

Investigating Respiratory Health in Immigrant and Low-Income Populations

Lena Tang, Laidlaw Scholar

Shalini Tendulkar, ScD., Laidlaw Mentor

Tufts University, Medford, MA

BACKGROUND

Asthma and chronic obstructive pulmonary disease (COPD) are two of the most prevalent respiratory conditions, with asthma affecting over 25 million people in the United States, disproportionately burdening people of low-income populations and communities of color (Gaffney et al., 2022). Racial and ethnic disparities in asthma prevalence and treatment persist, with Latino and Black children experiencing higher rates of emergency room visits and lower rates of long-term control compared to their white peers (Bryant-Stephens et al., 2021; Brigham et al., 2021).

These disparities are tightly linked to differing exposure levels of environmental risk factors, especially air pollution, which worsens asthma symptoms, increases hospitalizations, and contributes to early morbidity and mortality (Schraufnagel et al., 2019; Fiter et al., 2021).

Chelsea, Massachusetts, is a small but densely populated city just north of Boston. It has a predominately Latinx population and high rates of poverty (DataUSA, 2023; U.S. Census Bureau, 2024). Neighborhoods with greater racial diversity and lower household incomes are often the most negatively affected in terms of school quality, housing conditions, access to quality jobs, services and supports, and other social determinants of health (MGH CHNA, 2022). Chelsea ranks among the highest in Massachusetts for pediatric asthma hospitalizations and emergency visits (Massachusetts Department of Public Health [MDPH], 2025).

Understanding the lived experiences of residents in communities like Chelsea can inform more community-informed, structurally aware prevention and care strategies. Understanding these experiences can also encourage future health care providers to look beyond symptoms and into the environmental, social, and policy-level factors that shape patient care and experiences (Cogburn et al., 2019). By centering on a community with both high need and a history of social organizing, this research aims to highlight opportunities for collaborative, equitable solutions in community health.

Additionally, as climate change intensifies and urban air quality continues to decline, addressing the interlinked challenges of pollution exposure, systemic inequality, and respiratory illness becomes increasingly urgent for public health.

GAPS IN THE LITERATURE

While existing research has strengthened the evidence connecting air pollution and respiratory illness (Schraufnagel et al., 2019; Fiter et al., 2021), several critical gaps remain in the literature. Most of the current literature focuses on documenting disparities rather than exploring the lived

experiences or health priorities of those most affected. In a place like Chelsea, where structural inequities shape exposure and health outcomes, qualitative interviews provide context for understanding how families respond to flare-ups, what barriers they face in accessing care, and how they perceive pollution and risk.

Furthermore, few studies examine how intersecting factors such as race, income, and environmental risk compound to shape long-term outcomes. More nuanced, community-centered research is needed to inform equitable policy and intervention strategies that reflect the lived realities of affected populations. By focusing on personal narratives, this study seeks to show how structural inequities manifest in everyday challenges and offer insight that can guide both clinical decision-making and targeted public health action. For future clinicians and policymakers, listening to these narratives can also build empathy and a deeper understanding of how to deliver care that is culturally responsive and grounded in real-world experience.

Finally, gaps exist in the literature on neighborhood-level factors such as substandard housing, limited green space, and proximity to industrial sites, which further compound respiratory health risks, especially in urban settings (Howard et al., 2021, Cheng et al. 2021). Addressing these limitations can further help inform the development of prevention efforts and interventions to reduce the inequitable burden of respiratory diseases.

RESEARCH QUESTIONS

In collaboration with La Colaborativa, a Latina-led community-based organization with the mission of empowering the Latinx community through advocacy, education, economic development, and wellness programs, this qualitative interview research project aims to examine how housing conditions, occupational exposures, and other outdoor environmental exposures contribute to respiratory illness among low-income and immigrant communities. Centering on the lived experiences of low-income and immigrant residents, the following research questions guided this project:

1. How do residential and occupational exposures contribute to respiratory illness, particularly among immigrant and low-income populations?
2. What knowledge, resources, or support do residents need to better advocate for healthier homes and environmental conditions in their community?

These questions aim to inform local policy, improve community health interventions, and support broader social justice efforts in Chelsea, especially through the programs of La Colaborativa. In addition, the study aims to empower residents with knowledge and tools to advocate for healthier homes and communities.

