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Community-Engaged Public Health Research to Inform Hospital Campus Planning in a Low Socioeconomic Status Urban Neighborhood

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Abstract

Objective: To compare sociodemographic and motivational factors for healthcare use and identify desirable health-promoting resources among groups in a low socioeconomic status (SES) community in Chicago, IL. **Background:** Disparities in health services and outcomes are well established in low SES urban neighborhoods in the United States and many factors beyond service availability and quality impact community health. Yet there is no clear process for engaging communities in building resources to improve population-level health in such locales. **Methods:** A hospital building project led to a partnership of public health researchers, architects, and planners who conducted community-engaged research. We collected resident data and compared factors for healthcare use and choice and likelihood of engaging new health-promoting services. **Results:** Neighborhood areas were strongly associated with ethnic groupings, and there were differences between groups in healthcare choice and service needs, such as, proximity to home was more important to Latinos than African Americans in choice of

healthcare facility ($p_{\text{adj}} = .001$). Latinos expressed higher likelihood to use a fitness facility ($p_{\text{adj}} = .001$). Despite differences in vehicle ownership, >75% of all respondents indicated that nearby public transportation was important in choosing healthcare. **Conclusion:** Knowledge of community needs and heterogeneity is essential to decision makers of facility and community development plans. Partnerships between public health, urban planning, architecture, and local constituents should be cultivated toward focus on reducing health disparities. Further work to integrate community perspectives through the planning and design process and to evaluate the long-term impact of such efforts is needed.

Keywords: health disparities, community health, healthcare architecture, urban planning, health needs assessment, multidisciplinary research, public health

Background

In recent decades, health organizations have acknowledged both need and responsibility to focus on population health in addition to individual health. In the 1990s, the term *health needs assessment* was coined as a “systematic approach to ensuring that the health service uses its resources to improve the health of the population in the most efficient way” (Wright, Williams, & Wilkinson, 1998, p. 1310). Despite some researchers’ calls at the time for increased local community involvement in decision making (Jordan, Dowswell, Harrison, Lilford, & Mort, 1998), best practice for meaningful community engagement and shared ownership in health needs research and resource decision making remains somewhat unclear (National Network of Public Health Institutes, 2011).

Based on comparative research of populations, disparities in health outcomes have been well documented in the United States. Yet, solutions to reduce these disparities remain elusive (Fiscella & Williams, 2004; Margellos, Silva, & Whitman, 2004; Pickett & Pearl, 2001). Concomitant disparities in healthcare access and health outcomes continue to affect minority communities disproportionately (Andersen & Newman, 2005; Himmelstein & Woolhandler, 1995; Schiller, Lucas, Ward, & Peregoy, 2012). Although socioeconomic status (SES)-associated spatial disparities in access to healthcare services have been demonstrated (Comber, Brunson, & Radburn, 2011), neither presence nor use of healthcare services in low SES communities have necessarily translated to improved health outcomes relative to higher SES groups (Alter, Stukel, Chong, & Henry, 2011). In

addition, the notion of access to various types of care is multidimensional and nuanced, and varies by population (Comber et al., 2011; Shaw et al., 2013).

Various socioeconomic and environmental factors can impact use of healthcare and choice of healthcare service facilities. In areas with higher income and higher prevalence of employment, third-party payer and provider contractual factors have played a clear role in patients’ selection of providers (Abraham et al., 2011). In areas where uninsured, underinsured, and Medicaid-qualified populations are prevalent, substitution of local hospital emergency room use for primary care is common, with perceived urgent need, lack of knowledge about available services, and proximity as likely contributing factors (Cohen, 1989; Shaw et al., 2013). Studies have indicated that past experience with a facility (Philips et al., 2010) and factors such as reputation, referrals, recommendations from family and friends, and satisfaction (Abraham et al., 2011) were integral to healthcare decision making in some communities. However, there is a paucity of such research in low SES urban populations.

Improvements in access to and use of healthcare services alone are not likely to address health disparities adequately, since numerous social and environmental factors are inherently intertwined in the systemic problem (Koh et al., 2010; Pickett & Pearl, 2001). Over recent decades, leaders in public health have noted the limitations of reductionist research methods and have called for greater emphasis on systems-oriented thinking and approaches (Roux, 2011) that may address environmental and social determinants of health through improved daily living conditions and reductions in inequities in power and resources (Marmot, Friel, Bell, Houweling, & Taylor,

2008; Srinivasan, O'Fallon, & Dearry, 2003). In particular, key community-level built environmental determinants of health include project and public resource allocation, transportation planning, and land use definition (Northridge, Sclar, & Biswas, 2003). Systems-oriented studies have indicated that addressing social and environmental factors such as social cohesion, employment, and neighborhood attractiveness can impact community-level chronic disease prevalence trajectories (Mahamoud, Roche, & Homer, 2013; Brittin, Araz, Nam, & Huang, 2014). In addition, many public health experts have noted that experimentation in local projects is needed to build knowledge and forge progress toward improvements in urban health disparities (Rydin et al., 2012).

