Testing the Impact of De-escalation Training on Officer Behavior: The Tempe (AZ) Smart Policing Initiative

Final Report

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EXECUTIVE SUMMARY

The Tempe Smart Policing Initiative is a straightforward project: design, deliver, and evaluate a de-escalation training program. The Tempe team believed an "off-the-shelf" training would not be sufficient for their needs, or the needs of their community. As a result, the team customized their own training to fit the Tempe officers and their community.

Design

The Tempe team devoted 18 months to curriculum development, centered on three activities. First, they sent officers to nearly two dozen de-escalation trainings, including several of the most popular trainings such as T3 (https://www.polis-solutions.net/t3) and ICAT (https://www.policeforum.org/icat-training-guide, and trainings of specific police departments (e.g., LAPD). Officers completed an evaluation form for each training. Second, the ASU researchers spent five months shadowing peer-nominated (peers within the Tempe Police Department) top de-escalators to "watch them in action" and harness their local expertise. This included dozens of ride-alongs, one-on-one interviews, and focus groups. Third, the ASU researchers conducted a departmentwide survey to gather perspectives about de-escalation from all officers. A curriculum subcommittee reviewed all the information gathered in the design phase, and they worked with professional curriculum developers to create the training content.

Deliver

The Tempe de-escalation curriculum is grounded in officer safety, health, and wellness, and it draws heavily from the LAPD's PATROL model: Planning, Assessment, Time, Redeploy, Other Resources, Lines of Communication. The PATROL model emphasizes constant re-evaluation of circumstances, adaptability, slowing down the encounter, and using time and distance to the officer's favor. The Tempe team delivered the 10-hour training to randomly selected patrol and specialty units in a series of one-day sessions in February/March 2020. The training also includes five refresher virtual trainings delivered in the months after the initial session.

Evaluate

The randomized controlled trial design compares outcomes among officers in squads randomly assigned to Treatment (n=109) and Control (n=107) groups. In order to assess the impact of the training, ASU researchers drew on a wide range of data sources, including pre- and post-training officer perception surveys, phone surveys of citizens, administrative data on use of force, review of randomly selected BWC footage (six months pre- and post-training), and review of BWC footage of all use of force incidents (six months pre- and post-training).

Descriptive analysis of trends in the administrative data shows no clear impact of the training on officer use of force, but this analysis is confounded by the COVID-19 pandemic and George Floyd protests. Arguably, these events affected both Treatment and Control officers, but the specifics of those effects remain unclear. However, analyses of several other data sources demonstrate the positive impact of the training. **Officer surveys show, post-training, Treatment officers place greater emphasis on compromise and self-report greater use of compromise, knowing when to walk away, and maintaining officer safety.** Results from phone surveys of hundreds of citizens who had recent encounters with Tempe officers show 16 statistically significant differences between Treatment and Control officers (16 out of 28

measures), all favoring a positive training impact (mean scores on a Likert scale, 0-3). Citizens who interacted with Treatment officers were **significantly** more likely to agree:

- **the officer treated them fairly (*2.65 vs 2.46*);**
- **the officer was honest with them (*2.65 vs 2.48*);**
- **the officer listened carefully (*2.61 vs 2.41*);**
- **the officer acted professionally (*2.67 vs 2.47*).**
- **they were satisfied with how they were treated (*2.56 vs 2.33*);**
- **they were satisfied with the resolution to their situation (*2.21 vs 1.89*);**
- **the officer had a calm tone (*2.60 vs 2.28*);**
- **the officer used appropriate language (*2.70 vs 2.57*);**
- **the officer encouraged them that a positive outcome could be reached (*2.37 vs 2.14*);**
- **the officer remained neutral throughout the encounter (*2.61 vs 2.43*);**
- **the officer was patient with them (*2.63 vs 2.46*);**
- **the officer actively listened (*2.57 vs 2.40*);**
- **the officer compromised with them (*2.38 vs 2.14*);**
- **the officer showed empathy (*2.47 vs 2.23*);**
- **officer did or said things to calm them down (*2.40 vs 2.10*).**

Citizens were less likely to agree that they were upset/angry at the officer (*0.44 vs 0.65*).

ASU researchers examined randomly selected BWC footage recorded by Treatment (n=150) and Control officers (n=96) post-training. There were no differences among officers assigned to specialty units, but Treatment officers assigned to patrol were significantly:

- **less likely to use a condescending/patronizing tone (2% vs. 8.5% for Control);**
- **more likely to attempt to build rapport with the citizen (39.6% vs. 25.8% for Control);**
- **less likely to fail to transfer control to another officer (100% vs. 91.3% for Control);**
- **less likely to use charged/imposing body language (0.7% vs. 4.4% for Control);**
- **more likely to resolve the encounter informally (68.9% vs. 59.5% for Control), particularly for issuing a ticket or citation (2.0% vs. 19.1% for Control).**

ASU researchers also examined BWC footage of all use of force incidents six months before and after the training. During the pre-training period, Treatment officers were significantly less likely to use nine different de-escalation tactics. Post-training, all of those pre-training differences disappeared, and there is a statistically significant difference in citizen injuries: **citizens were 58% less likely to be injured during use of force encounters with Treatment officers.**

Lessons Learned

The results are clear and compelling: the Tempe de-escalation training fundamentally altered - **for the better**- the ways in which officers handle encounters with citizens. The Tempe SPI offers several lessons learned regarding de-escalation training. These lessons include:

- engage in an intensive and inclusive curriculum development process;
- harness local expertise by identifying and learning from peer-nominated "top de-escalators;"
- collaborate with professional instructional designers to create the training content;
- overcome officer resistance by grounding the training in officer safety, health and wellness;
- develop refresher trainings that reinforce key de-escalation principles;

- partner with a researcher to rigorously evaluate the training;
- include a wide range of measures to assess training impact, both traditional (administrative use of force data) and those that are more nuanced (officer and citizen surveys; review of body-worn camera footage).

Testing the Impact of De-escalation Training on Officer Behavior: The Tempe (AZ) Smart Policing Initiative[1]

INTRODUCTION

Statement of the Problem

August 9, 2021 marked the seven-year anniversary of Michael Brown's death in Ferguson, Missouri. In 2014-15, the police killings of Brown, Freddie Gray, Walter Scott, and others led to public outrage, riots, and demands for police reform. In December 2014, former President Obama created the President's Task Force on 21st Century Policing to examine the causes of the crisis, and to identify recommendations for improving community trust and enhancing police accountability. The Task Force final report included nearly 60 recommendations to improve policing, but de-escalation training was the only action item specifically related to police use of force (President's Task Force on 21st Century Policing, 2015). The final report states (2015, p. 20), "Law enforcement agency policies for training on use of force should emphasize de-escalation and alternatives to arrest or summons in situations where appropriate." In 2016, the Police Executive Research Forum (2016, p. 2) argued that agencies should make "it clear that de-escalation is the preferred, tactically sound approach in many critical incidents." In January 2017, eleven law enforcement leadership organizations[2] released a *National Consensus Policy on Use of Force,* with de-escalation as a centerpiece: "an

[1] Portions of this final report are drawn from prior published articles describing the project.

[2] The consortium includes: International Association of Chiefs of Police (IACP), Fraternal Order of Police (FOP), The Commission on Accreditation for Law Enforcement Agencies (CALEA), International Association of Directors of Law Enforcement (IADLEST), National Tactical Officers Association (NTOA), National Organization of Black Law Enforcement Executives (NOBLE), Association of State Criminal Investigative Agencies (ASCIA), Federal Law Enforcement Officers Association, Hispanic American Police Command Officers Association (HAPCOA), National Association of Women Law Enforcement Executives (NAWLEE), and the National Association of Police Organizations (NAPO).

officer shall use de-escalation techniques and other alternatives to higher levels of force consistent with his or her training whenever possible and appropriate before resorting to force and to reduce the need for force." The message was clear: police officers should be trained in de-escalation.

On May 25, 2020, five years and nine months after Michael Brown's death in Ferguson, Minneapolis police officer Derek Chauvin knelt on George Floyd's neck for nearly nine minutes, killing him. Floyd's death, along with the police killings of Breonna Taylor, Rayshard Brooks, and others, reignited the national outrage over police use of force, demonstrated by protests across the globe, legislative efforts to reform the police at the local, state, and federal level, and even calls to defund the police.

These tragic deaths in 2020 also amplified calls for police to receive training in de-escalation (Brumback and Rico, 2020). Though de-escalation has diffused widely and rapidly in law enforcement since Michael Brown's death (McKesson et al., 2016), there is no agreed-upon definition of the term or the tactics that comprise it. Moreover, Engel et al. (2020) recently completed a multidisciplinary systematic review of de-escalation training over a 40-year period (1976-2016), and they identified no evaluations of de-escalation in criminal justice or policing. Despite widespread calls for de-escalation training from citizens, advocacy groups, politicians and police leaders, there is virtually no empirical evidence on de-escalation in policing. We do not know what it is, what it includes, or whether it is effective.

In the last two years, researchers have begun to fill this gap by studying officer perceptions of de-escalation (Todak and White, 2019; McLean et al., 2020; White et al., 2019; Engel et al., 2020). This is an important first step, but few studies have explored the impact of

actual training on officer behavior, most notably use of de-escalation tactics and use of force. The Tempe SPI sought to fill this gap.

The Tempe Smart Policing Initiative

In 2017, the Tempe (AZ) Police Department (TPD) and researchers from Arizona State University (ASU) received funding through the Bureau of Justice Assistance (BJA) Smart Policing Initiative (SPI)[3] to design, deliver, and evaluate a customized de-escalation training program.[4] After a review of the relevant literature, this final report describes each of the three phases of the project: the **design** of the de-escalation curriculum, the **delivery** of the training via a squad-based randomized controlled trial, and the **evaluation** of the training impact. The evaluation compares officers in squads randomized to receive the training (Treatment group) to those who did not receive the training (Control group). The evaluation includes pre- and post-training assessment of:

- officer perceptions surveys;
- administrative data on use of force;
- citizen perception surveys (post-training only);
- random review of body-worn camera (BWC) footage;
- review of BWC footage of use of force incidents.

The report ends with a discussion of the implications of the findings for the larger discussion on police use of force and the role of de-escalation training, as well as lessons learned from the Tempe project.

[3] BJA created the Smart Policing Initiative (SPI) in 2009. The program was renamed "Strategies for Policing Innovation" during the Trump Administration, but last year BJA returned to the original name.
[4] Dr. White and the Tempe Police Department had just finished a funded, two-year evaluation of TPD's body-worn camera program. This project built on the success of that prior collaboration.

LITERATURE REVIEW

The Central Role of Force in Policing

Policing scholars have long understood the difficulty of managing encounters with potentially violent citizens (Bittner, 1970; Manning, 1978). The primary goal in police-citizen encounters is to resolve the interaction peacefully, or with the least amount of force necessary (Bittner, 1970; Klockars, 1985). Despite its importance to the police role, use of force is a statistically rare event--2% of the 53.5 million police-citizen contacts in 2015 resulted in the threat or use of force (Davis et al., 2018). However, that does not diminish the significance of the estimated 2,931 daily use of force incidents (Davis et al., 2018). Although some encounters require force, how often it is used (and what type of force is used) is to some extent dependent on the skills of the responding officer (Fyfe, 1996; Kane and White, 2013).

De-escalation and the Early Research on Police

Muir (1977) and Bittner's (1967) work on skid row policing and typologies of skilled officers is particularly important to frame the discussion of de-escalation. Muir (1977, p. 50) described the professional officer as being morally reconciled with the use of force (termed "passion") and having an understanding of the dignity and tragedy of the human condition (termed "perspective" or empathy). Other non-professional officers would lack one or both of these characteristics. According to Bittner (1967), officers can engage in effective peacekeeping by gaining detailed knowledge of their beat and its residents, seeking alternatives to arrest, and making decisions in the pursuit of violence reduction rather than law enforcement. Additionally, Fyfe (1996) defined two types of excessive force: extralegal and unnecessary. Extralegal force is intentional abuse of citizens driven by an officer's malice (i.e. brutality). Given the officer's intent, de-escalation is not part of the equation. In contrast, unnecessary force is excessive force

resulting from officer carelessness or incompetence. The skilled officers characterized by Muir (1977) and Bittner (1967) are able to resolve encounters without using unnecessary force. In other words, those officers are skilled de-escalators.

De-escalation in 21st Century Policing

Though early research provides important context, there is currently little consensus about the specifics of de-escalation. In their systematic review, Engel et al. (2020) identified only one concrete definition of de-escalation, from the National Consensus Policy on Use of Force (IACP, 2017, p. 2):

> Taking action or communication verbally or non-verbally during a potential force encounter in an attempt to stabilize the situation and reduce the immediacy of the threat so that more time, options, and resources can be called upon to resolve the situation without the use of force or with a reduction in the force necessary. De-escalation may include the use of such techniques as command presence, advisements, warnings, verbal persuasion, and tactical repositioning.

Their multidisciplinary systematic review of de-escalation training over a 40-year period (1976-2016) identified **no evaluations** in criminal justice or policing (Engel et al., 2020). The lack of empirical evidence is compounded by the fact that de-escalation is not universally embraced. Critics perceive de-escalation as an effort to limit or control the authority to use force, thereby increasing the risk of potential officer injury or death (Blake, 2017; Jackman, 2016; Landers, 2017; Williams, 2015). Engel et al. (2020) note that central principles of de-escalation, such as slowing down a potentially violent encounter, are antithetical to decades of traditional police training (e.g. establish quick control of the situation). Mixed support for de-escalation raises concerns about the willingness of officers to embrace such training, as well as to use the tactics to resolve police-citizen encounters.

