

Shaping officer behaviour through training and policy

Kyle McLean^{*} , Arif Alikhan^{**} and Geoffrey P. Alpert^{***}

Abstract Academic research aimed at measuring changes in officer behaviour typically focuses on agencies' implementation of new training or modifications to policy. However, programmes to change officer behaviour are more likely to be successful when changes in policies are coupled with effective training. This paper reviews the importance of coupling training and policy changes to maximize the chances of modifying an officer's behaviour. As an example, we present results from a quasi-experimental evaluation of a training programme paired with a policy modification regarding the application of an electronic control weapon (ECW). The evaluation used videos of a use-of-force encounter integrated into a pre- and post-survey asking officers for their recommended levels of force in the encounter. Results demonstrate that officers evaluated the circumstance differently after completing the training component and were less likely to recommend the use of the ECW.

Introduction

Shaping an officer's decision-making and behaviour are the end goals of police policies, procedures, standards, or training programmes. Police agencies rely on policies, training, supervision, and accountability systems to influence officers' actions and behaviour. For example, agencies formulate policies on the use of force, reporting of misconduct, responding to persons suffering from mental illness, and prohibiting bias in police actions. When new policies are issued, or significant policy or procedural changes are made, agencies must include training or education to inform officers and then use supervisors and accountability systems to ensure compliance.

As the evidenced-based policing movement grows and becomes more influential, the target for evaluating effectiveness expands from initial studies of crime prevention (see [Lum and Koper, 2017](#), for an overview) to studies of the internal workings of police departments, such as the impact of new or modified policies and procedures and the effectiveness of training programmes to influence officer behaviour (see e.g. [Prenzler et al., 2013](#); [McLean et al., 2020](#); [Wood et al., 2020](#); [Engel et al., 2022](#)). Typically, in these studies, training and policy are treated as separate domains. Researchers focus on isolating the impact of either a training programme or a policy change to then recommend 'what works' or what is considered a 'best practice'. This is an

^{*}Department of Sociology, Anthropology and Criminal Justice, Clemson University, Clemson, SC, USA. E-mail: kdmclea@clemson.edu

^{**}Alikhan Insights, Irvine, CA, USA

^{***}Department of Criminology and Criminal Justice, University of South Carolina, Columbia, SC, USA and Department of Criminology and Criminal Justice, Griffith University, Brisbane, Queensland, Australia

admirable goal but isolating a single training programme or policy modification to determine its impact is likely not measuring what is necessary for effective and sustainable behavioural changes. This is especially true when a modification to an existing policy is not coupled with any training efforts.

Policy changes must be emphasized and explained by training that reviews the policy and how officers should implement changes in practice. Training programmes that teach officers new skills (e.g. de-escalation, crisis intervention, or peer intervention) must be similarly guided and grounded by corresponding policies that mandate the implementation of the skills learned in training. These behaviours must be reinforced by supervisors and accountability systems.

Consider, for example, the Ethical Policing is Courageous programme developed by the New Orleans Police Department to reduce police misconduct ([Peer Intervention for Officer and Community Safety, n.d.](#)). The programme teaches officers the skills necessary to become an active bystander to prevent other officers from engaging in misconduct. It is also accompanied by the implementation of a 'duty to intervene' policy that requires officers to intervene and report if they see an officer engaging in misconduct and incorporates a disciplinary process for failure to follow the policy. A rigorous research design might attempt to isolate the effects of the policy change as compared to the training programme by examining changes in misconduct in agencies that undergo the training, but do not make policy changes, as compared to agencies that change their policy but do not implement the training. Instead, both the policy change and the training should be viewed as an important, even necessary, contribution to a police agency, but neither is sufficient to implement fully the desired behavioural changes. Furthermore, long-lasting change is unlikely to occur without supervision and accountability systems.

Rather than wasting time and energy to uncover small effect sizes, a holistic approach that includes policy changes, training, supervision, and accountability can provide police departments the best chance of succeeding. Evaluations remain a critical tool to determine if the efforts are successful in altering the targeted behaviour as these observations

about controlling police behaviour are important conceptual notions, but they need to be tested in agencies to make sure they are empirical realities. Conducting a grand study and evaluating the impact of policies, training, supervision, and accountability is ideal but beyond our scope. Our goal is to take the first two components and evaluate the impact of a policy modification on the use of an electronic control weapon (ECW) which is accompanied by classroom and scenario-based training for officers.

