Urban Green Space and Social Cohesion at Nicholl Park in Richmond, CA

Mina P. Rossman

ABSTRACT

Strong social cohesion in a community is important for human well-being. It is established that access to urban green spaces is associated with greater social cohesion for residents, but the specific physical green space features that contribute to this relationship and the mechanisms by which the effect happens are unclear. I conducted semi-structured interviews with people who use Nicholl Park in Richmond, CA, to understand their park use patterns, perceptions of the park, and how they interact with others in their community. Using frameworks from previous literature on social cohesion, I used these results to assess the state of social cohesion between people who use Nicholl Park. I found that people are drawn to the park because of its variety of recreational spaces and facilities, but that people are deterred from using the park due to its need for better maintenance, lighting, and access to restrooms. People who visit Nicholl Park more often, involved in structured recreation programs or community service at the park, feel more connected to the park and others who use it, which contributes to greater social cohesion overall. The findings of the study will be useful for determining what improvements can be made to the park's programs and management to bring more people to the space and strengthen social cohesion among local residents.

KEYWORDS

perception, place attachment, community, [one more keyword], semi-structured interviews

INTRODUCTION

As we increase our reliance on digital means to connect with others, it is important to cultivate spaces for people to interact with each other face-to-face. More in-person communication is associated with more sleep, greater feelings of acceptance from others, and other mental health benefits (Pea et al. 2012). Social cohesion, which relies on in-person interactions, is an indicator of the state of a community, characterized by feelings of trust, a sense of belonging, and a desire for the community's well-being. (Schiefer and van der Noll 2017, Wan et al. 2021). Unfortunately, social cohesion has been in overall decline in developed countries (Green et al. 2011). The daily positive social interactions associated with better social cohesion relieve social tensions and provide relief from everyday routine (Hartig et al. 2014) which ultimately supports heightened human physiological health, happiness, and well-being (Delhey and Dragolov 2016, Jennings and Bamkole 2019). Greater cohesion is also particularly important for older adults because it creates expanded social support networks on which they can rely when formal social agencies cannot provide adequate support (Kweon et al. 1998). As such, its use as an assessment of health is increasing, especially by governments of developed countries looking to strengthen their country's resilience (Chan et al. 2006, Chuang et al. 2013).

Urban green space use and access correlate with higher social cohesion in the communities surrounding these spaces (Kweon et al. 1998, Sullivan et al. 2004, Jennings and Bamkole 2019, Wan et al. 2021). Social cohesion, being a characteristic of a neighborhood as a whole (rather than a characteristic of individuals), is influenced by "physical characteristics of the neighborhood, such as the availability and quality of green space and natural elements" (Hartig et al. 2014). In addition to physical characteristics, perceptions of the environment and use patterns also determine the extent an urban green space facilitates local social cohesion (Wan et al. 2021). Other specific features that contribute to this relationship and the mechanisms by which the effect happens are unclear, as well as the directionality of the relationship (Jennings and Bamkole 2019), especially because perceptions and uses of green spaces differ across cultures and locations (Oh et al. 2022). Given that the connections between urban green space and social cohesion will vary on a case-by-case basis, it is critical to explore this relationship across a variety of communities that experience different methods of access to green spaces.

Moreover, it is a well-established fact that there is not equitable access to urban green spaces everywhere, especially in big cities. This means that certain communities also miss out on the health benefits provided by green spaces. Understanding the urban green space-social cohesion relationship in these communities can provide insight into management strategies that make the most of existing green spaces' potential for facilitating local social cohesion and help support the health of the community. In reviewing the literature on this phenomenon, there were no studies on the topic that focused on the Bay Area. Like other major US cities, the Bay Area has a history of redlining communities of color which has resulted in a lack of mobility for those people from those communities (Aaronson et al. 2021). This, paired with a lack of investment and siting of noxious land uses in historically redlined communities, has resulted in communities of color carrying a disproportionate environmental pollution burden (Nardone et al. 2020). The city of Richmond shares this history: Data from CalEnviroscreen indicates that most census tracts in Richmond hold the top 25 percentile of pollution burden scores in CalEnviroscreen, designating these areas as SB 535 disadvantaged communities (Monserrat 2015). SB 535 disadvantaged communities are targeted for investment to increase climate adaptation and resilience (Monserrat 2015), which could be utilized to improve parks for increased mental and physical health. Therefore, these communities are effective places to understand how we can best manage green spaces to improve overall community health, by increasing social cohesion, with management strategies suggested in the conclusion of this research.

To investigate how urban green space facilitates social cohesion in Richmond, CA, I seek to understand specifically how urban green space provided by neighborhood parks encourages social cohesion within the surrounding community. I focused my research on a large, central park in Richmond; Nicholl Park. To answer my central research question, I investigated what characteristics of Nicholl Park draw people to it, their opinions of the park, as well as how connected park users feel to their neighbors. I also assessed what groups within Richmond's population seemed to be using the park the most.

FRAMEWORK

Study site

      A review of existing literature revealed a significant gap in studies concerning the relationship between urban green space and social cohesion, in that very little focus on the Bay Area. Richmond is a city in the East Bay, across from San Francisco, in California. It is north of Berkeley, from which it can be reached by car in 20 minutes. The city's location on a peninsula and its deepwater shipping ports, which can handle large and heavy cargo ships, has attracted industries to the city throughout its history (Richmond, CA - Official Website 2015). The siting of such industry is a major cause of the environmental issues that the city faces today.

      The first big industry that moved operations to Richmond was Standard Oil, now referred to as Chevron. The company built its refinery there in 1902 and has remained in the city since (Richmond, CA - Official Website 2015). Although the company and its refinery are a significant employer for the city, accidents at the refinery have been the source of multiple health hazard events. Notably, in 2012, a fire at the refinery caused 15,000 residents to seek medical attention for respiratory issues (US EPA 2018). Through the first half of the 20th century, industries continued to locate in Richmond. The industrial boom peaked during WWII, with a significant influx of workers from the south and southwest, drawn to the Kaiser Richmond Shipyards (Johnson 1991). The influx created a sharp increase in housing demand. In response, when new houses were built in Richmond, local housing officials, supported by backlash from white residents, intended to keep the inland areas for white residents and concentrate black residents along the shipyards and railroad (Johnson 1991).

