How understanding neighborhoods can help reduce tobacco use

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Smoking harms nearly every organ in the body and causes many diseases. Credit: CDC/Debora Cartagena

A Penn State researcher testing a new way to assess tobacco use with a neighborhood mapping platform and in-person interviews has found that community engagement is key to addressing risky health behaviors.

Cigarette smoking remains the leading cause of preventable disease and

death in the United States, and smoking-related illness costs more than $300 billion each year, according to the U.S. Department of Health and Human Services.

"While there is an extensive literature on neighborhoods and health, substance-use behavior has not typically been explored in comprehensive fashion," said Louisa Holmes, assistant professor of geography. "What we do know is that the tobacco industry targets neighborhoods with higher concentrations of Black, Latino and low-income residents for marketing and promotion, and that there are persistent disparities in tobacco use and cessation between neighborhoods."

Holmes collaborated with colleagues at University of California San Francisco and Streetwyze Inc. to conduct a pilot study using a new web-based mapping platform to explore issues of neighborhood equity and tobacco use behavior.

"Collecting data on product availability, pricing and advertising from area tobacco retailers allows us to investigate how these differ across neighborhoods, and the interviews add needed context to the retail data," Holmes said. "For example, health researchers tend to view convenience stores as a net negative because of their heavy concentration in less advantaged neighborhoods and the access they provide to unhealthy food and tobacco and alcohol. However, participants in our study reported that some tobacco retailers also added community value, as they were places of social interaction and sources for products not readily available elsewhere in that neighborhood."

A mixed methods approach using quantitative data collection, in-depth geographically explicit interviews, and neighborhood-level maps, is helpful for understanding the complexities of human behavior around tobacco use, Holmes said.

"To really understand reasons for health-related behaviors, individual thought processes and choices, and how people view and interact with their environments beyond trends, we have to talk to them," Holmes said.

While the quantitative side of the research shows that wealthy neighborhoods tend to have fewer tobacco retailers, higher tobacco prices and healthier food choices compared to lower-income neighborhoods that have more tobacco retailers, lower tobacco prices and unhealthy food choices, the qualitative side allows the residents to interpret what those differences mean in everyday life and how they may drive behavior, Holmes said.

"What this might mean for policy is that it's important to cultivate public spaces of positive social interaction in neighborhoods, but this can be done in a variety of ways that do not also require sales of tobacco and unhealthy foods," Holmes said. "For example, efforts like the Tenderloin Healthy Corner Store Initiative in San Francisco and the Healthy Corner Store Initiative in Philadelphia aim to transform convenience stores like those mentioned by our participants into affordable healthy options for the neighborhood rather than eliminating them altogether."

Holmes said she hopes the methods used in her pilot study can be refined and applied to other health topics.

"The essential framework of the study is to gain multi-layered information in local contexts, including broader population and environmental trends as well as narratives of the lived experiences of people interacting in those environments daily, so as to paint as comprehensive a picture as possible of how facets of neighborhood life contribute to whatever the outcome of interest may be," she said. "For this study, we looked at tobacco, but given the right data, any number of other topics, such as food environments, could benefit from this

approach as well."

More information: Louisa M. Holmes et al, Piloting a spatial mixed method for understanding neighborhood tobacco use disparities, *Social Science & Medicine* (2021). DOI: 10.1016/j.socscimed.2021.114460

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