The current study uses a quasi-experimental video vignette survey to evaluate the effectiveness of a policy modification coupled with a classroom and scenario-based training component. Data are collected from 360 officers in a police agency in the Western USA over a 2-week period in the summer of 2019. The policy change and training component are designed to clarify when the use of an ECW or other less-than-lethal, intermediate-force weapon is permissible. Results indicate that the policy modification and training component, coupled together, influence the officers' decision-making process, and reduces the likelihood that an officer would recommend the need to use an ECW based on the video scenario.

Policy evaluations

Changes to policing policies are typically touted as an easy way to reform and improve police operations. This is likely due to the perceived simplicity of making a policy change in a police department—a new or changed policy is issued, officers are informed and sometimes required to acknowledge the new or modified policy, and the agency expects changes in behaviours and outcomes in the field. This approach is used to advocate for more restrictive use of force policies with the slogan #scantwait ([Yglesias, 2020](#)), reducing disparities through eliminating traffic stops for non-moving violations ([Jallow, 2021](#)), and eliminating threats to officer and citizen safety through restrictions on vehicular pursuits ([Alpert, 1997](#); [Jenkins, 2022](#)). Yet, policy changes alone may only have a limited impact on measurable changes in decisions, actions, or behaviours. Much like the average person quickly scrolling to the bottom and clicking 'accept' on the terms of service for the latest app, officers may not review carefully the written policy change before acknowledging receipt.

Many policy changes are too nuanced for a simple sign-off type of policy change. Consider restrictions on vehicular pursuits. Certainly, limiting the scenarios in which an officer is allowed to pursue an individual who is fleeing from arrest can reduce injuries and fatalities to officers, suspects, and bystanders (Alpert, 1997). At the same time, eliminating pursuits entirely may send a message that getting away with a crime is as simple as driving away from a police officer (see e.g. Jenkins, 2022). A comprehensive and effective vehicular pursuit policy balances the risks of pursuit (e.g. speeds, recklessness, congestion, futility, etc.) and risks to society if the suspect is not detained (e.g. how serious is the suspected crime?) against the governmental interests in apprehending the suspect. If a chief wants officers to make this determination, significant training and discussion are needed. The training must go beyond a simple policy statement and must include teaching officers how to weigh the risks and benefits of pursuits effectively (Alpert and Dunham, 1990; Alpert, 1997).

At the same time, we know that policy changes can influence officer decisions and behaviours. White (2001) reports that more restrictive use-of-force policies are related to lower rates of use of force in the Philadelphia Police Department. Similarly, Shjarback and colleagues (2020) report that a policy requiring officers to document when they draw their weapons is related to a significant decrease in officer-involved shootings in the Dallas Police Department (see also Jennings and Rubado, 2017). Thus, policies can be an important mechanism for altering officer behaviour but need to be accompanied by effective training and education to have a meaningful and sustainable impact on decisions and actions in the field.

For example, policy changes may find resistance if they are not sufficiently explained and trained by police departments (Musheno, 1980). Consider that the ruling in *Miranda v. Arizona* did not experience widespread compliance for years after the U.S. Supreme Court issued its decision (Leo, 2008). Similarly, the initial implementation of body-worn cameras is commonly plagued by non-compliance issues (Hedberg et al., 2017). However, training that covers the benefits of body-worn cameras may

improve officer perceptions of cameras (Huff et al., 2018), which may in turn increase compliance (Ready and Young, 2015). In sum, policy changes may impact officers' behaviours but are more likely to be successful when accompanied by training on both the how and why of a policy change.

Training evaluations

Studies of police training are becoming increasingly common. Researchers are examining the effectiveness of procedural justice training (Skogan et al., 2015; Wood et al., 2020; Weisburd et al., 2022), de-escalation training (Giacomantonio et al., 2020; McLean et al., 2020; White, 2021; Engel et al., 2022), as well as a variety of other topics (Lonsway et al., 2001; Beletsky et al., 2011; Herrington and Pope, 2014). The results of these studies typically indicate improvements in officer knowledge and attitudes towards a targeted problem, but limited ability to alter officer behaviour (e.g. Skogan et al., 2015; Antrobus et al., 2019). In fact, Sierra-Arévalo and Papachristos (2021) note that the effect sizes of specialized police training programmes tend to be quite small.

