PERSPECTIVES on Sexual and Reproductive Health

ARTICLE

Evaluating the Implementation and Outcomes of a Community-Based Doula Program in Washington State: A Mixed-Methods Analysis

Taylor Riley[1,2] | Zeruiah V. Buchanan[1] | Dila Perera[3] | Kate Wilhite Brickell[3] | Cynthia Turrietta[3] | Janae Teal[4] | Jami Bess[3] | Margarita Celis[3] | Hawa Egal[3] | Memorie Gladstone[3] | Betty Hernandez[3] | Vonda Prioleau[3] | Mienah Z. Sharif[1,5]

[1]Department of Epidemiology, University of Washington, Seattle, Washington, USA | [2]Carolina Population Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA | [3]Open Arms Perinatal Services, Seattle, Washington, USA | [4]The Capacity Collective, Seattle, Washington, USA | [5]Division of Community Health Sciences, University of California at Berkeley School of Public Health, Berkeley, California, USA

Correspondence: Taylor Riley (taylor_riley@unc.edu)

Received: 16 April 2024 | **Revised:** 20 May 2025 | **Accepted:** 26 May 2025

ABSTRACT

Background: Community-based doulas, who provide nonclinical perinatal support and are often from the same communities as the families they serve, are increasingly recognized as a strategy to ameliorate racialized perinatal health inequities. However, little is known about the successful implementation and sustainability of community-based doula programs.

Methods: Using an explanatory sequential mixed methods design, we examined the implementation and health outcomes of a community-based doula program serving low-income families and the barriers and facilitators that influence these outcomes. We analyzed programmatic and health outcome data among all families enrolled in the program from January 2016 through December 2022. Four in-depth listening sessions with the program's direct service providers were conducted and analyzed using thematic analysis.

Results: Among the over 1800 families served, the majority of whom identified as either Asian, Black, Indigenous, Latina/e/x, or multiracial, there were 14,672 total home visits that totaled 17,774 h. Over $87,000 in direct funds and 7000 tangible items (e.g., diapers) were dispersed to families. Preterm birth ranged from 4% to 9% across programs and most participants (> 94%) were breastfeeding/chestfeeding at birth. Direct service providers identified holistic, culturally-matched services and "doula-ing the doula" (organizational infrastructure to support doulas) as facilitators. Barriers included the intersecting systems of oppression that underlie the primary challenges faced by birthing families and direct service providers, including lack of community resources and power asymmetries within birth settings, that can lead to provider burnout.

Conclusions: These findings document the positive impact of community-based doula programs and bolster calls for increased compensation and structural supports for doulas.

1 | Introduction

The alarming racialized inequities in perinatal health outcomes are persistent and structural racism is recognized as a fundamental cause of these inequities [1, 2]. Structural racism is the "totality of ways in which societies foster racial discrimination through mutually reinforcing inequitable systems" [3, p. 1454], like housing, health care, and employment, and has been empirically linked with inequitable adverse birth outcomes [4–6]. Black and Indigenous birthing people are two to three times more likely to die from a pregnancy-related cause than white birthing people and they experience higher rates of preterm birth and infant mortality [7–9]. The vast majority of research and interventions addressing these inequities have focused

on individual risk factors and behaviors with little change in outcomes [2], but growing attention is being paid to structural racism and other interconnected systems of oppression (e.g., sexism) as a driver of these inequities [2, 10, 11].

An increasingly popular strategy to address racialized perinatal health inequities is doulas, who are trained professionals that provide nonclinical support to pregnant women, transgender men, and gender non-conforming people before, during, and after birth. The care doulas provide is recognized as an evidence-based intervention that improves maternal health, patient satisfaction, and health care experiences [12–17]. However, the majority of doula care implementation and research focuses on private care models where families pay out of pocket [18]. This is out of reach for many, especially economically marginalized and racially minoritized people. Community-based doula programs explicitly aim to disrupt the social determinants of these health inequities and support birthing people at elevated risk of adverse health outcomes due to structural racism, generally at no or low cost [19]. Community-based doulas are often from the same community as the families they serve and provide one-on-one emotional and informational support during the perinatal and postpartum periods. This goes beyond standard doula care to include a wider array of culturally responsive support services tailored to the specific needs of the communities they serve [18].

A growing field of research and practice explores how doulas can mitigate the intersecting systems of oppression (e.g., sexism, racism, classism, heterosexism, xenophobia) that coalesce during pregnancy, childbirth, and postpartum and can lead to adverse health outcomes [20–25]. Previous studies have highlighted how community-based doulas who share similar racial, ethnic, religious, or cultural backgrounds as the families they serve can help disrupt these harms by building trust, providing information, supporting autonomy, facilitating culturally grounded birthing practices, and addressing discrimination in the hospital [20, 26, 27]. However, research also shows that the mistreatment of doulas in hospitals can lead to burnout, as can the additional support they provide beyond birth [22–26]. Additionally, most of this research focuses on the role of doulas during hospital births, but less is known about community-based doula programs that provide support throughout pregnancy and into early childhood and parenting. With community-based doulas becoming a popular strategy to improve perinatal health inequities through policies such as Medicaid reimbursement [28], it is imperative to understand better the factors affecting the successful implementation and sustainability of community-based doula programs.

To fill this gap, our study aims to examine the implementation and health outcomes of a community-based doula program and the barriers and facilitators that influence these outcomes. Using both quantitative and qualitative methods, we aim to capitalize on the advantages of each method to obtain a more in-depth understanding of community-based doula programs as well as the experiences of direct service providers who work within these programs. We used intersectionality as the guiding theoretical framework for this study to recognize the overlapping systems of oppression such as racism, sexism, classism, and xenophobia at the macro social-structural level that (re)produce adverse health outcomes for families living at these intersections [29–31]. Intersectionality provides a useful framework for understanding the structural context in which community-based doula programs operate and which they help birthing families navigate.

2 | Methods

An academic-community research team co-conceptualized and conducted this mixed-methods study of a community-based doula program in Washington state. We used an explanatory sequential mixed methods design [32] (quan → QUAL) in which we used quantitative methods to describe the program's implementation and health outcomes, followed by qualitative methods to explore the barriers and facilitators to achieving those outcomes. This study design leveraged the existing and continually collected programmatic data of the community-based doula program, which was then followed by qualitative data to explain and contextualize the quantitative findings. The University of Washington Institutional Review Board reviewed and approved the study procedures and analyses.