      This pattern persists today, with people of color residing predominantly in the center of Richmond (CalEnviroScreen 4.0 2021). This area is geographically defined by the 580 freeway to the south, the 80 to the east, and the Richmond Parkway, an arterial road that runs along the shoreline to intersect the 80 and 580. Figure 1, shows that the area surrounding these major roads has higher concentrations of diesel particulate matter and higher rates of asthma; more than 90% of the rest of California. Because there are such high levels of pollution, most of these communities have a CalEnviroscreen percentile score of 75 or more, designating them as SB 535's disadvantaged communities. This score takes into account the pollution burden experienced by a

population, as well as the population characteristics that may make them more susceptible to the effects of pollution (Admin 2015). These areas are shown in Figure 1.
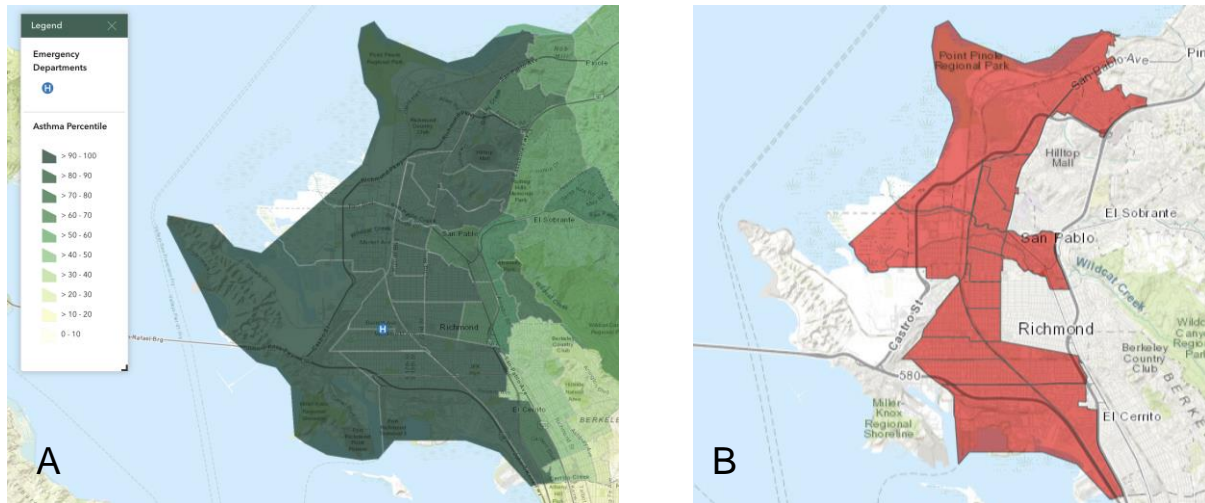
Figure 1. Health Disparities in Richmond. A. Asthma percentiles for each census tract in Richmond. B. Map of SB 535 disadvantaged communities, depicted in red. (CalEnviroScreen 4.0 2021)

In the center of Richmond, in an SB 535-designated disadvantaged community, is Nicholl Park. The park has a variety of facilities: tennis courts, a playground, baseball and softball fields, a putting green, a small skate park, grass lawns, and a few benches and picnic tables. The recreation department, local organizations, and individuals use the park for various community events, park work days, and celebrations. Throughout its history, the park has had many updates, but it likely receives less attention than Richmond regional parks surrounding the city, which offer a greater area and variety of natural recreational green space.

Across the park, on Macdonald Ave, is the local non-profit YES! Nature to Neighborhoods. A large part of their work focuses on bringing Richmond residents together in the outdoors, who otherwise experience cultural, financial, or other constraints to green space access ("Our Mission & Vision" n.d.). In recent years, one of their many projects has focused on making improvements to Nicholl Park based on community needs, with funding from the city's "Love Your Block" grant (A. Kircher, *personal communication*). They want to continue work at the park and, as they also work toward building community in Richmond, I will be sharing my findings with them. They are assisting my research by sharing their knowledge of the park and the local community, as well as getting in touch with participants for the research.

Defining social cohesion

Although the concept of social cohesion has been studied for quite some time, the definition remains varied among researchers, which presents a challenge in determining exactly what social cohesion looks like in and around Nicholl Park. Chan et al. (2006), a work widely cited in literature involving social cohesion, argues that social cohesion is a state of affairs concerning interactions among members of society, characterized by attitudes that include trust, a sense of belonging, and the willingness to participate and help. Chan et al. most emphasized the fact that social cohesion does not require that people in a community have specific shared values such as, for example, respect for diversity. It may be the case that certain values are more conducive to increased social cohesion. Still, they argue that communities can have other kinds of values that are more important for their community's trust and connectedness with one another. For this reason, I will define social cohesion in terms of any specific shared values as well.

The variations concern what specific factors contribute to social cohesion, but in definitions presented across recent literature, some factors appear most often. Schiefer and van der Noll (2017) proposed a definition that captures these essential features of social cohesion, highlighting 3 core elements that characterize a cohesive society: The quality of social relations (including social networks, trust, acceptance of diversity, and participation), identification with the social entity, and orientation towards the common good (sense of responsibility, solidarity, compliance to social order). Because their definition well summarizes proposed definitions of social cohesion, I use their definition as a framework for analyzing the level of social cohesion between people who use Nicholl Park, as well as between park users and their neighbors.

Urban green space and social cohesion

Previous research has established that there is a correlation between access to adequate green space and increased social cohesion (Hartig et al. 2014). The exact features of green spaces that contribute to this relationship and the mechanism that creates this relationship are still a bit unclear, as well as the directionality of the relationship (Jennings and Bamkole 2019).

Literature does agree that physical characteristics play a large part. For instance, the presence of greenery, vegetation, and gardens in parks is notably associated with greater social cohesion. These characteristics draw people to the space: more social interactions happen in these spaces, people build relationships and create community, strengthening social cohesion (Kweon et al. 1998, Sullivan et al. 2004). Conversely, some features like the presence of trees in urban green spaces, might correlate with lower levels of social cohesion if people feel that it would encourage more crime in the space (Hong et al. 2018).