One notable exception to this trend is the study by Engel and colleagues (2022) of a de-escalation training programme which report a 28% reduction in the use of force in the Louisville, KY, Metro Police Department after the completion of training. This training programme, however, was accompanied by a significant decline in enforcement actions, including all arrests, and coincided with a change in the agency's use of force policy and policy on handcuffing individuals during traffic stops. Rather than pointing this out as a failure, we instead echo Engel and colleagues' (2022, p. 199) sentiment that, '[t]o facilitate long-term changes in police behavior, a holistic approach is recommended that supports training tenets with complimentary policies....' Thus, the true distinction that creates the success of the programme being studied may not have been the content itself, but the holistic approach to implementing policy changes to accompany the training.

In sum, policies and training must not be viewed independently as competing explanations for changes in decision-making and officer behaviour.

Instead, researchers and practitioners alike should consider the benefits of maximizing possible effects by examining and implementing changes in policy in conjunction with robust training programmes.

The targeted programme

The department participating in the study has a robust internal system for investigating and reviewing uses of force which includes regular inspections of body-worn video footage. During a routine review of body-worn videos, reports, and other materials, the agency identified an issue in the existing ECW policy that may have been misinterpreted by officers in the field. After further examination and coordination with internal subject matter experts, the agency modified the policy document to eliminate the ambiguity that may have led to a misinterpretation of the agency's policy. Specifically, the experts noted ambiguity in a section of the policy document describing situations in which an ECW might be used. To be clear, the incidents identified may not have risen to the level of excessive force by law or policy but represented situations that could have been handled better. By revising the policy document, the agency attempted to proactively alter officer behaviour to reduce ECW use in specific circumstances.

After the modified policy was issued, the department solicited and received feedback from officers and determined that confusion continued to exist about the modification. As a result, the agency developed a training programme that would review the policy change explaining the details of the change and how officers were expected to respond. This review included trainers discussing the revised policy in a classroom environment, as well as several live-action scenario exercises featuring the need to make decisions regarding the use of intermediate force. This training programme was incorporated as a featured component of a larger 1-day training course for all officers.

Current study

The present study uses data from a quasi-experimental evaluation of this in-service use-of-force training to assess the impact of a combined policy and training intervention to ensure the appropriate use of an intermediate-force weapon such as ECW. Officers were surveyed pre- and post-training with an integrated body-camera video to pose a hypothetical officer–citizen interaction for officers to rate their recommended level of force. The body-camera video of interest involves a response to an unarmed suspect who fails to respond or comply with an officer's commands. The video provides the reason for the police response and sufficient footage for the viewing officer to recommend the level of force the officer believes is appropriate under relevant department policies and procedures. Most importantly, the video of interest is one of the incidents reviewed by the agency that led to the policy modification. Officers' recommendations for the use of force are tested to assess whether the training programme and policy change reduce the likelihood that officers would recommend intermediate force in this specific situation.

Methods

Data for this study are from a convenience sample of 360 officers¹ working at a large police agency in the Western USA. Officers surveyed in this study attended a mandatory, 1-day training programme which includes a classroom and scenario-based component on the use of an ECW or other form of intermediate force. The instructors are police officers with special training in adult learning and relevant expertise in the use of intermediate force. As part of the programme, trainers review the modifications to the use of force policy aimed at reducing ECW usage in specific situations. Officers completed a survey before and after the training programme.

¹ All 360 officers completed at least part of the survey, although some only filled out certain sections of the survey. More information on response rates will be presented later in the paper. Additionally, this department employs several thousand officers with 360 representing only a small sample of officers in the agency.

When the officers arrive and sign in to record their attendance at the training programme,² they complete the pre-training survey. This includes information on officers' demographics,³ as well as their attitudes regarding their agency and the public. When all officers are signed in and the initial portion of the survey is completed, body-camera footage of an officer–citizen interaction in the police department is then played on the front screen in the classroom for everyone to watch. The video automatically pauses before the officer in the video uses force and officers are asked to respond to a series of questions about the officer–citizen encounter, including their recommendation on whether to use force and if so, what level of force is appropriate. Officers then tear a stub of paper off this pre-test survey with a random number on it.

The officers are provided the second survey at the end of the day, after the completion of the training. On the post-training survey, officers provide the number on the paper stub to link the post-training survey to the pre-training survey and then watch a *different* body-camera video of an officer–citizen interaction. When the video pauses, officers respond to the same set of questions as the pre-training survey regarding the officer–citizen encounter.

