RECONCEPTUALIZING COMMUNITY VIOLENCE RESEARCH: REDEFINING SAFETY USING PLACE-BASED METHODOLOGIES AND ENHANCING CROSS-SECTOR DATA SHARING MODELS TO INFORM COMMUNITY VIOLENCE INTERVENTION EFFORTS IN MECKLENBURG COUNTY, NORTH CAROLINA

by

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ABSTRACT

RACHEL SIEGAL. Reconceptualizing Community Violence Research: Redefining Safety Using Place-Based Methodologies and Enhancing Cross-Sector Data Sharing Models to Inform Community Violence Intervention Efforts in Mecklenburg County, North Carolina. (Under the direction of DR. RYAN P. KILMER)

Community violence occurs primarily in public settings, frequently involves high-risk behaviors such as firearm use, and is often geographically concentrated as a result of racial and economic segregation enforced through policy and practice. Community violence has risen in Mecklenburg County, North Carolina over the past five years, with a plurality of incidents concentrated in neighborhoods which also have high rates of social, economic, and health-related risk factors. This dissertation builds on my work with the City of Charlotte and Mecklenburg County as part of a multi-sector collaboration intended to leverage resources and align programs and policies to disrupt, reduce, and prevent community violence. In this dissertation, guided by the Ecological Systems Theory and Social Determinants of Health Framework for Action, I used qualitative, quantitative, photographic, and geospatial data to (1) explore residents' perceptions of safety and experiences of community violence; (2) describe an integrated, place-based methodology that can be used in community violence research; and (3) explore how positionality informs cross-sector, collaborative data sharing efforts to address community violence.

In study one, participants identified neighborhood features across ecological levels that contributed to them feeling safe or unsafe. Notably, participants perceived historical and on-going disinvestment, enacted through structural racism, as contributing to unsafe conditions. In study two, which grows out of study one, we found that walking interviews generated more findings specific to place and situated within the micro-, meso-, and exosystem levels, while more traditional, semi-structured sedentary interviews yielded results that were largely centered within the individual and microsystem levels. In addition, using an integrated methodology

highlighted gaps in the publicly available quantitative data and demonstrated the utility of employing multiple methods to capture data related to place, most notably by generating data that informed actionable insights across ecological levels. In study three, we found that individuals' and organizations' social identities (e.g., individuals' level of data knowledge and data sharing experiences, and organizations' use of formal data sharing processes) as well as power (specifically, individuals' sense of empowerment, and organizations' use of resources and data sharing capacity) interacted to influence barriers and facilitators to data sharing.

Findings point to areas for future research and suggest local implications including (a) the need for increased attention in research and practice related to how structural racism contributes to unsafe neighborhood conditions; (b) the potential benefits of considering how the described integrated, place-based methodology can be scaled to capture residents' perceptions of safety and experience of violence across neighborhoods; and (c) the salience of attending explicitly to how the positionality of the individual and organization contributes to barriers and facilitators to cross-sector data sharing. Results from my dissertation can be used locally to inform cross-sector, collaborative solutions to community violence that incorporate residents' perspectives and address risk factors across ecological levels. While conducted in Mecklenburg County, results also have implications for community violence prevention and intervention efforts in communities across the country.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ATV	Alternatives to Violence
CMPD	Charlotte-Mecklenburg Police Department
CV	Community violence
CVP	Community violence prevention
FRCV	Firearm-related community violence
FRV	Firearm-related violence

CHAPTER 1 - INTRODUCTION

Community Violence: A Health Disparity

Firearm-related violence (FRV) is a significant cause of death and injury in the United States. Community violence, the focus of this work, is a type of violence which occurs primarily in public settings, is often geographically concentrated, and frequently involves high-risk behaviors such as firearm use (Abt, 2016). I refer to FRV, in the context of community violence, as firearm-related community violence (FRCV). In 2020, FRV became the leading cause of death for young people ages 1 to 19 years in the Unites States (Goldstick et al., 2022). This increase in firearm-related injuries was driven largely by an increase in firearm-related homicides (Goldstick et al., 2022). Importantly, firearm-related homicides likely reflect only part of the impact of FRV (National Institutes of Health [NIH], 2022), given that there were more than double the number of firearm-related injuries as firearm-related deaths in 2017 (Fowler et al., 2015). Exposure to FRV, even in the absence of physical injury, can have long-lasting negative effects on health and development (NIH, 2022). In the U.S., non-Hispanic Black adults are at a disproportionately higher risk of exposure to FRCV than non-Hispanic white adults, and firearm-related homicides are the leading cause of death for Black adolescents and young adults (CDC, 2019; Sheats et al., 2018). As such, reducing community violence, and specifically FRCV, is a health equity concern and the focus of this multi-component project.

Community-level Risk Factors for Community Violence

Community-level factors, including racial segregation, income inequality, and neighborhood deprivation (e.g., concentrated poverty), have been associated with disproportionate exposure to FRCV (Boeck et al., 2020; Knopov et al., 2019; Rowhani-Rahbar et al., 2019). For instance, in one effort, after controlling for measures of deprivation, people living

in census tracts with higher levels of racial segregation were exposed to higher rates of fatal and non-fatal firearm assaults (Krieger et al., 2019). Additionally, across a 25-year period, higher levels of state-level racial segregation were positively associated with larger Black-White disparities in states' rates of FRCV (Knopov et al., 2019). Similarly, higher levels of income inequality within a given county were associated with higher rates of firearm-related homicide victimization for people living in that county, both five and 15 years later (Rowhani-Rahbar et al., 2019). This association persisted for Black individuals after accounting for additional factors in the county, including the rate of violent and non-violent crimes, firearm ownership, and indices to measure deprivation as well as social capital (Rowhani-Rahbar et al., 2019). Likewise, socioeconomic disadvantage, measured at the family and census tract level, was associated with exposure to FRV up to 10 years later (Beardslee et al., 2021). Together, these findings suggest that community-level factors may serve to concentrate risk for FRCV among Black communities. Therefore, theories that situate individual-level outcomes within their surrounding environments, and the contemporary and historical contexts that shape them, can inform efforts to address disparities in community violence exposure.

Select Theories Relevant to Community Violence Research

While there are multiple theories that can be used to identify key opportunities for community violence intervention, prevention, and reduction, the Ecological Systems Theory (Bronfenbrenner, 1977; Bronfenbrenner, 1986; Bronfenbrenner et al., 1999) and the Social Determinants of Health Framework for Action (Solar & Irwin, 2010) are particularly relevant, as they both employ a multi-level approach to addressing complex public health challenges.

Ecological Systems Theory Applied to Community Violence Research

Bronfenbrenner's Ecological Systems Theory, also referred to as the bioecological

model, and more recently adapted as the social-ecological model, posits that individuals interact with and are influenced by multiple systems over time, and that these system-level interactions impact individuals' health and well-being. Applied to community violence, this model frames an individual's exposure to community violence and subsequent outcomes as shaped by the individual's interactions with various system levels in the environment over time: micro-, meso-, exo-, macro-, and chrono-system levels (See Figure 1; Bronfenbrenner, 1977; Bronfenbrenner, 1986; Bronfenbrenner, 1999; CDC, 2021; Dahlberg & Krug, 2002; Flynn et al., 2019).

An individual's interactions with other individuals and as part of organizations, and systems (e.g., friends, family, neighbors, and schools) fall within the microsystem. The mesosystem is composed of interactions between aspects of the microsystem, and/or aspects of the exosystem with the microsystem. Systems and policies which impact the individual, such as the healthcare system or criminal justice system, comprise the exosystem. Cultural attitudes and ideologies are part of the macrosystem, while the chronosystem encapsulates the interactions between and within systems, across time (e.g., urban renewal policies in the mid-20th century contributing to the displacement of Black residents and destruction of local businesses; Huneycutt, 2023).

The application of Ecological Systems Theory to community violence research provides an opportunity to understand the relationships between and among these system levels, as well as factors and conditions across systems interact to result in observed outcomes (Sabri et al., 2013). However, previous FRCV research has predominantly focused on points of intervention or prevention at the individual- or micro-levels (e.g., bystander interventions), and/or via efforts isolated within one system (Carter et al., 2021; Oliphant, 2019; Schmidt, 2019). Recent efforts to set a research agenda for FRCV prevention call for the exploration of factors across ecological

levels (Carter et al., 2021). In particular, Carter and colleagues' (2021) research agenda emphasizes the importance of exploring the role of neighborhood and community-level factors, often situated within the micro-, macro-, and exosystem levels, using methods and data sources that are diverse and multi-faceted. Innovative methodologies are needed that can adequately capture the often complex and interacting factors across systems (Boeck et al., 2020; Carter et al., 2021).

Despite the utility of the Ecological Systems Theory, there are limitations, most notably the theory's amorphous approach to identifying root causes of inequity, and its lack of discussion of structural factors (e.g., structural racism). In other words, while the Ecological Systems Theory emphasizes that it is necessary to account for multiple levels of influences when assessing complex public health challenges and identifying potential actionable solutions across multiple levels, it does not clearly articulate that a failure to address structural factors will result in persistent, inequitable outcomes for individuals and communities. Subsequently, this theory does not provide insight into strategies or approaches that can be used to address root causes of inequity.

The Social Determinants of Health Framework for Action Applied to Community Violence Research

The Social Determinants of Health Framework for Action posits a causal relationship between structural and intermediary determinants of health and individual health outcomes and is thus well-suited for framing factors which contribute to inequitable exposure to community violence (see Figure 2; Solar & Irwin, 2010). The structural determinants of health refer to the socioeconomic and political context, such as health, housing, and education policies, which result in a set of socioeconomic positions, such that populations are arranged by various

sociodemographic factors including income, education, and race/ethnicity (Solar & Irwin, 2010). These structural determinants shape the intermediary determinants of health, such as living and working conditions and food availability, as well as behaviors, biological factors, and psychosocial factors (Solar & Irwin, 2010). Stratification via the structural determinants of health and subsequent differential access to the intermediary determinants of health directly impact an individual's health and well-being (Solar & Irwin, 2010). The structural and intermediary determinants of health identified by the Social Determinants of Health Framework for Action align well with the various levels identified in the Ecological Systems Theory. Of relevance to this dissertation effort, the Social Determinants of Health Framework for Action also provides recommended strategic directions to address health inequities. Discussed next, these recommendations include social participation and empowerment, and cross-sector collaboration.

Social Participation and Empowerment to Address Health Disparities

The Social Determinants of Health Framework for Action posits that addressing health inequities will require that groups which have been historically and currently marginalized or oppressed gain decision-making power over the processes that affect their well-being (i.e., exercising their rights, accessing resources, and participating actively in the process of shaping society and making decisions; Solar & Irwin, 2010). This conceptualization of empowerment draws from Rowlands' (1997) model of empowerment, which describes four types of power: Power over, power to, power with, and power within. Rowlands' (1997) model of empowerment emphasizes that while changes in power relations can take place at various levels (e.g., at the individual, micro-, and macro-levels), a focus on individual- or micro-levels will not lead to the structural change needed to reduce health inequities. Rather, collective action – such as civil rights marches in the 1960s, as well as more recently, Black Lives Matter protests – to organize

and change existing hierarchies (e.g., changes in voting and housing rights; public discourse on racism and prison abolition), is particularly important (Buchanan et al., 2020; Dunivin et al., 2022). Engagement in collective action in response to community violence is a secondary focus of the first study in this dissertation.

Cross-sector Collaboration to Address Health Disparities

In the Social Determinants of Health Framework for Action, cross-sector collaboration is emphasized as a means by which structural change can occur to address health disparities such as community violence (Solar & Irwin, 2010). Indeed, cross-sector collaborations can be well-positioned to align and leverage resources for systems-level intervention and change to address health disparities and improve population-level health (Bryson et al., 2015; Klievink et al., 2018). However, there are unique challenges to cross-sector collaborations, including needing to align behavioral elements (e.g., individual attitudes) and structural elements (e.g., political, policy, and technical factors within and across represented organizations and sectors) to be successful (Ruijer, 2021). The third manuscript in this dissertation explores factors which may influence the success of a cross-sector collaborative convened to use data to inform community violence prevention and intervention efforts.

Taken together, these theories – Ecological Systems Theory and the Social Determinants of Health Framework for Action – provide guidance on identifying opportunities for intervention and prevention to address health disparities. These theories can inform strategies for intervention as well as how to reduce and prevent exposure to community violence, a documented health disparity both nationally (e.g., CDC, 2019) and, as described next, locally, in Mecklenburg County, North Carolina.

Dissertation Context

The City of Charlotte, located in Mecklenburg County, North Carolina, has experienced rapid growth in population (16.3% increase from 2010-2017), diversity, and median household income (23.6% increase from 2010-2017; City of Charlotte, 2019). However, in a national study of economic mobility, of the 50 largest cities in the country, Charlotte ranked last (Chetty et al., 2014). Data show that children who were born into low-income households had a less than 5% chance of living in high-income households as adults, suggesting that this rapid population and subsequent economic growth has only yielded benefits for subsets of the community (Chetty et al., 2014; Opportunity Insights, 2020). The findings were even more stark for Black communities, with results indicating that, as adults, Black men who grow up in low-income households in Charlotte have a significantly lower household income ($19,000) compared to white men ($32,000; Opportunity Insights, 2020).

In this context of disparities in income, social mobility, and economic opportunity, Mecklenburg County has also experienced an increase in FRCV over the past five years, with an 119% increase in homicides (Office of City Manager, 2019). Paralleling national trends in community violence, a plurality of violent assaults occurred in less than 2% of the county's geographical area (Office of the City Manager, 2019). Aligned with prior research showing a connection between high levels of racial segregation, income inequality, and FRV (Boeck et al., 2020; Knopov et al., 2019; Rowhani-Rahbar et al., 2019), FRV in Mecklenburg County has been concentrated in areas with increased risk factors including low median household income and high racial segregation (Mecklenburg County Department of Public Health, 2019; Office of the City Manager, 2019).

In response to this increase in violent assaults and homicides, the city and county brought together key stakeholders as part of the Community Violence Prevention (CVP) Initiative, a

cross-sector effort to coordinate and align institutional resources. The CVP Initiative is led by the CVP Steering Committee, which is composed of executive leadership from local government and major healthcare systems. In turn, the Steering Committee is supported by the CVP Data Collaborative, a consortium of organizations with representation from local government, healthcare, and education. The CVP Data Collaborative was convened to provide research and evaluation support to the Steering Committee, by leveraging resources for data sharing, analysis, and dissemination in support of community violence prevention and intervention activities.

Thus far, the CVP Data Collaborative has developed an evaluation strategy for two violence interruption efforts in the community and hospital settings (Alternatives to Violence [ATV] and Health Alliance for Violence Intervention [HAVI], respectively; Mayfield et al., 2022). Additionally, the CVP Data Collaborative is working with a local integrated data system, the Charlotte Regional Data Trust, to share, link, and analyze administrative data to conduct research and evaluation related to violence prevention and interruption. Guided by the Ecological Systems Theory and the Social Determinants of Health Framework for Action, I use the following three manuscripts to inform, support, and strengthen these efforts. All three studies were funded by the University of North Carolina at Charlotte Graduate School Summer Fellowship and the P.E.O. 2022-2023 Dissertation Scholars Award. Study-specific funding sources are acknowledged in the relevant manuscripts.

Study One – Sense of Safety in the Neighborhood Context: The Roles of Structural Racism and Social Connectedness

The community-based violence interruption program, ATV, is designed to prevent, reduce, and interrupt FRCV and is most effective when implemented in areas with high rates of FRCV (Cure Violence Global, 2021). Using historical data from the Charlotte-Mecklenburg

Police Department (CMPD), the City of Charlotte identified a 'hot spot' of FRCV, located at the intersection of Beatties Ford Road, LaSalle Street, and Catherine Simmons Avenue. However, the identification and implementation of this intervention was determined primarily by city and county leadership, using historical data from the CMPD, and with minimal input from the community. This top-down approach risks inadvertently missing concerns that are salient to the community, may contribute to residents' sense of disempowerment, and may ignore existing, community-led solutions to identified problems (Wallerstein et al., 2017). Furthermore, residents' perception of safety and experiences of violence may be shaped by a multitude of factors that include but are not limited to FRCV (DaViera et al., 2020).

Therefore, in my first manuscript, I use qualitative thematic analysis to explore factors underlying perceptions of safety and experiences of community violence among residents in this area. This study builds on efforts to address community violence in Beatties Ford Corridor, by exploring participants' perceptions of safety and experiences of community violence. It was funded in part by the City of Charlotte and an award from the Society for the Psychological Study of Social Issues. All study procedures were approved by the UNC Charlotte Institutional Review Board (IRB #21-0268).

Project Significance

Study one is significant in that it contributes to local efforts to identify factors related to community violence, with a goal of improving intervention and prevention efforts. Findings from Study one can be used by local decision makers to inform both the process(es) (i.e., *how*) and the intervention(s) (i.e., *what*) used to reduce community violence. Study one also makes a theoretical contribution in its focus on identifying multiple ecological system levels underlying

experiences of community violence, consistent with recent calls in the FRCV field (Carter et al., 2021).

Study Two – Changing Our Approach to Community Violence Research: How an Integrated, Place-based Methodology can be Used to Collect Data and Conduct Analysis, to Inform Action across Multiple Ecological Levels

Study two is a direct response to recent calls for the inclusion of multiple data sources to capture factors and conditions related to community violence across ecological system levels (Carter et al., 2021; Flynn et al., 2021). Study two describes the integrated, place-based, methodological approach used in study one and it explores the unique and complementary contributions of the data generated from each method. The frequency of themes related to each ecological system level is compared across sedentary and walking interviews, and the insights generated from incorporating the geospatial walking routes, as well as photographs, are described. Additionally, the convergence and divergence of the qualitative and photograph data generated through sedentary and walking interviews, as well as quantitative data obtained from the Charlotte-Mecklenburg Quality of Life Explorer, are explored. All study procedures were approved by the University of North Carolina at Charlotte Institutional Review Board (IRB #21-0268).

Project Significance

Study two makes a methodological contribution in that it provides insight into the types of data generated from each of the integrated methods, such that those working on future efforts in community violence can consider the benefits of an integrated, multimethod approach or employ the most appropriate method(s) for the research question(s) being addressed. Study two also provides evidence for the use of walking interviews as both an empowering data collection

method as well as a method that generates data informed by place. As such, this study provides an example of how a place-based methodology can be used in health disparities research, particularly when seeking to explore related factors that go beyond the individual level. Study two makes a significant contribution locally, in that it highlights the utility of the Charlotte-Mecklenburg Quality of Life Explorer (used by researchers, practitioners, and policymakers locally), while also identifying gaps in the tool's ability to capture neighborhood context. These gaps are important for users to understand, to avoid inaccurate assumptions and utilize the tool appropriately.

Study Three – Expanding data sharing models: Exploring how individual and organizational positionality impacts cross-sector data sharing

The CVP Data Collaborative is working with the Charlotte Regional Data Trust ('Data Trust'), a local integrated data system, to share, link, and analyze administrative data to conduct research and evaluation related to FRCV intervention and reduction. However, cross-sector collaboratives such as the CVP Data Collaborative often face barriers to data sharing that can impede progress (Mayfield et al., 2022; Wiehe et al., 2018). While power imbalances have been described as a tension in data sharing collaboratives (Ruijer, 2021), to this researcher's knowledge, the role of positionality within data sharing partnerships – how differences in social identities and power shape access – has not been investigated. Study three explores how individuals' and organizations' social identities and power are related to perceived barriers to data sharing in the CVP Data Collaborative. Specifically, drawing on overlapping and complementary theories from data sharing (Van Panhuis et al., 2014; Wiehe et al., 2018), cross-sector collaboration (Bryson et al., 2015; Susha et al., 2017), and community-based participatory research (CBPR; Oetzel et al., 2018; Wallerstein et al., 2017), I use deductive, thematic,

qualitative analysis to explore the role of social identities and power at the individual and organizational level in data sharing collaboratives. Study three builds upon my work with Drs. Carlene Mayfield, Jennifer Langhinrichsen-Rohling, and Melvin Herring exploring barriers and facilitators to data sharing in the CVP Data Collaborative (Mayfield et al., 2022). All study procedures were approved by the University of North Carolina at Charlotte Institutional Review Board (IRB # 21-0379).

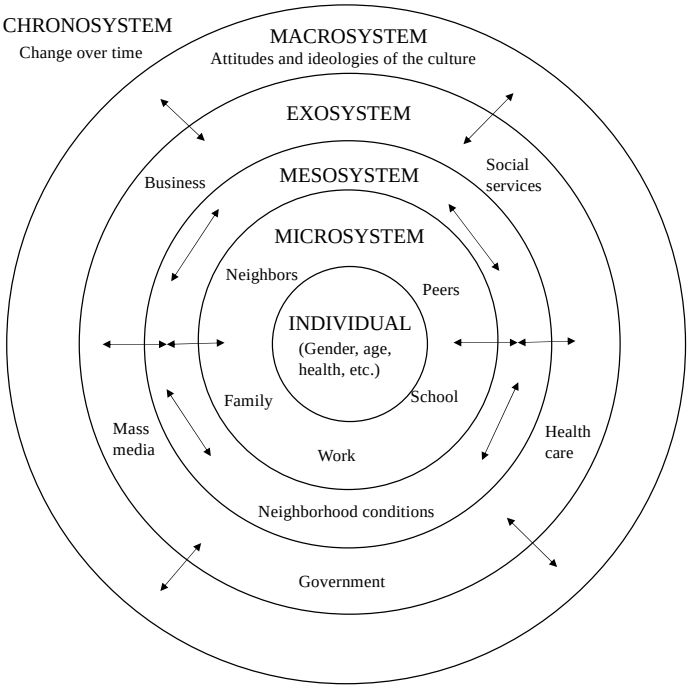
Project Significance

Study three is significant in that it builds on existing data sharing frameworks. Specifically, results provide initial evidence that barriers to data sharing are informed by factors at the individual and organizational levels. Additionally, results suggest that social position and power are important considerations within data sharing efforts. Qualitative findings gleaned from this study lay the groundwork for future quantitative research, validating the role of social identity and power at the individual and organizational levels. Furthermore, this study provides support for future exploration of how other sociodemographic identities (e.g., race, gender, age) influence collaborative, data sharing efforts to address health disparities.

