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# Examining the influence of group diversity on the functioning of community-based participatory research partnerships: A mixed methods study

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## Abstract

Public health has endorsed the use of community-based participatory research (CBPR) to address health inequities involving diverse and marginalized communities. However, few studies have examined how group diversity among members of CBPR partnerships influenced how well the partnerships achieve their goals of addressing health inequities through equitable collaboration. We conducted secondary, convergent, mixed methods analysis to (1) evaluate the association between group diversity and participatory decision-making within CBPR partnerships, and (2) identify the perceived characteristics, benefits, and challenges of group diversity within CBPR partnerships. Using data from a cross-site study of federally funded CBPR partnerships, we analyzed and integrated data from surveys of 163 partnerships ($n = 448$ partners) and seven in-depth case study interviews ($n = 55$ partners). Quantitatively, none of the measured characteristics of group diversity was associated with participatory decision-making within the partnerships. Qualitatively, we found that partnerships mainly benefited from membership differences in functional characteristics (e.g., skillset) but faced challenges from membership differences in sociocultural characteristics (e.g., gender and race). The integrated findings suggest the need to further understand how emergent group characteristics and how practices that engage in group diversity contribute to collective functioning of the partnerships. Attention to this area can help promote health equity achievements of CBPR partnerships.

**KEYWORDS**

community-academic research partnerships, community-based participatory research, diversity, partnership functioning

## Highlights

- Understanding how group diversity shapes the collaborative functioning of a community-based participatory research (CBPR) partnership to address health inequities is important.
- We examined how group diversity influenced the collective functioning of CBPR partnerships using a mixed methods approach.
- Quantitatively, we found that differences among members in demographic backgrounds did not influence participatory decision-making.
- Qualitatively, we found that partnerships benefited from differences among members in functional backgrounds but faced challenges from differences in social and cultural backgrounds.
- Fostering equitable practices that support the range of group diversity can enhance the success of CBPR.

# INTRODUCTION

In an increasingly pluralistic society, there is a need to address how individuals could work effectively with others who have distinct identities and worldviews while affirming the core values of human diversity (Jones, 1990). For the past three decades, public health, community psychology, and allied fields have embraced the use of community-based participatory research (CBPR) to address health inequities by engaging with communities impacted by inequitable research relationships, structural racism, and other forms of systemic oppression (Israel et al., 2018; Lykes, 2017; McCloskey et al., 2011; Rodríguez Espinosa et al., 2020; Wallerstein & Duran, 2006). Contemporary systematic reviews of community-engaged research point to the positive impacts of these approaches on health and social outcomes (Cyril et al., 2015; O'Mara-Eves et al., 2015; Salimi et al., 2012). These collaborations have been promoted to diversify the public health workforce, enhance the participation of marginalized communities in research, and optimize the translation of research into action (Cook, 2008; Stokols, 2006; Wallerstein et al., 2019). Although bridging relationships between academic and community partners of diverse backgrounds is an underlying rationale for the use of CBPR to address health inequities through equitable collaboration, few studies have examined the contribution of group diversity to the dynamics and outcomes of the partnerships (Wallerstein et al., 2008).

This study focuses on CBPR, defined as a community-engaged research approach that engages all partners equitably and recognizes the unique strengths that each brings with the goal of combining knowledge with action to promote social change and health equity (W.K. Kellogg Foundation, 2001). Though partnerships may vary in membership size, representation, and affiliation, fostering equitable collaboration throughout the research process to attain the partnership goal of addressing health inequities is considered to be an ideal of CBPR (Israel et al., 2018). Thus, this study considers participatory decision-making as a measured outcome that reflects the extent to which a partnership fosters equitable collaboration among its members (Israel et al., 2018). Using a mixed methods convergent design of data from a cross-sectional study of federally funded CBPR partnerships, this study examines which characteristics of group diversity influenced how well CBPR partnerships collaborate equitably to achieve their goals of addressing health inequities (which we will refer to as collective functioning).

## Review of the literature

### Determinants of effective CBPR functioning

CBPR practitioners have sought to develop and test conceptual models that provide a mechanistic understanding of how the contextual, organizational, and relational dimensions of CBPR partnerships contribute to intermediate capacity-building and long-term health outcomes (Kastelic et al., 2018; Oetzel et al., 2018). The CBPR Conceptual Model, which guides our study, posits that characteristics of the partnership organization (e.g., group diversity and culturally bridging capital), as shaped by macro-level contexts, could influence relational aspects of the partnership (e.g., collective functioning), impact the research conduct, and influence capacity-building and health outcomes (Center for Participatory Research, 2020; see Supporting Information: 1). A few qualitative and quantitative studies support the notion that how CBPR partnerships are organized may influence their collective functioning (Becker et al., 2013). For example, a qualitative study identified the degree of inclusive membership as a dimension of a partnership's readiness to conduct CBPR that may in turn influence its outcomes (Andrews et al., 2012). A survey analysis found that partnerships with certain engagement structures (e.g., tribal governance or public health approval structures) were found to have greater control of resources and data ownership by community partners (Oetzel et al., 2015a). A mixed methods study revealed that relational aspects of the partnership, including equitable decision-making, influenced the personal outcomes of partners (Rodríguez Espinosa et al., 2020). This line of evidence promotes the consideration of partnership organizational structure as a potential predictor of their collective functioning.

### The influence of group diversity on CBPR functioning

The changing demographic composition of the U.S. society and workforce have stimulated research interests in understanding the impacts of diversity on the performance of work groups (Roberson, 2019). In this study, group diversity is defined as a structural characteristic of a partnership (or group characteristic) that indicates membership variation with respect to sociodemographic identity, skills and knowledge, and other socially constructed and evolving characteristics of membership differences that meaningfully shape how group members relate to one another at a given time (Bell et al., 2011; DiTomaso et al., 2007; Harrison & Klein, 2007). CBPR partnerships typically involve a core work group (or work team) leading coordinated work to realize their collective functioning. Thus, the literature on work groups is appropriate to review in this context given the lack of empirical research on diversity in CBPR partnerships.

Systematic reviews of the literature, primarily from the fields of community psychology, management, and organizational behavior, articulate three hypothesized mechanisms that help to explain the ways in which diversity within work groups can influence their performance (Roberson, 2019; Van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). First, the social categorization hypothesis asserts that individuals maintain social identities by categorizing and distinguishing each other according to salient group characteristics (Tajfel, 1981). These tendencies are predicted to elevate the group's conflict and communication issues,

compromise collective problem solving, and dampen group performance (Williams & O'Reilly, 1998). Second, the similarity/attraction hypothesis posits that individuals who are similar in backgrounds may benefit from bridging experiences and shared values (Berscheid & Walster, 1978; Bryne, 1971; Pfeffer, 1985). Greater levels of group diversity may reduce interpersonal attractions among members with similar backgrounds and are thought to impede group cohesion, communication, and performance (Williams & O'Reilly, 1998). Third, the information/decision-making hypothesis states that individuals in diverse teams may benefit from the variety of skills, information, and social connections of others (Tziner & Eden, 1985). Greater access to multiple problem-solving capacities may promote the identification of effective solutions and improve group performance (Page, 2007; Williams & O'Reilly, 1998).