2.1 | Study Setting

Open Arms Perinatal Services (Open Arms) is a nonprofit community-based organization that provides free, culturally responsive, and comprehensive pregnancy, birth, lactation, and early parenting services to families living within 200% of the federal poverty level in Washington state. Open Arms predominantly employs and serves Black, Indigenous, Latina/e/x, and other people of color and offers culturally matched doula care; childbirth education; lactation and new parent support; referrals and help navigating community resources (e.g., food banks, housing support, and domestic violence support services); and tangible items such as diapers and other baby items.

2.2 | Quantitative Methods and Analysis

The study population for the quantitative analysis included all individuals enrolled with Open Arms between January 1, 2016, and December 31, 2022. We extracted data on all program participants from a central database where intake coordinators recorded data on demographics (age, race and ethnicity, primary language, place of birth, and county of residence). During each family visit, direct service providers recorded data on referrals, time spent with families, and health outcomes in the database. Program administrators performed continual data quality checks to ensure accuracy.

First, we calculated descriptive statistics of characteristics of participants enrolled in Open Arms' four programs. These include the two core programs—(1) Birth Doula Services and the (2) Community-Based Outreach Doula Program (Outreach Doula)—as well as the (3) Lactation Support Program and (4) Family Support Services. Program details are in Table 1 but, briefly, upon intake, families choose one doula service to enroll in—either Birth Doula Services or the Outreach Doula Program—based on their personal interest and program availability. Birth Doula Services involve a maximum

TABLE 1 | Key components of the four primary Open Arms programs.

Program	Description
Birth Doula Services	Provides culturally-and-linguistically matched person-centered services focused on prenatal health, birth preparation, lactation, and postpartum support. The program offers three prenatal visits, continuous support during labor and delivery, three postnatal visits, and three case management calls. Services have been provided in 67 languages, primarily Amharic, English, Somali, Spanish, Tigrinya, Toisanese, and Vietnamese.
Community-Based Outreach Doula Program	Provides comprehensive, culturally matched support prenatally, during birth, and into early parenting. They provide at least bi-weekly visits from the second trimester of pregnancy until the child's second birthday. This program currently serves the Indigenous, Latina/e/x, African American/Black, and Somali communities.
Lactation Support Program	Provides Black/African American and Spanish-speaking families with a community-matched Lactation Support Peer Counselor (LSPC). The LSPC supports families prenatally and up to a year postpartum in working toward their self-identified feeding goals. The Lactation Support Program offers home visits, prenatal lactation classes, monthly lactation topic classes (i.e., mastitis, pumping, milk sharing, etc.), group in-person parent support gatherings, and virtual drop-in lactation lounges. Services are provided in Spanish and English.
Family Support Services	Provides supportive resource navigation, hosts peer support parenting groups, organizes community events for families, and builds referral relationships with community organizations that provide services for families from pregnancy to age five. The Family Support Services team connects families with tangible goods such as diapers and other baby necessities and connect families directly to a variety of community programs and services including resources related to basic needs, food, childcare, parent groups, health insurance enrollment and navigation, housing and rental assistance, mental health, domestic violence, advocacy, legal aid and more. Services are provided in English and Spanish. Virtual interpretation support is available when required to support additional languages.

of three prenatal visits, three postpartum visits, and continual labor and delivery support, whereas the Outreach Doula program is more intensive and long-term with bi-weekly visits from the second trimester until the child's second birthday. Families in Birth Doula Services are able to choose to extend their services by enrolling in the Lactation Support Program in addition to or after they complete the Birth Doula Services program. Families in the Outreach Doula Program are not eligible for individual home visiting through the Lactation Support Program as services would be duplicative. Starting in 2020, all Open Arms families also had access to Family Support Services, which provides tangible goods and support in navigating community resources. Direct service providers in Family Support Services, Outreach Doula, and Lactation Support Programs are full-time employees of Open Arms, whereas Birth Doulas are contracted employees. We calculated participant characteristics for each of the four programs and calculated outcomes for the two core programs—Birth Doula Services and Outreach Doula Program—for which outcome data were available.

We categorized outcomes into two groups: implementation outcomes and health outcomes. Implementation outcomes captured the delivery of key components of each program: total number of home visits, time spent with families during home visits and labor/delivery, referrals, and tangible goods and direct funds given to families. Health outcomes included the following birth outcomes: cesarean section, preterm birth (< 37 weeks gestation), low birthweight (< 2500 g), neonatal intensive care unit (NICU) admission, and breastfeeding/chestfeeding at birth.

We performed descriptive statistics of sociodemographic characteristics of families across the Open Arms programs. We calculated the total and average per family for all implementation outcomes and counts and percentages for health outcomes. We conducted quantitative analyses in Stata Version 16.0. Following these analyses, the first integration step in this explanatory sequential study involved connecting the results from this initial quantitative phase to help plan the questions for the follow-up qualitative data collection phase [32].

2.3 | Qualitative Methods and Analysis

After analyzing the quantitative data, we conducted four in-depth listening sessions with direct service providers in each of the four Open Arms programs in April–June 2023. All direct service providers ($n = 50$) were invited to participate via email, and there were a total of 25 participants (ranging from 4 to 8 per session). We held listening sessions either in person on site or on Zoom for 60–90 min. Participants received a $50/h incentive. Guided by the quantitative findings, we developed a semi-structured question guide (available upon request) that asked about facilitators and barriers to their work and the families' outcomes, as well as resources and policies that could further support and sustain community-based doula programs. We tailored interview guides to each program's scope of work. We considered data saturation reached after these four sessions were conducted. We obtained oral informed consent from all interviewees to audio record the discussions. At each listening session, we provided light snacks for participants, and the facilitator (Z.V.B.) and notetaker (T.R.) introduced themselves and

described the goals of the project. We audio recorded listening sessions, used Otter.ai transcription software for verbatim transcribing, and imported deidentified transcripts into Dedoose software [33].

We used a thematic analysis approach to identify, analyze, and report themes within data [34]. Two coders (T.R. and Z.V.B.) conducted independent, inductive line-by-line coding of the transcripts to generate initial codes in Dedoose. We used memos to define codes, record our reflexive processes examining our assumptions, biases, and influences on data interpretation, and highlight areas of potential differing interpretation. The two coders resolved coding disagreements through discussion. We developed the codebook in an iterative process of reviewing, refining, and finalizing codes through team consensus. After finalizing the codebook, the two coders independently coded all transcripts and then grouped the codes into broader categories to generate themes to capture the broader conceptual findings and patterns in the data. Rather than calculate intercoder reliability [34], we ensured reliability through multiple consensus meetings, iterative refinement of the codebook, and checking for thematic saturation. Following the qualitative analysis, the last integration step was documenting the ways in which the qualitative results helped explain and extend upon the quantitative results [32]. Finally, after producing a draft of initial integrated mixed methods results, all direct service providers were invited to a member checking session to validate the findings [35]. T.R. and Z.V.B. presented the findings to the 15 attendees and then asked attendees to reflect on the accuracy of findings in capturing the listening sessions and what could be added/removed to better capture their experiences [35].