Conclusion

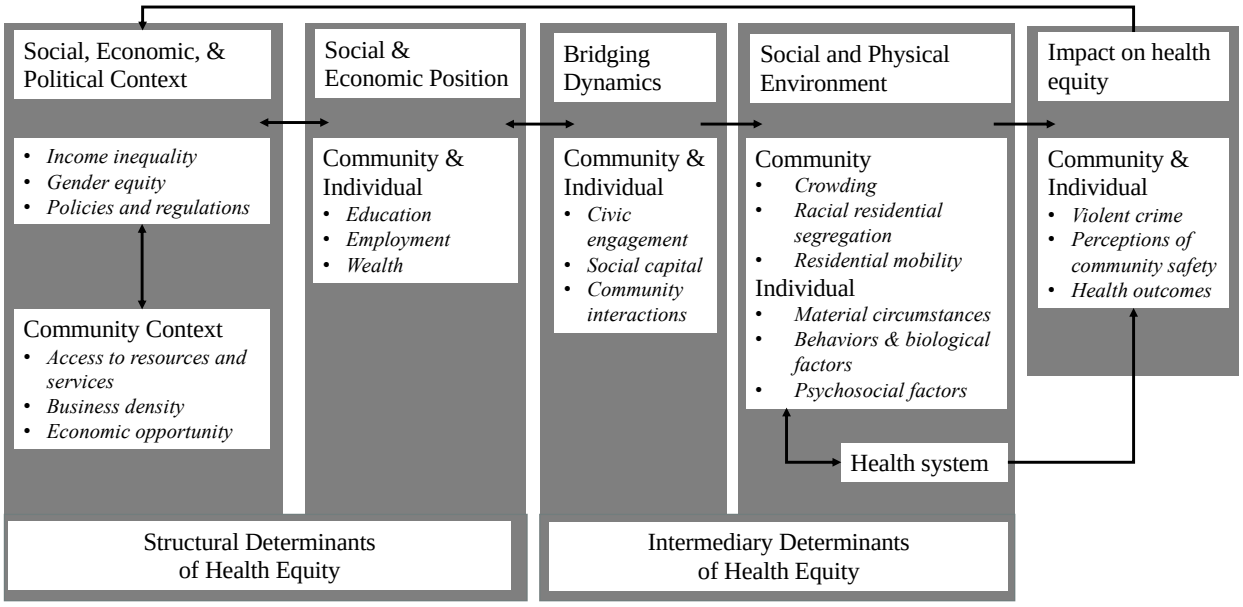
Community violence in Mecklenburg County is a clear concern, with notable racial and economic disparities, and a current priority, with multiple partners aligning and leveraging resources to understand, disrupt, reduce, and prevent it. As with many complex public health challenges, the disparate exposure to community violence that some communities experience is a result of structural and intermediary determinants of health that contribute to inequitable living conditions. Results from these three studies can be used to strengthen local efforts to reduce community violence in Charlotte-Mecklenburg.

Figure 1. *Ecological Systems Theory Applied to Community Violence Research*



Note. This figure was adapted from Flynn and colleagues (2019) application of the Ecological Systems Theory (Bronfenbrenner, 1977) to measuring community violence.

Figure 2. *The Social Determinants of Health Framework for Action, Applied to Community Violence Research*



Note. This model was adapted from the Social Determinants of Health Framework for Action (Solar & Irwin, 2010) and the Structural and Social Determinant Categories and Community Construct Examples (Armstead et al., 2019).

CHAPTER 2 – SENSE OF SAFETY IN THE NEIGHBORHOOD CONTEXT: THE ROLES OF STRUCTURAL RACISM AND SOCIAL CONNECTEDNESS

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ABSTRACT

Structural inequities have shaped communities' risk of exposure to community violence, such that some communities are at higher risk of experiencing community violence. The negative consequences of community violence have been well-documented. However, considerably less work has examined how structural factors, community violence, and perceptions of safety are related and influence one another. The current study addresses this gap using data collected during sedentary and walking interviews to explore perceptions of safety and exposure to violence among 20 adults (18-67 years old) residing in an historically Black community in Charlotte, North Carolina. Drawing on Bronfenbrenner's Ecological Systems Theory, and using inductive thematic analysis, we explore how perceptions of safety and exposure to violence are related to and contextualized within factors at the individual, neighborhood, community, and societal levels. Results highlight how structural racism, enacted through community disinvestment over time, has contributed to neighborhood conditions that reduce participants' perceptions of safety and has laid a foundation for increased community violence. At the same time, participants described how they increased their sense of safety through individual-level, precautionary actions; through social connection; and via advocacy efforts through mediating organizations. Findings from this study can inform how communities, researchers, practitioners, and policymakers understand the relationships among structural inequities, community violence, and perceptions of safety. The results challenge us to broaden our understanding of the factors and conditions related to perceptions of safety while we develop and implement interventions that address the root causes of community violence.

CHAPTER 2 – SENSE OF SAFETY IN THE NEIGHBORHOOD CONTEXT: THE ROLES OF STRUCTURAL RACISM AND SOCIAL CONNECTEDNESS

Firearm-related violence is a significant cause of death and injury in the United States, and homicides are the second leading cause of death for U.S. adolescents and young adults ages 16-29 years (Centers for Disease Control and Prevention [CDC], 2019). In 2017, firearm-related violence accounted for over 14,500 homicides and more than seven times as many nonfatal injuries (CDC, 2019). Firearm-related violence frequently occurs as part of community violence, which is defined as "deliberate acts intended to cause physical harm against a person or persons in the community" (Cooley et al., 1995, p. 202). Community violence is a type of violence that occurs in public settings, is often geographically concentrated, and involves high-risk behaviors (Abt, 2016). While the negative consequences of community violence exposure have been well-documented, considerably less work has examined the structural factors which shape exposure to community violence, how community members perceive or experience community violence, and how these experiences are related to perceptions of safety. The current study uses data from sedentary and walking interviews to explore perceptions of safety and exposure to community violence among a predominantly Black community in Charlotte, North Carolina. We use Bronfenbrenner's Ecological Systems Theory as a guiding framework.

Community Violence Exposure, Perceptions of Safety, and Health Outcomes

Recent qualitative work finds that individuals' perceptions of safety and violence are often informed by the same or overlapping contexts (DaViera et al., 2020; Zuberi, 2016). For example, perceptions of safety and violence have been shown to be influenced by the interplay among neighborhood violence (e.g., homicides) and environmental, social, and temporal cues, including indicators of structural marginalization such as redlining, gentrification, or inequitable policing (DaViera et al., 2020; Nation & Wendel, 2021; Zuberi, 2016). As one case in point, in a

photovoice study with youth, participants shared that their perceptions of safety related to their exposure to structural violence through the built environment (e.g., homes, streets, buildings, open spaces, and infrastructure), unsafe neighborhood conditions, capitalistic exploitation of the community, and current city- and state-level policies (i.e., housing policies; Bennett Irby et al., 2018; Zuberi, 2016). In a separate study, Black boys and young men described a decreased sense of safety when police were in their neighborhood or involved in interpersonal interactions (Rengifo et al., 2017; Zuberi, 2016). Perceptions of safety also vary by participants' identities, with girls and young women more likely to report feeling unsafe when walking at night or alone compared to boys, and boys and young men more likely to report concerns about fighting or gang-related violence (Cobbina et al., 2008; DaViera et al., 2020). This body of research suggests that community violence is one factor, among many, that influences individuals' perceptions of safety.

Beyond influencing perceptions of safety, exposure to community violence also has short- and long-term impacts on physical, mental, and behavioral health outcomes (Turner et al., 2016; Turner et al., 2019). Across the life span, being shot or shot at, as well as witnessing community violence, can be a traumatic event, and it is common for children, adolescents, and adults to experience post-traumatic stress disorder following such an experience (Bottiani et al., 2021). Compared to the general population, survivors of firearm-related violence are more likely to develop depression, anxiety, substance use problems, and physical illnesses, as well as have a higher incidence of subsequent repeat injuries, than the general population (Ranney et al., 2019). In turn, it is critical that we work to reduce and prevent community violence. Subsequently, recent calls within community violence research have emphasized the need to better understand how interactions between and among the individual and their surrounding environments relates

to community violence prevention, intervention, and reduction (Carter et al., 2021). As such, we situate this study within Bronfenbrenner's Ecological Systems Theory.

Bronfenbrenner's Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1977, 1986, 1999), also referred to as the bioecological model, posits that individuals interact with and are influenced by multiple systems over time, and that these system-level interactions impact individuals' health and well-being. Applied to community violence, this model frames an individual's exposure to violence and subsequent outcomes (e.g., adjustment or adaptation, changes in perceptions of safety) as shaped by the individual's interactions with various systems in the environment over time: micro-, meso-, exo-, macro-, and chronosystems (Bronfenbrenner, 1977, 1986, 1999; CDC, 2021; Dahlberg & Krug, 2002; Flynn et al., 2020).

Individuals and organizations that directly interact with or impact the individual (e.g., friends, family, neighbors, and schools), are part of the microsystem. As one example, perceptions of safety may be positively influenced by the presence of a trusted neighbor or friend, even in the context of neighborhoods with high rates of violent crime (Oliphant et al., 2019; Zuberi, 2016). Interactions between aspects of the microsystem and/or aspects of the exosystem with the microsystem fall within the mesosystem. As such, neighborhood conditions, influenced by external systems, are part of the mesosystem. For example, in neighborhoods with high levels of socioeconomic disadvantage, police misconduct was related to increased community risk of crime (Kane, 2005). Institutions and policies in which the individual is not involved or immediately present (e.g., local government; Flynn et al., 2020) fall within the exosystem. Finally, the macrosystem refers to cultural ideologies and attitudes, while the chronosystem refers to interactions between and within systems, across time (e.g., redlining

policies in the 1900s contribute to racially and economically segregated communities today, which have been related to increased rates of community violence and decreased perceptions of safety; DaViera et al., 2020; Krieger et al., 2017; Rothstein, 2017).

Structural marginalization has been used to refer to the structural determinants of health (i.e., the beliefs, laws, policies, and practices that span the exo-, macro-, and chronosystem levels) that shape longstanding social problems and disproportionately impact specific communities (Mullaly & West, 2018; Nation & Wendel, 2021). Indicators of structural marginalization, such as income inequality and concentrated socioeconomic disadvantage, have each been shown to relate to higher rates of violent crime (Boeck et al., 2020; Krieger et al., 2017; Rowhani-Rahbar et al., 2019). Incorporated into Bronfenbrenner's Ecological Systems Theory, structural marginalization highlights how factors and conditions situated within the exo-, macro-, and chronosystems can serve to marginalize and oppress individuals and communities, with implications for community violence-related outcomes. Applying the Ecological Systems Theory provides an opportunity to understand the relationships between and among these systems as they relate to community violence, exposure, and subsequent outcomes. The following section reviews the local context, prior to describing the current study.

Study Context

In a national study of economic mobility, Charlotte ranked 50th of the 50 largest cities, with children who were born into low-income households having a less than 5% chance of living in high-income households as adults (Chetty et al., 2014; Opportunity Insights, 2020). These findings were even more stark for Black communities: As adults, Black men who grew up in low-income households in Charlotte had a significantly lower household income ($19,000) compared to white men who grew up in low-income households ($32,000; Opportunity Insights,

2020). Such results suggest that, despite the perception of Charlotte as a generally affluent city, the city's rapid population and subsequent economic growth has only yielded benefits for specific subsets of the community. At the same time, Mecklenburg County has experienced an increase in firearm-related community violence and assaults over the past five years, with an 119% increase in homicides, and a plurality of violent assaults occurring in areas representing less than 2% of the county (Office of the City Manager, 2019). These areas with high levels of concentrated crime are also areas with concentrated poverty, low educational attainment, and high unemployment, relative to the larger county (Mecklenburg County Department of Public Health, 2019; Office of the City Manager, 2019).

The Beatties Ford Corridor, encompassing several neighborhoods, is one of the areas in Charlotte with high rates of firearm-related violence concentrated in some of the neighborhoods, as well as concentrated social and health risk factors relative to the rest of the county. As an area that government, education, nonprofit, and private sectors have historically disenfranchised (Greer et al., 2021), the corridor has been identified as a 'Corridor of Opportunity' by the City of Charlotte and, as such, is the recent recipient of targeted economic investment, including anti-displacement and violence prevention programs.

The Current Study

This study examines adults' perceptions of their neighborhood environment to understand their lived experiences and perceptions of community violence and safety. Drawing on the views of 20 Charlotte residents residing within Beatties Ford Corridor, this study uses sedentary and walking interviews to better understand how experiences of community violence are related to perceptions of safety and informed by the neighborhood context. Therefore, the research questions are as follows:

1. How do participants perceive and experience safety?
2. How do participants perceive and experience violence?

Methods

Study Design

A case study using qualitative data was used to assess residents' experiences and perceptions of violence. Case studies are contextually bounded in time and space, have a clear unit of analysis, and rely on multiple sources of data (Hyett et al., 2014). The current case was geographically bounded within the Beatties Ford Corridor, which spans several neighborhoods in Charlotte, North Carolina. Individual participants were the units of analysis, serving as our prime informants. Qualitative data were obtained during sedentary and walking interviews. In the following section, I describe my research paradigm and disclose my identities that are most relevant to this project.

Researcher Identity

I used a critical constructivist paradigm to develop and approach this study. In using this paradigm, I conducted this study with the underlying beliefs that reality is created by individuals and that these realities are socially constructed entities. In turn, I attempted to generate accounts of meaning from the participants' viewpoints to better understand human actions and experiences (Fossey et al., 2002). Using this frame, in my analysis, I sought to interpret the data within the context of existing power structures. Therefore, the identities which confer power to me and influence my understanding of reality hold particular relevance.

In conducting this study as a white, upper-middle class, cis gender woman, who grew up in a predominantly white, northeastern town, I critically examined how whiteness as a dominant system influenced my research and perceptions (Coleman, 2020; Rauk, 202l). Additionally,

living outside of the community where this research occurred, I am less aware of local or historical efforts relevant to this study. To attend to this concern, I met with city and county staff and community members to inform my understanding of related efforts. Moreover, I used reflexivity and peer-debriefing (Davies & Dodd, 2002; Lincoln & Guba, 1986; Smith & McGannon, 2017) throughout the research study, as well as member checks following data analysis (see, e.g., Smith & McGannon, 2017), to reflect on and at times mitigate how my identity, values, and positionality impacted the research process. At the same time, one of my values as a Community Psychologist is to ensure that research is used both as a way to inform action on issues of social justice and as a process which can be socially just, for example, through the sharing of power and co-creation of knowledge between researchers and participants. In the current study, this value shaped the project's research questions, the methodology and methods I used, and my approach to data analysis.

Research Setting, Sampling, and Recruitment

Participants, who were 18 years or older and lived within the Beatties Ford Corridor, were recruited using purposeful, snowball sampling (Flynn et al., 2020; Patton, 1990). With purposeful sampling, the goal is not to collect data to support generalizable conclusions, but to ensure representation of perspectives, characteristics, and factors that may impact conclusions (Patton, 1990). Therefore, participants were recruited to represent a diverse range of identities that may impact their perceptions of safety, including age, gender, race, leadership status in the community, and length of time in the community (Beardslee et al., 2021; Bennett Irby et al., 2018; DaViera et al., 2020; Flynn et al., 2020; Mora et al., 2021; Office of City Manager, 2019). Table 1 presents participant and neighborhood demographics.

Snowball sampling, when participants are asked to recommend or refer individuals who may meet study criteria (Patton, 1990), was also used as part of our recruitment strategy. For example, a group of community leaders and residents who meet once a month with city representatives was invited to participate in the study. This group was also asked to refer the researcher to community leaders (e.g., religious leaders, neighborhood association leaders, non-profit leaders) and residents, as well as share study information with others in the community who may be interested (Patton, 1990). We similarly shared information about the study with various community groups (e.g., at neighborhood association meetings), at community events, and via flyers posted throughout the community. The flyers included a link to a screening form, through which the researchers could determine individuals' eligibility and collect their contact information. The researcher contacted all eligible individuals and invited them to participate in the study. Participants could receive up to $55 for participation, across two interviews ($20 per interview x two) and a member check ($15). Compensation was provided via gift cards, with the option to choose from Amazon, Walmart, Food Lion, or Visa gift cards.

Data Collection

The current project used qualitative data collected at two time points to explore participants' perceptions of community violence and safety. Two interviews were conducted with each participant and verbal informed consent was obtained before beginning each interview. The first interview was a semi-structured, sedentary interview, conducted over Zoom or by phone. During this interview, the researcher asked questions about the individual's experiences and perceptions of community violence and contextual factors (e.g., perceptions about safety and specific instances during which the participant felt safe and unsafe in the past year).

The second interview was a guided, participant-led walking interview. Participant-led

interviews can enable participants to share their stories at their own pace and can serve to challenge and disrupt power differentials between the researcher and participant (Ross et al., 2009). The walking interview is referred to as a guided, participant-led interview, to emphasize that although the participant was asked to lead the walking interview and share information that they found relevant, this experience was co-created by the participant and researcher. At the beginning of the walking interview, the researcher asked the participant to show the researcher their neighborhood and to point out and describe any locations that made them feel safe or unsafe. Common starting points included public settings (e.g., the library) or the participant's home address. A more detailed overview of the study's multicomponent, integrative methodology is described by Siegal and colleagues (in preparation). This study was approved by the University of North Carolina at Charlotte (UNCC) Institutional Review Board (#21-0268).

Member Checks

All participants were asked to participate in member checks during which they provided feedback on the identified codes and themes (Lincoln & Guba, 1986). Member checks provide an opportunity for participants to have power over their data, for co-learning between researchers and participants, and for exploring contradictions that arise during data analysis (Smith & McGannon, 2017). During member checks, participants agreed with the results and provided important insight that was incorporated into the results for additional context. For example, when reflecting on female participants' fear of walking alone at night past groups of men, one participant reflected he did not feel that same level of concern, perhaps because he is male. Overall, this process increased the validity of the results and helped to mitigate the potential misrepresentation of data (Lincoln & Guba, 1986; Smith & McGannon, 2017). Member checks occurred after the themes were identified and refined (see 'Analytic Approach').

Analytic Approach

In total, 20 participants completed at least one interview, with 13 of those 20 participants completing the virtual interview and eligibility screener (seven participants were recruited via snowball sampling, only completed the walking interview, and did not complete the screener), with 12 of the 13 participants also completing the walking interview. Of the 13 participants who completed the eligibility screener, one participant did not answer questions about their gender, age, race, or leadership status, and one participant did not answer questions about their age or leadership status. The seven participants who did not complete the virtual interview or eligibility screener were recruited for walking interviews while one of the researchers was in the neighborhood, conducting an interview with a different participant. We were not able to reach these seven participants following the walking interview, and these participants' demographic characteristics are not reported.

Qualitative Analysis

We used an inductive, thematic analysis to allow themes, codes, and relevant relationships to emerge (Braun & Clarke, 2006; DaViera et al., 2020). We then categorized the inductively derived codes using the Ecological Systems Theory, to understand the results within the context of the theoretical framework (DaViera et al., 2020; Bronfenbrenner, 1977). First, to become familiar with the data, the first and second authors read each interview and generated initial codes relevant to the research questions (Braun & Clarke, 2006). Coders then met to discuss the initial list of codes. Using this initial list, the first two authors coded each interview and met regularly to discuss and iteratively define and refine the codes such that data were analyzed, interpreted, and discussed until consensus was reached about the codes (DaViera et al., 2020). Additionally, codes were compared within and between interviews, to explore where

codes co-occurred or overlapped with others (DaViera et al., 2020). Both coders needed to agree that at least five participants shared a similar sentiment for it to be considered a code. The primary author then identified patterns or themes across the codes, using the Ecological Systems Theory to organize themes. At this point, the primary author conducted member checks to refine themes. Participants' feedback is included in the results section with the relevant theme(s) (Smith & McGannon, 2017). NVivo, a qualitative analysis software program, was used to analyze the data.

Results

Experiences of community violence included awareness of violence (e.g., violent incidents that participants knew about or had heard of happening but did not see or experience) and witnessing violence (e.g., gunfire, fighting). Gun violence was described as episodic and generally occurred in areas participants perceived as unsafe. Several participants observed that teenagers and young adults were most frequently involved in gun violence. Physical aggression, arguments, and drug and alcohol use were described as facilitators of gun violence. Participants referenced injury or death of friends, relatives, and neighbors as a result of gun violence; no participants reported direct involvement in or experience with gun violence. However, participants reported direct victimization from other types of violence such as burglary and theft, and gendered violence. Gendered violence ranged from being catcalled or followed to witnessing or being aware of domestic abuse. The substantial prevalence of drug and alcohol use across the area also contributed to residents feeling unsafe. In the following sections, organized using the Ecological Systems Theory, we describe participants' experiences and perceptions of violence. Structural racism, the totality of ways in which societies foster racial discrimination through mutually reinforcing systems (Bailey et al., 2017), was observed across multiple themes and

system levels. Table 2 outlines observed themes and sub-themes, as well as provides exemplar quotes.

Individual- and Microsystem-Level Themes: Participants Use Multi-Faceted Strategies to Increase their (sense of) Safety

Despite episodes of violence, participants overwhelmingly described themselves as feeling safe in their neighborhood. That said, while participants generally perceived themselves as safe, they also described how individual identities and their own actions influenced their perceptions of safety. For example, women more frequently described feeling unsafe walking alone or being out at night. They also described taking safety precautions when they were alone. One participant (AC, a 21-year-old Black woman) described,

> *"I will always walk with a taser just mainly because, like, my neighborhood has a lot of crack heads. And it's a lot of like older men and it's like I'm a young Black girl, so I just don't take the risk because they, you know, when I do walk me having some defense on me, I just don't take the risk without walking without any type of protection."*

Being Vigilant and Taking Safety Precautions

Almost all participants described needing to be vigilant, or aware, when walking through their neighborhood and nearby surroundings. Several participants described feeling nervous or anxious, particularly in areas or during times (e.g., at night) that they identified as unsafe. Participants often described actions they took in response to feeling unsafe, including such steps as turning on the front porch light, backing into their driveway, or waiting for strangers to walk by before getting out of their car. In describing walking back to her house at night, one participant (AC) said, "*Um there's a little bit of like uneasiness, or like, I'll just call a friend while I'm walking you know for that second level of security to like, calm my anxiety*." These

actions highlight strategies participants used to help manage physiological and emotional responses when in unsafe environments.

Knowing and Supporting Your Neighbors Increases Safety

Participants described how knowing their neighbors increased their sense of safety. For example, when describing where she walks, one participant (JF, a 48-year-old white woman) said, "*I know all of the people, I know so many people that live in that circle. That I'm like, nothing's gonna happen to me*." Talking with neighbors and knowing what is going on in the neighborhood also increased participants' sense of safety. Additionally, multiple participants described how working in the community, whether at a job or as a volunteer, built community with their neighbors and increased their sense of safety. For example, a community advocate (TH, a 55-year-old Black woman) described how her relationships with her neighbors and her advocacy for the neighborhood helped to make other residents feel safe: "*I think it makes [other residents] feel safe when they unsure [about something], they can call me because they know if something's going on, if I don't know, I'm gonna research [it]*". Similarly, participants described caring for their neighbors through actions such as bringing over flowers, checking in on someone they have not seen in a while, cleaning up the neighborhood, and supporting one another's businesses. Most participants described how seeing other people out on the street and knowing that their neighbors had "eyes on the street", increased their sense of safety.

At the same time, several participants described a lack of sense of community with their neighbors. One participant (CM, a 59-year-old Black woman), who was a homeowner and had lived in her neighborhood for over 10 years, perceived new neighbors who were renters as not as friendly as other homeowners. Another participant (JS, a 57-year-old Black woman), who was also a homeowner and had lived in a different neighborhood for over 10 years, described

experiencing microaggressions from her new, predominantly white neighbors, as well as general unfriendliness.