Although the literature supports the hypothesis that characteristics of group diversity impact the performance of work groups, the strength, and direction of this relationship have been mixed (Horwitz & Horwitz, 2007; Jackson, 2003; Joshi & Roh, 2009). Most of the research focuses on explicit, widely recognized, and traditionally measurable sociodemographic characteristics (e.g., age, gender, race, and ethnicity); a few studies address implicit and nuanced group characteristics that influence power, position, and interactions among group members (Horwitz & Horwitz, 2007; Jackson, 2003; Roberson, 2019; Van Knippenberg & Schippers, 2007). The scarcity of evidence in this area motivates efforts to clarify how implicit and explicit group characteristics influence the collective functioning of work teams across different settings.

In healthcare and public health, scholars have proposed that efforts to diversify the workforce can lead to improved access to care, quality of care, and health equity (Cohen et al., 2002; Department of Health and Human Services US, 2006; Williams et al., 2014). Although a limited number of studies have shown that partners' identity, intersectionality, and positionality influence their engagement in the partnerships (Muhammad et al., 2014), much less is known about how group diversity contributes to the partnership process and collective functioning of CBPR. In particular, CBPR represents a power-sharing structure in which academic and community partners strive to engage in deliberative practices to address power, status, and oppression within and outside the partnership (Wallerstein et al., 2019). Membership similarities and differences in salient group characteristics may serve as a meaningful context that influence how academic and community partners develop, make sense of, and maintain relationships to achieve the collective partnership goals (Bond, 2016; DiTomaso et al., 2007; Trickett, 2002). This motivates our intent to investigate the hypothesized association between group diversity and collective functioning of CBPR partnerships.

Our literature review identified the need to examine which group characteristics mattered in CBPR partnerships and to what extent these characteristics promoted or impeded their collective functioning. To this end, this study addressed the following two research questions: (1) What is the association between measured characteristics of group diversity and participatory decision-making within CBPR partnerships? (2) What are the perceived characteristics, benefits, and challenges of group diversity within CBPR partnerships? We used a mixed method approach to help understand the context, experience, and perceptions that shaped the complex relationship between group diversity and collective functioning of CBPR partnerships (Lucero et al., 2018).

# METHODS

## Study design

We employed a convergent mixed methods design (Creswell & Plano Clark, 2018) based on secondary analysis of qualitative and quantitative data from the Research for Improved Health (RIH): A National Study of Community-Academic Partnerships. Conducted in 2011–2012, RIH was a cross-site, mixed methods study of CBPR partnerships that were funded by the National Institutes of Health and the Centers for Disease Control and Prevention. RIH aimed to understand the barriers and facilitators to effective CBPR partnerships in American Indian/Alaska Native (AI/AN) communities and other communities of People of Color (Hicks et al., 2012; Lucero et al., 2018). The full details of RIH are described elsewhere (Lucero et al., 2018; Oetzel et al., 2015b). In our study, we used partnership surveys to evaluate associations between measures of group diversity and participatory decision-making within the partnerships. We used case study interviews to identify the characteristics, benefits, and challenges of group diversity within the partnerships. The secondary analysis of deidentified data was determined by the University of California, Los Angeles (UCLA) South Campus Institutional Review Board to not require human subjects review.

## Quantitative data source and sampling procedures

The data for the quantitative analysis came from partnership-level ($N = 200$) and individual-level ($N = 450$) surveys. The RIH team administered two sets of surveys: (1) partnership-level Key Informant Survey (KIS) to the Principal Investigator/Project Directors (PI/PD) of eligible partnerships on demographic and structural characteristics of the partnerships, and (2) individual-level Community Engagement Survey (CES) to PI/PD-nominated academic and community partners on partnership processes, dynamics, and outcomes. All PI/PDs of 294 eligible partnerships were invited to complete the KIS. Of 294 PI/PDs invited, 200 PI/PDs (98.5% academic members, 1.5% community or other members) completed the KIS, yielding a 68.0% response rate. The (study) team used purposive sampling to ask participating PIs/PDs to name up to four individuals, one academic partner, and three community partners, to complete the CES. PI/PDs were also invited

to complete the CES individually. At this stage, 138 out of 200 PI/PDs and 312 out of 404 PI/PD-nominated academic and community partners completed the CES. The response rate at this stage was 74.5% and the cumulative response rate was 50.7%.

For this study, we merged partnership-level KIS and individual-level CES datasets using the unique partnership identification. Upon merging both datasets, data from 448 PI/PD-nominated respondents ($n = 448$) from 163 partnerships (median partnership size, 18; IQR, 12–30) were available for analysis. Because of the modest amount of missing values across the variables (<5% missing each), list-wise deletion was used to account for missing values in the datasets.

## Qualitative data source and sampling procedures

The data for the qualitative analysis included semi-structured individual and focus group interviews ($N = 81$) with stakeholders of seven case study partnerships. From the eligible sample of 294 CBPR projects, the RIH investigators used purposive sampling to select case study partnerships of diverse partnership characteristics that had a minimum history of 3 years, included community advisory structures, and demonstrated ongoing intervention or policy research (Lucero et al., 2018; Oetzel et al., 2015b). The contact person of each partnership nominated research investigators and community members to participate in the interviews. The RIH investigators developed the interview guide and conducted individual and focus group interviews to understand the contexts, actions, and experiences of CBPR projects (Hicks et al., 2012). The RIH qualitative data set contained a total of 69 individual interviews ($n = 67$ participants; two participants were interviewed twice) and 12 focus group interviews ($n = 72$ participants that took part in structured and unstructured focus groups).

In this study, we used a combination of maximum variation sampling and criterion sampling to select transcripts of stakeholder individual and focus group interviews from the RIH qualitative data set. Within each case study partnership, we selected interviews of stakeholders representing various partnership positions to grasp the collective partnership experience from multiple perspectives. Over the course of the analysis, we focused on stakeholders who worked on the frontline of partnership collaboration, such as academic or community coordinators, to understand their in-depth experience of engaging with different partners. By the time we reached thematic saturation (see below), we analyzed 55 interview transcripts, including 44 individual interviews and 11 focus groups interviews.

# QUANTITATIVE DATA MANAGEMENT AND ANALYSIS

## Measures

This section summarizes the main variables used in quantitative analysis with additional information and summary statistics (see description of quantitative analytical measures in Supporting Information: 2). An assessment of the CES measures supported evidence of factorial, convergent, and discriminant validity and internal consistency (Oetzel et al., 2015b).