3 | Results

3.1 | Quantitative

Open Arms served over 1800 families across the four programs between January 1, 2016, and December 31, 2022, the majority of whom identified as American Indian/Alaska Native, Asian, Black, Latina/e/x, or Multiracial (Table 2). Across the four programs, around half of the birthing people served, on average, were born outside of the United States, and around 20%–22% spoke Spanish as their primary language. Over one-quarter (28%) in the Outreach Doula Program spoke Somali as their primary language compared to smaller proportions in the other programs. While families lived across 10 Washington counties, most lived in King, Pierce, and Snohomish counties. Around 5% of Birth Doula Services families participated in the Lactation Support Program.

Among the 1567 families served by Birth Doulas Services, there were 1488 home visits that totaled 7748 h, with an average of 6 h per family, and over 12,000 service hours during labor and delivery, with an average of 11 h per family (Table 3). Among the 203 families served by the Outreach Doula Program, there were 13,184 home visits that totaled 11,026 total hours, with an average of 61 h per family, and over 2000 h during labor and delivery, with an average of 14 h per family. Across both groups, over $87,000 in direct funds and 7000 tangible items were dispersed to families. On average, families enrolled in Birth Doula Services at 28 weeks gestation and in Outreach Doula at 25 weeks gestation.

Regarding health outcomes, the prevalence of cesarean section was 26% in Birth Doula Services and 24% in the Outreach Doula Program. Among families in Birth Doula Services, the prevalence of preterm birth was 4.1%, low birthweight was 4.5%, and NICU admission was 5.5%. Among families in the Outreach Doula Program, the prevalence of preterm birth was 9.3%, low birthweight was 12.2%, and NICU admission was 13%. For both groups, the vast majority (> 94%) were breastfeeding/chestfeeding at birth. Of note, around 13%–25% of families were missing health outcome data because the family did not contact the doula for labor and delivery or were unable to be contacted during follow-up.

3.2 | Qualitative

We identified six interconnected themes that emerged across the four groups to describe the facilitators and barriers to community-based doula programs. We operationalized facilitators as aspects of the program that led to positive experiences among birthing families and sustained community-based providers in continuing their work. We operationalized barriers as obstacles that prevented the provision of services and led to adverse experiences of both providers and the families they serve (e.g., negative birth experiences). The supportive and challenging factors that qualitative participants described were conceptualized as reflecting the facilitators and barriers, respectively, of the community-based doula program as a whole.

3.2.1 | Facilitators

3.2.1.1 | Facilitator: Holistic, Culturally Matched Services. Participants across all groups described the effectiveness of the Open Arms model of holistic services and culturally-matched support in which community-based service providers are trusted members of the communities they serve and matched with families based on culture, ethnicity, and preferred language. This cultural congruence between the provider and birthing person helped to build trust, ultimately contributing to positive pregnancy and birth experiences. This mutual trust also helped to retain providers working in their communities, which sustained the program. One participant described their role as being someone:

> who either is from and shares that community affinity, or has an understanding of the communities that we serve. And so that builds a level of trust and a way that families are able to connect, knowing that the provider they're connected with here at Open Arms has experience, potentially the same lived experience or similar ... [We are] able to hold some of the complexities that come up for families who have been oppressed or marginalized and are experiencing various levels of harm or fears as they're navigating through systems, that there's someone who

TABLE 2 | Characteristics of participants in Open Arms programs, January 1, 2016–December 31, 2022.

Characteristics	Birth Doula Services *N* (%)	Community-Based Outreach Doula Program *N* (%)	Lactation Support Program *N* (%)	Family Support Services[b] *N* (%)
Age				
< 20	109 (7)	21 (10)	4 (5)	15 (8)
21–29	748 (49)	109 (54)	48 (57)	88 (49)
30–39	606 (40)	63 (31)	28 (33)	68 (38)
40+	64 (4)	8 (4)	4 (5)	7 (4)
Race and ethnicity[a]				
American Indian/ Alaska Native	32 (2)	12 (6)	8 (9)	3 (1)
Asian	132 (8)	0 (0)	0 (0)	2 (1)
Black	561 (36)	133 (66)	44 (50)	97 (43)
Latina/e/x	411 (26)	46 (23)	26 (30)	54 (24)
White	268 (17)	0 (0)	0 (0)	14 (6)
Multiracial/other	146 (9)	11 (5)	8 (9)	17 (8)
Declined to provide	17 (1)	1 (0)	2 (2)	38 (17)
Primary language				
English	925 (59)	98 (48)	68 (77)	120 (53)
Spanish	310 (20)	44 (22)	18 (20)	45 (20)
Somali	69 (4)	57 (28)	0 (0)	3 (1)
Amharic	50 (3)	0 (0)	1 (1)	12 (5)
Other	213 (14)	4 (2)	1 (1)	45 (20)
Place of birth				
Born in United States	726 (49)	82 (47)	86 (52)	45 (63)
Born outside United States	754 (51)	93 (53)	78 (48)	26 (37)
County of residence				
Island County	11 (1)	0 (0)	0 (0)	0 (0)
King County	1256 (81)	175 (91)	82 (95)	162 (87)
Kitsap County	3 (0)	0 (0)	0 (0)	0 (0)
Lewis County	1 (0)	0 (0)	0 (0)	0 (0)
Mason County	1 (0)	0 (0)	0 (0)	0 (0)
Pierce County	98 (6)	13 (7)	3 (3)	12 (6)
Skagit County	3 (0)	0 (0)	0 (0)	0 (0)
Snohomish County	165 (11)	5 (3)	0 (0)	12 (6)
Thurston County	16 (1)	0 (0)	1 (1)	1 (1)
Whatcom County	1 (0)	0 (0)	0 (0)	0 (0)
Total	1567	203	88	225

Note: If someone was enrolled in multiple programs, they are represented in each program they were enrolled in (e.g., individuals can be in multiple columns).
[a]Data collected included self-reported race and ethnicity categories that follow federal Office of Management and Budget (OMB) categorizations.
[b]Family Support Services began in 2020. Therefore, these numbers do not represent the full study period (2016–2022).

TABLE 3 | Implementation and health outcomes for community-based doula programs, January 1, 2016–December 31, 2022.