In a low SES area of Chicago, Illinois, Saint Anthony Hospital, a privately owned, mid-sized, short-term, acute-care community hospital has planned to build a new hospital and clinic facility and community campus to include other health promoting services, with a broad vision of evolving the community toward a culture and higher level of health. Prior health needs assessment research in this area of Chicago in 2004–2005 documented significant local health disparities. For example, 35% of Latinos and 39% of African Americans versus 18% of Non-Hispanic Whites were obese (Whitman, Williams, & Shah, 2004). The same study also documented health-related behaviors and found that minority residents were more dependent on public transportation and shopped for groceries far less often than non-Hispanic White residents (Shah & Whitman, 2005).

The potential Saint Anthony Hospital building project represented an opportunity to actively engage the local community in research to augment the prior needs assessment findings with residents' own perspectives on their health-related preferences and needs. The goal was to uncover and interweave local perspectives and context into the processes of community service definition, urban planning, and architectural design, in order to maximize positive community-level health impact. A multidisciplinary team was assembled, including experts in public health research, architecture, urban planning, and healthcare. Key community informants and stakeholders were identified. The research was intended to identify local residential ethnic patterning and to provide a better

understanding of similarities and differences among local ethnic group populations so that services and structures could be designed for optimal appeal across the service area. The team's overriding intention was to direct hospital and community campus design toward a long-term goal of measurable improvements in community health. The research focused on residents in the Saint Anthony Hospital service area, a population comprised predominantly of Latinos (most of Mexican background or lineage) and African Americans. The specific aims were to identify and compare sociodemographic and motivational factors that influenced healthcare use and healthcare facility choices between the two groups and to explore and identify what health-promoting and community-enhancing services residents envisioned using in the area.

Methods

We conducted community research in Chicago, Illinois, in 2011–2012. Initial development included the formation of multidisciplinary research and community partnerships. Qualitative findings from key informant interviews and community focus groups (Elijah-Barnwell et al., 2012) provided insights about residents' perceptions of health and their community and guided development of a quantitative survey. We gathered data on perceived health, decision factors for healthcare utilization, envisioning use of potential community health-promoting services, and neighborhood ethnic patterning. The findings are being applied in the design process for a new community healthcare campus intended to promote health across the local ethnic constituencies. The community-engaged research also laid groundwork for future evaluation of the built project's community health outcomes (see Figure 1).

The research protocol was reviewed and approved by the Institutional Review Board of the University of Nebraska-Lincoln. As the research was deemed to be of minimal risk, passive consent was authorized.

Participants

Participants were residents of Chicago neighborhoods included in Saint Anthony Hospital's service



Figure 1. Summary of overall project phases. Community research findings are the key focus of this article.

area. The sample size was $N = 609$, with 397 respondents self-identified as African American and 212 self-identified as Latino. Of the Latino respondents, 172 (81%) specified Mexican or Mexican American origin. Excluded from analysis were 103 respondents defined as outliers based on geographic location and/or ethnicity.

Data Collection

With the help of local community volunteers, we recruited a purposeful convenience sample, targeting the major ethnic groups in the community using multiple methods, including mail, online, and in-person administration. Census tracts in the hospital service area were identified, and paper-based surveys, in English and Spanish, and a follow-up postcard were mailed to adult heads of households. The service area included North Lawndale, South Lawndale (Little Village), Lower West Side (Pilsen), and parts of several surrounding neighborhoods. An identical online survey was made available for respondents with Internet access. In addition, four onsite survey collection events were publicized through community organizations and fliers and took place at three local community organization facilities.

Measures

The cross-sectional survey incorporated questions about sociodemographics, motivational/ obstructive factors to healthy living, obtaining healthcare, and healthcare facility choice. These factors included concerns about the cost of healthcare, proximity of healthcare facility to home and work, availability of transportation, and proximity to other needed

services. Characteristics of a healthcare facility, such as languages spoken, quality of service, wait time, personal familiarity with the facility's personnel, and ease of parking, were also included as potential factors in facility choice. The importance of these factors was rated on a scale of 1–4, *strongly disagree*, *somewhat disagree*, *somewhat agree*, and *strongly agree*. The survey also included questions about self-assessed level of health and a healthcare rating as well as access to and use of health information sources such as the Internet or word of mouth, and use of hospitals within the past year.

