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The role of doulas in respectful care for communities of color and Medicaid recipients

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Abstract

Background: Despite the tenets of rights-based, person-centered maternity care, racialized groups, low-income people, and people who receive Medicaid insurance in the United States experience mistreatment, discrimination, and disrespectful care more often than people with higher income or who identify as white. This study aimed to explore the relationship between the presence of a doula (a person who provides continuous support during childbirth) and respectful care during birth, especially for groups made vulnerable by systemic inequality.

Methods: We used data from 1977 women interviewed in the Listening to Mothers in California survey (2018). Respondents who reported high levels of decision making, support, and communication during childbirth were classified as having "high" respectful care. To examine associations between respectful care and self-reported doula support, we conducted multivariable logistic regressions. Interactions by race/ethnicity and private or Medi-Cal (Medicaid) insurance status were assessed.

Results: Overall, we found higher odds of respectful care among women supported by a doula than those without such support (odds ratios [OR]: 1.4, 95% CI: 1.0–1.8). By race/ethnicity, the association was largest for non-Hispanic Black women (2.7 [1.1–6.7]) and Asian/Pacific Islander women (2.3 [0.9–5.6]). Doula support predicts higher odds of respectful care among women with Medi-Cal (1.8 [1.3–2.5]), but not private insurance.

Conclusions: Doula support was associated with high respectful care, particularly for low-income and certain racial/ethnic groups in California. Policies supporting the expansion of doulas for low-income and marginalized groups are consistent with the right to respectful care and may address disparities in maternal experiences.

KEYWORDS

birth, doula, maternity services, Respectful care

1 | INTRODUCTION

All childbearing individuals have the right to person-centered maternity care including, respectful care and freedom from mistreatment[1,2] encompassing abuse, discrimination, neglect, or failure to provide adequate care.[3–5] Yet, not all pregnant persons experience respectful care or are free from mistreatment.[3,5–7] Respectful care safeguards a birthing person's dignity and privacy, protects against mistreatment, and facilitates informed choice.[2] Respectful care is more likely to be experienced among midwife-attended births and is less likely among low-income individuals on public insurance and people of color.[3,6–9] To the extent that these experiences often reflect implicit and explicit biases because of racism or socioeconomic status and other systemic inequities,[7] we propose that access to a doula, a person who provides support during pregnancy and birth,[2] can counter some of these inequities by promoting respectful care, particularly among marginalized communities. Marginalized communities include racialized and ethnic minoritized communities or those experiencing social, political, or economic discrimination.[10] We acknowledge that not all birthing persons identify as women, as such we use gender-inclusive terms in our reflections. When reporting others' research, or our methods and analysis, we use terminology consistent with the data source used for analysis.

In the United States (US), 17% of women report experiencing at least one form of mistreatment during labor and birth.[3] Mistreatment was more common among women of color, including Black, Hispanic, Indigenous, and Asian women, and especially low-income women of color—27% of whom reported mistreatment—compared with low-income white women (19%).[3] In California, women with Medi-Cal (California's Medicaid) coverage, who are disproportionately Black or Latina,[6] are more likely than women with private insurance to report unfair treatment on the basis of race or ethnicity (6.5% versus 2.3%, respectively), language spoken (7.4% versus 1.7%), and--among English speakers especially--insurance status (9.0% versus 0.7%) during their intrapartum and postpartum hospital visit.[6]

Experience of mistreatment and racism can be a deterrent to seeking maternity care, which further perpetuates health inequities.[11,12] Moreover, racism can affect medical decision making[13] and provider-patient communication,[14] which may result in medical emergencies being overlooked.[15] This inequitable treatment may contribute to disparate maternal or birth outcomes found between Black and white people in the United States; for example, in 2013-2014 the maternal mortality rate among non-Hispanic Black women was nearly three times higher than the risk among non-Hispanic white women (56 vs. 20 per 100 000 live births, respectively) in 27 states and the District of Columbia.[16] Inequitable quality of care and experience of mistreatment during pregnancy and birth warrants particular scrutiny.[15,17,18]

Borne from emerging evidence of pervasive mistreatment, efforts to understand and promote respectful care are evolving.[5,19] Improved communication and autonomy and informed decision making promotes patients' feelings of control and security and is valued alongside proper clinical care, thus a key component of high quality of care.[19–21] A systematic review identified and recommended several interventions to promote respectful care, including one-to-one continuous supportive care.[19] One supportive care intervention that merits closer attention is the presence of a doula who can provide such continuous support.[20,22]