A literature review conducted by Wan et al. (2021) analyzed 51 studies on green space and social cohesion, and concluded that people's perceptions of the space and their use patterns also indirectly determine to what extent an urban green space can facilitate local social cohesion, in addition to physical characteristics. Specific perceptions that affect this relationship are people's perceptions of the spaces' greenness, proximity, and safety. Visitors' frequency and duration of visits, the activities they do there, and level of participation in the design and management of the space are use patterns that will affect the social cohesion in a green space as well.

The relationships between physical characteristics, perceptions, and uses of the space are not necessarily linear; use patterns and perceptions will affect each other and ultimately social cohesion, as visualized in Figure 2. Informed by this model, my analysis of Nicholl Park focused on how its physical characteristics and the community's perceptions and usage patterns contribute to social cohesion in the area. I will ask interview and survey questions related to people's use and perceptions of the park, and their opinions of its physical characteristics.
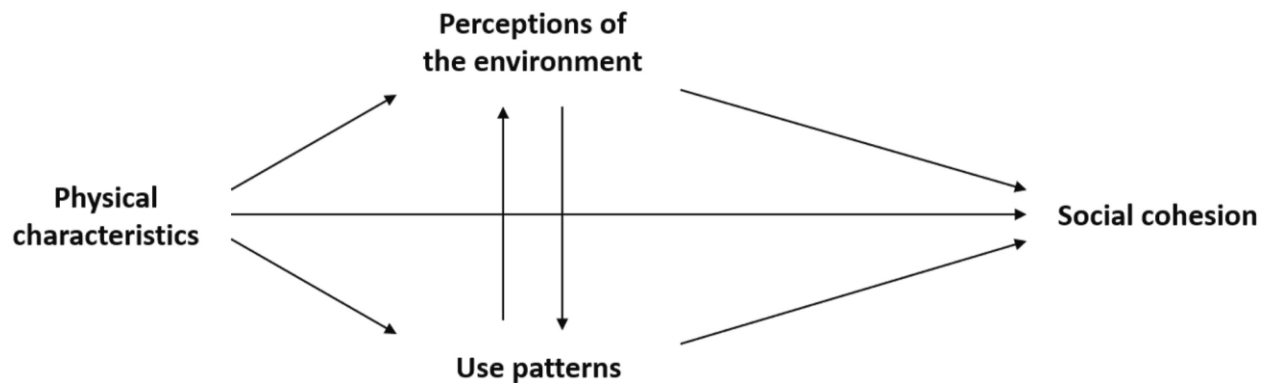

Figure 2. Conceptual model of the relationship between green space and social cohesion. (Wan et. al 2021)

Methodology

Many studies that intend to measure social cohesion at the city or country level usually use survey data, or assess a variety of population metrics, when such data is available. However, I believe the imprecise nature of the definition of social cohesion reflects the fact that populations will experience varying degrees of social cohesion in different ways. The lack of a consensus on a singular set of factors contributing to social cohesion shows that the same framework cannot be applied to all populations, especially since a large portion of social cohesion research has focused on only European countries (Oh et al. 2022). Furthermore, as mentioned earlier, the way that people use green spaces will vary by culture and location, which means that the park uses, perceptions, and physical characteristics that affect them will also vary by location. As such, I used semi-structured interviews and open-ended surveys to understand the experiences and perspectives of people who use Nicholl Park, which would allow for more detailed and insightful answers about how people interact with the park.

METHODS

Semi-structured interviews

I conducted 9 interviews throughout February and March of 2024. I shared information about the project through the YES Nature to Neighborhoods mailing list, and onsite at Nicholl Park. I required that participants must have visited the park within the last 6 months. Participants verbally provided informed consent at the beginning of the interview. As a thank-you for their time, I gave participants a $10 gift card. I conducted and recorded all interviews via Zoom. I transcribed the audio using Otter.ai, double-checked the transcriptions for mistakes or personal information, and removed these manually. I coded the interviews by looking for information corresponding to the general topics of use patterns, perceptions, and interactions between people, and then analyzed for common themes appearing within each of these topics.

Park use and perceptions questions

Through the interview questions, I assessed participants' use patterns of the park, as well as their perceptions of the space, according to the topics outlined by my research framework. To

learn more about visitors' park use, I specifically asked about the frequency and duration of visits, activities, and participation in activities at the park. Through the questions pertaining to perception, I gathered insight into participants' views of the park in terms of safety, greenery, and proximity, as well as their overall opinions of the space if they wanted to share opinions that fell outside of these categories. The full list of interview questions can be found in Appendix A.

Social cohesion questions

To more directly address the matter of social cohesion, I created a set of questions to learn more about people's interactions with members of their community both in and outside of the park. Unless the participant brought up such topics toward the beginning of the interview, I kept questions pertaining to social relations for the end of the interview to build rapport with interviewees beforehand. These questions corresponded to the three main aspects of social cohesion as defined by Schiefer and van der Noll (2017): the quality of social relations, identification with the social entity, and orientation toward the common good. Table 1 shows the list of questions pertaining to each aspect.

Table 1. Interview questions relating to the three main aspects of social cohesion

Aspect	Sub-topic	Question(s)
Quality of social relations	Closeness	Does it seem like people at the park are friendly? Do people initiate conversation?
		Do you usually recognize other people when you visit the park?
	Trust	Do you feel that you could ask for help from someone here at the park if you needed it? Would you help others if they approached you for help?
Identification with Social Entity	Place attachment	Would you say that Richmond is special to you? Do you strongly identify with your neighborhood?
	Sense of belonging	Do you feel that you have strong social support here? Do you feel close to others?
Feeling of		Are you a part of any community groups in the area?

Aspect	Sub-topic	Question(s)
responsibility for the common good		What kinds of things do you guys do? How often?

Surveys

Later on in my data collection process, I also created and distributed a survey through Qualtrics XM, through which I collected 18 responses. This way, I could reach more people if they preferred to participate via survey and reach people who primarily spoke Spanish, as I do not have the skills to conduct an interview in Spanish myself. I could not verify parental consent for those under 18 for the survey, since I distributed it electronically and did not directly interact with participants, so I surveyed those under 18 which collected low-risk information. I asked about their favorite things about Nicholl Park, the activities they do, who they visit with, and what they would change about the park. The questions for the adult survey were the same as what I asked in the interviews but with about half of the questions being converted to have multi-select answers. I presented questions regarding the participant's interactions with others as a set of statements about their interactions with others in the park having Likert-scale answers on the scale of "Strongly agree" to "Strongly disagree." All questions had the option to add more detail through open-ended answers. I translated all the survey questions into Spanish for the Spanish language survey option, as well as all the corresponding written answers, using DeepL online translator. The full list of child and adult survey questions can be found in Appendix B.

