



# Race/Ethnicity and Perception of Care: Does Patient–Provider Concordance Matter?

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## Abstract

**Objective** We determine whether racial concordance between postpartum patients and obstetric providers (dyads) impacts the perception of quality of care among people undergoing intrapartum obstetrical procedures.

**Study Design** This is a prospective cohort study of postpartum people who underwent operative vaginal or cesarean deliveries in the second stage of labor. Participants were asked to identify the race of their primary provider and complete the Interpersonal Processes of Care (IPC) survey, which assesses communication, patient-centered decision-making, and interpersonal style. The association of participant-identified patient–provider racial concordance with IPC scores was determined. The primary outcome was the IPC subdomain related to discrimination, and secondary outcomes included other IPC subdomains and IPC results by participant racial identity (Black, LatinX vs. White). Sociodemographic and biomedical data were extracted from the medical record. Bivariable analyses were performed.

**Results** Of 168 patients who were approached, 107 (63.6%) agreed to participate and 87 (81.3%) completed the survey. The majority ( $n = 49$ ) identified a racially discordant provider. Participants in racially concordant dyads were more likely to be older, White, use English as a primary language, complete a higher degree of education, and have a higher household income when compared with racially discordant dyads. Intrapartum outcomes were not significantly different between groups. Median IPC subtest scores were not significantly different between groups or between racial/ethnic identities.

**Conclusion** There were no significant differences in perceptions of IPC between racially concordant versus discordant dyads. However, there is an ongoing need to further clarify measures of quality of care in high-acuity obstetrical situations to remediate ongoing racial and ethnic disparities in adverse health outcomes.

## Keywords

- ▶ racial concordance
- ▶ obstetrics
- ▶ patient and provider
- ▶ discordant dyads

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## Key Points

- Racial concordance between patient and clinician has been associated with improved quality of care.
- There are limited data on racial concordance and perceptions of operative obstetrical care (e.g., operative vaginal delivery).
- Racial concordance was not associated with differences in patient-perceived quality of care associated with operative obstetrics.

Significant racial and ethnic disparities in maternal morbidity and mortality persist in the United States. Black pregnant people are three to four times more likely to die from pregnancy-related causes than White women.<sup>1</sup> Hispanics/Latinx pregnant people (herein referred to as Hispanics) have been shown to have higher rates of severe maternal morbidity and are more likely to die from hypertensive diseases in pregnancy.<sup>2,3</sup>

The various dimensions of structural racism are a foundational cause of health disparities, impacting health at various levels.<sup>4</sup> One specific area where structural racism has an appreciable effect is at the level of the patient-provider encounter.<sup>5,6</sup> Physician-held implicit biases<sup>7</sup> and negative racial stereotypes influence attitudes toward and expectations of patients and, most, notably providers' diagnostic and treatment decisions.<sup>8</sup> A reduction in bias with cultural and linguistic congruency in racially and ethnically concordant patient-provider dyads may increase trust, the basis of quality care.

Currently, research into the effect of racial concordance on experiences and outcomes of birthing mothers is lacking. Given trends in the role of racial concordance in various fields and the accentuation of the racial concordance benefit in complex medical cases,<sup>9,10</sup> we seek to explore the effect of racial and ethnic concordance on the experiences of birthing people undergoing obstetrical procedures in the second stage of labor (e.g., operative vaginal delivery or intrapartum cesarean delivery). The rationale for studying individuals undergoing operative interventions in the second stage is that these individuals required unplanned, time-sensitive counseling with direct impacts on maternal and, potentially, neonatal health. Thus, optimizing care in this setting requires high-quality communication skills from a clinician and trust from the patient. We hypothesize that individuals cared for by providers belonging to their perceived same racial group (i.e., racial concordance between individual and their obstetric provider) will report higher levels of satisfaction in their care compared with racially discordant counterparts.

## Materials and Methods

This is a prospective observational cohort of newly postpartum people who underwent operative vaginal delivery or cesarean delivery in the second stage of labor at Northwestern Memorial Hospital in Chicago, IL. This hospital is a quaternary care center in which approximately 12,000 individuals give birth each year, including a socioeconomically and racially diverse patient population. Over 150 obstetric providers participate in labor and delivery care, including

obstetrics and gynecology residents, maternal-fetal medicine fellows, obstetrics and gynecology specialty faculty, maternal-fetal medicine subspecialty faculty, and certified nurse midwives. When patients require operative interventions in the second stage of labor, any of these individuals may be the primary person responsible for counseling and consenting for intervention, although attending physicians are involved in the care of all patients.

