



West Hartford-Bloomfield Health District Community Needs Assessment:

A Mixed Methods Study Identifying COVID-19 Knowledge, Perceptions, and Health Disparities

Yue Song,^{1,2} Paola Bojorquez-Ramirez,¹ Esther Luo,¹ Yinqiao Wang,¹ Sawsan Dabit,¹ Megan Westcott,³ Christopher Hansen,³ Jessica Lewis,¹ Mariah Frank,¹ Debbie Humphries¹

Yale School of Public Health¹; Oregon Health & Science University²; West Hartford-Bloomfield Health District³

Background

The West Hartford-Bloomfield Health District (WHBHD) is a regional health department serving the towns of West Hartford and Bloomfield in Connecticut. In the first few months of the COVID-19 pandemic, from February to April of 2020, elderly residents and Black residents accounted for disproportionately high proportions of the COVID-19 related deaths in WHBHD (elderly - 59%, vs. 20.5% of the population; Black - 38%, vs. 19% of the population).¹⁻³ This project was designed to better understand COVID-19 knowledge, perception, attitudes, response satisfaction, and vaccination outlook on an individual and community level. Since WHBHD has not previously assessed community health needs this assessment will serve as the first step in implementing effective and timely interventions to address needs, disparities, and misperceptions about the COVID-19 pandemic while strengthening the ability of WHBHD to respond to future public health needs.

Objectives

- 1) Identify key topics from existing NIH COVID-19 Office of Behavioral and Social Science Research Tools to include in a comprehensive COVID-19 survey.
- 2) Evaluate the level of COVID-19 knowledge, perception, attitudes, government response satisfaction, and vaccination on an individual and community level.
- 3) Compare health issues, barriers, and disparities between different communities.

Methods

Qualitative Data:

- Five semi-structured key informant interviews were conducted with leaders from faith-based organizations and local government to corroborate findings from the survey, each lasting 20-60 minutes.
 - Questions focused on the respondents' personal knowledge and perceptions on community health needs, the quantity and quality of COVID-19 information distribution, community perceptions and attitudes regarding COVID-19, the accessibility of COVID-19 testing and vaccination, and challenges during the pandemic.

Quantitative Data:

- A digital survey was distributed in English, Portuguese and Spanish through the West Hartford Community Relationships Specialist, emergency response alert systems, senior and community center mailing lists, official town websites and local newsletters. Paper copies of the survey were made available to houses of worship, community centers and local leaders.
 - Questions were adapted from the US Census (American Communities Survey), the CDC (Behavioral Risk Factor Surveillance System), and the Johns Hopkins community research surveys.
 - Questions focused on demographics, general health status, COVID-19 (knowledge, perceived risk and attitudes, testing and care), COVID-19 vaccination (status and intent), and community health.
 - We received electronic responses from both West Hartford (n=535) and Bloomfield (n=244); although paper copies were available, none were returned.
 - R and SAS statistical software were used to compare the average rates of community health ratings in West Hartford and Bloomfield. Chi-square tests, Fisher's exact test, and t-tests were used, as appropriate, to identify potential differences that may exist between West Hartford and Bloomfield.



