BACKGROUND

In recent years, health agencies have become increasingly more concerned about the detrimental effects of violence on public health. Violent crime (murder, rape, aggravated assault, armed robbery) is a social determinant of health. Studies have shown that residing in a community with a high violent crime rate increases an individual’s risk of adverse health outcomes. Geographic areas with majority minority and impoverished residents have higher violent crime rates. To achieve health equity in the U.S., we need identify the environmental factors that are associated with increased violent crime occurrence.

The retail food environment is hypothesized to play an important role in community violence. Food retail outlets are considered to be crime attractors because they: 1) carry relatively large amounts of money due to the high volume of cash transactions and 2) have minimal security. Prior research has shown that geographic areas with greater retail outlet availability and violent crime rate. We found emerging evidence that suggests communities with a high violent crime rate often have higher violent crime rates. Furthermore, there is research has shown that geographic areas with greater retail outlet availability and violent crime, there are adverse health outcomes. Geographic areas with majority minority and impoverished residents have higher violent crime rate increases an individual’s risk of adverse health outcomes. Geographic areas with majority minority and impoverished residents have higher violent crime rate.

OBJECTIVES

Despite the existing evidence on the relationship between food retail outlet availability and violent crime, there are some key gaps in knowledge. Many prior studies focused solely on the availability of one particular type of outlet. Furthermore, prior studies did not consider the overall healthfulness of the retail food environment. The objective of this study is to fill these gaps in knowledge by examining U.S. county-level associations between food retail outlet availability and violent crime rate. We hypothesize that greater availability of convenience stores and fast food restaurants will be associated with a higher violent crime rate. Findings from this research will contribute needed knowledge to the field on the role of the retail food environment in violent crime occurrence.

METHODS

To achieve our objectives, we obtained data on 3,133 U.S. counties from two public sources: The United States Department of Agriculture (USDA) Food Environment Atlas and the Federal Bureau of Investigation’s (FBI) Unified Crime Reporting Program. All measures reflect 2014 estimates. Per capita represents numerators of 10,000 county residents.

Measures

Food Retail Outlets: per capita grocery stores, convenience stores, supercenters, fast food restaurants, full service restaurants, farmers’ markets, and Modified Retail Environment Index (mRFEI).

Socio-demographics: % under 18, % non-Hispanic black, % Hispanic, % living below the federal poverty threshold, median household income, % residents who are low-income and have low-access to a grocery store, and metro county status.

Violent Crime Rate: per capita total violent crime which includes murder, rape, aggravated assault, and armed robbery.

ANALYSIS

We calculated descriptive statistics (i.e., means and frequencies) for all measures among all counties and stratified by metro county status. We examined multivariable-adjusted linear regression models to examine associations between food retail outlet availability and violent crime rate. Models were adjusted for % under 18, % non-Hispanic black, % Hispanic, % poverty, and metro county status. We reviewed stratified linear regression models to assess associations between food retail outlet availability and violent crime rate by metro county status. All analyses were performed with Stata version 14.

RESULTS

Our analyses linked the availability of several food retail outlets to violent crime rate at the county level, and we observed differences in associations between metro and non-metro counties. Considering that the data were cross-sectional, we cannot rule out reverse causality. Recent studies have hinted at a possible bi-directional relationship between food retail outlet availability and violence. Research is needed to determine if violence influences the retail food environment.

CONCLUSIONS

In summary, food retail outlet availability is associated with violent crime rate at the county level in the U.S. Findings from this study highlight the need for additional research on the intersection of food retail outlet availability and violence. Future studies should evaluate the possible bi-directional relationship between food retail and violent crime, which includes determining if violent crime rate negatively affects food retail outlet availability over time.