### *Outcome variable*

Five items in the CES, each measured using a 5-point Likert scale from 1 *(Not at all)* to 5 *(To a great extent)*, indicate the degree to which the partner contributes to the decision-making process and the extent to which the decision resonates with their contribution. A 25-point index was created by adding non-missing responses of the five items. Reliability assessment of these items yielded a Cronbach's alpha of .86. To address the skewed distribution of the outcome, the index was dichotomized around the median of 22 to compare partnerships that have high (or above-median) levels with those that have low (or below-median) levels of participatory decision-making.

### *Exposure variables*

Measures of partnership demographic entropy were constructed for seven demographic characteristics: gender, race, rural/urban location, disability status, LGBT identity, international status, and youth status. The index of entropy is commonly used to measure the extent to which group members are proportionately distributed into different categories of a given characteristic (Oetzel, 2001; Teachman, 1980). An entropy-based index was created for each demographic characteristic using the estimates of academic members and community members provided by the project PI/PD in the KIS. A higher value of the index reflects a greater level of membership diversity. Perceived membership diversity in the CES was also included as a predictor of subjective diversity. The measure indicates the degree to which the partner perceived that their partnership membership is diverse. It was measured using a 5-point Likert rating item with responses ranging from 1 (*Not at all*) to 5 (*To a great extent*).

### *Control factors*

Five items in the CES, each measured using a 5-point Likert scale, were selected as control factors: academic interaction capacities; community interaction capacities; legitimacy; connection to political decision-makers and other organizations; and connections to relevant stakeholders. These control factors were hypothesized to be associated with partnership demographic entropy and participatory decision-making. The first two items indicate perceptions of effective interaction capacities among academic and community members. The last three items indicate perceptions of partnership credibility as well as connections with policy and external constituents to work effectively toward its goals.

## Analytical procedures

All statistical procedures were performed using Stata Version 15.0. Univariate analysis was conducted to

examine central tendencies among the analytical variables. Pearson's correlation analysis was conducted among the variables to explore bivariate associations and to assess for multicollinearity. For inferential analysis, logistic regression models were performed with robust standard errors to account for the clustering of responses by the partnerships and Bonferroni correction to account for testing multiple predictors. Logistic regression was conducted of binary-transformed participatory decision-making variable on each of the seven characteristics of demographic entropy and on subjective diversity. Five control variables were then added to the unadjusted model to test the significance of each association after accounting for the control factors. Wald's test was used to assess the contributions of the coefficients to the full model. Post-estimation statistics were generated to assess the overall fit of the model.

## Qualitative data management and analysis

The lead author of this study (PPC) analyzed the transcripts of the stakeholder, individual, and focus group interviews using thematic analysis (Castleberry & Nolen, 2018). The purpose of the analysis was to explore: (i) relevant group characteristics, or implicit and explicit characteristics of internal group differences or similarities that shaped perceived partnership experience and functioning; and (ii) benefits and challenges of group diversity: the positive or adverse reported partnership interactions, actions, and experiences that could be connected to relevant group characteristics. The lead author also examined the co-occurrence of themes on the benefits and challenges of group diversity with themes on group characteristics.

An iterative coding process was used with constant comparative analysis to develop and refine the codebook. To begin, the lead author reviewed twice a set of 12 interview transcripts from seven case study partnerships to gain a better understanding of the stakeholder narratives and experiences and to develop a preliminary coding scheme. At this stage, descriptive codes were applied by the lead author and, when possible, a parent domain was suggested for each focal passage using the hand coding method. In the latter part of this initial coding stage (i.e., after six interviews), he referred to earlier scripts to create similarly worded descriptive codes, and he annotated the partnership context and dynamic, connections to other interviews, and reflective insights about the coding process that could be useful in making an overall interpretation. The lead author discussed the resulting coding scheme and code reports with the research team to ensure coding consistency and to reach consensus on the coding approach. Upon the team's review and approval, the lead author developed the main coding scheme, revised it, and applied it to the remaining interviews using ATLAS.ti 8 software. He made iterative revisions to the entire codebook to incorporate new codes, delete or merge unnecessary codes, revise the organization of the codebook, and refine the overall coding process. He repeated this process until he reached thematic saturation for all themes on group characteristics, benefits, and challenges of group diversity; that is, when he no longer discovered new themes or relationships among themes in a subsequent transcript (Bernard, 2006). To synthesize the findings, the lead author integrated similar groups of codes with associated memos and quotations integrated under an overarching domain to develop narrative explanations for these domains. He discussed the findings with the research team, including the RIH PIs, for feedback, refinement, and corroboration.

## Mixed methods integration

After completing the analyses of each strand, we used a back-and-forth process to integrate both strands of findings to understand the extent to which the associations between group diversity and participatory decision-making assessed during the quantitative analysis could confirm, reject, or modify the characteristics and implications of group diversity identified during the qualitative analysis (Moseholm & Fetters, 2017). For each dimension of group diversity, we juxtaposed the quantitative and qualitative findings to identify the linkages between them and generate integrated interpretations—called meta-inferences (Creswell & Plano Clark, 2018)—that yielded a more complete understanding of the mixed methods data.

# RESULTS

## Quantitative findings

### Sample characteristics

Of the total CES respondents ($N = 450$), 118 participants self-identified as academic members while 194 participants self-identified as community members; the remaining respondents did not self-identify with either category. Table 1 shows the distribution of respondents by gender, and race and ethnicity among self-identified academic and community members. There was a significant difference in the racial and ethnic composition of the academic members compared to the community members, with People of Color comprising the majority of the community team but minority of the academic team.

### Inferential analyses

Descriptive statistics of the analytical variables are summarized in Supporting Information: 2. The results of the unadjusted logistic models examining the associations between partnership demographic entropy and participatory decision-making are shown in Table 2. Partnership location entropy was associated with increased odds of high participatory decision-making relative to low participatory decision-making, odds ratio (OR) = 2.29, 95% confidence interval (CI): [1.12, 4.66]. In addition, subjective diversity was associated with

**TABLE 1** Characteristics of community engagement survey respondents[a]

| | All respondents (%) ($N = 450$) | Self-identified academic partners (%) ($n = 118$) | Self-identified community partners (%) ($n = 194$) | $p$ Value* |
|---|---|---|---|---|
| *Gender* | | | | |
| Female | 73.7 | 69.2 | 76.6 | .170 |
| Male | 26.3 | 30.8 | 23.4 | |
| *Race and ethnicity* | | | | |
| American Indian | 12.0 | 6.6 | 15.5 | .003 |
| Alaskan Native | 1.1 | 0.9 | 1.2 | |
| Hispanic | 11.7 | 5.7 | 16.1 | |
| Asian | 8.0 | 9.4 | 7.7 | |
| Pacific Islander | 0.7 | 0.9 | 1.2 | |
| Non-Hispanic White | 46.0 | 59.4 | 37.5 | |
| Black | 15.3 | 10.4 | 18.5 | |
| Mixed race | 3.6 | 5.7 | 2.4 | |
| Other | 1.5 | 0.9 | 0.0 | |

[a]Valid or non-missing values are used for calculation of percentages

*$p$ Value for Chi-square test of independence for gender, and race and ethnicity.