Doulas are trained professionals who provide person-centered, continuous support for pregnant people during childbirth, and intermittent support during pregnancy and in the postpartum period, but are not part of the patient's medical team or the health facility's staff.[2] Doulas provide emotional support, advice about labor and coping mechanisms, and facilitate **or provide** physical comfort measures.[23] Accordingly, their presence may promote a person's agency over their care and promote respectful, culturally sensitive care,[20] which may mitigate experiences of racism during birth.[24] The presence of a continuous support person, including a doula, is associated with higher satisfaction with labor and birth, reduced preterm and low birthweight births, reduced cesarean and instrumental vaginal birth, reduced use of analgesics, and shorter duration of labor.[23,25–27] However, the cost of doula support, not typically covered by insurance, is a barrier to access; as such, doulas most often serve middle or upper class white pregnant people and use of their services is not distributed equitably across race and income.[28]

To expand the evidence for the benefit of doulas, this study examines the association between doula presence at birth and self-report of elements of respectful care during labor and birth (i.e., agency over decision making, feeling supported, and good communication) among noninstitutionalized mothers who delivered in hospitals in California in 2016. Given the doula's role as an advocate and source of informational support person during labor, we hypothesize that birthing people will report greater levels of respectful care if a doula was present during childbirth compared with births without a doula present. In addition, as people of color and Medicaid recipients experience the lowest levels of

respectful care,[3,6] we hypothesize that these groups may report greater increases in respectful care with a doula compared with their white or privately insured counterparts. We theorize that birthing people can garner more respectful care via increased self-efficacy because of the doula support[20,26]; in addition, providers may provide more respectful care simply because of being observed by the doula.[29] Policy implications of our findings will be detailed.

2 | METHODS

2.1 | Data source and study population

We used data from the Listening to Mothers in California survey conducted in 2018, which collects data on the experiences of mothers during prior prenatal, intrapartum, and postpartum periods.[30] A representative sample of women aged 18 and older who are not incarcerated or in a rehabilitation facility and who had a singleton birth in a California hospital between September 1 and December 15, 2016, was drawn from birth certificate data. Women were selected using a stratified random sampling procedure based on type of birth, Northern or Southern California, Black race, and presence of midwife. The survey oversampled Black women, women with a midwife, and women with a vaginal birth after previous cesarean birth, and sampling weights were constructed to adjust the sample for nonresponse and representativeness of births in the state of California. The questionnaire was developed in English, translated into Spanish, and available in either language. Eligible women were contacted via invitational mailings, text messages, email, and phone calls, and participated in the survey either online (via smartphone, tablet, or computer) or on the phone with an interviewer.

In total, 2539 women completed the survey, with a response rate of 54%. Our analytic sample included all women who responded with valid answers to questions about respectful care during birth and the main exposure variables and who had either private or Medi-Cal insurance. Women who were uninsured (n = 14), unsure about their insurance (n = 15), or missing information (n = 66) were not included in the analysis. Fifty-four women who did not specify either private or Medi-Cal insurance provided answers to an open-ended text response about what insurance they did have. Using these responses, we categorized an additional 27 women as using either private or Medicaid insurance. The remaining 27 women had either TRICARE, insurance through the Veterans Affairs, Medicare, or other insurance that could not be categorized as either private or Medicaid insurance and were not included in our analytic sample. Our final analytic sample comprised 1977 women.

2.2 | Measures

2.2.1 | Dependent variable

We constructed our dependent variable, respectful care, based on responses to three questions about the participant's experience during labor and birth, which were only asked of women who delivered vaginally or who had experienced some labor before having a cesarean. These three questions followed the prompt: "How much do you agree with the following statements about your recent experience of labor and birth?" and were as follows: (a) The birth room staff encouraged me to make decisions about how I wanted my birth to progress; (b) I felt well supported by staff during my labor and birth; (c) the staff communicated well with me during labor. The response options were: (a) agree strongly, (b) agree somewhat, (c) neither agree nor disagree, (d) disagree somewhat, and (e) disagree strongly. Most women reported "strongly agree" to these three questions (51%, 75%, and 74%, respectively). We examined internal reliability using Cronbach's alpha and found high internal consistency ($\alpha = 0.76$). High respectful care was defined as a response of "agree strongly" to all three questions.

