



## Research Article

# Community Health Ambassadors' Work Challenges COVID-19 Spread in Spatially Segregated Minority Communities in Omaha, Nebraska

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## Abstract

This article highlights spatial segregation's role regarding African American COVID-19 vulnerability and social inequity and efforts of these disadvantaged communities to mitigate these vulnerabilities via community health ambassadors and community-based organizations. Through a sub-contract award to Creighton University's Center for Promoting Health and Health Equity and the Department of Health Sciences-Multicultural and Community Affairs, community health ambassadors/advocates (CHAs) in Omaha, Nebraska were trained to increase the communication of the Centers for Disease Control and Prevention and other messaging about COVID-19 Prevention Guidelines in Omaha minority communities. CHAs were educated and trained in COVID-19 messaging and surveillance, the latter to assess COVID-19 public health guideline adherence in their communities. In centers with existing social cohesion, such as faith-based organizations, adherence increased. Where social cohesion was lower, less adherence ensued. CHAs successfully assessed guideline adherence in public spaces and encouraged local citizens in CDC COVID-19 prevention adherence. Community-based organizations can positively impact these minority communities and may help mitigate hypersegregation.

**Keywords:** Hypersegregation; Community health ambassadors/advocates; Community-based organizations; COVID-19

## Abbreviations

CBO: Community-Based Organization, CHA: Community Health Ambassador/Advocate, COTS: Contact Observation Tracking System, CPHHE: Center for Promoting Health and Health Equity, CDC: Centers for Disease Control and Prevention, DCHD: Douglas County Health Department, CU: Creighton University, FBO: Faith-Based Organizations, HUD: U.S. Department of Housing and Urban Development, IP: Implementation Plans, OHA: Omaha Housing Authority, PHI: Protected Health Information, REACH: Racial and Ethnic Approaches to Community Health

## Introduction

As United States COVID-19 cases increase, African Americans, who make up 13% of the population in the United States, are disproportionately infected at higher rates, according to data released by several states and big cities [1]. And their higher prevalence of underlying chronic conditions predisposes them to higher rates of morbidity and mortality when infected [2].

This article highlights how African American spatial segregation, a social inequity, enhances their COVID-19 vulnerability, and the efforts these disadvantaged communities employ to mitigate these vulnerabilities via the roles of community health ambassadors/advocates (CHAs) and community-based organizations (CBOs). CHAs in Omaha, Nebraska were trained to increase Centers for Disease Control and Prevention (CDC) messaging to their communities about COVID-19 Prevention Guidelines. Training and education support was through a sub-contract awarded to Creighton University's Center for Promoting Health and Health Equity (CPHHE) and the Office of Health Sciences-Multicultural Affairs by the Douglas County Health Department in Omaha, Nebraska. The hypersegregation and its consequences involve various racial/ethnic communities. However, this paper's focus is Omaha minority community; the majority of the trained CHAs were representatives from predominantly African American communities. Therefore, conclusions drawn from our data most accurately represents these areas.

The CHAs also assessed their local community members' adherence to COVID-19 CDC guidelines, using an

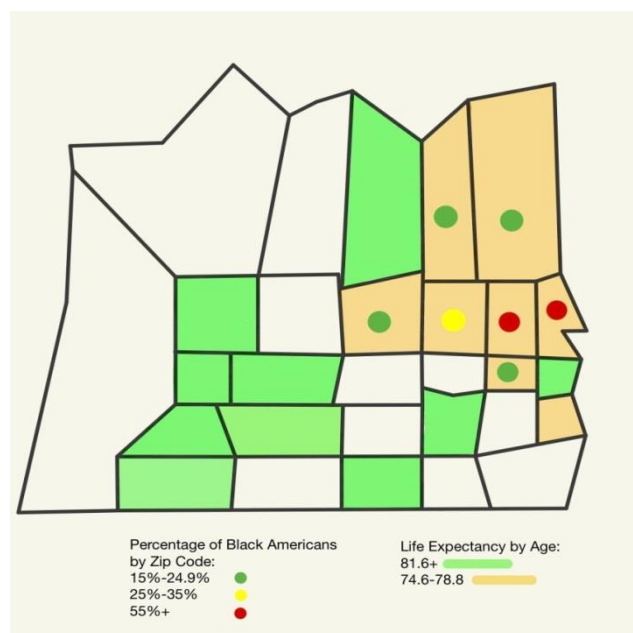
instrument that the lead author of this paper and the project evaluator Jeffrey Smith, PhD' designed: the Contact Observation Tracking System (COTS), a visual surveillance instrument (Figure 2). This paper's specific focus is COTS's purpose and effectiveness. The results illustrate CHAs' and community-based organizations' (CBOs) outcomes as COVID-19 prevention messengers.