All postpartum individuals aged  $\geq 18$  years old who spoke English or Spanish and who underwent an operative vaginal delivery or cesarean section in the second stage were eligible for participation in the study. Each participant was identified by trained research assistants during the postpartum hospitalization. Patients who did not speak English were approached by a certified bilingual research assistant, and all study protocols were conducted in the participant's language of choice. Biomedical and birth outcome data were abstracted from the electronic medical record. Participants completed a survey collecting sociodemographic information, as well as self-perceived race or ethnicity. As part of the survey, participants were asked to identify their primary obstetrician during the intrapartum period and to assign the individual a particular race or ethnicity. Given that our study was conducted in an academic center, resident and fellow physicians may play an equal or even greater role in intrapartum counseling. Patients may not be aware of the academic hierarchy, and thus, we felt that it was important not to direct participants to select their attending obstetrician. Rather, they were instructed to complete the survey based on who they felt provided the bulk of their intrapartum counseling, regardless of training level or practice type.

Participants were also administered the modified Interpersonal Processes of Care (IPC) survey, a 29-item instrument that assesses several subdomains of communication, patient-centered decision-making, and interpersonal style.<sup>11</sup> It has been validated in both English and Spanish, various racial groups and primarily primary care (i.e., nonobstetric) settings to assess factors that contribute to health outcomes and examine the impact of quality improvement endeavors. The IPC survey is scored "so that higher scores indicate higher frequency of the labeled interpersonal process, which means that higher scores sometimes indicate better processes (e.g., decided together) and sometimes indicate worse processes (e.g., lack of clarity"<sup>11</sup>; **Supplementary Appendix A** [available in the online version]). Subdomains include those of communication (hurried communication, elicited concerns, explained results), decision-making (patient-centered decision-making), and interpersonal style (compassionate, respectful, discriminated, and disrespectful nursing staff).<sup>11</sup>

| Variable                                     | Concordant (n = 38) | Discordant (n = 49) | p-Value |
|--|---------------------|---------------------|---------|
| <b>Age (y)</b>                               |                     |                     |         |
| 18–24  | 1 (2.6)             | 12 (24.5)           | 0.017   |
| 25–29  | 8 (21.1)            | 10 (20.4)           |         |
| 30–35  | 22 (57.9)           | 17 (34.7)           |         |
| 36–40  | 7 (18.4)            | 8 (16.3)            |         |
| 40 or older                                  | 0 (0.0)             | 2 (4.1)             |         |
| <b>Race/ethnicity</b>                        |                     |                     |         |
| White  | 29 (76.3)           | 5 (11.4)            | <0.001  |
| Black  | 5 (13.2)            | 10 (22.7)           |         |
| LatinX                                       | 3 (7.9)             | 20 (45.5)           |         |
| Asian  | 1 (2.6)             | 7 (15.9)            |         |
| Pacific Islander                             | 0 (0.0)             | 2 (4.5)             |         |
| <b>Participant primary language</b>          |                     |                     |         |
| English                                      | 35 (97.2)           | 40 (83.3)           | 0.071   |
| Spanish                                      | 1 (2.8)             | 8 (16.7)            |         |
| <b>Education</b>                             |                     |                     |         |
| High school or less                          | 4 (10.5)            | 10 (20.4)           | 0.03    |
| Some college                                 | 4 (10.5)            | 14 (28.6)           |         |
| College or advanced degree                   | 30 (78.9)           | 25 (51.0)           |         |
| <b>Income (\$)</b>                           |                     |                     |         |
| <25,000                                      | 2 (5.3)             | 11 (22.4)           | 0.002   |
| 25,001–40,000                                | 7 (18.4)            | 9 (18.4)            |         |
| 40,001–75,000                                | 2 (5.3)             | 12 (24.5)           |         |
| ≥75,000 or more                              | 27 (71.1)           | 17 (34.7)           |         |
| <b>Insurance type</b>                        |                     |                     |         |
| Private payor                                | 32 (84.2)           | 27 (55.1)           | 0.005   |
| Government payor                             | 6 (15.8)            | 22 (44.9)           |         |
| <b>Provider race/ethnicity</b>               |                     |                     |         |
| White  | 29 (78.4)           | 39 (83.0)           | 0.273   |
| Black  | 5 (13.5)            | 4 (8.5)             |         |
| LatinX                                       | 2 (5.4)             | 0 (0.0)             |         |
| Asian  | 1 (2.7)             | 4 (8.5)             |         |
| <b>Language provider used</b>                |                     |                     |         |
| English                                      | 38 (100.0)          | 47 (95.9)           | 0.502   |
| Spanish                                      | 0 (0.0)             | 2 (4.1)             |         |
| Interpreter used by provider (if applicable) | 0 (0.0)             | 2 (4.1)             | 0.502   |
| <b>Participant language preference</b>       |                     |                     |         |
| English                                      | 37 (97.4)           | 46 (93.9)           | 0.629   |
| Spanish                                      | 1 (2.6)             | 3 (6.1)             |         |