Participant demographics

To determine what part of Richmond's population uses Nicholl Park, I collected interview participants' demographic information. At the end of the interview, I asked participants to fill out a quick Google Form indicating their age range, gender, race, income range, and zip code. The same questions were included at the end of the survey as well. I did not ask for participants' names and made all questions optional. In my data analysis, I calculated the percentages of participants

belonging to each age and income range, race category, and gender identity to compare them to the demographics of Richmond's population.

RESULTS

Ultimately, I collected a total of 27 survey and interview responses. I conducted 9 interviews: 6 with adults and 3 with older adolescents whose parents had given consent. I collected 18 survey responses: 7 from adults and 11 from people under 18.

Park use

Frequency and duration of visits

Of the 16 interview participants and the adults who responded to the survey, 44% visited once a week, 22% visited once every two weeks, and 19% stated that they visited once a month. One participant reported visiting at least two times a week, and another did not answer this question on the survey. As for the duration of park visits, people reported spending anywhere from 1-30 minutes to two hours at the park during their usual visit. 19% of people stay for less than 30 min, 31% for 30 min-1 hr, 38% for 1-2 hrs, and 12% for 2 or more hours. People who are usually visiting for 1-2 hours are usually there with their children, especially to play on the playground. People who are visiting for smaller amounts of time are usually at the park to walk around or rest. Cases in which participants mentioned being at the park for 2 or more hours were usually there for community service events or parties.

Activities and public participation

Of the 26 total people that I interviewed and surveyed about park activities, 21 stated that they use Nicholl Park primarily for active recreation activities. 88% of people like to walk around the park, 46% play (using the playground facilities), and 27% use facilities designated for specific sports (skateboarding, baseball, and tennis). 37% of participants mentioned participating in community service activities at the park. Most of the time, these activities involved park beautification and maintenance, but two participants also mentioned providing resources for others (hot meals, educational resources, etc.). 81% of people reported going to the park with family,

31% with friends, and 27% alone. All participants who stated that they go to the park with friends were between 0-18 years old. Those who go to the park alone like to run, walk, or rest there.

Park perceptions

Proximity

Perceived greenness does not influence people's perception of Nicholl Park as much as perceived proximity and safety. The park is seen as a central space in Richmond both in terms of its physical location and social significance. One interview participant said to me, "[Nicholl Park] just happens to be really close to a lot of activities that the kids have like there's the Art Center down the street…. School for our older one is right close by and there's the East Bay Center for Performing Arts… and then YES is right across the street so it's just really close to a lot of stuff." All but one person I spoke to said it was always easy for them to get there; either by car (the most common form of transportation), or by walking to the park, if the walk took about 15 minutes or less. Another interview participant described Nicholl Park as a "principal" park in Richmond. I spoke to one person who frequently referred to Nicholl Park as "Richmond Park." For reference, there is no Richmond Park in Richmond, CA.

Safety

Across all 26 interview and survey responses, 23% of people explicitly mentioned safety. 19% stated that they were concerned by the use of drugs, alcohol, or smoking in the park when asked about what they dislike about the park or would change about it. The biggest issue, mentioned by 5 people, is the lack of lighting at Nicholl Park; there are large stadium-style lights and lamp posts in the park, but several do not work and there aren't enough to light the whole park. People stated that this keeps them from staying at the park past dark because they cannot see well and feel it is unsafe.

Maintenance and cleanliness

Although the lack of lighting is also a maintenance issue, 33% of survey and interview participants brought up other concerns related to the cleanliness and maintenance of Nicholl Park. Such concerns contributed to a negative perception of the park, and are things that people would

like to change about it. One participant told me, "[Nicholl Park] is … more like worn and torn, as far as the play structures," and when talking about the baseball fields there, said, "the bench areas, it's almost like, laughable … I wouldn't feel comfortable, like, setting up a game with someone else like outside of our community." People have expressed that Nicholl Park's facilities are in need of updates and repairs. 33% of all participants also mentioned issues regarding the bathrooms at Nicholl Park, noting that they are not clean and need to be open more often. 19% of people mentioned issues with trash around the park in general, too. One person noticed that "there's trash bins that are around the whole field and none of them have trash [bags] in there." The third largest issue, mentioned by 15% of interview and survey participants, was the presence of graffiti on the restrooms and in the skatepark area. One interviewee expressed, "the bathroom was, like, filled with graffiti … I feel like it made people think it was an unsafe place, or like, it didn't make it feel as welcoming." Another person described the graffiti as "an eyesore."

Social cohesion

Quality of social relations

63% of 16 interview and adult survey participants agreed that other people at the park are friendly. However, only 38% of people said that they would initiate conversation with others at the park. 44% of people have recognized other visitors when they go to Nicholl Park. One interviewee who volunteers as a baseball coach at the park said, "Before doing baseball, no, I didn't recognize anyone … so I don't think I ever recognized a person there for the first four years. And then after baseball, during baseball season … I don't even think I can count that." However, there was only one person who said, in an interview, that they recognize a few people in the park consistently. This interview participant goes to the park at least 2 times a week, for a couple of hours, at a consistent time during the day. They had said, "I don't get into deep conversation because they're usually working out and stuff, but I will take up a little bit of time to just say, 'Hey, how are you?'"

Most people told me that others would say hi or greet people in some way as they passed each other in the park, but 19% of people stated that they did not feel people were necessarily friendly. One interview participant told me: "Nicholl Park, as opposed to the ones more on the East Side of the bay, like people are a little bit more standoffish…People are a little bit more on

guard. I'm not sure why." They went on to describe how parks in other places have more parents with kids, where parents might initiate conversation more. Another person described a similar observation, saying that "[other parks] are a little smaller, a bit more focused on what it is … There's like, a section where all the parents sit, you know, so it lends itself more to have conversations or at least greet one another. I think [Nicholl Park] is just so big and it has so many options."