**TABLE 2** Effect estimates of unadjusted and adjusted logistic regression of participatory decision-making on demographic entropy characteristics[a,b]

| Referent category: low participatory decision-making | Unadjusted odds ratio | Standard error | 95% CI of odds ratio | Adjusted odds ratio | Standard error | 95% CI of odds ratio |
|---|---|---|---|---|---|---|
| Gender entropy | 3.173 | (2.279) | [0.777–12.97] | 2.346 | (1.604) | [0.614–8.957] |
| Race entropy | 0.613 | (0.175) | [0.351–1.071] | 0.631 | (0.181) | [0.360–1.109] |
| Location entropy | 2.287* | (0.832) | [1.121–4.664] | 1.940 | (0.750) | [0.909–4.140] |
| Disability entropy | 0.433 | (0.290) | [0.117–1.606] | 0.337 | (0.249) | [0.079–1.433] |
| LGBT entropy | 1.391 | (0.828) | [0.433–4.469] | 1.812 | (1.059) | [0.576–5.696] |
| International entropy | 0.754 | (0.293) | [0.352–1.615] | 0.617 | (0.250) | [0.284–1.343] |
| Youth entropy | 0.990 | (0.424) | [0.427–2.291] | 1.206 | (0.555) | [0.489–2.972] |
| Subjective diversity | 1.467** | (0.194) | [1.132–1.901] | 1.032 | (0.173) | [0.742–1.434] |

[a]Adjusted for community interaction, academic interaction, project legitimacy, connection with political stakeholders, and connection with other stakeholders

[b]*$p < .05$, **$p < .01$, ***$p < .001$ (two-tailed tests).

increased odds of high participatory decision-making relative to low participatory decision-making, OR = 1.47, 95% CI: [1.13–1.90].

Table 2 shows the results of the logistic models testing the associations between partnership demographic entropy and the odds of participatory decision-making, adjusted for partnership control factors. Partnership location entropy was no longer associated with the odds of participatory decision-making, OR = 1.94, 95% CI: [0.91–4.14] after adjusting for partnership control factors. Likewise, subjective diversity was no longer associated with the odds of participatory decision-making, OR = 1.03, 95% CI: [0.74–1.43] after adjusting for partnership control factors. In both models, positive associations were observed between participatory decision-making and each of the following control factors and net of other variables: community interaction, academic interaction, and project legitimacy.

## Qualitative findings

### Sample characteristics

The health context of the intervention, characteristics of population served, and geographic location of the seven case study partnerships are summarized in Supporting Information: 3. Overall, the seven case study

partnerships varied considerably in focal health area, sociodemographic characteristics of focal population, and geographical location.

## Group characteristics

The qualitative analysis identified multiple group characteristics that emerged in stakeholder discussions of partnership experiences and perceptions that pertain to differences or similarities among partnership members (see examples of these characteristics in Supporting Information: 4). These characteristics were organized into two dimensions: functional characteristics that relate to the perceived execution of partnership tasks and activities; and sociocultural characteristics that relate to the perception of individual, social, and cultural identities of partners. We identified six functional characteristics, including professional background, organizational affiliation, skillset, research approach, community activism, and partnership maturation. We identified 12 sociocultural characteristics, including gender, race, ethnicity, tribal affiliation, faith affiliation, age, leadership approach, language use, physical disabilities, educational attainment, income, and geographic origin.

## Benefits and challenges of group diversity

This section describes the ways in which partnerships experience benefits from differences and similarities among members in group characteristics. Partnership challenges arising from membership differences in group characteristics are also identified. Table 3 illustrates examples of these benefits and challenges from the interviews.

### *Benefits of membership differences*

The analysis identified three major benefits of having members who differed from one another in group characteristics. These themes include drawing upon unique partnership expertise, acquiring novel partnership perspectives, and promoting group collaboration. These themes chiefly co-occurred with functional characteristics.

*Drawing upon unique partner expertise.* Partnerships benefited from the exchange of skills, actions, or connections offered by the range of functional capacities of their members. The group characteristics that were identified to co-occur with this benefit include organizational affiliation, professional backgrounds, and skillset. To illustrate, a focus group participant in Partnership F characterized the partnership as a "real marriage" among its research, legal, and community components and that, at the different periods in its history, the partnership benefited from the unique contributions of each component (Example 3.1). Partnerships with membership differences in such functional characteristics were able to leverage distinctive areas of expertise to achieve participatory action.

*Acquiring novel perspectives.* Partnerships gained distinct perspectives from members that were diverse with respect to such characteristics as organizational and professional backgrounds. With an emphasis on exchange of ideas and insights, partnerships benefited from these novel perspectives in a way that would not be experienced in homogeneous partnerships. As shown in Example 3.2, a community PI of Partnership D perceived that having partners of different cultural backgrounds provided the partnership with "richness" as it could counterbalance the cultural perspectives from being "all on one side or the other side." The example highlights the utility of novel perspectives to partnership collective functioning.

*Promoting group collaboration.* Partnerships benefited from enhanced group collaboration that partners attributed to perceptions of membership differences. The co-occurring group characteristics include both functional characteristics, such as professional backgrounds, and sociocultural characteristics, such as tribal affiliations. In Example 3.3, the community PI of Partnership B attributed the positive partnership dynamics to the perception that each partner held "different pieces of the puzzle" from a content expert to a group facilitator. The diverse range of academic and community problem-solving capacities, when combined with respect for each other's contributions, served to enhance equitable collaboration among partners.

### *Benefits of membership similarities*

The analysis distinguished two benefits of having members who share or align with one another in group characteristics. The themes include acquired cultural insider contexts of partners and embeddedness within the partnership communities. These benefits mainly co-occurred with sociocultural characteristics.

*Acquired cultural insider contexts of partners.* Partnerships benefited from gaining insider perspectives on the social, cultural, and historical contexts of the partnership communities as a result of similarities among members in sociocultural characteristics (e.g., race or tribal affiliation). These contexts helped strengthen interpersonal connections with the partnership communities, leading to greater levels of trust and cooperation. For example, a community tribal coordinator in Partnership A explained that having a Native-identified academic partner afforded tribal community partners insights into tribal experiences leading to their acceptance of partnership research (Example 3.4). Acquired cultural insider contexts from sociocultural alignment among partners provided relational foundations for positive collaboration experiences.