## Background

**Hypersegregation:** COVID-19 outcomes for racial/ethnic minorities correlate with their "hypersegregation" that generates major needs for CHA and CBO prevention efforts. Closely reviewing hypersegregation's definition, a form of residential segregation, helps highlight its presence in COVID-19 disparities in Omaha, Nebraska. It is common knowledge that "Racial residential segregation occurs when two or more groups of people are spatially separated and occupy different areas of the same city, a pattern that can be shaped by discriminatory outside forces and/or the social organization of the group itself" [3]. Massey and Denton [3] developed the concept of hypersegregation in 1989 to describe metropolitan areas in which African Americans were highly segregated on at least four of the 5 dimensions they identified. To qualify as hypersegregated, metropolitan areas had to score high on at least four of the five distinct dimensions of segregation: evenness, isolation, clustering, concentration, and centralization. "Evenness indicates the differential representation of blacks and whites across neighborhoods; isolation refers to the likelihood of blacks sharing neighborhoods with whites; clustering measures the degree that black neighborhoods form a contiguous enclave; concentration describes the extent to which blacks reside in a relatively small geographic area; and centralization determines whether blacks are located at the urban core" [4]. Massey and Denton found that from 1970 to 2010, 52 metropolitan areas, including Omaha, Nebraska, met the criteria for hypersegregation.

African Americans in highly segregated areas generally have lower health outcomes [5], as racial discrimination leads to spatial stratification, spatial concentration of poverty, social exclusion, and health inequality [6]. These spatial effects can create social vulnerability and dismantle community capacity as a result of these highly segregated, disenfranchised neighborhoods. These existing structural and health vulnerabilities contribute to the current racial inequality in the COVID-19 outcomes [7].

**Spatial Segregation Effects and COVID-19 Implications:** The effects of spatial inequalities are evident in Douglas County, the most populous county in Omaha, Nebraska. Here we see a highly segregated county, with Caucasians the major demographic in the western zip codes and African Americans the majority or predominant demographic in the north eastern zip codes of Douglas County. The modified map (Figure 1), from the University of Nebraska Medicine Center for Reducing Health Disparities, highlights that the zip codes with the highest proportions of African Americans are also the areas of lowest life expectancy.



**Figure 1:** Map of Life Expectancy Divided by Zip Code and Demographics [8,9].

Massey and Denton state that groups that occupy a small share of the total of a city are said to be residentially concentrated, which qualifies as one of the dimensions for hypersegregation [3]. It is known that populations with disadvantage tend to live in denser neighborhoods. Given the mechanics of person-to-person viral transfer, in areas of spatial segregation, the spread of COVID-19 may be even more pronounced, as dense housing arrangements create conditions that are very conducive to much greater COVID-19 infection rates. These spatial facts probably explain why 68111, the zip code with the highest percentage of African Americans (64.1%) also has the highest level of community spread transmission (44%) compared to any other zip code [8]. However, other reasons may contribute to the 44%. African Americans disproportionately lack the luxury of working from home, which can place them at a higher risk for contracting COVID-19 in transit or at work [1]. Further, African Americans report lower adherence to COVID-19 public health recommendations for hand washing, social distancing, and mask wearing [10]. And larger proportions of lower educated individuals report riskier behaviors such as leaving the house, hand shaking, and participating in gatherings when compared to high educated individuals [11]. African Americans in 68111 on average are less educated than comparative local zip codes. Further, African Americans are more likely to hold low-wage jobs with frequent public contact. Finally, their work sites are less likely to enforce safety precautions [12].

