3.9	6
Felt disrespected	10.0	161	14.2	62	11.0	37	9.2	29	6.7	25	5.1	8
Able to have support person	85.0	1362	84.5	367	79.6	266	84.9	266	89.8	329	85.9	134
Providers were 'not at all' or 'a little' responsive	3.9	63	4.1	18	7.6	26	3.1	10	1.9	7	1.2	2
'Not at all' or 'a little' participated in decisions about care	7.0	113	9.4	41	9.8	33	5.4	17	3.2	12	6.4	10
<i>Felt 'Extremely' or 'very'</i>												
... pressured to induce labor	13.1	211	12.8	56	15.9	54	12.0	38	12.7	47	10.1	16
... pressured to use epidural analgesia	6.3	102	4.3	19	10.0	34	8.9	28	2.7	10	7.0	11
... pressured into cesarean delivery	10.6	171	9.3	41	11.5	39	11.4	36	11.3	42	8.2	13

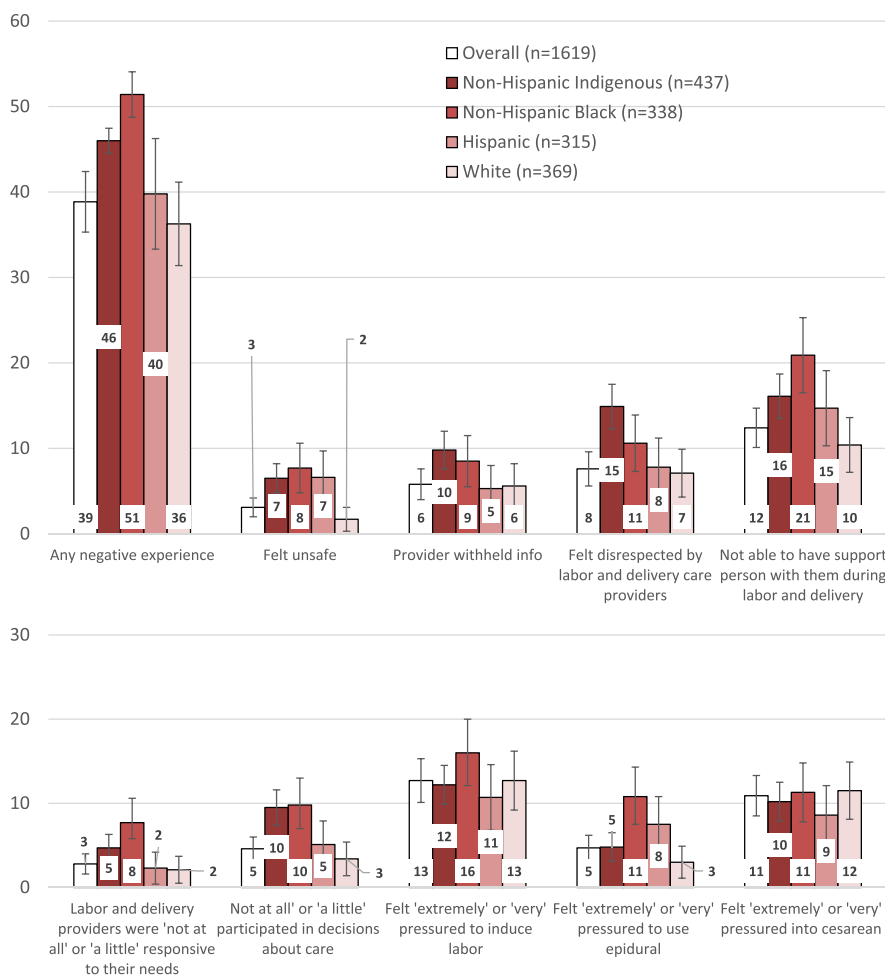


Fig. 1. Population prevalence of intrapartum care experiences by race, 2020 Wisconsin Pregnancy Risk Assessment Monitoring System.