	Birth Doula Services		Community-Based Outreach Doula Program	
	N = 1567		*N* = 203	
Implementation outcomes	**Total**	**Average per family (range)**	**Total**	**Average per family (range)**
No. of home visits	1488	1 (0,11)	13,184	65 (0,302)
No. of home visit hours	7748	6 (0, 58)	11,026	61 (2, 244)
No. of labor and delivery hours	12,869	11 (0, 80)	2415	14 (0, 75)
No. of referrals	2432	2 (0, 38)	3240	16 (0, 94)
No. of tangible goods dispersal	1336	5 (0, 36)	5919	29 (0, 229)
Direct funds ($)[a]	$55,406	—	$31,659	—
Health outcomes		***N* (%)**		***N* (%)**
Cesarean rate[b]		290 (26.3)		41 (23.8)
Preterm birth[b]		43 (4.1)		16 (9.3)
Low birthweight[b]		52 (4.5)		21 (12.2)
NICU admission[b]		64 (5.5)		23 (13)
Breastfeeding/chestfeeding		1108 (94)		172 (98)

Note: There were 28 Outreach Doula families missing health outcome data and 388 (25%) Birth Doula Services families missing health outcomes data (444 (28%) for cesarean).
[a]Direct funds started in 2020 at the onset of the COVID-19 pandemic. Individual data is not available, only totals.
[b]Among singleton births only: three multiples in Outreach Doula Program and 21 multiples in Birth Doula Services were removed for these calculations.

> understands and can hold them more holistically. (Family Support Services provider)

Another key aspect of the program discussed by participants was the holistic services that met the varying needs of families, many of whom had acute needs beyond birth including lack of access to housing, food, mental health care, childcare, or immigration and legal support. Open Arms provides both direct support (e.g., giving families car seats and baby supplies) and supports families in navigating external community resources (e.g., accessing mental health care). Notably, families can access Open Arms services without typical barriers faced in other community resources (e.g., free and no ID required). Community-based service providers spoke at length about the many "hats" they wore to meet these diverse needs of birthing families. Oftentimes, this led to time supporting families in ways that were not necessarily recorded in the program's routine record keeping, as this participant describes:

> We're driving around, getting diapers, getting formula, getting car seats, looking for housing for clients … I just do it because I'm like, they need this. So, I'm going to do it. (Birth Doula Services provider)

Together, the holistic and culturally matched services were crucial aspects that facilitated strong relationships and trust with birthing families. These relationships enabled community-based service providers to offer informed and proactive support to comprehensively meet the needs of marginalized birthing families. One participant explained it as "meeting people where they are" and, in turn, "they will see you for who you really are. And that'll help you have a better relationship with your client … you're part of their village … you go from doula to mom, or auntie or you know, whomever they need" (Birth Doula Services provider). This relational and holistic approach to pregnancy-related care resulted in families being able to "thrive when they have the wraparound services that meet their health needs, the baby's needs and their basic necessities" (Family Support Services provider).

3.2.1.2 | Facilitator: "Doulas Need to Be Doula'ed". Another key facilitator was that community-based service providers needed support themselves in order to sustain providing these holistic, culturally matched services. "The doula needs to be doula'ed" in order to build the relationships and trust that led to optimal pregnancy experiences (Birth Doula Services provider). One participant described it as a positive feedback loop where support for community-based providers led to bolstered support of families: "if we're supported then there's more in our cup to be able to fill the cups of our clients" (Birth Doula Services provider).

This facilitator was present at the organizational level and among peers, mentors, community, and families. At the organizational level, participants described flexible workplace policies (e.g., "offline" days with no meetings), formalized mentorship to help providers develop their skills and navigate challenges, on-call midwives available for support/questions,

continued professional development, and training/educational opportunities (both internal and external) as key factors in sustaining the program. Community-based providers also derived support through mentorship from their peers and trained mentors. One participant described it as: "we doula one another and continue to create unity and [a] village amongst one another" (Birth Doula Services provider). Fellow direct service providers serve as important sources to decompress, seek advice, process challenging situations, and celebrate successes. Additionally, given the unpredictable and time-sensitive nature of birth work, doulas also felt supported when they could call on other doulas to cover a birth for them. This sense of community of support within Open Arms was discussed across all groups, described as "being held through the work that we do with the families and with each other" (Family Support Services provider).

3.2.2 | Barriers

Four interconnected themes described challenges of the community-based program including (1) intersecting systems of oppression that harm community-based providers and the families they serve, (2) lack of resources due to policy and institutional constraints, (3) navigating power asymmetries within birth settings, and (4) burnout of community-based providers. Guided by the socioecological model [36], we conceptualized these themes as embedded and connected but operating at distinct levels from societal (Theme 1) to individual (Theme 4).

3.2.2.1 | Societal-Level Barrier: Intersecting Systems of Oppression That Harm Community-Based Providers and the Families They Serve. Participants identified how intersecting systems of oppression, like white supremacy, structural racism, sexism, and xenophobia, shaped the pregnancy and birth experiences of the families they worked with. Participants explicitly named the challenges experienced by the families they serve—as well as language inaccessibility, mistreatment, and lack of affordable housing, food, and health care—as systemic.

> I think the systemic part is really key in this ... the bigger picture like systemic racism and also systemic like, barrier and oppression on the communities that we are working with and that we are part of too. (Lactation Support Program provider)

These intersecting systems of oppression shaped how families were treated in the birth setting based on the intersectional identities they held or were perceived to hold.

> If it's a queer family, that will ... kind of shift things ... And then for a family that might not look like they have all the resources in the world, right? Like, that also looks really different, or a family that uses like, African American Vernacular, right? Like, they assume that they don't know anything, or they don't ask them questions ... And so that makes it really frustrating when I'm like, there isn't even consistency among how the hospital shows up. (Outreach Doula Program provider)

This differential treatment was directly linked to histories of structural oppression, including the extensive historical trauma in the Indigenous community that leads to "unnecessary interventions ... a lot of biased opinions and stereotypes" (Outreach Doula Program provider). Participants also described that holding the same structurally marginalized identities as the families they serve had some benefit due to similar lived experiences, but that it was predominately challenging both living in and helping families navigate these systems of oppression.

> [You've got] your own life going on, your own family members, you know, that are in the same community facing these same barriers that you're trying to help along with your clients. And you're facing these barriers at the same time ... (Outreach Doula Program provider)

3.2.2.2 | Community-Level Barrier: Lack of Resources due to Policy and Institutional Constraints. Participants described how these same overarching systems of oppression, like racism, also manifest in the form of lack of resources for the families they serve. As depicted in Figure 1, participants described the lack of resources at the community level as rooted in structural racism.