**Community Response Strategies:** Given such hypersegregated, disadvantaged communities' greater susceptibility to COVID-19 infection and adverse outcomes, targeted prevention efforts are crucial. Key strategies are education campaigns and consistent messaging from African American community members, for example, to improve adherence to prevention recommendations and mitigate risk [5]. Studies confirm CBOs' success in promoting positive

public health outcomes [5]. Moreover, McGuire [13] notes that “strategic collaboration between public, private, and nonprofit organizations is the first principle that the U.S. Department of Homeland Security lists for emergency management.”

Many communities have turned to “community-forward” or “community-based” approaches using trained community individuals to advance community health [5]. These individuals provide health education that promotes healthy lifestyles. They also educate peers about addressing specific health conditions like hypertension and diabetes as well as help community members navigate through healthcare systems. In Creighton University’s CPHHE initiative, CHAs (ambassadors and advocates) are knowledgeable community members that can (1) assess health needs, (2) develop programs and materials, (3) teach health condition management, (4) help people find services, (5) advocate for improved health services/resources, (6) discuss health concerns with individuals and the community, and (7) collect data [14].

**CPHHE Initiative:** Community Health Ambassadors/Advocates and COVID-19. Founded in 2008, the CPHHE initiative is a community-academic partnership in Omaha, Nebraska that “identifies health disparities and effectively promotes health equity and health improvement in a collaborative community-Creighton partnership in accord with Ignatian values”. CPHHE has partnered with community organizations and entities to address specific health needs in primarily underserved and underrepresented minority communities. CPHHE is a center “without walls” in the Department of Health Sciences Multicultural and Community Affairs at Creighton University (CU). A private Jesuit university, CU was founded in 1878 adjacent to the north eastern region of Douglas county, where the majority of African Americans in Omaha reside [15]. Also, CU is north of a community where many in the Latinx community live. Recognizing the potential for negative and inequitable outcomes treatment that the COVID-19 pandemic has rendered on these communities, CPHHE sought and was awarded a sub-contract by the Douglas County Health Department (DCHD) to enhance COVID-19 prevention in African American and Latinx communities. For this purpose, the goal of the project was to train, educate and coordinate the activities of 50+ CHAs from those communities.

### **Training and Education Procedure and Content**

After each previously CU certified CHA was invited, contracted and consented to participate, the training project began. CHAs agreed to a six-month grant commitment, including attendance at eight (8) formal sessions for education and training in COVID-19 Communication messaging and surveillance. During the training, CHAs were informed about current CDC COVID-19 Prevention Guidelines. Updated CDC epidemiological public health information on the pandemic was regularly provided, including prevalence, morbidity, and mortality data locally and nationally. Project leaders also infused cultural factors and ethical considerations into every session, coupled with discussions about how to ensure humanistic, caring, respectful and compassionate CHA approaches.

The training culminated with an introduction to the COTS instrument-the “Contact Observation Tracking System.” The design of the instrument correlated with the task of the CHAs. COTS was created expressly for this project; validity and reliability testing are forthcoming. The instrument was developed to collect data regarding whether people in their communities were adhering to CDC COVID-19 prevention guidelines before and after the messaging campaign. COTS was created in Microsoft Word and then printed and distributed to the CHAs by their assigned coordinators. This distribution method was conducted to assist CHAs who may not have readily available or reliable internet or smart phone services, or who feel more comfortable using physical materials for data collection.

The COTS form was transferred to a digital surveying software (Qualtrics, LLC) to provide CHA accessibility through their smart phones, easing the burden of managing paper copies and improving efficiency [16]. COTS forms completed on paper were collected by coordinators and sent to the COVID-19 project coordinator for input into the digital COTS survey system.

