Helping Individuals with Firearm Injuries: A Randomized Clinical Trial

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Health Systems Interventions to Prevent Firearm Injuries and Deaths
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- Co-Investigators and collaborators:
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  - Kevin Haggerty, MSW, PhD
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  - Anthony Floyd, MA, PhD
  - Elizabeth Griffin, MSW
  - Vivian Lyons, MPH
  - Research Assistants and Volunteers
Alcohol Interventions in a Trauma Center as a Means of Reducing the Risk of Injury Recurrence

Hypothesis: Providing brief alcohol interventions as a routine component of trauma care would significantly reduce alcohol consumption and would decrease the rate of trauma recidivism.
Findings: Change in mean number of drinks per week
Findings: Risk of re-injury
Findings: Risk of other outcomes

- Any traffic violation: 0.83
- Moving violation: 0.84
- DUI violation: 0.77
- Any arrest: 0.56
- Alcohol related arrest: 0.50

Frequency scale:
- Less frequent
- More frequent
“Given the prevalence of alcohol problems in trauma centers, screening, intervention, and counseling for alcohol problems should be routine.”
“Trauma centers are required to identify at least one member of the trauma staff to receive training in how to administer SBI and to monitor and evaluate program activities.”

American College of Surgeons Committee on Trauma
US Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute on Alcohol Abuse and Alcoholism
Substance Abuse and Mental Health Services Administration
National Highway Traffic Safety Administration
Original Research

Firearm-Related Hospitalization and Risk for Subsequent Violent Injury, Death, or Crime Perpetration
A Cohort Study

Original Research

Violence Perpetration Among Patients Hospitalized for Unintentional and Assault-Related Firearm Injury
A Case-Control Study and a Cohort Study

## Findings

<table>
<thead>
<tr>
<th>Index Hospitalization</th>
<th>Hospitalization</th>
<th>Nonfirearm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Assault</td>
</tr>
<tr>
<td>Violent injury</td>
<td>21.2 (7.0–64.0)</td>
<td>7.3 (3.5–14.9)</td>
</tr>
<tr>
<td>(n = 8655)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firearm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 613)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonfirearm, assault</td>
<td>3.1 (0.9–10.3)</td>
<td>6.6 (4.0–10.7)</td>
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<tr>
<td>(n = 2453)</td>
<td></td>
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</tr>
<tr>
<td>Nonfirearm, self-inflicted</td>
<td>0.8 (0.1–5.8)</td>
<td>1.6 (0.8–3.3)</td>
</tr>
<tr>
<td>(n = 5589)</td>
<td></td>
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<tr>
<td>Nonviolent injury</td>
<td>1.7 (0.8–3.8)</td>
<td>2.5 (1.7–3.5)</td>
</tr>
<tr>
<td>(n = 62428)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noninjury</td>
<td>1.0 (reference)</td>
<td>1.0 (reference)</td>
</tr>
<tr>
<td>(n = 175039)</td>
<td></td>
<td></td>
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</tbody>
</table>
**Figure 2.** Cumulative incidence of first violence-related arrest after hospitalization discharge among the 3 groups, by injury intent.

<table>
<thead>
<tr>
<th>Year From Hospitalization Discharge</th>
<th>Firearm injury</th>
<th>Other injury</th>
<th>No injury</th>
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<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0.02</td>
<td>0.004</td>
</tr>
<tr>
<td>2</td>
<td>0.03</td>
<td>0.05</td>
<td>0.006</td>
</tr>
<tr>
<td>3</td>
<td>0.06</td>
<td>0.08</td>
<td>0.01</td>
</tr>
<tr>
<td>4</td>
<td>0.09</td>
<td>0.12</td>
<td>0.015</td>
</tr>
<tr>
<td>5</td>
<td>0.12</td>
<td>0.14</td>
<td>0.02</td>
</tr>
<tr>
<td>6</td>
<td>0.15</td>
<td>0.16</td>
<td>0.02</td>
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<table>
<thead>
<tr>
<th>Hospitalized Patients, n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assault-related</td>
</tr>
<tr>
<td>Firearm injury</td>
</tr>
<tr>
<td>Other injury</td>
</tr>
<tr>
<td>No injury</td>
</tr>
<tr>
<td>Unintentional</td>
</tr>
<tr>
<td>Firearm injury</td>
</tr>
<tr>
<td>Other injury</td>
</tr>
<tr>
<td>No injury</td>
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</tbody>
</table>
Significance

- Wraparound programs for trauma patients at healthcare settings
- 2009: National Network of Hospital-based Violence Intervention Programs
  - Trauma informed care
  - Teachable moment
  - Interrupt the costly cycles of violent injury by transforming medical treatment into a catalyst for positive life changes
- Additional research on the effectiveness and implementation of these programs is needed to build robust empirical support for policy and practice
Approach

- Helping Individuals with Firearm Injuries (HiFi)
- Ongoing RCT among patients with GSW presenting to HMC
- Participants receive either an intervention or treatment as usual
- The unit of randomization is the calendar week
- Study staff assign patients with GSW to one of the two groups based on the week in which they present to HMC
- Enrollment and follow-up
  - 2016-2019
Slide 16

Intervention

- MI
- CTI
- MDT
• **Pre-CTI**: Develop a trusting relationship with patient
• **Phase 1**: Provide support and begin to connect patient to people and agencies that will assume the primary role of support
• **Phase 2**: Monitor and strengthen support network and patient’s skills
• **Phase 3**: Terminate CTI with support network in place
Measures

- Using several administrative databases and self-reported surveys:
  - Criminal justice involvement (e.g., arrests)
  - Healthcare utilization including hospitalizations/ED visits
  - Depression
  - Posttraumatic stress
  - Substance use
  - Life satisfaction
  - Social support
  - Physical and mental health-related quality of life
  - Exposure to violence
Challenges

- Cost
- SEP
- Systems Avoidance
Conclusions

• With sufficient support, feasible and rewarding
  • “I would have no clue what to do without you. I didn’t even know these services exist.”
  • “The counselor you referred us to is great and has been making a huge difference!”
  • “I wish there were more programs like this.”
• Raising awareness about HVIPs
  • Enhanced communication among those involved in the implementation and evaluation of these program
  • Continued advocacy to harness additional sources of funding to contribute to the sustainability of HVIPs