Desirability of proximal services was important in consideration of potential new healthcare facility models that include community services ancillary to, or distinct from, healthcare. Thus, questions were included to assess intention to use health-promoting services such as a fitness facility and career learning center. Some survey questions specifically referred to West 31st Street and South Kedzie Avenue in Chicago because of the possibility of development of a new community campus at this location. The likelihood to use new services was rated on a 1–4 scale, *definitely would use*, *likely to use*, *not likely to use*, and *would not use*.

Analysis

We conducted spatial analysis to examine settlement patterns of each ethnic group and to determine the spatial clustering of ethnic groups. G_i^* statistics (Ord & Getis, 1995) identified the location of ethnic clusters and tested the statistical significance of clustering of the Latino and African American populations, using tract-level data from the 2010 U.S. Census for

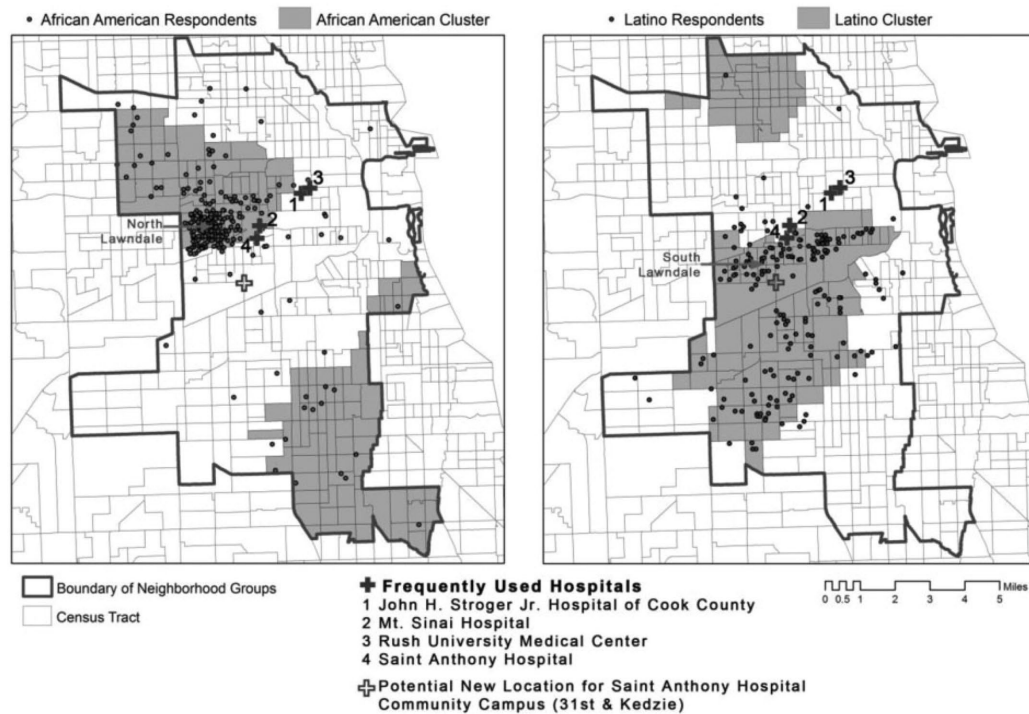


Figure 2. Clustering of survey respondents by ethnic groups with hospital locations. The African American population is noticeably clustered in the north-western portion and south-eastern portion of the study area (left map), while the Latino population is clustered in the middle-western portion and north-central portion (right map).

population indicators. A group of census tracts with high G_i^* values indicated a cluster or concentration of an ethnic population with high attribute values in contiguous census tracts compared to other areas in the city.

Descriptive statistics were run to examine respondent demographic profiles. Chi-square and t -tests were conducted to compare Latinos and African Americans on sociodemographic characteristics, healthcare choice factors, health information sources, area hospital use, and intended use of other health-related community services. All factors rated on a scale of 1–4 were dichotomized for analysis. As appropriate for each dependent variable, we conducted multivariable logistic or linear regression analyses for between-group comparisons, adjusting for age, gender, income, and education level. We confirmed adequate conformity to the assumptions of linearity where necessary. Adjusted p values, when significantly

different from the nonadjusted values, provided insight as to whether the difference between Latinos and African Americans could be attributed to these sociodemographic variations, providing a more nuanced picture than adjusted values alone. Data were analyzed using ESRI ArcGIS v.10.1 and SPSS v.20.