After the penultimate training session, CHAs designed Implementation Plans (IP) for their local communities. With IPs in place, CHAs began introducing their messaging strategies in their local communities and surveilling their local areas.

The instrument, (COTS) is divided into 3 distinct categories of surveillance (Figure 2):

- PEOPLE=the number of people assembled in a specific area
- SOCIAL DISTANCING=the number of PEOPLE in that specific area meeting social distancing guidelines
- MASK WEARING=number of PEOPLE in that specific area wearing masks and how many were not wearing masks.

This paper separates CHAs’ surveys, using COTS, by the local communities they observed. The communities are Faith-Based Organizations (FBOs), Omaha Housing Authority residential towers (OHA), and the General Community. FBOs are defined as a nonprofit organization, founded by a religious congregation such as a church, or religiously motivated organizers and board members [17]. The FBOs were churches located predominately in north Omaha, many African American. OHA contracts with the U.S. Department of Housing and Urban Development (HUD) to provide low and moderate-income individuals with safe and stable housing through rent subsidies. OHA has administered over 2,700 public housing units and up to 4,300 housing choice (Section 8) vouchers to the underserved community [18]. The general community in our study was defined as observations made by CHAs that were not performed at either a church or residential tower, but rather out in the community of north Omaha, as well as other areas of Douglas county. These locations included grocery stores, gas stations, and social gatherings. CHAs were required to complete 2 surveys weekly over 3 months. A total of 64 FBO surveys, 94 OHA surveys, and 536 General Community surveys were completed by the time of this data analysis. The data was transferred to an excel spreadsheet, where calculations were performed.

**COTS-1**

**DIRECTIONS:** After completing the demographic data at the top of the form, station yourself to surveil the focused area for COVID-19 prevention adherence.

<b>Advocate Name:</b>			
<b>Advocate Home Site:</b>			
<b>Advocate Coordinator:</b>			

<b>Date</b>	<b>Time:</b>	<b>Location:</b>	
		<b>Setting/Event:</b>	

	<b>How Many/Yes or No</b>	<b>Additional Information</b>
<b>Number of People</b>		
<b>Social Distancing (Yes or No)</b>		
<b>Number Wearing Masks</b>		

**Figure 2:** COTS Survey Instrument.

**Data**

Table 1 includes the three communities observed by CHAs. Categories for responses have been separated as “yes” and “no” for mask wearing, and “yes”, “no”, and “some” for social distancing. Percentages are derived by dividing (1) the number of observed individuals performing the specific action by (2) the total number of participants observed for each designated observational event.

Location	<b>Wearing Masks (Yes)</b>	<b>Wearing Masks (No)</b>	<b>Social Distancing (Yes)</b>	<b>Social Distancing (Some)</b>	<b>Social Distancing (No)</b>
<b>Omaha Housing Authority (OHA)</b>	69.2%	30.8%	53.6%	5.1%	41.2%
<b>Churches (FBO)</b>	91%	9%	84%	7.8%	7.8%
<b>General Community</b>	87%	13%	79%	10.4%	10.5%

**Table 1:** COTS Survey Data.

**Discussion**

Our results found differing levels of adherence depending on location. The highest rates of mask wearing and social distancing were found in FBOs, followed by the general community. The OHA towers had the lowest percentage of individuals wearing masks and social distancing, with only about half of observed residents social distancing in public apartment spaces. Compared to COTS observations in the general population, OHA individuals had worse public health guideline adherence. In contrast, FBO members had greater adherence. A 2014 to 2018 CPHHE study suggests reasons for lower OHA adherence. In 2014, CPHHE was awarded a 3-year CDC grant, Racial and Ethnic Approaches to Community Health (REACH). The project employed a CHA model to promote physical activity for residents (OHA) and members (FBOs) to reduce cardiovascular health disparities and its risk factors.

