Neighbourhood firearm violence, psychosocial risks and youth firearm perception

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INTRODUCTION

- Firearm injuries = # 1 cause of youth death since 2020.
- > 10% of US adolescents report firearm violence exposure.
- Even without home access, many youth believe they could obtain a firearm, indicating a potential for higher risk of violence and injury.
- Perceived neighborhood firearm access is linked to future firearm use, but research on access outside the home remains limited.

AIMS

- Assess how neighborhood firearm violence and the Child Opportunity Index (COI) relate to youth-reported firearm availability in the ED.
- Evaluate whether psychosocial risks (fighting, retaliation, bullying, intimate partner violence, and at-risk substance use) mediate these associations.

METHODS

- **Design**: Cross-sectional study using 2013–2024 Behavioral Health Screening data
- **Sample**: 16,174 patients (ages 14–18) with 23,334 ED visits
- **Exposure**:
  1) Neighborhood firearm violence (cumulative rate)
  2) Child Opportunity Index (COI), census tract and year–matched
- **Firearm Availability Groups**:
  1) No availability
  2) **At-home availability**
  3) **Perceived availability** (without at-home firearms)
- **Analyses**:
  1) Mixed-effects models (adjusted for age and gender)
  2) Mediation models to test the role of psychosocial risks

CONCLUSIONS

- Youth perceptions of firearm availability are shaped by: Neighborhood firearm violence, structural disadvantage (low COI) & psychosocial risks
- Fighting behaviors partially explained the link between neighborhood violence and perceived access (32% mediated).

CONTACT INFORMATION

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RESULTS

Sample characteristics:
- 64% female, 63% non-Hispanic Black
- 65% Medicaid insured, 75% living in very low COI areas

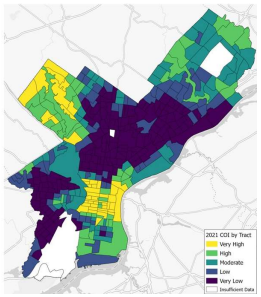
Psychosocial risks:
- Fighting (25%) and school bullying (26%) most common
- Retaliation, IPV, substance use all <10%

Firearm availability groups:
- No access: 87%
- Perceived access (no home firearms): 7%
- At-home access: 6%

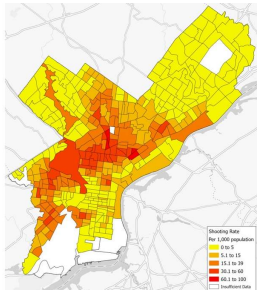
Perceived availability group associated with (p < .001) :
- Minority status, fighting, retaliation, bullying, IPV, substance use
- Lower COI and higher neighborhood firearm violence

At-home availability group associated with (p < .001) :
- Non-Hispanic White status, non-Medicaid insurance
- ED visits for mental health
- Higher COI and lower neighborhood firearm violence

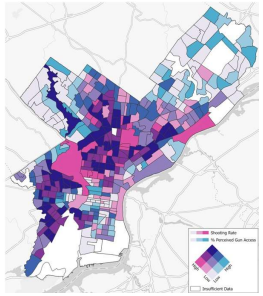
High perceived availability overlaps with high firearm violence in southwest, northwest, and northcentral neighborhoods (dark purple areas in Figure 3)



F1. Child Opportunity Index



F2. Cumulative firearm violence rate



F3. **Perceived firearm availability** & neighborhood firearm violence

Fighting behaviors mediated 32% of the total effect of neighborhood firearm violence on perceived firearm availability.

Table. Neighborhood firearm violence, COI, and youth fighting associated with perceived firearm availability

	Perceived firearm availability, OR (95% CI)		**Mediation effect**
	Without mediator	With mediator	
Model 1			
Neighborhood high firearm violence (Ref: < County's median)	1.84 [1.46-2.31]	1.52 [1.23-1.88]	-
Fighting (Ref: no fighting)	-	3.41 [2.98-4.15]	**32.0%**
Model 2			
COI (Reference: ≥ moderate)	2.21 [1.46-3.33]	1.76 [1.20-2.57]	-
Fighting	-	3.57 [3.03-4.22]	**36.8%**

IMPLICATIONS

❖ Screen for firearm access and psychosocial risk in ED settings

❖ Connect high-risk youth to safety and violence prevention programs