METHODS AND ANALYSIS

Design

This qualitative study was conducted in collaboration with La Colaborativa, a trusted community organization leading the Healthy Homes Initiative, which works to improve housing conditions and monitor indoor air quality in Chelsea. La Colaborativa's main roles in this research were helping define the research question, carrying out the recruitment, and providing a suitable space, familiar and accessible to the participants, for interviews to take place. The research entailed semi-structured interviews with residents experiencing asthma, COPD, or chronic cough to explore their lived experiences, barriers to healthcare, and awareness of environmental risks. Semi-structured interviews allowed participants to express their concerns and experiences surrounding respiratory disease in their own words, while guiding the conversation toward themes related to environmental health, housing conditions, access to care, and long-term health outcomes. This method enables deeper insight into how residents perceive risk, navigate health systems, and show the reality of living with a health condition.

Interview Guide

An interview guide was designed to reflect and explore the research questions. It consisted of 13 semi-structured questions divided into 5 sections. The first section, *Background*, collected basic information about the participants and their households to provide context for their responses. The second section, *Environmental Exposures*, asked about participants' housing conditions and neighborhood environments that may contribute to respiratory health risks. The third section, *Health Impacts*, focused on the presence and severity of respiratory illness within households and how participants perceived connections between environmental exposures and their health. The fourth section, *Healthcare and Resources*, examined participants' access to medical care, support services, and programs such as La Colaborativa's Healthy Homes initiative. The fifth section, *Knowledge, Advocacy, and Resources*, explored how participants' lived experiences as immigrants or members of low-income communities shaped their perceptions of environmental risks and their ability to respond to them.

Research Ethics

The study received IRB approval from Tufts University SBER IRB. All participants provided verbal consent prior to the start of the interview. All identifying information collected (e.g., names, street addresses) was anonymized to protect privacy and only the study PI had access to the identifying information..

Participants

Seven participants were recruited through La Colaborativa. Criteria for participation included: 1) resident of Chelsea, MA, 2) Aged 18 or older, 3) lived experience with respiratory illness

(personally or in a household). Recruitment materials were distributed in both English and Spanish to reflect the linguistic diversity of the community.

Data Collection

Interviews were conducted in person in the lobby of La Colaborativa with virtual options available upon request. Each interview lasted approximately 20-60 minutes and was audio-recorded with permission. Interviews were conducted in either English or Spanish, depending on participant preference, and later transcribed and translated as needed.

Data Preparation and Analysis

Transcripts were first generated using Zoom’s automatic transcription feature and then manually edited and refined for accuracy. Reflexive thematic analysis (Campbell et al., 2021) was used to analyze data. The process began with data familiarization (Step 1), which involved rereading each transcript in full while taking notes about emerging ideas and observations. Next, qualitative coding (Step 2) was conducted in NVivo (QSR International Pty Ltd., 2023), starting with the first transcript. An initial set of ten codes (e.g., “inhaler”, “La Colaborativa programs”) was developed, with additional codes added inductively as new concepts emerged in each of the subsequent interviews.

From there, preliminary candidate themes were identified and iteratively re-coded as new data was incorporated (Step 3). This was followed by developing and reviewing themes (Step 4) in relation to the research question to ensure coherence and completeness. In the theme refining and naming stage (Step 5), definitions were clarified to best represent the data. Finally, report writing (Step 6) synthesized the themes into a narrative, supported by representative quotes from participants.

As part of a commitment to engaging the community, a one-page, plain-language summary of findings will be shared with La Colaborativa and participants.

RESULTS

The results of the interviews can be categorized into three main themes: “The Building Needs Improvements”, “What’s Really Affecting You”, and “I Felt Confident in Her Because She Explained it to Me”.

Theme 1: “The Building Needs Improvements”

Many participants described daily exposure to harmful substances and environmental risks, contrasting conditions in Chelsea to those in other places they had lived, usually either other parts of the Boston area or their home country. Participants’ concerns included housing conditions, pests, cigarette smoke, and weather interaction with respiratory illness.

Indoor Exposures

Participants highlighted poor housing conditions, including mold, leaks, and pest infestations. A description of housing conditions is captured by the following quote by Carmen:

“I think about three years ago, they came and installed new windows, but the new windows... have mold in it, and also.... The bathroom, like, where the tub is, it's kind of, like, separated from the wall a little bit. So all the dirt that's behind that wall kind of leaks into the tub, if, like, water is splashed into it... there used to be some leakage.”

