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Moving beyond the individual: Community-level prejudice and health

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What role does racial bias play in race-based health disparities? Debate on this question has intensified since the publication of the Institute of Medicine's report, *Unequal Treatment*, in which wide-ranging racial disparities were shown to persist even when socio-economic and biological factors were controlled (Smedley et al., 2002). Much evidence shows that individuals' reported experiences of racial bias – in society broadly, as well as in health care settings, specifically – consistently relate to worse health outcomes (Brondolo et al., 2017; Pascoe and Richman, 2009; Williams and Mohammed, 2009).

There is less evidence that directly examines the relationship of bias in others (e.g., majority group members) to disparities in health outcomes. In samples of medical providers, implicit racial bias has been consistently associated with the reduced satisfaction and trust of Black patients in their provider, although bias has not been associated with patients' medical care, with limited exceptions (see review by Zestcott et al., 2016). The ability to interpret the implications of this literature has been weakened, however, by a reliance on hypothetical scenarios, small or isolated samples, and single point-in-time decisions.

1. From individual to community-level prejudice

The wide-ranging data collected by Project Implicit (https://implicit.harvard.edu), coupled with other national datasets are dramatically altering the research landscape. By aggregating data at the community level and then evaluating variations across the nation, researchers can identify links between prejudice and health that heretofore were not thought possible (e.g., Leitner et al., 2016a; 2016b; Orchard and Price, 2017). Using this approach, Leitner et al. (2016a) found that community-level prejudice of White community members was associated with higher rates of death among Black community members due to circulatory diseases (see also Chae et al., 2015; Lee et al., 2015; Miller et al., 2016). They further showed that community-level prejudice could be harmful for everyone involved, as more prejudice also was associated with poorer health outcomes for in-group members (e.g., of Whites' prejudice was associated with higher death rates for White members of the community; Leitner et al., 2016a, 2016b; see also Pickett and Wilkinson, 2015).

Orchard and Price (2017) make a valuable contribution to this small but growing literature in their study of community-level prejudice and disparities in preterm birth and low birth weight. Their analysis showed that pre-term births were 70–74% more likely for Black mothers than White mothers in high prejudice communities, compared to the 55–56% disparity found in low prejudice communities. Similarly, low-weight births were 118–131% more likely for Black mothers than White mothers in high prejudice communities, compared to the 95–104% disparity found in low prejudice communities. These sobering numbers are even more startling because the researchers controlled for socio-economic factors and many background health risks. Falsification tests using measures of bias on other dimensions (e.g., prejudice against gays) and collected under similar conditions did not produce the same effects.

2. Methodological challenges

New methods inevitably raise new questions. Orchard and Price (2017), as well as other researchers using the Project Implicit database, acknowledge that the data are not representative of a population. Participants self-select in visiting the site and in their choices of which bias measures they complete. Although the

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researchers use population weights for age and gender, there are likely other unmeasured selection biases. One might imagine, for example, that an internet-based sample will be skewed toward being more White, more educated, and having a higher income. If such is the case, the measured community-level bias may be more representative of bias found in certain segments of the community, perhaps those who hold more economic and social power. At the same time, these selection biases parallel what is commonly found in individual-level studies of bias (particularly with college students), and they are offset by the enormous advantage of very large sample sizes. The data analyzed by Orchard and Price, for example, included 31 million births and 1.8 million prejudice assessments in over 1200 counties. Furthermore, the results are consistent with findings on community-based prejudice that have used other, more representative samples (e.g., Lee et al., 2015).

Another question that is raised in these data concerns the distinction between implicit and explicit bias. Orchard and Price (2017) seem to show that explicit bias has more explanatory power as found in other studies (Leitner et al., 2016a), but there are exceptions (see Leitner et al., 2016b). Much has been written about the distinction between implicit and explicit bias at the individual level (e.g., Nosek and Smyth, 2007), and when it comes to racial prejudice, measures of the two are typically only weakly correlated ($rs = 0.20$ to 0.30; Bar-Anan and Nosek, 2014). A different picture emerges at the community-level, where implicit and explicit race bias were found to correlate so highly ($r = 0.86$, Orchard and Price, 2017) that one might reasonably question whether they represent different phenomena. Furthermore, such a stark difference at the individual and community levels raises questions about whether community-to-community variation in aggregated measures should even be conceptualized in the same way as individual-to-individual variation. A discussion about the statistical problems with high multicollinearity and differences in the reliability of implicit and explicit measures (at individual and community levels) is beyond the scope of this commentary. But consider, for example, that the difference found in Orchard and Price's exploratory analysis of county of birth versus county of residence could be due to more reliable estimates obtained in the much larger counties to which women traveled for births. It is an understatement to say that these are important issues to be addressed in future research.