*Embeddedness within partnership communities.* Partnerships benefited from collective embeddedness within the partnership communities among members who shared similarities in place-based group characteristics, such as geographical location. For example, a community pastor in Partnership F remarked that a community-based partnership representative had lived in their community for over two decades and demonstrated their passion for

**TABLE 3** Illustrations of expressed benefits and challenges of group diversity

| Type of benefits or challenges | Selected illustrations from the interviews |
|---|---|
| Benefits of membership differences | |
| 3.1 Drawing upon unique partner expertise | "This [partnership]…is a real marriage between research, a legal component, and then you have the community voice at the same time; and they all play a different role. There's emphasis in different moments of the history of this campaign that where it has been more about the legal, more about the research, and more about the community voice" (Partnership F, Focus Group Participant) |
| 3.2 Acquiring novel Perspectives | "People in the community…[and] the staff or the team who are of the culture of the community… they just … have a free disposition that these guys don't…I happen to think that a mix of cultural background is the best. But if it's all on one side or the other side, then that doesn't work. I think we have a real richness when we bring many backgrounds together" (Partnership D, Community Principal Investigator) |
| 3.3 Promoting group collaboration | "There's a lot of mutual respect… for one another, and a good collaborative spirit among folks… It's actually pretty amazing how so many people hold different pieces of the puzzle, from the person who is a good relationship builder with community to the person who has knowledge of health promotion to someone who has specific knowledge around a specific research method to a good leader/facilitator" (Partnership B, Community Principal Investigator) |
| Benefits of membership similarities | |
| 3.4 Acquired cultural insider contexts of partners | "I think it's her experiences with the communities beforehand, with Alaska native and American Indian communities.… it gives us an initial buy-in, I think, and a willingness to listen. But if she didn't come with genuine concern and appreciation for them, then that wouldn't get her as far" (Partnership A, Community Tribal Coordinator) |
| 3.5 Embeddedness within partnership communities | "It was very clear to me that here was a woman who had passion for her community. She…had lived in [community]…for 25 or 30 years… But she had this passion to see [community] come alive afresh and anew…And [partner] made me believe that I should be involved in it as well" (Partnership F, Community Pastor) |
| Challenges of membership differences | |
| 3.6 Race-related tension | "So I'm not sending this guy anything. He's not going to get whatever…[O]ur names for different tribes or different nationalities is really non-judgmental…But to the white man… [tribal term] means "fat." "It takes the fat." It means 'greedy' … it's very judgmental… in that perspective it's done because of the past that we've had. So that's really where there is a lack of trust, even for that word" (Partnership E, Tribal Research Board Member) |
| 3.7 Gender-related tension | "And so even asking for an MOU, as I say, where you don't trust me … 'Well, no, we don't trust you'… the lead PI was not from the community. They would sabotage the community PI because he was male and the network was with the women. And so I, being female and being part of that network, I would come in and neutralize [the situation]." (Partnership D, Academic Principal Investigator) |
| 3.8 Distrust of scientific approaches | "Well, most deaf people's experience of scientists and researchers is: 'You want to fix me'…The community we work with doesn't care about fixing their ears. They are fully competent, actualized human beings. They have jobs. They have a full and rich communication in American Sign Language…So there's always this sense of …Are you going to try to tell me that there's something wrong with me?" (Partnership G, Focus Group Participant) |
| 3.9 Communication barriers | "Sometime is actually very intimidating as in for a community group to be sitting with six or seven PhDs in the group. I felt uncomfortable speaking up…And I know that they look upon me as a community expert, right? But sometimes I felt, 'Oh, I don't know' … maybe it's somewhat cultural…Yeah, the Chinese piece of it…is: we don't want to rock the boat. I don't want to bring up…[the] controversy" (Partnership B, Community Consultant) |

community revitalization (Example 3.5). These favorable impressions influenced the pastor's decision to participate in the partnership. Shared community embeddedness among partners helped promote the sense of commitment to the partnership and facilitate relationship building among partners.

### *Challenges of membership differences*

The analysis identified four major challenges that arose from differences in group characteristics. The themes include race-related tension, gender-related tension, distrust of scientific approaches, and communication barriers. While these themes co-occurred with both dimensions of group characteristics, the most consequential challenges were mainly connected to sociocultural characteristics.

*Race-related tension.* Perceived actions, events, or statements indicative of racial bias or differentiation among partners emerged as a challenge in partnerships with membership differences in race. A tribal research board member in Partnership E recalled that the refusal to approve an assertive request from a White researcher reflected in part the historical distrust of White

individuals among tribal members (Example 3.6). When they are not addressed, race-related tensions could undermine efforts to build trust and collaboration among academic and community partners in racially heterogeneous partnerships.

*Gender-related tension.* Perceived actions, events, and statements indicative of gender bias or differentiation were found to be a notable challenge in partnerships with membership differences in gender. An academic PI of Partnership D attributed the conflict between the community PI and other partners to the perceived identification of the community PI as a male among other female academic and community partners. This led the PI to use their position as a female to help mediate this internal division (Example 3.7). As illustrated in the context of this partnership, the emergence of gender-related tensions could dampen efforts to bridge power differences and support collaboration.

*Distrust of scientific approaches.* Perceived skepticism of scientific approaches or research activities was a major challenge among individuals of distinct sociocultural backgrounds. A focus group participant in Partnership G characterized the perception of research among Deaf community members interacting with hearing academic members as, "You want to fix me" because the biomedical paradigm had historically focused on addressing hearing deficiencies despite the importance of Deafness to the identity and livelihood of Deaf community members (Example 3.8). The example illustrates how scientific distrust could complicate efforts to realize equitable collaborations with community partners, particularly when individuals perceived that partnership activities reflected historical research exploitation.

*Communication barriers.* Partners reported challenges engaging in interpersonal dialog, expressing personal concerns, and understanding the language of research. To illustrate, a community consultant of Partnership B related the communication unease of another community partner to their own experience of intimidation of working with several PhD-trained individuals in the partnership (Example 3.9). They further attributed the discomfort to the notion, "we don't want to rock the boat." Such communication barriers rooted in sociocultural differences among members could impede their equitable contribution to the partnerships.

### Integrating quantitative and qualitative findings

Comparing both strands of findings revealed that, for both dimensions of group characteristics, the quantitative results diverged from the qualitative results on how group diversity influenced collective functioning of the partnerships. For sociocultural characteristics, the quantitative findings failed to support the association between demographic entropy and participatory decision-making within the partnerships. However, the qualitative findings support the understanding that partnerships faced challenges from membership differences and benefited from membership similarities in sociocultural characteristics. For functional characteristics, the qualitative results revealed that partnerships benefited from membership differences in functional characteristics. However, this novel qualitative insight was not examined quantitatively as these functional characteristics were not measured in the survey.

## DISCUSSION

### Summary of findings

Our secondary, convergent, mixed methods analysis involving federally funded CBPR partnerships shed findings on the extent to which membership differences or similarities in meaningful group characteristics influenced how well academic and community partners collaborated equitably to achieve the partnership goals of addressing health inequities. First, the quantitative analysis evaluated whether the degree of membership mixing across seven measured sociodemographic characteristics and perceived diversity predicted the degree of equitable decision-making within the partnerships. None of the examined group diversity predictors was associated with participatory decision-making after adjusting for partnership control factors. While the findings do not support any of the hypotheses discussed above, they concur with previous meta-analyses of work groups, which failed to establish the effect of demographic diversity on group performance (Horwitz & Horwitz, 2007).