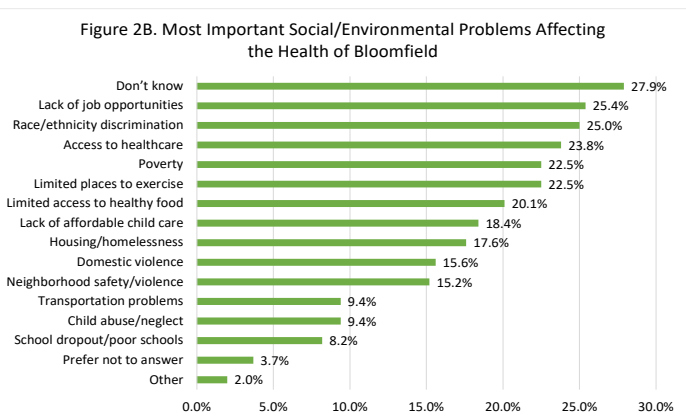
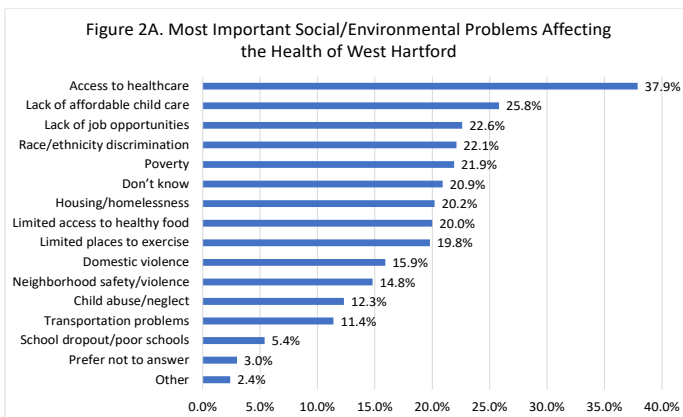
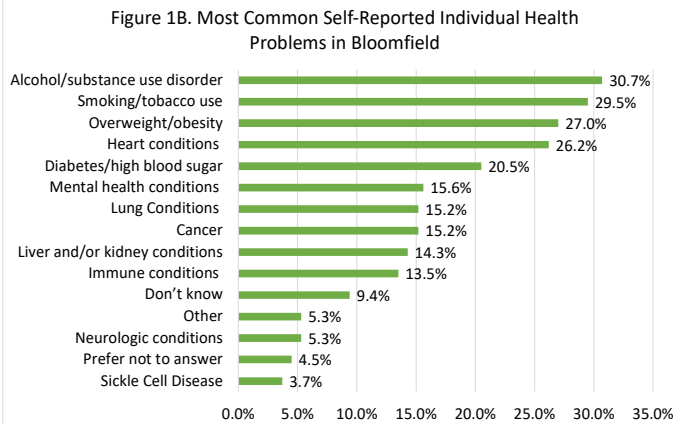
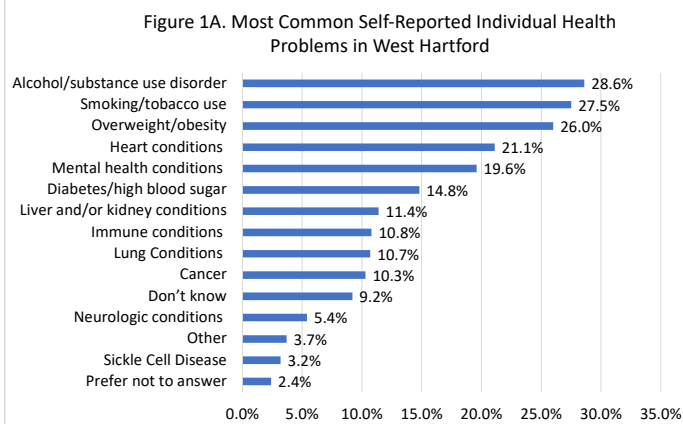
Results

Qualitative Summary:

- Interviews with community leaders highlighted themes of difficulties distributing information, vaccine registration struggles, and challenges for the elderly and African American communities.
- Bloomfield residents experienced more difficulties accessing health services and information, while West Hartford encountered limited transportation and language barriers in COVID-19 testing, care, and vaccination.
- There is a need for more direct support from local and state governments to address mental health and disparities.

Quantitative Analysis:

- Respondents from both towns reported an average individual health rating of 1.4 (scale 1-4, with 1=healthy), indicating health between “healthy” and “somewhat healthy” (p = 0.764).
- The top three self-reported individual health problems in both towns were alcohol/substance use disorders, smoking/tobacco use, and overweight/obesity (Figures 1A-1B).