12–18%, compared with 8%, 95% CI 6–10%), and more likely to say that their providers involved them in care-related decisions ‘not at all’ or ‘a little’ (10%; 95% CI 7–12% versus 3%, 1–5%). NH Black birthing people were also more likely than NH white birthing people to report that their providers involved them in decisions about their care ‘a little’ or ‘not at all’ (10%; 95% CI 7–13% versus 3%, 1–5%), and they were more likely to report that their providers were not responsive to their needs (8%, 95% CI 5–11% versus 2%, 95%CI 1–4%) (See Fig. 1). They were also more likely to be pressured to receive an epidural (11%, 95% CI 8–15% versus 3%, 95% CI 1–5%) and less likely to have their companion of choice present for their labor (79%, 95% CI 75–84% versus 90%, 95% CI 86–93%).

3.3. Adjusted regression

In models adjusted for hospital characteristics and other covariates (See Fig. 2), most differences between NH Indigenous and NH White birthing people remained significant. NH Indigenous race was associated with greater adjusted odds of feeling unsafe (aOR 5.5; 95% CI: 1.5–20.0), feeling that a provider withheld information (aOR 3.3; 95% CI: 1.4–7.7), feeling disrespected by providers (aOR 2.9, 95% CI: 1.5–5.6), and experiencing lower provider responsiveness (aOR 2.0, 95% CI: 1.2–3.2). In contrast, reported intrapartum care experiences of

birthing people who identified as NH Black were no longer significantly different from those of NH White birthing people in adjusted models. Finally, Hispanic respondents were less likely than NH White birthing people to report greater pressure to deliver by cesarean section (aOR 0.42, 95% CI: 0.19–0.94). There were no differences between non-Hispanic white birthing people and birthing people of other races that remained significant after adjustment.

Birth hospital characteristics were not consistently associated with intrapartum care experiences (See supplementary table Tables S3–S5). Moreover, we found no evidence that hospital characteristics mediate the relationship between race/ethnicity and intrapartum care experiences (See Table S6)—the regression coefficients for race in models adjusted for covariates remained essentially unchanged when hospital characteristics were introduced.

Because there is substantial evidence that the proportional odds assumption is violated for the ordinal logistic model of shared decision-making, we present results for models using a binary outcome with multiple cutoffs (see Fig. 3). In these models, relative to their NH White counterparts, NH Black birthing people were more likely to describe the extent of their participation in decisions about their care as both “a great deal” (OR: 2.2, 95% CI: 1.3–3.5) and “not at all” (OR: 3.3, 95% CI: 0.8–12.7) (see Fig. 3).