Fortunately, the research base on police de-escalation has grown since Engel et al.'s (2020) systematic review, with most of the studies assessing officer attitudes. Examination of officer attitudes about de-escalation is important because a large body of psychological literature demonstrates the importance of attitudes in shaping behavior (Ajzen, 1991; Ajzen et al., 2019; Fazio, 1986, 1990). **In other words, what officers think about de-escalation likely affects how willing they are to use it.** Todak and White (2019) conducted interviews with eight peer-nominated officers considered exceptional at de-escalation. The officers identified five key de-escalation tactics: humanity, listening, compromise, honesty, and empowerment. The officers also described impediments to those tactics, such as the immediacy of the threat, time, and citizen intoxication. As part of the Tempe SPI, White et al. (2019) surveyed officers in the Tempe (AZ) Police Department regarding their attitudes toward de-escalation prior to the delivery of de-escalation training. Officers valued de-escalation and were open to de-escalation training, but they were skeptical of its effectiveness on citizen encounters. Officer attitudes did not vary by race or gender. Todak and James (2018) conducted systematic social observations during ride-alongs to examine de-escalation tactics used by police. Officers frequently used respectfulness and active listening. The authors also found that maintaining a calm demeanor and emphasizing one's humanity significantly increased the likelihood of a calm citizen demeanor at the end of the encounter (Todak and James, 2018).

A few studies explore the influence of actual training on officer attitudes about de-escalation, or how often they employ it. Isaza and colleagues (2019) reported positive attitude change among University of Cincinnati police officers after they received PERF's *Integrating Communications, Assessment, and Tactics* (ICAT) training. Engel et al. (2020: xii) examined the impact of ICAT training with officers in the Louisville (KY), and results indicate "the randomly

assigned timing of de-escalation training in Louisville was associated with a statistically significant decline in use of force (-28%), citizen injuries (-26%), and officer injuries (-36%)." McLean and colleagues (2020) found that T3 training (https://www.polis-solutions.net/t3) led to no differences in behavior among Fayetteville (NC) and Tucson (AZ) officers (measured as use of force), but they did find that officer attitudes improved. During a hypothetical officer-citizen encounter, treatment officers placed higher priorities on procedurally fair communication (McLean et al., 2020).

DESIGN – BUILDING THE TEMPE DE-ESCALATION CURRICULUM

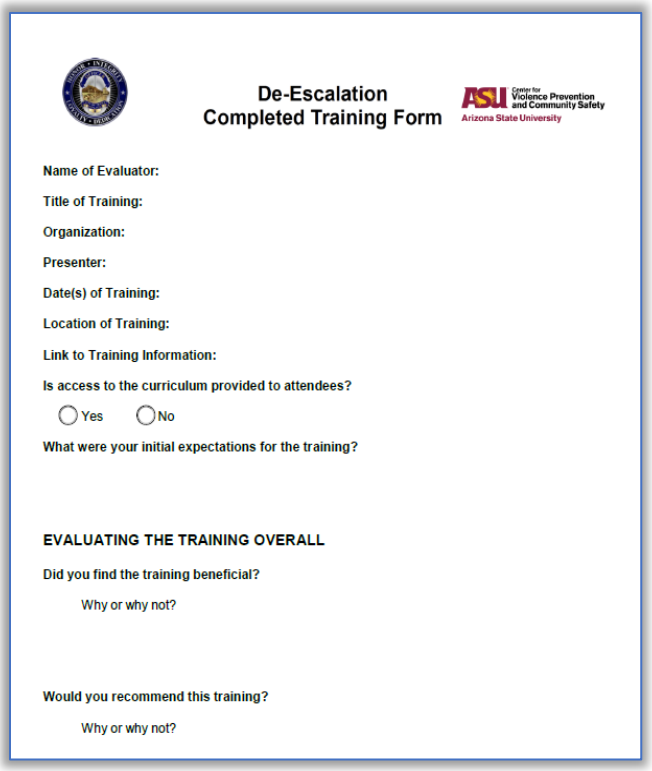
The TPD leadership decided early-on they did not want to use an existing off-the-shelf de-escalation training. Rather, they wanted to design a training that was customized for their officers and community. The Tempe team created a curriculum committee including TPD training staff, field operations personnel at various ranks, several peer-nominated top de-escalators (see below), a representative from the Tempe Officers Association, the ASU researchers, and curriculum instructional designers from ASU. This committee led the project and oversaw the curriculum building process. Over an 18-month period, the Tempe team engaged in three curriculum-building activities: sending officers to other trainings, learning from peer-nominated experts in TPD to "harness local expertise," and asking all sworn officers to complete a de-escalation perception survey.

Sending Officers to De-escalation Trainings

The TPD sent officers to 22 different de-escalation trainings, from September 2018 – March 2019. Some were online (n=5), some were local (4), and many involved out-of-state travel (13). Officers attended some of the most popular trainings, such as T3 (https://www.polis-solutions.net/t3), and PERF's ICAT, as well trainings of specific departments (e.g., LAPD).

Officers who attended a training completed an evaluation form and reported back to the Tempe team (see Figure 1). For each training, the team discussed the most relevant components that should be incorporated into the Tempe curriculum. ASU researchers compiled the information from the evaluation forms to identify consistent themes across the trainings.

Figure 1 De-escalation Training Evaluation Form



De-Escalation
Completed Training Form

Center for Violence Prevention and Community Safety
Arizona State University

Name of Evaluator:

Title of Training:

Organization:

Presenter:

Date(s) of Training:

Location of Training:

Link to Training Information:

Is access to the curriculum provided to attendees?

◯ Yes ◯ No

What were your initial expectations for the training?

EVALUATING THE TRAINING OVERALL

Did you find the training beneficial?

Why or why not?

Would you recommend this training?

Why or why not?

Harnessing Local Expertise from TPD's "Top De-escalators"

In order to harness the local expertise in TPD, all sworn personnel in field operations (approximately 200) were asked to anonymously nominate three co-workers who they considered to be highly skilled at de-escalation (officers could self-nominate). More specifically, the ASU researchers provided each officer with the following instructions:

We would like to identify a group of Tempe police officers who are especially skilled at de-escalation, and who have consistently demonstrated an ability to defuse potentially violent encounters. Please write the first and last names of three of your colleagues who you consider the most highly skilled at de-escalating difficult, potentially violent citizen encounters.

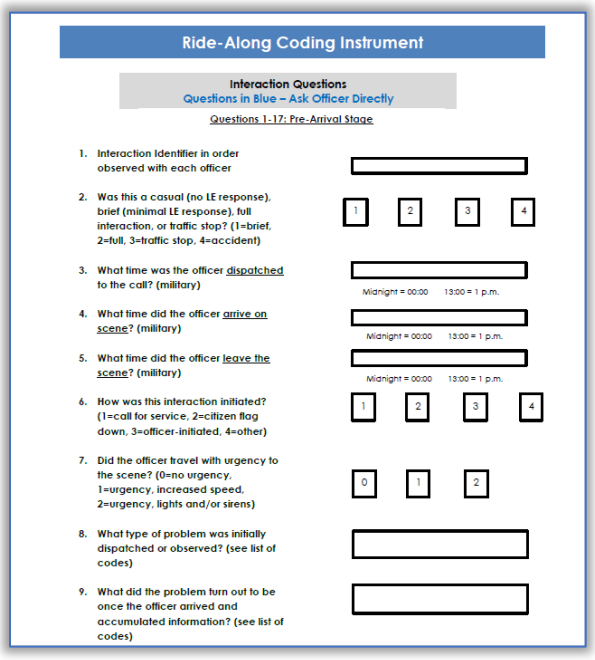
_____
_____

_____

This process resulted in a list of 136 officers who were nominated at least once. One officer was nominated 26 times. All Sergeants in field operations (n=20) reviewed the list of 136 officers, and each provided their own top 10 list. From these lists, the Tempe team identified 14 top de-escalators. Eleven of the 14 officers were assigned to patrol at the time of the nomination process. Of the other three, one was a sergeant of a specialty unit (Gangs), one was a school resource officer, and the other was a homicide detective. Eleven were male; three were female. Eleven were white; two were Latinx, and one was African American.

The ASU researchers then spent an intensive five-month period with those officers to document the tactics employed by the experts (December 2018 to April 2019). The researchers engaged in three activities. First, researchers participated in 44 ride-alongs and documented 166 interactions between a top de-escalator and Tempe citizens. For each interaction, the ASU "rider" completed a data collection instrument that captured more than 100 variables related to the call, what the citizen said and did, and what the officer said and did (see Figure 2 and Appendix A for the complete instrument). Researchers had previously attended a full-day training on systematic social observation delivered by an expert in the topic (Dr. Natalie Todak). Once the rides were complete, researchers compiled and analyzed the data, with a specific emphasis on de-escalation tactics.

Figure 2 Ride-Along Data Collection Instrument



Ride-Along Coding Instrument

Interaction Questions
Questions in Blue – Ask Officer Directly

Questions 1-17: Pre-Arrival Stage

1. Interaction Identifier in order observed with each officer
2. Was this a casual (no LE response), brief (minimal LE response), full interaction, or traffic stop? (1=brief, 2=full, 3=traffic stop, 4=accident) — 1 2 3 4
3. What time was the officer dispatched to the call? (military) — Midnight = 00:00 13:00 = 1 p.m.
4. What time did the officer arrive on scene? (military) — Midnight = 00:00 13:00 = 1 p.m.
5. What time did the officer leave the scene? (military) — Midnight = 00:00 13:00 = 1 p.m.
6. How was this interaction initiated? (1=call for service, 2=citizen flag down, 3=officer-initiated, 4=other) — 1 2 3 4
7. Did the officer travel with urgency to the scene? (0=no urgency, 1=urgency, increased speed, 2=urgency, lights and/or sirens) — 0 1 2
8. What type of problem was initially dispatched or observed? (see list of codes)
9. What did the problem turn out to be once the officer arrived and accumulated information? (see list of codes)

Second, the ASU researchers conducted one-on-one interviews with each of the top de-escalators. The interviews were conducted from February 2019 – April 2019. Each interview lasted from 30-45 minutes, and again, the objective was to capture experts' attitudes about and use of specific de-escalation tactics. The researchers also asked about the barriers to effective de-escalation. Table 1 shows the questions used to guide those interviews. The ASU researchers audio-recorded those interviews, which were then transcribed and analyzed to identify common themes.

Table 1 Interview Questions for Top-De-escalators

Employment
What is your current position?
How many years have you been a police officer?
Have they all been at Tempe PD?
Where else have you worked? How was that different from Tempe PD?
Specialty Teams
What specialty units do you work on?
Have you worked on any other teams in the past?

Have you had any other special assignments?

Self-Perceptions

Why do you think your peers voted you as a top de-escalator?
Is de-escalation one of your goals when you respond to a call?
Do you remember filling out the nomination sheet yourself? What types of traits did you think about when you voted for others?

General Perspectives on De-escalation

What is de-escalation?
Do you think your definition is different from the public's definition?
Can you describe exactly how an officer de-escalates a situation?
Does having other officers present hinder or help this process?

De-Escalation Training at Tempe PD

What types of formal training have you had specifically on verbal communication or de-escalation tactics?
Can you describe the training?
Did any of your specialty unit training help with this?
Do you think the ability to communicate and de-escalate is covered effectively by the Tempe Police Department?
How frequently do you use this training in the field?
Do you think this type of training is important in police work?

Tales from the Field

Can you describe a call in which you sensed the situation might escalate and you were able to stop that from happening?
Can you describe a call in which you employed tactics to de-escalate a situation, but they didn't work? In hindsight, what else would you have done?
Are there any other calls you can think of?

Barriers to De-Escalation

Are there specific situations in which de-escalation is more difficult, or impossible?
What elements of a situation make de-escalation more difficult or impossible, or undesirable?

Third, the researchers held two focus groups with top de-escalators. The goal of the focus group was to engage a group of the top de-escalators in a discussion about de-escalation. The focus groups included 6-8 officers. The researchers began with open-ended questions, and then used several body-worn camera videos to facilitate discussion (officers were asked to discuss the tactics used, what went right, what could have been done differently). In some cases, the BWC footage involved top de-escalators (used with their permission); in other cases, video of officers from other departments was pulled from publicly available sources (e.g., YouTube). Table 2

shows the focus group protocol. The ASU researchers audio-recorded the focus groups, which were then transcribed and analyzed to identify common themes.

Table 2 Focus Group Protocol

Pre-Videos

1. Before we watch videos, I want to cover one issue as a group. Can we talk about what the definition of de-escalation is, and how this is different from motivational interviewing? When would you use either of these two skills?

Videos – go over for each video

1. What was, or seemed to be, the call here? And once on scene, what was the problem? Are there other elements of this situation that you would be concerned about?
2. Is this the type of situation that you walk into with the goal of de-escalating? Why?
3. What elements of this situation make de-escalation more challenging?
4. How did the officer in the video try to de-escalate the situation? Did it work? Was there anything else the officer could have tried?
5. Did the other officers in the video play a role in this?

Survey of All Sworn Tempe Officers

The ASU research team administered a survey to all sworn officers. From August through October 2018, they attended each patrol roll call briefing (n=20) to explain the de-escalation project and the evaluation (i.e., informed consent), to answer officer questions, and administer the survey. The survey (scantron format) includes 106 questions that capture their attitudes on a wide range of issues, most notably the tactics they use to de-escalate encounters (ranked in importance, via Likert scale), how often they use those tactics, and perceptions about de-escalation training (see Appendix B). The survey also captures demographic characteristics of the officers, work assignment, and officer ID. During the roll calls, we approached 141 officers out of approximately 200 officers assigned to patrol, and 135 completed the survey (95.7% response rate). However, 34 officers did not complete the informed consent process resulting in a

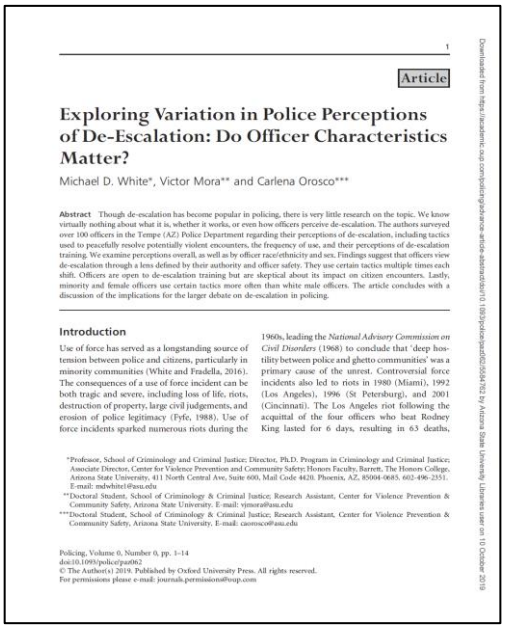
total of 101 useable surveys for the analysis (74.8%). As a result, the attitudes of roughly half of patrol officers were captured (101 of 200 officers assigned to patrol; 50.5%).