Results

From Ethnic Clusters

We found that Chicago's ethnic clustering patterns are distinct for Latinos and African Americans. Figure 2 shows statistically significant ($p < .05$) clusters of high values of Latino population and African American population percentages. For the most part, Latinos and African Americans live in markedly distinct portions of the study area. The African American population is clustered in the northwestern

portion and southeastern portion of the study area, while the Latino population is clustered in the middle-western portion and north-central portion. The boundary line between the neighborhoods of North Lawndale and South Lawndale functions as a residential border between the two ethnic groups. Figure 2 displays an overlay of survey respondent locations and ethnic clusters. We confirmed that the survey respondent groups corresponded significantly to each ethnic cluster geographically.

Sociodemographics and Health Ratings

Survey response analysis revealed many significant sociodemographic differences between Latinos and African Americans, after adjusting for age, gender, income, and education (see Table 1). Overall income levels were low, with more than half of the total sample earning US\$15,000 or less annually. While 44.9% of Latino households earned more than US\$25,000 annually versus only 20.9% of African Americans, Latino households tended to be larger in number of people. The two groups had different household structures, with 43.8% of Latinos versus 11.2% of African Americans being married ($p_{\text{adj}} < .001$). A higher proportion of Latinos had employment ($p_{\text{adj}} < .001$) and health insurance ($p_{\text{adj}} = .022$) and owned a home ($p_{\text{adj}} < .001$) and a vehicle ($p_{\text{adj}} < .001$). In addition, a higher proportion of Latinos indicated that they had home Internet access ($p_{\text{adj}} < .001$).

There was not a significant difference between Latinos and African Americans in self-ratings of health status, with both groups' average ratings approximately "Good." However, Latinos' average rating for healthcare received in the past 6 months was higher than African Americans' average rating (6.6 vs. 5.5 on a scale from 0 = *Worst healthcare possible* to 10 = *Best healthcare possible*, $p_{\text{adj}} = .046$). Latinos were more likely to be Catholic, while African Americans were more likely to have a Protestant religious affiliation ($p_{\text{adj}} < .001$). More than 3 times the proportion of African Americans versus Latinos indicated no religious affiliation.

Factors in Healthcare Use and Facility Choice

Table 2 includes potential obstacles to seeking

healthcare, motivational factors for healthcare facility choice, and sources used for health information. Overall, when associations were adjusted for age, gender, income, and education, there were not significant differences between the two ethnic groups in assessment of potential obstacles to seeking healthcare (e.g., cost concerns, lack of child care, and immigration status). A higher proportion of African Americans (42.1%) versus Latinos (26.9%) said that lack of transportation was an obstacle to obtaining healthcare ($p < .001$), although this became nonsignificant after adjusting for covariates.

After adjusting for covariates, a higher proportion of Latinos than African Americans indicated importance of the following factors in choosing a healthcare facility: proximity to home ($p_{\text{adj}} < .001$), proximity to work ($p_{\text{adj}} < .044$), anticipated wait time at the facility ($p_{\text{adj}} = .001$), and good service ($p_{\text{adj}} = 0.017$). More than one third of both groups said religious affiliation was an important factor for choosing a healthcare facility. Despite a higher prevalence of vehicle ownership among Latinos, more than 75% of respondents in both groups indicated that availability of nearby public transportation was important when choosing a healthcare facility. A higher proportion of Latinos used the Internet ($p_{\text{adj}} = .019$), as well as family and friends ($p_{\text{adj}} = .027$), as sources for health and healthcare information.

The data also included hospitals used over the past 12 months. In the sample, there were significant differences between groups in area hospital use (see Table 2 and Figure 2). A significantly higher proportion of African Americans than Latinos used Mt. Sinai Hospital ($p_{\text{adj}} < .001$) and John H. Stroger Jr. Hospital of Cook County ($p_{\text{adj}} < .005$). A higher proportion of Latinos than African Americans used Saint Anthony Hospital ($p = .002$) and regression analysis revealed that this crude difference was related to gender and income ($p_{\text{adj}} = .076$). Approximately 22% of the overall sample indicated no use of any hospital over the past 12 months. Although Rush University Medical Center is closer to primarily African American neighborhoods, the usage between ethnic groups was not significantly different for this facility.

Table 1. Sociodemographic Information and Ratings of Health and Healthcare.