The body-camera videos are alternated pre- and post-training to create a quasi-experimental design (see Skogan *et al.*, 2015, for a similar design and approach). One of these videos is of an incident reviewed by command staff that led to the policy change discussed earlier in the manuscript while the other video depicted an incident involving an individual experiencing a mental health crisis. On odd-numbered days, the incident of interest is shown during the pre-training survey and the mental health incident is shown during the post-training survey. On even-numbered days, the incident of interest is shown during the post-training survey and the mental health incident is shown during the pre-training survey before training started.

Since our interest is the potential reduction of ECW usage following the training programme,

we focus only on the incident of interest with officers on odd-numbered days serving as the pre-test control group and officers on even-numbered days serving as the post-test treatment group. The large agency participating in the study assigns officers to the training on a semi-random basis based on availability. To be clear, we cannot state with confidence that assignment to the training programme was random, but we can say for certain that officers were not assigned to training based on their group assignment (e.g. a whole squad is taken off the street for a day of training), individual assignment, or any other major factor as officers of all backgrounds from various assignments throughout the jurisdiction are represented in each session. Still, balance checks are conducted to make sure the pre-test and post-test groups are not different on any significant factors.

One hundred eighty-five officers attended training on an odd-numbered day (and were thereby assigned to the pre-test group) and 175 were assigned to training on an even-numbered day (and were thereby assigned to the post-test group). As is typical for an in-person policing survey, response rates are high (Nix *et al.*, 2019), however, even in a 1-day training programme attrition is an issue. One hundred eighty-two officers provide a recommended level of force at the pre-test (98.4% response rate), but only 158 provided a recommended level of force at the post-test (90.3%). Furthermore, in considering the multivariate analyses, only 259 officers provide sufficient detail to be included in the regression model detailed below (76.2% response rate).

Measures

Dependent variable. When the body-camera video pauses, officers are asked to check a box corresponding to which of several use-of-force options they recommend. This question forms the foundation of two dependent variables to use in the analysis—whether officers recommend *Intermediate Force* be used and the *Highest Force Recommended*

² Sign-in documentation was collected and maintained separately to ensure anonymity.

³ Notably, officer race was not included in the demographics section of the survey. The union for the officers participating in the survey would not approve the survey if it included a question on officer race. While this is not ideal, we do not believe it affected the results which are robust due to the design of the project (see other methodological details).

by the officer. *Intermediate force* is a dichotomous variable where 0 means the officer does not recommend intermediate force and 1 means the officer recommends intermediate force. *Highest Force* is an ordinal variable representing the highest level of force the officer recommended (where 1 = no force, 2 = empty hands, 3 = intermediate force, and 4 = lethal force). The recommendation of *Intermediate Force* is of particular interest because the policy change regarding ECW usage is specifically written to improve decisions regarding the use of intermediate force, not to reduce the use of force more generally.

Independent variable. The key independent variable of interest is whether the officer is in the *post-test* group. This variable is coded as a 1 if officers watch the incident of interest after training and 0 if officers watch the incident of interest prior to training.

Control variables.⁴ Several control variables are included to check for balance and ensure that the finding is robust to various threats (see Analytic Strategy section for more detail). First, the officer's rating of ability, opportunity, and intent (AOI) was included as it has previously been shown to be a primary driver of use-of-force decisions (see McLean et al., 2022a, b). AOI is a mean scale score consisting of three items regarding the subject's ability, opportunity, and willingness to inflict harm on the officer or another person. Similarly, officers are asked to rate the suspect's *resistance* as another driver of use-of-force decisions with possible response options of passive resistance, active resistance, active aggression, and aggravated aggression.⁵ The concepts of ability, opportunity, and intent are also reviewed in the training, so it is likely that this variable may change from pre- to post-test in conjunction with the force recommendation.

Three variables are used to understand officers' attitudes towards their job and the general public: *warrior* attitudes, *guardian* attitudes, and *cynicism*. *Warrior* is a mean scale score of four items aimed

at aggressive enforcement attitudes (from 1 to 5, with 5 being more aggressive attitudes), *guardian* is a mean scale score of four items examining community collaboration attitudes (from 1 to 5, with 5 being more collaborative attitudes), and *cynicism* is a mean scale score of two items asking the percentage of citizens that give officers reason to be suspicious or distrustful (1 to 5, where 1 = 0% and 5 = 100%).