Participants often connected the poor housing conditions to broader statements about renting apartments, opinions of their landlords, and hopes for improved conditions to live in. Alejandra reflected on her housing issue and landlord responses:

“What they have in the winter—the house tends to get damp. So what gets damp is like fungus, a black thing that appears on the wall. So it was made known to the owner. But the owner, what he ordered to clean it with was bleach, nothing else. After a few days, after months, that was it: the humidity. I mean, that means the building needs improvements.”

Finally, pest infestations were a struggle shared by the participants—specifically mice and cockroaches. Five out of seven participants expressed dealing with these pests in the home, many daily. Isabella shared her perception of the magnitude of the indoor mouse problem in Chelsea:

“You can ask anyone: ‘are there mice in your house? Yes. Are there mice in your house?’ And the ones who say no are lying, because I couldn't catch 3 mice in that house. And setting traps, setting everything. I couldn't catch them. And the owner even poisoned them. Look, yes. The 14 mice that died, that's a small number in the apartment where I was.”

These stories reveal a pattern of unsafe and neglected housing conditions where mold, humidity, and pests are constant stressors, linking poor-quality housing to participants' respiratory struggles.

Outdoor Exposures

Adverse outdoor exposures were also a chief concern for the participants. Participants shared their concerns about public smoking, garbage, lack of green spaces, pests, and generally living in

dirty conditions. Participants attributed these conditions to the worsening of their health issues. Alejandra is among the group of participants majorly affected by this issue:

“From the moment you step out onto the street, you know, it’s those bad smells. Especially when there’s a trash can on the street. Sometimes you can’t even walk through, that smell is so bad.”

Gabriela illustrates how public smoking affects her asthma as well as her ability to share spaces comfortably in Chelsea and her family life:

“I have a one-year-old granddaughter. Sometimes she wants to go to a park. And sometimes people are smoking there. And it’s really uncomfortable for you. Well, especially for someone who has asthma, because, I mean, if I’m having a good time with my granddaughter, but if someone is smoking nearby and that gives me a reaction, well, I can’t enjoy the time anymore because I have to leave. I have to maybe take my medicine, and I still have to leave.”

Some participants, however, noted improvements in outdoor conditions over time. A resident of Chelsea for more than 30 years, Lucia Paz shared her view:

“It was different before. Everything was dangerous, dirty, the roads were all broken. Now they’re fixing all that, making Chelsea more beautiful.”

Together, these accounts reveal persistent challenges in Chelsea’s outdoor environment: trash, smoking, and a lack of outdoor green space. However, they also reveal recognition that community improvements have begun to make a positive difference.

Theme 2: “What’s Really Affecting You”

Participants’ medical backgrounds revealed that both individual health histories and systemic factors shape respiratory health outcomes and experiences. Participant stories of diagnosis gave a clear picture of the necessity of clean and healthy environments as well as safe and effective healthcare. While most participants described emergency room visits for asthma attacks and respiratory flare-ups, their accounts also highlighted gaps in preventative care and timely access to primary care appointments.

Challenges Accessing Healthcare

Five out of the seven participants shared experiences seeking care in the emergency room, also known as Urgent Care. While emergency care offers fast and effective treatment, some

participants described needing to seek this type of care because of the lack of availability of preventive and primary care. Gabriela described one such visit:

“Yeah, uh, I went to Urgent Care, um, I think, like, in April. I think that was the last time. Because I was getting shortness of breath, this cough... I mean, it was like a mix of allergies and the cough and all that. So I had to go to urgent care because my doctor doesn't have appointments. [...] I really like MGH in Chelsea, which is Urgent Care. Because they are... Well, not all of them maybe, but in my experience, it was pretty good. They treat you well. They treat you with respect. They... They do their best to see what's really affecting you. They run tests.”

Limited availability of primary care appointments was a recurring frustration. Many participants wished for the consistency of a provider who knew their medical history, but faced long waits or barriers with scheduling. Gabriela explained:

“Sometimes you want someone who already knows your history, no? Who already knows your file and everything. So when it's not like that, something that's really necessary, like going to the emergency room, I like to make an appointment with my doctor. But it's kind of very complicated to make an appointment with her. So I think that's a little... difficult to make an appointment with her.”

The issue of scheduling appointments extended beyond inconvenience. Some participants relied on specialists to intervene when primary care scheduling failed. Carmen recalled:

“Once I was diagnosed, I tried to schedule an appointment with [Neighborhood Health], and they said that they couldn't schedule my appointment. That the doctor was not there. I called and called and called, until my nephrologist called, and he made... he had to make the appointment so that I could speak with my doctor. So, yeah, there was, like, you know, kind of, like, a miscommunication and kind of just not wanting to own up to certain things.”