Variables selected for analyses were grouped into three categories: 1) the importance of de-escalation tactics, 2) the frequency of usage of de-escalation tactics, and 3) perceptions of de-escalation training. Respondents were first presented with a list of 18 de-escalation tactics and were asked to rank the importance of said tactics on a scale of 0 (not important at all) to 3 (very important). The 18 tactics were derived from the literature, specifically studies that have examined de-escalation, conflict resolution, and other methods for managing volatile encounters. Respondents were then asked how often (in the last month) they exercised each of the skills, with response options of not at all (0), rarely (less than once per week; [1]), once per week (2), once per shift (3), and multiple times per shift (4). Perceptions of de-escalation training were measured with 12 statements relating to the willingness to participate in de-escalation training, the anticipated benefits of de-escalation training, as well as the overall impacts that such training would potentially have on use of force incidents, injuries, and community satisfaction. Respondents were asked to indicate their level of agreement with these items, ranging from 0 (strongly disagree) to 3 (strongly agree). Questions at the end of the survey captured officer information such as sex, race, age, length of service, education, and rank, which allows for examination of potential variation across officer characteristics.

The ASU researchers published the findings from this survey in an academic journal (see Figure 3 and Appendix C). See the article for a complete discussion of the results. Overall, the ASU researchers reported that **officers view de-escalation through a lens defined by their authority and officer safety.** They use certain tactics multiple times each shift. Officers are open to de-escalation training but are skeptical about its impact on citizen encounters. Lastly,

minority and female officers use certain tactics more often than white male officers.

Figure 3 Article Describing Results from Officer Perception Survey



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Article

Exploring Variation in Police Perceptions of De-Escalation: Do Officer Characteristics Matter?

Michael D. White*, Victor Mora** and Carlena Orosco***

Abstract Though de-escalation has become popular in policing, there is very little research on the topic. We know virtually nothing about what it is, whether it works, or even how officers perceive de-escalation. The authors surveyed over 100 officers in the Tempe (AZ) Police Department regarding their perceptions of de-escalation, including tactics used to peacefully resolve potentially violent encounters, the frequency of use, and their perceptions of de-escalation training. We examine perceptions overall, as well as by officer race/ethnicity and sex. Findings suggest that officers view de-escalation through a lens defined by their authority and officer safety. They use certain tactics multiple times each shift. Officers are open to de-escalation training but are skeptical about its impact on citizen encounters. Lastly, minority and female officers use certain tactics more often than white male officers. The article concludes with a discussion of the implications for the larger debate on de-escalation in policing.

Introduction

Use of force has served as a longstanding source of tension between police and citizens, particularly in minority communities (White and Fradella, 2016). The consequences of a use of force incident can be both tragic and severe, including loss of life, riots, destruction of property, large civil judgements, and erosion of police legitimacy (Fyfe, 1988). Use of force incidents sparked numerous riots during the 1960s, leading the *National Advisory Commission on Civil Disorders* (1968) to conclude that 'deep hostility between police and ghetto communities' was a primary cause of the unrest. Controversial force incidents also led to riots in 1980 (Miami), 1992 (Los Angeles), 1996 (St Petersburg), and 2001 (Cincinnati). The Los Angeles riot following the acquittal of the four officers who beat Rodney King lasted for 6 days, resulting in 63 deaths,

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Lesson Learned

The ASU research team compiled the data collected from the top de-escalator activities, and based on all the available data, they wrote a "Lessons Learned" document and delivered that document to the project committee in May 2019 (Appendix D). The ASU researchers also compiled information from the training evaluation forms and the officer perceptions survey. All of that information collected during the "DESIGN" phase served as the foundation for curriculum development.

DELIVERY

Randomization

In November 2019, the research team randomly assigned half of field operations personnel to receive the training. Random assignment occurred at the squad level. In order to reduce contamination in the field (e.g., Treatment and Control officers responding to the same

calls), the 20 patrol squads (identified by letter; e.g., A Squad) were stratified based on their district (North and South), zone (1, 2, 3, 4, 5, 6), and shift schedule (early morning [0500], morning [0800], afternoon [1300], early evening [1700], and night [2030/2100]). This allowed the researchers to develop squad pairings based on exposure level -grouped by the smallest exposure level. After the squad pairings were identified, simple randomization occurred within each squad block. Twelve specialty units also received the training. Since these units have city-wide responsibilities and varying shifts, stratification was not necessary and the units were randomly assigned to Treatment or Control. In total, 109 officers were assigned to the Treatment group and 107 were assigned to the Control group (See Table 3). The Tempe team carried out the randomization successfully, except for one mix-up involving two specialty units. The Gangs unit was randomized to receive the training and the K9 unit was randomized to the Control group. Unfortunately, the two units mixed up their assignment: K9 attended the training, and Gangs did not. All results are presented via an "intent to treat" approach with the units held in their original assigned groups (Gangs as Treatment, K9 as Control).

Practice Training

The curriculum committee finished their work in early January 2020, and the team decided to conduct a "dry run" of the training with a group of veteran officers who were not eligible to participate in the project (i.e., they worked in units that were not part of the study). The first version of the training encompassed two full days in the classroom. The practice sessions occurred on December 9-10, 2019. After the practice training was completed, the team solicited confidential feedback from the officers regarding the curriculum, format, and instructors. The officers were very candid, and their feedback led the Tempe team to make substantial revisions. The team eliminated redundancy in the curriculum and shortened several

blocks. The revised training was reduced to one 10-hour day. The officers also offered feedback on the instructors, several of whom had never taught before. In response, the ASU instructional designers held a full-day workshop on teaching (January 7, 2020), that covered general principles of classroom instruction and useful tips for engaging with students (e.g., do's and don'ts). The instructors found the workshop to be very valuable.

Table 3 Squad-Based Randomization

Training (109 officers)	No Training (107 officers)
A	**G**
B	**J**
D	**C**
F	**E**
H	**K**
I	**R**
M	**T**
S	**N**
L	**O**
P	**Crime Prevention Unit (CPU)**
Q	**DUI**
Bikes	**K9**
Gangs	**Traffic Investigation (SEM)**
Mounted	**Traffic/Special Investigation (SPE)**
Parks	**Threat Mitigation Unit (TMU)**
	Tactical Response Unit (TRU)
	Vehicular Crimes Unit (VCU)

The Curriculum

The Tempe curriculum is grounded in several important principles. First, the curriculum emphasizes officer safety. One of the most common critiques of de-escalation training is that it puts officers at risk by restricting their use of force (Engel et al., 2020). This perception of de-escalation can lead to substantial officer resistance. TPD overcame this concern by grounding their curriculum in officer safety. These concepts were infused throughout the entire daylong training. The Tempe training begins by defining de-escalation as:

Techniques used to gain compliance with the goal of reducing violence or aggression. This can be accomplished through application of the PATROL model, communication, the use of appropriate force, and/or other reasonable techniques.

- *Note*: **Officers should not compromise their safety or increase the risk of physical harm to the public when applying de-escalation techniques.**

Second, the curriculum is also grounded in the LAPD's PATROL model: Planning, Assessment, Time, Redeploy, Other Resources, Lines of Communication (see Figure 4). The PATROL model emphasizes constant re-evaluation of circumstances, adaptability, slowing down the encounter, and using time and distance to the officer's favor.[5] Third, the curriculum is comprehensive with strong elements of officer health and wellness. It is not just about citizen (and officer) behavior during an encounter. The curriculum has four guiding pillars (see Figure 5):

- Officer Pre-Care: Personal life, work/life balance, sleep, proactive care, coping mechanisms, resources;
- Officer Self-Management: Education and training, seeking additional skills, knowing when you are having a bad day, mental health;
- Managing Resources: Relieving a colleague when needed (tapping out), awareness of resources, communication (with citizens, dispatch, and fellow officers), setting the tone and energy;
- Resiliency: Post-incident debrief, time to decompress, culture change, peer support, CISM.

[5] The Commander over the TPD Training Unit attended the LAPD's PATROL model training. The philosophy, structure, and messaging of the PATROL model resonated with the Commander and the rest of the Tempe team.

Figure 4 The LAPD PATROL Model

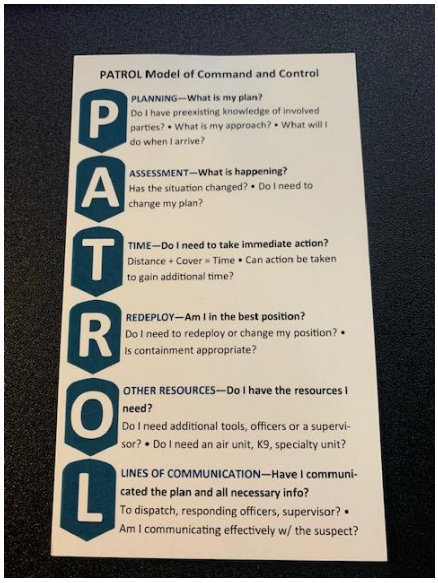
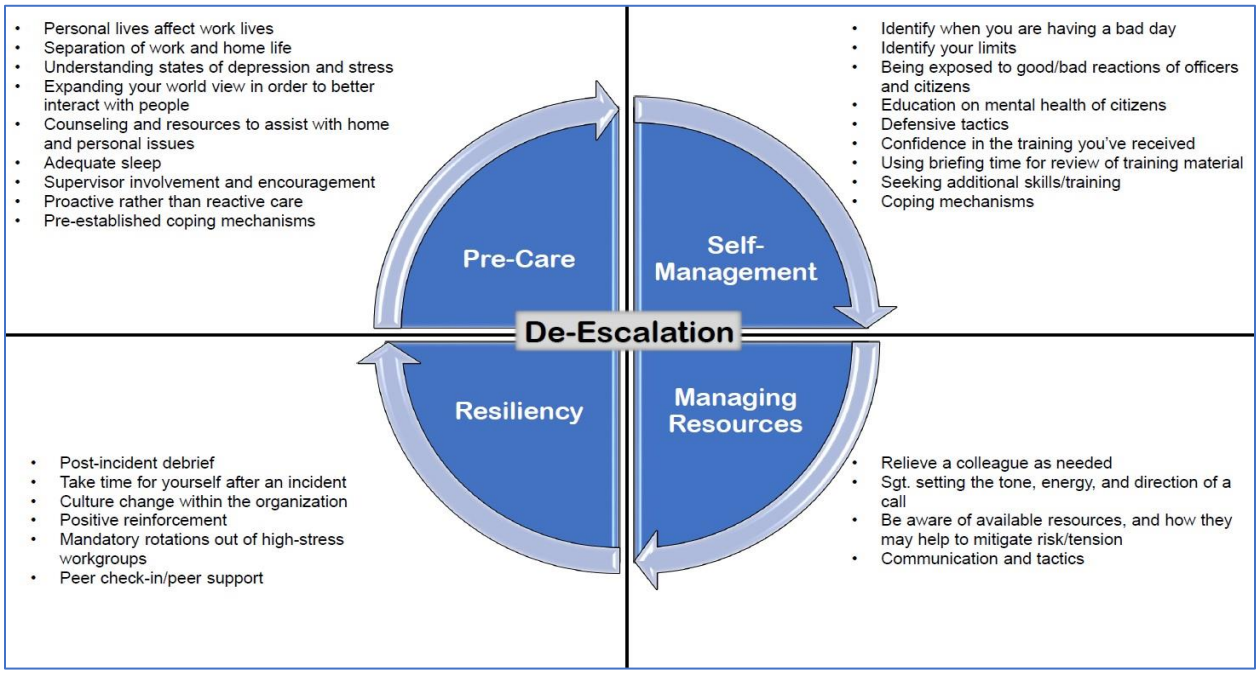


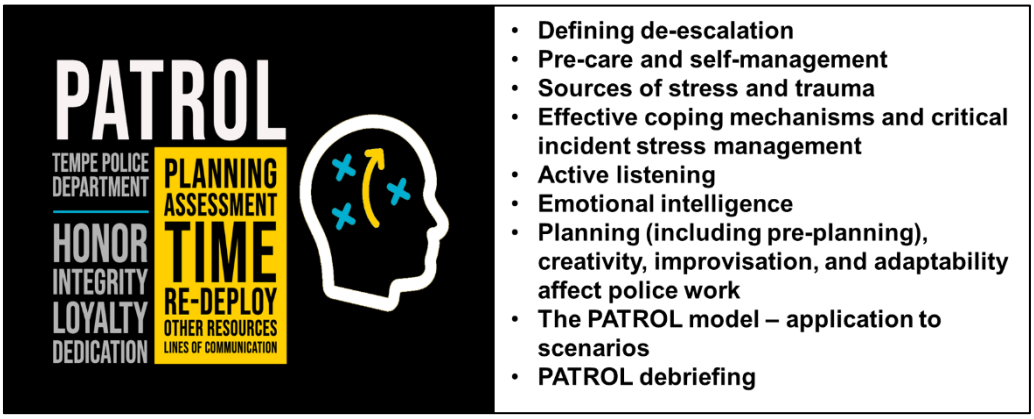
Figure 5 The Four Training Pillars



The 10-hour training begins with the definition of de-escalation grounded in officer safety, followed by a three-hour block on issues related to officer wellness (taking care of oneself at work and home, managing emotions, sources of stress, and how to deal with stress). This is

followed by a three-hour block on active listening, communication, and emotional intelligence. The final part of the curriculum focuses on tactics and employs scenario-based training to take the lessons from classroom instruction into the field. The PATROL model is emphasized throughout the day (see Figure 6).