A measure of *organizational justice* is also included as it has previously been shown to predict compliance with agency goals (Wolfe and Lawson, 2020), which could include a significant policy change, such as is addressed in this study. The measure is a mean scale score of five items regarding the officer's perceptions of the fairness of their agency (from 1 to 5, with 5 indicating greater perceived fairness).

Finally, several demographic variables are collected including officer gender (1 = *Female*, 0 = *Male*), years of experience, current assignment, prior force experience, rank, military experience, and education. For years of *experience*, data are collected as an ordinal variable and then dichotomized into dummy variables for 5–9 years, 10–14 years, 15–19 years, and 20+ years. Officers with less than 5 years of experience serve as the reference category for multivariate analyses. Similarly, the current assignment is collected categorically and dichotomized into dummy variables of *specialized field units*, *investigative* roles, and *administrative* and other roles, with patrol officers serving as the reference category. *Lethal/less-lethal experience* assesses prior force experience with a score of 1 if officers have used their gun or ECW in the line of duty and 0 if officers have not used their gun or ECW in the line of duty. For rank, data were collected to assess most of the ranks in the department (excluding ranks above Lieutenant where numbers are small), but small cell issues forced us to collapse categories and include a simple dichotomous indicator of whether an officer was a *supervisor* (1 = yes, 0 = no). Military experience was also a simple dichotomous measure with officers with prior military experience

⁴ All variables are discussed in greater detail in McLean et al. (2022a). That manuscript presents an analysis using only the pre-test data from this same study.

⁵ Note that no officers chose the aggravated aggression option.

being given a value of 1 and officers without the prior military experience being given a value of 0. Finally, education was collected categorically with an exhaustive list of options, but small numbers required us to collapse these into a series of dummy variables including *associate's degree*, and *bachelor's degree or higher*, with less than an associate's degree serving as the reference category.

Analytic strategy

Given the semi-random nature of the design, our first step analytically is to ensure that there are no measurable differences in the pre-test and post-test groups. Accordingly, we test for significant differences between each group on each of the control variables reviewed above. For dichotomous variables, a *t*-test for significant differences in proportions is conducted; for ordinal or categorical variables, a Pearson's chi-squared test is conducted; and for continuous variables, a *t*-test for significant differences in means is conducted.

Following these balance tests, a *t*-test for a simple difference in the proportion of officers recommending intermediate force is conducted. If assignment to the groups is approximately random and attrition is small, this test shows whether recommendations for intermediate-force changes are due to the training programme and accompanying policy change. To add more contexts to this analysis, a Pearson's chi-squared test is conducted on the highest level of force recommended to assess how officers respond to the restriction on intermediate force.

Finally, to ensure that the findings are robust, a clog-log regression with the intermediate-force recommendation as the dependent variable will be conducted. If any variables are not balanced between the pre-test group and the post-test group, the clog-log regression should be able to control for these differences to assess the impact of the training programme and accompanying policy change. A clog-log regression is used because residuals for a logistic regression are not normally distributed, likely due to the small percentage of officers who recommend intermediate force in the post-test (Long and Freese, 2014).⁶ Note that the results of

the clog-log are very similar to the results of a similarly specified logistic regression and these results are available upon request. Finally, several outliers are identified in the analysis—accordingly, the multivariate regression results are presented both with and without the outliers included and are substantively similar.

Results

Descriptive statistics, broken down into the pre-test balance checks, are presented in Table 1. The only variable that is significantly different between the pre-test and post-test groups is the officer's assessment of ability, opportunity, and intent in the encounter (pre-test = 3.21, post-test = 2.63). This change is likely due to the training programme's dual focus on ability, opportunity, and intent, as well as the proposed policy change regarding the use of intermediate weapons when citizens are 'unsafe to approach'. Thus, we will likely have difficulty disentangling these effects. Still, we can see that both the pre-test and post-test groups are alike on all other control variables including cultural values such as cynicism and warrior and guardian attitudes, as well as demographic variables such as gender, years of experience, current assignment, supervisory status, military experience, and education. Furthermore, the groups show no significant differences in previous experience with less-lethal or lethal force.