Note: Data displayed as n (%).

The exposure was participant-assigned racial concordance or discordance with their obstetrical provider (i.e., participant–physician dyad). The primary outcome was the median IPC subscore focused on participant assessment of discrimination due to race or ethnicity. Secondary outcomes

were all median IPC domain subscores. Assuming an  $\alpha$  of 0.05 and 80% power, we estimated a need for 74 persons (37 in each group) to detect a difference of 0.3 points on the IPC survey between racially concordant versus discordant groups. Bivariable analyses were performed using chi-square or Fisher's exact test, for categorical variables, and *t*-test or Wilcoxon rank-sum test, for continuous variables. Statistical significance was set at  $p < 0.05$ . All data were analyzed in R (version 3.6.2). IRB approval was obtained from Northwestern University (STU00212861).

## Results

In total, 168 patients were approached, 107 (63.6%) agreed to participate, and 87 (81.3%) completed the survey ( $n = 49$  racially discordant,  $n = 38$  concordant). The final sample included 87 individuals, of which 49 were in racially discordant dyads and 38 were in racially concordant dyads.

When compared with racially discordant dyads, participants in racially concordant dyads were more likely to identify as White (76.3 vs. 11.4%,  $p \leq 0.001$ ), be older ( $p = 0.017$ ), have completed a higher degree of education ( $p = 0.03$ ), and have a higher household income ( $p = 0.002$ ; [Table 1](#)). Intrapartum characteristics, including mode of delivery, were not significantly different between groups ([Table 2](#)).

No significant difference was noted between racially concordant and discordant dyads in the IPC survey domains of communication, shared decision-making, interpersonal style (compassion and respect), or discrimination ([Table 3](#)). Importantly, participants reported a generally a favorable perception toward lack of discrimination, as well as communication, patient-centered decision-making, and interpersonal style. In the secondary analysis comparing participants by race/ethnicity, there was no statistical significance in IPC survey results between groups ([Table 4](#)).

## Discussion

We found that older, White, English-speaking persons with higher degrees of education and income were more likely to be racially concordant with their providers. In contrast to our hypothesis, we identified no meaningful differences in patient-reported IPC by racial concordance or self-reported race/ethnicity.

Previous data, mostly derived from the nonobstetric literature, emphasize the role of racial concordance in different health outcomes. White, Black, Hispanic, and Asian patients who were racially/ethnically concordant with their provider reported greater satisfaction with their physician compared with discordant groups.<sup>12</sup> Racial and ethnic concordance was associated with an increased likelihood of seeking preventive care,<sup>13</sup> using a higher volume of health services,<sup>12</sup> and a lower likelihood of postponing or delaying care in Black and Hispanic patients.<sup>14</sup> Within the realm of obstetrics, Fryer et al demonstrate that under the care of Black physicians, the mortality rate for Black newborns is significantly lower as compared with those cared for by White physicians.<sup>10</sup>