> It's policies, it's racism, hierarchy. We're dealing with housing crises. Right now we're dealing with a lack of food benefits. A lack of mental health [care]. All of our resources are like tapped or have like months of waiting lists ... We are dealing with chronic white supremacy issues here. (Outreach Doula Program provider)

Open Arms coordinates referrals with external organizations that provide rental assistance, food, intimate partner violence services, and mental health care. However, these resources were often limited, completely lacking, or language inaccessible due to policy and organizational constraints. For example, participants described external organizations running out of resources, lack of sufficient relationships/linkages with external organizations to refer families to, limited low-to-no barrier resource options, and geographic barriers (e.g., county border lines that restrict what county resources are available to families). Additionally, participants discussed the absence or limitations of policies that provide pregnancy and parenting support, such as not working enough hours to qualify for paid family leave or inadequate policies for postpartum and lactation support.

Lack of language-accessible services, both within and outside the birth setting, was discussed as a large barrier across groups. While Open Arms tries to match providers and families based on language, this was not always possible due to a lack of funding for trainings that could expand the number of doulas who speak the variety of languages of Open Arms families (see Table 1 for primary languages spoken). Participants shared anecdotes of interpretation services that

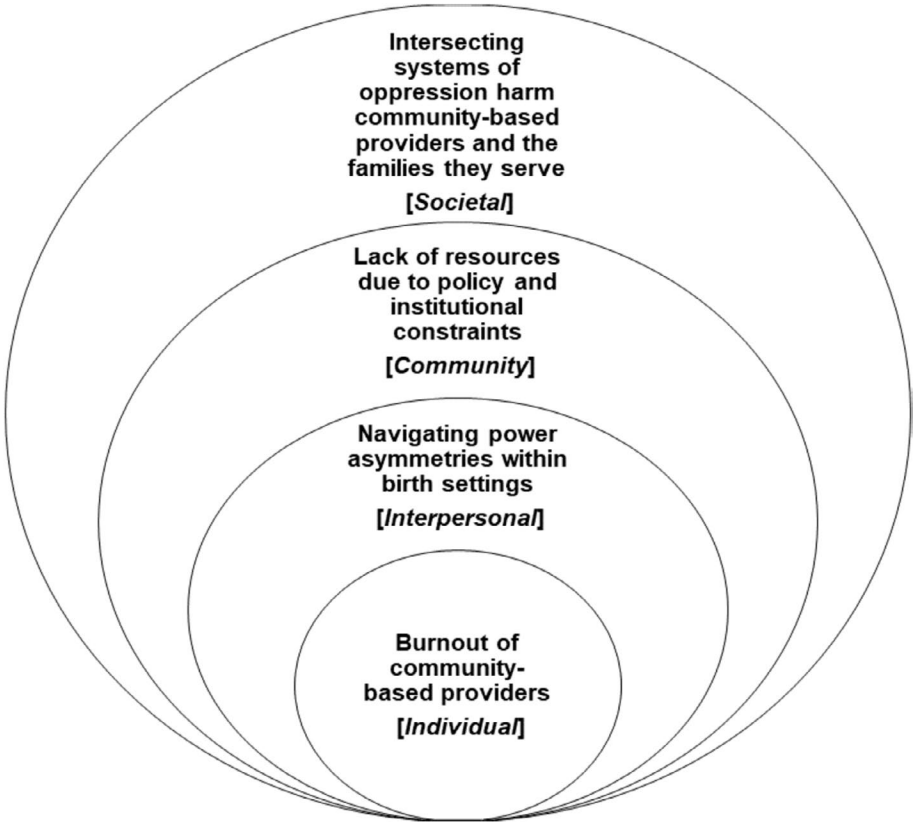

FIGURE 1 | Nested themes for barriers of a community-based doula program.

were not always reliable, timely or accurate. For example, birthing families who used hospital interpreters would experience incomplete and sometimes misleading translations, lack of proper consent for all labor interventions, reduced privacy, and not enough time for labor decisions compared to English speakers. The lack of quality interpretation services, both within the hospital and in the community at large, "leaves [immigrants and non-English speakers] behind in so many ways" (Lactation Support Program provider).

3.2.2.3 | Interpersonal-Level Barrier: Navigating Power Asymmetries in Birth Settings. The intersecting systems of oppression also shaped the power asymmetries present in birth settings among medical staff, doulas, and birthing families. Medical staff, including nurses and doctors, generally maintain decision-making power and authority within birth settings, which can sometimes lead to conflict with doulas if these decisions do not align with families' preferences. For Black, Indigenous, Latina/e/x and other doulas of color, these barriers to centering their families' wishes are exacerbated when navigating the interacting power differentials of race and credentials in the birth setting. Indeed, doulas described approaching each birth as akin to "preparing to go in for a war at their birth" and not being sure of what might happen.

> Because sometimes if you're going to the hospital, you gotta go in there with the full armor of God, because you never know what you're up against sometimes. (Birth Doula Services provider)

Part of this unpredictability was due to differing and unclear hospital policies regarding birth practices, such as delayed cord clamping, use of cameras in delivery room, or the birthing person's desire to transfer their care to another clinician. Several participants agreed with the sentiment that hospital policies could be weaponized by hospital staff and that "some of the policies [are] not a policy at all. It's the nurse's policy" (Birth Doula Services provider). These unpredictable hospital policies, often viewed as subjective or unwarranted by doulas, would lead to conflict between doulas and medical staff. Lastly, doulas noted a lack of knowledge or respect from hospital staff, particularly, doctors and nurses, about doulas and what their role was. One participant described it as:

> Nurses are like gatekeepers, sometimes they don't want you in there. The providers, due to lack of knowledge of our expertise, they don't understand the purpose for us even being in the room. (Birth Doula Services provider)

Participants also shared their strategies for navigating these power asymmetries including being clear with medical staff that they work for the birthing person and not the hospital, requesting documentation of hospital policies, and building relationships with clinicians over time so they can have open conversations to work through conflicts.

3.2.2.4 | Individual-Level Barrier: Burnout of Community-Based Providers. The lack of community resources and power asymmetries within birth settings, all stemming from intersecting systems of oppression, led to the burnout

of community-based providers. This burnout and risk of turnover are significant barriers to sustaining a community-based doula program. Participants spoke at length about the difficulties they experienced supporting families by taking on their challenges and helping them navigate systemic barriers. The demanding nature of community-based care and building relationships with families can lead to compassion fatigue, stress, and burnout.

