Understanding the Impact of De-escalation during Police-Civilian Interactions: Developing a Comprehensive Research Framework for Police Reform

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What we know about UoF studies ...

• What and how we “count” use of force varies dramatically across police departments and researchers
• Prevalence estimates vary depending on how use of force is conceptualized, measured, and reported
• Large methodological and statistical variations across studies
Basic Example: Measuring Use of Force

Units of Analysis

<table>
<thead>
<tr>
<th>Incident</th>
<th>Individual</th>
<th>Actions</th>
<th>Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police-Citizen Encounter</td>
<td>Citizen 1</td>
<td>Taser, OC Spray</td>
<td>Police Officer 1</td>
</tr>
<tr>
<td>Citizen 2</td>
<td>Physical Restraint</td>
<td>Physical Restraint</td>
<td>Police Officer 2</td>
</tr>
<tr>
<td>N = 1</td>
<td>Verbal Command, Canine Deployment</td>
<td>Canine Deployment</td>
<td>Police Officer 3</td>
</tr>
</tbody>
</table>

Use of Force Counts

N = 1, N = 2, N = 6, N = 3
What we know about UoF studies ...

- Measuring racial/ethnic disparities in use of force is also fraught with inconsistencies and inappropriate benchmark comparisons.
- Measuring the factors that predict use of force (e.g., situational, legal, individual, organizational, community) often have same limitations as measurements of UoF.

- Limitations in UoF studies can be even more problematic when examining the impact of UoF reform efforts.
  - Why ... and what can we do about it .... Using example of police de-escalation training.
De-escalation Training

• Widely supported by across various stakeholders; endorsed by experts and academics after 2014

• Most recently, calls for de-escalation training have been combined with calls for changes in UoF policies, peer-intervention, and larger reform efforts

• No uniform definition or recognition of what “de-escalation” is

• Sparse evidence regarding its effectiveness
# De-escalation Training

<table>
<thead>
<tr>
<th><strong>SUPPORT</strong></th>
<th><strong>CONCERNS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Viewed as “common sense” approach</td>
<td></td>
</tr>
<tr>
<td>• Perceived as effective for CIT and SWAT units</td>
<td></td>
</tr>
<tr>
<td>• Used in other countries – considered “best practice”</td>
<td></td>
</tr>
<tr>
<td>• Believed to:</td>
<td></td>
</tr>
<tr>
<td>o Reduce frequency/severity of officer use of force</td>
<td></td>
</tr>
<tr>
<td>o Reduce officer/citizen risk of injury/death</td>
<td></td>
</tr>
<tr>
<td>• No systematic evidence regarding officer risk/safety</td>
<td></td>
</tr>
<tr>
<td>• Environment growing more dangerous for police</td>
<td></td>
</tr>
<tr>
<td>• Training contradicts traditional tactics believed to be effective</td>
<td></td>
</tr>
<tr>
<td>• Believed to:</td>
<td></td>
</tr>
<tr>
<td>o Teach officers to become hesitant to use force</td>
<td></td>
</tr>
<tr>
<td>o Increase officer/citizen risk of injury/death</td>
<td></td>
</tr>
</tbody>
</table>
Does de-escalation training work?

• Prior to 2019 – no studies of police de-escalation training

• Studies have measured changes in officers’ attitudes, perceptions, knowledge, and self-reported behaviors

• Does it change officer behavior?
  • Must consider **changes** in:
    • Use of force incidents
    • Citizen complaints re: force
    • Citizen and officer injuries resulting from UOF incidents
    • Severity of force incidents, relative to resistance
Impact of Police Reforms on Measuring Use of Force Severity

Severity measured as:

- Type of force – severity continuum
- Force relative to resistance – Force Factor (Alpert & Dunham, 1997)
- Police force relative to civilian resistance
  - Captures the escalation and de-escalation of both officer and civilian behaviors during an individual use of force encounter
    - Officers might use multiple types of force
    - Civilians might respond using multiple types of resistance
  - Used to determine whether use of force was proportionate
- De-escalation-based UoF models make creation of force factor more challenging
Use of Force Continuum: Philadelphia PD (2020)

- **DEADLY FORCE**
  - **OFFICER OPTIONS:** Firearms
  - **OFFENDER BEHAVIOR:** Reasonable belief that there is an immediate threat of death or serious bodily injury

- **LESS LETHAL FORCE**
  - **OFFICER OPTIONS:** Electronic weapon (ECW), ASP/Baton
  - **OFFENDER THREAT:** Physically aggressive or assaultive behavior with immediate likelihood of injury to self or others

- **MODERATE/LIMITED FORCE**
  - **OFFICER OPTIONS:** Physical control holds, OC spray
  - **OFFENDER THREAT:** Resisting and non-compliant

- **NO FORCE**
  - **(Use of Force Report not required)**
  - **OFFICER OPTIONS:** Verbal commands, officer presence
  - **OFFENDER THREAT:** Obedient, compliant, non-aggressive

Use the option that represents the minimal amount of force necessary to reduce the immediate threat.

