

Violence research and prevention in healthcare settings

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A PILOT IMPLEMENTATION STUDY OF SAFERTEENS-PC: A VIOLENCE INTERVENTION FOR ADOLESCENT PRIMARY CARE PATIENTS

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Statement of Purpose Youth violence is a leading cause of morbidity and mortality. Adolescent primary care visits provide an opportunity for violence screening and delivery of interventions, which are not typically offered in this setting. Thus, we examined implementation of an evidenced-based behavioral intervention (SafeERteens) in primary care.

Methods/Approach Adolescents (ages 14–18) reporting past year aggression on a screening survey were eligible. A quasi-experimental design was used, enrolling a comparison sample (e.g., resource brochure) and an intervention sample, which consisted of clinic staff delivering a 30-minute Motivational Interviewing-based brief intervention, followed by automatic text message boosters over 8 weeks. Follow-up surveys were complete at 3-months.

Results Overall, about half (50.0%; 56.6%) of youth screened positive, with 110 enrolled ($n=49$ comparison; $n=61$ intervention). Intervention delivery characteristics varied by clinic, including completion (75.9%; 62.5%), modality (100% telehealth; 60% telehealth/40% in-person), and enrollment in text messages (81.8%; 55.0%). In analyses comparing relative changes over time (using an intent-to-treat approach), the intervention group showed significantly greater reductions in severe peer aggression ($p<0.05$), anxiety ($p<0.05$) and substance use consequences ($p<0.05$) relative to the comparison group. Other outcomes examined were in the expected direction, with greater reductions in intervention vs comparison groups in peer victimization, substance use, intention to avoid fighting, and depression (all $p's<0.10$). Participant and staff feedback was positive, identifying challenges to long-term implementation.

Conclusions Findings support the feasibility and preliminary effectiveness of delivering violence interventions in primary care, with key lessons learned informing future translation of behavioral interventions into routine care in primary care.

Significance/Contribution to Injury and Violence Prevention Primary care is a useful setting to identify adolescents involved with violence, and deliver interventions, which could reduce injury and improve health outcomes.

Violence prevention policy and advocacy

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ASSOCIATION BETWEEN FIREARM LAWS AND HOMICIDE AMONG EMERGING ADULTS

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Statement of Purpose To assess the impact of firearm laws on homicides among emerging adults (age 18–20) as they are disproportionately victimized in firearm homicide.

Methods/Approach We conducted an interrupted timeseries using negative binomial regression with state and year fixed effects to assess the impact of firearm laws on homicide among those age 18–20 between 1989–2015. Homicide was stratified by firearm and nonfirearm to test for specificity of the laws' effects. Laws were coded as 0 pre-implementation and 1 for the first full year post-implementation. Models controlled for several state demographic characteristics. Age appropriate sub-populations were used to calculate Incident Rate Ratios (IRR).

Results Among emerging adults, handgun purchaser licensing laws (IRR=0.62, 0.50–0.77), large capacity magazine bans (IRR=0.80, 0.69–0.92), and prohibitions for violent misdemeanors (IRR=0.86, 0.76–0.96) were associated with reductions in firearm homicide. Background check alone (IRR=1.12, 1.02–1.24) and shall issue laws without discretion (IRR=1.18, 1.05–1.31) were associated with increases in firearm homicide. Compared to current may issue concealed carry, no issue of permits was also associated with increases in firearm homicide (IRR=1.15, 1.02, 1.29). No policies were associated with changes in nonfirearm homicide.

Conclusions Laws requiring background checks are conducted as part of a licensing system, banning ownership among those convicted of a violence misdemeanor beyond domestic violence, and limiting magazine size are associated with reductions in firearm homicide among emerging adults. Laws that make it easier for civilians to carry guns in public are associated with increases in firearm homicide.

Significance and Contributions of Injury and Violence Prevention Science Emerging adults experience disproportionately high rates of firearm homicide. This is the first study to estimate the impact of firearm laws on homicide of emerging adults and offers specific policy solutions to reduce gun violence in this age group.

Rurality and injury

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URBAN–RURAL TRAUMATIC BRAIN INJURY MORTALITY DISPARITIES BY AGE AND MECHANISM OF INJURY

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Statement of Purpose Traumatic brain injury (TBI) mortality rates have been shown to be higher in rural versus urban areas. Variation by age and intent/mechanism of injury has not been assessed. Urban–rural TBI mortality rate differences were quantified by age and intent/mechanism of injury.

