

# The association between density of alcohol establishments and violent crime within urban neighborhoods

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## **Abstract**

BACKGROUND: Numerous studies have found that areas with higher alcohol establishment density are more likely to have higher violent crime rates, but many of these studies did not assess the differential effects of type of establishments or the effects on multiple categories of crime. In this study, we assess whether alcohol establishment density is associated with 4 categories of violent crime and whether the strength of the associations varies by type of violent crime and by on-premise establishments (e.g., bars, restaurants) versus off-premise establishments (e.g., liquor and convenience stores).

METHODS: Data come from the city of Minneapolis, Minnesota in 2009 and were aggregated and analyzed at the neighborhood level. Across the 83 neighborhoods in Minneapolis, we examined 4 categories of violent crime: assault, rape, robbery, and total violent crime. We used a Bayesian hierarchical inference approach to model the data, accounting for spatial auto-correlation and controlling for relevant neighborhood demographics. Models were estimated for total alcohol establishment density as well as separately for on-premise establishments and off-premise establishments.

RESULTS: Positive, statistically significant associations were observed for total alcohol

establishment density and each of the violent crime outcomes. We estimate that a 3.9 to 4.3% increase across crime categories would result from a 20% increase in neighborhood establishment density. The associations between on-premise density and each of the individual violent crime outcomes were also all positive and significant and similar in strength as for total establishment density. The relationships between off-premise density and the crime outcomes were all positive but not significant for rape or total violent crime, and the strength of the associations was weaker than those for total and on-premise density.

CONCLUSIONS: Results of this study, combined with earlier findings, provide more evidence that community leaders should be cautious about increasing the density of alcohol establishments within their neighborhoods.

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