| Variable                            | Concordant (n = 38) | Discordant (n = 49) | p-Value |
|-------------------------------------|---------------------|---------------------|---------|
| <b>BMI (kg/m<sup>2</sup>)</b>       |                     |                     |         |
| 18.5–25                             | 2 (5.3)             | 3 (6.1)             | 0.255   |
| 25–30                               | 18 (47.4)           | 14 (28.6)           |         |
| 30–35                               | 11 (28.9)           | 13 (26.5)           |         |
| 35–40                               | 5 (13.2)            | 11 (22.4)           |         |
| 40+                                 | 2 (5.3)             | 8 (16.3)            |         |
| Nulliparous                         | 33 (86.8)           | 32 (65.3)           | 0.026   |
| <b>Mode of delivery</b>             |                     |                     |         |
| Cesarean delivery                   | 25 (65.8)           | 32 (65.3)           | 1.0     |
| Operative                           | 13 (34.2)           | 17 (34.7)           | 0.215   |
| Primary cesarean delivery           | 24 (96.0)           | 27 (84.4)           |         |
| <b>Mode of operative delivery</b>   |                     |                     |         |
| Forceps                             | 12 (92.3)           | 14 (82.4)           | 0.613   |
| Vacuum                              | 1 (7.7)             | 3 (17.6)            | 0.114   |
| Failed operative delivery           | 0 (0.0)             | 4 (13.3)            |         |
| Use of neuraxial anesthesia         | 37 (97.4)           | 48 (98.0)           |         |
| Third or fourth degree laceration   | 4 (30.8)            | 5 (29.4)            | 1.0     |
| Surgical complications <sup>a</sup> | 5 (13.2)            | 13 (26.5)           | 0.183   |

Abbreviation: BMI, body mass index.

Note: Data presented as n (%).

<sup>a</sup>Exploratory laparotomy, postpartum hemorrhage (defined as estimated blood loss > 1 L)<sup>16</sup>, emergent hysterectomy, and/or visceral injury at time of laparotomy.

| Variable   | Concordant (n = 38)<br>Median score [IQR] | Discordant (n = 49)<br>Median score [IQR] | p-Value |
|--|---|---|---------|
| <b>Discriminated</b>   |   |   |         |
| Discriminated due to race/ethnicity <sup>a</sup>               | 4.00 [4.00, 4.00]                         | 4.00 [4.00, 5.00]                         | 0.551   |
| Disrespectful nursing staff <sup>a</sup>                       | 4.00 [4.00, 4.00]                         | 4.00 [4.00, 4.00]                         | 0.829   |
| <b>Communication</b>   |   |   |         |
| Hurried communication—lack of clarity <sup>a</sup>             | 6.00 [5.00, 8.00]                         | 7.00 [5.00, 9.00]                         | 0.527   |
| Elicited concerns, responded <sup>b</sup>                      | 15.00 [13.00, 15.00]                      | 15.00 [13.00, 15.00]                      | 0.955   |
| Explained results, medications <sup>b</sup>                    | 19.00 [17.00, 20.00]                      | 18.00 [15.00, 20.00]                      | 0.152   |
| <b>Decision-making</b>   |   |   |         |
| Patient-centered decision-making—decided together <sup>b</sup> | 17.00 [14.00, 20.00]                      | 17.00 [14.00, 20.00]                      | 0.649   |
| <b>Interpersonal style</b>                                     |   |   |         |
| Compassionate, respectful <sup>b</sup>                         | 25.00 [23.00, 25.00]                      | 25.00 [22.00, 25.00]                      | 0.631   |

Abbreviations: IPC, Interpersonal Processes of Care; IQR, interquartile range.

Notes: For discriminated subdomain: discriminated due to race/ethnicity.

For communication subdomain: hurried communication scores range from 5 to 25, elicited concerns, responded scores range from 3 to 14, and explained results, medications scores range from 4 to 20.

For decision-making subdomain, scores range from 4 to 20.

For Interpersonal Style subdomain, scores range from 5 to 25.

<sup>a</sup>Higher score indicates a less favorable perception of the interpersonal care process.

<sup>b</sup>Higher score indicates a more favorable perception of the interpersonal care process.