Methods/Approach National Vital Statistics System mortality data (2015–2017) were analyzed by three urban–rural county classifications: large urban, medium/small urban, and rural. Excess TBI mortality rates were calculated relative to large urban areas (rate differences), which had the lowest TBI mortality rates. The proportions of deaths attributable to differences in urbanization (population attributable fraction) were estimated by dividing excess deaths by total TBI deaths. The

proportions of the excess deaths due to each intent/mechanism were calculated by dividing the intent/mechanism-specific excess deaths from the total excess deaths by urbanization level and age group.

Results Rural areas had the highest excess TBI mortality rates. Overall, 18.1% of TBI deaths would be prevented if all areas had the TBI mortality rate of large urban areas. Excess TBI mortality rates in rural and medium/small urban areas were primarily due to motor vehicle crashes (33.2% and 28.5%) and intentional self-harm (38.9% and 44.8%). This was consistent for all age groups except individuals aged ≥ 75 years in medium/small urban areas, for whom unintentional falls and intentional self-harm accounted for the largest share of excess TBI mortality rates.

Conclusions TBI mortality increased with rurality and excess TBI mortality rates were predominantly attributable to motor vehicle crashes and intentional self-harm, with differences by age regarding magnitude and mechanism.

Significance and Contributions to Injury and Violence Prevention Science TBI mortality increases with rurality. Prevention in rural areas may want to focus efforts on reducing TBI-related deaths due to motor vehicle crashes, intentional self-harm, and falls among older adults.

Firearm violence

143 BALTIMORE'S UNDERGROUND GUN MARKET: AVAILABILITY OF AND ACCESS TO GUNS

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Statement of Purpose Underground gun markets create opportunities for individuals who are prohibited from gun ownership to gain access to them. Understanding how these individuals obtain guns, as well as their unsuccessful attempts to get guns, is key to developing interventions that effectively restrict the supply of guns in an underground market.

Methods/Approach We recruited 195 men outside of parole and probation centers in Baltimore City. We conducted surveys with these criminal justice system-involved men about their experiences in the underground gun market. The survey data was gathered using an audio-assisted computer survey instrument. The survey was composed of questions about ability to acquire firearms, why they were desired, and selling/trading behaviors.

Results 30% of respondents (n=58) reported having experience in the underground gun market. More than half of these individuals were unsuccessful in their most recent attempt to obtain a firearm due to cost- or source-related barriers. Over 80% of individuals who did not already have access to a gun but wanted one (31/38) reported wanting to acquire one for safety or protection. Most respondents who had access to firearms had handguns (90%). Individuals reported selling or trading a gun (n=35) for money (69%), drugs (46%), or other guns (23%), or accepting guns as payment for drugs.

Conclusions Although an underground market can facilitate access to firearms, barriers exist that can prevent acquisition by high risk individuals.

Significance and Contributions to Injury and Violence Prevention Science This is the first study to understand the availability of and access to guns in Baltimore's underground gun market. Efforts should focus on strategies that increase accountability and restrict the supply of guns in an underground market or those that provide alternatives to gun carrying to feel safe.

Motor vehicle injuries and policy

146 EXAMINING CHILD RESTRAINT USE AND ORIENTATION AMONG CRASH-INVOLVED CHILD PASSENGERS: DRIVERS' FAILURE TO COMPLY WITH EXISTING LEGISLATION

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Purpose Based largely on biomechanical modeling, several states (including NJ) recently enacted legislation requiring child passengers <2 years to remain in rear-facing child restraints and passengers <4 years in an approved rear- or forward-facing restraint. However, little is known regarding adherence with this legislation. Thus, we examined child restraint use and orientation (rear- vs. forward-facing) for child passengers involved in motor vehicle crashes in NJ.

Methods Utilizing data from the NJ Safety and Health Outcomes warehouse—which includes both driver- and passenger-level data from police-reported crashes—we selected all passengers age <9 who were in an identified seating location at the time of a 2017 crash (n=25,978). As a first step, we describe child passenger demographics and restraint use and orientation.

Results There were equal proportions of male and female passengers with an average age of 4.2+2.5 years. The majority (94%) were seated in the vehicle's second or third row at the time of the crash. Over one-third (38%) of children <1 and almost half (48%) of children between ages 1 and 2 were not properly restrained in rear-facing restraints. Overall, nearly one in five (17%) children <4 were not properly restrained in either a rear- or forward-facing restraint. As age increased, use of restraints decreased, with the majority of children >6 using vehicle seat belts.

Conclusion Findings reflect a preliminary investigation of real-world child restraint use and orientation. Despite legal requirements for rear-facing restraint use for the youngest passengers, many children are improperly restrained and perhaps at greater injury risk.

Significance of Contributions This project is among the first to examine real-world child restraint use across an entire state, providing novel information regarding restraint orientation. Future research will leverage linked hospitalization data to examine child passenger injury outcomes and the contribution of driver-, child- and neighborhood-level characteristics to nonadherence.