Source: Philadelphia Police Department Use of Force Policy, Directive 10.1
Use of Force Continuum: Las Vegas Metro (2020)

Each bold force option within the Levels of Control represents the highest level of force option available; however, other force options should be considered to help de-escalate the situation.
Use of Force Continuum: Dallas PD (2019)

Dallas Police Department

Linear Response Continuum

- Officer’s Response/ Levels of Control
- Officer Presence, Verbal Direction
- Psychological Intimidation, Resistive Dialogue
- Passive Resistance
- Soft Empty Hand Control
- Hard Empty Hand Control, OC Spray, ECW, Pepperball area saturation
- Defensive Resistance
- Intermediate Weapons, Impact Weapon/Baton, Pepperball direct contact
- Active Aggression
- Deadly Force

Chance of Injury to Subject & Officer

Subject’s Behavior/ Levels of Resistance
The officer continuously assesses the situation and acts in a reasonable manner to ensure officer and public safety.
Use of Force Model: Queensland, Australia
ICAT Critical Decision Making Model (PERF)
Why does this matter for measuring UoF?

• How police are conceptualizing and reporting force is likely to change ... this is important for measuring severity of force ... which in turn matters for determining effectiveness of de-escalation training

• Severity measures are especially important for studies of de-escalation

• UoF counts may not decrease even if training is effective

• Presents another challenge for studying UoF
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Changes must correspond with timing of the training
Assessments of Police Training

• Few studies examine effectiveness of police training
  • Those that do mostly use survey designs
  • Some interrupted time series analyses – but many limitations
• Difference-in-Difference models need to compare across agencies (problematic for UOF)
• Very few use Randomized Control Trial (RCT) designs
  • Operationally challenging to administer
  • Strong likelihood of contamination
  • Ethical considerations
Stepped Wedge RCT

• Hussey and Hughes (2007) framework, primarily used in the fields of health (medicine, nursing) and education

• Clusters of research subjects are randomly exposed to intervention sequentially over time

• Crossover design: clusters of subjects begin as no-intervention control groups, but cross permanently from control group into intervention group in sequence at randomized, pre-specified time

• Design allows experimental comparison between subjects in clusters receiving intervention and subjects in clusters receiving “conditions as usual” awaiting crossover

• Used to study NYPD implicit bias training (Worden et al., 2020)
Stepped Wedge RCT Design as Implemented in LMPD

<table>
<thead>
<tr>
<th></th>
<th>Pre-Training</th>
<th>Implementation Period</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 0</td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td><strong>Strata 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 1, 6, &amp; 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strata 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 4, 5, &amp; 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strata 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 2, 3, &amp; 9</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- Control (pre-training)
- Training
- Treatment (post-training)

Note: Step 0 = January 2019 to February 10, 2019; Steps 1 to 3 = February 11, 2019 to November 30, 2019; Step 4 = December 1, 2019 to February 2020
Stepped Wedge RCT Design

• Examine whether changes in outcomes corresponds with timing of training relative to pre-training period (baseline) and other division clusters that had not yet crossed over into treatment (controls)

• Linear mixed model – cluster level random effect (clusters = police divisions)

• Includes fixed effect for time (assumes a common underlying secular trend across all clusters)

• Includes single term for treatment (implying a constant shift from untreated to treated condition)

• Random assignment and diagnostic tests show between clusters stability pre-treatment
Findings from Stepped-Wedge RCT

Study of de-escalation training with LMPD (Engel et al., 2020)

- Significant reductions in police UOF incidents (-28%), citizen injuries (-26%) and officer injuries (-36%)

Study of implicit bias training with NYPD (Worden et al., 2020)

- No significant changes in counts or racial disparities for multiple police actions (stops, citations, arrests, and UOF)
Limitations of Stepped Wedge Design

• Restrictions on agency size eligible
• Restrictions on time to implement training eligible
• Assumption that secular trend may influence different clusters at the same time – possible that some districts could be impacted differently on factors related to UoF
• Training delivery may impact control sites through maturation related to policy changes or other agency factors – impact of training alone may be overstated relative to other contemporaneous factors

• Hybrid of fixed effects panel regression modeling and interrupted time series – making it an appropriate statistical test to measure training effects
Moving Forward: Documenting the Impact of Police Reform

• Struggle to compare UOF prevalence and severity across jurisdictions will continue for the foreseeable future
  • Greatest opportunity to standardize is at the state level

• In the interim, focus on meaningful research that will support police reform efforts

• Develop loose framework that provides agencies with their own opportunities to appropriately measure change within their agencies
  • Standardization is not necessary for meaningful research – methodology should vary based on agency size, policies, training, reporting, etc.
Moving Forward: Supporting Police Reform

• Strengthen research designs and analyses to support pre/post comparisons, changes within agencies
• Develop basic data and analytical guides that are helpful for agencies, policymakers, and communities
• Support the collection of new data sources (e.g., de-escalation tactics)
• Invest in research examining content-rich data sources to better unravel police-civilian interactions (SSO, report narratives, BWC footage, interviews)
• Refocus efforts to appropriately measure racial/ethnic disparities
• More involvement of scientific community within agencies and communities
Comments / Questions?

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