In response to an example scenario in which I asked interview participants if they would feel comfortable asking for the help of a stranger at Nicholl Park in the case that they needed assistance, 84% of interviewees said yes, but that it would depend on the person. Only one interviewee confidently said "yes" to the question. In the survey, 29% of participants indicated that they felt people at the park are trustworthy. 57% said that they neither agree nor disagree with the statement that people at the park are trustworthy. Survey respondents who visited the park for at least 30 minutes once a week generally agreed with all of the statements presented in the survey, indicating that they feel people at the park are friendly and trustworthy, they feel safe when visiting the park, identify with their community, and feel a sense of belonging in Richmond.

Identification with social entity

When I asked people if they imagined themself living in Richmond for a long time, older adults who had been living in Richmond for several years, especially if they had started families there, responded "Yes." The young people I interviewed don't necessarily imagine themselves living there for a long time but are attached to the city because they grew up there. One young participant said, "after college … I plan to come back. Maybe not like, forever … I feel like leaving and then coming back to make it better." 71% of survey participants agree that they feel a strong sense of belonging in Richmond, but 29% of participants said they disagree with the statement. 57% of survey respondents stated that they feel a strong sense of belonging in Richmond.

Feeling of responsibility for the common good

6 of 7 adult survey participants agreed that community service is important to them, and 8 out of 9 interview participants are consistently involved in community service activities. Given that I reached out to many interview and survey participants through YES Nature to Neighborhoods, most participants had done community service work like beautification and

maintenance at Nicholl Park, through YES. Two interview participants described organizing clean-ups with their friends, family, our neighbors at Nicholl Park or other parks near their home. Speaking about the trash issues in other parks near their home, one person described "I will opt to go to the parks that feel cleaner and safer. I mean, I'm trying to work with the parks here too … like I said, we go specifically just to clean up the parks to try and help." Another person, who frequently uses the skate park at Nicholl Park, expressed "[I'll] put in a request with the city to get like, the grass cut there because for whatever reason, they don't always cut it. And there'll be always litter left around, so we go pick up litter and stuff like that … and we'll just host the space to invite families more into skateboarding … and stuff like that." Participants who were parents with children were more likely to initiate actions like these to help or improve Richmond's community.

Interview and survey participant demographics

2 interview participants did not fill out the demographic information questionnaire, leaving 14 people who did fill out the form. Of the adult interview and survey participants that responded to the form, they were primarily Hispanic or Latino (71%) and identified as female (%71). 52% of all 27 interview and survey respondents were younger than 18 years old. There was 1 respondent who identified in each of the following categories (7% of questionnaire respondent group): Indigenous/Native American or Alaska Native, White or Caucasian, Asian or Pacific Islander, or two or more races. 50% of people reported having an income of $0-$30,000, but at least half of this group was under 18 or students. There were 29% of people who reported having an income of $30,001-$60,000. 7% (1 person) had an income between $60,001-$90,000. 29% of people did not answer the question. Figure 3 shows a map of zip code areas in Richmond. 64% of participants live in the 94801 area, 29% live in 94804, and 7% live in 91806.
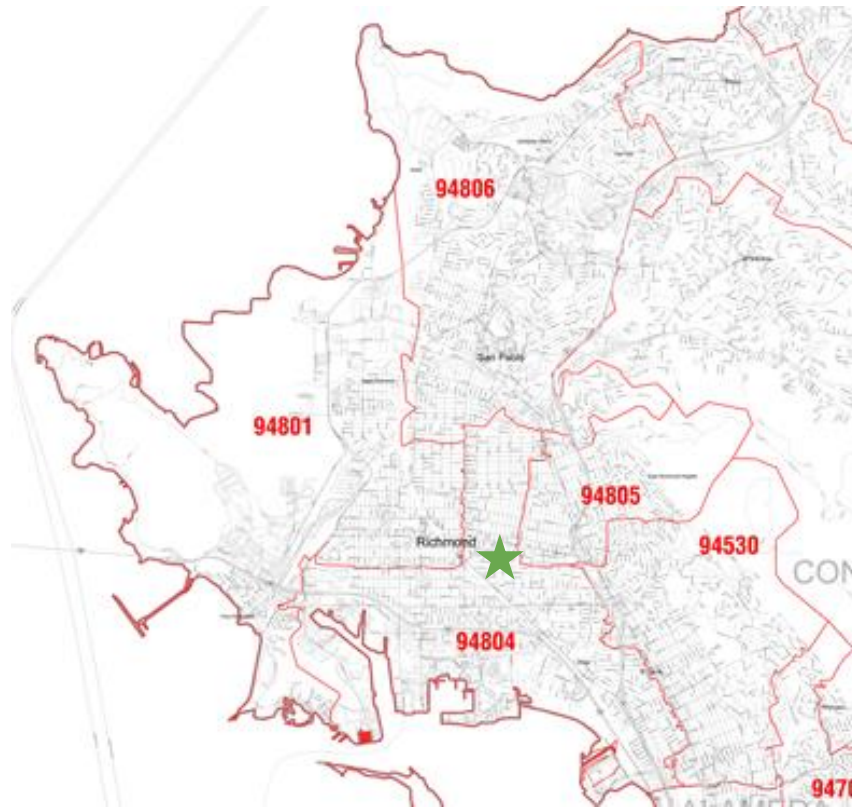
Figure 3. Richmond zip codes. The green star marks Nicholl Park's location. ("Richmond California Zip Code Wall Map" 2024)

DISCUSSION

The results of both the surveys and interviews indicate that people who visit Nicholl Park more often are also more connected to their community. People appreciate that the park is large, easy to get to, and can support a wide variety of activities, but agree that the park is not as well-maintained as the other parks in Richmond. In instances where people felt uncomfortable or unsafe at the park, it was most often due to issues with the physical and perceived safety of the park due to its physical characteristics. People generally agree that people at the park are friendly, and those who visit the park consistently feel more connected to their community, but negative interactions with others at the park have a strong negative impact on feelings of connection at social cohesion at Nicholl Park. My project provides insight into how people interact with each other at Nicholl Park, how people see the space improving to bring more people to the space and support interaction and contributes to current literature on the pathways between physical attributes of green spaces and how they support social cohesion.