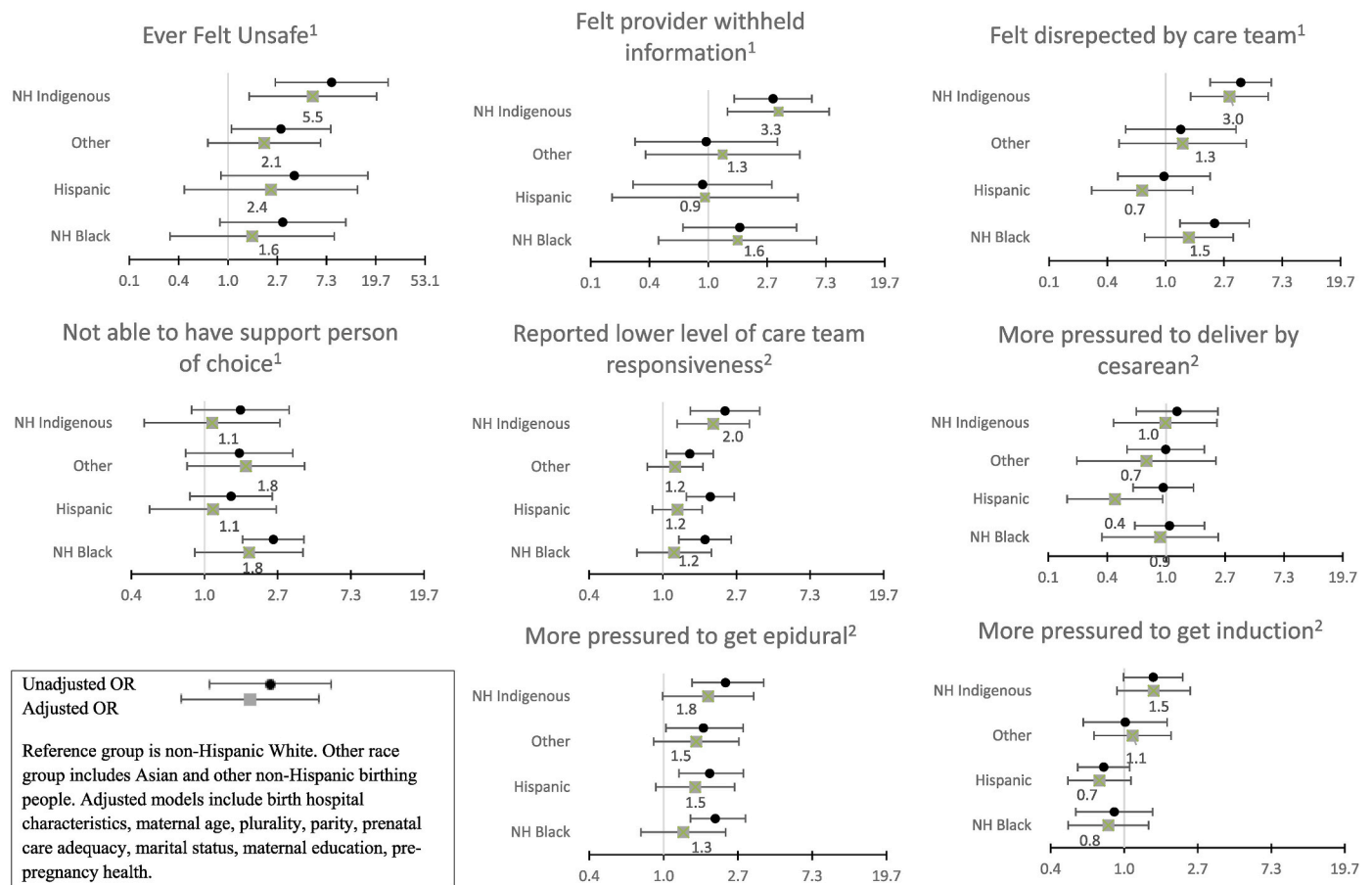


Fig. 2. Odds ratios of reporting intrapartum care experiences by race, logistic and ordinal logistic adjusted regression results.

3.4. Robustness checks

We found no significant differences in care experiences between respondents who gave birth before the COVID-19 pandemic (January–February 2020) and those who gave birth during the pandemic (March–December 2020) (Table S2). However, we cannot rule out the possibility that COVID-19 affected how sample members responded to the survey.

4. Discussion

This study is one of the first to provide population estimates of negative experiences of intrapartum care and to our knowledge the first to include estimates of these experiences for Indigenous birthing people. Our novel data show that the prevalence of negative experiences is significantly higher in the populations most affected by racial inequities in perinatal health (non-Hispanic Black and Indigenous birthing people), compared with the majority white population of Wisconsin. We present evidence that in Wisconsin, NH Indigenous birthing people are more likely than their NH White peers to have negative intrapartum care experiences and that these differences remain when individual-level demographic and medical characteristics and birth hospital characteristics are held constant.

NH Black birthing people are also more likely than their NH White counterparts to have negative intrapartum care experiences, however, these differences disappear when other factors are held constant. We did not find any evidence that hospital characteristics mediate the identified relationships between race/ethnicity and intrapartum care experience.

4.1. Results in the context of what is known

The relatively poorer intrapartum care among Indigenous birthing people observed in this study is consistent with previous research and reports that hospital policies may disproportionately affect or be inequitably applied to Indigenous birthing people (Altman et al., 2021; Furlow, 2020). The differences documented in this study could reflect racial discrimination, features of the perinatal health system that uniquely affect Indigenous birthing people, or some combination of these factors. Surveys of Indigenous (American Indian) healthcare users have found a high prevalence of perceived discrimination and racial microaggressions, which are associated with later healthcare utilization and some indicators of physical and mental health (Gonzales et al., 2014; Walls et al., 2015).