| | African Americans (<i>n</i> = 397) | | Latinos (<i>n</i> = 212) | | <i>p</i> Value | Adjusted <i>p</i> Value ^a |
|--|--|----------|------------------------------|----------|-------------------|---|
| | % | <i>n</i> | % | <i>n</i> | | |
| Gender (<i>n</i> = 607) | | | | | <.001 | .004 ^b |
| Female | 37.7% | 149 | 55.2% | 117 | | |
| Male | 62.3% | 246 | 44.8% | 95 | | |
| Age, years (<i>n</i> = 572) | | | | | <.001 | .013 ^c |
| 18–30 | 11.4% | 42 | 24.6% | 50 | | |
| 30–54 | 68.3% | 252 | 58.6% | 119 | | |
| ≥55 | 20.3% | 75 | 16.7% | 34 | | |
| Age, mean years (SD) (<i>n</i> = 572) | 45.5 (12.3) | | 40.7 (14.1) | | <.001 | .001 ^c |
| Total household income (<i>n</i> = 570) | | | | | <.001 | <.001 |
| ≤US\$15,000 | 68.8% | 256 | 30.8% | 61 | | |
| US\$15,001–US\$25,000 | 10.2% | 38 | 24.2% | 48 | | |
| US\$25,001–US\$35,000 | 9.1% | 34 | 17.2% | 34 | | |
| US\$35,001–US\$50,000 | 4.8% | 18 | 13.6% | 27 | | |
| US\$50,001–US\$75,000 | 4.8% | 18 | 10.1% | 20 | | |
| ≥US\$75,001 | 2.2% | 8 | 4.0% | 8 | | |
| Marital status (<i>n</i> = 603) | | | | | <.001 | <.001 |
| Never married | 61.3% | 241 | 24.8% | 52 | | |
| Married | 11.2% | 44 | 43.8% | 92 | | |
| Separated, divorced, widowed, or other | 27.5% | 108 | 31.4% | 66 | | |
| Employment status (<i>n</i> = 597) | | | | | <.001 | <.001 |
| Employed full or part time | 22.5% | 87 | 50.2% | 106 | | |
| Unemployed or on strike | 56.5% | 218 | 22.7% | 48 | | |
| Retired, homemaker, or student | 21.0% | 81 | 27.0% | 57 | | |
| Education level (<i>n</i> = 598) | | | | | .006 | .818 ^d |
| No high school diploma | 34.4% | 135 | 28.3% | 58 | | |
| High school diploma or GED | 49.6% | 195 | 44.9% | 92 | | |
| Associates or higher degree | 16.0% | 63 | 26.8% | 55 | | |
| Child(ren) in household (<i>n</i> = 580) | 48.3% | 183 | 66.7% | 134 | <.001 | .063 |
| Dependent elder(s) in household (<i>n</i> = 592) | 23.8% | 91 | 12.9% | 27 | .002 | .105 |
| Main language spoken at home (<i>n</i> = 600) | | | | | <.001 | <.001 |
| English | 97.4% | 379 | 33.2% | 70 | | |
| Spanish | 1.5% | 6 | 59.7% | 126 | | |
| Other | 1.0% | 4 | 7.1% | 15 | | |
| Religious affiliation (<i>n</i> = 595) | | | | | <.001 | <.001 |
| Catholic | 11.2% | 43 | 77.7% | 164 | | |
| Protestant, Baptist, other Christian | 46.6% | 179 | 13.3% | 28 | | |
| Other religion | 21.9% | 84 | 2.4% | 5 | | |
| No religion | 20.3% | 78 | 6.6% | 14 | | |
| Home Internet access (<i>n</i> = 570) | 39.1% | 142 | 70.5% | 146 | <.001 | <.001 |
| email address (<i>n</i> = 596) | 39.2% | 152 | 66.3% | 138 | <.001 | .026 |
| Use social media, for example, Facebook, MySpace (<i>n</i> = 588) | 33.3% | 127 | 53.6% | 111 | <.001 | .416 |
| Own home (<i>n</i> = 585) | 14.7% | 56 | 39.5% | 81 | <.001 | <.001 |
| Own a car/vehicle (<i>n</i> = 595) | 20.8% | 80 | 68.1% | 143 | <.001 | <.001 |
| Self-health rating in last 6 months, mean (SD) (<i>n</i> = 598), 1 = poor, 3 = good, 5 = excellent | 2.9 (1.1) | | 3.0 (1.0) | | .165 | .548 |
| Rating of healthcare received in last 6 months, mean (SD) (<i>n</i> = 526), 0 = worst possible, 10 = best possible | 5.5 (3.1) | | 6.6 (3.0) | | <.001 | .046 |
| Household health insurance status (<i>n</i> = 587) | | | | | <.001 | .022 |
| All members have health insurance | 32.0% | 122 | 41.3% | 85 | | |
| No members have health insurance | 37.3% | 142 | 19.9% | 41 | | |

a. Adjusted for age, gender, income, and education.

b. Adjusted for age, income, and education.

c. Adjusted for gender, income, and education.

d. Adjusted for age, gender, and income.