> I think that can lead to burnout ... that we're kind of overextending ourselves, because for us, our clients are more like family. It's not always a transactional situation where it's like you've paid me so now I'm going to do this. This is when you're an empath, and you're a healer, you understand things for people that are needing it. And if you can figure it out, then you usually do. (Birth Doula Services provider)

Community-based providers "show up in places that people don't even think about... the corners that kind of get left in the dark" (Outreach Doula Program provider). Because of this, they must address the substantial challenges experienced by birthing families, which directly affect the well-being of community-based providers as well. As one participant explained:

> It's just really hard to witness ... to support people in accessing these things. Systemically you notice all these barriers, and so it does have a huge impact and effect on our supporting folks. (Lactation Support Program provider)

This work often had emotional, mental, and physical impacts on the community-based provider's own health and well-being. As one participant described:

> I need strength because you know, this is weighing on me, this is just as taxing on my body, my mental health as well. I'm trying to take it all, you know, I want this to be very serene for you. So, I'm grabbing your stress. (Birth Doula Services provider)

Notably, there was a synergy between the barrier of burnout that community-based providers experienced when holistically meeting the needs of the families they serve and the facilitator of "doulas need to be doula'ed." The organizational infrastructure of mentorship, training, and flexible workplace policies (e.g., "doula-ing the doula") was introduced to counteract the barriers and burnout experienced by community-based providers and to sustain the program. This was described as an iterative process that required both the organization and community-based providers to be flexible in responding to emergent needs of both providers and the families they serve.

3.3 | Mixed-Methods Integration

The facilitators that emerged from the qualitative data provided key insights that helped explain the striking quantitative findings of high levels of home visits, hours with families, and positive birth outcomes (e.g., vaginal and term births). Specifically, participants' qualitative descriptions of the holistic services reflected the extensive number of hours spent with families and the tangible items, direct funds, and referrals given to families. However, the qualitative data revealed these implementation outcomes were likely *underestimates* because much of community-based provider's work entailed labor outside of home visit or labor/delivery hours (e.g., cooking meals, finding car seats, answering texts and calls at night etc.). Additionally, some divergence emerged between the qualitative findings of supporting family autonomy and agency in defining their own positive birth outcomes compared to the standard quantitative measures of "positive" outcomes. For example, while exclusive breastfeeding is generally seen as the gold standard positive outcome, participants urged that instead a patient-centered outcome that reflects the patient's informed choice to use formula, donated human milk, and/or direct breast feeding was a better representation of "positive" perinatal outcomes.

4 | Discussion

This study explored the implementation and outcomes of a community-based doula program and underscored the dual importance of providing holistic services for marginalized families alongside structural supports for the community-based providers doing this demanding work. Our mixed-methods findings documented the substantial number of hours spent with birthing families and the amount of direct funds and tangible items provided, which were further contextualized with the qualitative findings of the many roles that community-based providers play to meet the needs of birthing families. Intersecting systems of oppression, such as structural racism and sexism, underlie the primary challenges faced by the community-based doula program, including lack of community resources and power asymmetries within birth settings, that lead to provider burnout. These findings affirm other research that suggests an undue burden is placed on doulas and other community-based providers to improve persistent racialized inequities while they are simultaneously experiencing and supporting families in the context of discrimination and inequitable institutions [24–26]. These findings add to the growing body of work documenting the positive impact of community-based doula programs and bolster the widespread calls for increased compensation and structural supports for doulas [20, 22, 25].

While we were unable to perform any causal analyses linking the program aspects to outcomes due to lack of data for an appropriate comparison group, the qualitative findings suggest the combined aspects of the holistic program (e.g., home visits, resource acquisition, having a supportive person to call/text) were a likely contributor to a higher prevalence of term, vaginal, and healthy weight births. These outcome data are not directly comparable to overall county or state specific measures because this study population is only families living within 200% of the federal poverty level, but there are some comparisons worth noting. The cesarean rate among Open Arms birthing people (24%–26%) is slightly lower in both programs compared to the Washington state average (30%) [37]. The preterm birth prevalence among

families in the Birth Doula Program was much lower (4%) compared to the state average (9%). Given that the Outreach Doula Program just serves Black, Somali, Indigenous, and Latina/e/x families, the program's 9% average is on par with or lower than the state averages for these same racialized groups (14% Indigenous, 10% Black, and 9% Latina) [37]. Alongside the qualitative findings of doulas building trusting relationships with families, these quantitative findings strengthen previous research showing that doulas play a crucial role in disrupting systemic patterns of frequent medical interventions, high cesarean rates, and trauma from negative birth experiences [20, 24].

This study also documents how the four interconnected programs of Open Arms are systems-focused in how they address structural racism as it manifests through mutually reinforcing inequitable systems like housing, health care, and employment [3]. Community-based service providers described how the unique integration of lactation support, doula care, resource acquisition for housing, food, baby items, and other necessities can work synergistically to address the intergenerational impacts of structural racism on health and well-being. Indeed, these mixed-methods findings show how this comprehensive community-based approach can help achieve positive outcomes for families. Similar studies also describe housing, food, and mental health services as the largest needs of the families that community-based doulas serve [38], suggesting that resource acquisition is an essential part of these programs and requires increased funding to sustain. Notably, the geographic barriers to resource acquisition are tied to other aspects of structural racism like gentrification that pushes families out of cities/counties with more publicly funded resources [39]. Thus, community-based doula programs have the potential to disrupt these systemic harms, but structural and policy approaches are needed to address inequitable access to resources, such as affordable housing, livable wages, paid parental leave, and comprehensive postpartum care [2, 40, 41].

Community-based service providers dedicate a vast amount of time to reliably support birthing families, shining a light on the financial undervaluing of birth worker services. This study helps illuminate the invisibilized labor that is required to build the infrastructure for these robust referral systems and the underlying work of structurally supporting community-based doula programs beyond prenatal and birth hours. This comprehensiveness is partly reflected in the average of 17–75 total hours spent per family with ranges up to 200 h, but the qualitative findings reveal how these are likely underestimates. It is important to note that these estimates do not fully capture the organizational components that sustain a robust infrastructure that adequately supports doulas, including timely payments for services, expertly matching doulas with families, resource acquisition for families, and evidence-based reflective mentorship and relationship-based practices [42]. These organizational supports are critical for sustaining community-based doula programs and should be taken into account when setting appropriate compensation and insurance reimbursement for doulas [43].

These findings also have implications for collaborators and funders of community-based doula programs. Cross-sector collaborations, such as with public health nurses, social workers, and medical providers, could buttress the work of doulas in meeting the comprehensive needs of low-income birthing families. As described by participants, though, the lack of community resources is driven by systemic factors and thus require systemic strategies, such as policy changes like guaranteed basic income [2]. Regarding funders, there is a need for monetary and structural support for community-based service providers, who witness and try to disrupt the racism and obstetrical violence their families experience, which can lead to burnout. Funders should also recognize the extensive labor, which is often made invisible, that goes into building community linkages, "doulaing the doula", and infrastructure required to result in this reliable, consistent, and trustworthy support for birthing families.