Figure 6 The Tempe De-escalation Training



Training Sessions

The Tempe team delivered the de-escalation training during a series of one-day sessions starting January 30, 2020 and ending March 3, 2020. The TPD training unit staff led the training, but several top de-escalators also participated (as volunteers). Outside experts from Arizona State University taught training blocks on active listening and emotional intelligence. Altogether, there were 10 training sessions, each with approximately 10-20 officers (organized by squad). The ASU researchers attended each of the training sessions to document implementation. There was remarkable consistency from one session to the next, and officers seemed to embrace the training. Participation was excellent. Officers asked questions, and responded to questions asked of them. They paid attention. The Training Unit Lieutenant was present for every session which facilitated engagement (Commanders attended some as well).

Pre-Post Knowledge Assessment

Officers who received the de-escalation training (N=109) were asked to complete a knowledge assessment comprised of 36 questions related to the training curriculum. Respondents were asked to complete the assessment before and after receiving the training. The ASU researchers modified the order and text of the questions to reduce a testing effect. The knowledge assessment was grouped into several sections based on the curriculum:

- ***De-escalation*** – definitions and components of de-escalation;
- ***Stress & Your Body*** – stress effects on the body and performance, coping with stress;
- ***Critical Incidents*** – helpful aftermath procedures, resources for potential long-term effects;
- ***Communication/Emotional Intelligence*** – types of communication, usefulness of verbal and non-verbal forms;
- ***Field Tactics*** – PATROL model, tactics to aid in de-escalation.

The knowledge assessment was sent electronically via the TPD's internal email system. From February 13-28th, 76 officers completed the pre-training assessment. The average score was **78.6%**. From March 6-30th, 51 officers completed the post-training assessment, with an average score of **84.6%**. The degree of overlap among officers who completed the pre and post-training assessments is unclear. In order to boost response rate, we did not collect any identifying information for the officers (i.e., the knowledge assessments were anonymous). As a result, we do not know if they are the same officers. The average score increase of **6%** was driven by significant improvement in the Critical Incidents and Communication/Emotional Intelligence questions (increases of 13.5% and 15.7%, respectively). The other sections changed less than 5%.

The Global Pandemic and "George Floyd" Protests

The timing of training delivery was epically bad given the global COVID-19 pandemic. Ten days after the final training session, President Trump declared a national emergency (Smith-

Schoenwalder, 2020), and on March 30th, the Arizona Governor's Office issued a statewide stay-at-home order. These events severely complicate the assessment of training impact, especially with regard to within-group comparisons over time. In other words, the pre-training and post-training periods align nearly perfectly with pre- and post-COVID 19. Most of the analyses will focus on a between-groups comparison in the post-training (COVID-19) period.

On May 25, 2020, Minneapolis police officer Derek Chauvin killed George Floyd. Floyd's death (as well as the deaths of others) led to worldwide protests against police brutality. Protests took place in Tempe in June and July 2020, during the study period. In some cases, officers used force at these protests.

We argue the rigor of the RCT design can withstand the random shock events of the pandemic and protests, as every officer in the study experienced the events regardless of their randomized study group. Nevertheless, the timing of the pandemic and protests represents a significant limitation that the reader should consider when interpreting the findings. We discuss these limitations further in the last section of the report.

Refresher Trainings

In order to reinforce key de-escalation principles, TPD's training unit created five online refresher trainings. The officers in the Treatment group viewed these with their squad during pre-shift roll calls, or during officers' own time (approximately two and four months after the classroom training, and monthly starting in May 2021). TPD recognized that some of the skills/ knowledge taught in the training could likely diminish over time, and the follow-up trainings were designed to reduce that effect. The refresher trainings cover key aspects of the curriculum and emphasize the PATROL model. The refreshers trainings used BWC footage to highlight and reinforce lessons from the curriculum. Attendance at the refresher trainings was required.

EVALUATE

The ASU research team led the evaluation portion of the project. We carried out multiple research activities to assess whether the training led to changes in key outcomes including officer attitudes and behavior, citizen perceptions of officers, use of force, and use of de-escalation tactics. Below we describe results from: post-training officer perceptions surveys, citizen phone interviews, administrative use of force data, BWC footage review of randomly selected incidents, and BWC footage review of pre- and post-training use of force incidents.

Post-Training Officer Perceptions Survey

The ASU research team administered a post-training officer perception survey. The post-training survey modeled the pre-training survey, allowing for a pre- and post-assessment of officer perceptions over time (keeping in mind the above discussion regarding the global pandemic and protests). Unlike the pre-training survey, which was administered in person, the research team administered the post-training officer survey online using Google Forms. This change in survey administration occurred because of university and TPD safety protocols associated with COVID-19. The link to the post-training survey became available to all 200 officers assigned to patrol (who were in the Treatment and Control groups) in early June and remained open for four weeks. The online recruitment approached netted a sample of 107 completed surveys for a response rate of 54%.

The ASU research team published a peer-reviewed journal article describing the results from the post-training officer survey (see Figure 7). The full article can be found in Appendix E. The focus of the article is a comparison of attitudes and use of de-escalation among the officer groups post-training. More specifically, the ASU researchers compare Treatment and Control officers' attitudes about the importance of specific de-escalation tactics, how often they use those

tactics, and their sentiments de-escalation training. The researchers employ an econometric random-effects model to examine between-group differences post-training while controlling for relevant officer attributes including age, race, sex, prior training, and squad-level pretraining attitudes about de-escalation. Here is a brief overview of the findings.

Officers rated the importance of 18 de-escalation tactics on a scale from 0-3 (0=not important; 1=somewhat important; 2=important; 3=very important). Officers then rated how frequently they use each tactic (0=not at all; 1=rarely; 2=once per week; 3=once per shift; 4=multiple times per shift). First, all officers in the TPD value and frequently use de-escalation. In that sense, it was difficult for the new training to "move the needle" on de-escalation since it is an already accepted and widely-used set of tactics. Second, the training altered attitudes and reported use of three tactics, two of which run counter to the traditional police mindset (compromise, knowing when to walk away) and one that refutes a common criticism of de-escalation (maintaining officer safety). See Table 4. Those findings warrant some discussion.

Figure 7 Post-Training Officer Perceptions Article

The current issue and full text archive of this journal is available on Emerald Insight at:
https://www.emerald.com/insight/1363-951X.htm

Moving the needle: can training alter officer perceptions and use of de-escalation?

Officer perceptions and use of de-escalation

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Abstract
Purpose – De-escalation training for police has received widespread attention as a method for reducing unnecessary and excessive use of force. There is virtually no research on de-escalation, and as a result, there is little understanding about what it is, what it includes and whether it is effective. The current study compares attitudes about the importance and use of de-escalation among officers who were randomly assigned to participate (or not) in de-escalation training.
Design/methodology/approach – The current study draws from a larger randomized controlled trial of de-escalation training in the Tempe, Arizona Police Department (TPD). Approximately 100 officers completed a survey in June–July 2019 and again in June–July 2020. TPD delivered the de-escalation training to half the patrol force in February–March 2020. The authors compare treatment and control officers' attitudes about the importance of specific de-escalation tactics, how often they use those tactics and their sentiments de-escalation training. The authors employ an econometric random-effects model to examine between-group differences post-training while controlling for relevant officer attributes including age, race, sex, prior training and squad-level pretraining attitudes about de-escalation.
Findings – Treatment and control officers reported positive perceptions of de-escalation tactics, frequent use of those tactics and favorable attitudes toward de-escalation before and after the training. After receiving the training, treatment officers placed greater importance on compromise, and reported more frequent use of several important tactics including compromise, knowing when to walk away and maintaining officer safety.
Originality/value – Only a few prior studies have has examined whether de-escalation training changes officer attitudes. The results from the current study represent an initial piece of evidence suggesting de-escalation training may lead to greater use of those tactics by officers during encounters with citizens.
Keywords Training, Police, Use of force, De-escalation
Paper type Research paper

Introduction
August 9, 2020 marked the six-year anniversary of Michael Brown's death in Ferguson, Missouri. The police killings of Brown, Freddie Gray and others led to public outrage, riots and demands for police reform. In late 2014, former President Obama created the President's Task Force on 21st Century Policing to examine the causes of the crisis, and to identify recommendations for improving community trust and enhancing police accountability. The Task Force final report included nearly 60 recommendations to improve policing, but

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Table 4 Results from Post-Training Officer Survey

Outcome (Importance of De-Escalation Tactics)	Mean Trained	Mean Not Trained	Difference
Patience	2.7	2.8	-0.1
Communication	2.8	2.9	-0.1
Listening	2.8	2.9	-0.1
Compromise	2.0	1.3	0.7*
Non-threatening body language	2.2	1.8	0.4
Staying calm	2.7	2.8	-0.1
Empathy	2.4	2.1	0.3
Knowing when to request back-up	2.7	2.6	0.1
Knowing when to call a supervisor	2.2	2.0	0.1
Knowing when to use force	2.9	2.8	0.0
Knowing when not to use force	2.9	2.9	0.0
Using proper tactics	2.9	2.7	0.2
Maintaining officer safety	2.9	2.7	0.2
Knowing when to walk away	2.7	2.6	0.0
Using appropriate wording and language	2.5	2.2	0.3
Speaking in a calm manner	2.4	2.3	0.0
Keeping appropriate personal space	2.4	2.1	0.3
Maintaining eye contact	2.0	2.0	0.0
Outcome (Frequency of Use)			
Patience	3.9	3.5	0.4
Communication	4.0	3.7	0.3
Listening	4.0	3.7	0.3
Compromise	3.5	2.5	0.9*
Non-threatening body language	3.7	3.2	0.5
Staying calm	3.9	3.6	0.3
Empathy	3.6	3.3	0.3
Knowing when to request back-up	3.4	2.3	1.1
Knowing when to call a supervisor	2.6	2.1	0.5
Knowing when to use force	3.2	2.7	0.5
Knowing when not to use force	3.3	2.8	0.5
Using proper tactics	3.9	3.3	0.7
Maintaining officer safety	4.0	3.2	0.9*
Knowing when to walk away	3.5	2.4	1.0*
Using appropriate wording and language	3.8	3.3	0.5
Speaking in a calm manner	3.9	3.5	0.4
Keeping appropriate personal space	3.8	3.0	0.8
Maintaining eye contact	3.5	3.0	0.6
Note: *p<.05, **p<.01, ***p<.001			

Traditional police training emphasizes the importance of maintaining control of a situation. Compromise is akin to relinquishing some police authority. Yet, emerging research on de-escalation highlights the importance of compromise for peacefully resolving encounters (Todak & White, 2019; White et al., 2019). Moreover, knowing when to walk away is traditionally perceived as retreat, which is shunned in police training. The Tempe training viewed this tactic as a way to gain more time, to "tap out" in favor of another officer, or to

disengage because it is not a police problem. Officers who received the Tempe training self-reported greater use of these non-traditional de-escalation tactics.

Critics of de-escalation argue it increases risk of injury because officers will hesitate to use force (Engel et al., 2020a). Maintaining officer safety is paramount, and it is a central feature of the Tempe de-escalation training. The training's focus on officer safety translated into greater reported use of tactics designed to reduce risk to officers and citizens. This important finding responds directly to one of the most serious criticisms about de-escalation. The results from the current study represent an initial piece of evidence suggesting de-escalation training may lead to greater use of those tactics by officers during encounters with citizens.

Post-Training Citizen Perceptions

The ASU researchers conducted phone interviews of citizens who had recent interactions with Tempe police officers. These interviews were only completed during the post-training period, from June 2020 through June 2021. Each week during this period, the team randomly selected 10 officers – five Treatment and five Control – and all calls for service from the previous week for each officer were extracted from TPD administrative records. A TPD crime analyst exported the calls for service to Excel to be cleaned for eligibility (sensitive case types were excluded; e.g., sexual assault) and to account for anonymous callers who wished to not be contacted. Each week, the crime analyst sent a list of citizen names and phone numbers to the ASU research team. The ASU team had no information on the specific cases or how the citizen was involved in the case (e.g., suspect, victim, witness, etc.).

Within one to three weeks of their interaction with a Tempe police officer, a member of the ASU team called each citizen to ask if they would like to take part in a confidential and voluntary survey that asked them about their experience with the Tempe police officer. All ASU

staff received training or had prior experience in how to conduct phone interviews. ASU team members attempted to make contact no fewer than three times. During the study period, a total of 481 citizens completed the survey for a response rate of 20.2%, which is fairly typical for this kind of research (White et al., 2017, 2018). Notably, the ASU interviewers had a much higher response rate - 50.4% - when the citizen actually answered the phone. The 20.2% response rate was driven by non-response, wrong phone numbers, and disconnected phone numbers. Last, 203 interviews were set aside because the citizen did not have an in-person interaction with a police officer. Given the global pandemic, TPD increasingly moved to a model where nonemergency citizen calls for service were handled by dispatchers and officers over the phone. The final sample of in-person interactions for analysis is 282: 151 citizens who interacted with a Treatment officer, and 131 who interacted with a Control officer.