Table 2. Obstacles and Motivating Factors for Healthcare Choice, Health Information Sources, and Most Frequently Used Hospitals.

| | African Americans (<i>n</i> = 397) | | Latinos (<i>n</i> = 212) | | <i>p</i> Value | Adjusted <i>p</i> Value ^a |
|---|--|----------|------------------------------|----------|-------------------|---|
| | % | <i>n</i> | % | <i>n</i> | | |
| Obstacles to seeking healthcare (strongly to somewhat agree) | | | | | | |
| Seek healthcare when needed despite cost concerns (<i>n</i> = 599) | 64.3 | 250 | 63.8 | 134 | .911 | .536 |
| Lack of transportation is obstacle to healthcare (<i>n</i> = 586) | 42.1 | 159 | 26.9 | 56 | <.001 | .122 |
| Lack of child care is obstacle to healthcare (<i>n</i> = 564) | 21.2 | 78 | 21.4 | 42 | .949 | .678 |
| Immigration status is obstacle to healthcare (<i>n</i> = 573) | 18.1 | 67 | 21.2 | 43 | .372 | .275 |
| Important factors in choosing a healthcare facility (<i>strongly to somewhat agree</i>) | | | | | | |
| Proximity to home (<i>n</i> = 592) | 63.1 | 243 | 81.6 | 169 | <.001 | .001 |
| Proximity to work (<i>n</i> = 527) | 51.6 | 176 | 68.3 | 127 | <.001 | .044 |
| Religious affiliation of facility (<i>n</i> = 542) | 42.5 | 147 | 35.2 | 69 | .096 | .185 |
| Languages spoken at the facility (<i>n</i> = 570) | 61.5 | 225 | 69.1 | 141 | .068 | .370 |
| Waiting time (<i>n</i> = 573) | 62.7 | 232 | 81.3 | 165 | <.001 | .001 |
| Staff/professionals know you (<i>n</i> = 582) | 66.0 | 249 | 75.1 | 154 | .023 | .271 |
| Good service (<i>n</i> = 578) | 77.6 | 291 | 88.7 | 180 | .001 | .017 |
| Ease of parking (<i>n</i> = 557) | 61.6 | 221 | 76.3 | 151 | <.001 | .141 |
| Nearby public transportation (<i>n</i> = 569) | 75.2 | 276 | 76.7 | 155 | .684 | .349 |
| Physical appearance of the facility (<i>n</i> = 566) | 74.3 | 272 | 79.5 | 159 | .167 | .716 |
| Proximity to businesses and other services (<i>n</i> = 580) | 64.1 | 241 | 70.6 | 144 | .114 | .229 |
| Referral from family/friend (<i>n</i> = 579) | 70.9 | 266 | 79.9 | 163 | .019 | .048 |
| Sources used for information about health | | | | | | |
| Internet (<i>N</i> = 609) | 18.9 | 75 | 39.6 | 84 | <.001 | .019 |
| Ask a health professional (<i>N</i> = 609) | 52.6 | 209 | 55.7 | 118 | .477 | .994 |
| Printed info from hospital or clinic (<i>N</i> = 609) | 9.8 | 39 | 14.2 | 30 | .109 | .328 |
| Library (<i>N</i> = 609) | 6.0 | 24 | 6.6 | 14 | .786 | .871 |
| Family/friends (<i>N</i> = 609) | 27.7 | 110 | 35.4 | 75 | .050 | .027 |
| Community organizations (<i>N</i> = 609) | 6.3 | 25 | 9.0 | 19 | .226 | .377 |
| Most frequently used hospitals in past 12 months | | | | | | |
| John H. Stroger Jr. Hospital of Cook County (<i>N</i> = 609) | 31.7 | 126 | 14.6 | 31 | <.001 | .005 |
| Mt. Sinai Hospital (<i>N</i> = 609) | 34.5 | 137 | 15.1 | 32 | <.001 | <.001 |
| Rush University Medical Center (<i>N</i> = 609) | 7.6 | 30 | 11.8 | 25 | .082 | .205 |
| Saint Anthony Hospital (<i>N</i> = 609) | 12.3 | 49 | 21.7 | 46 | .002 | .076 |
| No hospitals used (<i>N</i> = 609) | 19.4 | 77 | 25.9 | 55 | .062 | .575 |

a. Adjusted for age, gender, income, and education.