Police Provide Neighborhood Surveillance and Increase Threat to Safety

Both Black and white participants described police as providing surveillance in the neighborhood, which increased participants' sense of safety. Several of these participants described needing to find a balance between surveillance and over-policing. To that end, a subset of participants described the harm that over-policing has caused Black neighborhoods and the resulting levels of mistrust between Black communities and police. One participant (JD, an 18-year-old Black woman) described needing to be vigilant of the police, because "*you never know what the police – like, how they're going to react. So you don't know how to react cause you don't know how they're going to react*." These participants' experiences of police causing harm was also related to the theme 'Carceral strategies are not an adequate solution to drug use' (cf. below).

Incorporate Community Voice in Decision-making to Increase Safety

In Bronfenbrenner's Ecological Systems Theory, individuals also have influence on the systems around them. Throughout the interviews, participants shared examples of how their lived experiences can inform decisions related to improving neighborhood safety. For example, in describing how a park was built next to a four-lane thoroughfare, one participant (LN, a 61-year-old man who reported his race as "Other") asked: "*Who wants to sit at a point, right off of a four lane major thoroughfare? It's like, all they breathing is carbon monoxide. That really don't make no sense to me*." Other participants described how mediating organizations (see theme 'Mediating organizations' below for more information) can be used to incorporate resident voice into decision making. BP (a Black woman, age not disclosed) described how, through her

nonprofit, she could, *"involve the neighbors, so the neighbors can take on ownership of their neighborhood…We want to say what do they want? How would they like to see things improve?"*

Overall, participants discussed the importance of including residents in decision making about how to increase neighborhood safety and reduce community violence. One participant (LL, a 36-year-old, Black man) summed this sentiment up as, "*You just want to be able to have a say so on what's happening in your neighborhood. You want to have a seat at the table."* Participants emphasized how residents who live in the community have expertise in what violence "looks like" in their community, what safety means, and how to increase community safety.

Micro- and Mesosystem Level Themes: Neighborhood Conditions Create (un)Safe Environments

Participants perceived their neighborhood as a central environment that impacted their perceptions of safety and violence. Almost all participants identified specific conditions of their neighborhood when asked what about their neighborhood makes them feel safe or unsafe.

Neighborhood Characteristics Influence Experiences and Perceptions of Violence and Safety

In considering neighborhood factors that influenced their experiences and perceptions of safety, participants referred to characteristics of the neighborhood such as lighting, road and sidewalk maintenance, access to greenways, access to healthy food, and business investment. The lack of these resources was viewed as directly contributing to negative health outcomes for participants, while also creating conditions which contributed to unsafe environments and higher risk for exposure to violence. For example, lighting was viewed as a crime deterrent, as one participant (ML, a 67-year-old Black woman) commented, *"Having great lighting would definitely help us all because, you know, some things don't happen in brilliant light."* Participants viewed specific resources (e.g., grocery stores) and characteristics (e.g., lighting and

paved roads), or the lack thereof, as features that can influence perceptions of safety. They also described the systematic denial or overabundance of these neighborhood resources and characteristics (e.g., lack of sidewalks; proliferation of fast food restaurants) as the manifestation of structural racism (see, "Structural racism limits access to safety-promoting conditions').

Areas with Action Decrease Safety

Participants described "areas with action" as areas within the neighborhood characterized by poor lighting, poorly maintained properties, and businesses (e.g., arcades) that facilitated unsafe behaviors. Participants perceived these areas as characterized by "people hanging out", and as hot spots for drug use and interpersonal and gun violence. Participants felt unsafe when frequenting areas with action, and reported avoiding those areas, or only going there when necessary.

Mediating Organizations Provide Advocacy Opportunities to Increase Safety

In the face of these ongoing and interrelated challenges, participants described how organizations within their microsystem such as churches, neighborhood associations, and nonprofit organizations contributed to a sense of safety, by serving as an avenue through which residents could advocate for neighborhood change or offering direct services. Several participants described churches as organizations that could increase safety, such as by providing safe spaces for youth and young adults to "hang out" after school, or by purchasing abandoned properties to renovate as part of the church. Neighborhood associations were described as organizations through which residents could stay informed and organize and advocate for neighborhood change. For instance, one participant (JF) described how her neighborhood association president brought residents together to discuss a corner store's application for a liquor license and the implications for neighborhood safety. Similarly, nonprofits were viewed as

avenues through which residents could advocate for change, as well as access services. In fact, multiple participants described starting or joining nonprofits to bring people together around a common cause. The nonprofits with which they were involved spanned across challenges facing the neighborhood, including environmental justice, violence prevention, police brutality, and housing security. Other nonprofits, such as the YMCA, were described as pillars in the community, places that provide safe spaces for youth and adults and promote healthy living. In sum, participants noted that both the overabundance of some – and lack of other – neighborhood resources and features contributed to an unsafe neighborhood environment, with a higher risk for exposure to violence. Participants joined existing and started new organizations as a way to advocate for needed resources and safer neighborhoods.

Mesosystem Level Themes: Community Development has Multiple Consequences

The interactions between the macrosystem (e.g., local government and housing policies) and microsystem (e.g., neighborhoods) were particularly evident in participants' discussions surrounding gentrification and displacement. Study participants live in an area characterized as at high risk for gentrification and displacement. Gentrification and displacement were discussed by almost all participants and were closely tied to comments about community development.

Community Development Leads to Increased Services and Safety

Participants connected a recent increase in the levels of community development and investment with new homeowners moving into the area, and a subsequent increase in available services. Participants also described community investment as a tool to increase safety by improving aspects of the neighborhood environment (e.g., adding speed bumps and more lighting) to deter crime. In describing an area of Beatties Ford Corridor that had already received targeted community investment, one participant (LL) said:

"*…it was a lot of you know, 2011, a lot of just stuff going- happening right there. Drugs, violence, one of my [school's] kids actually got killed there, like broad daylight back in 2012. So I'm glad to see that [area] being upfitted....*"

Community Development Leads to Displacement and Alienation

However, there was a significant tension between the need for targeted investment in the community – particularly as a response to the historically low levels of investment described by participants – and the potential for an increased risk of resident displacement as a result of this type of investment. Reflecting this tension, one participant (JS, a 57-year-old Black woman) commented, *"I have some mixed feelings. I don't know if it is gentrification or urban renewal. Once people start building, they don't have any respect for the people who are here."*

Participants also observed how neighborhoods undergoing gentrification are often home to Black communities or other communities of color, who are now being forced to move as wealthier, often white, people move into the neighborhood and increase the cost of living. Furthermore, in areas which received targeted investment, participants reported that these efforts did not always make the neighborhood feel safer, and that some changes contributed to participants feeling out of place and that the neighborhood features (e.g., restaurants, stores, amenities) no longer reflected the neighborhood population. This sense of displacement and alienation is particularly salient in this quote from one participant (AC):

Um, I think they're trying to work on making it feel like a neighborhood, you know what I mean, like with the renovations and stuff... [but it] almost feels very commercial… it misses like that [this] is someone else's home".

Overall, while participants' desire for investment in their community was discussed against a backdrop of historical disinvestment, this desire was also in tension with the oft-seen

consequences of development, including that Black renters and homeowners were subsequently displaced by incoming white homeowners.

Exosystem Level Themes

Structural Racism Limits Access to Safety-promoting Conditions

Participants connected the current neighborhood conditions to the lack of investment in Beatties Ford Corridor, an area of the city comprised of historically Black neighborhoods. A lack of sewage infrastructure, as well as a lack of hospitable parks and greenways, were discussed by multiple participants, with specific reference to how other, whiter neighborhoods have this infrastructure, but the predominantly Black neighborhoods in Beatties Ford Corridor do not. In commenting on the lack of greenways, one participant (LN) noted:

> *"We need greenways. Just like they got over there in university, downtown, South Charlotte, everywhere, but over here in the Black community. And we need to experience that quality of life… And they just keep givin' us excuses as to why we don't have greenways yet in our communities… You see this city when they want to do something they could do it."*

This participant highlighted how structural racism contributed to the lack of greenways in Beatties Ford Corridor, while also commenting on how, even now, there is a lack of political will to address disparities in access to greenways and other public resources. Often, the areas to which participants compared Beatties Ford were whiter and wealthier, and they had more homeowners. Participants perceived these demographics as being more appealing to developers of grocery stores, businesses, and other amenities, and as among the reasons Beatties Ford did not have the same number or type of amenities. For example, that same participant (LN) commented:

"Stores like Target - they look at how many renters and say it's not enough people to support our store our prices whatever - as more homeowners come in then the other services come."

As some participants related, this lack of investment in neighborhood resources, lack of healthy food, and lack of businesses also influenced one another. For example, one participant (TH, a 55-year-old Black woman) conveyed how contamination in the ground water due to a lack of sewage system infrastructure makes gardening less safe for residents who are trying to increase their or their community's access to healthy food: "*We in a food desert. [But] we around all this poison and contamination, so we can't have a garden."*

In addition to the lack of resources and services, participants simultaneously described an oversaturation of unhealthy food and rundown businesses which facilitated unsafe behaviors. As a result of this continued disinvestment, residents faced multiple threats to their health and safety, making gun violence one of the many concerns residents face. In the words of TH:

"*You're going to kill us, either way around, gunshot versus long term death. Look at all the asthma in the zip code. Just like I said, I had great access to health care for my baby, she still came out low birth weight. I ate good. But the environment I lived in*."

This quote illustrates both how gun violence is a threat to participants' health and safety, while also demonstrating how neighborhood conditions – and the policies, systems, and other factors that create those conditions – play a large role in participants' sense of safety, exposure to violence, and health. Overall, this theme emphasizes participants' perceptions that the amalgamation of these neighborhood conditions – whether the lack of grocery stores, the deteriorating sewage systems, or the presence of gunfire – are all examples of how structural racism manifests at the neighborhood level and decreases participants' safety.

Media Perpetuates Racism

Participants perceived the media as perpetuating racism. Participants described the media as predominantly sharing narratives about violence in the neighborhood, without providing context about systematic community disinvestment or sharing stories that disrupt or discredit those narratives. During member checks, one participant (JM, a 52-year-old white man) who is a teacher described the effects of this stereotype perpetuated by the media. He works mostly with white students who live in a predominantly white area of Charlotte, and he often hears his students parroting this media-driven narrative. Another participant (RM, a 33-year-old Black man) responded that the media's amplification of these stereotypes impact residents in Beatties Ford Corridor too, in part by contributing to beliefs that the neighborhood is unsafe and potentially eroding trust between neighbors.

Policies Contribute to Unsafe Environments and Behaviors

Participants also described policies as a factor contributing to unsafe environments. Although no two participants talked about the same type of policy, participants discussed policies involving employment, housing, taxes, and healthcare. Participants more often pointed to policies that contributed to feeling unsafe or to unsafe neighborhoods as opposed to policies that contributed to creating safer neighborhoods. For example, in discussing minimum wage, one participant (CM) shared their view that minimum wage is so low, youth and young adults do not have viable employment options beyond selling drugs. As a separate example, a different participant (LN) described how home ownership is a direct route to generational wealth in the United States:

"That's what we call generational wealth off the house daddy paid $26,000 for. If you cared about Black people you'd show them how to do that. You'd create an entity – that's what you did [with white people]"

This quote demonstrates how this route to wealth was available for white people and denied to Black people. Related to housing, participants also talked about the lack of power that renters have when landlords increase the rent, and how that is a threat to their health and safety. Overall, however, policies were described less frequently than neighborhood conditions.

Carceral Strategies are Inadequate Solutions to Drug Use. When talking about solutions to violence, participants mostly commented on how current solutions at the policy or program level do not work, often because they do not address what participants viewed as the root cause(s) of the problem. This was particularly prevalent in relation to how participants experienced neighborhood and community responses to drug use and crime. A young Black woman (AC) described a local business' response to drug users at a corner store:

"So they put gates and stuff up there. But like, I don't think, you know, that really helps…I don't feel like you know, that really made it safe, because it's just like, [the drug users] just moved, you know, whatever they were doing … And it just made like, you know, that part up there look bad because there's gates and stuff everywhere like, you know, like it's a prison or something."

Another participant (RM) also talked about how we currently use the police as the solution to drug use, but that policing is not effective at addressing drug addiction or the reasons why someone starts using drugs. He said,

"*We can have drug treatment for the people who need it. That'd be good, but not bringing police in and beating them away. Like, let's see how we can get [them] help."*

While this participant acknowledged that not everyone in his neighborhood agrees with him, he was adamant in the interviews and member check about the need to address the root causes of public health concerns such as drug use, and he did not view policing as a viable solution for preventing drug use.

Even participants who advocated for the use of police in response to drug use commented on how the presence of police did not seem to deter drug use. For example, one participant (JA, a Black woman, age not disclosed) described how after her friend called the police about people using or selling drugs, the friend was threatened by the people using drugs and told not to call the police again. Stories about the presence of police being a non-deterrent to drug sales or use did not align with participants' perceptions that increased surveillance, via police, could increase neighborhood safety (i.e., the theme, 'police as surveillance and threat').

Discussion

The findings of this study align with and extend existing research on adults' perceptions of and experiences living in neighborhoods with high rates of crime. Despite a sizable body of research on the effects of exposure to community violence (Ranney et al., 2019; Turner et al., 2016; Turner et al., 2019), comparatively little is known about how residents perceive and experience neighborhoods described as high crime. This work begins to address this gap in knowledge through the qualitative analysis of interviews with a sample of adults living in a neighborhood with high rates of crime in Charlotte, North Carolina.

While participants reported generally feeling safe in their neighborhood, they also described the perceived need to be vigilant, as well as feelings of worry or anxiety during or following instances of violence. Although none of the participants were directly victimized by community violence such as being injured by physical fighting or a gunshot, a continuous state

of physiological activation (e.g., hypervigilance) can contribute to higher levels of stress and worse long-term health outcomes (Rivara et al., 2019). These associations between on-going, chronic stress and future, negative health outcomes have been shown to be prevalent at the individual and neighborhood level (Mayne et al., 2018; Rivara et al., 2019). In one study, an increase in the rate of homicides in the neighborhood was associated with a four percent increase in the rate of preterm births (Mayne et al., 2018). Similarly, neighborhoods with higher rates of crime also have higher rates of individuals with multiple chronic conditions (Shin et al., 2019). Situated within the broader literature, these results suggest that efforts to reduce community violence may have additional advantageous outcomes for individuals (e.g., improved quality of life, reduced levels of stress) and the community (e.g., improved long-term health, reduced health risks).

One of the more prominent themes that emerged from our analysis was the complex interplay involving historical disinvestment, community development and investment, gentrification and displacement, and crime and safety. Previous research has found a relationship between gentrification and crime reduction, such that when gentrification occurred, crime was reduced (Autor et al., 2017). Results from the current study suggest that community development may serve as a neighborhood-level protective factor to deter and drive out criminal activity. However, while community development may help to deter crime, these investments can also contribute to displacement, threatening residents' safety and well-being (Zuk et al., 2018). Consistent with this notion, the current study found that participants perceived community development such as new businesses, services, neighborhood maintenance, and housing, as contributing to displacement, when no protective, anti-displacement policies were implemented. Relatedly, participants described how recent development efforts had contributed to them feeling

alienated from their neighborhood, in that the development was created for the people who were gentrifying the neighborhood. This feeling may contribute to residents feeling less safe, if they are navigating spaces that they perceive as not designed for them, or spaces they perceive as purposefully designed for incoming residents, whose presence threatens to displace current residents. Similarly, in other work, researchers found that community development efforts contributed in some instances to residents feeling alienated from their neighborhood (Jelks et al., 2021; Tuttle, 2021). Alienation from place (i.e., a declining sense of ownership, control, or belonging) has been used to describe participants' experiences of social and cultural displacement as gentrification occurs (Tuttle, 2021). In the current study, even as participants described the need for community development, they discussed how existing efforts had contributed to feeling alienated from their neighborhood and increasing neighbors' risk of displacement from the physical space.

Furthermore, our results emphasize the importance of contextualizing community development efforts and threats of displacement within historical patterns of structural racism and marginalization. In this study, the historical community disinvestment that occurred across these Charlotte neighborhoods was perceived as systematic and racially discriminatory. Prior work on structural marginalization suggests that this racialized disinvestment contributes to the development of longstanding social problems, such as community violence (Mullaly & West, 2018; Nation & Wendel, 2021). Now, with local government, healthcare, and business partners investing in the neighborhood, Black and low-income residents are concerned about being displaced by white, higher income residents. This fear is not unfounded, as in the 1950s and 60s, many residents who originally lived in Brooklyn, a historically Black neighborhood in Charlotte, were forced to relocate to neighborhoods surrounding Beatties Ford Road when Brooklyn was

decimated in the name of urban renewal (Huneycutt, 2023). Indeed, participants situated the current threat and experience of displacement alongside the neighborhood's history of advocating for basic necessities like clean water and working sewage systems. Recognizing the potential for disparate impact on communities of color, researchers have called for increased focus on the effects of (anti-)displacement policies disaggregated by race (Chapple et al., 2022). Our work adds to this call and highlights the need to situate (anti-)displacement policies within the context of structural marginalization and racism.

The prominence of gentrification and displacement as a theme in this study, as well as residents' focus on neighborhood characteristics such as food deserts, lighting, and poorly maintained streets and sidewalks, underscores the necessity of expanding our understanding of factors, beyond community violence, that contribute to perceptions of safety. Currently, official crime data from police departments are often used to measure community violence and serve as a proxy for safety. However, participants described factors such as a lack of grocery stores and poorly maintained sidewalks and businesses, that contribute to feeling unsafe. Furthermore, participants described how the cumulative effects of structural racism have created conditions that facilitate community violence. These findings align with previous work, in which perceptions of safety were influenced by environmental, social, and temporal cues, including indicators of structural marginalization (DaViera et al., 2020; Zuberi, 2016). These results point towards the need to address the root causes that contribute to community violence, some of which also create conditions that reduce experiences and perceptions of safety.

Addressing root causes will necessitate the use of metrics and methodological approaches that can better capture underlying, structural factors. A recent review of the literature details how researchers have operationalized structural determinants that differentially position communities

for risk of experiencing community violence (Armstead et al., 2019). These indicators offer innovative and needed metrics to better observe changes in the structural and social determinants (e.g., structural racism and marginalization) that are root causes of inequities in community violence and other conditions that decrease safety (Armstead et al., 2019). Similarly, approaches that capture factors across ecological system levels will also be important for accurately measuring and understanding factors related to community violence and safety.

The Ecological Systems Theory emphasizes the need to employ multiple levels of analysis and multiple levels of action to address public health challenges such as community violence. In the current study, the role structural racism has played in creating neighborhood conditions such as high rates of community violence was of particular salience. Recent calls for processes which privilege restorative justice, reparations, reconciliations, and accountability (e.g., Jaffe et al., 2021), are one example of how we can begin to address the legacies of structural racism. These types of efforts, if enacted through policies and embedded across programs, can be used at the exosystem level to address risk factors for community violence (e.g., poverty), and embedded throughout the macrosystem level to start to shift attitudes and ideologies about why community violence occurs and our collective responsibility to address it. At the same time, results from the current study suggest that local efforts may do well to use a holistic approach to improve residents' sense of safety and decrease violence, such as through street and sidewalk maintenance and increased access to healthy food. Similarly, results suggest that efforts to build community and foster connection between neighbors, may help to increase residents' sense of safety. Aligned with the Ecological Systems Theory, these multi-level approaches to reduce community violence may be more effective than any one strategy alone.

Related to fostering community, participants in this study described multiple types of relationships with their neighbors that contributed to their increased feelings of safety. First, a general sense of knowing their neighbors appeared to increase participants' perceptions of their safety. This sentiment of "knowing neighbors" is similar to the idea of membership, the feeling of belonging, influence, and of mattering to the group, which is a dimension of sense of community (McMillan & Chavis, 1986). Participants also described social connections with their neighbors that seemed to move beyond loose ties into a deeper level of providing social support, such as calling to check in on neighbors and exchanging gifts at the holidays. Having social connections and interactions with neighbors has been shown to have an indirect, negative effect on crime victimization via collective efficacy, where higher levels of social connections and interactions with neighbors are associated with higher levels of collective efficacy and reduced crime victimization (Soto et al., 2021). Additionally, multiple participants described working towards shared goals by advocating with their neighbors through neighborhood associations, nonprofit organizations, and other organized bodies. Collaboration, or working towards a common goal of change-for-the-better, is a core element of sense of community (McMillan & Chavis, 1986). Similar to social connections and interactions, belonging to shared neighborhood networks such as neighborhood associations was shown to have a negative, indirect effect on crime victimization through collective efficacy (Soto et al., 2021). Taken together, such findings are also notable because sense of community has been found to moderate the relationship between exposure to violence and later psychological distress, where an increased sense of community helped to mitigate the long-term effect of exposure to violence (Greenfield & Marks, 2010; Sampson et al., 1997). Although sense of community was not explicitly coded for, these dimensions – knowing your neighbors, social connection and support, and collaboration or

change for the better - emerged throughout the interviews, as one way that participants increased their (sense of) safety.

This sense of collaboration for "change-for-the-better" also appeared to relate to empowerment and advocacy. Empowerment theory suggests that the ability to act collectively (i.e., power with), through organized bodies, may allow residents to better engage in advocacy and impact local decision making (i.e., achieve power over decision making; Rowlands, 1997). In this study, in the face of historical neighborhood disinvestment, recent community investment, and subsequent gentrification and displacement, participants described the need to include resident voice in decision making about their neighborhood (Rowlands, 1997). Frameworks to address disparities in access to social determinants of health emphasize the need for community voice in decision making (Solar & Irwin, 2010), and case studies suggest that community organizing – a form of power with – can facilitate implementation of anti-displacement strategies and reduce displacement (Foell et al., 2020; Louie, 2016). By building and using their collective power, residents and neighborhood organizations may be better positioned to lead community development efforts. Centering residents' perspectives in community development efforts may contribute to efforts that better reflect the priorities of the community and are adapted to the local context. The importance of centering people with lived experience and adapting efforts to the local context also emerged in participants' disparate views on policing, discussed next.

In this study, some participants viewed the increased presence of police and security personnel as a way to increase neighborhood surveillance and safety; however, some participants also described police as being ineffective at reducing crime or increasing safety, as well as contributing to decreased feelings of safety. In a few cases, the same participants described all three of these sentiments. These overlapping and seemingly contradictory views of policing may

in some ways reflect the positionality of each of the participants, who varied in racial and gender identity, length of time in the neighborhood, and age. Notably, the three younger, Black participants more frequently described police as ineffective, if not outright harmful, to Black communities. This is likely the result of racist policing practices, whereby police are more likely to arrest, engage with force, and fatally shoot Black people and, in particular, Black men (Goel et al., 2016; Nix et al., 2017). At the same time, one older, Black, male participant expressed wanting more police in the neighborhood, which may be a result of growing up during the "War on Drugs", wherein police were framed as the solution to drug use (Hinton, 2016). Participants were also situated within different neighborhoods, all of which comprise the same general geographical area, the Beatties Ford Corridor. While these neighborhoods have similarities to be sure, differences in history, population, and experiences with policing, all may influence the current residents' perspectives on effective solutions to community violence. Overall, these results suggest that participants' experiences and perceptions were informed by their intersecting positionalities and prior experiences, which were shaped by existing and historical policies and systems. Therefore, efforts to address community violence, even within the same geographical area, may necessitate diverse and varied solutions to appropriately respond to the unique contexts and needs of each neighborhood.