5 | Limitations

This study had several limitations. First, these findings are descriptive, and we are unable to conduct any causal or associative analyses due to the lack of a comparative control group. Second, the recorded home visit hours did not include time spent on administrative duties, travel, resource acquisition, and other aspects of supporting families that doulas routinely provide. Third, the qualitative findings only reflect the experiences of community-based direct service providers, not the individuals and families enrolled at Open Arms. Fourth, the listening sessions were conducted with coworkers and sometimes supervisors; thus, participants may not have felt comfortable sharing their experiences in this setting due to potential power differentials and/or lack of anonymity. Fifth, the missing birth outcome data is likely nonrandom, and we could be underestimating the prevalence of adverse birth outcomes in this program. Finally, the generalizability of these findings to other community-based doula programs in different social contexts may be limited.

6 | Conclusions

Community-based programs that are culturally and relationship centered, like Open Arms, provide an example of how systems-focused programs can mitigate the effects of structural racism on health inequities. Holistic services are essential to meet the acute needs of marginalized birthing families, and there is a simultaneous need for increased funding and structural supports for the programs and individuals providing this care.

References

1. J. C. Phelan and B. G. Link, "Is Racism a Fundamental Cause of Inequalities in Health?," *Annual Review of Sociology* 41, no. 1 (2015): 311–330, https://doi.org/10.1146/annurev-soc-073014-112305.

2. J. Crear-Perry, R. Correa-de-Araujo, T. Lewis Johnson, M. R. McLemore, E. Neilson, and M. Wallace, "Social and Structural Determinants of Health Inequities in Maternal Health," *Journal of Women's Health* 30, no. 2 (2021): 230–235, https://doi.org/10.1089/jwh.2020.8882.

3. Z. D. Bailey, N. Krieger, M. Agénor, J. Graves, N. Linos, and M. T. Bassett, "Structural Racism and Health Inequities in the USA: Evidence and Interventions," *Lancet* 389, no. 10077 (2017): 1453–1463, https://doi.org/10.1016/S0140-6736(17)30569-X.

4. B. D. Chambers, J. T. Erausquin, A. E. Tanner, T. R. Nichols, and S. Brown-Jeffy, "Testing the Association Between Traditional and Novel

Indicators of County-Level Structural Racism and Birth Outcomes Among Black and White Women," *Journal of Racial and Ethnic Health Disparities* 5, no. 5 (2018): 966–977, https://doi.org/10.1007/s40615-017-0444-z.

5. T. Chantarat, D. C. Van Riper, and R. R. Hardeman, "Multidimensional Structural Racism Predicts Birth Outcomes for Black and White Minnesotans," *Health Services Research* 57, no. 3 (2022): 448–457, https://doi.org/10.1111/1475-6773.13976.

6. M. E. Wallace, P. Mendola, D. Liu, and K. L. Grantz, "Joint Effects of Structural Racism and Income Inequality on Small-for-Gestational-Age Birth," *American Journal of Public Health* 105, no. 8 (2015): 1681–1688, https://doi.org/10.2105/AJPH.2015.302613.

7. Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, *Racial/Ethnic Disparities in Pregnancy-Related Deaths—United States, 2007–2016* (Centers for Disease Control and Prevention, 2022), https://www.cdc.gov/reproductivehealth/maternal-mortality/disparities-pregnancy-related-deaths/Infographic-disparities-pregnancy-related-deaths-h.pdf.

8. D. Ely and A. Driscoll, "Infant Mortality in the United States, 2019: Data From the Period Linked Birth/Infant Death File," *National Vital Statistics Reports* 70, no. 14 (2021): 1–18.

9. M. Osterman, B. Hamilton, J. Martin, and A. Driscoll, "Births: Final Data for 2020," *National Vital Statistics Reports* 70, no. 17 (2022): 1–50.

10. T. Riley, D. A. Enquobahrie, L. S. Callegari, and A. Hajat, "Structural Gendered Racism and Preterm Birth Inequities in the United States," *Social Science & Medicine* 2024, no. 348 (1982): 116793, https://doi.org/10.1016/j.socscimed.2024.116793.

11. E. M. Hailu, S. R. Maddali, J. M. Snowden, S. L. Carmichael, and M. S. Mujahid, "Structural Racism and Adverse Maternal Health Outcomes: A Systematic Review," *Health & Place* 78 (2022): 102923, https://doi.org/10.1016/j.healthplace.2022.102923.

12. E. D. Hodnett, S. Gates, G. J. Hofmeyr, and C. Sakala, "Continuous Support for Women During Childbirth," *Cochrane Database of Systematic Reviews* 7 (2013): CD003766, https://doi.org/10.1002/14651858.CD003766.pub5.

13. M. A. Bohren, G. J. Hofmeyr, C. Sakala, R. K. Fukuzawa, and A. Cuthbert, "Continuous Support for Women During Childbirth," *Cochrane Database of Systematic Reviews* 7 (2017): CD003766, https://doi.org/10.1002/14651858.CD003766.pub6.

14. K. J. Gruber, S. H. Cupito, and C. F. Dobson, "Impact of Doulas on Healthy Birth Outcomes," *Journal of Perinatal Education* 22, no. 1 (2013): 49–58, https://doi.org/10.1891/1058-1243.22.1.49.

15. K. B. Kozhimannil, R. R. Hardeman, L. B. Attanasio, C. Blauer-Peterson, and M. O'Brien, "Doula Care, Birth Outcomes, and Costs Among Medicaid Beneficiaries," *American Journal of Public Health* 103, no. 4 (2013): e113, https://doi.org/10.2105/AJPH.2012.301201.

16. K. B. Kozhimannil, L. B. Attanasio, J. Jou, L. K. Joarnt, P. J. Johnson, and D. K. Gjerdingen, "Potential Benefits of Increased Access to Doula Support During Childbirth," *American Journal of Managed Care* 20, no. 8 (2014): e340–e352.

17. W. L. Wolman, B. Chalmers, G. J. Hofmeyr, and V. C. Nikodem, "Postpartum Depression and Companionship in the Clinical Birth Environment: A Randomized, Controlled Study," *American Journal of Obstetrics and Gynecology* 168, no. 5 (1993): 1388–1393, https://doi.org/10.1016/s0002-9378(11)90770-4.

18. C. J. Marshall, A. Nguyen, S. Arteaga, et al., "Building Capacity for Research on Community Doula Care: A Stakeholder-Engaged Process in California," *Maternal and Child Health Journal* 28, no. 3 (2024): 400–408, https://doi.org/10.1007/s10995-023-03883-2.