Wisconsin is home to 11 federally recognized tribal nations and while most of these tribes have their own health systems that offer prenatal care, none of the tribal health clinics in the state offer labor and delivery care. Therefore, birthing people who receive prenatal care through their local tribal health clinic may be unfamiliar with the birth hospital setting, providers, or both. Previous research indicates that having the same provider from prenatal care through delivery is associated with higher satisfaction with healthcare (Forster et al., 2016). Given this context, the finding of more negative intrapartum experiences among Indigenous birthing people might be partly due to lack of provider continuity.

Results also show that NH Black birthing people are more likely than NH White birthing people to report shortcomings in the interpersonal aspects of their intrapartum care, including lack of respect and responsiveness to patient needs. The lower quality of treatment among NH Black birthing people is consistent with previous research, which has

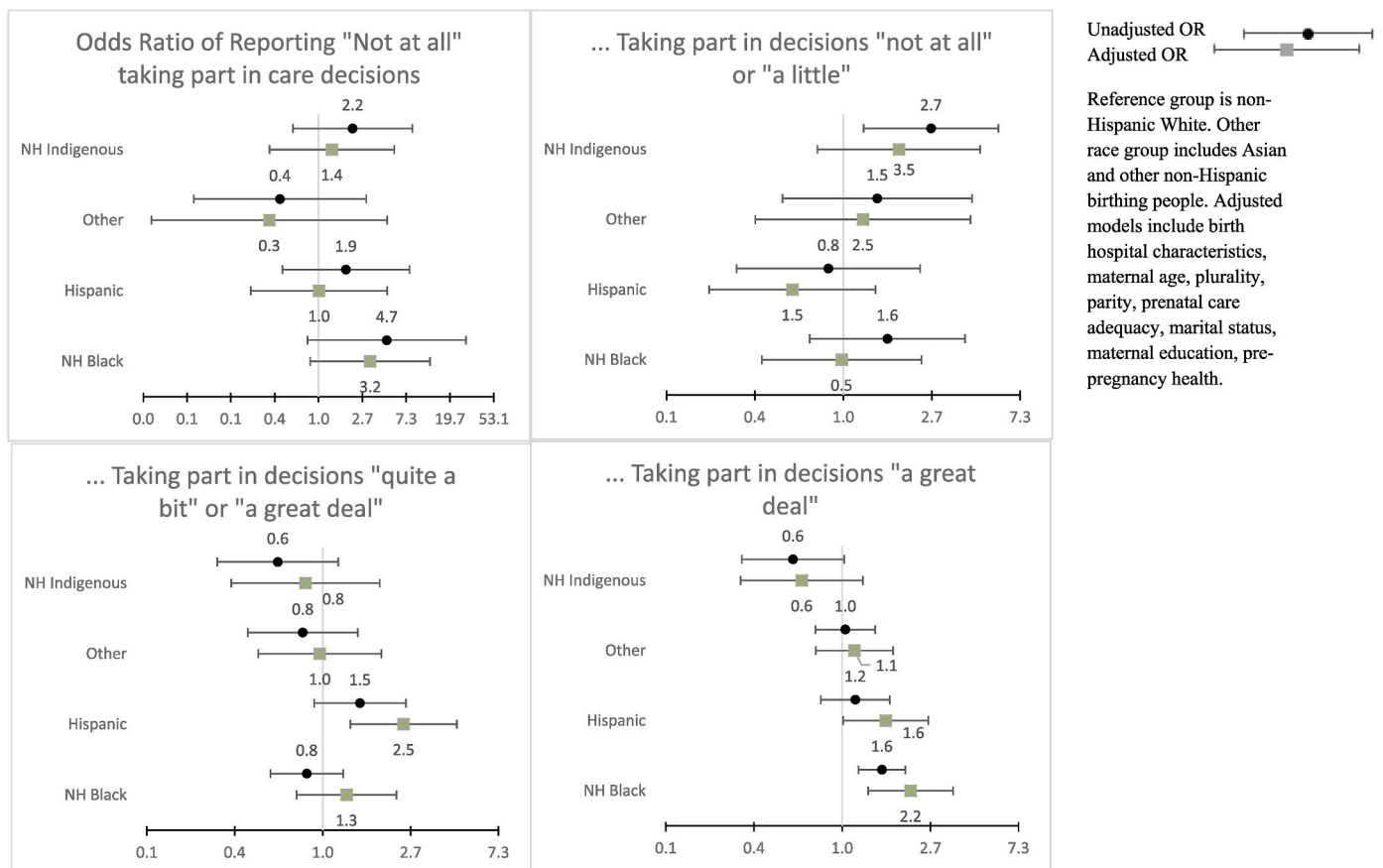


Fig. 3. Odds ratios of reporting differing levels of participation in intrapartum care decision by race (reference group: Non-Hispanic White), logistic regression results with multiple cutoffs.