The diverse perspectives on the role of police may also reflect the historical and contemporary entanglement of policing with social services (Hinton, 2016), as well as a broader cultural norm of criminalization (French et al., 2021). Criminalization operates through laws and policies that render particular conditions – such as mental health and drug use – stigmatized and illegal, positioning law enforcement, rather than community-based public health organizations, as front-line responders (French et al., 2021). Of salience here, most participants in this study

expressed a desire to help neighbors with drug addiction or mental illness. However, participants struggled to suggest solutions that went beyond criminalizing these behaviors, and some participants ardently advocated for the forced removal of these individuals. These sentiments echo patterns from the late 20th century, when funding for social welfare programs was cut, and funding for punitive law enforcement strategies was increased (Alexander, 2012; French et al., 2021). Historical data demonstrate that responding to social and public health challenges with criminalization did not improve social or health outcomes; rather, this response contributed to racial and economic disparities in the legal system (Alexander, 2012; French et al., 2021). A response to community violence that starts to disentangle policing and social services, emphasizes prevention, and includes targeted steps to increase access to social determinants of health, may be more effective at addressing public health challenges such as drug addiction.

Limitations

This work is exploratory in nature and, as such, is not without important limitations. Given the study's design, it was not intended to be representative. The small sample of 20 participants limits our ability to apply any conclusions directly to the larger neighborhood population. Furthermore, not all individuals completed both interviews. In instances in which an individual only completed the virtual interview, we may be missing data more relevant to their neighborhood context. Similarly, for participants who only completed the walking interview, we do not have the same level of information about their experiences of violence or safety. As the participants who only completed walking interviews were people who were the most spatially proximal to the streets with the highest rate of violent crime in the identified area, we may be missing information which could deepen our understanding of exposure to and perceptions of violent crime. Additionally, interviews were conducted over a 12-month period, due to

challenges recruiting participants and scheduling interviews (e.g., residents expressed interest in the study but did not answer their phone when we called; often walking interviews were postponed multiple times due to schedule changes or inclement weather). These recruitment challenges likely influenced our results and conclusions. For example, participants may reflect a sub-group of people who were already engaged in local efforts (e.g., through their neighborhood association or nonprofit) and were therefore easier to reach for recruitment, and also more attuned to the benefits of working collectively towards a common goal. As engaged residents, this sub-group may also reflect perspectives of those who are very informed about local issues (e.g., the sewage systems), more so than other neighbors. Furthermore, we did not have any participants who described being directly victimized by gun violence. Including the perspectives of people who have been directly victimized by gun violence may have resulted in a larger emphasis on the impact of gun violence, as opposed to in the current study, where an emphasis on housing, structural racism, and access to other determinants of health emerged. Finally, interviews and analyses were conducted by researchers who lived outside of the neighborhood. This may have limited what participant shared with the researchers, as well as our ability to understand the cultural, economic, social, or political context influencing participants' experiences. Without the perspectives of people with lived experience participating in data collection or analysis, we may have misinterpreted or missed important meaning within the data. By conducting member checks with participants, we attempted to partially address this concern.

Conclusion

Despite these limitations, we believe that this study has much to offer to the local Charlotte-Mecklenburg community as well as broader efforts to improve neighborhood safety and reduce community violence. Our data underscore how a range of factors spanning the micro,

meso, and exosystem levels, which may not be thought of as traditionally related to sense of safety or violence (e.g., community development and investment; lighting, sidewalk, and road maintenance), influence individuals' perceptions of safety. Furthermore, our results suggest that residents perceive current neighborhood conditions (e.g., high rates of crime, the lack of sewage systems, sidewalks and roads in disrepair) as a manifestation of structural racism. Subsequently, efforts to address community violence and improve sense of safety should address structural racism, as a root cause of these conditions, and incorporate a racial equity lens. These efforts should be implemented in a way that incorporates residents' voices and honors a history of resilience and activism.

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Table 1

Participant and Neighborhood Characteristics

	Participants	Neighborhood demographics
Male[1]	33%	Not available
Race[1]		
White	17%	8%
Black	75%	78%
Other	8%	14%
Median age[2]	46	37
Age range[2]	18-67	Not available
Length of time in neighborhood[2]		Not available
<1 year	17%	
1-5 years	25%	
6-10 years	0%	
10+ years	58%	
Neighborhood leader	Yes (50%)	Not available

Note. $N = 20$. Participant demographics were obtained from the eligibility screener; only 13 of 20 participants completed the eligibility screener and are included in this table. Seven participants were recruited for and completed walking interviews while the researchers were in the neighborhood and did not complete the screening survey.
Neighborhood demographics were obtained from the Mecklenburg County Quality of Life Explorer (Mecklenburg County GIS, 2022) and calculated using neighborhood profile areas 123, 139, 311, 382, 70, 85, and 374.
[1]Indicates that data were only available for 12 of the 13 participants who completed the eligibility screener.
[2]Indicates that data were only available for 11 of the 13 participants who completed the eligibility screener.

Table 2

Study Themes, Sub-themes, and Exemplar Quotes

Theme	Quote	N
Types of violence		16
Gun and interpersonal violence	*I think shootings come with like, just personal like relationships, like they're having disagreements or quote unquote, beef with an individual or a group of individuals.* – LL	15
	…there was like hundreds of shots fired and um, it wound up killing I believe two or three people. One of my neighbors actually got shot at that time. She didn't die [but] she had a wound…- RM	
Injury, illness, or death	*My mom died of lung cancer. My neighbor across the street died of ovarian cancer. [We] had more younger people die of lung cancer. I started to see the cancer rate in my community... I take three blood pressure pills.* - TH	10
Theft, burglary	*You feel kind of violated when someone come into your house when they're not suppose to be there.* – JS	9
Prevalence of drug and alcohol use	*And then the drug usage like between me walking from campus to getting to my house…it's 10 minutes from campus. So it's close enough to walk but at the same time, it's like, I probably shouldn't be walking in this environment* – AC	11
Gendered violence	*In this neighborhood I still feel safe in a way but I just made- I did- it just have been men that said things to me. Or you know, I've been walking and a car drives by and they slow down.* – JD	6
Individual and microsystem levels: Participants use multi-faceted strategies to increase their (sense of) safety		18
Vigilance as a safety precaution	*I'm aware of what's around me, and when there's stuff around me that I don't, don't care for, you know, um I take the necessary precautions.* – JA	12
Knowing and supporting your neighbors	*When I say I feel safe there, [it's because] I know I will always have somebody to go to* – CM	16
Police as surveillance	*…a police presence would be number two, and I do see cars going up and down the streets on a relatively regular basis."* – JM	9
Police as ineffective or threat	*…because of the things that I've seen police do to people my color, I always get nervous whenever I see a whole bunch of police* – JD	8

Incorporate community voice in decision-making	*You just want to be able to have a say so on what's happening, in your neighborhood. You want to have a seat at the table.* -LL	10
Microsystem level: Neighborhood conditions create (un)safe environments		17
Lighting, road, and sidewalk maintenance	*… sidewalks needs to be resurfaced, there's a lot of sidewalks that are cracked and broken so [my son and I] had to get in the road to maneuver up the street.* – LL	14
Areas with action	*So it was a, a dude that got shot... Then I think his uncle had got shot… I think that's when they started boarding [up the houses]. But they had already put fences and stuff around the carwash and stuff.* – JD	14
Mediating organizations	*We focus basically on Katherine Simmons area, that's really where they have the high crimes and the drugs, things of that nature… And we do a lot of programs on that street* – BP	12
Mesosystem level: Community development has multiple consequences		17
Leads to increased services and safety	*There used to be a lot of stuff going on, on this street, a lot of crime and stuff. Police was constantly down here. So since this little street has changed, we don't get none of that no more.* – JS	16
Leads to displacement and alienation	*…they're forcing all Black folks point blank out, and they're bringing in, a lot of white folks are coming in. Unfortunately, that's what it is, you know, the true color, you know. They will buy your land and keep it moving.* – BP	16
Exosystem Level		
Structural racism limits access to safety-promoting conditions	*The big companies like FedEx, Target, Lowe's. They go on demographics alone, and there was too many renters [in Beatties Ford]… And a community of renters would never get you the services you need…* – LN	17
Media perpetuates racism	*We did like two days with no problem… so it would go from like amazing… to like, damn I know how that's gonna play out... [the media] is gonna be totally [focused] on the shooting… I felt like people was going to make it a Black thing and a hood thing.* – RM	6
Policies contribute to unsafe environments and behaviors	*…minimum wage is so low, you can't do anything on it. You can't live on that. So kids have the option to sell drugs or get involved in this stuff that can pay a lot more. They don't think they have the other options, and minimum wage doesn't pay enough.* – CM	12
Carceral strategies are inadequate solutions to drug use	*I think we have drug addiction, um we deal with a lot of trauma… I know people like to say, "we need more police on the streets… justice needs to be served…that doesn't change the foundation of the issue.* – RM	7

Note. N = 20. N represents the number of participants who described this theme or whose interviews included at least one code relevant to the specific theme. Both coders needed to agree that at least five participants shared a given sentiment for it to be considered a code, which were then organized into themes and sub-themes.

CHAPTER 3 – CHANGING OUR APPROACH TO COMMUNITY VIOLENCE RESEARCH: HOW AN INTEGRATED, PLACE-BASED METHODOLOGY CAN BE USED TO COLLECT DATA, CONDUCT ANALYSIS, AND INFORM ACTION ACROSS MULTIPLE ECOLOGICAL LEVELS

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ABSTRACT

Community violence, particularly firearm-related community violence, is geographically concentrated, with notable racial, gender, and age disparities. Subsequently, community violence prevention frameworks emphasize the need for place-based intervention and research. However, *how* to use and integrate place-based methods and an understanding of the potential *benefits* of using and integrating place-based methods, is lacking. We describe an innovative, place-based methodology that integrates qualitative, photographic, and geospatial data collected during sedentary and walking interviews with publicly available quantitative data. Using the Ecological Systems Theory to guide the analysis, we compared the frequency of themes generated during sedentary and walking interviews to explore whether different insights emerged from these two qualitative methods. We found that walking interviews more frequently generated data related to place and that, relative to the sedentary interviews, during walking interviews, participants more frequently described factors within the meso- and exosystem levels, as compared to the individual or microsystem levels. We used the qualitative results to inform quantitative data visualization and used the quantitative data to compare neighborhood-level indicators between the study area and the county. Finally, we explored to what extent data collected from the different methods aligned or diverged. Findings indicated that each method provided unique data that complemented – and illustrated the complexity of – results derived from the other methods. Additionally, the integration of multiple methods highlighted the benefit of triangulating data in place-based research, as there were limitations inherent to each method. Using an integrated, placed-based methodology generated insights across multiple ecological system levels that would not have been clear through only one method, and which can be used to inform multiple levels of intervention and action.

CHAPTER 3 – CHANGING OUR APPROACH TO COMMUNITY VIOLENCE RESEARCH: HOW AN INTEGRATED, PLACE-BASED METHODOLOGY CAN BE USED TO COLLECT DATA, CONDUCT ANALYSIS, AND INFORM ACTION ACROSS MULTIPLE ECOLOGICAL LEVELS

Individuals' and communities' access to the social determinants of health, the conditions in which people are born, grow, live, work, and age, are increasingly informed by place (Arcaya et al., 2016; Office of Disease Prevention and Health Promotion, n.d.; Solar & Irwin, 2010). As such, place-based interventions, geographically located and coordinated efforts to strengthen neighborhoods and respond to community challenges, can be effective at improving health and reducing health disparities (Liu & Berube, 2015; McGowan et al., 2021). Community violence, defined as "deliberate acts intended to cause physical harm against a person or persons in the community" (Cooley et al., 1995, p. 202), is geographically clustered, with notable racial and gender disparities (Boeck et al., 2020). Subsequently, community violence prevention frameworks emphasize the need for place-based intervention and research (Abt, 2016). While place-based community violence interventions have demonstrated potential for creating sustainable improvements in community health and safety (Hohl et al., 2019), *how* to use and integrate place-based methods and a better understanding of the *benefits* of using and integrating place-based methods, is needed. The current paper addresses this gap by describing an innovative, place-based methodology that integrates (a) qualitative data collected during sedentary interviews; (b) qualitative, photographic, and geospatial data collected during walking interviews; and (c) publicly available, quantitative data. While this integrated approach was employed within the context of a study exploring participants' perceptions of and exposure to community violence and safety, these methods may be well-suited for research in the context of other health disparities with risk factors informed by place.

Community Violence is a Health Disparity

Community violence is a type of violence that occurs in public settings, is often geographically concentrated, and involves high-risk behaviors such as firearm-related violence (FRV; Abt, 2016). FRV is a significant cause of death and injury in the United States; however, the burden of FRV and, in particular, firearm-related homicides, is not evenly distributed; gender and racial disparities are prevalent. For example, boys and young men represented close to 90% of the youth and young adults (ages 12-to-24-year-olds) who committed a firearm-related homicide 2014 (Puzzanchera et al., 2016). Additionally, Black and Indigenous youth and young adults are at a disproportionately high risk for exposure to FRV, with Black male youth at higher risk for firearm-related homicide than White male youth, particularly in urban settings (Bottiani et al., 2021; Centers for Disease Control and Prevention [CDC], 2019; Sheats et al., 2018). At the same time, and as a result of policy and practice, risk factors at the neighborhood-level, such as income inequality, socioeconomic disadvantage, and racial segregation, are often geographically concentrated, creating areas that are at higher risk for exposure to community violence (Boeck et al., 2020; Knopov et al., 2019; Reardon et al., 2015; Rowhani-Rahbar et al., 2019; Zimmerman & Messner, 2013). As such, community violence reflects a health disparity, with geographically concentrated risk factors rooted in access to the social determinants of health and found across multiple ecological system levels (Armstead et al., 2019).

Ecological Systems Theory Applied to Community Violence Research

Bronfenbrenner's Ecological Systems Theory, also referred to as the bioecological model, posits that individuals interact with and are influenced by multiple ecological levels over time. Applied to community violence, this model frames an individual's exposure to

violence and subsequent outcomes as informed by the individual's interactions with various ecological system levels (Bronfenbrenner, 1977; 1986; 1999; CDC, 2021; Flynn et al., 2019). In particular, within the ecological system levels, we focus on the social determinants of health, the conditions which give rise to health disparities.

Using this model, the microsystem refers to groups, organizations, and settings with which the individual directly interacts (e.g., friends, family, neighbors, and schools). Neighborhood conditions, such as crowding or residential segregation, would fall within the microsystem (Armstead et al., 2019; Solar & Irwin, 2010). The mesosystem encapsulates interactions between aspects of the micro- and exosystem. Community organizing and civic engagement are examples of such interactions. Institutions and policies which impact the individual, but in which the individual is not involved or immediately present, are part of the exosystem. The health care, education, government, and legal systems fall within the exosystem. Cultural attitudes and ideologies, such as sexism, white supremacy, and individualism, are reflected in the macrosystem. Finally, the chronosystem refers to interactions between and within systems, across time. The application of the Ecological Systems Theory to community violence, informed by the social determinants of health, provides an opportunity to understand how observed outcomes – often geographically concentrated - result from risk and protective factors and conditions across these levels. Subsequently, research methods must be able to adequately capture data across multiple system levels, with special attention paid to the neighborhood context and the role of place. Walking interviews, described next, have been used to capture such data, particularly regarding place characteristics and qualities.

Collecting Place-based, Ecologically Nested Data through Walking Interviews

Walking interviews produce information specific to how individuals relate to place and have been used to elucidate the relationships among individual, place, and exposure to violence (Evans & Jones, 2011; Flynn et al., 2020; Lauwers et al., 2017). In one study, researchers used walking interviews and photo elicitation to explore how mental well-being is influenced by the neighborhood environment (Lauwers et al., 2021). The walking interview provided a deeper discussion of place-based topics, as elements in the physical environment prompted elaboration, and themes emerging from the walking interviews reflected different levels of the Ecological Systems Theory (Lauwers et al., 2021). However, it is unclear to what extent these themes arose in that effort as a result of the semi-structured interview guide used on the walking interview, or whether the generated data were unique to the walking interview method. In a separate study, researchers compared the type of data collected during walking interviews relative to sedentary interviews, particularly in regard to participants' understanding of place (Evans & Jones, 2011). Data generated through these walking interviews were more often informed by the environments in which they occurred, and data collected from the walking as opposed to sedentary interviews generated more data related to place (Evans & Jones, 2011). Of relevance to the current study, these results suggest that walking interviews may be a method well-suited for understanding how place is related to participants' experiences. The current study builds on these findings to explore how walking interviews (augmented by other data, such as photographs) can be used to better understand the role of place in creating community violence.

Similarly, Flynn and colleagues (2019) used walking interviews as part of an integrated methodology to investigate how participants experienced multiple forms of violence across ecological levels and how these experiences were informed by place. Specifically, researchers used three different types of interviews (i.e., baseline, walking, and family history interviews),

along with Global Positioning System (GPS) and heartrate data, to measure how participants were directly impacted by their surrounding environments and how they interacted with others in their environments (Flynn et al., 2019). While walking interviews provided information related to place, combining multiple types of data collection led to a better understanding of the ways in which different types of violence across ecological system levels impacted participants' well-being (Flynn et al., 2019). In the current study, we expand on this previous effort by describing how we integrated qualitative, GPS, photographic, and quantitative data, and the unique insights gained from integrating these methods.

The Current Study

While place-based methods show promise in their ability to generate data related to place and how they pertain to health disparities, there is a dearth of literature describing the types of data produced when place-based methods are integrated or exploring how these data contribute to inferences drawn through integration. In the current study, we address this gap by describing the components of an integrated, place-based methods approach, the types of data collected from the separate methodological components, and when integrated, how these data complement, expand on, and contradict one another. This work occurs within the context of a study exploring the relationship between residents' experiences of community violence and perceptions of safety, in which we incorporated multiple types of place-based methods. Our research questions are as follows:

1. What types of data were generated from each of the employed methods?
2. How did results align or diverge across multiple methods?

Methods

In this section, we describe the methods used to collect qualitative, GPS, photographic, and quantitative data. We describe an exploratory sequential case study design, conducted with adults, aged 18-65, living in a southeast urban city. Case studies are contextually bounded in time and space, have a clear unit of analysis, and rely on multiple sources of data (Hyett et al., 2014). The current case was limited to the Beatties Ford Corridor, which spans several neighborhoods in Charlotte, North Carolina. Qualitative data were obtained during sedentary and walking interviews, with geospatial data and photographs collected during walking interviews. Quantitative data aggregated to the neighborhood level were obtained through publicly available dashboards. The methods used, and their intended purpose, are shown in Table 1.

Sampling and Recruitment

Participants were recruited using purposeful, snowball sampling (Flynn et al., 2020; Patton, 1990) and received up to $55 in compensation. They were recruited to represent a diverse range of identities that may impact their perceptions of safety, such as age, gender, race, and length of time in the community (Beardslee et al., 2021; Bennett Irby et al., 2018; DaViera et al., 2020; Flynn et al., 2020; Office of City Manager, 2019). A majority (69%) of participants identified as female, and 77% identified as Black of African American. Just over half (55%) of participants lived in a neighborhood in Beatties Ford Corridor for 10 or more years, and 45% identified as holding a leadership position in their community. Additional information about sampling and recruitment is provided elsewhere (Siegal et al., in preparation). The research study was approved by the IRB at the University of North Carolina at Charlotte (IRB #21-0268).

Data Collection

Sedentary and walking interviews were conducted with each participant, during which qualitative, geospatial, and photographic data were collected. Verbal informed consent was obtained at the start of each interview.

Sedentary Interview

A sedentary interview was conducted first, over Zoom or by phone. During this interview, the participant answered questions about their perceptions of violence and safety in their neighborhood, specific instances in which they felt safe and unsafe in the past year, and their engagement in collective efficacy efforts (e.g., volunteering). At the end of the sedentary interview, the researcher invited the participant to schedule a walking interview. Twelve participants completed the sedentary and walking interviews, and one participant completed only the sedentary interview.

Guided, Participant-led Walking Interview

At the beginning of the walking interview, the participant was asked to show the researcher their neighborhood and, in particular, to point out and describe any locations that made them feel safe or unsafe. Common starting points included public settings (e.g., the library) or the participant's home. We refer to these interviews as guided, participant-led interviews, to emphasize that although the participant was asked to lead the interview and share information that they found relevant, this experience was co-created by the participant and researcher; therefore, it was not solely participant-led, but rather, guided by both parties (Ross et al., 2009). For example, participants often sought input from the researcher as to where they should walk, or whether the researcher had "seen enough", and the researcher used standard guiding questions during the walking interview, related to spatial cues (e.g., "*How have you liked living near [location]?"*), temporal cues (e.g., "*What is this area like late at night?"*), as well as prompts

which were informed by the previous virtual interview (e.g., "*During our last interview you talked about [X]. How do you see that showing up in your neighborhood*"?). During the walking interview, the researcher collected geospatial data (i.e., the walking route and any stops along the route) using Pocket Earth Pro, a mapping application available on iOS and Android. The researcher also obtained permission to use their cell phone camera to photograph structures (e.g., buildings) that the participant identified (Bennett Irby et al., 2018).

Publicly Available Quantitative and Geospatial Data

Charlotte-Mecklenburg streets and Neighborhood Profile Areas (NPAs; i.e., neighborhood boundaries delineated using U.S. census boundaries and specific to Mecklenburg County; Zager, 2015) were obtained from the Mecklenburg County Open Data portal (Mecklenburg County GIS, n.d.). A dataset of homicide victim locations for the years during which data collection occurred (2021-2022) in the associated neighborhoods was obtained from the Charlotte-Mecklenburg Police Department Homicide Dashboard, part of the Community Violence Prevention Data Dashboard (2023).

Neighborhood-level variables (e.g., rates of violent crime) for Mecklenburg County were obtained from the Charlotte-Mecklenburg Quality of Life Explorer (Quality of Life Explorer, n.d.). The Quality of Life Explorer is an interactive dashboard, maintained by local nonprofit and government partners, that displays data from various sources aggregated to the neighborhood level. Demographic characteristics and safety indicators, aggregated to the neighborhood level, were selected for inclusion in the current study if they emerged as themes or sub-themes in interviews with participants (i.e., identified by at least 5 participants, see Siegal et al., in preparation) and were available (or had a close proxy) through the Charlotte-Mecklenburg Quality of Life Explorer. From these identified variables, demographic characteristics and safety

indicators were selected for *visual* representation (i.e., mapping) if they were aligned with a theme or sub-theme identified in the interviews, or if they noticeably diverged from qualitative findings.

Data Analysis

Content analysis was conducted using the themes and sub-themes identified previously (see Siegal et al., in preparation, for qualitative results and additional details; Krippendorff, 2013). The frequency of themes and sub-themes described during the sedentary and walking interviews were compared. Participants' walking routes were mapped using ArcGIS Pro in combination with publicly available quantitative and geospatial data. Photographs were used to provide a visual reference for and further contextualize the qualitative results. The neighborhood-level demographic variables and safety indicators were compared for the study area and the county at-large. Variables selected for visual representation were displayed using choropleth mapping (a mapping technique that visualizes geographic regions using different colors or shades, in relation to a variable; Mu & Tong, 2022) on ArcGIS Pro.