Knowing that the groups are balanced on all the control variables except for one and attrition affects only a small portion of the officers (there were just 8.1 percentage points difference between response rates pre- and post-test), we can move on to the test for differences in recommended levels of force. Officers in the pre-test group are significantly more likely to recommend intermediate force (28%) than officers in the post-test group (13%; $t(338)=3.36$, $p < 0.01$; see Table 2). Furthermore, the Pearson's chi-squared test is significant when examining the highest level of force recommended by officers (see Table 3). Digging into this further, in addition to the drop in intermediate force, Table 3 demonstrates corresponding increases in the use of empty hands or no-force tactics and a decrease in lethal-force

⁶ Other assumptions of logistic regression were also checked, such as multicollinearity, but revealed no significant issues.

Table 1: Descriptive statistics

	Pre-test		Post-test		Total	
	Mean	SD	Mean	SD	Mean	SD
AOI*	3.21	1.05	2.63	1.02	2.94	1.07
Cynicism	2.42	0.74	2.43	0.75	2.43	0.74
Warrior	4.05	0.66	4.02	0.68	4.04	0.67
Guardian	4.28	0.74	4.20	0.79	4.24	0.76
Organizational justice	2.82	0.51	2.82	0.57	2.82	0.54
Resistance						
Passive resistance	83.2%		90.0%		86.4%	
Active resistance	16.3%		9.4%		13.0%	
Active aggression	0.5%		0.6%		0.6%	
Female	19.5%		20.0%		19.7%	
Experience						
1–4 years	20.7%		21.3%		21.0%	
5–9 years	11.4%		11.2%		11.3%	
10–14 years	23.4%		22.5%		23.0%	
15–19 years	16.9%		11.8%		14.5%	
20 years or more	27.7%		33.1%		30.3%	
Assignment						
Patrol	54.6%		55.0%		54.8%	
Spec. field unit	19.7%		16.0%		17.9%	
Investigative	11.5%		17.2%		14.2%	
Administrative/other	14.2%		11.8%		13.1%	
Lethal/less-lethal experience	76.8%		77.2%		77.0%	
Supervisor	81.7%		78.5%		80.2%	
Military	21.1%		22.9%		22.0%	
Education						
No degree	33.0%		26.6%		29.9%	
Associate's degree	21.1%		22.5%		21.8%	
Bachelor's degree or higher	46.0%		50.9%		48.3%	

* $p < 0.05$.**Table 2:** *t*-Tests for significant differences pre-test to post-test

	Pre-test	Post-test	<i>t</i> -Test
	<i>M</i> (SE)	<i>M</i> (SE)	
Intermediate force	0.28 (0.03)	0.13 (0.03)	3.36**

** $p < 0.01$.

tactics. Thus, it appears that the combination of the training programme and policy change results in a substantial reduction in recommendations of intermediate force.

While the pre-test balance checks show no significant differences among all the control variables except for ability, opportunity, and intent, it is still

possible that, in combination, other variables may influence the estimate of the effect size—after all, assignment to training approximates random but was not completely random. However, both the clog-log regression with and without outliers reinforces the findings of the *t*-test—the combination of the policy change and training results in a significant reduction in the recommendation to use intermediate force (see Table 4, with outliers: $b = -0.95$, $p < 0.01$; without outliers: $b = -3.14$, $p < 0.01$).

Examining other potential confounders, we focus only on findings that are robust to outliers—that is, they were significant in both models. AOI is significantly related to recommendations to use intermediate force, such that greater perceived AOI is

Table 3: Chi-square test for significant differences in highest force recommended

	Pre-test		Post-test	
	<i>N</i>	%	<i>N</i>	%
Video 1				
No force	101	55.5	102	64.6
Empty hands	30	16.5	35	22.2
Intermediate weapons	46	25.3	20	12.7
Lethal force	5	2.8	1	0.6
<i>Chi-SQUARE</i>		11.67**		