found lower levels of information sharing and higher levels of disrespect among this group (Attanasio and Kozhimannil, 2015; McLemore et al., 2018; Vedam et al., 2019). These differences are attenuated in adjusted models, suggesting that other covariates, such as type of insurance coverage, may contribute to these racial differences. Nonetheless, these individual factors are shaped by structural racism, which racially patterns access to resources, and the disrespect and lack of responsiveness in care provided to NH Black birthing people may still contribute to preventable morbidity or mortality and negative postpartum mental health outcomes (Bryant et al., 2010; Ely and Driscoll, 2020).

Regarding birthing persons' experiences of shared decision-making, results were mixed, with some racial groups' reports falling toward the extremes of the response scale other groups' reports clustering in the middle. These patterns could reflect either a difference in how members of different racial groups use the scale or a somewhat polarized pattern of decision-making experiences. Importantly, the PRAMS questionnaire did not capture the birthing person's preferred level of involvement in decision-making, and decision-making tools should account for patients' values and preferences about their role in decision-making.

We did not find evidence that birth hospital characteristics are significantly associated with intrapartum care experiences, nor that they mediate racial differences in these experiences in Wisconsin. Nonetheless, the lack of a statistically significant result may be due to data limitations (lack of variability in hospital characteristics by race) and may not hold for other states. The differences between NH Indigenous and NH White intrapartum experiences persist after adjusting for potential hospital clustering and birth hospital characteristics, suggesting that other factors, such as provider-level bias, may be driving these differences.

Regardless of whether racial differences in treatment are driven by

provider bias or hospital-level factors, the development and adoption of clinical tools that promote patient-centered care principles could mitigate, if not eliminate, provider bias and assure equitable access to information and autonomy. Robust information sharing processes must transcend the systemic barriers to provider-patient communication, including lack of continuity of care and system incentives to biased care counseling. They must also be adaptable to diverse communication preferences, cultural norms, and values.

However, quality initiatives will have limited success without addressing the structural factors structural factors both inside and outside the birth hospital that shape interactions between birthing people and their providers. For example, the scheduling of hospital providers (i.e. nurse shifts, obstetrician and midwife call schedules), often mean that birthing people are attended by providers they had no relationship with before their labor, and they may have multiple sets of providers during their labor and delivery. The tort law policy context is associated with provider behavior, specifically with procedure use, as well as with complications of labor (Currie and MacLeod, 2008). Other structural factors, like time constraints due to staffing, charting requirements, and hospital culture, can affect the quality of provider-patient communication. Medical training likely also plays an important role in creating and perpetuating harmful norms in communication (van der Waal et al., 2021).

While these factors affect all people who give birth in U.S. hospitals, they may have a disproportionate impact on Black and Indigenous birthing people. For example, previous research has documented medical provider bias against Black and Indigenous people (Maina et al., 2018) and has associated this bias with racial stereotyping, including likelihood to be "compliant" with follow-up care (Chapman et al., 2013; Cooper et al., 2012; FitzGerald and Hurst, 2017), which could in turn

affect a provider's communication with a patient they just met or their mental calculations about likely outcomes and medical liability.

4.2. Strengths and limitations

We use a robust and racially diverse population-based sample of birthing people to estimate the prevalence of intrapartum care experiences in Wisconsin. While all survey research is potentially subject to bias due to non-response, it is only one source of total survey error, and sample representativeness is likely a better indicator of data quality than response rate (Biemer and Lars, 2003). Due to the stratified sample strategy used in Wisconsin PRAMS and the complex survey weighting using over twenty characteristics from the birth certificate, the weighted sample in our study closely approximates the study population. Although our results may not be generalizable to other U.S. states, our prevalence estimates align with previously published national estimates (Declercq et al., 2014), and Wisconsin is the site of persistent racial inequities in perinatal health, making it a good test case for studying and intervening on the drivers of racial inequities.