Results

Frequency of Themes in the Sedentary and Walking Interviews

The frequencies at which themes and sub-themes emerged during the sedentary and walking interviews are presented in Table 2. Detailed descriptions of the themes and example quotes are available (see Siegal et al., in preparation). In the sedentary interviews, participants more often discussed the various types of violence they encountered (i.e., across all types), which included drug and alcohol-related concerns, gender-based violence, gun and interpersonal violence, and injury, illness, or death. Two of these violence types, gun and interpersonal violence and injury, illness, or death were more often discussed during walking interviews.

Similarly, in the walking interviews, participants more frequently described neighborhood conditions that created (un)safe environments as well as how structural racism has contributed to a lack of safety-promoting conditions in their neighborhood. Additionally, during walking interviews participants more often discussed the consequences of community development, describing both positive consequences, such as increased services and amenities, and negative consequences, such as an increased risk of displacement for current residents.

Photographic and Geospatial Data Collected During Walking Interviews

Photographs were selected to be representative of the identified themes and are presented in Supplemental Table 1. Although all participants consented to photographs being taken throughout the walking interview, photographs were only collected during nine of the 12 walking interviews. On two of the nine walking interviews, there were only two photographs taken. Furthermore, in the other seven walking interviews, several photographs contained identifying information and were deleted. These limitations are discussed further below. During several of the walking interviews, participants instructed researchers to take photographs as evidence of what they were saying, for example, "Make sure you get a picture of that sink hole."

Of the 12 participants who completed walking interviews, four participants chose to drive from spot to spot. Participants' routes spanned across Beatties Ford Corridor, and several routes overlapped with one another. Consistent with recommended practices, we display all the walking routes as a single, conjoined route to preserve participants' anonymity (Flynn et al., 2019). Participants' walking routes are displayed in Figure 1, against the rate of violent crime (2021) and homicide victim locations (2021 and 2022).

Integrating Qualitative and Geospatial Data with Neighborhood-level Demographic Characteristics and Safety Indicators

Results comparing the neighborhood-level demographic characteristics and safety indicators between the study area and the county overall are presented in Table 3. Selected variables are also displayed as maps, shown in Figure 2. Additional visual representations of the demographic and safety indicators can be viewed on the Charlotte-Mecklenburg Quality of Life Explorer (Quality of Life Explorer, n.d.). There were several qualitative, photographic, and quantitative results that aligned. In the qualitative analysis, themes emerged related to the neighborhood's identity as a predominantly Black neighborhood, the impact of structural racism, the current development efforts, and threats of gentrification and displacement. Similarly, the quantitative data showed that the population of the study area in 2021 was predominantly Black, and that the area had the lowest median household income in the county. There was also a higher proportion of rental houses in the study area as compared to Mecklenburg County (46.9% versus 22%, respectively), and a slightly higher rate of residential renovation (3 versus 2, respectively), which may suggest gentrification and risk of displacement. Of the different types of violence described by participants, gun and interpersonal violence were described most frequently. Quantitative data show that this area has one of the highest rates of violent crime in the county. Results from the qualitative data and photographs also portrayed a lack of access to grocery stores. Similarly, data from the Quality of Life Explorer suggested that the study area had some of the lowest access to grocery stores in the county, as measured by the proximity of residential units within a ½ mile radius to a grocery store.

However, there were also instances in which the qualitative, photographic, and quantitative diverged. In qualitative interviews, participants described both a lack of services and a lack of business investment as well as an oversaturation of businesses which facilitate unsafe behaviors and subsequent violence. Photographs show businesses (e.g., arcades) that participants

described as creating opportunities for crime, as well as shuttered businesses that became "areas with action". Several participants used this phrase to refer to areas that they perceived as dangerous, predominantly because of a combination of gun violence, drug activity, or poor lighting. While there were no available quantitative data that directly captured specific types of businesses (e.g., arcades) or abandoned buildings, the area's rate of commercial construction, the concentration of commercial building permits per 100 acres, was similar to the rate in the county overall. Although participants described a lack of access to walking or biking trails and parks, quantitative data showed that over 90% of households were within a ½ mile distance to a public outdoor recreation area. Additionally, while quantitative data suggested that the study area had a similar degree of sidewalk availability compared to the county, participants described the available sidewalks as in need of repair. Similarly, photographs showed sidewalks that were uneven, often with grass and weeds growing among them.

Discussion

We describe the components of an innovative place-based, integrated methods approach, the unique aspects of data collected from the separate methods, and how these components complement one another to provide a more complete understanding of community violence as informed by place. The content discussed by participants during the sedentary and walking interviews was notably different, particularly in regard to how themes aligned within the ecological system levels. Geospatial data collected during the walking interviews provided a more complete understanding of the distinct and overlapping places participants frequented. Quantitative data were used to complement and contextualize the themes identified through the qualitative analysis. In some instances, quantitative data contradicted qualitative findings. Overall, integrating methods as part of a place-based approach yielded richer data that spanned

across ecological system levels and supported more nuanced conclusions than employing a more circumscribed data collection strategy.

While the same themes emerged in both sedentary and walking interviews, the prevalence of themes varied across the two types of interviews. Specifically, in the sedentary interviews, participants more often discussed themes situated at the individual level (e.g., the type of violence participants experienced, the precautionary steps they took) and within the micro- and mesosystem levels (e.g., interactions with neighbors and how organizations mediated or influenced engagement between individuals and systems). The higher prevalence of these themes in the virtual interview is likely due to the set of interview questions. In the virtual interview, participants were explicitly asked about exposure to violence, their perceptions of neighborhood safety, and community engagement. Although researchers asked follow-up questions related to topics brought up by participants as they arose during the semi-structured sedentary interviews, the data suggest that the themes which emerged largely reflected the set of interview questions identified and defined by the researcher, which may reduce the ecological validity of the data.

Comparatively, in the walking interviews, participants more often discussed themes situated at the micro-, exo-, and macrosystem-levels of the Ecological Systems Theory. For example, the role of structural racism in contributing to neighborhood conditions which create or exacerbate health disparities, was more frequently described during the walking interviews. Participants' increased focus on how structural racism contributed directly to unsafe neighborhood conditions, may be a result of the participant being prompted by their surroundings during the walking interview. Prior work shows that, compared to sedentary interviews, walking interviews produced more spontaneous discussions of place, due to elements of the surrounding

environment prompting participants even without researcher probes (Evans & Jones, 2011). Evidence suggests that, even when questions about place were incorporated into the sedentary interview guide, walking interviews prompted more area-specific information about surrounding features (Evans & Jones, 2011). The present findings are consistent with this notion. In the semi-structured interview guide used during the sedentary interview in the current study, we included geospatial prompts such as "*what areas or places make you feel unsafe*". Even with this prompt in the sedentary interview, place-based aspects of participants' experiences of violence were discussed more frequently in the walking interviews. Situated in the existing literature, these findings suggest that when interrogating the role of place, walking interviews are a useful method. Walking interviews may be particularly beneficial in their ability to generate data across multiple ecological system levels that may not be as easily obtained through more circumscribed approaches to data collection.

Participant-led walking interviews may have also mitigated power differentials between the researcher and participants as the walking interview was intentionally structured to empower participants. Reduced power differentials can better enable participants to share their local knowledge and experiences and, importantly, challenge researcher assumptions, biases, or theories (Wood & McAteer, 2017). For example, participants were asked to lead the walking interview and share information at their discretion, rather than in response to a pre-determined set of interview questions. While researchers did provide some prompts over the course of the walking interviews, these prompts were relatively broad (e.g., "*can you show me places in your neighborhood where you feel safe*"), were a follow-up question from the sedentary interview, or were made in response to a question from the participant (e.g., "*where should we go next?*"). By challenging the expectation that the researcher would guide the interview, participants were able

to provide information they viewed as relevant to their experiences of safety and violence. For example, during the walking interviews, participants described neighborhood conditions, such as poorly maintained sewage systems and a lack of sidewalks, as contributing to feeling unsafe. Such features are not commonly described in the academic literature as related to community violence and were not explicitly asked about in the sedentary interviews; thus, such data would have gone uncaptured without the walking interview component of the study. Participants' increased focus on neighborhood conditions during the walking interviews may in part reflect an increased ability to share their local knowledge and experiences with the researcher, as a result of reduced power differentials.

In the current study, the walking interview also provided an opportunity for researchers to physically experience the neighborhood alongside the participant. Embodied subjectivity refers to the ways in which our body feels our lived experiences, identities, and positionalities, all of which impact our research (Fernandez, 2018; Rauk, 2021). By walking with participants, we were able to experience the cracked sidewalks or observe how new development differed from the historical neighborhood. We could physically see the distinctions between neighborhoods as streets changed from paved to unpaved. In one instance, we were catcalled along with the participant, as she spoke about her experience of walking through the neighborhood as a woman. In another instance, we were greeted by neighbors who the participant had described as warm and welcoming. Although the embodied subjectivities as a result of these shared experiences were still different – informed by our identities, positionality, and prior experiences – being able to walk in the space with participants deepened our understanding of the experiences they described. We were able to bring this embodied experience into our data analysis, particularly in considering how our own lived experiences were informing our analysis. We believe that the

walking interview provided additional place-based context that increased the credibility and rigor of our coding and data analysis.

Similarly, incorporating photographs was a way to represent visually the experiences of participants and provide context for the identified themes, particularly for people unfamiliar with the study area. Photographs can be used to share pieces of participants' experiences, beyond that which can be achieved through narration alone (Bennett Irby et al., 2018). When paired with the themes and the choropleth maps, the photographs helped contextualize and reinforce what participants described. The benefit of incorporating photographs was particularly salient when the identified qualitative themes conflicted with the quantitative data. For example, although the quantitative data suggested that the sidewalk availability in the study area was similar to that in the county overall, participants described a lack of sidewalk availability, and that when available, the sidewalks were cracked, different heights, and challenging to use. The photographs provided visual evidence for this theme. At the same time, we found it beneficial to use photographs as a complement to the other data collection methods, rather than as a sole or primary method for data collection for this effort. For example, under the approved IRB protocol, we could not take pictures of people. Given that several of the themes that emerged in our work related to interactions with others, we would have been challenged to convey such content if we only relied on photographs. Overall, photographs were an important albeit secondary method for data collection, offering additional place-based context.

Mapping participants' walking routes provided a useful visual representation of the geospatial variability between participants' common routes (e.g., around their neighborhood) and where those routes overlap. Integrating participants' walking routes with the quantitative data also provided a visual representation of the unique and shared characteristics of the

neighborhoods represented in the data, which enhanced data analysis. The study area, Beatties Ford Corridor, is a collection of neighborhoods along Beatties Ford Road. Each neighborhood has a distinct history, although shaped by shared elements and geographic proximity. Therefore, during qualitative data analysis, we considered how to weigh and incorporate participants' differing perspectives, particularly when participants lived in different neighborhoods. For example, only a few participants expressed how policing has harmed Black neighborhoods. However, one of these participants was our only participant who also lived in the neighborhood in Beatties Ford Corridor with the highest rate of violent crime. Given this participant's neighborhood context, we prioritized his perspective related to policing in how we presented our qualitative findings (see Siegal et al., in preparation). In this way, mapping the walking routes helped us to better visualize participants within their neighborhood context and subsequently reconsider both how their perspectives were informed by place and how place should inform our representation of the results. Integrating the qualitative and geospatial data helped to visualize the diversity of participants' perspectives on key issues such as policing. These differences raise questions of what we gain or lose when discussing these diverse neighborhoods as one corridor, and suggest that efforts to address violence in Beatties Ford Corridor should be adapted to the varying strengths and needs of each neighborhood.

Finally, the inclusion of publicly available quantitative data allowed us to compare differences between the area of focus and the county overall, as well as between participants' experiences as described in the interviews and similar indicators in the publicly available data. Overall, publicly available data show that, compared to the county overall, Beatties Ford Corridor had a higher level of violent crime, significantly lower median household income, less tree canopy, and fewer houses in close proximity to grocery stores, as well as a higher number of

neighborhood organizations. Important context is introduced when these quantitative findings are integrated with the qualitative data. For example, participants described how a history of disinvestment in the predominantly Black neighborhoods in Beatties Ford Corridor has contributed to the lower median household income and higher rates of violent crime. Indeed, in the name of "urban renewal", Brooklyn, a predominantly Black neighborhood in Charlotte, was destroyed, including the destruction of the local, Black-owned businesses housed within it (Huneycutt, 2023). This destruction decimated the housing and earning potential of residents who later moved to Beatties Ford Corridor, with effects that are still felt today, evidenced through the low median household income and high rates of crime (Huneycutt, 2023). Similarly, the construction of highways bisecting neighborhoods in Beatties Ford Corridor, disrupted existing community ties, potentially contributing to lower social cohesion, which is also related to increased crime rates (Huneycutt, 2023; Mazerolle et al., 2010; Sampson et al., 1997). As another example, while quantitative data show that the area has a higher percentage of households within a ½ mile radius of public outdoor recreation areas relative to the county, participants explicitly described a lack of access to walking and biking trails as compared to other, whiter neighborhoods. Although walking and biking trails have continued to be expanded in predominantly white neighborhoods in Mecklenburg County, Beatties Ford Corridor has not received that same investment (Contino, 2023). The difference between the qualitative and quantitative findings may also reflect participants' inclination to compare their neighborhood to other neighborhoods in Charlotte, as opposed to the larger (and perhaps less developed) Mecklenburg County area. In addition to helping contextualize the quantitative data, integrating the qualitative and quantitative data illustrated gaps in the quantitative data that may be useful for understanding the neighborhood context. For example, participants frequently discussed

lighting as a deterrent to crime and the lack of lighting in their neighborhood as making the neighborhood less safe. However, lighting is not an indicator currently available on the Quality of Life Explorer, a tool used by local government and other sectors to inform programming, policy, and research. By integrating the qualitative and quantitative data, it is possible to assess not just whether particular public resources exist in a neighborhood, but also how accessible they are and their quality. Although the Quality of Life Explorer, the dashboard where these publicly available data are housed, is a powerful platform, the limitations of these data are important to understand, and to convey to the local decision makers, researchers, and community organizations who use it. Together, these findings illustrate the benefit of incorporating qualitative and quantitative data when conducting place-based research.

Considerations and Limitations

These findings should be interpreted within the limitations of this study. All participants included in this study completed the sedentary interview prior to the walking interview. Therefore, interview sequence may be a limitation, such that participants may have felt that they adequately discussed certain topics during the sedentary interview and subsequently did not revisit those topics during the walking interview. However, while the frequency of themes varied across the sedentary and walking interviews, each theme arose in both the sedentary and walking interviews, suggesting that the variation in theme frequency across interview type was related to something other than the interview sequence. Relatedly, with the walking interview occurring subsequent to the initial, sedentary interview, it is possible that participants felt more comfortable with researchers at this later interview and thus discussed certain topics more frequently and in more depth relative to others. While a future direction could be to use a counterbalanced design to modify the sequence of interviews for different participants, it is

worth noting that prior research which varied the sequence of sedentary and walking interviews still found differences in the type of information discussed as related to place (Evans & Jones, 2011). In addition, as noted above, although all participants consented to the taking of photographs during their interview, three participants had no photographs taken during their walking interview, and two participants only had two photographs taken during the walking interview. In some instances, researchers found it challenging to take photographs that did not include people in the frame, particularly in busy areas. Additionally, some participants focused on topics related to other people (e.g., relationships with their neighbors), or topics for which photographs may result in identification of the participant or other people (e.g., burglary, homes on their street in disrepair). In these instances, researchers chose not to take pictures, to preserve the anonymity of participants and other neighborhood residents. As another limitation, the publicly available quantitative data used in this study were collected at different time points (e.g., some data were only recent as of 2015, while others were recent through 2021), and may not capture more recent neighborhood changes. Finally, and consistent with most qualitative research, this study was not designed to be transferable to other sites, or even the population of residents in the study area. Rather, this study used only a small sample of participants who were not necessarily representative of the population in the study area, which may have impacted the frequency and content of the identified themes.

Conclusion

With health so strongly influenced by place, community members, funders, researchers, and other decision makers will continue to explore how to develop complete and accurate conceptualizations of the myriad of ways in which health and place interact. The integrated methodology presented in this paper describes the multiple methods we used as part of data

collection; by describing the types of data collected and inferences drawn, we provide an example for other researchers who seek to implement a place-based methodology. The combination of sedentary and walking interviews, photographs, walking routes, and publicly available data allowed more nuanced insights into participants' experiences of violence. The integration of multiple methods highlighted the benefit of triangulating data in place-based research, as there were limitations inherent to each method. Moreover, the walking interviews provided contextual information about the neighborhood that would not have been as clearly conveyed through the sedentary interviews or the quantitative data alone. Ideally, efforts to understand health disparities informed by place will engage in multiple levels of analysis and, in turn, identify actionable recommendations across ecological levels. As place-based approaches to address health disparities continue to gain traction, attention to how we collect data will be an important consideration.

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Table 1

Data Type, Data Sources, and Purpose

Data Type	Data Source	Method	Purpose
Neighborhood demographics and identified indicators	Quality of Life Explorer Community Violence Data Dashboard	N/A (secondary data)	To compare neighborhood of interest to county overall; use interviews to inform which data to explore using QOL
Perceptions of safety and experience of violence	Virtual interviews via Zoom or telephone	Semi-structured interview guide	To explore the relationship between participants' exposure to violence and perceptions of safety, as guided by the researcher and informed by existing literature
Perceptions of safety and experience of violence	Walking interviews	Participant-led interviews	To explore the relationship between place, ecological levels, and violence, as guided by the participant
Photographs	Walking interviews	Researcher-captured photographs	To document neighborhood structures and places that hold meaning for participants
Walking routes	Walking interviews	Pocket Earth Pro	To explore similarities and differences between participants' routes as representative of places that hold meaning for participants

Table 2

Prevalence of Themes and Sub-themes Identified in the Virtual and Walking Interviews

Theme/Sub-theme	Virtual interview (n)	Walking interview (n)
Themes with more prevalence[1] in virtual interviews		
Participants use multi-faceted strategies	132	69
Constant vigilance	58	21
Police or security personnel	22	6
Police are ineffective or threatening	13	5
Police provide useful surveillance	10	2
Know and support your neighbors	52	44
Incorporate community voice in decision making	13	3
Media perpetuates racism	9	4
Types of Violence	78	60
Drug or alcohol use	31	15
Gender-based	14	4
Vandalism, burglary, robbery	17	6
Gun and interpersonal violence	26	36
Injury, illness, or death	7	20
Themes with similar prevalence[1] in virtual and walking interviews		
Policies contribute to (un)safe behaviors	19	17
Carceral strategies are inadequate solutions to drug use	16	4
Themes with more prevalence[1] in walking interviews		
Neighborhood conditions create (un)safe environments	101	110
Maintain lights, roads, and sidewalks	39	47
Areas with action[2]	36	47
Mediating organizations[3]	35	25
Structural racism limits access to safety promoting conditions	67	120
Community development has multiple consequences	44	117
Leads to displacement	20	45
Leads to increased safety and services	29	86

Note. N = 13 participants. One participant did not complete the walking interview. (n) refers to the number of coded excerpts per theme.

[1] Refers to absolute prevalence. Categorizations are based on prevalence of themes (not subthemes).

[2] Areas with action are areas that participants perceived as dangerous.

[3] Mediating organizations refer to organizations that participants described as influencing how they engaged with the larger community (see Siegal et al., in preparation).

Table 3

Neighborhood-level Indicators for Beatties Ford Corridor and Mecklenburg County

Neighborhood-level Indicator	Beatties Ford Corridor	Mecklenburg County
Percent of population self-identified as Black or African American	78%	29.1%
Median household income (2020)	$33,277	$69,240
Average age of death (2019)	70	72
Number of neighborhood organizations	2	0
311 request rate (number of requests per 100 people)[1]	79	32
Percent of residential land area covered by tree canopy (2012)	46.5%	55.5%
Percent of houses within a half-mile of a public outdoor recreation area	93.7%	61%
Percent of houses within a half-mile of a grocery store	23.1%	31.6%
Percentage of rental houses	46.9%	22.2%
Residential renovation rate	3	2
Commercial construction rate	1	1
Property crime rate	48	31
Violent crime rate	16	5
Disorder related calls	295	97
Nuisance violations (2020)	22	7
Sidewalk availability (2015)	0.5%	0.4%

Note. Variables were selected for inclusion if they aligned with themes or sub-themes from the qualitative analysis (as identified by at least 5 participants; see Siegal et al., in preparation). Beatties Ford Corridor is composed of Neighborhood Profile Areas 123, 139, 374, 70, 85, 311, 382. NPAs were created using information from census block groups, neighborhood boundaries, planning commission boundaries and community feedback (Zager et al., 2015). Data are from 2021 unless otherwise noted.

[1] 311 is Charlotte-Mecklenburg's phone and web resource for service requests, bill payments, questions, comments, and concerns.

Supplemental Table 1

Photographs Representative of Identified Themes

Themes and sub-themes	Example Photographs
Participants use multi-faceted strategies to increase their sense of safety	
	No photos available
Neighborhood conditions create (un)safe environments	
Maintain lights, roads, and sidewalks	 A sidewalk in disrepair, next to planned apartment complex.
Areas with action	 A new arcade opened; A type of business participants identified as a likely area with action.
Mediating organizations	 A church having a fundraiser on Saturday.
Structural racism limits access to safety promoting conditions	

Fast food and food deserts

An area that has received significant investment. However, there are still no easily accessed grocery stores.

Lack of business investment

A closed down business.

Environmental neglect

An area of land that separates a community from accessing an existing greenway was recently purchased by local government for greenway development.