- Access to healthcare (37.9%), lack of affordable childcare (25.8%), and lack of job opportunities (22.6%) were the three most important social/environmental problems affecting the health of respondents in West Hartford (Figure 2A). In contrast, Bloomfield residents highlighted lack of job opportunities, race/ethnicity discrimination and access to health care as the most important social/environmental problems affecting health (Figure 2B).
- While the majority of West Hartford and Bloomfield respondents (74.9% and 77.1%, respectively) have been tested for COVID-19 (see Table 1), there were significant differences in testing accessibility between towns (p = 0.002), with nearly

double the proportion of West Hartford residents reporting difficulty accessing COVID-19 testing compared to Bloomfield residents.

- COVID-19 vaccination status is significantly different between the two towns ($p = 0.001$), with 87.3% of Bloomfield respondents vaccinated compared to 77.2% of West Hartford respondents. Challenges that delayed or prevented vaccination varied significantly between towns, and included difficulties with the registration system, lack of available vaccines and time limitations ($p < 0.001$), and healthcare barriers ($p = 0.002$).

Table 1. Frequency of COVID-19 Testing, Care, and Vaccination

Characteristic, n (%)	West Hartford (n = 535) ^a	Bloomfield (n = 244) ^a	p ^e
Testing Status			0.843
No, I've never been tested	134 (25.1)	56 (23.0)	
Yes, and I have only tested negative	359 (67.1)	167 (68.4)	
Yes, and I have tested positive at least once	29 (5.4)	16 (6.6)	
Yes, my results are pending	13 (2.4)	5 (2.1)	
Testing Accessibility			0.002*
Difficult	114 (21.6)	28 (11.5)	
Easy	358 (67.7)	193 (79.4)	
N/A	57 (10.8)	22 (9.1)	
Treatment Status	100 (18.8)	40 (16.6)	0.462
Vaccination Status	412 (77.2)	213 (87.3)	0.001*

^a Numbers may not sum to totals due to missing data, and column percentages may not sum to 100% due to rounding.

^e p-value for χ^2 or Fisher's exact test.

*p-value < 0.05.

Recommendations

- Increase community outreach in both Bloomfield and West Hartford to increase social cohesion and build social capital, especially with the African American and minority communities.
- Expand services and resources targeting the elderly population and provide more personal as well as technological support to mitigate mental health issues that arose during the pandemic.
- Address ongoing individual health problems such as alcohol/substance use disorder, overweight/obesity and smoking/tobacco use in future programs.
- Develop additional surveys to extend the study's findings to query for unmet healthcare and basic needs, mechanisms to deliver services and support to circumvent residents' time limitations and clarify the role of language and cultural barriers.

Limitations

- The overall survey response rate was lower from Bloomfield residents with an over-representation of the White population. While West Hartford survey respondents were representative of the White and Black demographic census distributions, Bloomfield survey respondents were not. Thus, Bloomfield survey results may not be generalizable to the Bloomfield community.
- Survey responses were exclusively received as digital forms with no paper surveys administered, resulting in possible selection bias due to underrepresentation of several populations that lack digital tools.

Acknowledgments

Our project would not have been possible without the assistance of many individuals. We thank Debbie Humphries, Mariah Frank, Lakai Legg, Jessica Lewis, and our preceptors Chris Hansen and Megan Westcott for their continual support and guidance.

REFERENCES

1. Data from West Hartford-Bloomfield Health District. (2021). <https://resources.finalsite.net/images/v1620440049/westhartfordctgov/csteklomrgn9a7fwwjns/data.pdf>
2. U.S. Census Bureau QuickFacts: Bloomfield town, Hartford County, Connecticut. <https://www.census.gov/quickfacts/fact/table/bloomfieldtownhartfordcountynconnecticut/LFE041219>.
3. U.S. Census Bureau QuickFacts: West Hartford CDP, Connecticut. <https://www.census.gov/quickfacts/westhartfordcdpconnecticut>.

RESOURCES: NIH REPOSITORY OF COVID-19 RESEARCH TOOLS; THE AMERICAN COMMUNITY SURVEY (ACS); BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM (BRFSS); THE US CENSUS.