Park uses affecting social cohesion

Nicholl Park supports many activities that provide opportunities to build community at the park. However, rather than all people in all parts of the park interacting with one another, park visitors usually stick to one or two activities that they consistently visit the park for, and in those spaces, it is most likely that social cohesion is strengthened. People who visit the park for structured activities with other people like sports games (organized by the recreation department) or community service (organized by individuals and local organizations) recognize more people at the park when they are there because they visit the park more consistently and interact with others who like using the space, which becomes a way for people to connect. As seen in both the survey and interview responses, people who visit at least once a week, even for 30 minutes, have overall better perceptions of other people at the park and their connection to their community. These findings align with Kweon et al.'s (1998) work, which emphasizes that individuals who visit a green space more often will probably have more social ties with others there.

Most participants stated that they go to the park with others; usually family members. Therefore, there tends not to be an intention to initiate extended conversation (something beyond an acknowledgment of a fellow park visitor) with other people outside of their visiting group. These findings align with those of Peters (2010), who found that visitors to parks in the Netherlands who visited with other people were more focused on their interactions with those people rather than other people in the park.

Physical characteristics affecting safety and aesthetic perceptions

There are safety concerns at the park connected to both its physical characteristics and social factors. People feel that Nicholl Park is a nice place overall, but there is not a strong sense that everyone feels safe and comfortable there. As found in Loukaitou-Sideris et al.'s (2016) study, which found that installing good lighting helped elders feel safer when visiting parks, the same applies to Nicholl Park as well. This issue is a direct barrier that prevents people from using the space more which would create more opportunities for connection, but also creates a perception

of the park being an unsafe space overall. The lack of bathroom and water fountain access also limits the amount of time that people can spend at the park, limiting opportunities for connection.

A couple of surprising results of the study are that vegetation was not a significant factor in people's perception of Nicholl Park, and that graffiti was brought up as a substantial safety and maintenance issue that negatively affects people's perceptions of the park. One of the most commonly researched perceptions of green spaces is the perception of greenness (Wan et al. 2021, Francis et al., 2012, Sefcik et al. 2019), but when asked how Nicholl Park's vegetation compares to other parks in Richmond, interview participants did not seem to make note of the vegetation that is at the park, so nobody had expressed any strong opinions about it. This is very different from what most other studies have found, in which people like having more greenery in their parks and neighborhoods, but one reason that this may not be the case in my study is that Richmond is surrounded by multiple large, regional parks which have much more greenery. As such, Richmond Residents are not more or less drawn to Nicholl Park because of its vegetation. Finally, the presence of graffiti did make people feel that the park might be less safe or deterred them from areas with graffiti because they considered it to be unpleasant-looking.

Face-to-face interactions at the park

Further detrimental to social cohesion through park interactions are real and perceived threats to personal safety Wan et al. (2021). One interview participant recounted an experience in which their child had said that they were offered drugs by an older group of kids at the park. This interaction resulted in them choosing to go to Nicholl Park less often. Another interview participant described their experience at Nicholl Park in which they felt by others for their family's racial background. These experiences have not resulted in them seeking out visits to Nicholl Park less often, but it does create a diminished sense of belonging, negatively affecting that person's sense of belonging and overall social cohesion. These situations indicate that there is an overarching community dynamic affecting social cohesion in Richmond that likely cannot be effectively addressed by just the environment at Nicholl Park. Cultural and racial dynamics in Richmond's community reflect greater society and country-wide social dynamics.

Nicholl Park's community

My interview and survey participants as a whole had slightly different demographics from Richmond's population as a whole. My participant population was 71% Hispanic or Latino, 71% identified as female, and 52% of all 27 interview and survey respondents were younger than 18 years old. Richmond is 44% Hispanic or Latino, 50.6% female, and 21% of the population is under 18 (U.S. Census Bureau 2023). The larger portion of female-identifying people who visit the park could be due to traditional familial gender roles in which women are the primary caretakers of their children and thus would be the ones to take them to the park. due to differences in park use between different cultures. There may be a large population of people under 18 that use Nicholl Park because it provides a free, large open space for kids to gather, that is in a central location to other commonly used spaces (Sefcik et al. 2019). These results indicate that the park may not feel as accessible to other racial groups, however, demographics of those using Nicholl Park do better reflect the racial makuep of the areas more closely surrounding Nicholl Park, which can range anywhere from 54%-73% Hispanic or Latino (CalEnviroScreen 4.0 2021).

My results show that Nicholl Park overall has done a good job of functioning as a space for connections between community members, increasing social cohesion. However, it could use some maintenance to freshen up the park and encourage its continued use. People's descriptions of their interactions with the park show that there are issues when it comes to social cohesion in Richmond. These results are similar to that of (source(s)), and they supported Schiefer and van der Noll's (2017) framework for defining social cohesion. However, the results are different in that (why they are different if they are different)

Limitations

The biggest limitation of this research is that I could not possibly survey or interview everyone who uses Nicholl Park. I intended to get 12-15 interviews, but was only able to do 9. Furthermore, a lot of these responses may be biased toward people who are particularly excited to talk about Nicholl Park, since those are the people that reached out to me for interviews. This in itself is not a bad thing, but it is more difficult to understand why people who don't want to go to Nicholl Park feel that way since my outreach efforts were focused on the park and the places surrounding it. Secondly, many other, if not all, studies on social cohesion and green space use a

survey instrument with a set of statements and scaled answers (strongly disagree to strongly agree). Although I do include some of these questions in the survey, I chose to ask these kinds of questions in the interview to get a more nuanced understanding of people's interactions with others at the park. This means that the broader applicability to other studies that primarily use surveys is limited, as they also have more quantitative analyses.

Future directions

Given that part of the original gap being filled by this research is that there are not any studies done on social cohesion and green space in the Bay Area, the field would benefit from having more studies located in different cities across the U.S. in addition to the Bay Area. On a smaller scale, it would be useful to repeat the research at another park in Richmond or in another city close by to compare the results, which would produce further insight into how each park affects connection in their local communities. Additionally, given the differences in the population that uses Nicholl Park versus Richmond's whole population, the study would also benefit from further research on the experiences of specific racial groups at the park to understand the differences in use.