2.2.2 | Independent variables

The presence of a doula was assessed based on responses (yes and no or not sure) to the question "A 'doula' is a trained labor companion who gives comfort, emotional support, and information during birth. A doula does not provide medical care. Did you get support from a doula during your recent birth?" We categorized race/ethnicity as (a) non-Hispanic (NH) white, (b) Hispanic/Latina, (c) NH Asian/Pacific Islander, (d) NH Black, and (e) NH Multiracial or other, which included American Indian/Alaska native, multiple race, and other. Other covariates included education (high school or less, some college, college or higher), income category (at or below the poverty line, above the poverty line), marital status (married, not married), parity (one child, two or more child), and birth provider type (physician, midwife, other). We did not include emergency cesarean birth given high correlation with provider type. In light of concerns raised by the Listening to Mothers survey stakeholders and implementers about the interpretation of the word doula among non-English-speaking respondents in the Listening to Mothers final report,[30]

we also included language of the interview (English, Spanish) in our analyses.

We imputed missing responses on these six covariates using multiple imputation by chained equations for binary or categorical variables, creating 13 data sets.[31] The proportion missing was 2.4% for education, 2.7% for marital status, and 1.3% for provider classification, 0% for parity, and 14.7% for income. The imputation model included doula, race/ethnicity, insurance, education, income, marital status, parity, birth provider, and language of the survey.

2.3 | Analysis

We conducted our analyses using Stata 16.0. We adjusted all analyses for the stratified sample design and applied survey weights to account for nonresponse and oversampling as described above. To test our hypothesis, we examined the associations between presence of a doula and respectful care overall and by women's race/ethnicity and insurance status. We fitted unadjusted (bivariate) and adjusted (multivariable) binary logistic regression models. Since we hypothesized differences in respectful care among women of color compared with white women, we chose white women as our reference category. The reference category for other variables was the category with the largest number of cases. After adjusting for all covariates, we tested interactions between doula and race/ethnicity and doula and insurance. In addition to producing interaction coefficients in these adjusted models, we conducted postestimations of the linear combinations of coefficients to calculate stratum-specific estimates of the odds of respectful care by presence of a doula for each race/ethnicity and insurance status. We also calculated predicted probabilities from the marginal effects of the multivariable logistic regression models.

We confirmed multicollinearity was not problematic in adjusted models by assessing the variance inflation factor. We identified statistical significance of the odds ratios when corresponding 95% confidence Intervals (CI) did not contain 1. Given that it is difficult to ascertain whether data are missing at random, and the imputation procedure may bias the results when data are missing not at random,[32] we conducted a sensitivity analyses to determine the impact of the imputation procedure on our findings by comparing results from an analysis of complete cases (n = 1687). Due the possibility of misinterpretation of the word doula with the Spanish translation, we conducted additional sensitivity analyses to explore the possible effect of the interpretation of the word doula by reanalyzing both imputed and complete cases conditional on English survey respondents and respondents who reported primarily speaking English at home.

3 | RESULTS

As Table 1 shows, half of the sample was Latina women (50.2%), and there were smaller percentages of NH Asian/PI (15.4%), NH Black (4.3%), and NH Multiracial/Other (3.1%). Over half had private insurance (51.0%), were above the federal poverty line (54.3%), married (85.9%), and had two or more children (56.0%). Only 11.1% were attended by a midwife at birth.

Overall, 15.7% were supported by a doula. Communities of color, those with Medi-Cal insurance, high school or lower education, and who were surveyed in Spanish were more likely to report doula support (see Table 2). Respectful care differed by presence of a doula, where 49.6% of women (95% CI: 43.9–55.3) with a doula reported respectful care versus 43.3% without (40.8–45.8). NH Multiracial/Other had the lowest prevalence of high respectful care (28.0% [18.7–39.6]) followed by Hispanic/Latina (42.6% [39.4–45.8]) and non-Hispanic white (44.6% [40.1–49.2]). Respectful care was higher among the privately insured (47.3% [44.0–50.6]) versus among Medi-Cal recipients (41.2% [38.0–44.4])—and among those with a midwife (59.3% [53.3–64.9]) versus a physician (42.2% [39.7–44.8]).

After adjusting for socioeconomic and demographic variables, the odds of high respectful care were 40% higher among those with the support of a doula than those without (1.0–1.8) (Table 3). Independent of doula support, women whose birth was attended by a midwife as the primary provider had nearly two times the odds of receiving respectful care compared to those attended by a physician (1.9 [1.5–2.5]). In the fully adjusted model including an interaction term between race and doula, the ratio of odds ratios of respectful care were over two times higher for NH Asian/PI women with a doula (2.4 [0.8–7.0]) and for NH Black women with a doula (2.8 [0.9–8.3]) than white women or those without a doula. Although the magnitude of the effect was large, the interaction terms only approached significance. When assessing insurance status, the interaction term was 2.0 and statistically significant (1.2–3.4).