Community development has multiple consequences

Leads to displacement

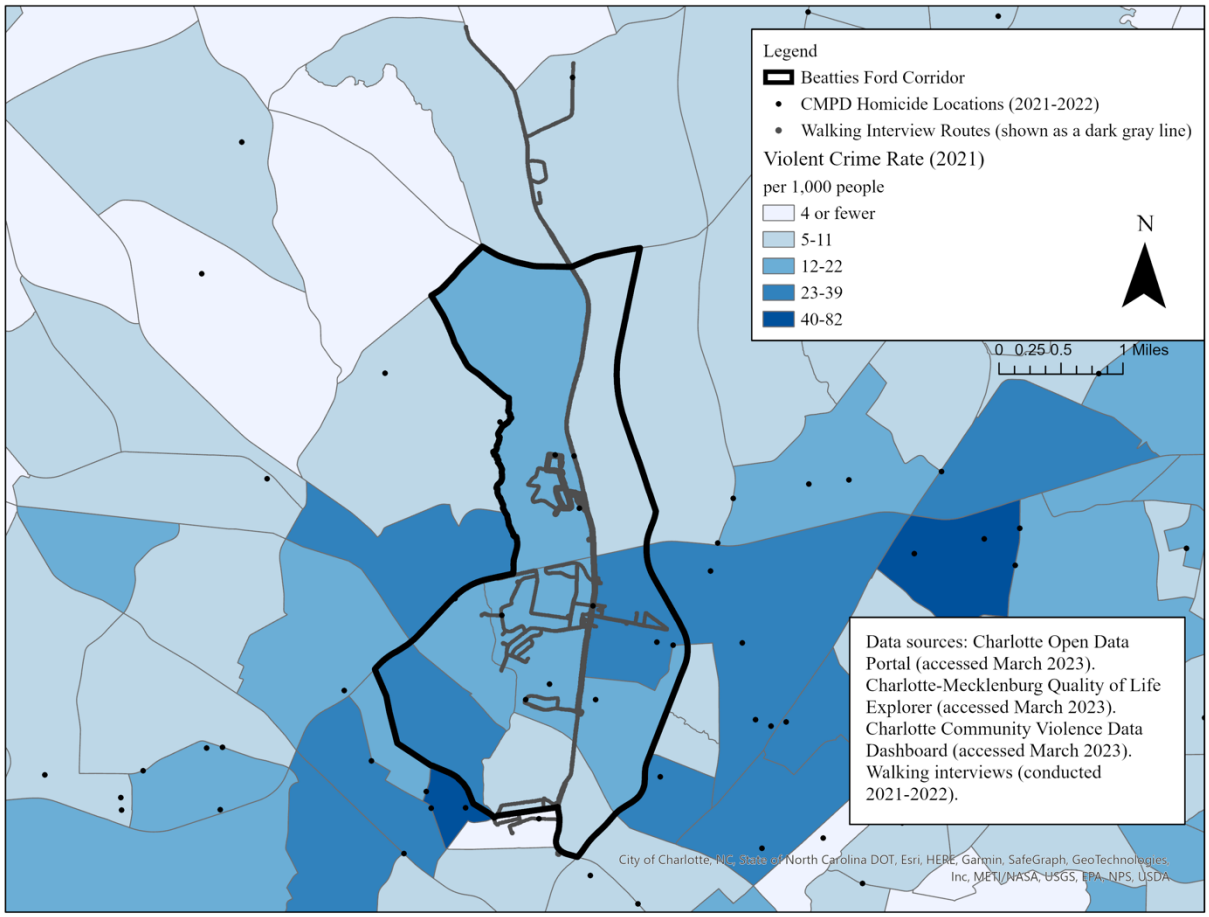
Walking by new development, a participant wondered about gentrification in their neighborhood.

Leads to increased safety and services

Speedbumps were added to the road.

Figure 1

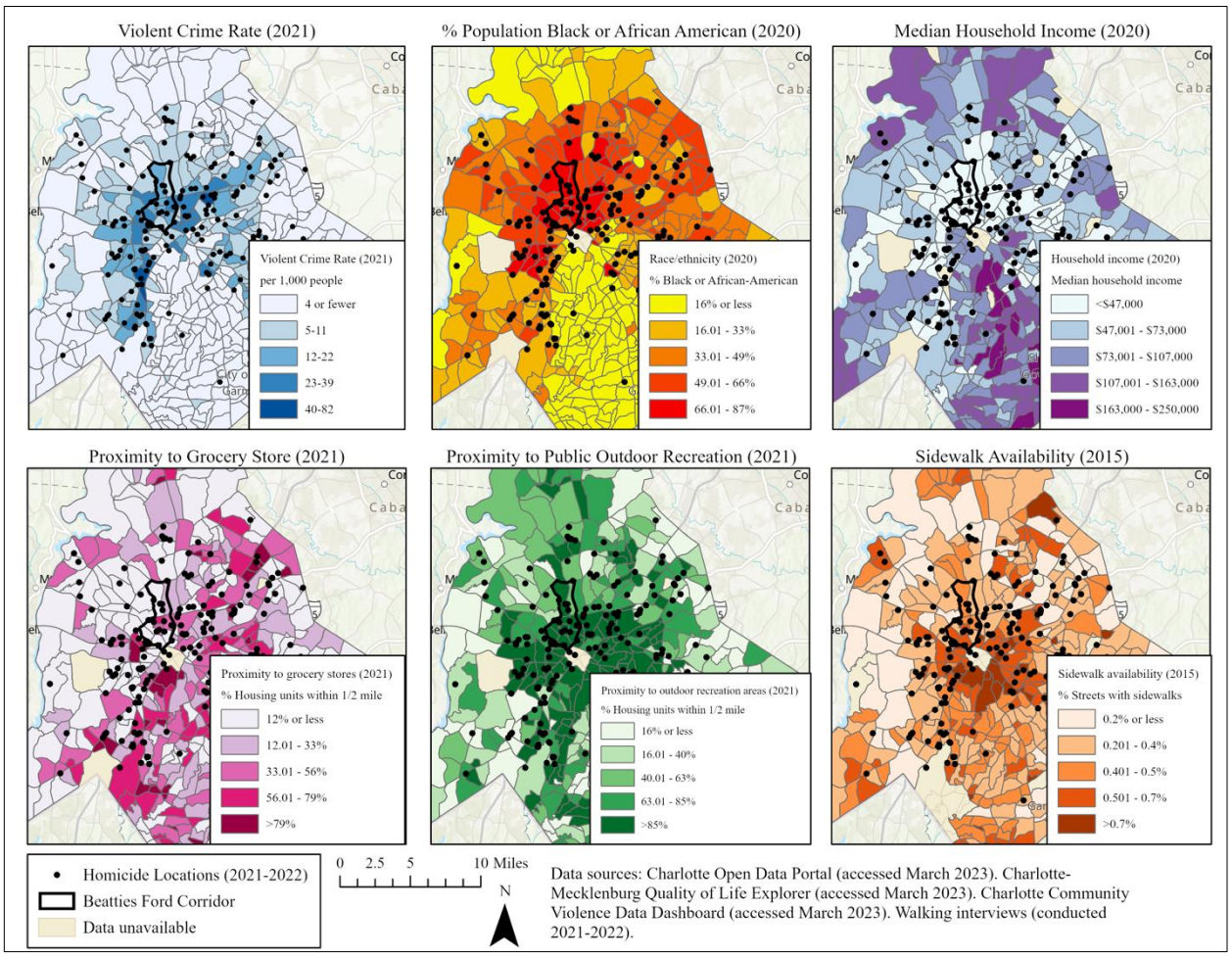
Walking Interview Routes



Note. This figure shows participants' walking interview routes as a dark gray line, displayed in the legend as a single gray dot. Walking interview routes are shown as a conjoined line, to protect the privacy of individual participants. Beatties Ford Corridor is outlined in black. Homicide victim locations (2021-2022) and violent crime rate (2021) are shown. Violent crime rate includes homicides, rape, robbery, and aggravated assault. Darker blue areas represent higher rates of violent crime.

Figure 2

Selected Neighborhood Demographics and Safety Indicators Identified by Participants



Note. This figure shows maps of Mecklenburg County using data from the Charlotte-Mecklenburg Quality of Life Explorer and Charlotte Community Violence Data Dashboard. Variables were selected from the Quality of Life Explorer if they represented or were a close proxy to themes or sub-themes identified by participants. Variables were selected for visualization in this figure if they notably aligned with or diverged from qualitative or photographic findings. Beatties Ford Corridor is outlined in black, and homicide victim locations are displayed as single points.

CHAPTER 4 – EXPANDING DATA SHARING MODELS: EXPLORING HOW INDIVIDUAL AND ORGANIZATIONAL POSITIONALITY IMPACTS CROSS-SECTOR DATA SHARING

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ABSTRACT

Cross-sector collaborations are an integral part of efforts to address long-standing, community-level health inequities. Although there are multiple benefits of data sharing to inform cross-sector collaborative efforts, these collaborations often face multiple challenges to sharing and using data, including technical, legal, ethical, motivational, and political barriers. While these barriers have been well described in the literature, limited research has focused on how positionality, the social identity and power of the individual or organization, may contribute to these barriers. The current study uses interviews conducted with 10 members of a Community Violence Prevention Data Collaborative, representing eight organizations across sectors, to explore how positionality informs barriers to data sharing. The study occurs within a larger context of collaboration across sectors in Mecklenburg County, North Carolina to leverage organizational resources and align programs and policy to disrupt, reduce, and prevent community violence. Study findings illustrate and enhance understanding of how social identity and power exist and interact for the individual and the organization. We find that individuals' level of data knowledge, data sharing experiences, and sense of empowerment, as well as organizations' use of formal data sharing processes, engagement with leadership, and development of their own and others' data sharing capacity interacted to inform barriers and solutions to data sharing. The current study advances previous models for data sharing by highlighting the role that social identity and power play, particularly in collaboratives with multiple organizational partners.

CHAPTER 4 – EXPANDING DATA SHARING MODELS: EXPLORING HOW INDIVIDUAL AND ORGANIZAITONAL POSITIONALITY IMPACTS CROSS-SECTOR DATA SHARING

Today's complex public health challenges necessitate the prioritization of health equity, social justice, and equitable health outcomes for all communities (Landers & Bowleg, 2022). Addressing the long-standing inequities in social and structural determinants of health which give rise to existing health disparities requires collaboration across historically siloed sectors (Bryson et al., 2015; Solar & Irwin, 2010). Among the strategies that can facilitate effective collaborations, data sharing, integration, and analysis are key elements to better understand complex community needs, inform program design and strategies, drive policy, and evaluate success (Bryson et al., 2015; Fischer et al., 2019). While barriers to cross-sector data sharing and associated benefits have been well documented (Mayfield et al., 2022; Van Panhuis et al., 2014; Wiehe et al., 2018), considerably less work has examined how these efforts are influenced by the positionality of individuals and organizations represented in these collaborations. Social identities and resulting power differentials within collaborative efforts that go unaddressed have the potential to reproduce or exacerbate systemic health inequities (Muhammad et al., 2015). Therefore, the current study explores how individuals' and organizations' positionality inform barriers and solutions to cross-sector data sharing, as part of a larger effort to reduce community violence.

Exposure to Community Violence is a Health Disparity

Community violence, a type of interpersonal violence that is perpetuated against individuals not intimately related to the perpetrator, is a significant cause of death and injury in the United States (Abt, 2016; Centers for Disease Control and Prevention [CDC], 2019). Community violence often involves firearms (Abt, 2016), and in 2017, there were more than

14,500 homicides and over seven times that many nonfatal injuries attributed to firearm violence (CDC, 2019). Black and Indigenous youth and young adults are at a disproportionately high risk for exposure to firearm-related violence, with Black male youth at higher risk for firearm-related homicide compared to White male youth, particularly in urban settings (Bottiani et al., 2021; CDC, 2019; Sheats et al., 2018). Factors such as concentrated and intergenerational poverty, structural racism, and economic segregation disproportionately impact Black communities and contribute to inequitable exposure to firearm-related community violence for Black children, youth, and young adults (Boeck et al., 2020; Knopov et al., 2019; Nation & Wendel, 2021; Rowhani-Rahbar et al., 2019). As such, exposure to firearm-related community violence is a health disparity, with risk factors rooted in structural and social determinants of health.

Social Determinants of Health Framework for Action

The Social Determinants of Health Framework for Action posits a causal relationship between structural and social health determinants, such as health, housing, and education policies, and individual health outcomes (Solar & Irwin, 2010). The structural determinants of health include the socioeconomic political context (e.g., health, housing, and education policies), which give rise to socioeconomic positions stratified by various sociodemographic factors. In turn, these factors shape and influence individual health outcomes, such as exposure to community violence (Armstead et al., 2018; Solar & Irwin, 2010). Because structural and social health determinants span across sectors, cross-sector collaboration is emphasized as a key strategy to address health disparities (Solar & Irwin, 2010). The following section describes the use of cross-sector collaborations as one strategy to address health disparities.

Cross-sector Collaborations for Addressing Health Disparities

Cross-sector collaborations provide an avenue for engaging multiple perspectives across

sectors, build buy-in, and achieve collective decision making (Emerson et al., 2011). As such, these collaborations can contribute to improved program and referral services, increased policy alignment, and the reduction of health disparities (Emerson et al., 2011). However, as a result of the multiple organizations often represented in a cross-sector collaborative, the process of cross-sector collaboration is complex. Multiple frameworks have been proposed that identify factors which are facilitative for successful cross-sector collaboration (see, for example, Bryson et al., 2015 or Ruijer, 2021). These frameworks describe characteristics relevant to collaborative success, such as the broader environmental and institutional contexts as well as the collaborative structures and processes for decision making and activity (Ruijer, 2021). However, even when these conditions are facilitative for collaboration, tensions can arise (see, e.g., Ruijer, 2021; Susha et al., 2017) and cross-sector collaborations which seek to share and use integrated data may face an additional layer of complexity.

Sharing Data to Inform Cross-sector Collaboration

Cross-sector collaborations can use integrated data to evaluate and improve programs and policy, such as by measuring progress over time, assessing implementation fidelity, or evaluating effectiveness (Ruijer, 2021). However, data sharing comes with its own challenges. For example, partners are often hesitant to share data, because of a fear of what others may do with the data or concerns about how the data will be used (Bryson et al., 2015; Klievink et al., 2018). Data sharing also requires the technical expertise and legal and governance infrastructure needed for data storage, management, integration, and analysis (Wiehe et al., 2018). Reflecting these common challenges, existing data sharing frameworks describe technical, legal, political, ethical, and motivational barriers for data sharing efforts, all of which may arise at multiple points throughout data sharing (Van Panhuis et al., 2014). Factors that can help address these barriers

include clear communication; adequate preparation, funding, and support; non-monetary benefits; and regulatory assurances (Wiehe et al., 2018). For example, while criminal justice partners may be concerned about sharing juvenile court records because of their sensitive nature (an ethical barrier), clear, consistent, and ongoing communication about how the data will be used can help to mitigate this concern (Wiehe et al., 2018). However, existing data sharing models are somewhat limited in that they (1) have been predominantly developed when sharing data between two partners, (2) focus primarily on the influence of the individual and (3) do not explicitly attend to positionality as related to data sharing.

Expanding Data Sharing Models

Data Sharing Models with Multiple Partners. Existing data sharing models have been predominantly informed by data sharing partnerships involving two organizations, as opposed to a larger number of organizations participating in a data sharing collaborative. The focus of the current study grows out of a multi-organization, cross-sector data sharing effort described by Mayfield and colleagues (2022). In this multi-organization collaborative, designed to support decision making and data sharing, with the objective of evaluating community violence prevention efforts, there were multiple and different barriers that existed for each partner, potentially increasing the complexity of data sharing as compared to when only two partners are involved (Mayfield et al., 2022). At the same time, when identifying solutions to data sharing barriers, having multiple partners in the collaborative resulted in a rich discussion of diverse solutions, that may not have been possible if limited to a dyadic data sharing partnership (Mayfield et al., 2022). Data sharing efforts with multiple partners may necessitate the expansion of data sharing models to incorporate factors relevant to multi-organization data sharing efforts.

Interactions between the Individual and Organization Influence Data Sharing.

Indeed, when Mayfield and colleagues (2022) applied Wiehe's data sharing framework to the multi-organization, cross-sector data sharing collaborative, they expanded the framework to include motivational barriers at *both* the individual and organizational-level, which were sometimes in conflict with one another. As one case in point, although one individual representing their organization was highly motivated to share data, there was a lack of alignment between that organization's mission and the data sharing collaborative's mission, which resulted in reduced motivation for the organization to share data (Mayfield et al., 2022). As another example, individuals' and organizations' previous experience with sharing data influenced their motivation to engage in the described effort (Mayfield et al., 2022). These findings suggest individuals' and organizations' experiences and characteristics may influence one another. The current study grows directly out of the work by Mayfield and colleagues (2022), to explore how individuals' and organizations' positionality informs barriers and solutions to cross-sector data sharing in multi-organization collaboratives.

Positionality in Data Sharing Partnerships. Positionality refers to how differences in social identities and power shape access in society (Misawa, 2010). Positionality is most often applied to individuals, to describe how all people are raced, classed, and gendered (Martin & Gunten, 2002). Of salience to the present effort, positionality has also been explored within partnerships between academic researchers and community members (Muhammad et al., 2015). By being attentive to individuals' different positionalities, these partnerships were able to identify and subsequently address existing inequalities and power differentials that often go unnamed (Muhammad et al., 2015). Specific methods and practices, such as the equitable provision of sufficient time, compensation, and resources for all partners, and the dual ownership of processes and products, have evolved to disrupt and mitigate these power differentials

(Balcazar et al., 1998; Israel et al., 2005). Although these practices are promising, to the authors' knowledge, organizational positionality has largely been explored in the context of community-university partnerships (Muhammad et al., 2015); in collaborative partnerships with multiple organizations, other sectors are also present. Furthermore, while funders and researchers have called for more explicit attention to engaging people with lived experience in data sharing efforts (Nelson et al., 2020), attention to the multidimensional nature of social identity and power within multi-organization, data sharing collaboratives has been largely absent from the literature. The following sections define and explore how social identity and power may present in cross-sector data sharing collaboratives and influence their dynamics and processes.

Social Identity. Social identities are complex, multi-layered phenomena that are fluid, situational, and constructed at the individual or group level (Muhammad et al., 2015). Identity is shaped by ascribed characteristics, such as race/ethnicity, skin color, or gender, and achieved characteristics (e.g., education, job), as well as how we – and others – view our identities (Muhammad et al., 2015; Oetzel, 2009). An individual's social identities may influence the barriers they face and solutions they identify to achieve data sharing, including technical (e.g., a person who has the technical skills for data sharing) or political (e.g., a person who has the leadership position at their organization to approve data sharing) barriers and solutions. In the data sharing literature, attention to the multitude of characteristics that comprises one's social identity has been described as having "the appropriate stakeholder", whether that is someone from the leadership, data management, or legal team (Wiehe et al., 2018). A clearer conceptualization of what additional characteristics contribute to someone being "the appropriate stakeholder" can help to advance data sharing frameworks and subsequent efforts. Furthermore, although not specific to data sharing, models for cross-sector collaboration have been criticized

for their lack of attention to engaging a diversity of perspectives (e.g., including important government, nonprofit, corporate, and philanthropic partners, as well as people with lived experiences; Kania et al., 2013). A framework that centers social identity may help to address this criticism.

Social identity can also be ascribed to organizations, in that organizations differ across such characteristics as their type (e.g., public or private), sector (e.g., health, education, legal), or size. Similarly, organizations' social identities can be informed by how employees and shareholders, as well as the public, view the organization. For example, although medical and criminal justice professionals may view their institutions as legitimate, helping organizations, historical and contemporary racism in healthcare and policing, and resulting medical and legal atrocities, have contributed to Black communities having lower levels of trust in and utilization of healthcare and legal systems as compared to white communities (Alang et al., 2020; Alsan & Wanamaker, 2016; Tyler, 2005). As such, for these organizations, their characteristics – and historical and contemporary actions and events – inform their identity and how other organizations and individuals interact with them.

In existing data sharing frameworks, organizations' social identities are present, if not explicitly identified. For example, having the technical infrastructure and economic resources available for data sharing may be a result of an organization's type, sector, or size, among other characteristics. Similarly, having ethical or motivational reasons to engage in data sharing may be related to how the organization is viewed by the public. Data sharing partnerships may be strengthened through thoughtful consideration of organizations' social identities. Without this attention to social identities and how they interact with power, individuals' and organizations' positionalities (identity and power) have the potential to further systemic health inequities and

disadvantage already-marginalized partners and communities (Muhammad et al., 2015).

Power. Power is operationalized through constructed hierarchies which institutionalize the marginalization of certain groups, often dependent on their social identities (Wallerstein et al., 2019). In turn, social processes and institutions maintain, reproduce, and routinize resulting structural inequities (e.g., racial and economic segregation, poverty, health care access). In a collaborative partnership, partners' abilities to exercise power are shaped by these contextual factors. At the same time, by working towards greater equity as part of partnership processes and through intended outcomes, partnerships can be emancipatory and can change social and structural conditions (Wallerstein et al., 2019). However, the partnership's ability to be emancipatory depends in part on the members' willingness to address power dynamics *within* their partnership (Muhammad et al., 2015; Wallerstein et al., 2019). Often, social identity confers power and, similar to how both individuals and organizations have social identities, both individuals and organizations hold and use power. For example, a partner who understands the technical and legal jargon involved in data sharing may hold more power in a data sharing partnership than a partner who does not. Likewise, an organization that has strong data storage and management practices will be positioned to share data sooner and to engage in data sharing collaboratives more readily. Similarly, organizations with social identities that are publicly valued (e.g., organizations which address problems deemed pertinent by the public, or are otherwise highly valued) may hold more power in a data sharing collaborative than organizations which are not as publicly valued. For example, an organization that provides services to a stigmatized population may be less valued.

In summary, both individuals and institutions have social identities and, as a result of those identities and our current social, economic, and political systems, hold varying levels of

power. When in collaborative partnerships, these positionalities may interact with one another and inform outcomes. An awareness of the positions and power that individuals and institutions hold can lead to partnerships that are more equitable, sustainable, and impactful (Muhammad et al., 2015; Muhammad et al., 2018). The current study explores how individuals' and organizations' positionalities inform data sharing efforts, as part of a cross-sector collaborative working to disrupt, reduce, and prevent community violence.

Study Context and Aims

Mecklenburg County has experienced an increase in firearm-related homicides over the past five years, with a plurality of violent assaults concentrated in less than 2% of the county (Office of the City Manager, 2019). In response to this increase in violent crime, leaders from the City of Charlotte and Mecklenburg County (Charlotte's home county) brought together key stakeholders as part of the Community Violence Prevention (CVP) Initiative, a cross-sector effort to coordinate and align institutional resources. The CVP Initiative is led by the CVP Steering Committee, which is composed of executive leadership from local government and healthcare. In turn, the Steering Committee is supported by the CVP Data Collaborative, a consortium of organizations with representation from local government, healthcare, and education. At the time of data collection, the CVP Data Collaborative was composed of representatives from the city of Charlotte (Office of Data and Analytics and the Charlotte-Mecklenburg Police Department); Mecklenburg County (Department of Public Health, Department of Social Services, Criminal Justice Services, and Community Support Services); primary, secondary, and post-secondary education (Charlotte-Mecklenburg Schools, Johnson C. Smith University, and the University of North Carolina at Charlotte); and healthcare (Atrium Health). The Data Collaborative was convened to provide research and evaluation support to the

Steering Committee, by leveraging resources for data sharing, analysis, and dissemination in support of community violence prevention and intervention.

As part of a broader effort to design an evaluation for community violence prevention programming, members of the CVP Data Collaborative participated in semi-structured interviews to assess barriers and solutions to cross-sector data sharing (see Mayfield et al., 2022). The current study uses data collected during these interviews to explore how identity and power are related to barriers and solutions to data sharing, at the individual and at the organizational level. Therefore, this effort is guided by the following questions:

1. In the context of a cross-sector data sharing collaborative, how are individuals' identity and power related to perceived barriers or solutions to data sharing?
2. In the context of a cross-sector data sharing collaborative, how are organizations' identity and power related to perceived barriers or solutions to data sharing?
3. In the context of a cross-sector data sharing collaborative, how do individuals and organizations' identity and power interact as related to perceived barriers or solutions to data sharing?

Methods

Participants

Participants (n = 10) were members of the CVP Data Collaborative at the time of data collection. Participants represent eight organizations across sectors (e.g., health, education, government), and all hold leadership or data-related positions in their organization (e.g., data analyst). All members of the CVP Data Collaborative, who were not part of the research team, participated in the study.