**Table 4** IPC survey results, stratified by postpartum participant race/ethnicity

| Variable   | Black<br>Median score [IQR] | LatinX<br>Median score [IQR] | White<br>Median score [IQR] | p-Value |
|--|-----------------------------|------------------------------|-----------------------------|---------|
| Discriminated  |                             |                              |                             |         |
| Discriminated due to race/ethnicity <sup>a</sup>               | 4.00 [4.00, 5.00]           | 4.00 [4.00, 4.00]            | 4.00 [4.00, 5.00]           | 0.216   |
| Disrespectful nursing staff <sup>a</sup>                       | 4.00 [4.00, 4.00]           | 4.00 [4.00, 4.00]            | 4.00 [4.00, 4.00]           | 0.576   |
| Communication  |                             |                              |                             |         |
| Hurried communication—lack of clarity <sup>a</sup>             | 7.00 [5.00, 8.00]           | 7.50 [5.75, 9.25]            | 6.00 [5.00, 8.00]           | 0.249   |
| Elicited concerns, responded <sup>b</sup>                      | 15.00 [11.00, 15.00]        | 15.00 [13.75, 15.00]         | 14.00 [13.00, 15.00]        | 0.774   |
| Explained results, medications <sup>b</sup>                    | 19.00 [17.00, 20.00]        | 18.00 [15.50, 20.00]         | 18.50 [16.00, 20.00]        | 0.806   |
| Decision-making  |                             |                              |                             |         |
| Patient-centered decision-making—decided together <sup>b</sup> | 17.00 [14.00, 19.00]        | 17.50 [12.50, 20.00]         | 17.00 [14.00, 20.00]        | 0.774   |
| Interpersonal style  |                             |                              |                             |         |
| Compassionate, respectful <sup>b</sup>                         | 25.00 [23.00, 25.00]        | 25.00 [22.50, 25.00]         | 25.00 [23.00, 25.00]        | 0.696   |

Abbreviations: IPC, Interpersonal Processes of Care; IQR, interquartile range.

Notes: For discriminated subdomain, scores range from 4 to 20.

For communication subdomain: hurried communication scores range from 5 to 25, elicited concerns, responded scores range from 3 to 14, explained results, medications scores range from 4 to 20.

For decision-making subdomain, scores range from 4 to 20.

For Interpersonal Style subdomain, scores range from 5 to 25.

<sup>a</sup>Higher score indicates a less favorable perception of the interpersonal care process.

<sup>b</sup>Higher score indicates a more favorable perception of the interpersonal care process.

## Strengths and Limitations

A major strength of the study is the inclusion of patients who underwent operative vaginal deliveries or cesarean deliveries conducted in the second stage. This specific scenario was chosen because these are bounded procedures that require more in-depth counseling in a stressful period, making the role of communication quality much more critical than in less stressful health care interactions. Importantly, due to the presence of one or two clinicians during these scenarios and the close proximity of study participation to the clinical events, provider communication could be assessed more specifically, thereby reducing recall bias or confusion regarding counseling by multiple providers.

This study was not without limitations. Despite planned oversampling of Black and LatinX patients, our team was still unable to obtain necessary sample sizes to fully explore these concordant groups due to disproportionately fewer minority providers. Therefore, our study is likely underpowered to detect a difference in the primary outcome. An additional limitation is that the IPC survey has not been validated in obstetrics and, thus, may not capture key obstetric processes of care. Newly developed metrics for obstetrical quality of care aimed at identifying and remediating obstetric racism, such as the Patient Reported Experience Measure of OBstetric racism (PREM-OB) Scale, emphasize the role of communication<sup>15</sup> but have yet to be tested within the clinical scenario in which our study was conducted—thus limiting our study's generalizability and external validity. Finally, as with any survey-based study,

residual recall and selection biases limit the generalizability of our findings.

## Conclusion

The racial disparities in obstetrics warrant further examination of patient–provider factors that may contribute to poor outcomes, as well as those that may limit or prevent further discrepancies in morbidity and mortality among different racial/ethnic groups. Studies performed in nonobstetric fields have demonstrated that racial concordance between patients and providers has a positive impact on patient adherence, trust, and use of health care services. While our study did not detect differences in perceptions of IPC between racially concordant and discordant groups, further research examining racial concordance in obstetrics is essential. As future studies examine the role of racial concordance in obstetrics, the disparities in the health care provider workforce remain a challenge.

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**Conflict of Interest**

None declared.

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