These accounts reveal a pattern of delays, frustrations, and reliance on emergency services, underscoring the lack of reliable access to consistent primary care.

Health Insurance and Immigration

Despite these challenges, several participants expressed a positive outlook on the healthcare access they have received in the United States, especially through insurance programs. Multiple participants expressed appreciation for their access to medical care through insurance and

contrasted this with the high costs and limited availability of care in their Central American home countries. Alejandra reflected:

“Well, what I can tell you is that, what makes it that you live here in this country, you have the appropriate tools. If someone doesn't seek care, it's because they don't want it. Or lack of information. I mean, it's not like in our countries. It's harder to have it there because they're poor countries. So here, they have medical care that is more favorable for human beings, for people. So living here in this country is how it's been easier. They give consultations, medicine. They don't deny you services here.

You have to have money in our countries to pay for the medical consultation. And they give you the prescription so you can go to the pharmacy and buy the medicine. Here it's similar because of health insurance. If you don't have health insurance, it's because they haven't sought advice or haven't asked for help or haven't asked for much information or they didn't apply, I don't know. But here, the insurance helps you. So, just living here, for me, I can say it's a blessing. Because it helps me a lot with my health. There is a lot of attention that I need for the... because, well, unfortunately, maybe because I haven't taken care of myself. But the average health is a little affected.”

For low-income and immigrant populations with multiple conditions, insurance coverage was critical for health. Several participants relied on insurance for their medical care, including Sofia, who explains how losing her job, and with it, her employer-provided insurance, affected her family's care:

Interviewer: “Were there any challenges in finding the care that [you and your husband] needed?”

Sofia: “At that time, no, but because I was working. So I had that help through my job. But now I don't work. And it's getting really difficult for him. Because the problem is, he's diabetic. He has high blood pressure and cholesterol... and other problems that complicate things.”

These reflections reveal a dual reality of healthcare access for immigrants: while U.S. insurance programs can make care more affordable and consistent than in home countries, job loss or bureaucratic barriers can quickly destabilize care for families with chronic health needs.

Theme 3: “I Felt Confident in Her Because She Explained it to Me”

This final overarching theme focuses on how participants get support and guidance for their health. Many rely on specialists and trusted primary care providers to help them manage their respiratory conditions and navigate the healthcare system. At the same time, community

organizations like La Colaborativa provide education, resources, and practical help to improve living conditions and overall well-being. In tandem, doctors and community resources give participants the tools and confidence to take care of their health and families.

Physician Trust and Advocacy

Physician advocacy emerged repeatedly when participants were asked about times they felt supported. For some, hesitancy in making appointments and seeking medical care appeared to be tied to limited knowledge about, or confidence in engaging health professionals outside the hospital setting. Alejandra illustrated this reliance on doctors and specialists:

“Well, in the area of health, only when I've felt bad, I've called and made an appointment. In the emergency room, the only support has been at the clinic, with doctors or a specialist. They are the only health professionals who have supported me from there.”

In other cases, participants described primary care physicians who were compassionate, patient, and understanding of the participants' culture and language, which demonstrates the positive impact having a trusted, long-term primary care provider can have. This was the case for Isabella and her doctor:

And then, as you can see, you have to have your own family doctor. [...] And the doctor's name is... [name of doctor]. And she says to me, ‘I'm going to do this for you’, and she explains everything to me. And I say, ‘But why is this?’ And well, honestly, I felt confident in her because she explained it to me. And well, she speaks just like you. She understands everything you say to her. And she speaks, it's hard for her, but I understand, and she tells me you're a translator. It's not that they don't translate the same. I tell them.

For some participants, the louder voice of a trusted physician was essential to receiving quality care. Carmen, who is immunocompromised due to kidney failure, shared how her specialist's advocacy ensured she was protected from contagion in the hospital:

“Once I tell them, like, ‘hey, I have, um, kidney problems, I have kidney failure,’ or... ‘I'm in dialysis’, like, they're... they will automatically separate me from anybody who has COVID. Or anyone that's said that they have flu symptoms, or that it's been outside of the country, so that they know that they have to be super careful in not getting me, you know, near, um, people. Yeah, to make sure that I'm not getting sick. [...] Also, I think it's because they know my doctor. Like, a lot of people there know my doctor, and I guess... I guess my doctor's very, like, on top of people, so I guess that's the reason.”