Data Collection

Data collection occurred between April and May 2021. CVP Data Collaborative members were interviewed by one of the three university researchers on the CVP Data Collaborative. The semi-structured interviews lasted 60-90 minutes and occurred over Zoom. Participants were asked to respond to prompts about their organization (e.g., *Please briefly describe your organization's experience with cross-sector data sharing*), their organization's experience with cross-sector data sharing (e.g., *Organizations are often at different points in their comfort and readiness to share data… How would you rate your organization's readiness to share data?*), and barriers and solutions to cross-sector data sharing (e.g., *From your perspective, what are the main barriers to cross-sector data sharing in your organization? How do technical barriers show up in your organization?*). Because these interviews were conducted as part of a larger study on barriers to data sharing (Mayfield et al., 2022), explicit questions about positionality were not asked.

Data Analysis

We used thematic analysis, which relies on multiple coders to identify key insights and themes relevant to the research questions (Braun & Clarke, 2006; Tracy, 2019). Thematic analysis is an iterative process which includes generating initial codes, identifying patterns or themes, and reviewing and refining themes alongside existing literature (Tracy, 2019). Deductive coding was used to generate a list of potential, initial codes, which were then refined as the primary and secondary coders familiarized themselves with the data by re-reading each interview. Coders met routinely to discuss code application, and compare codes across and within interviews. Disagreements about codes were discussed between coders until consensus was reached. The primary coder collated codes into potential themes and worked with the secondary coder and other co-authors to review, define, and name the themes. Member checks

took place as part of the primary analysis, prior to the coding and secondary analysis for the current study.

Results

For members of the data collaborative participating in this study, individuals' most salient social identities were knowledge and experience in data use and data sharing. Individuals' sense of empowerment was the most prominent theme related to individuals' power. For organizations represented in the data collaborative and in this study, having formal data sharing processes, experience with data collection and data sharing, and hierarchical organizational culture, emerged as social identity characteristics related to data sharing. Organizations appeared to exercise their power through leadership support and their willingness and effort to build their own and other organizations' capacity for partnership. The social identities and power of the individual and organization also interacted with one another to influence data sharing processes, through the individual's organizational role and their awareness of organizational data sharing processes and history. In the following sections, we describe commonalities, inconsistencies, and the most salient expressions of how social identity and power for the individual and organization interacted and influenced data sharing. Themes and sub-themes related to the individuals' and organizations' social identity and power are displayed in Table 1. Exemplar quotes are included in Table 1 as well. Figure 1 provides a graphic illustration of identified themes and their interactions. Figure 2 illustrates how our results build on prior work.

Individuals' Knowledge and Experience Using Data and Data Sharing were Related

Aligned with Wiehe's framework, which underscores the importance of having people with technical expertise, almost all participants (n = 8) expressed a high level of knowledge about data and data use, with a small subset (n = 2) reporting a lower level of knowledge about

data and data use. However, even participants who self-reported a lower level of knowledge about data and data use still expressed confidence in their ability to use data to tell stories. Participants' understanding and experience with data sharing was more variable. In some instances, participants' high level of knowledge about the data in their organization and existing legal protections contributed to the individual's hesitancy around how to share the data. If participants did express high levels of data sharing knowledge, their knowledge varied in understanding aggregate data sharing verse individual-level data sharing. Similarly, participants' experiences with sharing data varied on whether the shared data were individual-level data or aggregated. For example, a subset of participants (n = 3) who described themselves as not knowing how data sharing would work for their organization's data, were able to explain how aggregate data sharing could occur and ask technical questions related to sharing the individual-level data in light of the legal protections surrounding those data. Individuals with a lower level of knowledge about data sharing in their organization, particularly individual-level data sharing, expressed hesitancy at moving the data sharing project forward. Generally, participants with more experience sharing data also described higher levels of knowledge about data sharing. Participants with more experience sharing data tended to comment about the potential of the data sharing project and describe how they were leveraging their role in their organization to move the data sharing project forward within the organization.

Participants described legal concerns around sharing individual-level data, which while important to abide by do not always mean that individual-level data sharing cannot be accomplished. Indeed, participants often described how individual-level data could not be shared due to specific legal reasons, but then detailed the parameters under which individual-level data were or could be shared while still abiding by the legal frameworks.

Individuals' Sense of Empowerment Related to Data Sharing

Individuals Who Expressed Higher Levels of Empowerment

Most participants (n = 8) displayed a moderate or high sense of empowerment. These participants described using their organizational role to influence, assess, or make decisions about data sharing. This sense of empowerment was evident even for participants in lower positions of power within their organization. For example, participants with higher levels of empowerment but in a "lower power" organizational role, still made efforts to influence the decision making of their manager. At the same time, some participants (n = 3), while empowered, due to their position in their organization, still needed to defer to their manager to make finaal decisions. Participants with prior experience with data sharing projects seemed to exercise their power more often within their organizational role as it related to the data sharing effort.

Individuals Who Expressed Lower Levels of Empowerment

Participants who expressed lower levels of empowerment (n = 5), described needing to defer to their manager, without describing how they planned to influence their manger's decision. Most of these participants (n = 4) also described being hesitant to share their organization's data or a subset of their organization's data, which may contribute to why they preferred to defer to their manager for this and related data sharing decisions. One participant described feeling disempowered as a result of their role in their organization and the minimal level of decision making power they were afforded. This participant also expressed low levels of data knowledge and use and minimal data sharing competence. Overall, participants who expressed lower levels of empowerment may be choosing to defer to their manager because of concerns about legal protections surrounding the data, because they were questioning the

relevance of their organization's data to the project, or because they had limited experiences with data sharing, so they could not see the promise of the project, nor how they could use their position to actualize that potential.

Sense of Empowerment and Knowledge of Organization's Prior Data Sharing Efforts

Having a higher level of knowledge about the organization's data sharing history encompasses knowing who needs to approve data sharing, how to share data, as well as examples of previous data sharing efforts. Participants (n = 4) who expressed high levels of knowledge about the organization's data sharing history were able to describe how to move data sharing through the organization in a way that was facilitative for the data sharing project. These participants expressed higher levels of empowerment and were aware of who to pull into the data sharing effort (e.g., leadership, legal) and when to do that most advantageously.

Organizations' Data Sharing Processes, Data Collection, and Data Sharing Experiences

Most participants (n = 8) described formal data sharing processes, such as existing Memoranda of Understanding (MOUs), Data Sharing Agreements (DSAs), contracts, or other templates that could be used for the current project, at their organizations. Having organizational processes or resources in place that supported data sharing was perceived as facilitative for individuals moving a data sharing project through the organization, regardless of the individual's position in the organization. In organizations with well-defined and accessible data sharing processes and resources, even participants in lower power positions and participants with limited experience sharing data could still "see a path forward" through the existing processes. However, participants (n = 3) also perceived formal data sharing processes as sometimes prohibitive for data sharing, in that they could cause lengthy delays moving the project through these processes. This was particularly evident if there was a lack of leadership support for the project.

Despite most of their organizations having formal data sharing processes, participants (*n* = 8) also described areas in which their organizations could improve their data sharing processes, particularly for sharing individual-level data. Multiple participants (*n* = 3) who described their organization as needing additional formal data sharing processes also related that their organization had not previously shared individual-level data for research purposes. This lack of organizational-level capacity for individual-level data sharing made it challenging for individuals to support the data sharing project in their organization.

Many participants (*n* = 8) described their organization's previous experience sharing aggregate data, and almost all participants (*n* = 9) described their organizations' regular data sharing partners. Through the creation of positions and ongoing data sharing efforts, organizations made clear that they valued data sharing. Some participants (*n* = 5) also described their organization's previous experience sharing individual-level data with another entity.

An organization's prior experience sharing individual-level data was perceived as facilitative for the organization's ability to share individual-level data for this data sharing project. Prior experience sharing individual-level data often meant that the organization had organizational procedures and written processes in place that could help the individual move a data sharing project through the organization. However, negative prior experiences sharing data was a salient concern and a barrier for the current project. Half of the participants (*n* = 5) described negative experiences their organization had with sharing data previously. In some examples, negative experiences sharing data were related to the organization wanting to control how its image was portrayed, often described by participants as portraying its image accurately. In prior experiences, the organization experienced shared data being used incorrectly, contributing to an inaccurate and negative portrayal of the organization. Other negative

experiences sharing individual-level data were described as the result of poor planning by or limited capacity of the organization(s) receiving the data. For example, working with organizations that did not have the technical capacity to protect the data they were requesting resulted in a challenging experience for the organization trying to share its data.

While many individuals described their organization's prior experience sharing aggregate data, having prior experience sharing only aggregate data did not facilitate the organization's perceived ability to share individual-level data. Instead, the organization's prior experience sharing aggregate data seemed to be prohibitive for exploring how to share individual-level data, with participants (n = 5) often defaulting back to exploring how aggregate data could be shared, rather than considering how they might share individual-level data and the potential benefits for doing so.

Leadership within Hierarchical Cultures as an Exercise of Power

Aligned with Wiehe's model, leadership support emerged as an important organizational facilitator or barrier to data sharing. Participants (n = 7) described how leadership support for data sharing projects generally was facilitative for this specific data sharing project. Having high-level leadership support in the form of verbal or written "sign-on" was facilitative for the data sharing project. In most instances, these high-level leaders were not represented in the collaborative. Some participants (n = 2) gave examples of when high-level leadership prioritized a data sharing project, how that moved the project through the organization, despite other potential data sharing barriers. Participants (n = 3) spoke about increasing leadership's awareness of the current project as a way to increase support. A lack of leadership support emerged for one organization because it appeared that the leaders were unaware of the project. Even though the participant had a high-level of knowledge about their organization, a key decision making role

about data sharing, and was empowered to move data sharing projects through their organization, due to the hierarchical nature of the organization, the individual still found it challenging to navigate the organization and obtain leadership support. Participants (n = 3) also shared examples of how the organization's prior negative experiences with data sharing could deter leadership from supporting new data sharing projects. Prior negative organizational experiences with data sharing contributed to hesitancy by the leaders of multiple organizations to support the current data sharing project. In these instances, participants described needing to intentionally and iteratively advocate for why this project was different from previous efforts and how this project would provide value to the organization. Individuals who were empowered and who had high levels of knowledge about their organization's data sharing experiences, described doing this advocacy work with their leadership and through the organization.

Similarly, almost all participants (n = 8) described their organizational culture as hierarchical, with top-down decision making. A hierarchical organizational culture interacted with the individual's position and could make it challenging to move data sharing efforts through the organization. Being in an organizational position of power made the individual more confident in their ability to move the data sharing project forward. However, individuals nested in organizations with a very hierarchical structure described a limited ability to influence the outcomes of the data sharing project – even when they held a position of organizational power. Participants in hierarchical organizations described needing to strategize to move data sharing efforts through the organization. For example, participants described that any decisions about sharing data would involve consultation with multiple levels of leadership, as well as data sharing supports (e.g., legal and technical assistance).

Sharing Organizational Power by Building Capacity for Data Sharing

All participants (*n* = 10) described their organization as an organization that was trying to address social and public health challenges. Some participants (*n* = 5) described their organization as wanting to build cross-sector partnerships and support collaborative efforts. These participants described how data sharing can be an element of cross-sector partnerships, and how efforts to establish or maintain data sharing are an avenue through which organizations can build or deepen partnerships.

Several participants (*n* = 3) described their organization's internal efforts to build organizational capacity for partnering with other organizations to share data. For example, participants identified strategies such as grant funding to sustain the organization's ability to partner, and internal organizational policies and procedures, as elements that could increase internal capacity for partnership and data sharing. However, many participants (*n* = 9) described a lack of available resources to support data sharing efforts, either because there were limited resources at the organization or resources were not allocated to the project. In this sample, resource allocation was strongly contingent on obtaining high-level leadership support.

Over half of participants (*n* = 6) described how their organization's ability to collaborate in a data sharing partnership was also dependent on the other organizations' capacity to receive or share data. In other words, the organization's power to share data was limited by the other organization's capacity to engage in the data sharing. At the same time, some of these participants (*n* = 3) described efforts by their organization to use its resources (e.g., personnel with technical expertise) to support the partner organizations in addressing challenges to data sharing, so that a data sharing partnership could succeed. These examples demonstrate how organizations can use their power and position (e.g., resources) to support data sharing, particularly when partner organizations do not have demonstrated capacity for data sharing.

Discussion

Prior models of cross-sector, data sharing collaboratives have been predominantly informed by data sharing between two partners, often an academic institution (e.g., a university) and a community partner (e.g., a local government department). These models, while useful, are largely insufficient when engaging in data sharing efforts with multiple data sharing partners, particularly in light of variability in data sharing experience and capacity. Furthermore, prior models have been relatively silent on how individuals' and organizations' social identities and power influence their motivation to share data. Using interviews conducted with 10 members of a cross-sector data sharing collaborative, we explored how the individuals' and organizations' positionality interact when in a multi-organization collaborative to inform data sharing efforts. Our secondary, qualitative, thematic analysis shed light on the extent to which individual and organizational identity and power influence cross-sector data sharing efforts.

We identified multiple individual characteristics that were related to the individual's perceived or experienced ability to move the data sharing project forward in their organization. These included the individual's experiences with data, data use, and data sharing, generally and within their current organizations; the individual's sense of empowerment; and the individual's knowledge of their organization's history of data sharing. We also identified organizational characteristics related to the individual's perceived or experienced ability to advance the data sharing project. These organizational characteristics included the organization's existing data sharing processes, the organization's prior data sharing experiences, organizational leadership, and organizational hierarchy. While all represented organizations conveyed willingness to partner to share data, only some organizations' willingness translated into action to engage in data sharing partnerships. In the following sections, we situate these findings in the literature,

and describe how findings align with, expand on, and in some cases, deviate from, previous data sharing frameworks.

Individuals' achieved characteristics emerged as particularly salient in the current study. Aligned with identified solutions to data sharing barriers, collaborating with the "right people" in the organization was key to moving the data project forward (Wiehe et al., 2018). While working with individuals with technical data skills was facilitative for data sharing, previous experience engaging in data sharing appeared to help the individual appreciate the potential promise of the data sharing project. More specifically, having data sharing experience(s) within the individual's current organization was particularly helpful. Having data sharing experience(s) within their current organization often meant that the individual was more familiar with the nuances of the organization and the organization's data as related to data sharing, which translated into the individual's increased confidence and ability to navigate through the organization's data sharing processes. In other words, it appeared that having both knowledge of and experience with data, data use, and data sharing, particularly at their current organization, increased the individual's capacity to engage in data sharing and move the data sharing effort through their organization.

Individuals without prior experience sharing individual-level data, at organizations that did not have experience sharing individual-level data, struggled to identify pathways to share individual-level data successfully. Unexpectedly, experience sharing aggregate data – for the individual or the organization – seemed to be prohibitive to identifying pathways to share individual-level data. For example, when describing challenges to sharing individual-level data, individuals suggested sharing aggregate-level data as a solution to the challenges, rather than imagining solutions to achieve individual-level data sharing. At the same time, individuals shared examples in which these barriers to sharing individual-level data were overcome, most

notably for case management. While aggregate data can be beneficial to cross-sector data collaboratives and may be an acceptable intermediate step in advance of individual-level data sharing, aggregate data alone are often not sufficient (van Panhuis et al., 2014). However, there was a notable tension between individual's and organization's willingness, preparedness, and experience sharing individual-level data for case management, and their simultaneous fear, worry, and lack of motivation to share individual-level data for research or evaluation. These concerns may stem from a combination of real or perceived harm as a result of sharing individual-level data (e.g., concern about the data being used incorrectly), as well as existing policy protections (e.g., HIPAA, FERPA, and VAWA) and a desire to preserve individuals' confidentiality. Given the promise of cross-sector collaboratives to address complex public health challenges, it may be time to re-evaluate the disinclination to engage in individual-level data sharing for research and evaluation purposes. Instead, we can start to re-imagine and re-create how we can share individual-level data safely, with minimal harm to already marginalized communities or the organizations which safeguard their data.

Relatedly, sense of empowerment, which we defined as individuals using their organizational role to influence, assess, or make decisions about data sharing, emerged as a new aspect of data sharing partnerships. Specifically, we found that participants' sense of empowerment was important for individuals' ability to envision how they could move the data sharing project through their organization and to act and take steps down the data sharing path. For example, some participants discussed how they planned to describe the data sharing project to their manager, emphasizing alignment between the proposed project and the organization's mission, as one way to increase leadership buy-in. Similarly, participants who expressed higher levels of empowerment described how and when to pull in organizational leaders or technical

experts to move the data sharing project forward. In some ways, sense of empowerment is similar to previously described motivational barriers, which include a lack of personal or institutional incentives, opportunity cost, possible criticism, and disagreement on data use (van Panhuis et al., 2014). However, sense of empowerment expands on motivation to integrate perceptions of personal control with behaviors to exert control (Riger, 1993). Given the variety in participants' sense of empowerment in the current study, assessing individuals' motivation and capacity to advance data sharing efforts may be a useful preliminary step for multi-organization data sharing collaboratives. The transtheoretical model of health behavior change has been used in prior work with community coalitions to assess individuals' motivation and capacity to move from contemplation to action, to achieve the goals of the collective (see Finnegan et al., 2018). This type of assessment may be a valuable addition to cross-sector data sharing efforts.

Relatedly, individuals' ability to engage leadership to support data sharing efforts was seen as facilitative for data sharing efforts. Previous research has suggested that having leadership support increased individuals' motivation for data sharing projects (Mayfield et al., 2022), and that engaging leadership is critical for organizational buy-in for data sharing (Wiehe et al., 2018). Results from the current study highlight the role that individuals within the organization can take to engage high-level leadership as a way to advance data sharing efforts. Being strategic about when and how to engage high-level leadership appeared to be particularly beneficial in the hierarchical organizations represented in the current study. Understanding an organization's culture is an important step in preparing for data sharing (Wiehe et al., 2018), and this study highlights that hierarchical attributes may be a salient component of organizational culture related to data sharing.

Strategic engagement of high-level leadership also emerged as important in organizations with negative experiences sharing data. Indeed, best practices in university-community data sharing partnerships recommend that university researchers understand partners' organizational history with data sharing – such as data breaches – to adequately address community partners' concerns when entering into new data sharing partnership (Wiehe et al., 2018). The current study extends these findings, illustrating that negative data sharing experiences can include times when data sharing organizations felt misconstrued, or misrepresented, by data products. Even when data are protected, results from data sharing efforts may point to negative aspects of the organization sharing data. These experiences may diminish organizations' willingness to participate in future data sharing efforts and are thus important to understand and consider when initiating data sharing partnerships.

Furthermore, having formal data sharing processes in the organization may help to moderate the relationship between leadership support and data sharing, such that organizations with formal data sharing processes depend less on higher-level leadership support, since there are established processes to advance the data sharing effort. Having formal data sharing processes also appeared to diminish the impact of the importance of the individual's knowledge of data sharing and experience with data sharing at their organization. For example, individuals at organizations with established data sharing processes knew how to move a data sharing project forward, even if they had not previously been part of a similar data sharing effort at their organization or elsewhere. At the same time, these formal processes – although facilitative in some ways – could also derail data sharing projects, by increasing the amount of time to project completion. However, this consequence was viewed as minor and unavoidable by participants, particularly in light of the benefits of having formalized data sharing processes. Many

organizations have informal data sharing processes (Mayfield et al., 2022), highlighting the importance of developing these processes as part of building organizational capacity and readiness for data sharing, particularly for organizations engaged in collaborative, cross-sector data sharing partnerships.

Related to having data sharing processes, organizations were at different levels of their readiness to share data. This is common in data sharing partnerships, where even organizations that are motivated to share data may have different levels of organizational readiness for data sharing (Mayfield et al., 2022). We found that it was important to understand organizations' previous experiences sharing data and the purposes of these prior efforts. For example, organizations represented on the collaborative had different levels of experience with sharing data for research and evaluation. Organizations' experience with sharing data ranged from sharing individual-level data, sharing aggregate data, sharing individual-level data for case management, and not sharing any data. Given organizations' different levels of readiness for data sharing, organizational readiness assessments for data sharing may help to assess and build data sharing capacity (for additional information on organizational readiness, see Scaccia et al., 2015). Completing a readiness assessment may help individuals within the same organization, as well as their data sharing partners, understand, and align their goals, a necessary step in data sharing partnerships (Scaccia et al., 2015; Wiehe et al., 2018). Through organizational readiness assessments and subsequent capacity building, data partners may be more prepared to engage in data sharing.

In this study, participants identified data sharing as a form of partnership building, in that data sharing depends on both partners' capacity to work together to achieve a shared goal. Subsequently, some organizations with higher levels of data sharing capacity described sharing

power by using their resources to develop partners' data sharing capacity. Participants described that by engaging in a cross-sector, multi-organization collaborative, partners could share knowledge, resources, and technical solutions with one another. For example, one partner offered their technical resources for other organizational partners' use. This type of resource sharing has been described previously as occurring between universities and the data producers (Wiehe et al., 2018). There are often power imbalances between organizational partners, which can influence data sharing efforts (Ansell & Gash, 2008; Bryson et al., 2015) and the current study extends prior work by demonstrating how power sharing can occur between organizations, as part of a multi-organization data collaborative. This cross-sector partnership may have the added benefit of implicitly reducing university partners' power, by creating avenues for data partners to access resources to achieve data sharing through other, non-university partners. As seen in this collaborative, equitable data sharing may mean data sharers use their resources to build capacity for their organizational partners to achieve data sharing.

Solutions to complex public health challenges will continue to require partner engagement across sectors, and data sharing models engaging only two partners will no longer be sufficient. As organizations form multi-organizational partnerships, members should consider both the individuals' social identity and power within the partnership and their organization, as well as the organizations' social identity and power. Moreover, collaborative partners should consider who is and who should be represented in the collaborative, as well as what those individuals need from their organizations and the collaborative at large to equitably engage in this work. Readiness assessments and efforts to build the individuals' and organizations' capacity for data sharing, as a way to share power across organizations, should be considered.

Limitations

These findings should be interpreted within the context of the study's limitations. First, this study was cross-sectional, in that interviews occurred at one time point. Therefore, we cannot conclude to what extent individuals' and organizations' different identities and power influenced the data sharing project. Furthermore, as this study used secondary data, the interviews were not designed to address this study's aims. Therefore, interviewers did not ask questions to assess how individuals' ascribed characteristics (e.g., race, gender, education) influenced their positionality within the data collaborative and their organization and did not ask participants about how they perceived their organization's characteristics to influence their positionality within the data collaborative. Individuals' ascribed and achieved characteristics, and similarities and differences in these characteristics between individuals can impact partnership dynamics (Chandanabhumma et al., 2022; Muhammad et al., 2015). Therefore, it is likely that these characteristics impact data sharing partnerships as well. Future research that explicitly explores how individual and organizational characteristics influence data sharing collaboratives is needed. Finally, although member checks were conducted following the primary analysis, member checks did not occur for this study, in large part because of the two-year time lapse between data collection and this secondary analysis. As such, we determined a member check was not needed because we would be asking members to reflect on the extent to which these analyses reflected their experiences two years ago. Additionally, membership in the data collaborative and members' positions in their organizations have changed since data collection occurred.