While we were able to adjust for many individual-level covariates and a few hospital-level characteristics, there were several unmeasured factors that we were not able to account for, and which should be considered in future research. For example, continuity of care and cultural congruence of care providers have both been associated with care satisfaction (Forster et al., 2016; Moore et al., 2023) could be important mediators that shape experiences of care. There is also evidence that different models of care (i.e. midwife-led versus obstetrician-led) yield different clinical and experiential results (Declercq et al., 2020; Vedam et al., 2019), so provider type and models of care should also be considered for future research. Finally, we were not able to measure provider bias or obstetric racism in our study, but our results suggest that further investigation of these factors as possible drivers of within-hospital racial disparities is warranted.

In addition, all Wisconsin PRAMS respondents were asked questions about pressure to receive medical interventions during their labor and delivery, regardless of mode of delivery. While we adjust for final mode of delivery in the final analyses, we are not able to assess whether the respondents had a planned cesarean or a trial of labor. Therefore, these survey items may have had limited relevance for respondents who had planned cesareans or very short labor durations, but they were not able to indicate that the item was "not applicable." There were only 3 missing values on these items, indicating that most people with planned cesareans responded to the questions anyway, introducing noise to the data. Respondents with planned cesareans may have responded thinking of their experiences with providers before their planned delivery or simply marked "not at all" if they didn't experience pressure on the day of their delivery. Since it is not possible to assess how those with planned cesareans responded to these questions, the results related to these outcomes should be interpreted with caution, and future work should distinguish between those with trials of labor and those with planned cesarean deliveries.

4.3. Conclusions

Having appropriate data to understand and measure changes in intrapartum experiences will be critical for informing policy initiatives to address racial inequities in mental and physical health outcomes. Partnerships with tribal leaders to collect data for Indigenous populations are essential to generating inclusive data while respecting tribal sovereignty. Moreover, measures like those used in the current study should be incorporated into national surveys and health system quality improvement efforts.

The prevalence of negative intrapartum experiences in our study were similar to national estimates from the 2011–2012 Listening to Mothers survey (Declercq et al., 2014), suggesting little or no progress in provision of person-centered intrapartum care over the past decade.

One contributor to the lack of progress is likely the absence of consistent measures that could inform policy and practice. Adopting measures like those used in the current study or others designed to measure obstetric racism specifically (Scott and Davis, 2021) into ongoing data collection efforts, including national surveys and health system quality improvement and evaluation efforts, will be necessary to establish a benchmark for the current state of intrapartum care, inform targeted policy and practice interventions, and measure progress on the quality and equity of intrapartum care. One opportunity for leveraging such measures is the new "Birthing-friendly" hospital designation offering increased reimbursement from the Centers for Medicare and Medicaid Services. While current measures for the designation reflect actions that the hospital has taken to advance equity, it is critical to also measure what the impact of these actions is on birthing people, vis a vis the respect and autonomy they experience during intrapartum care. These patient-centered measures add important information, which, taken in tandem with existing patient safety metrics, paint a more complete picture of care quality and expand the field of possible solutions to the maternal health equity crisis in the United States.

CRedit authorship contribution statement

Fiona Weeks: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization. **Rebecca Myerson:** Writing – review & editing, Methodology. **Ronald Gangnon:** Writing – review & editing, Methodology. **Jennifer Dykema:** Writing – review & editing, Investigation. **Candi Cornelius:** Writing – review & editing. **Tiffany Green:** Writing – review & editing, Conceptualization.

Ethical statement

This research was reviewed by the University of Wisconsin-Madison Institutional Review Board and determined to not constitute human subjects research, since it only involved secondary analysis of existing data. The data collection was a separate study and was overseen and approved by the University of Wisconsin-Madison Institutional Review Board.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2025.117720>.

Data availability

The authors do not have permission to share data.

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