The survey captured a range of information about the call, what the citizen said and did, what the officer said and did, and citizen satisfaction with the encounter. The survey also focused specifically on officers' use of de-escalation tactics during the call. The variables in the survey were measured on a Likert scale (*0 = strongly disagree, 1 = disagree, 2 = agree, 3 = strongly agree*; see Appendix F for the full survey). The ASU researchers employed independent sample T-tests to compare mean responses of citizens across officer group (Treatment v. Control). They also employed One-Way ANOVAs as a sensitivity test. To be clear, the analysis focuses on citizens' perceptions of the officer with whom they had an encounter, with a specific focus on comparing perceptions based on whether the encounter involved a Treatment or Control officer.

Table 5 presents the results of survey respondents' perceptions overall and by officer group. Of the 28 variables of interest, 16 show a statistically significant difference between the

Treatment group and Control group, all favoring positive effects for the de-escalation training.[6] Though each of the 16 differences reach statistical significance, we do acknowledge that the mean differences, in some cases, are relatively small. Respondents who interacted with Treatment officers were more likely to agree that the officer treated them fairly (2.65 vs. 2.46); was honest with them (2.65 vs. 2.48); listened carefully (2.61 vs. 2.41); and acted professionally (2.67 vs. 2.47). Also, citizens who interacted with Treatment officers were more likely to agree that they were satisfied with how they were treated (2.56 vs. 2.33) and with the resolution to their situation (2.21 vs. 1.89).

With regard to de-escalation tactics, Table 5 again shows findings documenting the impact of the training. Citizens who interacted with Treatment officers were more likely to agree that the officer had a calm tone (2.60 vs. 2.28); used appropriate language (2.70 vs. 2.57); encouraged them that a positive outcome could be reached (2.37 vs. 2.14); remained neutral throughout the encounter (2.61 vs. 2.43); was patient with them (2.63 vs. 2.46); actively listened (2.57 vs. 2.40); compromised with them (2.38 vs. 2.14); showed empathy (2.47 vs. 2.23); and did or said things to calm them down (2.40 vs. 2.10). Also, citizens were less likely to agree that they were upset/angry at the officer (0.44 vs 0.65). Taken together, the results from citizen interviews provide powerful evidence regarding the impact of the de-escalation training. The training significantly altered the ways in which officers handled citizen encounters.

[6] The T-test results identified 14 statistically significant differences. ANOVA sensitivity tests supported these findings and identified two other statistically significant differences: officers who received the training were more likely to be honest (*2.65 vs 2.48*) and more likely to compromise with the citizen (*2.38 vs 2.14*).

Table 5 Citizens' Perceptions of Officers' Behavior and De-escalation Tactics

Variable	Overall Mean (n = 282)	Tx (n = 151)	Control (n = 131)
Satisfaction with police			
Ofc treated you with respect	2.61	2.66	2.56
Ofc treated you fairly	2.56	2.65*	2.46
Ofc was honest with you	2.57	2.65[a]	2.48
Ofc listened carefully to you	2.52	2.61*	2.41
Ofc acted professionally	2.57	2.67*	2.47
Ofc cared about your well-being	2.43	2.53	2.33
Ofc threatened to use force against you	0.17	0.17	0.15
Ofc used force against you	0.14	0.14	0.12
You are satisfied with how you were treated	2.44	2.56*	2.33
You are satisfied with how your situation was resolved	2.05	2.21*	1.89
De-escalation tactics			
Ofc had a calm tone	2.45	2.60**	2.28
Ofc explained their decision-making process	2.37	2.44	2.29
Ofc used appropriate language with you	2.63	2.70*	2.57
Ofc encouraged you that a positive outcome could be reached	2.26	2.37*	2.14
Ofc gave you enough physical space	2.57	2.61	2.53
Ofc maintained eye contact	2.45	2.50	2.38
Ofc took a calm, peaceful approach to resolve the situation	2.54	2.62	2.46
Ofc remained neutral throughout encounter	2.53	2.61*	2.43
Ofc's body language was neutral or welcoming	2.43	2.46	2.40
Ofc took necessary steps to ensure your safety at the scene	2.52	2.57	2.48
Ofc was patient with you	2.55	2.63*	2.46
You were upset/angry with the officer	0.54	0.44*	0.65
Ofc was upset/angry with you	0.38	0.33	0.44
Ofc was actively listening to you	2.50	2.57*	2.40
Ofc was in a rush to get the encounter over with	0.68	0.58	0.78
Ofc compromised with you	2.26	2.38[a]	2.14
Ofc showed empathy	2.36	2.47*	2.23
Ofc did or said things to calm you down	2.27	2.40*	2.10

Note: ANOVAs were conducted for a sensitivity analysis

*p < .05, **p < .01, ***p < .001

[a]ANOVA sensitivity analysis indicates a statistically significant difference between Tx and Control (p < .05)

Administrative Data on Use of Force

The ASU research team analyzed departmental use of force data six months prior to and after delivery of the curriculum. The research team gathered data using IAPro, a software that serves as a case management system and repository for use of force incidents that occur throughout the department. The team employed a report builder function to capture all use of force incidents during the study period, with the officer as the unit of analysis. Use of force by officers who did not participate in the study were set side. The analysis only includes use of force among the 200 or so officers in the Treatment and Control groups. The officer-based analysis captures total force used, rather than a count of distinct incidents in which force was deployed (incident-based). Because multiple force types can be used on a single call for service, it is important to use an officer-based approach that capture the full picture of use of force (i.e., if two officers both use force during the same encounter, it is counted here as two uses of force, not one). The team parsed out total force counts by month and year, and did the same by force type (e.g., canine bite, taser) and workgroup (e.g., patrol, specialty units).

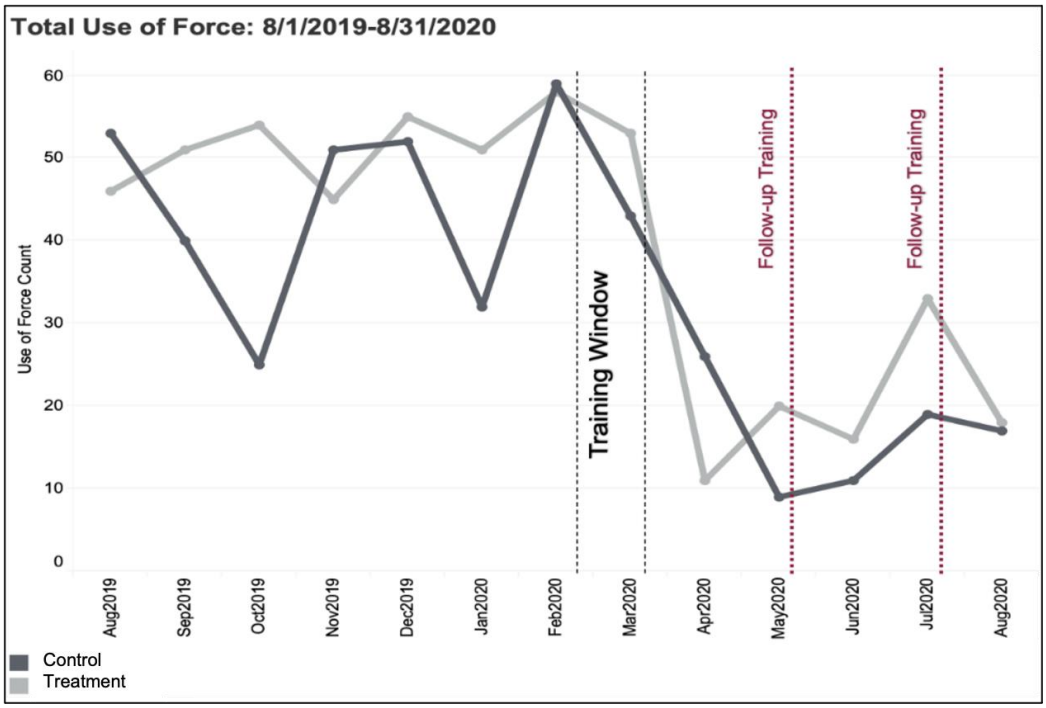
Total Use of Force

Figure 8 shows monthly use of force counts for both groups. Prior to the training, the Treatment group averaged from 45-60 uses of force. The Control group displayed more month-to-month variability, ranging from 25-60 uses of force. Both groups experienced a significant drop during and after the training window. Much of this decline is likely explained by the onset of the global pandemic, President Trump's declaration of a national emergency on March 13, 2020 (Smith-Schoenwalder, 2020), and Arizona Governor Ducey's issuance of a stay-at-home order on March 30, 2020 (Arizona Governor's Office, 2020). The parallel timing between the

COVID-19 pandemic and the delivery of the de-escalation training complicates the evaluation in significant ways, particularly the pre-post analysis of use of force.

Use of force levels increased during the spring and summer 2020 for both groups, but they stay well below pre-training/pre-pandemic levels. There are two notable post-training trends for the Treatment group. First, the counts for the Treatment group do spike notably in June and July 2020. The city of Tempe experienced protests in the aftermath of George Floyd's death on May 25th. There were organized citizen protests against police brutality in the city throughout June and July 2020. These protests culminated in a clash between officers and protestors on July 27, 2020, resulting in seven arrests, and an officer injury (KTAR, 2020; Martinez, 2020). Several of the squads in the Treatment group led the response to the protests, which may explain the spike in use of force. Second, Figure 8 shows vertical lines representing two online refresher trainings that were delivered to the Treatment squads during pre-shift roll calls. These trainings centered on review of body-worn camera footage and highlighted use of the PATROL model. The Treatment group experienced declines in use of force after each of these refresher trainings.

Figure 8 Total Use of Force Pre- and Post-Training



Total Use of Force by Unit

Figures 9 and 10 show the same monthly use of force data but separate the groups into patrol/traffic (Figure 9) and specialty unit (Figure 10), and we see the same general pattern displayed in Figure 8. Before the training (and pandemic), there is more stability for Treatment patrol squads than the Control. Among specialty units pre-training, there is notable monthly variation for both groups, but the Treatment specialty units engage in higher levels of force. All groups experience the same significant decline during the training/pandemic window, and totals remain much lower than the pre-training/pandemic time period (again with month-to-month variation). Both patrol and specialty unit Treatment squads show declines after the refresher trainings.

Figure 9 Total Use of Force Pre- and Post-training, Patrol/Traffic Units

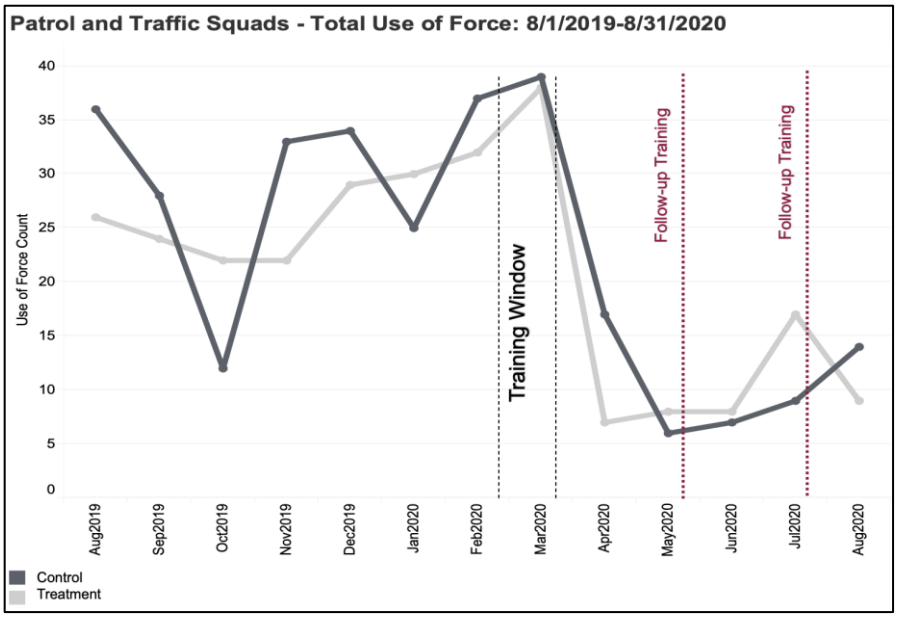
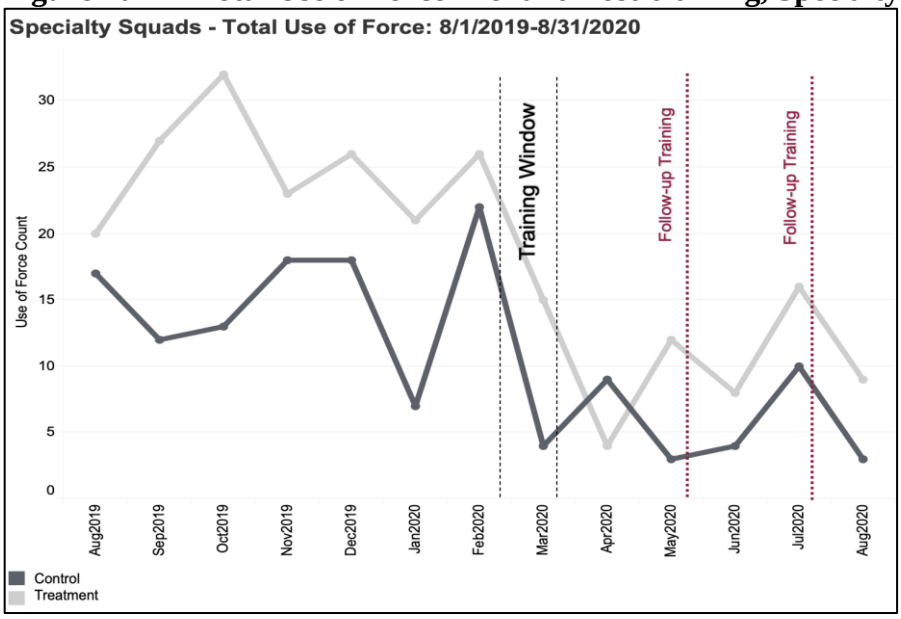


Figure 10 Total Use of Force Pre- and Post-training, Specialty Units



Use of Force by Type

Figures 11 and 12 show use of force totals by type both before and after the training. Prior to the training, display of firearm and takedowns accounted for the most use of force incidents for

both groups (Figure 11). The Treatment group had a lower number of display of firearms (155 vs. 200 for the Control), but a larger number of takedowns (101 vs. 42 for the Control). Strikes were more common among the Treatment group (28 v. 5 for the Control), but the Control Group was responsible for all 13 canine bites.