** $p < 0.01$.**Table 4:** Clog-log regression of recommendation to use intermediate force

	Outliers removed			Full model		
	Coef.	Std. Err.	<i>p</i> -value	Coef.	Std. Err.	<i>p</i> -value
Post-test	-3.14	0.87	0.00**	-0.95	0.34	0.01**
AOI	0.93	0.32	0.00**	0.52	0.16	0.00**
Resistance						
Active resistance	2.34	0.66	0.00*	1.12	0.36	0.00**
Active Aggression	--	--	--	1.42	1.36	0.30
Cynicism	-0.03	0.30	0.92	0.22	0.19	0.25
Warrior	0.47	0.39	0.24	0.16	0.25	0.52
Guardian	-0.98	0.39	0.01*	-0.34	0.22	0.12
Female	1.04	0.49	0.04*	0.30	0.35	0.38
Experience						
5-9 years	0.89	0.83	0.28	0.21	0.52	0.69
10-14 years	0.97	0.84	0.25	-0.09	0.51	0.86
15-19 years	1.30	0.90	0.15	0.68	0.56	0.23
20+ years	2.03	0.88	0.02*	0.56	0.57	0.33
Assignment						
Spec. field unit	-0.15	0.77	0.85	0.24	0.44	0.59
Investigative	1.77	1.17	0.13	0.77	0.54	0.16
Admin	0.92	0.68	0.17	0.49	0.44	0.27
lethal/less-lethal experience	-2.04	0.71	0.00**	-0.79	0.36	0.03*
Supervisor	2.19	0.91	0.02*	0.47	0.50	0.35
Military	-0.91	0.72	0.20	-0.13	0.38	0.74
Education						
Associate's Degree	2.76	0.78	0.00**	1.28	0.42	0.00**
Bachelor's degree or higher	1.36	0.71	0.06	0.62	0.41	0.13
Organizational justice	1.18	0.55	0.03*	0.10	0.29	0.73
<i>N</i>		232			259	
Chi-square		100.40**			62.86**	

* $p < 0.05$, ** $p < 0.01$.

related to an increased likelihood of recommending intermediate force (with outliers: $b = 0.52$, $p < 0.01$; without outliers: $b = 0.93$, $p < 0.01$). Additionally,

perceiving active resistance as compared to passive resistance (with outliers: $b = 1.12$, $p < 0.01$; without outliers: $b = 2.34$, $p < 0.01$) and having an associate's

degree compared to less than an associate's degree (with outliers: $b = 1.28, p < 0.01$; without outliers: $b = 2.76, p < 0.01$) are related to a higher likelihood of recommending intermediate force. Finally, having prior lethal or less lethal-force experience is associated with a lower likelihood of recommending intermediate force (without outliers: $b = -0.79, p < 0.05$; with outliers: $b = -2.04, p < 0.01$).

Discussion

The goal of most new policies in policing is to alter officer decision-making or behaviour in some meaningful way. Training programmes such as those focused on de-escalation or citizens with mental health issues intend to shape the way that officers interact with citizens (Rogers *et al.*, 2019; McLean *et al.*, 2020; White, 2021; Engel *et al.*, 2022). Policy changes, such as those made to the use of force policies or traffic stop policies, also intend to change officer behaviour (White, 2001; Shjarback *et al.*, 2020). Too often, however, researchers and policy-makers alike turn to single-option solutions—that is, implementing a training programme or a single policy change—for altering behaviour. Researchers prefer these options in an effort to design studies that isolate the effects of a single change because it is the type of good, basic science that is vaunted in research design textbooks and classes (e.g. Campbell and Stanley, 1963). Practitioners may view single-option solutions as preferable because they are easily palatable by command staff and officers and require expending fewer resources. At the same time, changes to behaviour are more likely to occur through a concerted effort by an agency—a comprehensive ‘pulling all levers’ approach—that complements policy changes with relevant training and education programmes, as well as improved supervision and accountability (see e.g. Alpert and Smith, 1994; Alpert and Dunham, 2010; McLean *et al.*, 2022a, b).

In this study, we did not disentangle the impacts of a policy change regarding the appropriate use of an intermediate weapon from the training programme that reviewed this policy change, as well as other use-of-force concepts. In so doing, we cannot state definitively the impact of either the policy change or the training programme. However, we

demonstrate that these two factors, in combination, cut the percentage of officers recommending intermediate force in half in a scenario that command staff reviewed and identified as problematic for intermediate weapons. This finding was robust to a variety of analytic techniques, including simple *t*-tests that assumed the study design was as good as random and a fully saturated clog-log, multivariate regression model. We contend that this approach, while not as ideal scientifically, is imminently more practical and more likely to create lasting positive change in a police department. Writing policies and reviewing those policies in integrated training programmes may not isolate effects and may take time, but they are also more likely to be successful. Similarly, while out of the scope of this study, we suggest that adding robust supervision and accountability practices would further improve the ability of policy changes and training programmes in creating change.