The qualitative analysis identified multiple, contemporaneous group characteristics, including implicit and explicit dimensions of group differences, that could be organized along two major dimensions: functional characteristics that were required to implement the tasks of the partnership; and sociocultural characteristics that include those that shaped the relatedness of identities and interactions among members. For the most part, these dimensions reflect the classification of diversity characteristics into job-related and job-unrelated categories depending on whether they are salient to the execution of tasks at work (Pelled et al., 1999).

Similarities or differences among members in group characteristics may generate potential benefits as well as challenges for the extent to which partnerships collaborated equitably to achieve their goals. The qualitative findings revealed that the partnerships primarily benefited from membership differences in functional characteristics. We found that membership differences in functional characteristics, particularly in partnerships that promote equitable contributions of their partners, could enhance the collective functioning of CBPR partnerships by maximizing the range of distinct functional capacities to accomplish the partnership tasks at hand. These findings support the prediction made by the information-sharing hypothesis (Page, 2007; Williams & O'Reilly, 1998).

The qualitative findings also revealed that the partnerships benefited from membership similarities

and faced challenges from membership differences in sociocultural characteristics. In partnerships that support mutual understanding and relationship bridging, having members who align with one another in these characteristics may promote empathetic understanding and cohesion, in accordance with the similarity/attraction hypothesis (Williams & O'Reilly, 1998). The findings indicate that membership differences in sociocultural characteristics could lead to the emergence of partnership tensions, distrust, and communication barriers, particularly when the partnerships do not engage in equity-oriented practices that account for sociopolitical and historical context, power, and privilege to effectively address concerns. While these tensions may be antithetical to the power-sharing intent of CBPR, our findings support the predictions made by the social categorization hypothesis (Williams & O'Reilly, 1998). The findings illuminate some of the challenges of sociocultural differences reflective of macrosocial inequities manifesting as power and privilege within the partnerships (Wallerstein & Duran, 2018). In specific partnership situations that we identified, academic and community partners who differ in salient, intersecting sociocultural characteristics (e.g., gender and race) may generate perceptions of hierarchy and privilege leading to interpersonal and communication issues (DiTomaso et al., 2007). Although the partnership role (e.g., academic or community partner) and sociocultural identities tended to align with anticipated patterns of hierarchy and privilege in most cases, we found limited instances in which tensions emerged among academic partners of marginalized sociocultural identities and their community counterparts. Overall, in support of the social categorization hypothesis, these tensions illustrate the implications of deep-seated differentiation and biases that should be addressed within CBPR partnerships (Wallerstein et al., 2019).

The mixed methods integration allowed for the inductive, exploratory strengths of qualitative analysis to support or refute the deductive, associational strengths of quantitative analysis. In contrast to the lack of quantitative associations between demographic entropy and participatory decision-making, the qualitative findings suggested that several group characteristics variably influenced collective functioning of the partnerships. We offer two potential explanations that may inform the discrepancies between the two strands of findings.

First, the contrasts in findings could be explained by unmeasured quantitative characteristics that were qualitatively identified. The qualitative analysis identified relevant functional characteristics and sociocultural characteristics that appeared to shape partnership perceptions and experiences. However, these emergent characteristics, which extended beyond conventional demographic characteristics, were not quantitatively measured. Furthermore, the observed high mean rating of subjective diversity suggests that qualitatively identified group characteristics could inform such ratings. These findings merit a consideration of unmeasured group characteristics that could influence partnership collective functioning.

Second, the contrasts in findings suggest the need to consider partnership practices that engage in group diversity. Similar to the findings of Oetzel et al. (2015a), the quantitative analysis indicated that academic interaction, community interaction, and project legitimacy were each associated with participatory decision-making. These results support our qualitative findings that the cross-cultural bridging capacities and credibility of individual partners and their organizations may be instrumental to successful collaboration. However, these factors alone do not capture the full spectrum of equity-oriented partnership practices that enhance the functional capacities of members and practices that bridge cultural and interpersonal differences among partners to shift power dynamics and realize partnership equity (Oetzel et al., 2018; Ortiz et al., 2020; Wallerstein et al., 2019). Additional mixed methods research is needed to understand how these equity-oriented practices at the individual, group, and institutional levels influence the focal relationship.

## Strengths and limitations

The study offers several strengths in understanding the implications of group diversity in CBPR partnerships. Using a large CBPR data set, the quantitative analysis assessed whether multiple characteristics of group diversity influenced participatory decision-making within the partnerships. The qualitative analysis of in-depth case study partnership interviews uncovered perceived characteristics, benefits, and challenges of group diversity from diverse stakeholders. A final strength is the use of a mixed methods convergent design, which allowed for the qualitative findings to corroborate the quantitative findings to holistically address the overall question.

The study has limitations stemming from the RIH study design as well as the secondary mixed methods analysis. The cross-sectional nature of quantitative data limited causal inference of the focal association. The sample limitations of RIH may limit generalizability of the findings to projects that are not self-identified as CBPR nor funded by the National Institutes of Health and the Centers for Disease Control and Prevention (Oetzel et al., 2015b). The goals of the CBPR project, particularly when it was funded to address health inequities, may have influenced the group diversity and perceived dynamics of the partnerships. The nomination of CES respondents by PI/PD may have led to an overestimation of partnerships reporting positive outcomes. The fact that PI/PDs provided estimates of membership compositions among partnerships of different sizes in the KIS may have reduced the accuracy of demographic entropy. The CES did not ask about the length of time respondents engaged in the partnerships, which could have influenced their reported experiences. The secondary qualitative analysis limited our full understanding of group characteristics (and how they evolve over time) and partnership implications of group diversity. Due to the case study sampling approach in RIH, we were unable to qualitatively contrast experiences across partnerships with varying degrees of

membership differences of a group characteristic. The independent collection of each strand of data limited direct comparisons between qualitative and quantitative data by each partnership.

## Conclusions and implications for practice

This study provides evidence that characteristics of group diversity can influence the extent to which CBPR partnerships achieved their goals of addressing health inequities through equitable collaboration. We encourage CBPR practitioners and community psychologists to assess group diversity and how it manifests in CBPR partnerships as well as engage in deliberative practices to promote power sharing, equitable collaboration, and affirmation of human diversity (Jones, 1990; Trickett, 2002; Wallerstein et al., 2019). Our findings demonstrate that, to the extent that the partnerships effectively address these dynamics through equity-oriented practices, membership differences in functional characteristics could enhance the collective functioning of the partnerships while membership differences in sociocultural characteristics could impede it. As such, partnerships can benefit from equity-oriented practices that promote the range of members' functional capacities and practices that promote cultural and interpersonal bridging among members of distinct sociocultural backgrounds. Integration of these practices at multiple levels of the partnership from promoting inclusive membership recruitment to advocating for more equitable funding policies could ensure that CBPR partnerships are best positioned to leverage the strengths of group diversity to realize health equity.

