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Purchase of Loose Cigarettes by Adult Smokers in Philadelphia: Individual-level Correlates and Neighborhood Characteristics

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Background

- Philadelphia has the highest adult smoking rate and the highest rate of tobacco retailers among the 10 largest U.S. cities.
- Governmental reports have identified high rates of illegal sale of cigarettes in Philadelphia.
- Studies have found that a main source of cigarette use in low income communities is single (loose) cigarettes purchased at tobacco retailers or from unregulated street vendors.
- While studies have shown that loose cigarette use is a problem among urban youth who reside in disadvantaged neighborhoods, less research has been performed among adults on this topic, and no studies focus on Philadelphia.
- In order to efficiently target tobacco control efforts towards reducing smoking rates in Philadelphia, demographic, geographic, behavioral factors affecting the purchase of loose cigarettes need to be determined.

Research Questions:

1. What are the demographic and smoking-related correlates of having purchased loose cigarettes among adult smokers in Philadelphia?
2. Are smokers who purchased loose cigarettes more likely to reside in Philadelphia neighborhoods with high poverty rates, compared to smokers who did not?
3. Are smokers who purchased loose cigarettes more likely to reside in Philadelphia neighborhoods with high tobacco retail density, compared to smokers who did not?

Methods

- This study used self-reported data from the Public Health Management Corporation’s 2010 Household Health Survey (HHS), a representative cross-sectional survey of health related factors among residents of Southeastern Pennsylvania.
- Balancing weights were used to make the sample representative of Philadelphia, PA.
- Smoking status was determined by answering “Every Day” or “Some Days” to the question “Do you NOW smoke cigarettes?”
- A logistic regression model was used to identify demographic and smoking-related predictors of having purchased loose cigarettes in the past 2 months among a sample of adult smokers in Philadelphia.
- The logistic regression model also contained variables representing the density of tobacco retail outlets (per 1000) and percent poverty by Philadelphia Planning Analysis Section (PAS).
- Base maps and geo-coded tobacco-retailer data were provided by the City of Philadelphia. Income data by census tract was compiled using the 2010 U.S. census, and aggregated by PAS.
- Statistical analysis was performed using IBM SPSS Statistics 22. Geographical analysis was performed using ArcGIS 10.2.

Results

- Figure 1 shows a positive association between number of individuals in the HHS sample who purchased loose cigarettes and areas of Philadelphia with high poverty.
- Figure 2 shows a positive association between number of individuals in the HHS sample who purchased loose cigarettes and tobacco retail density.

Discussion

- Greater likelihood of having purchased loose cigarettes among young African American smokers with less than full-time employment was expected given Philadelphia’s high volume of cigarette retailers located in low income, primarily African American, neighborhoods.
- Income and quit attempts were not identified as significant correlates of purchasing loose cigarettes, which differs from previous research.
- While bivariate analysis showed positive association between having purchased loose cigarettes and living in areas with high poverty or tobacco retail density, the multivariate analysis found no significant correlation.
- While fines are imposed for selling loose cigarettes, Philadelphia has limited enforcement capabilities. Results of this study could be used to inform community and city-wide actions to curb illegal sale of cigarettes as part of comprehensive tobacco control efforts.

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