Alcohol outlet density and violence: A geospatial analysis

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Abstract

Aims: To examine the relationship between alcohol outlet density and violent crime controlling for neighbourhood sociostructural characteristics and the effects of spatially autocorrelated error. Design: The sample for this ecologic study comprised 188 census tracts from the City of Austin, Texas and 263 tracts from the City of San Antonio, Texas. Data pertaining to neighbourhood social structure, alcohol density and violent crime were collected from archival sources, and analysed using bivariate, multivariate and geospatial analyses. Results: Using ordinary least squares analysis, the neighbourhood sociostructural covariates explained close to 59% of the variability in violent crime rates in Austin and close to 39% in San Antonio. Adding alcohol outlet density in the target and adjacent census tracts improved the explanatory power of both models. Alcohol outlet density in the target census tract remained a significant predictor of violent crime rates in both cities when the effects of autocorrelated error were controlled for. In Austin, the effects of alcohol outlet density in the adjacent census tracts also remained significant. The final model explains 71% of the variance in violent crime in Austin and 56% in San Antonio. Conclusions: The findings show a clear association between alcohol outlet density and violence, and suggest that the issues of alcohol availability and access are fundamental to the prevention of alcohol-related problems within communities.

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