Figure 11 Force Types during the Pre-training Period

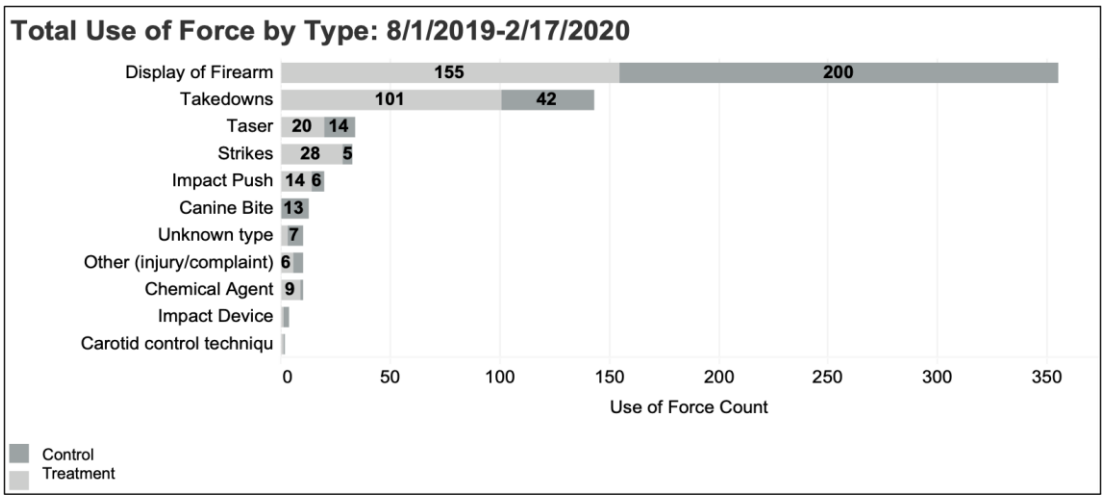


Figure 12 Force Types during the Post-training Period

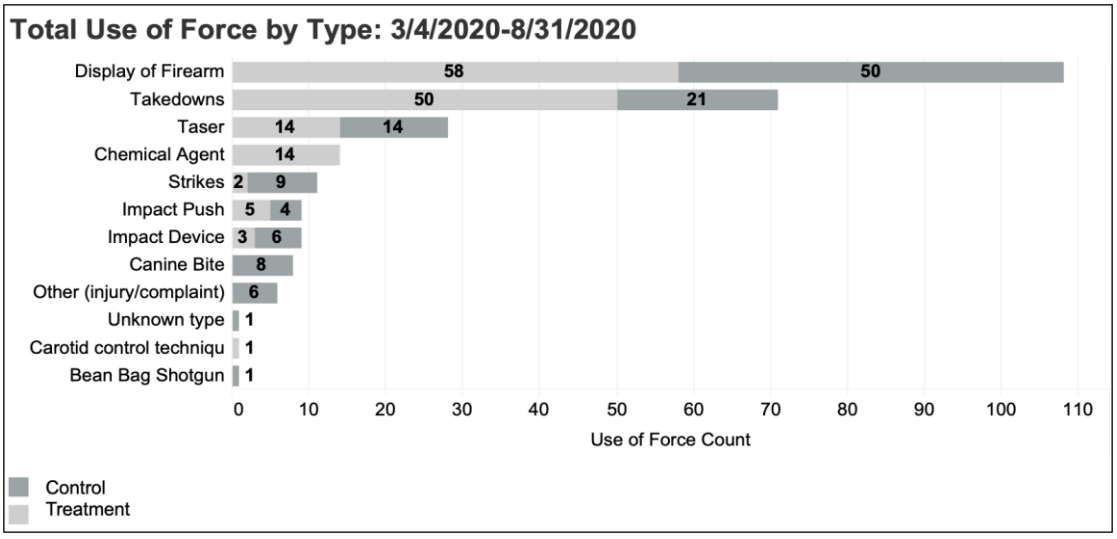


Figure 12 shows notable reductions in all force types in the post-training period (consistent with Figure 8). Display of firearms and takedowns are still the most common for both officer groups. Takedowns are still more common among the Treatment group (50 vs. 21 for the Control), but

display of firearms is about equal (58 for Treatment, 50 for the Control). Taser deployments are also equal (14 for each), and there are some additional differences among less common force types, such as chemical agent (14 for Treatment vs. 0 for Control), strikes (2 for Treatment vs. 9 for the Control), and canine bites (0 for Treatment vs. 8 for Control). Some of the differences in force types is explained by the squads in each group. For example, the K9 unit is in the Control group, so all canine bites occur in that group (13 pre-training; 8 post-training- See Figure 13). The bike squad (in the Treatment group) patrols Mill Avenue in Tempe, an entertainment area with numerous bars and restaurants. Takedowns are a common use of force employed by this squad. This explains the difference in takedowns among specialty units in the pre-training (72 for Treatment vs. 3 for Control) and post-training periods (27 for Treatment v. 0 for Control). These differences are a function of the squad-based randomization design. We decided to include all uses of force, rather than remove one type which would create an unbalanced comparison.

Figure 13 Force Type by Squad Type in the Pre-Training and Post-Training Periods

Total Use of Force by Type and Unit of Assignment: 8/1/2019-2/17/2020

		Control	Treatment
Patrol & Traffic	Display of Firearm	125	109
	Takedowns	39	29
	Taser	12	15
	Impact Push	4	6
	Unknown type	6	3
	Strikes	3	5
	Other (injury/complaint)	3	5
	Chemical Agent	1	1
	Impact Device		1
	Carotid control techniqu		1
	Total	193	175
Specialty	Display of Firearm	75	46
	Takedowns	3	72
	Strikes	2	23
	Canine Bite	13	
	Impact Push	2	8
	Chemical Agent		8
	Taser	2	5
	Impact Device	3	
	Other (injury/complaint)	1	1
	Unknown type	1	
	Carotid control techniqu	1	
	Total	103	163
Grand Total		**296**	**338**

Total Use of Force by Type and Unit of Assignment: 3/4/2020-8/31/2020

		Control	Treatment
Patrol & Traffic	Display of Firearm	35	39
	Takedowns	21	23
	Taser	13	8
	Strikes	7	1
	Chemical Agent		8
	Impact Push	3	2
	Impact Device	3	1
	Other (injury/complaint)	3	
	Unknown type	1	
	Carotid control techniqu		1
	Bean Bag Shotgun	1	
	Total	87	83
Specialty	Display of Firearm	15	19
	Takedowns		27
	Canine Bite	8	
	Taser	1	6
	Chemical Agent		6
	Impact Device	3	2
	Impact Push	1	3
	Strikes	2	1
	Other (injury/complaint)	3	
	Total	33	64
Grand Total		**120**	**147**

Summary

The analysis of monthly use of force data tells us little about the impact of the de-escalation training. The global pandemic and the protests following George Floyd's death represent enormous confounding variables. Moreover, the analysis of force types is confounded by the "preferred" force types among specialty units randomly assigned to the Treatment and Control groups. The review of body-worn camera footage will shed more light on the potential impact of the de-escalation training.

Random Review of BWC Footage

In order to assess the impact of the de-escalation training on officer behavior, the ASU team randomly selected and reviewed BWC footage from both trained and not trained officers. The team conducted this review both before and after training delivery. Each week, the team randomly selected 5 officers in each group, and then randomly selected a BWC video for each officer from the previous week. For the pre-training period, we conducted this review from June 23, 2019 through November 30, 2019 (n=230; 138 Treatment and 92 Control). During the post-training period, we conducted the review from March 4, 2020 – July 16, 2020 (n=246; 150 Treatment and 96 Control).

The ASU researchers developed a coding instrument that captures more than 130 variables for each encounter. It focuses on key aspects of the call, what the officer said and did, what the citizen said and did, and the outcome. The instrument pays special attention to officers' use of de-escalation tactics. The ASU research team created the coding instrument based on review of other similar instruments and their expertise (see Appendix G for the instrument). A senior coder performed inter-rater reliability checks on a random selection of the coded footage. Variables with low levels of agreement were discussed with the group, resolved, and subjected to

additional analyses before proceeding to the next phase of coding. Below we present a basic descriptive analysis of the results, comparing incidents involving Treatment and Control officers.

Table 6 shows the pre-training characteristics of encounters by officer group, including average length of the encounter, procedural justice, and more than 40 de-escalation tactics. A few notable findings emerge. First, Tempe officers engaged in high levels of procedural justice regardless of officer group. For example, 93.3% of Treatment officers and 95.7% of Control officers spoke to citizens in a respectful manner. Second, officers frequently used de-escalation tactics during their encounters. For example, 62.2% of Treatment officers and 67.1% of Control officers appeared empathetic toward the citizen; 92.4% of Treatment officers and 90% of Control officers used active listening; and only 2.9% of Treatment officers and 3.3% of Control officers ignored what the citizen was communicating.

Third, a small percentage of citizens were under the influence of drugs (0%-1.5%), alcohol (6.5%-8.8%), or exhibited signs of mental illness (2.2%-3.6%). Though 10.9%-11.7% were escalated during the encounter, very few failed to comply with the officer (4.3%-5.1%), threatened to assault (.7%-1.1%) or actually assaulted the officer (0%-2.2%). Officer use of force was rare (6.6% Treatment vs. 4.4% Control), as were officer (none) and citizen (.7%-4.3%) injuries.

Fourth, recall these data were collected during the pre-training period. Ideally, we would see no (or very few) differences among officers in the Treatment and Control groups. This would support the group equivalence assumption of randomization. Of the more than 40 variables shown in Table 6, the differences between Treatment and Control officers reached statistical significance for four variables: Treatment officers were more likely to speak in a calm manner (97.1% vs. 91.3% for Control), compromise with the citizen (63.5% vs. 38.5% for Control), were

less likely to only ask questions necessary for a report (36.8% vs. 50% for Control), and were more likely to resolve encounters informally (71.3% vs. 56.0% for Control), especially by issuing fewer tickets/citations (6.6% vs. 17.6% for Control).

Table 6 Descriptive and Bivariate Analysis of Pre-training BWC Footage

	Treatment (n=138)	*[a]	Control (n=92)
Average length of encounter (minutes)	16.7		18.1
Procedural Justice			
Officer answered the citizen's questions	98.9%		100%
Office offered solutions to the citizen's questions	86.4%		87.1%
Officer appeared invested	94.7%		91.1%
Officer explained actions that could be taken to reach a safe resolution for all parties	94.5%		88%
Officer spoke to the citizen in a respectful manner	93.3%		95.7%
Officer De-escalation			
Used friendly physical contact on the citizen	6.1%		4.5%
Used friendly language	56.8%		48.9%
Explained their decision-making to the citizen	90.2%		94.5%
Appeared to call for back-up	2.2%		4.5%
Appeared to call a supervisor	3%		1.1%
Used condescending language or a patronizing tone when talking to the citizen	3.7%		8.7%
Spoke in a calm manner	97.1%	*	91.3%
Was patient	91.9%		91.3%
Appeared empathetic to the citizen	62.2%		67.1%
Appeared to compromise with the citizen	63.5%	**	38.5%
Encouraged the citizen that a positive outcome could be reached	64.8%		54.8%
Was clear in their commands to the citizen	100%		100%
Appeared to maintain sufficient personal space between themselves and the citizen	100%		98.9%
Appeared to use active listening	92.4%		90%
Appeared to have a calm commanding presence	94.9%		91.2%
Attempted to build a common ground with the citizen	75.6%		81.3%
Attempted to talk through the issue at hand	95.6%		89%
Attempted to build rapport	52.9%		47.3%
Used "we" language	19.2%		27.5%
Kept a clear head	97.8%		97.8%
Controlled their emotions	94.9%		93.5%

Transferred control to another officer, if necessary	52.1%		57.1%
Prioritized officer safety	100%		97.8%
Was in sync with other officers on scene	98.8%		100%
Used time to their advantage	94.8%		93.1%
Acted impersonally	8.82%		15.2%
Used charged/imposing body language	2.3%		3.3%
Had a "go go go" attitude	6.6%		4.4%
Ignored what the citizen was communicating	2.9%		3.3%
Only asked questions necessary for a report	36.8%	*	50%
Unnecessarily yelled at the citizen	18.2%		5.3%
Was reactive, angry, or abrasive	5.2%		4.4%
Let ego control their response	2.9%		2.2%
Lost their patience	5.9%		4.4%
Pressed the situation unnecessarily	5.4%		3.5%
Ignored cues from other officers	0%		0%
Used force when it was possible to use other approaches	0%		7%
Citizen and Officer Behavior			
Citizen intoxicated (alcohol)	8.8%		6.5%
Citizen under influence of drugs	1.5%		0%
Citizen mentally ill	3.6%		2.2%
Citizen escalated	11.7%		10.9%
Citizen failed to comply	5.1%		4.3%
Citizen fled	2.9%		0%
Citizen threatened to assault officer	.7%		1.1%
Citizen physically assaulted officer	0%		2.2%
Officer used force	6.6%		4.4%
Citizen injured	.7%		4.3%
Officer injured	0%		0%
Resolution			
Resolved informally	71.3%	*	56.0%
Officer issued ticket/citation	6.6%	*	17.6%
Citizen detained/arrested/force used	13.2%		14.3%

[a] Group difference assessed using chi-square.
*p < .05, **p < .01.