A REACH observational study, which conducted focus groups in the north Omaha FBO and OHA communities, similarly found that FBO members followed recommendations more frequently than OHA residents. OHA residents were concerned about drugs, alcohol, fighting, and disrespect for tower community items/infrastructure, increasing their sense of insecurity and isolation. These concerns decreased motivations for following physical activity guidelines despite CHA-provided education about possible adverse consequences. In communities where individuals feel unsafe, such as OHA residential towers, residents may be more likely to “look out for themselves” or

may be so overwhelmed with other life stressors and their own survival, that practices such as social distancing, hand washing, and mask wearing are not their priorities. Concentrated disadvantage in neighborhoods is one of the most reliable predictors of high rates of violent crime, and this disproportionate exposure to violence in specific racial groups can be explained by differences in neighborhood disadvantage [19]. Also, residence in residentially segregated areas is associated with a detrimental effect on mental health and higher rates of antisocial behavior [20].

In the REACH project, FBOs exhibited social capital, defined as "connection among individuals," serving as a social network to facilitate reciprocity and trustworthiness [21]. Religiosity and spirituality are defining features of African American life that shape individual and communal behaviors. It has been found that religion and spirituality play crucial roles in promoting prosocial attitudes and behaviors among adults [22]. When individuals feel they are part of a community they trust, they may be more sensitive to how their actions affect others. In contrast to the OHA towers, the heightened sense of community in FBOs facilitated social cohesion and self-efficacy. The collective sense of comradery encouraged and motivated them to be more physically active and feel more accountable for their own actions [23].

Social capital and its influences should also lead to increased adherence to public health COVID-19 guidelines that CHAs promulgated. Richard Wood, in *A Faith-based Journey: Faith-Based Organizing for Racial Equity and Ethical Democracy* [24], discusses the growth of faith-based organizations regarding mobilizing systemic change, arguing that FBOs have sufficient institutional scale to make differences in civil and political society, moving towards a future closer to ethical democracy and away from economic inequality, policy paralysis, and racial injustice. In our study, we have seen how FBOs can change community members behaviors and attitudes, confirming FBOs value in reducing health and economic disparities in the north Omaha community,

Although OHA residents' adherence to COVID-19 prevention guidelines was less than hoped, OHA officials report that OHA CHAs felt empowered and are seen as invaluable leaders by residents of their respective towers. These CHAs believe they have positively impacted their communities by protecting neighbors through both COVID-19 Prevention information and tangible resources like masks, hand sanitizers, and educational materials (personal communication, 2020). Although OHA results showed less mask wearing and social distancing compared to the other two communities, OHA officials added that during a three (3)-month period, positive COVID-19 test results declined. A possible explanation for this reduction may be improved adherence, but less compared to the other two communities.

Overall, this evidence of improved COVID-19 prevention adherence is further support that CBOs can play a positive role in these African American communities. However, to meet CBOs' true potential, how to combat hypersegregation must be addressed and has no easy solution. However, continued community engagement and community involvement, such as programs created by the CPHHE, are a great start.

## Conclusion

This article aimed to highlight (1) spatial hypersegregation's role in enhancing African American COVID-19 vulnerability and social inequity, and (2) CBOs and CHAs effectiveness in mitigating these vulnerabilities. Employing COTS, CHAs successfully observed CDC COVID-19 Prevention adherence in their communities' public spaces and encouraged guideline adherence. In FBO centers with high social cohesion adherence was greater than in areas with social cohesion. The COTS form and method was found to be an effective tool and process for surveilling COVID-19 adherence in those communities where CHAs were employed. Although hypersegregation characteristics could describe the communities, CHA training and implementation of the COTS, provided much needed education and COVID-19 Prevention resources to community members. Evidence suggests that CHAs positively impacted those micro sub-groups where they provided COVID-19 Prevention service. The community members were surveilled, educated, informed and resourced with COVID-19 Prevention information and supplies; thus, preventing its spread. Community Health Ambassadors were the COVID-19 Prevention cavalry coming to the rescue of their local community members.

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## Conflicts of Interest

The authors declare no conflict of interest.