Table 3. Intended Use of Potential Neighborhood Services.

| | African Americans (<i>n</i> = 397) | | Latinos (<i>n</i> = 212) | | <i>p</i> Value | Adjusted <i>p</i> Value ^a |
|--|--|----------|------------------------------|----------|-------------------|---|
| | % | <i>n</i> | % | <i>n</i> | | |
| Definitely or likely would use if available in or near neighborhood | | | | | | |
| Park with playground and trails (<i>n</i> = 581) | 78.8 | 298 | 89.7 | 182 | .001 | .001 |
| Low-cost fitness facility (<i>n</i> = 581) | 75.0 | 282 | 92.2 | 189 | <.001 | <.001 |
| Sports facility with after-school youth program (<i>n</i> = 582) | 67.6 | 257 | 85.1 | 172 | <.001 | <.001 |
| Arts facility with youth program (<i>n</i> = 586) | 67.1 | 255 | 84.0 | 173 | <.001 | <.001 |
| Healthcare clinic within walking distance (<i>n</i> = 590) | 82.0 | 314 | 89.3 | 185 | .018 | .015 |
| Low-cost transportation to healthcare appointments (<i>n</i> = 586) | 80.7 | 305 | 83.7 | 174 | .374 | .307 |
| Learning center with courses/information on health topics (<i>n</i> = 587) | 82.1 | 312 | 87.4 | 181 | .092 | .469 |
| Learning center with courses to advance my career (<i>n</i> = 591) | 82.0 | 315 | 87.9 | 182 | .062 | .649 |
| Library with health and community information (<i>n</i> = 592) | 83.3 | 319 | 89.5 | 187 | .041 | .464 |
| Place where people help me navigate the healthcare system (<i>n</i> = 592) | 78.3 | 300 | 86.1 | 180 | .021 | .161 |
| Facility for community group meetings or events (<i>n</i> = 587) | 76.3 | 289 | 79.3 | 165 | .395 | .331 |
| Child care center (<i>n</i> = 580) | 61.4 | 229 | 68.1 | 141 | .107 | .143 |
| Daycare for elders (<i>n</i> = 578) | 60.9 | 227 | 50.7 | 104 | .019 | .252 |
| Assisted living facility (<i>n</i> = 583) | 62.2 | 235 | 52.2 | 107 | .020 | .267 |
| Community garden (<i>n</i> = 592) | 69.4 | 267 | 74.9 | 155 | .156 | .163 |
| New hospital and clinic near 31st and Kedzie (<i>n</i> = 574) | 66.2 | 247 | 79.6 | 160 | .001 | <.001 |
| Grocery at 31st and Kedzie (<i>n</i> = 575) | 69.1 | 260 | 76.4 | 152 | .067 | .211 |
| New retail area near 31st and Kedzie (<i>n</i> = 573) | 67.7 | 254 | 80.8 | 160 | .001 | .019 |
| Restaurant at 31st and Kedzie (<i>n</i> = 574) | 65.3 | 245 | 71.9 | 143 | .112 | .581 |

a. Adjusted for age, gender, income, and education.

b. Some questions included a specific location at West 31st St. and South Kedzie Ave. because of the possibility of developing a hospital and community campus at that location.

Intended Use of Other Neighborhood Services

There were many significant differences between ethnic groups in rating the likelihood to use potential new neighborhood services that could be introduced as health promotion components of a new hospital campus (see Table 3). Latinos indicated a significantly higher likelihood to use physical activity resources such as a park with playground and trails ($p_{adj} = .001$), a low-cost fitness facility ($p_{adj} < .001$), and a sports facility with an afterschool youth program ($p_{adj} < .001$) as well as an arts facility with a youth program ($p_{adj} < .001$). But, overall proportions of reported likelihood to use these services was high (minimum 67%) across both groups. Among both groups, there was a high likelihood of use for low-cost transportation to healthcare (>80%), health and career learning centers (>82%), a library (>83%), and help with healthcare navigation (>78%). African

Americans were more likely than Latinos to want senior services such as day care ($p = .019$) and assisted living ($p = .020$), which was attributable to sociodemographic differences. Latinos indicated higher likelihood to use both a new hospital and a clinic facility ($p_{adj} < .001$) and retail offerings ($p_{adj} = .019$) at the potential new development site (see Table 3 and Figure 2).

Discussion

This study is a component of a longer term, community-engaged building project and evaluation plan in a low SES urban area primarily populated by two minority groups beset by marked health disparities. Our work represents a unique multidisciplinary approach, with a team of architectural design, urban planning, and public health professionals, working

collaboratively with hospital and community leaders. The collaborative effort is intended to leverage the opportunity of a large-scale hospital building project for maximum positive community health impact. While our work does not presuppose a simple or quick solution to the health disparities problem, it posits that community members' own perspectives about their health and health-related needs are essential to effective planning and decision making. Our work also acknowledges that such a complex systemic issue must be addressed along multiple dimensions, including presence of health-promoting resources and environment, availability of community and educational services that may impact a spectrum of social determinants, as well as access to and use of quality healthcare. Notably, this study engaged with a community population, rather than a patient population, as positive impact on the whole community is the ultimate goal.