Table 7 shows the same set of analyses for the post-training period, and again, several key findings emerge. First, Tempe officers continued to display very high levels of procedural justice regardless of group assignment. For example, 97% of Treatment officers and 98.3% of Control officers answered the citizen's questions; and 96.2% of Treatment officers and 92.5% of

Control officers spoke to the citizen in a respectful manner. Second, officers continued to use de-escalation tactics during their encounters. For example, 96.6% of Treatment officers and 91.4% of Control officers displayed patience; 95.1% of Treatment officers and 90.3% of Control officers used active listening; and 96.6% of Treatment officers and 95.7% of Control officers controlled their emotions.

Third, a small percentage of citizens were under the influence of drugs (2.1%-6.1%), alcohol (7.4%-8.0%), or exhibited signs of mental illness (5.3%-7.4%). Though 14.2%-15.8% were escalated during the encounter, very few failed to comply with the officer (3.4%-4.7%), threatened to assault (.7%-1%) or actually assaulted the officer (0%). Officer use of force was rare (6.8% for Treatment vs. 3.2% for Control), as were officer (none) and citizen (1.1%-5.4%) injuries.

Fourth, Table 7 shows five statistically significant differences between Treatment and Control officers. Given the RCT design, these differences are likely attributable to the de-escalation training. Trained patrol officers were significantly:

- less likely to use a condescending/patronizing tone (2% vs. 8.5% for Control);
- more likely to attempt to build rapport with the citizen (39.6% vs. 25.8% for Control);
- less likely to fail to transfer control to another officer, if necessary (100% vs. 91.3% for Control);
- less likely to use charged/imposing body language (0.7% vs. 4.4% for Control);
- more likely to resolve the encounter informally (68.9% vs. 59.5% for Control), particularly for issuing a ticket or citation (2.0% vs. 19.1% for Control).

These findings were reported in a recently published article (see Figure 14). See Appendix H for the full article.

Last, the de-escalation project included both patrol and specialty unit squads (see Table 3). We re-ran the analyses in Table 7 separating the experimental groups into both patrol and specialty officers. The statistically significant findings held only for patrol officers. There were

no significant differences between specialty unit officers in the Treatment and Control Groups.

Table 8 shows the five statistically significant differences for only the patrol officers.

Table 7 Descriptive and Bivariate Analysis of Post-Training BWC Footage (n=246)

	Treatment (n=150)	*a	Control (n=96)
Average length of encounter (minutes)	13.2		13.6
Procedural Justice			
Officer answered the citizen's questions	97%		98.3%
Office offered solutions to the citizen's questions	94.7%		89.7%
Officer appeared invested	96.6%		95.7%
Officer explained actions that could be taken to reach a safe resolution for all parties	88.3%		87.3%
Officer spoke to the citizen in a respectful manner	96.2%		92.5%
Officer De-escalation			
Used friendly physical contact on the citizen	4.1%		5.3%
Used friendly language	49%		40.4%
Explained their decision-making to the citizen	87.5%		84.8%
Appeared to call for back-up	1.4%		2.1%
Appeared to call a supervisor	.68%		4.3%
Used condescending language or a patronizing tone when talking to the citizen	2%	*	8.5%
Spoke in a calm manner	96.6%		93.6%
Was patient	96.6%		91.4%
Appeared empathetic to the citizen	32.6%		30.8%
Appeared to compromise with the citizen	28.9%		39.4%
Encouraged the citizen that a positive outcome could be reached	34.5%		33.7%
Was clear in their commands to the citizen	99.1%		100%
Appeared to maintain sufficient personal space between themselves and the citizen	98.6%		98.9%
Appeared to use active listening	95.1%		90.3%
Appeared to have a calm commanding presence	94.5%		92.5%
Attempted to build a common ground with the citizen	59.9%		62.4%
Attempted to talk through the issue at hand	89%		87.5%
Attempted to build rapport	39.6%	*	25.8%
Used "we" language	20%		13.8%
Kept a clear head	98.7%		98.9%
Controlled their emotions	96.6%		95.7%
Transferred control to another officer, if necessary	100%	*	91.3%
Prioritized officer safety	99.3%		98.9%

Was in sync with other officers on scene	98.4%		100%
Used time to their advantage	97.3%		95.7%
Acted impersonally	6.8%		9.6%
Used charged/imposing body language	.7%	*	4.4%
Had a “go go go” attitude	4.1%		5.3%
Ignored what the citizen was communicating	1.4%		5.4%
Only asked questions necessary for a report	43.2%		48.3%
Was reactive, angry, or abrasive	2.7%		5.4%
Let ego control their response	.68%		2.2%
Lost their patience	4.7%		6.5%
Pressed the situation unnecessarily	2%		3.2%
Ignored cues from other officers	1%		0%
Citizen and Officer Behavior			
Citizen intoxicated (alcohol)	8.0%		7.4%
Citizen under influence of drugs	6.1%		2.1%
Citizen mentally ill	7.4%		5.3%
Citizen escalated	14.2%		15.8%
Citizen failed to comply	4.7%		3.4%
Citizen fled	.7%		1%
Citizen threatened to assault officer	.7%		1%
Citizen physically assaulted officer	0%		0%
Officer used force	6.8%		3.2%
Citizen injured	5.4%		1.1%
Officer injured	0%		0%
Resolution			
Resolved informally	68.9%	**	59.6%
Officer issued ticket/citation	2%	**	19.1%
Citizen detained/arrested/force used	13.5%		8.5%

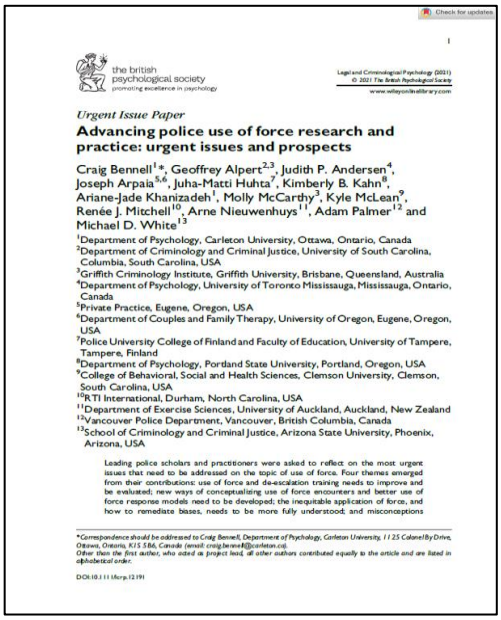
[a] Group difference assessed using chi-square.

*p < .05, **p < .01.

Table 8 Statistically Significant Post-Training BWC footage, Patrol Officers Only

Officer Behaviors	Treatment (n=110)	*a	Control (n=83)
Officer used a condescending/ patronizing tone*	1.8%	*	9.8%
Officer attempted to build rapport with citizen*	42.7%	**	22.2%
Transferred control to another officer, if necessary	0.0%	*	10.5%
Officer used charged/imposing body language*	0.0%	*	3.8%
Officer resolved the encounter informally*	69.6%	**	61.0%
Officer issued ticket/citation*	2.7%	**	19.5%

Figure 14 Published Article Describing BWC Random Review Findings



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Urgent Issue Paper

Advancing police use of force research and practice: urgent issues and prospects

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Leading police scholars and practitioners were asked to reflect on the most urgent issues that need to be addressed on the topic of use of force. Four themes emerged from their contributions: use of force and de-escalation training needs to improve and be evaluated; new ways of conceptualizing use of force encounters and better use of force response models need to be developed; the inequitable application of force, and how to remediate biases, needs to be more fully understood; and misconceptions

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Review of BWC Footage for Use of Force Incidents

The ASU researchers also coded BWC footage for all use of force cases approximately six months before (August 2019-February 2020) and after (March 2020 – August 2020) the delivery of the de-escalation training. The team coded each officer-citizen interaction at a use of force encounter. In other words, the data are officer-based, not incident-based. If one officer used

force on a suspect, and the same (or another) officer had an encounter with another citizen at the scene, these two interactions are recorded separately as two distinct encounters (one involving use of force, one not). This approach captures the dynamics of each interaction at a use of force encounter, allowing the team to examine the dynamics of use of de-escalation with every individual at the scene. The team used the same coding instrument described above for the random BWC review. Below we present a basic descriptive analysis of the results, comparing incidents involving Treatment and Control officers for both the pre-training and post-training periods.

Table 9 compares the dynamics of encounters during the pre-training period among Treatment (n=336) and Control officers (n=322). Interactions with Control officers were significantly longer (76.1 minutes compared to 57.7 for Treatment). Regardless of group, all officers exhibited high levels of procedural justice (91% or above for each component). This is a notable finding given these are encounters where at least one officer used force. There are a number of statistically significant differences between officer groups with regard to use of de-escalation. Treatment officers used significantly less likely to several de-escalation tactics during the pre-training period, including:

- used friendly language (43% vs. 51.1% for Control);
- explained their decision-making to the citizen (82.1% vs. 87.7% for Control);
- appeared empathetic to the citizen (7.1% vs. 14.5% for Control);
- encouraged citizen that a positive outcome could be reached (30.5% v. 38.9% for Control);
- attempted to talk through the issues at hand (78.3% vs. 84.5% for Control);
- attempted to build rapport (16.1% vs. 28.7% for Control);
- only asked questions necessary for a report (83.5% vs. 74.5% for Control).

Treatment officers also were less likely to use active listening (94.2% vs. 97.4% for Control), less likely to have a calm commanding presence (95.8% v. 98.4% for Control), and were more

likely to be clear in their commands to the citizen (100% vs. 98.4% for Control), though these percentages were very high for both groups.

There were no group differences in officer and citizen behavior except for citizen escalation. Citizens were more likely to be escalated in encounters with Treatment officers (47% vs. 39.3% for Control), though only a small percentage were intoxicated (10.3%-11.9%), under the influence of drugs (2.4%-4.9%), or exhibiting signs of mental illness (1.6%-1.9%). More than three-quarters of citizens failed to comply with officers (75.4%-82.8%), and one-third physically assaulted the officer (34.4%-35.7%). Officers used force in 62.1%-63.4% of the interactions, and both officer (1.2%-2.1%) and citizen injuries (14.4%) were uncommon.

Table 9 Descriptive and Bivariate Analysis of Pre-training BWC footage from Incidents Involving Use of Force

	Treatment (N=336) % (n)	*[a]	Control (N=322) % (n)
Average length of encounter (minutes)	57.7	*	76.1
Procedural Justice			
Officer answered the citizen's questions	96.2%		99.1%
Office offered solutions to the citizen's questions	95.3%		98.6%
Officer appeared invested	100%		100%
Officer explained actions that could be taken to reach a safe resolution for all parties	92.9%		92.9%
Officer spoke to the citizen in a respectful manner	91.4%		94.9%
Officer De-escalation			
Used friendly physical contact on the citizen	1.5%		2.2%
Used friendly language	43.0%	*	51.1%
Explained their decision-making to the citizen	82.1%	*	87.7%
Appeared to call for back-up	10.8%		13.1%
Appeared to call a supervisor	1.5%		1.3%
Used condescending language or a patronizing tone when talking to the citizen	4.5%		2.2%
Spoke in a calm manner	97.9%		97.8%
Was patient	94.3%		97.2%
Appeared empathetic to the citizen	7.1%	**	14.5%

Appeared to compromise with the citizen	6.7%		9.8%
Encouraged the citizen that a positive outcome could be reached	30.5%	*	38.9%
Was clear in their commands to the citizen	100%	*	98.4%
Appeared to maintain sufficient personal space between themselves and the citizen	100%		99.7%
Appeared to use active listening	94.2%	*	97.4%
Appeared to have a calm commanding presence	95.8%	*	98.4%
Attempted to build a common ground with the citizen	74.1%		79%
Attempted to talk through the issue at hand	78.3%	*	84.5%
Attempted to build rapport	16.1%	***	28.7%
Used “we” language	3.9%		4.4%
Kept a clear head	99.1%		99.4%
Controlled their emotions	93.5%		94.8%
Transferred control to another officer, if necessary	99.1%		100%
Prioritized officer safety	99.7%		100%
Was in sync with other officers on scene	99.4%		100%
Used time to their advantage	97%		96.5%
Acted impersonally	9.6%		5.6%
Used charged/imposing body language	1.2%		1.6%
Had a “go go go” attitude	3%		2.2%
Ignored what the citizen was communicating	2.2%		1%
Only asked questions necessary for a report	83.5%	*	74.5%
Unnecessarily yelled at the citizen	7.7%		4.7%
Was reactive, angry, or abrasive	6.9%		5.6%
Let ego control their response	4.5%		1.9%
Lost their patience	8.4%		5.9%
Pressed the situation unnecessarily	1.7%		2.6%
Ignored cues from other officers	0.3%		0%
Used force when it was possible to use other approaches	1.4%		0%
Citizen and Officer Behavior			
Citizen intoxicated (alcohol)	10.3%		11.9%
Citizen under influence of drugs	2.4%		4.9%
Citizen mentally ill	1.9%		1.6%
Citizen escalated	47%	*	39.3%
Citizen failed to comply	82.8%		75.4%
Citizen fled	33.8%		26.2%
Citizen threatened to assault officer	5.1%		9.5%
Citizen physically assaulted officer	34.4%		35.7%
Officer used force	62.1%		63.4%
Citizen injured	14.4%		14.4%
Officer injured	2.1%		1.2%

Resolution			
Resolved informally	33.3%		32.7%
Officer issued ticket/citation	0.3%		0%
Citizen detained/arrested/force used	52.5%		53%
*p-value < .05, **p-value < .01, ***p-value < .001			

Table 10 shows the same dynamics of use of force encounters during the post-training period for Treatment (n=152) and Control (n=168) officers. A number of these warrant discussion. Officers in both groups continued to use high levels of procedural justice (89% or above for each component). Again, this is noteworthy given the use of force during these incidents. Second, there are no statistically significant group differences in the use of de-escalation tactics. All of the pre-training differences favoring increased use of de-escalation by the Control group have disappeared. Though the global pandemic inhibits any sort of pre-post comparison of groups (e.g., within group), it seems as if the de-escalation training may have "leveled the playing field" with regard to these pre-existing group differences.