Broader implications

These results continue to reinforce the observation that the physical characteristics of green spaces do affect people's use and perceptions of parks and thus affect how people connect to one another in that space. My findings add more nuance to Wan et al.'s framework for the relationships between public urban green spaces and social cohesion: Physical factors should also be considered when thinking about perceived safety, because in this way they indirectly, though strongly, change how safe people feel in a space. Finally, it also had direct management implications for the park. People have made it clear that Nicholl Park needs some fixing up and more consistent maintenance to make it more accessible and appealing for people to spend time there. Based on the findings of my research, the baseball field benches, playground equipment, bathrooms, and trash cans are the most in need of repairs and aesthetic updates. This may be due to the decreased funding for parks and recreation departments, but it does provide data that shows which parts of the park people

love, value, and use, which can be used by the city of Richmond to understand which parts of the park also need the most attention. Knowing that people like to use sports facilities at the park, they could better maintain them to encourage the continued use of those facilities.

ACKNOWLEDGEMENTS

REFERENCES

Aaronson, D., J. Faber, D. Hartley, B. Mazumder, and P. Sharkey. 2021. The long-run effects of the 1930s HOLC "redlining" maps on place-based measures of economic opportunity and socioeconomic success. Regional Science and Urban Economics 86:103622.

Admin, O. 2015, May 18. Scoring & Model. Text. https://oehha.ca.gov/calenviroscreen/scoring-model.

CalEnviroScreen 4.0 Results. 2021, October. .
https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/Cal
EnviroScreen-4_0/.

Chan, J., H.-P. To, and E. Chan. 2006. Reconsidering Social Cohesion: Developing a Definition
and Analytical Framework for Empirical Research. Social Indicators Research 75:273–
302.

Chuang, Y.-C., K.-Y. Chuang, and T.-H. Yang. 2013. Social cohesion matters in health.
International Journal for Equity in Health 12:87.

City of Richmond. 2019. Richmond Resilience Roadmap Report. Deliverable of the TCC
Planning Grant. Richmond, CA, USA.

Delhey, J., and G. Dragolov. 2016. Happier together. Social cohesion and subjective well-being
in Europe. International Journal of Psychology 51:163–176.

EPA [Environmental Protection Agency]. 2018. Chevron Settlement Information Sheet.
Overviews and Factsheets. https://www.epa.gov/enforcement/chevron-settlement-
information-sheet.

Francis, J., B. Giles-Corti, L. Wood, and M. Knuiman. 2012. Creating sense of
community: The role of public space. Journal of Environmental Psychology 32:401–409.

Green, A., G. Janmaat, and H. Cheng. 2011. Social Cohesion: Converging and Diverging Trends.
National Institute Economic Review 215:R6–R22.

Hartig, T., R. Mitchell, S. de Vries, and H. Frumkin. 2014. Nature and Health. Annual Review of
Public Health 35:207–228.

Hong, A., J. F. Sallis, A. C. King, T. L. Conway, B. Saelens, K. L. Cain, E. H. Fox, and L. D.

Frank. 2018. Linking green space to neighborhood social capital in older adults: The role of perceived safety. Social Science & Medicine 207:38–45.

Jennings, V., and O. Bamkole. 2019. The Relationship between Social Cohesion and Urban Green Space: An Avenue for Health Promotion. International Journal of Environmental Research and Public Health 16.

Johnson, M. S. 1991. Urban Arsenals: War Housing and Social Change in Richmond and Oakland, California, 1941-1945. Pacific Historical Review 60:283–308.

Kweon, B.-S., W. C. Sullivan, and A. R. Wiley. 1998. Green Common Spaces and the Social Integration of Inner-City Older Adults. Environment and Behavior 30:832–858.

Loukaitou-Sideris, A., L. Levy-Storms, L. Chen, and M. Brozen. 2016. Parks for an Aging Population: Needs and Preferences of Low-Income Seniors in Los Angeles. Journal of the American Planning Association 82:236–251.

MapSALES. 2024. Richmond California Zip Code Wall Map.. https://www.mapsales.com/marketmaps/city-wall-maps/zip-code/california/red-line-richmond-wall-map.aspx.

Monserrat, L. 2015, November 20. SB 535 Disadvantaged Communities. Text. https://oehha.ca.gov/calenviroscreen/sb535.

Nardone, A., J. A. Casey, R. Morello-Frosch, M. Mujahid, J. R. Balmes, and N. Thakur. 2020. Associations between historical residential redlining and current age-adjusted rates of emergency department visits due to asthma across eight cities in California: an ecological study. The Lancet Planetary Health 4:e24–e31.

Oh, R. R. Y., Y. Zhang, L. T. P. Nghiem, C. Chang, C. L. Y. Tan, S. A. Quazi, D. F. Shanahan, B. B. Lin, K. J. Gaston, R. A. Fuller, and R. L. Carrasco. 2022. Connection to nature and

time spent in gardens predicts social cohesion. Urban Forestry & Urban Greening 74:127655.

Our Mission & Vision. (n.d.). https://www.yesfamilies.org/our-mission-vision.

Richmond, CA - Official Website. 2015. History of Richmond. https://ci.richmond.ca.us/112/History-of-Richmond.

Schiefer, D., and J. van der Noll. 2017. The Essentials of Social Cohesion: A Literature Review. Social Indicators Research 132:579–603.

Sefcik, J. S., M. C. Kondo, H. Klusaritz, E. Sarantschin, S. Solomon, A. Roepke, E. C. South, and S. F. Jacoby. 2019. Perceptions of Nature and Access to Green Space in Four Urban Neighborhoods. International Journal of Environmental Research and Public Health 16:2313.

Sullivan, W. C., F. E. Kuo, and S. F. Depooter. 2004. The Fruit of Urban Nature: Vital Neighborhood Spaces. Environment and Behavior 36:678–700.

U.S. Census Bureau. 2023. U.S. Census Bureau QuickFacts: Richmond city, California. https://www.census.gov/quickfacts/fact/table/richmondcitycalifornia/PST045223.

Wan, C., G. Q. Shen, and S. Choi. 2021. Underlying relationships between public urban green spaces and social cohesion: A systematic literature review. City, Culture and Society 24:100383.