Conclusion

Within the context of these limitations, results from this study offer important insight into important dynamics in cross sector collaboratives working to achieve data sharing. First, this

paper expands on previous data sharing frameworks in that it highlights the interactions between individual and organizational characteristics, and how these characteristics can act as constraints or facilitators to data sharing. Findings suggest that there are benefits to engaging multiple partners in data sharing efforts. For example, data sharing collaboratives can be spaces for co-learning and resource sharing to support data sharing. This deviates from previous data sharing models that center academic researchers and in which academic researchers in universities work with a single partner organization to use their data. Results from this study also emphasize the critical importance of understanding how identity and power influence cross-sector data sharing spaces, with implications for equity. Without explicit attention to how positionality influences data sharing efforts, the voices and perspectives of individuals and organizations who are empowered through existing policies, cultural norms, and practices, will continue to be prioritized. This prioritization comes at the cost of excluding the perspectives of individuals, communities, and organizations who continue to be marginalized. By attuning to individual and organizational social identity and power, data sharing efforts will be better situated to address health disparities.

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Table 1

Themes and Sub-themes related to Social Identity and Power in a Cross-sector Data-sharing Collaborative

Theme and sub-theme	Example quote	*n*
	Individual-level	
Knowledge and experience using data and data sharing		10
High levels of data sharing knowledge for aggregate data	…if we can aggregate up and still give you know, somebody the data that will help answer their question, then that's sometimes the easier way to do [data sharing] – Isabella	5
High levels of data sharing knowledge for individual data	…we have lots of processes in place to share restricted information with secure entities - Grace	4
High levels of data knowledge, low levels of data sharing experience and/or data sharing knowledge	I don't, I, you know, I'm not a- I'm not a data expert, by any means. I am far better at interpretation or explanation of the data. – Lisa	5
Sense of empowerment		
Empowered	I don't have final decision power, but I have the ability to influence um higher level leadership in terms of making recommendations about what we should prioritize. And I have the ability to like escalate, specific projects up to leadership in a way that is very facilitative for uh those approval processes. - Laura	8
Defers to manager	So we're, we're very much on the recommendation side, but they- they typically lean on us to help them make that final decision - Isabella	3
Disempowered	So I'm not really sure where [my Director] is gonna land and willingness to provide some of that data. I think generally speaking, we tend to be very protective of our data. - Wendy	5
	Organization-level	
Data sharing processes		

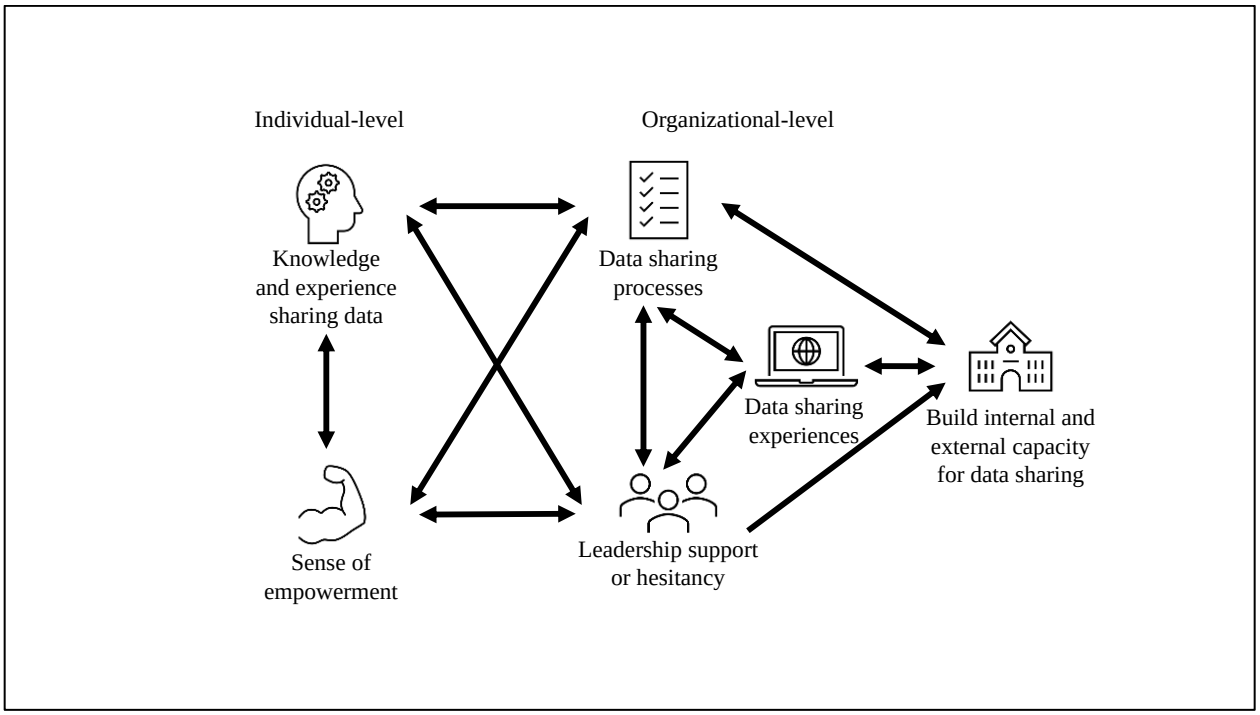
Has formal processes	So we have a process set up where people can request data, either through research studies, or in some cases, that are not for research studies…. And my team oversees that work - Melissa	8
Can improve data sharing processes	And we really don't have processes in place, or, you know, some of these like saying, you know, data sharing practices, or like I said, it's kind of an informal process where requests come to me, and then I look it over, decide how to respond - Wendy	8
Data sharing experience		
Regular data sharing partners	We share data periodically with a number of groups. One would be the [Steering Committee]. And related to that the [Steering Committee] for the purposes of planning for the [Community]. So we share data related to service volume, types of services provided, those kind of things." - Susan	9
Experience sharing aggregate data	We do have a publicly available [Dashboard] that tracks you know, high level [aggregate numbers]. But that's kind of it in terms of data sharing. - Wendy	8
Experience sharing individual- level data for research	[The Partner] was trying to do this project and they were trying to get, um they were kind of hitting a bunch of doors. Finally, they had a conversation with [Organization Leader]. And [Organization Leader] said, "Okay, we're going to get this done." And so it got escalated. And it was signed, because [The Partner] meets the minimum requirements for [legal] compliance. [Individual-level data sharing] required both the prioritization from [Leadership], a reasonable ask from [The Partner] and in a situation where we wanted to put our data. – Laura	4
Experience sharing individual- level data for services	because we're providing a [service], some pieces are restricted, you know, actual addresses of our clients, and obviously, their names and identifying information, but obviously there's some exceptions, you know, [Department A] and [Department B] and that sort of thing – Lisa	6
Negative experiences sharing individual-level data	…that data has been misinterpreted, repeatedly, like, in a frustrating way. – Andrew ….um, lack of technical capacity on the receiver side…. Um, like, poor design and poor planning [on both ends]. So projects that it just doesn't make sense [for us] to share data – Laura	5
Leadership as exercise of power		
Leadership as facilitative	We have a very supportive [leadership], at the moment, um, I have worked in environments in the past where that has not been the case. But right here right now, that's not an issue. - Susan	7

Leadership as prohibitive	the [Leadership] at the top, I mean, it really sets the tone, and they all, you know, have different approaches to how they want to approach data sharing. - Isabella	5
Building organizational capacity for data sharing		
Organization wants to be part of partnership/be a good partner	we do understand that it's a give and take with being able to share information that we have with other entities that can utilize that information. So I think [my Organization is] really looking at being very collaborative when it comes to data sharing, because [we] just don't collect nearly as much data as we would like to. So we can't get a full picture of what's happening without having some type of data sharing process in place. - Aisha	5
Organization takes internal steps to be a good partner	I do think that a transition that [Organization] wants to make is to shift into like long-term sustainable funding solutions. So not just like one off grants, but like, projects that can like, grow over time through grant funding. - Laura	3
Organization's ability to partner depends on other orgs	I guess the thing is, if you're data sharing, you can be as good as you possibly can be. But if the organization you're working with doesn't have similar tools in place, it can, it can be challenging - Andrea	6
Org takes steps to support other orgs' capacity to be a good partner	I have a strong technical team, they can have people on my team to help solve any technical issues to get the data shared - Grace	3
Lacks available resources/resource allocation	[My Organization] has the capacity, but [we] don't always allocate resources towards it – Laura Staff is certainly limited. We, depending on the request, generally only have one person who's pulling data for what we call data requests – Melissa	9
Hierarchical organizational culture	um pretty much it's just kind of running it up the chain to my direct supervisor… then it would go to our [next level of leadership]. And broader than that, then it would go to the [highest level of leadership] for approval. – Aisha	8

Note. N = 10. *n* = the number of participants who had at least one part of their interview coded as part of that theme. Pseudonyms were used to protect individuals' identity and privacy.

Figure 1

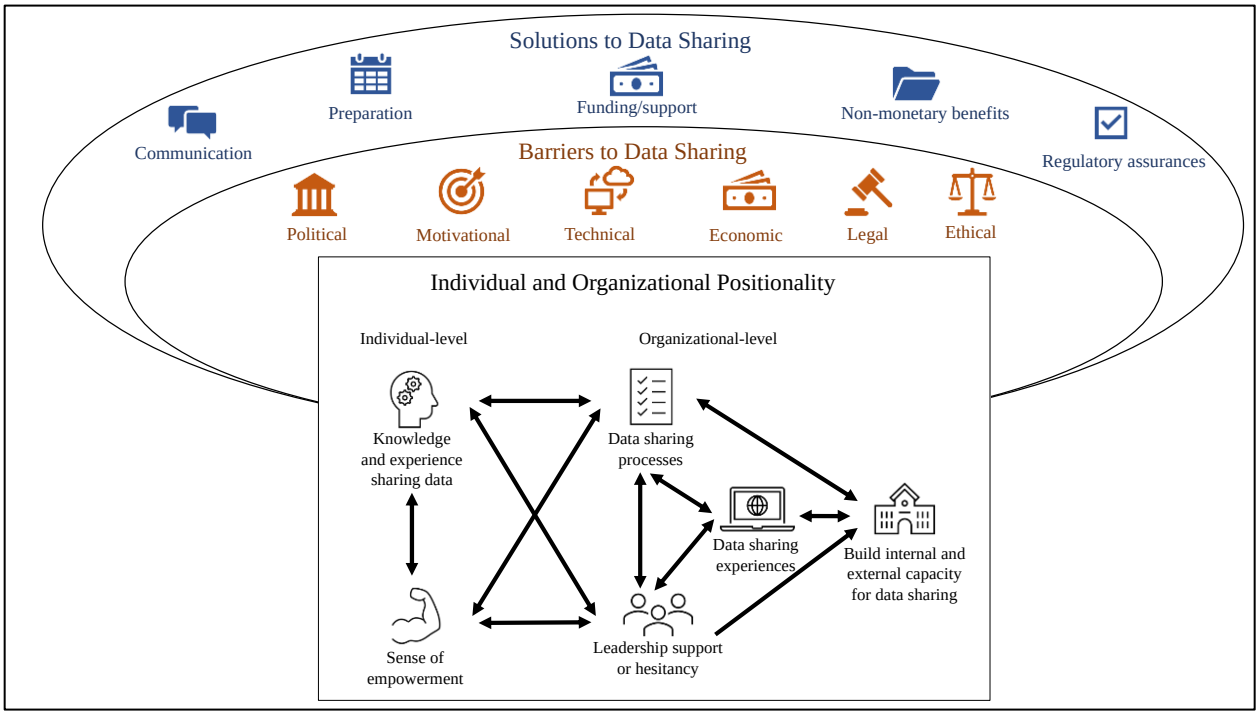
Individual and Organizational Positionality



Note. This figure shows how the social identity and power of the individual (on the left) interact with one another, as well as with the social identity and power of the organization (on the right). Double-headed arrows are used to indicate that participants described a bidirectional relationship. Single-headed arrows are used to indicate that participants descried the relationship as unidirectional. Knowledge and experience data sharing refers to both general and organization-specific experience.

Figure 2

Incorporating Individual and Organizational Positionality within Existing Data Sharing Models



Note. This figure shows how individual and organizational positionality expands on existing models for barriers and solutions to data sharing (van Panhuis et al., 2014; Wiehe et al., 2018).

CHAPTER 5 - DISCUSSION

This dissertation was motivated by the local focus on community violence prevention and intervention in the City of Charlotte and Mecklenburg County, following an increase in firearm-related violence (FRV) in Mecklenburg County from 2015-2020. Guided by the Ecological Systems Theory and Social Determinants of Health Framework for Action, the three manuscripts that comprise this dissertation used a variety of approaches to expand how we understand, operationalize, and respond to community violence. Study one explored experiences and perceptions of safety and violence among a sample of adults living in a neighborhood with high rates of violent crime. Study two described an innovative, place-based, integrated methodology that was used to explore perceptions of safety and violence using qualitative, geospatial, photographic, and quantitative methods. Finally, study three explored how social identity and power inform collaborative, cross-sector efforts to address community violence, among a sample of content experts currently participating in a data collaborative.

Summary of Findings

Below I organize overarching findings across the three studies of this dissertation in line with the Ecological Systems Theory and Social Determinants of Health Framework for Action: (1) Understanding community violence across ecological system levels and (2) Engaging in cross-sector collaboration to address community violence as a health disparity.

Understanding Community Violence across Ecological System Levels

Disparities in exposure to community violence, and particularly firearm-related homicides, are attributed in part to racial segregation, income inequality, neighborhood disadvantage, and socioeconomic disadvantage (Boeck et al., 2020), among other structural factors. However, these contextual factors have often been left out of local efforts to address

community violence. Recent attention has been given to the need for research that goes beyond the individual-level to explore the influence of factors across ecological levels (Carter et al., 2021). Furthermore, there is an increased recognition of the need for data and methodologies that capture these factors across systems and do not rely on any singular data source (Boeck et al., 2020; Carter et al., 2021). The current dissertation contributes to community violence research by addressing these two gaps.

In study one, we found that participants perceived historical and on-going disinvestment in the community as contributing to unsafe environments. Participants described FRV as one of several features of their neighborhood that contributed to them feeling unsafe. Lack of environmental investment, such as sewage systems and greenways, the presence of potholes and uneven sidewalks, as well as a lack of business investment and healthy food options, were described as components of unsafe neighborhoods. These features (or lack thereof) are likely a result of structural racism (Bailey et al., 2021). Similarly, prior research finds that rates of pedestrian fatalities were significantly higher in neighborhood tracts that received worse grades (on a scale of A through D) during redlining (Taylor et al., 2023). Relatedly, residential racial segregation as a result of redlining was related to reduced access to green space today (Nardone et al., 2021). These findings suggest that, while FRV is a prevalent safety concern for participants, it is one of many unsafe conditions participants face, as a result of structural racism.

In study two, which grows out of study one, we described an integrated, place-based methodology that used qualitative, geospatial, photographic, and quantitative data, collected from walking and sedentary interviews, as well as from publicly available sources. When comparing data generated through these different methods, we found that walking interviews generated data specific to place, including factors and conditions nested within higher levels of

the ecological system (such as the meso- and exosystem levels), compared to sedentary interviews, which tended to yield data specific to the individual and microsystem levels. This is consistent with prior work which found that, compared to sedentary interviews, walking interviews generated more spontaneous discussions of place, in part due to cues in the surrounding environment (Evans & Jones, 2011). These results, that walking interviews are well-suited for generating data related to place, are particularly meaningful in light of the findings from the first manuscript, that structural racism is an underlying cause of unsafe neighborhood conditions. Researchers and funders have called for the development of research approaches to directly examine how structural racism impacts rates of injury and violence (Rexing et al., 2020). As walking interviews are a method well suited to identifying how and where structural racism has resulted in unsafe neighborhood conditions, this integrated, place-based methodology (including walking interviews) may be employed as one response to such calls.

Additionally, results from both qualitative and photographic data added important nuance to the quantitative data – for example, by highlighting that although safety-promoting conditions such as sidewalks were present, they were in disrepair and often not useable, negating their utility. Overall, incorporating multiple, place-based methods provided more nuanced and actionable information when exploring how place is associated with health disparities such as community violence. Findings across these two papers underscore the importance of accounting for neighborhood- and community-level factors and conditions, as well as structural factors such as structural racism, as part of community violence prevention efforts. In addition, community violence prevention and intervention researchers should utilize methodologies that integrate multiple methods of data collection to generate data relevant to multiple ecological levels.

Engaging in Cross-sector Collaboration to Address Community Violence

The Social Determinants of Health Framework for Action emphasizes the need for cross-sector collaboration to effectively address health disparities, such as community violence. Among the strategies that can facilitate effective collaborations, data sharing, integration, and analysis are key elements to better understand complex community needs, inform program design and strategies, drive policy, and evaluate success (Bryson et al., 2015; Fischer et al., 2019). While barriers to cross-sector data sharing and associated benefits have been well documented (Mayfield et al., 2022; Van Panhuis et al., 2014; Wiehe et al., 2018), considerably less work has examined how these efforts are influenced by the positionality of individuals and organizations represented within these collaborative efforts. Social identities and resulting power differentials within collaborative efforts that go unaddressed have the potential to reproduce or exacerbate systemic health inequities (Muhammad et al., 2015). As such, study two (reflected in manuscript 3) explored how the positionality of individuals and organizations influenced cross-sector data sharing efforts.

We found that individuals' knowledge and experience in data use and data sharing, as well as their sense of empowerment, informed their perceptions of data sharing barriers and solutions. For organizations, formal data sharing processes, prior experiences sharing data, and hierarchical organizational cultures shaped the data sharing barriers they faced. Organizations exercised their power through leadership support and willingness to build their own and others' partnership capacity. The social identities and power of the individual and organization also interacted with one another to influence data sharing processes, through the individual's organizational role and their awareness of organizational data sharing processes and history. Specifically, individuals with prior data sharing experiences were able to see how to navigate the power structure in their organization, to contribute to the effort more effectively. Findings from

the third study provide supporting evidence that the interactions between the positionality of the individual and organization inform data sharing barriers and solutions. Collaborative data sharing efforts to address health disparities should incorporate a more holistic approach to understanding *who* is at the table, and how their experiences, positions, and identities influence their approach to data sharing.

Implications for Research and Practice

The current dissertation (including both its methods and findings) lays out a pathway for future research and practice. To begin, the first study provides evidence for the role of ecological factors, particularly as related to local context, in understanding residents' perceptions of safety and experiences of violence. Participants identified multiple elements that comprise the construct of community safety. In future research, these findings can be quantitatively examined at the neighborhood level, with particular attention paid to structural racism and dimensions of the current neighborhood context(s) such as development, gentrification, and displacement. Study two provides an example of how multiple, place-based methods can be integrated to inform efforts to address health disparities. We recommend consideration of how this type of integrated approach can be scaled, in addition to how participant voice can be further embedded throughout the research process (e.g., through the use of photo voice instead of photo elicitation, as co-researchers throughout the study design and implementation). Additionally, future research in collaborative, cross-sector data sharing efforts should incorporate explicit questions about how sociodemographic characteristics of the individual (i.e., race, gender, age, education, employment) and organization (i.e., a predominantly white institution, a service-oriented institution, organization size, directing body) may serve as barriers and facilitators to data sharing.

Findings also have local implications. Study one was conducted in an area in Charlotte that is the implementation site for a community violence interruption program. This area is also receiving targeted economic investment. An early evaluation of the community violence interruption program suggests that program staff are providing resources to participants to address their limited access to components represented in this study, such as a lack of access to food and safe and reliable housing (Gaines et al., 2023). The current study lends credence to these Year 1 evaluation results, and further emphasizes the necessity of addressing aspects that are "upstream" from violent crime. Although Beatties Ford Corridor is receiving targeted economic investment and is the pilot site for a staying-in-place program (i.e., a collaborative approach to provide opportunity for residents who want to stay in their neighborhoods to remain, while preserving housing affordability for future generations; City of Charlotte, 2023), results from study one suggest that such efforts should be guided, shaped, and modified by resident input throughout the entire process. Without ongoing input from residents, efforts risk being perceived as alienating to current residents. Finally, community development and investment, although well-intentioned and necessary, may unintentionally contribute to residents' concerns regarding displacement. Those leading efforts to address a legacy of structural racism should carefully consider the potential for unintended impacts. For instance, if investment efforts result in the displacement of Black residents from historically Black neighborhoods, then these efforts will have contributed to the ongoing legacy of structural racism, instead of disrupting or starting to repair the harms caused by this legacy.

Relatedly, results from study three can be used to guide strategies for collaborative efforts. As one example, members of the data collaborative that was the focus of this study effort are currently determining how to engage people with lived experience in upcoming shared data

projects, empowering those with lived experience to make decisions over how their data are used. Additionally, results can be used by other local, collaborations, to encourage members to question who is over-, or under-represented in similar, collaborative efforts. These questions may lead to important restructuring of collaborative efforts, which can ultimately shift the problems that are identified, the types of questions asked, the data deemed trustworthy and reliable, and the inferences drawn.

Limitations

These dissertation findings should be considered in the context of study limitations, including issues of sampling strategies and recruitment, which lead to saturation-related concerns. For example, study one used a purposeful, snowball sampling strategy to recruit participants with diverse identities that may affect their experiences and perceptions of safety and violence. Despite multiple and varied recruitment efforts, none of our participants described direct victimizaion from FRV, which limits our understanding of how FRV can impact sense of safety. However, a core study objective was to explore whether there are other components beyond FRV that contribute to residents' sense of safety. Findings can guide future practice considerations, as well as research directions that could be explored, related to a more comprehensive understanding of sense of safety. In study two, all data were collected first from sedentary interviews, then from walking interviews. Research examining the influence of order on the content generated from each interview could enhance understanding of the differences between data collected from sedentary and walking interviews. Furthermore, quantitative data were only examined at one time point and only used data available through the Quality of Life Explorer. Integration of longitudinal data and other data sources (e.g., zoning maps) could provide insight into causal relationships between structural racism (e.g., redlining, urban renewal

efforts) and current neighborhood conditions (e.g., low median household income, lack of sidewalk availability, lack of grocery stores). Finally, study three used secondary data. Therefore, questions pertaining specifically to positionality were not asked. Findings may differ in the context of a study focused on how positionality informs data sharing. For example, the role of lived experience may emerge as a more salient factor to consider in data sharing efforts. Future research should use qualitative and quantitative approaches to explore the relationship between positionality and data sharing.

Conclusion

The current dissertation research used the Ecological Systems Theory and Social Determinants Framework for Action to frame local efforts and expand how we understand, operationalize, and respond to community violence. Findings from the studies integrated in this dissertation contribute to the extant literature by (a) identifying factors across ecological system levels that inform perceptions of safety and violence; (b) describing an integrated, place-based methodology that can be used in health disparities research; and (c) providing initial evidence that, in the context of a cross-sector collaborative addressing community violence, the positionality of individuals and organizations inform barriers and facilitators to data sharing. This dissertation provides direction for local efforts and lays the foundation for a research agenda that supports effective, successful cross-sector collaboration to address risk factors and root causes of community violence across ecological levels.

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