Our findings reveal that there is significant heterogeneity in this low SES urban community and that income alone is not sufficient to characterize the needs and preferences of such communities. Knowledge of other sociodemographic trends and differences between key constituent groups is essential to designing service offerings toward reduction in health disparities and improvements in health status. In this particular community, the Latino population appeared more socioeconomically stable, with higher proportions of marriage, employed status, and home ownership. Approximately one third of both ethnic groups viewed concern about cost as an obstacle to seeking needed healthcare, while transportation was a greater obstacle for African Americans, likely due to lower levels of household income and car ownership. Latinos generally seemed to have higher expectations for level of service at healthcare facilities, while "word-of-mouth" communication was important to both groups in choosing a place for healthcare.

Location of services and access to transportation are essential components of healthcare facility planning. Based on our findings, while proximity is not the sole motivator in hospital choice, it does play a role. Saint Anthony Hospital may wish to enhance its transportation services and mobile and clinic presence to serve African Americans in North Lawndale

once it moves to its new location. The inclusion of elderly care services may also attract African Americans to the campus and may present an opportunity to leverage the knowledge and skills of the elderly for community betterment.

Residents indicated significant interest in new health-promoting neighborhood services that could be offered in conjunction with a new hospital and community campus, creating a comprehensive package of community health-oriented offerings versus healthcare services alone. For example, 82% or more of both ethnic groups indicated likelihood to use learning centers focused on health and career development. Anticipated usage of other potential services, such as retail and fitness facilities, is also high overall. Interest in parks and youth programs was higher among Latinos, possibly due to the presence of more children per household in the Latino group. Thus, a new healthcare organizational model, incorporating services other than healthcare, can potentially enhance the business model and financial sustainability of the new hospital as well as have a positive impact on this community. To the degree that these services support a more viable economic infrastructure in the area, health outcomes are also likely to improve (Marmot et al., 2008).

Importantly, the findings are providing useful insights as to how to develop a building program that best accommodates community needs and encourages use of preventive, educational, and social services toward long-term improvements in community health. Hospital administration, program planners, and design teams are leveraging the findings of the research to inform the service offering definition and design of the new hospital and clinic facility and campus as well as to address needs for local spatial distribution of services, such as mobile healthcare and health promotion services. Our findings as to significant ethnic residential clustering are consistent with other literature (Allen & Turner, 2005; Pamuk, 2004; Sharma, 2012) and reinforce the importance of engaging actively with these ethnic groups in the planning process, given the community hospital's intent to attract and serve residents in both groups optimally. Findings about community healthcare use and needs, and residents' interest in a range of health-promoting services, are informing

development of an experimental service model supported by programming and design of the new hospital facility and multiservice campus. In addition, based upon expressed local transportation needs, planners are actively working with the city to develop an adequate public transportation and traffic infrastructure at the predetermined site.

Significant crude p values in this report may be interpreted as representations of valid, existing differences between ethnic groups, even though some of these differences were nonsignificant after adjusting for the covariates of income, gender, and education level. Decision makers for the new hospital campus and service design are considering the crude p values that represent group differences, with awareness of underlying contributing factors, as they engage with both key local ethnic communities.

There are some limitations to this study. The cross-sectional survey data were collected via convenience sampling; however, this predominantly low-income sample corresponds to significant ethnic clustering according to Gi* statistics, indicating reasonable accuracy in obtaining responses from the targeted groups. Although the African American sample is weighted more toward males than the Latino sample, we have adjusted for gender in the analysis. In addition, although the findings are usefully informing new campus design in this neighborhood, they may not be generalizable to other low SES communities. The specific findings of this study are intended for application in the local context, but the process of community-engaged research and integration of findings in healthcare and health promotion service and neighborhood design can serve as an example for future built projects elsewhere.

This study was a novel endeavor to leverage community-engaged public health research toward informing the service and architectural design of a new community-centric hospital campus model integrating healthcare, health promotion, and other community resources. Through the project, we are continuing work to forge, describe, and document effective processes for incorporating and translating research findings and community perspective through planning and design development. Although the timing to complete design and break ground on the new campus is not yet certain as of this publication, the

research plan includes eventual evaluation of the public health impact of the project. Public health research and collaboration in such large built projects is invaluable to align organizational and design goals toward sustainable improvements in community health outcomes.

Implications for Practice

- Despite some consistency in health disparity trends among low SES urban communities in the United States, such communities are not homogeneous either across or within urban locales.
- In order to develop sustainable solutions that address health disparities, planning of health and community service facilities, as well as other built projects, should take into account local residents' perspectives and expressed needs.
- Cross-sectoral collaboration between public health, urban planning, architecture and design, and local constituents is needed to focus planning and project goals toward disease prevention and improvements in community-level population health.

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