When stratum-specific associations were derived from the interaction terms (Figure 1), the odds of respectful care for NH Black women with a doula were 2.7 times that of NH Black women without a doula (1.1–6.7) and 2.3 times that for NH Asian/PI women (0.9–5.6). Among Medi-Cal recipients, the odds of the respectful care were 80% higher if they had a doula than if they did not (1.8

TABLE 1 Socioeconomic and demographic characteristics overall and by presence of a doula among respondents of Listening to Mothers in California, 2018

	Total		Presence of a doula			
	(N = 1977)		No (n = 1651)		Yes (n = 326)	
	N	% [95% CI]	N	% [95% CI]	N	% [95% CI]
Overall						
Presence of a doula						
No[a]	1651	84.4 [82.7, 86.0]				
Yes	326	15.6 [14.0, 17.3]				
Race/ethnicity						
NH white	497	27.0 [25.0, 29.1]	445	29.0 [26.7, 31.4]	52	16.4 [12.6, 21.1]
Hispanic/Latina	983	50.2 [47.9, 52.4]	779	47.5 [45.0, 50.0]	204	64.7 [59.1, 70.0]
NH Asian/PI	265	15.4 [13.7, 17.3]	236	16.3 [14.4, 18.4]	29	10.7 [7.4, 15.2]
NH Black	159	4.3 [3.8, 4.9]	132	4.2 [3.7, 4.9]	27	4.7 [3.2, 6.9]
NH Multiracial/Other	73	3.1 [2.4, 3.9]	59	3.0 [2.3, 3.9]	14	3.4 [2.0, 5.8]
Insurance						
Private	981	51.0 [48.7, 53.3]	864	53.6 [51.1, 56.1]	117	36.7 [31.3, 42.4]
Medi-Cal	996	49.0 [46.7, 51.3]	787	46.4 [43.9, 48.9]	209	63.3 [57.6, 68.7]
Income[b]						
At or below poverty	676	33.6 [31.4, 35.8]	534	32.0 [29.7, 34.4]	142	42.1 [36.6, 47.8]
Above poverty level	1059	54.3 [52.0, 56.6]	925	56.6 [54.0, 59.1]	134	41.9 [36.4,4 7.7]
Missing	242	12.2 [10.7, 13.8]	192	11.5 [9.9, 13.2]	50	16.0 [12.2, 20.7]
Education						
High school or less	624	32.0 [29.9, 34.2]	468	28.9 [26.6, 31.2]	156	49.1 [43.4, 54.8]
Some college	633	32.6 [30.5, 34.8]	557	34.4 [32.0, 36.9]	76	23.0 [18.5, 28.2]
College or higher	708	34.6 [32.5, 36.8]	615	36.0 [33.6, 38.4]	93	27.4 [22.7, 32.7]
Missing	12	0.7 [0.4, 1.3]	11	0.8 [0.4, 1.5]	1	0.4 [0.1, 3.1]
Marital status						
Married	1674	85.9 [84.2, 87.4]	1399	86 [84.2, 87.6]	275	85.3 [80.9, 88.8]
Not married	287	13.3 [11.8, 14.9]	238	13.1 [11.5, 14.8]	49	14.2 [10.7, 18.5]
Missing	16	0.9 [0.5, 1.5]	14	0.9 [0.6, 1.6]	2	0.6 [0.1, 2.4]
Parity						
One	890	44 [41.7, 46.3]	751	44.3 [41.8, 46.9]	139	42.0 [36.5, 47.8]
Two or more	1087	56 [53.7, 58.3]	900	55.7 [53.1, 58.2]	187	58.0 [52.2, 63.5]
Birth provider						
Physician	1568	83.5 [82.1, 84.8]	1319	83.9 [82.3, 85.4]	249	81.1 [76.7, 84.8]
Midwife	291	11.1 [10.1, 12.1]	237	10.8 [9.7, 12.0]	54	12.7 [9.8, 16.3]
Other[c]	102	4.8 [3.9, 5.8]	84	4.7 [3.8, 5.9]	18	5.1 [3.2, 8.2]
Missing	16	0.7 [0.4, 1.2]	11	0.6 [0.3, 1.2]	5	1.1 [0.4, 2.8]
Language of survey						
English	1611	82.8 [81.0, 84.4]	1416	86.9 [85.2, 88.5]	195	60.3 [54.7, 65.7]
Spanish	366	17.2 [15.6, 19.0]	235	13.1 [11.5, 14.8]	131	39.7 [34.3, 45.3]

Abbreviation: NH, non-Hispanic; weighted percentages reported.