## References

1. John E, Burch ADS, Searcey D, et al. (2020) Black Americans face alarming rates of coronavirus infection in some states. *New York Times*.
2. Centers for Disease Control and Prevention. Cases of coronavirus disease (COVID-19) in the U.S.
3. Massey DS, Denton NA (1989) Hypersegregation in US metropolitan areas: Black and Hispanic segregation along five dimensions. *Demography* 26(3): 373-391.
4. Hess C, Gabriel R, Leibbrand C, et al. (2019) Does hypersegregation matter for black-white socioeconomic disparities? *Demography* 56: 2169-2191.
5. Cheng YD, Yu J, Shen Y, et al. (2020) Coproducing responses to COVID-19 with community-based organizations: Lessons from Zhejiang Province, China. *Public Administration Review* 80(5): 866-873.
6. Browning C, Feinberg S, Wallace D, et al. (2006) Neighborhood social processes, physical conditions, and



disaster-related mortality: The case of the 1995 Chicago heat wave. *American Sociological Review* 71(4): 661-678.

7. Kim SJ, Bostwick W (2020) Social vulnerability and racial inequality in COVID-19 deaths in Chicago. *Health Educ Behav* 47(4): 509-513.

8. Douglas County Health Department (2021) Douglas County NE COVID-19 Dashboard.

9. College of Public Health-Center of Reducing Health Disparities (2021) Life Expectancy Calculator for Adult Nebraskans-Nebraska Life Expectancy Mapping by Zip Code.

10 Block R Jr, Berg A, Lennon RP, et al. (2020) African American adherence to COVID-19 public health recommendations. *Health Literacy Research and Practice* 4(3): 166-170.

11. Salimi A, ElHawary H, Diab N, et al. (2020) The North American layman's understanding of COVID-19: Are we doing enough. *Front Public Health* 8: 358.

12. Polonijo AN (2020) Who is dying the most from COVID in California? *Hispanic Outlook on Education Magazine* 30(12): 34-35.

13. McGuire S (2010) What if Hurricane Katrina hit in 2020? The need for strategic management of disasters. *Public Administration Review* 70(1): S201-S207.

14. Bureau of Labor Statistics (2018) U.S. department of labor, occupational outlook handbook, health educators and community health workers.

15. Kosoko-Lasaki O, Stone J, Brown RL, et al. (2017) The Center for Promoting Health and Health Equality's Racial and Ethnic Approaches to Community Health Program. *J Community Med Health Educ* 7: 530.

16. Qualtrics, LLC. (2021) Drive Provo, UT, [Software].

17. White House Office of Faith-Based and Community Initiatives. Guidance to Faith-Based and Community Organizations on Partnering with the Federal Government.

18. Omaha Housing Authority (2021) About OHA.

19. Peterson RD, Krivo LJ (2005) Macrostructural analyses of race, ethnicity, and violent crime: Recent lessons and new directions for research. *Annual Review of Sociology* 31: 331-356.

20. Maguire A, French D, O'Reilly D (2016) Residential segregation, dividing walls and mental health: A population-based record linkage study. *Journal of Epidemiology and Community Health* 70(9): 845-854.

21. Putnam RD (2000) Thinking About Social Change in America. Skocpol T., Fiorina, MP., *Bowling Alone: The Collapse and Revival of American Community*, Simon and Schuster, United States, 19.

22. Mattis JS, Jagers RJ (2001) A relational framework for the study of religiosity and spirituality in the lives of African Americans. *Journal of Community Psychology* 29(5): 519-539.

23. Kosoko-Lasaki O, Ekúndayò OT, Smith J, et al. (2019) Urban minority community safety and its impact on physical activity: The Center for Promoting Health and Health Equity-Racial and Ethnic Approaches to Community Health (CPHHE-REACH) Initiative. *J Natl Med Assoc* 111(3): 334-344.

24. Wood R, Fulton B (2015) *The Other Democratic Dilemma: Religion in the Public Sphere. A Shared Future: Faith-Based Organizing for Racial Equity and Ethical Democracy*. University of Chicago Press, United States, 14-18.

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