One other statistically significant finding emerged, and it is an important one. Citizen injuries are significantly less likely during interactions with Treatment officers compared to Control officers (11.2% vs. 26.4%). This finding is especially interesting given the similarities in use of more than 35 different de-escalation tactics, equivalent use of force during these encounters (74.2% for Treatment, 72.6% for Control), the increased prevalence of assaults against Treatment officers during these encounters (42.4% vs. 29.5% for Control; just short of statistical significance), and the mixed findings from the analysis of administrative use of force data (see above). Moreover, there was no difference in the prevalence of citizen injuries in the pre-training period. Taken together, these findings point to a potentially significant training

effect: when Treatment officers are involved in use of force encounters, they are 58% less likely to injure citizens compared to officers who did not receive the de-escalation training.

Table 10 Descriptive and Bivariate Analysis of Post-training BWC footage from Incidents Involving Use of Force

	Treatment (N=152) % n	*[a]	Control (N=168) % n
Average length of encounter (minutes)	72.9		61.1
Procedural Justice			
Officer answered the citizen's questions	93.7%		98%
Office offered solutions to the citizen's questions	92.6%		98%
Officer appeared invested	100%		100%
Officer explained actions that could be taken to reach a safe resolution for all parties	94.1%		89%
Officer spoke to the citizen in a respectful manner	93.3%		92.7%
Officer De-escalation			
Used friendly physical contact on the citizen	0.7%		1.2%
Used friendly language	32.9%		25.8%
Explained their decision-making to the citizen	77.6%		79.2%
Appeared to call for back-up	15.8%		19.6%
Appeared to call a supervisor	2%		3%
Used condescending language or a patronizing tone when talking to the citizen	6.6%		5.4%
Spoke in a calm manner	98.7%		96.4%
Was patient	94.1%		95.2%
Appeared empathetic to the citizen	18.4%		20.2%
Appeared to compromise with the citizen	12.5%		9.5%
Encouraged the citizen that a positive outcome could be reached	36.2%		38.3%
Was clear in their commands to the citizen	100%		100%
Appeared to maintain sufficient personal space between themselves and the citizen	100%		99.4%
Appeared to use active listening	94.5%		97%
Appeared to have a calm commanding presence	98.0%		96.4%
Attempted to build a common ground with the citizen	57%		51.5%
Attempted to talk through the issue at hand	72.4%		70.1%
Attempted to build rapport	16.5%		16.2%
Used "we" language	0.7%		2.4%
Kept a clear head	98.7%		100%
Controlled their emotions	96%		95.1%

Transferred control to another officer, if necessary	100%		100%
Prioritized officer safety	99.3%		100%
Was in sync with other officers on scene	100%		100%
Used time to their advantage	98%		96.4%
Acted impersonally	5.3%		7%
Used charged/imposing body language	0%		1.8%
Had a “go go go” attitude	3.3%		6.6%
Ignored what the citizen was communicating	0%		2.4%
Only asked questions necessary for a report	87.7%		87%
Unnecessarily yelled at the citizen	4.6%		5.7%
Was reactive, angry, or abrasive	5.3%		7.7%
Let ego control their response	3.3%		3%
Lost their patience	6.6%		4.8%
Pressed the situation unnecessarily	3.2%		2.3%
Ignored cues from other officers	0%		0.6%
Used force when it was possible to use other approaches	0.9%		2.4%
Citizen and Officer Behavior			
Citizen intoxicated (alcohol)	14.6%		10.1%
Citizen under influence of drugs	4.1%		7.4%
Citizen mentally ill	5.7%		4.5%
Citizen escalated	60.5%		63.1%
Citizen failed to comply	89.1%		94.3%
Citizen fled	46.7%		42.5%
Citizen threatened to assault officer	15.2%		11.3%
Citizen physically assaulted officer	42.4%		29.5%
Officer used force	74.2%		72.6%
Citizen injured	11.2%	**	26.4%
Officer injured	6.7%		4.8%
Resolution			
Resolved informally	22.2%		24.2%
Officer issued ticket/citation	0%		0.6%
Citizen detained/arrested/force used	57.1%		53.4%
*p-value < .05, **p-value < .01, ***p-value < .001			

CONCLUSION

Summary

The Tempe SPI was a very straightforward project: design, deliver, and evaluate a customized de-escalation training program. In terms of design, the Tempe team devoted 18 months to curriculum development. They sent officers to nearly two dozen de-escalation trainings, including T3 and ICAT. The ASU researchers spent six months shadowing peer-nominated top de-escalators to "watch them in action" and harness their local expertise. The researchers also conducted a departmentwide survey to gather perspectives about de-escalation from all officers. The team created a curriculum subcommittee to review all of the information gathered in the design phase, and they worked with professional curriculum developers to create the actual training content. The team carried out a pilot test of the curriculum with veteran officers and made significant improvements based on their feedback. The training is grounded in officer safety, health, and wellness, and it also draws heavily from the LAPD's PATROL model.

The delivery of the training occurred via a squad-based randomized controlled trial. The ASU team paired patrol squads based on the degree of potential contamination (pairs had the lowest potential contamination risk), and then randomized into the Treatment and Control groups. Instructors included TPD training unit staff, a few top de-escalators, and outside experts from ASU. The instructors delivered the 10-hour training in a series of one-day sessions in February and March 2020, and over the next year, the team delivered five online refresher trainings to reinforce key de-escalation principles (completed during pre-shift roll calls).

The evaluation of the training drew on a wide range of data sources, including pre- and post-training officer perception surveys, phone surveys of citizens, administrative data on use of force, review of randomly selected BWC footage (six months pre- and post-training), and review

of BWC footage of all use of force incidents (six months pre- and post-training). Table 11 highlights the significant study findings. Though the administrative data showed no clear impact (and was confounded by the pandemic and George Floyd protests), analyses of several other data sources demonstrated the positive impact of the training. The officer surveys showed that trained officers place greater emphasis on compromise and self-reported greater use of certain tactics (compromise, knowing when to walk away, maintaining officer safety). The phone surveys of citizens identified 16 statistically significant differences between Treatment and Control officers, all favoring the positive impact of the training. The differences among Treatment officers include features of procedural justice (e.g., fair treatment, honesty, listening), key de-escalation tactics (e.g., patience, compromise, empathy, doing things to keep the citizen calm), and increased satisfaction with how the citizen was treated and how the encounter was resolved.

Table 11 Summary of Findings from the Tempe SPI

Data and Outcome	Significant Findings Supporting a Positive Training Effect
Use of force data	--
Officer surveys	Greater emphasis on compromise and self-reported greater use of compromise, knowing when to walk away, maintaining officer safety.
Citizen surveys	16 statistically significant differences: more procedural justice, greater use of de-escalation, more satisfaction with treatment and encounter resolution.
Random BWC	Less likely to use a condescending/patronizing tone; more likely to attempt to build rapport with the citizen; less likely to fail to transfer control to another officer, if necessary; less likely to use charged/ imposing body language; more likely to resolve the encounter informally.
BWC use of force	citizens were 58% less likely to be injured during use of force encounters.

Random review of BWC footage uncovered **five important findings** supporting a positive training impact, as Treatment officers were: less likely to use a condescending/patronizing tone; more likely to attempt to build rapport with the citizen; less likely to fail to transfer control to another officer, if necessary; less likely to use charged/ imposing body language; and were more likely to resolve the encounter informally. Only the last of these differences occurred in the pre-training period. Review of BWC footage of use of force incidents showed, during the pre-training period, Treatment officers were significantly less likely to use nine different de-escalation tactics. During use of force encounters after the training, all of those differences disappeared, and there is a statistically significant difference in citizen injuries: citizens are 58% less likely to be injured during use of force encounters with Treatment officers. The results are clear and compelling: the Tempe de-escalation training fundamentally altered - **for the better**- the ways in which officers handle encounters with citizens.

The ASU research team has presented many of these results already at police and academic conferences: the 2019 and 2020 IACP national meetings, the 2021 IACP officer wellness workshop, the 2018-2021 American Society of Criminology meetings, the 2021 American Society of Evidence-based Policing meeting, and a 2021 webinar for the Bureau of Justice Assistance. They also have commented in the media on the project, published several peer-reviewed journal articles, and have a forthcoming article on Police1.com (see Appendix I for a list of all public release of findings).

Limitations

The Tempe SPI project has several limitations that should be kept in mind when considering the findings. First, Tempe is a medium-sized police department in the southwestern US. The extent to which this entire project would "travel" beyond Tempe is not known. Second,

the Tempe team took a unique approach to each phase of the project. At its core, the Tempe training is customized for the TPD, its officers, and the Tempe community. The extent to which the Tempe process would work for others remains unknown. Third, prior to the delivery of training, Tempe officers already valued de-escalation and used it extensively (demonstrated through officer surveys and BWC review). They also already used high levels of procedural justice. In that sense, it may have been difficult for the de-escalation training to "move the needle," which underscores (even more) the impressive findings reported here.

Fourth, there was one mix-up with randomization as one specialty squad assigned to Treatment failed to attend the training (Gangs), and another specialty squad assigned to Control actually attended the training (K9). All of the analyses presented here follow an intent-to-treat model with those groups in their original assignment (i.e., K9 is in Control even though the received the training). The intent-to-treat approach is recognized as the preferred approach in RCTs that experience "contamination" or related issues (Imbens and Rubin, 2015). Fifth, our analysis of administrative use of force data is primarily descriptive using raw counts. Time constraints and data availability limited our approach. In future analyses, the ASU team will calculate weekly rates of use force by call volume and will apply more sophisticated techniques such as interrupted time series analysis (ARIMA).

Sixth, the most common outcomes in an evaluation of de-escalation training are rare events: use of force, citizen injuries, and officer injuries. We believe these measures are too blunt to capture the true impact of the Tempe de-escalation training. The other measures -officer perception surveys, interviews of citizens, review of BWC footage- provide a more detailed, nuanced picture of how the training influenced officer behavior. However, these measures are more difficult to capture, and they are inherently subjective, especially with BWC footage. We

sought to reduce these concerns about subjectivity through intensive training of our coders and robust inter-rater reliability checks.

Last, the delivery of de-escalation training and study period coincided with a global pandemic and worldwide protests against police brutality. These events shaped and confounded the analysis in important ways, especially the analysis of administrative use of force data. These events also all-but eliminated the traditional pre-post analysis of outcomes that define a program evaluation. That said, the project is a randomized controlled trial, and every officer in the study experienced the global pandemic and the George Floyd protests. We believe the rigors of an RCT still stand, as long as we keep our primary focus on post-training differences among the Treatment and Control groups.

Lessons Learned

The Tempe SPI project offers several lessons for agencies interested in de-escalation training. First, the success of the Tempe project is explained, in large part, by the intensive process they went through to create the training. This process lasted 18 months. TPD created a project committee that included individuals of varying ranks from units throughout the department. Everyone has a seat at the table: patrol, investigations, communications, training, command staff, crime analysts, and the officers' association. Everyone bought into the project. TPD also took the time to examine and pull selectively from available de-escalation trainings. TPD set aside thousands of dollars to send officers to those trainings, and they listened to their feedback about each training.

Second, TPD learned a great deal from the peer-nominated top de-escalators regarding what works and what doesn't in de-escalation. A number of other studies have employed the peer nomination strategy, and it has proven to be quite effective (Todak & White, 2019). Those

officers also served as “embedded champions” who assisted with messaging and clarified misconceptions surrounding the training. Several of them also served as instructors during the actual training.

Third, TPD hired professional instructional designers to assist with creating the curriculum. TPD training unit personnel had teaching experience, but no one had any experience in actually creating a curriculum, from developing Power Point slides and embedding links to developing group exercises. The ASU instructional designers had this experience.

Fourth, one of the most common concerns regarding de-escalation is that it puts officers at risk by restricting their use of force. TPD overcame this concern by grounding their curriculum in officer safety, health and wellness. These concepts were infused throughout the entire daylong training. Officers were taught about the causes and consequences of stress and how to deal with it. Moreover, the training incorporated BWC footage of use of force incidents. This footage was examined through the PATROL model lens, and in each case, the instructors and attendees discussed what happened and why. The footage depicted uses of force by Tempe police officers and officers in other departments, allowing for an after-the-fact discussion of the decisions made by the officers. This also reinforced the central and important role of use of force in de-escalation.

Fifth, TPD recognized the need to supplement the original classroom training with refresher online trainings that reinforced key aspects of de-escalation. The five refresher trainings were delivered online primarily during pre-shift roll calls. The officers watched the training individually and then discussed it amongst themselves with their sergeant. It is likely that de-escalation skills diminish over time, and follow-up trainings can reduce that effect.

Sixth, TPD partnered with researchers at ASU to implement a research design that would rigorously measure the impact of the training. Researchers became Tempe Police volunteers and had full access to department data, including body-worn camera footage. The researchers were part of the team from day 1, and their evaluation provides the evidence about what happened. The TPD/ASU researcher relationship also reflects the spirit of BJA's Smart Policing Initiative.

Last, the ASU researchers examined the impact of the training using a variety of different data sources, not just administrative use of force data. The Tempe team believed, from the start, that administrative use of force and injury data are blunt measures that might not capture the impact of the training. In simple terms, TPD is not a high use of force department and injuries are rare. Since use of force is a rare event, the evaluation needed to take a more nuanced approach to fully capture the impact of de-escalation training. The ASU researchers documented the positive impact of the training through officer perception surveys, phone surveys of citizens, and extensive review of body-worn camera footage. Use of these data took the "did it work" question to another level.

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