To build upon this study, additional mixed methods research should be conducted to elaborate on the contributions of group diversity and equity-oriented practices to the long-term achievements and sustainability of CBPR partnerships. These studies could leverage innovative approaches such as social network analysis to examine how partnerships with differing group characteristics contribute to the evolution of collective knowledge, social connections, capacity-building, and other long-term outcomes of the partnerships (Cabrera et al., 2020). Furthermore, the data for this study were collected before sociopolitical changes of the past few years (e.g., the COVID-19 pandemic and racial justice movements). While the values of the findings remain, these shifts may have implications on the diversity of CPBR partnerships that are worthy of further investigations. Continued research in this area could help ensure that CBPR fully embraces human diversity and inclusion in advancing health equity.

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## REFERENCES

Andrews, J. O., Newman, S. D., Meadows, O., Cox, M. J., & Bunting, S. (2012). Partnership readiness for community-based participatory research. *Health Education Research*, *27*(4), 555–571. https://doi.org/10.1093/her/cyq05

Becker, A. B., Israel, B. A., Gustat, J., Reyes, A. G., & Allen, A., III (2013). Introduction to methods for CBPR for health. In B. A. Israel, E. Eng, A. J. Schulz, & E. A. Parker (Eds.), *Methods for community-based participatory research for health* (2nd ed., pp. 69–96). Jossey-Bass.

Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., & Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management*, *37*(3), 709–743. https://doi.org/10.1177/0149206310365001

Bernard, H. R. (2006). *Research methods in anthropology: qualitative and quantitative approaches* (4th ed.). AltaMira Press.

Berscheid, E., & Walster, E. (1978). *Interpersonal attraction* (2nd ed.). Addison-Wesley.

Bond, M. A. (2016). Leading the way on diversity: Community psychology's evolution from invisible to individual to contextual. *American Journal of Community Psychology*, *58*(3–4), 259–268. https://doi.org/10.1002/ajcp.12083

Bryne, D. E. (1971). *The attraction paradigm*. Academic Press.

Cabrera, J. F., Harrison, R., & Tsui, J. (2020). Method to improve the effectiveness of community-based participatory research projects: A social network approach. *Progress in Community Health Partnerships: Research, Education, and Action*, *14*(3), 393–406. https://doi.org/10.1353/cpr.2020.0044

Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, *10*(6), 807–815. https://doi.org/10.1016/j.cptl.2018.03.019

Center for Participatory Research (2020). *CBPR Model*. The University of New Mexico. Retrieved July 27, 2022, from https://cpr.unm.edu/research-projects/cbpr-project/cbpr-model.html

Cohen, J. J., Gabriel, B. A., & Terrell, C. (2002). The case for diversity in the health care workforce. *Health Affairs*, *21*(5), 90–102. https://doi.org/10.1377/hlthaff.21.5.90

Cook, W. K. (2008). Integrating research and action: A systematic review of community-based participatory research to address health disparities in environmental and occupational health in the USA. *Journal of Epidemiology & Community Health*, *62*(8), 668–676. https://doi.org/10.1136/jech.2007.067645

Creswell, J. W., & Plano Clark, V. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.

Cyril, S., Smith, B. J., Possamai-Inesedy, A., & Renzaho, A. M. N. (2015). Exploring the role of community engagement in improving the health of disadvantaged populations: A systematic review. *Global Health Action*, *8*(1):29842. https://doi.org/10.3402/gha.v8.29842

Department of Health and Human Services (US). (2006). *The rationale for diversity in the health professions: A review of the evidence*. http://bhpr.hrsa.gov/healthworkforce/reports/diversityreviewevidence.pdf

DiTomaso, N., Post, C., & Parks-Yancy, R. (2007). Workforce diversity and inequality: Power, status, and numbers. *Annual Review of Sociology*, *33*, 473–501. https://doi.org/10.1146/annurev.soc.33.040406.131805

Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review*, *32*(4), 1199–1228. https://doi.org/10.5465/AMR.2007.26586096

Hicks, S., Duran, B., Wallerstein, N., Avila, M., Belone, L., Lucero, J., Magarati, M., Mainer, E., Martin, D., Muhammad, M., Oetzel, J., Pearson, C., Sahota, P., Simonds, V., Sussman, A., Tafoya, G., & Hat, E. W. (2012). Evaluating community-based participatory research to improve community-partnered science and community health. *Progress in Community Health Partnerships: Research, Education, and Action*, *6*(3), 289–299. https://doi.org/10.1353/cpr.2012.0049

Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management*, *33*(6), 987–1015. https://doi.org/10.1177/0149206307308587

Israel, B. A., Eng, E., Schulz, A. J., Becker, A. B., Allen, A. J., Guzman, J. R., & Lichtenstein, R. (2018). Critical issues in developing and following CBPR principles. In N. B. Wallerstein, B. M. Duran, J. G. Oetzel, & M. Minkler (Eds.), *Community-based participatory research for health* (pp. 31–44). Jossey-Bass.

Jackson, S. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management*, *29*(6), 801–830. https://doi.org/10.1016/S0149-2063(03)00080-1

Jones, J. M. (1990). Invitational address: Who is training our ethnic minority psychologists, and are they doing it right? In G. Stricker, E. Davis-Russell, E. Bourg, E. Duran, W. R. Hammond, J. McHolland, K. Polite, & B. E. Vaughn (Eds.), *Toward ethnic diversification in psychology education and training* (pp. 17–34). American Psychological Association.

Joshi, A., & Roh, H. (2009). The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal*, *52*(3), 599–627. https://doi.org/10.5465/AMJ.2009.41331491

Kastelic, S., Wallerstein, N., Duran, B., & Oetzel, J. (2018). Socio-ecological framework for CBPR: Development and testing of a model. In N. Wallerstein, B. Duran, J. Oetzel, & M. Minkler (Eds.), *Community-based participatory research for health: Advancing social and health equity* (3rd ed., pp. 77–94). Jossey-Bass.

Lucero, J., Wallerstein, N., Duran, B., Alegria, M., Greene-Moton, E., Israel, B., Kastelic, S., Magarati, M., Oetzel, J., Pearson, C., Schulz, A., Villegas, M., & White Hat, E. R. (2018). Development of a mixed methods investigation of process and outcomes of community-based participatory research. *Journal of Mixed Methods Research*, *12*(1), 55–74. https://doi.org/10.1177/1558689816633309

Lykes, M. B. (2017). Community-based and participatory action research: Community psychology collaborations within and across borders. In M. A. Bond, I. Serrano-Garcıa, C. Keys, & M. Shinn (Eds.), *Handbook of community psychology volume 2: Theoretical foundations, core concepts, and emerging challenges* (pp. 43–58). American Psychological Association Press.