3. Antecedents and mechanisms of community-level prejudice

The findings in Orchard and Price (2017), and related literature (e.g., Chae et al., 2015; Lee et al., 2015; Leitner et al., 2016a, 2016b; Miller et al., 2016; Reid et al., 2014), raise many compelling questions concerning the antecedents of community-level bias. Are these countywide variations in biased attitudes a function of differences in historical events, or certain cultural beliefs and values? Are they a function of differences in socioeconomic opportunities available to different groups of residents? Do they vary by opportunities for intergroup contact, or by access to and exposure to different types of media? For example, higher levels of racial animus, as indicated by more frequent Google searches for racial slurs, are found in media markets for which Blacks make up 20–30% of the residents (Stephens-Davidowitz, 2014). And negative media portrayals of minority groups have well-documented effects on attitudes towards minority group members (Dixon and Williams, 2015; Schemer, 2014).

The effects of any one of these forces (e.g., historical precedent, media presentations, cultural values, economic losses) may be magnified by the clustering of culturally and phenotypically similar individuals within communities. Research on housing markets and residential relocation suggest that racial bias influences the decisions individuals make about where to live, driving a desire for distance from stigmatized minority group members and potentially promoting racial segregation (Emerson et al., 2001; Lankford and Wyckoff, 2006). This segregation may promote social contagion of discriminatory beliefs, and contribute to their pervasiveness and persistence within a community (Dovidio, 2009).

Orchard and Price (2017) also raise questions about the mechanism(s) through which community-level bias produces greater disparities in birth outcomes. One prominent hypothesis, advanced by Orchard and Price, is that community-level bias is a proxy measure for increased exposure to interpersonal discrimination and accompanying stress. Consistent with this hypothesis is abundant evidence that individual-level perceived discrimination may affect health through stress-induced changes to physiology, cognition, emotion, and behavior (see review by Brondolo et al., 2017). Everyday experiences with prejudice in the community may produce pervasive and persistent changes in social cognition, including heightened sensitivity to stereotype threat, that influence stress reactivity and recovery with cumulative effects on health. Other recent research suggests that community level prejudice may influence the capacity to acquire health-promoting skills (Reid et al., 2014).

But other mechanisms – independently or in concert with discrimination-induced stress – must also be considered. One possibility is a decrease in access to or utilization of healthcare in more biased counties, as shown by Leitner et al. (2016a). This decrease is consistent with findings that minority individuals who have experienced more discrimination are less likely to access healthcare (e.g., Bleser et al., 2016; Gonzales et al., 2014; Mays et al., 2017; Stepanikova and Oates, 2017). Additionally, community-level prejudice may be associated with more discriminatory social policies or practices (e.g., greater racial segregation or more aggressive law enforcement against Black individuals). These policies and practices may impact family and community support systems, as well as reduce social capital (Brondolo et al., 2012; Lee et al., 2015; Williams and Mohammed, 2009).

The relatively strong effects for explicit bias (Lee et al., 2015; Leitner et al., 2016a; Orchard and Price, 2017) suggests that to some extent, community residents accept their racial bias. They don't feel the need to hide these biases from the self, as they freely self-reported them. Explicit racial bias is a statement about lack of connection between oneself (and the groups included with the self) and others. Substantial literature highlights the importance of individual-level social integration on health – those individuals who have positive social connections with others tend to have better health on a variety of dimensions, and those who lack these connections have poorer health (e.g., Luo et al., 2012; Robles et al., 2014). The emerging data on community-level bias suggest that health may be affected not only by individual experiences, but also by a broader sense of connection and acceptance that emerges from the community as a whole.

Taken together, this growing body of knowledge can help to disentangle the consequences of different ideas about social connection. Leitner and colleagues' (2016a, 2016b) results suggest that negative views towards other groups are costly to one's health, not only for Blacks but also for Whites. Plus, data from Orchard and Price (2017) suggest that communities with more negative attitudes towards Black individuals may risk incurring more health care and education-related costs because they are not effectively supporting the health of Black infants.

4. Moving beyond the individual: a research agenda

As Kaufman et al. (2014) suggest, additional multi-level, interdisciplinary research is needed to understand the ways in which