[a]includes do not know.

[b] Poverty is defined using the federal Poverty Level, with at or below being 100% or less and above being higher than 100%.

[c]includes nurse practitioner, physician assistant, or other unspecified provider.

TABLE 2 Presence of a doula and high respectful care by women's characteristics and provider type, among respondents of Listening to Mothers in California, 2018

	Presence of a doula	High respectful care
	% [95% CI]	% [95% CI]
Respectful care		
Low	14.3 [12.2, 16.6]	
High	17.5 [15.1, 20.3]	
Presence of a doula at birth		
No[a]		43.3 [40.8, 45.8]
Yes		49.6 [43.9, 55.3]
Race/ethnicity		
NH white	9.5 [7.2, 12.4]	44.6 [40.1, 49.2]
Hispanic/Latina	20.2 [17.7, 22.9]	42.6 [39.4, 45.8]
NH Asian/PI	10.8 [7.5, 15.4]	50.8 [44.5, 57.0]
NH Black	17.2 [11.8, 24.4]	50.0 [41.9, 58.1]
NH Multiracial/Other	17.4 [10.2, 28.0]	28.0 [18.7, 39.6]
Insurance		
Private	11.2 [9.3, 13.5]	47.3 [44.0, 50.6]
Medi-Cal	20.2 [17.7, 22.9]	41.2 [38.0, 44.4]
Income[b]		
At or below poverty	19.6 [16.7, 22.9]	40.8 [36.9, 44.7]
Above poverty level	12.1 [10.2, 14.2]	46.5 [43.4, 49.7]
Missing	20.5 [15.7, 26.4]	43.9 [37.4, 50.6]
Education		
High school or less	24.0 [20.7, 27.6]	42.9 [38.9, 47.1]
Some college	11.0 [8.7, 13.8]	44.0 [40.0, 48.2]
College or higher	12.4 [10.1, 15.1]	46.3 [42.4, 50.1]
Missing	9.4 [1.3, 45.0]	17.5 [4.4, 49.7]
Marital status		
Married	15.5 [13.8, 17.4]	45.4 [42.9, 47.9]
Not married	16.7 [12.6, 21.7]	37.7 [32.0, 43.8]
Missing	9.9 [2.3, 34.3]	36.3 [16.8, 61.7]
Parity		
One	14.9 [12.7, 17.5]	42.4 [39.1, 45.9]
Two or more	16.2 [14.0, 18.6]	45.7 [42.6, 48.8]
Birth provider		
Physician	15.2 [13.4, 17.1]	42.2 [39.7, 44.8]
Midwife	17.9 [13.8, 22.9]	59.3 [53.3, 64.9]
Other[c]	16.8 [10.6, 25.6]	43.7 [33.9, 53.9]
Missing	23.9 [9.0, 50.0]	52.9 [28.4, 76.1]
Language of survey		
English	11.4 [9.9, 13.1]	44.4 [41.9, 47.0]
Spanish	36.0 [31.1, 41.3]	43.6 [38.4, 48.9]

Abbreviations: NH, non-Hispanic; weighted percentages reported.

[a]Includes do not know.

[b]Poverty is defined using the Federal poverty level, with at or below being 100% or less and above being higher than 100%.

[c]Nurse practitioner, physician assistant, or other unspecified provider.

[1.3–2.5]). For NH white women (1.0 [0.5–1.8]), Hispanic women (1.3 [0.9–1.8]), and women with private insurance (0.9 [0.6–1.3]), the relationships between doulas and respectful care were not significant.

These associations translate to predicted probabilities of respectful care of 0.71 and 0.68 for NH Black women and NH Asian women with a doula, respectively, compared with 0.48 for women in each group without a doula (Figure 2). Women with Medicaid insurance with a doula also had a higher predicted probability of respectful care (0.54) compared with those without a doula (0.39).

Our findings were robust to our sensitivity analyses. In our complete case analysis (compared with imputed data), we found increases in both magnitude and strength of the interactions between doula and race/ethnicity on respectful care but a dampened overall association (Table S1). When examining the possible effect of the misinterpretation of the word doula among a sample restricted to English survey respondents in the imputed data set, there were negligible changes to the results (Table S2). In the complete case analysis restricted this way, as well as among only those who reported primarily speaking English at home in both imputed and complete cases, the overall associations between a doula and respectful care were also similar (results not shown).