McCloskey, D. J., Aguilar-Gaxiola, S., & Michener, J. L. (2011). *Principles of community engagement* (2nd ed.). National Institutes of Health, Centers for Disease Control and Prevention.

Moseholm, E., & Fetters, M. D. (2017). Conceptual models to guide integration during analysis in convergent mixed methods studies. *Methodological Innovations*, *10*(2):205979911770311. https://doi.org/10.1177/2059799117703118

Muhammad, M., Wallerstein, N., Sussman, A. L., Avila, M., Belone, L., & Duran, B. (2014). Reflections on researcher identity and power: The impact of positionality on Community Based Participatory Research (CBPR) processes and outcomes. *Critical Sociology*, *41*(7–8), 1045–1063. https://doi.org/10.1177/0896920513516025

Oetzel, J. G. (2001). Self-construals, communication processes, and group outcomes in homogeneous and heterogeneous groups. *Small Group Research*, *32*(1), 19–54. https://doi.org/10.1177/104649640103200102

Oetzel, J. G., Villegas, M., Zenone, H., White Hat, E. R., Wallerstein, N., & Duran, B. (2015a). Enhancing stewardship of community-engaged research through governance. *American Journal of Public Health*, *105*(6), 1161–1167. https://doi.org/10.2105/AJPH.2014.302457

Oetzel, J. G., Zhou, C., Duran, B., Pearson, C., Magarati, M., Lucero, J., Wallerstein, N., & Villegas, M. (2015b). Establishing the psychometric properties of constructs in a community-based participatory research conceptual model. *American Journal of Health Promotion*, *29*(5), e188–e202. https://doi.org/10.4278/ajhp.130731-QUAN-398

Oetzel, J. G., Wallerstein, N., Duran, B., Sanchez-Youngman, S., Nguyen, T., Woo, K., Wang, J., Schulz, A., Keawe'aimoku Kaholokula, Israel, J., Alegria, B., & M. (2018). Impact of participatory health research: A test of the community-based participatory research conceptual model. *BioMed Research International*, *2018*, 1–12. https://doi.org/10.1155/2018/7281405

Ortiz, K., Nash, J., Shea, L., Oetzel, J., Garoutte, J., Sanchez-Youngman, S., & Wallerstein, N. (2020). Partnerships, processes, and outcomes: A health equity-focused scoping meta-review of community-engaged scholarship. *Annual Review of Public Health*, *41*, 177–199. https://doi.org/10.1146/annurev-publhealth-040119-094220

O'Mara-Eves, A., Brunton, G., Oliver, S., Kavanagh, J., Jamal, F., & Thomas, J. (2015). The effectiveness of community engagement in public health interventions for disadvantaged groups: A meta-analysis. *BMC Public Health*, *15*(1):129. https://doi.org/10.1186/s12889-015-1352-y

Page, S. E. (2007). *The difference: How the power of diversity creates better groups, firms, schools, and societies*. Pearson University Press.

Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly*, *44*(1), 1–28. https://doi.org/10.2307/2667029

Pfeffer, J. (1985). Organizational demography: Implications for management. *California Management Review*, *28*(1), 67–81. https://doi.org/10.2307/41165170

Roberson, Q. M. (2019). Diversity in the workplace: A review, synthesis, and future research agenda. *Annual Review of Organizational Psychology and Organizational Behavior*, *6*, 69–88. https://doi.org/10.1146/annurev-orgpsych-012218-015243

Rodríguez Espinosa, P., Sussman, A., Pearson, C. R., Oetzel, J. G., & Wallerstein, N. (2020). Personal outcomes in community-based participatory research partnerships: A cross-site mixed methods study. *American Journal of Community Psychology*. https://doi.org/10.1002/ajcp.12446

Salimi, Y., Shahandeh, K., Malekafzali, H., Loori, N., Kheiltash, A., Jamshidi, E., Frouzan, A. S., & Majdzadeh, R. (2012). Is community-based participatory research (CBPR) useful? A systematic review on papers in a decade. *International Journal of Preventive Medicine*, *3*(6), 386–393.

Stokols, D. (2006). Toward a science of transdisciplinary action research. *American Journal of Community Psychology*, *38*(1–2), 79–93. https://doi.org/10.1007/s10464-006-9060-5

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge University Press.

Teachman, J. D. (1980). Analysis of population diversity. *Sociological Methods & Research*, *8*, 341–362.

Trickett, E. J. (2002). A future for community psychology: The contexts of diversity and the diversity of contexts. In T. A. Revenson, A. R. D. Augelli, S. E. French, D. L. Hughes, D. Livert, E. Seidman, & H. Yoshikawa (Eds.), *A quarter century of community psychology*. Springer.

Tziner, A., & Eden, D. (1985). Effects of crew composition on crew performance: Does the whole equal the sum of its parts? *Journal of Applied Psychology*, *70*(1), 85–93. https://doi.org/10.1037/0021-9010.70.1.85

Van Knippenberg, D., & Schippers, M. C. (2007). Work group diversity. *Annual Review of Psychology*, *58*, 515–541. https://doi.org/10.1146/annurev.psych.58.110405.085546

Wallerstein, N., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health Promotion Practice*, *7*(3), 312–323. https://doi.org/10.1177/1524839906289376

Wallerstein, N., & Duran, B. (2018). Theoretical, historical, and practice roots of CBPR. In N. Wallerstein, B. Duran, J. Oetzel, &

M. Minkler (Eds.), *Community-based participatory research for health: Advancing health and social equity* (pp. 17–29). Jossey-Bass.

Wallerstein, N., Muhammad, M., Sanchez-Youngman, S., Rodriguez Espinosa, P., Avila, M., Baker, E. A., Barnett, S., Belone, L., Golub, M., Lucero, J., Mahdi, I., Noyes, E., Nguyen, T., Roubideaux, Y., Sigo, R., & Duran, B. (2019). Power dynamics in community-based participatory research: A multiple–case study analysis of partnering contexts, histories, and practices. *Health Education and Behavior*, *46*(1_suppl), 19S–32S. https://doi.org/10.1177/1090198119852998

Wallerstein, N., Oetzel, J. G., Duran, B., Tafoya, G., Belone, L., & Rae, R. (2008). What predicts outcomes in CBPR? In M. Minkler, & N. Wallerstein (Eds.), *Community-based participatory research for health* (pp. 371–394). Jossey-Bass.

W.K. Kellogg Foundation. (2001). *Community track essential program elements*. http://www.kellogghealthscholars.org/sites/Program%20Elements.pdf

Williams, K. Y., & O'Reilly, C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, *20*, 77–140.

Williams, S. D., Hansen, K., Smithey, M., Burnley, J., Koplitz, M., Koyama, K., Young, J., & Bakos, A. (2014). Using social determinants of health to link health workforce diversity, care quality and access, and health disparities to achieve health equity in nursing. *Public Health Reports*, *129*(1_suppl2), 32–36. https://doi.org/10.1177/00333549141291S207

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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