These accounts highlight the central role that physician trust and advocacy play in health outcomes for low-income settings. Whether through direct medical support, language and culture-sensitive communication, or leveraging professional authority, physicians often served as the primary or only path to quality healthcare.

La Colaborativa as a Resource

La Colaborativa's mission of educating and connecting people with the resources they need was reflected on by many participants in the interviews. Many participants gained not only knowledge and support through their connections with the organization but also tangible support that improved their health and wellbeing. Isabella found the sessions she went to beneficial—they provided her with practical tools to improve her and her son's health, addressing environmental risks and how to make changes in the home:

“Well, I went to a meeting at La Colaborativa. Beatriz's. Chelita, who's sort of in charge of health, had a meeting in December. We went to about 3. It was about improving, like, the apartment where I was. So she explained that to us—about the environment, air traffic, how harmful it is to one's health. And what I understood is that, well, I could be a potential beneficiary because of my son's condition, because the apartment there didn't have good air conditioning. It leaked.”

Beyond education, La Colaborativa played a critical role in meeting immediate housing needs. Lucia Paz expressed deep gratitude for La Colaborativa as the organization helped her secure shelter:

“Look, I'm lucky I moved because I've been in my shelter since this. I was in a shelter on behalf of La Colaborativa. I was in a shelter for two years. Then my time at the shelter was up. I didn't have any more time, I had to get out. That's when I got my room. I was already moving room to room. But I've also moved this year--I've moved three times. And then again, because the lady says she's going to give up the apartment. [...] I'm very grateful to those who work at La Colaborativa, because they pay attention to you, give their time, and everything. God bless them always.”

For others, La Colaborativa's work had visible effects on the broader community. Marcela reflected on both environmental improvements and the organization's overall commitment to well-being:

“One day in the afternoon we came and they were asking how, how do the trees benefit us? Uh-huh. And what would we like for the future, they said.

[...] I feel that because at least right now that they've planted a lot of trees, it feels cooler, and I feel that it's cooler inside. It also helps more, maybe, at least one person in need.
[...] To me, I feel that it's the entire community. Because many of us come [to La Colaborativa] from everything about oxygen to personal well-being.”

Together, these narratives illustrate the multifaceted role of La Colaborativa: educating residents about health risks, facilitating access to safe housing, and fostering environmental improvements that better the community.

CONCLUSION

This qualitative research study aimed to explore how environmental exposures, housing conditions, and access to healthcare influence respiratory health among low-income and immigrant residents in Chelsea, Massachusetts, to understand participants' knowledge and advocacy strategies for healthier homes and communities, and to examine the role of community organizations like La Colaborativa in supporting these efforts. Data collected from seven participants yielded three primary themes: Theme 1: “The Building Needs Improvements”, Theme 2: “What’s Really Affecting You” and Theme 3: “I Felt Confident in Her Because She Explained it to Me.”

Key findings highlight the persistent challenges participants face, including unsafe housing conditions, exposure to environmental hazards, limited access to timely primary care, and systemic barriers exacerbated by socioeconomic and immigration-related factors. Participants emphasized the importance of physician trust and advocacy, describing how specialists and culturally responsive primary care providers were essential for navigating healthcare systems and managing chronic respiratory disease.

Community resources, particularly La Colaborativa, also played a critical role in addressing health risks, providing education, practical support, and environmental improvements that enhanced both individual and community well-being. Participants relied on these combined supports to feel empowered in managing their health and advocating for safer living conditions.

Limitations of this research included the small sample size and short time frame of three months. With only seven participants interviewed, the findings cannot be generalized to the broader Chelsea community or to larger populations. The limited timeframe also restricted opportunities for deeper engagement with participants and follow-up interviews that might have revealed changes over time or clarified emerging themes. In addition, language barriers may also have introduced inaccuracies or led to a subtle loss of meaning during translation and transcription. Despite these constraints, the study offers meaningful insights into the lived experiences of residents navigating health and housing challenges in Chelsea.

In closing, this study highlights the value of centering the voices of immigrant and low-income communities to inform public health strategies and policies. Listening to residents' narratives can guide clinicians, policymakers, and organizations like La Colaborativa in developing responsive, equitable approaches to improve respiratory health outcomes. By integrating both healthcare and community-based resources, future interventions can better address structural inequities and improve respiratory health outcomes for vulnerable populations.

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