19. A. Bey, A. Brili, C. Porchia-Albert, M. Gradilla, and N. Strauss, *Advancing Birth Justice: Community-Based Doula Models as a Standard of Care for Ending Racial Disparities* (Ancient Song Doula Services, Village Birth International, Every Mother Counts, 2019), https://everymothercounts.org/wp-content/uploads/2019/03/Advancing-Birth-Justice-CBD-Models-as-Std-of-Care-3-25-19.pdf.

20. K. B. Kozhimannil, C. A. Vogelsang, R. R. Hardeman, and S. Prasad, "Disrupting the Pathways of Social Determinants of Health: Doula Support During Pregnancy and Childbirth," *Journal of the American Board of Family Medicine* 29, no. 3 (2016): 308–317, https://doi.org/10.3122/jabfm.2016.03.150300.

21. D. A. Davis, "Obstetric Racism: The Racial Politics of Pregnancy, Labor, and Birthing," *Medical Anthropology* 38, no. 7 (2019): 560–573, https://doi.org/10.1080/01459740.2018.1549389.

22. M. S. Van Eijk, G. A. Guenther, P. M. Kett, A. D. Jopson, B. K. Frogner, and S. M. Skillman, "Addressing Systemic Racism in Birth Doula Services to Reduce Health Inequities in the United States," *Health Equity* 6, no. 1 (2022): 98–105, https://doi.org/10.1089/heq.2021.0033.

23. K. Wint, T. I. Elias, G. Mendez, D. D. Mendez, and T. L. Gary-Webb, "Experiences of Community Doulas Working With Low-Income, African American Mothers," *Health Equity* 3, no. 1 (2019): 109–116, https://doi.org/10.1089/heq.2018.0045.

24. C. A. Kathawa, K. S. Arora, R. Zielinski, and L. K. Low, "Perspectives of Doulas of Color on Their Role in Alleviating Racial Disparities in Birth Outcomes: A Qualitative Study," *Journal of Midwifery & Women's Health* 67, no. 1 (2022): 31–38, https://doi.org/10.1111/jmwh.13305.

25. K. Thomas, S. Quist, S. Peprah, K. Riley, P. C. Mittal, and B. T. Nguyen, "The Experiences of Black Community-Based Doulas as They Mitigate Systems of Racism: A Qualitative Study," *Journal of Midwifery & Women's Health* 68, no. 4 (2023): 466–472, https://doi.org/10.1111/jmwh.13493.

26. P. M. Kett, M. S. van Eijk, G. A. Guenther, and S. M. Skillman, ""This Work That We're Doing Is Bigger Than Ourselves": A Qualitative Study With Community-Based Birth Doulas in the United States," *Perspectives on Sexual and Reproductive Health* 54, no. 3 (2022): 99–108, https://doi.org/10.1363/psrh.12203.

27. E. Falade, R. M. Cornely, C. Ezekwesili, et al., "Perspectives on Cultural Competency and Race Concordance From Perinatal Patients and Community-Based Doulas," *Birth* 50, no. 2 (2023): 319–328, https://doi.org/10.1111/birt.12673.

28. S. M. Ogunwole, J. Karbeah, D. G. Bozzi, et al., "Health Equity Considerations in State Bills Related to Doula Care (2015–2020)," *Women's Health Issues* 32, no. 5 (2022): 440–449, https://doi.org/10.1016/j.whi.2022.04.004.

29. P. H. Collins, *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment* (Routledge, 1991).

30. Combahee River Collective, "The Combahee River Collective Statement," 1977 accessed June 9, 2022, https://www.blackpast.org/african-american-history/combahee-river-collective-statement-1977/.

31. K. Crenshaw, *Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics*, vol. 1 (University of Chicago Legal Forum, 1989), 8, http://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8.

32. J. W. Creswell and V. L. Plano Clark, *Designing and Conducting Mixed Methods Research*, 2nd ed. (SAGE Publications, 2011).

33. Dedoose, "Version 9.0.17, Cloud Application for Managing, Analyzing, and Presenting Qualitative and Mixed Method Research Data," 2021, www.dedoose.com.

34. V. Braun and V. Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (2006): 77–101, https://doi.org/10.1191/1478088706qp063oa.

35. C. McKim, "Meaningful Member-Checking: A Structured Approach to Member-Checking," *American Journal of Qualitative Research* 7, no. 2 (2023): 41–52.

36. U. Bronfenbrenner, "Toward an Experimental Ecology of Human Development," *American Psychologist* 32, no. 7 (1977): 513–531, https://doi.org/10.1037/0003-066X.32.7.513.

37. March of Dimes, "Peristats: State Summary for Washington," 2021, accessed November 17, 2023, https://www.marchofdimes.org/peristats/state-summaries/washington?lev=1&obj=3&reg=99&slev=4&sreg=53&stop=55&top=3.

38. R. West, A. DiMeo, A. Langer, N. Shah, and R. L. Molina, "Addressing Racial/Ethnic Inequities in Maternal Health Through Community-Based Social Support Services: A Mixed Methods Study," *Maternal and Child Health Journal* 26, no. 4 (2022): 708–718, https://doi.org/10.1007/s10995-021-03363-5.

39. T. Riley, J. P. Schleimer, and J. L. Jahn, "Organized Abandonment Under Racial Capitalism: Measuring Accountable Actors of Structural Racism for Public Health Research and Action," *Social Science & Medicine* 343 (2024): 116576, https://doi.org/10.1016/j.socscimed.2024.116576.

40. F. M. Muchomba, J. Teitler, and N. E. Reichman, "Association Between Housing Affordability and Severe Maternal Morbidity," *JAMA Network Open* 5, no. 11 (2022): e2243225, https://doi.org/10.1001/jamanetworkopen.2022.43225.

41. K. A. Komro, M. D. Livingston, S. Markowitz, and A. C. Wagenaar, "The Effect of an Increased Minimum Wage on Infant Mortality and Birth Weight," *American Journal of Public Health* 106, no. 8 (2016): 1514–1516, https://doi.org/10.2105/AJPH.2016.303268.

42. M. Tobin, S. Carney, and E. Rogers, "Reflective Supervision and Reflective Practice in Infant Mental Health: A Scoping Review of a Diverse Body of Literature," *Infant Mental Health Journal* 45, no. 1 (2024): 79–117, https://doi.org/10.1002/imhj.22091.

43. J. Arcara, A. Cuentos, O. Abdallah, et al., "What, When, and How Long? Doula Time Use in a Community Doula Program in San Francisco, California," *Women's Health* 19 (2023): 17455057231155302, https://doi.org/10.1177/1745505723115530.