APPENDIX A: Interview Questions

Aspect	Sub-topic	Question(s)
Use patterns	Frequency	When was the last time you visited Nicholl Park? How often would you say you visit the park?
	Activities	What do you like to do at the park? Who do you go to the park with?
	Duration	How much time do you usually spend at the park? Would you spend more time at the park if you could?
	Public Participation	Have you participated in any events at the park? Who were they put on by?
Perception of the park	Greeness	Do you feel that Nicholl Park has a lot of vegetation?
	Proximity	Is it easy for you to get to the park? How much time does it take for you to get to the park?
	Safety	Is there anything about Nicholl Park that makes you feel unsafe?
	Overall Opinion	How does Nicholl Park compare to other parks you have been to in Richmond? Is there anything you dislike about the park? What would you change about it?
Social Cohesion		
Quality of social relations	Closeness	Does it seem like people at the park are friendly? Do people initiate conversation? Do you usually recognize other people when you visit the park?
	Trust	Do you feel that you could ask for help from someone here at the park if you needed it? Would you help others if they approached you for help?

Aspect	Sub-topic	Question(s)
Identification with Social Entity	Place attachment	Would you say that Richmond is special to you? Do you strongly identify with your neighborhood?
	Sense of belonging	Do you feel that you have strong social support here? Do you feel close to others?
Feeling of responsibility for the common good		Are you a part of any community groups in the area? What kinds of things do you guys do? How often?

APPENDIX B: Survey Questions

Berkeley
UNIVERSITY OF CALIFORNIA

English ⌄

Child/Teen or Adult Survey Option

Please choose the child/teen or adult survey option:

○ Children and Teens (under 18)
○ Adult Survey (18 and over)

Child/Teen Survey Consent

Hello! Thank you so much for starting this survey! My name is Mina, and this survey is for my college research project. I am studying how people use Nicholl Park, and how it helps them feel more connected to their community. This survey will ask about how you use Nicholl park, and what you like and don't like about it. If you do not feel comfortable answering some of the questions on the survey, you do not need to answer them. You are free to stop the survey at any time. The survey is anonymous, so these answers will

not be able to be traced back to you. Once I have analyzed the results and summarized them, I will share them with local non-profit organization YES Nature to Neighborhoods, and Richmond's Parks and Recreation department so that they both can use the information for their work in the park.

 If you have any questions, please feel free to email me at minarossman@berkeley.edu

◯ I understand and wish to continue

◯ I do not wish to continue

Child/Teen Q block

What is your favorite part of Nicholl Park

◯ Tennis Courts

◯ Swings

◯ Playground

◯ Baseball fields

◯ Skate park

◯ Grass fields/Soccer fields

◯ Walking track

◯ Putting green

◯ Softball fields

◯ Community garden

What do you like to do at Nicholl Park?

Who do you go to Nicholl Park with?

○ My family

○ My friends

○ [   ] Other

If you could change one thing about Nicholl Park, what would it be?

What is your favorite park in Richmond and why?

Adult Survey Consent

Hello! Thank you so much for starting this survey! My name is Mina, and this survey is for my undergraduate thesis project. I am studying how people's use of Nicholl Park and their interactions with others there relates to how connected they are to their community. This survey will ask about how you use Nicholl park and what you like and dislike about it, and then there will be a section that asks you to agree or disagree with a set of statement about how you interact with your community. Finally, there will be a short section to provide your demographic information. I will use the results of this section to compare the characteristics of people who use Nicholl Park to the characteristics of people living in Richmond. If you do not feel comfortable answering some of the questions on the survey, you do not need to answer them. You are free to stop the survey at any time. The survey is anonymous, so these answers will not be able to be traced back to you. Once I have analyzed the results and summarized them, I will share them with local non-profit organization YES Nature to Neighborhoods, and Richmond's Parks and

Recreation department so that they both can use the information for their work in the park.

 If you have any questions, please feel free to email me at minarossman@berkeley.edu

○ I understand and wish to continue
○ I do not wish to continue

Adult Q Block

How often do you visit Nicholl Park?

○ Once a month
○ Once every two weeks
○ 1 time a week
○ 2 times a week
○ 3 times a week
○ More than 3 times a week
○ [   ] Other

How much time do you usually spend Nicholl Park?

○ 30< minutes

○ 30 min – 1 hour
○ 1-2 hours
○ 2-3 hours
○ 3+ hours
○ [   ] Other

What do you usually do at Nicholl Park?

[   ]

Who do you usually go to the Nicholl Park with?

☐ My family/children
☐ By myself
☐ Friends
☐ [   ] Other

Would you spend more time at the park if you could?

○ Yes
○ Maybe
○ No

What would allow or encourage you to spend more time at the park?

Have you participated in any events put on at the park?

○ No
○ Yes

If so, who put on the event(s) and what was it?

How does Nicholl Park compare to other parks you have been to in Richmond?

How do you normally travel to the park?

○ Car
○ Bus (Public Transportation)
○ Bike
○ Walk
○ [   ] Other

How long does it take you to get to the park?

○ 5 min
○ 10 min

○ 15 min
○ 20 min
○ 30 min

Is there anything you dislike about Nicholl Park? What would you change about the park?

[ ]

Please indicate how much you agree or disagree with the following statements:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I usually recognize people at the park	○	○	○	○	○
People at the park are friendly	○	○	○	○	○
I initiate conversation with others at the park	○	○	○	○	○
People at the park are trustworthy	○	○	○	○	○

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel safe when visiting the park	○	○	○	○	○
There is a feeling of togetherness at the park	○	○	○	○	○
I feel a strong sense of belonging in Richmond	○	○	○	○	○
Community service is important to me	○	○	○	○	○
My community is an important part of my identity	○	○	○	○	○
I have social support here.	○	○	○	○	○

Please feel free to elaborate on any of your answers to the previous question here, or to share more of your thoughts on the state of community in and surrounding the park. Having more information will help my project!

```
┌──────────────────────────────────────────────────────────────────┐
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                  ⟋ │
└──────────────────────────────────────────────────────────────────┘
```

Demographic Info

What is your age range?

○ 0-18
○ 19-24
○ 25-34
○ 35-44
○ 45-54
○ 55-64
○ 64+
○ Prefer not to answer

Gender

○ Female
○ Male
○ Non-binary
○ Prefer not to say

Race (select all that apply)

○ Asian or Pacific Islander

○ White or Caucasian

○ Black or African American

○ Hispanic or Latino

○ Indigenous/Native American or Alaska Native

○ Prefer not to say

○ [   ] Other

Income Range

○ $0-$30,000

○ $31,000-$60,000

○ $61,000-$90,000

○ $91,000-$120,000

○ $120,000+

○ Prefer not to answer

Zip Code

Powered by Qualtrics