4 | DISCUSSION

This study sheds light on a benefit of doula care that has not been previously quantified using population-based data. In addition to a shorter labor and a lower risk of cesarean birth among other advantages,[23] our study adds that the presence of a doula is associated with reports of higher respectful care, which entails communication of information, being afforded the respect in voicing concerns, and being involved in the decision-making process.[8] Yet, in our study and others, many **women** do not report receiving respectful care.[30] Doulas can facilitate the dialogue between patients and providers[33] and promote health literacy for patients,[20] evidence for which our study supports. Consistent with implications of previous research,[3,8,9] our study also showed higher respectful care among those with a midwife supported birth.

We found that the association between doulas and respectful care was **stronger** among communities of color and women with Medi-Cal insurance, who may experience poor communication or dismissal of concerns as a result of racism and other structural inequities, which can have harmful consequences during childbirth.[15] With the support from a doula, an otherwise marginalized person is better equipped

TABLE 3 Unadjusted and adjusted odds of respectful care among respondents of Listening to Mothers in California, 2018, Imputed data set

	Unadjusted (bivariate)	Adjusted (multivariable)	Adjusted + Race interaction	Adjusted + Insurance interaction
	UOR [95% CI]	AOR [95% C]	AOR [95% C]	AOR [95% C]
Doula (ref = no)				
Yes	1.3 [1.0, 1.7]	1.4 [1.0, 1.8]	0.9 [0.5, 1.8]	0.9 [0.6, 1.3]
Race/Ethnicity (ref = white)				
Hispanic/Latina	0.9 [0.7, 1.2]	1.0 [0.7, 1.3]	0.9 [0.7, 1.2]	1.0 [0.7, 1.3]
NH Asian/PI	1.3 [0.9, 1.8]	1.3 [1.0, 1.8]	1.2 [0.9, 1.7]	1.3 [1.0, 1.8]
NH Black	1.2 [0.9, 1.8]	1.4 [1.0, 2.1]	1.2 [0.8, 1.9]	1.5 [1.0, 2.2]
NH Multiracial/Other	0.5 [0.3, 0.8]	0.5 [0.3, 0.8]	0.4 [0.2, 0.8]	0.5 [0.3, 0.8]
Insurance (ref = private)				
Medi-Cal	0.8 [0.6, 0.9]	0.8 [0.6, 1.1]	0.8 [0.6, 1.1]	0.7 [0.6, 1.0]
Income (ref = above poverty)				
At or below poverty	0.8 [0.7, 1.0]	1.0 [0.7, 1.3]	1.0 [0.7, 1.3]	1.0 [0.7, 1.2]
Education (ref = college or higher)				
High school or less	0.9 [0.7, 1.1]	1.1 [0.8, 1.5]	1.1 [0.8, 1.5]	1.1 [0.8, 1.5]
Some college	0.9 [0.7, 1.2]	1.1 [0.8, 1.4]	1.1 [0.8, 1.4]	1.1 [0.8, 1.4]
Marital status (ref = married)				
Not married	0.7 [0.6, 1.0]	0.8 [0.6, 1.1]	0.8 [0.6, 1.1]	0.8 [0.6, 1.1]
Parity (ref = two or more)				
One	0.9 [0.7, 1.1]	0.9 [0.7, 1.0]	0.9 [0.7, 1.0]	0.9 [0.7, 1.1]
Provider (ref = physician)				
Midwife	2.0 [1.5, 2.6]	1.9 [1.5, 2.5]	2 [1.5, 2.6]	2.0 [1.5, 2.6]
Other	1.1 [0.7, 1.6]	1.1 [0.7, 1.6]	1.1 [0.7, 1.6]	1.1 [0.7, 1.7]
Language of the survey (ref = English)				
Spanish	1.0 [0.8, 1.2]	1.0 [0.8, 1.4]	1.0 [0.8, 1.4]	1.0 [0.7, 1.3]
Interaction terms (ratio of AORs)				
Doula and race[a]				
Hispanic/Latina			1.3 [0.7, 2.7]	
NH Asian/PI			2.4 [0.8, 7.0]	
NH Black			2.8 [0.9, 8.3]	
NH Multiracial/Other			1.6 [0.4, 6.5]	
Doula and insurance[b]				
Medi-Cal				2.0 [1.2, 3.4]

Abbreviations: AOR, Adjusted Odds Ratio; CI, Confidence Interval; NH, non-Hispanic; UOR, Unadjusted Odds Ratio.