While we are confident in the robust nature of this finding, we would be remiss not to acknowledge several limitations. First and foremost, while the design of the study is intended to approximate randomization, it is not, in fact, a randomized study. We are unaware of the specific mechanisms by which individuals were assigned to training on specific days. The balance checks revealed no significant differences on several key variables, but that does not preclude the possibility of differences in unobserved characteristics. Second, this study focuses on a training programme with surveys conducted immediately before and after officers completed the training, when the information reviewed was fresh in their minds. It is possible that the detected effects would not last very long. Third, we note a very high response rate to completing any of the survey (98% in the pre-test and 90% in the post-test); however, when conducting the multivariate analyses, missing data reduced the response rate to 76%. Fourth, the outcome measured in this study was not actual, observed officer behaviour, but hypothetical officer behaviour after watching body-camera footage of a real officer–citizen encounter in their agency. This leaves open the possibility that officers may behave differently in practice than they stated in the survey. Additionally, it is possible that participants were aware of the outcome of the incident depicted in

the video prior to taking the survey since the video footage came from the same agency. However, the partnering agency employs several thousand police officers and only 360 officers took the survey. Thus, it is unlikely that any of those 360 were involved in the incident.

Researcher–practitioner partnership

This research is only possible because of commitment from the department and its training staff and demonstrates the benefits of truly collaborative researcher–practitioner partnerships. The project was initially proposed by the academics to the practitioner as a study of how officers use threat assessment to make use of force decisions (see [McLean *et al.*, 2022a](#)). When the decision was made to survey officers during an in-service training programme, members of the command staff at the participating agency who were assisting in project design and implementation identified the possibility of focusing on the impacts of the training programme, as we have done here. Over the course of several months, the authors worked collaboratively with each other, as well as with the director of police training and education at the department to design a study that examined the impact of the training and policy change.

The academic partners then spent several days at the police department observing the training programme to ensure fidelity. The trainers helped the academics to understand fully the training programme and its purpose and became advocates for the study—undoubtedly a contributor to the extremely high response rates. Without this level of support and collaboration, the authors may have been able to examine threat assessment as planned, but the development of this evaluative project would not have been possible and provided both a valuable experience for the academic partners and quantitative feedback on the success of the training programme to the agency. This feedback was presented to the agency via video conference at the conclusion of the project.

At the same time, this collaboration was not trouble free. In this case, there was an existing relationship between the researcher team and several members of the agency command staff from prior work together. Very quickly, a trust relationship between both groups developed. As anyone who has worked in a researcher–practitioner partnership knows, however, these relationships begin as tentative and the practitioners often ‘test’ the researchers to determine their commitment and to determine what benefits there will be to the agency. This partnership is no different with the researchers meeting and presenting the ideas behind the research project to several members of the command staff and the training division throughout project development. The research team, including both the researchers and the practitioner author, had to persuade decision-makers of the value of the project to justify the time and effort required. Additionally, and as noted in an earlier footnote, the collaboration required that the survey be vetted by the police officers’ union which would not permit a question on the officer’s race in the survey.

Finally, partnerships and collaboration take time and effort. Survey development, project design, and site visits prior to data collection took place over the course of an entire year, beginning in August 2018 before the survey launched in July 2019. The research itself moved at a pace that was slower than preferred by the agency, with data entry and basic analyses taking several months to conduct before providing basic feedback on the results of the study in early 2020. Still, we believe that the success of the study speaks for itself as the substantial reduction in intermediate-force recommendations is larger than the effect sizes for reductions in force found in most major policing studies (see [Sierra-Arévalo and Papachristos, 2021](#)).⁷

Conclusion

In the end, this study highlights two critical points. First, advocating for policy changes or training

⁷ We acknowledge that the estimates in [Sierra-Arévalo and Papachristos \(2021\)](#) are aimed at reductions in overall force, where we are focused only on the use of force in a specific situation; however, our study also demonstrated a clear reduction in the level of force in a situation where the use of force was problematic, thus reducing extraneous noise and improving its importance.

programmes is preferred by researchers and practitioners to address policing issues, but holistic changes that link robust training with a significant policy change can be more powerful. Second, researcher–practitioner partnerships that are truly collaborative can provide greater insights and stronger research findings than partnerships where academics design studies without practitioner input. Collaborative projects that evaluate the effectiveness of holistic interventions should provide more value to the field than piecemeal projects with researchers treating police departments as their laboratories.

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