[a]The difference in the doula respectful care association in each respective race/ethnicity group compared with the doula respectful care association in white women.

[b]The difference in the doula respectful care association in women whose birth was covered by Medi-Cal insurance compared with the doula respectful care association in women whose birth was covered by private insurance.

to make informed decisions, advocate for themselves, and be more empowered to ensure their voice is heard.[33]

This study is the first to quantify the relationship between a doula and higher respectful care among childbearing people from financially or socially marginalized groups, such as communities of color and low-income public insurance beneficiaries. As our results were consistent across multiple sensitivity analysis, the findings demonstrate minimal bias introduced by imputation or language barriers in the association between respectful care and doulas among women of color and Medi-Cal beneficiaries.

There are limitations to note. The interpretation of the word doula by non-English speakers may have inflated

reported use of a doula, as discussed in the Listening to Mothers final report.[30] Non-English speakers may have either interpreted a doula to be a nurse or other hired attendant, or considered any support person including non-hired, informal attendants, such as a mother or a sister. This may explain why the effects among Hispanic women were diluted compared with other non-Hispanic race/ethnicity groups where we found a higher magnitude of association. The findings remained consistent after exclusion of those who may be impacted by language-based misinterpretation. Additionally, there may be synergistic effects of having both a doula and a midwife; we were unable to examine this due to the small sample. Future studies with larger samples should explore this potential interaction.

Because of the small, cross-sectional sample of individuals and the focused scope of the questionnaire, we were limited in exploring interacting facets of respectful care, including hospital factors that may play an important role in obstetric practices, or individual experiences of birth (like complications or type of birth) that may influence perception of the childbirth experience. In addition, because of small samples among communities of color (despite intentional oversampling), we could not consider the heterogeneity of different race/ethnicities within each broader category.

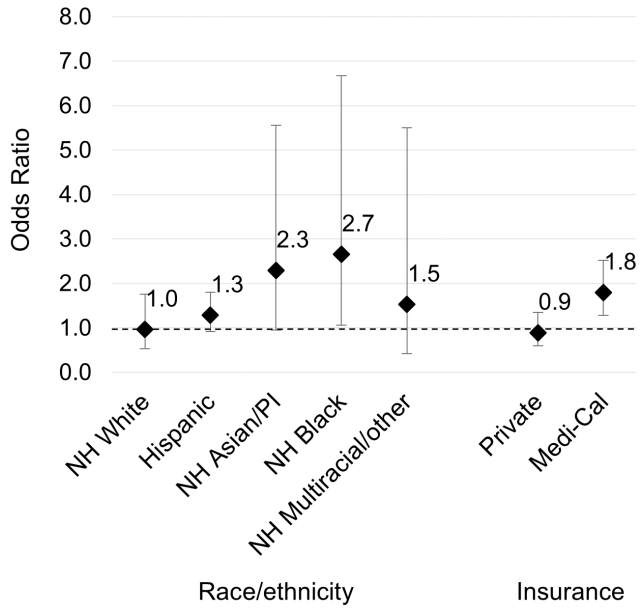

FIGURE 1 Stratum-specific estimates for race/ethnicity and insurance of the adjusted odds ratios of respectful care with a doula versus without a doula among respondents to Listening to Mothers California, 2018. *Note*: NH, non-Hispanic

5 | PUBLIC HEALTH IMPLICATIONS

Despite being a cost-effective intervention via reductions in cesarean and preterm birth, especially for Medicaid beneficiaries,[25,34,35] only some states offer coverage for doulas through Medicaid, including the states Oregon and Minnesota.[28] In California, doulas will be added to the list of preventive services and Medi-Cal will begin to cover doula services starting January 1, 2023.[36] Yet, even in states with existing Medicaid coverage, low

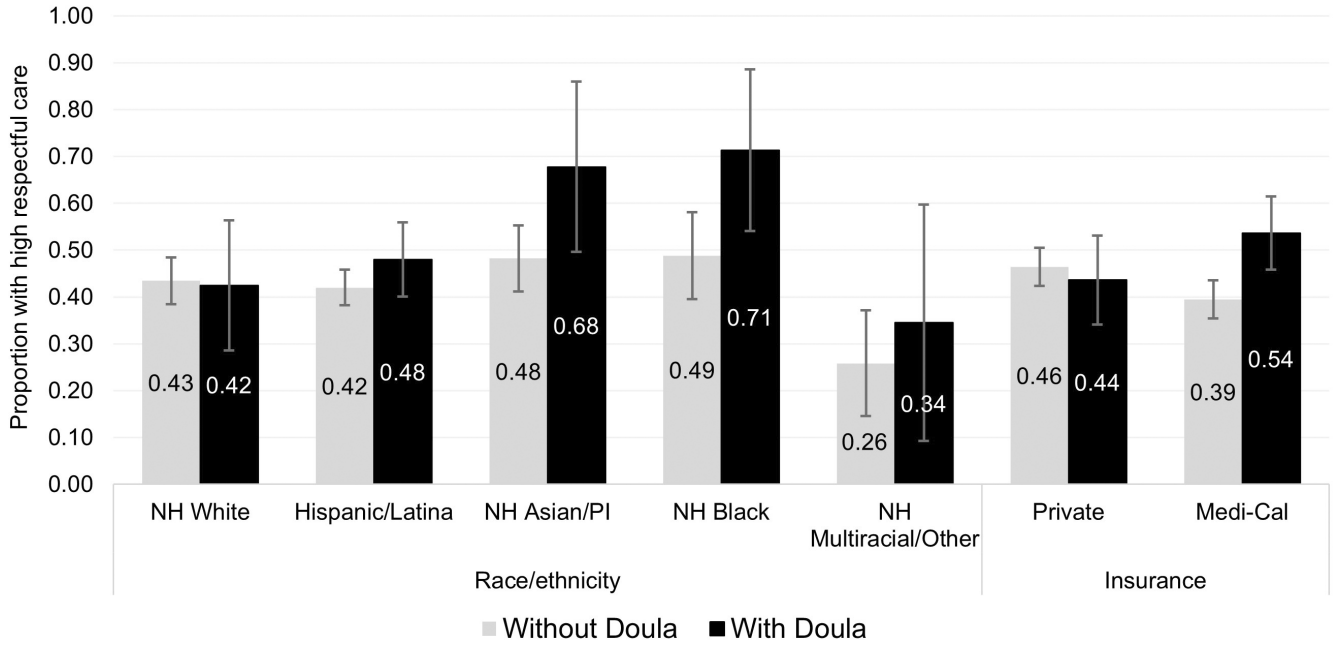

FIGURE 2 Adjusted probabilities of high respectful care with 95% confidence intervals. *Note*: NH, non-Hispanic

reimbursement rates, lack of doula acceptance in health care settings, and challenges to receiving reimbursement prevents many doulas from serving this population, perpetuating limited access to doulas.[28,33] Barriers for doulas to enroll, complete requirements, and have their registration certified for each state poses problems, especially as doula training is not standardized or regulated.[28,33,37]

Recommendations for successful policy implementation in California and beyond include building a diverse workforce for culturally competent care through training fee waivers and incentives, providing guidance on doula training requirements, ensuring coverage of full spectrum services (multiple visits, labor support, and pregnancy loss), and offering adequate reimbursement commensurate with the services provided.[28,33,37,38] For low-income or otherwise marginalized people, doula services in California are currently provided on a sliding scale by private-pay doulas or by community-based volunteer and nonprofit organizations, such as the Volunteer Doula Program at Contra Costa Regional Medical Center or the Joy in Birthing Foundation.[39] Many doulas provide volunteer or pro bono services, or offer trade arrangements for services,[38] which is likely the route by which low-income Medi-Cal recipients in our sample accessed a doula. In addition, community-based doulas or perinatal health workers are able to provide services that are tailored to the community in which they serve.[40] Given our findings, support for these programs is also warranted. Our findings highlight that the presence of a continuous support person is a key aspect of respectful care, to which all childbearing individuals have the right.[2] Although volunteer and community-based doula programs improve access to culturally congruent doula care, they may be limited in their capacity to provide services to broad geographic areas; offering free or low-cost services may also be a barrier to sustaining a doula workforce. Policies to expand Medicaid to cover doulas are moving toward expanded access but fall short of providing adequate reimbursement rates and growing a diverse doula workforce. The health advantage of a doula for low income or persons of color—mediated by mitigation of racism and improved respectful care—cannot fully manifest the face of these gaps in policies around reimbursement and expanding the workforce. To further address challenges in reimbursement and integration, stakeholders can collaborate with and learn from doulas in legislative planning, provide funding for training a diverse workforce, and consider adopting standardized regulations for doula training.[28,33,37,41] Surmounting these challenges would ensure greater access to culturally congruent doula support, and, in turn, a more positive birth experience and healthy outcomes for pregnant people and their newborns.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in University of North Carolina at Chapel Hill Dataverse at https://doi.org/10.15139/S3/3KW1DB.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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