

Predicting Officer Involvement in Lethal Force: The Relative Impacts of Educational Attainment and Line-of-Duty Victimization

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Abstract

The Police use of force continues to draw significant public and scholarly attention, particularly regarding how officer characteristics shape decision-making in high-stakes encounters. Higher education is frequently promoted as a key mechanism for enhancing professionalism, improving de-escalation, and reducing problematic behavior. This study examines whether educational attainment, specifically possessing a bachelor's degree, predicts differential officer involvement in lethal force incidents while controlling psychological and experiential variables, including line-of-duty victimization. Analyzing secondary data from 64 law enforcement officers across seven agencies in two southern U.S. states, binary logistic regression was conducted to evaluate the relative impact of higher education. The overall model was statistically significant ($\chi^2(5)=23.166$, $p<.001$), accounting for 46.7% of the variance in career lethal force involvement (Nagelkerke $R^2=.467$) and correctly classifying 84.4% of cases. An officer's history of prior line-of-duty victimization emerged as the primary statistically significant predictor ($B=2.864$, $p=.002$), increasing the odds of lethal force involvement by more than seventeen times ($\text{Exp}(B)=17.525$). Higher education demonstrated a substantial protective directional effect, associated with an 80.6% reduction in the odds of lethal force involvement ($\text{Exp}(B)=0.194$), though this relationship was slightly shy of statistical significance ($p=.078$). Control measures for military service, negative emotionality, and cognitive reflection also did not reach statistical significance. These findings highlight prior line-of-duty trauma as a critical driver of career lethal force encounters and suggest that while formal education remains a promising protective factor, post-incident trauma support and early intervention systems are vital operational needs.

Keywords: *Officer education, police use of force, police professionalism, trauma-informed policing, officer victimization*

In recent years, police conduct, particularly use of force, has come under heightened public and scholarly scrutiny, prompting widespread debate about its impact on public trust and community safety. Because policing is fundamentally a public service that relies on public consent and cooperation, maintaining public confidence in law enforcement is essential to effective crime prevention and the promotion of safe, resilient communities. When communities trust the police, individuals are far more likely to cooperate with criminal investigations, report offenses, serve as court witnesses, and participate in collective neighborhood safety efforts. Conversely, when public trust is eroded, individuals become hesitant or unwilling to engage with law enforcement, undermining public safety and weakening the overall institutional legitimacy of the justice system. Officers' use of force plays a central role in shaping these perceptions, directly influencing how the public evaluates procedural justice, officer fairness, and police legitimacy ([NCJRS, 2015](#); [Vespucchi, 2020](#)).

Against this backdrop, scholars, policy makers, and police leaders have increasingly questioned whether higher education may influence officers' behavior and high-stakes decision-making. Standard police academy training is relatively brief, operational, and tactical in nature. Consequently, the possibility that college-educated officers might approach use-of-force encounters differently, utilizing greater restraint, verbal de-escalation, and critical thinking, has become a central focus of inquiry for those seeking to strengthen police–community relations and reform law enforcement practices. Examining this relationship contributes directly to broader conversations surrounding police professionalism and the evolving competencies required for modern, community-oriented policing. If officers holding college degrees are systematically more judicious in their use of force, encouraging or requiring higher education within the profession could represent a transformative structural reform strategy to promote ethical conduct, elevate professional standards, and reduce unnecessary harm ([Vespucchi, 2020](#)).

A growing body of empirical literature provides support for this proposition. Research consistently demonstrates that college-educated officers often outperform their non-degree-holding counterparts across a range of professional metrics, earning higher performance evaluations, demonstrating stronger interpersonal communication skills, and displaying heightened ethical judgment in complex situations ([Sanderson, 1977](#); [Vespucchi, 2020](#)). Yet, despite the widespread belief that higher education improves officer judgment and curbs excessive force, empirical findings across the

broader field have not always yielded uniform or definitive conclusions regarding lethal force specifically. Furthermore, many police departments across the United States and around the world continue to operate without minimum educational requirements that include a college degree. This persistent gap between academic research and real-world policy implementation has hindered the widespread adoption of educational standards across law enforcement agencies.

These dynamics underscore the need for continued, rigorous empirical examination of how educational attainment shapes officers' use of force behavior when evaluated alongside psychological traits, cognitive attributes, and personal exposure to trauma. While prior research often highlights post-secondary education as a protective cognitive shield, the realities of field operations dictate that education operates within a complex web of individual and experiential factors. When officers experience life-threatening violence in the line of duty, the resulting psychological strain and hypervigilance can fundamentally alter real-time threat perception, potentially overshadowing formal educational preparation.

To evaluate these competing dynamics, the present study evaluates officer-level data across a sample of N=64 law enforcement officers. By examining bachelor's degree attainment alongside negative emotionality, cognitive reflection, prior military service, and prior line-of-duty victimization, this study clarifies the relative impact of higher education in high-stakes environments. Specifically, the findings evaluate whether formal education retains its protective directional influence when placed in direct empirical competition with powerful experiential predictors like officer trauma, offering a more nuanced understanding of how individual background and operational exposure jointly shape lethal force outcomes in modern policing.

Literature Review

Prior research in criminology and police studies has established a well-documented correlation between higher education levels among law enforcement officers and their use of force behavior ([Johnson et al., 2019](#); [Klahm & Tillyer, 2010](#); [Rydberg & Terrill, 2010](#); [Stickle, 2016](#)). Across this body of work, officers with college degrees tend to exercise broader discretion, demonstrate greater emotional self-regulation, and employ less forceful tactics than those without post-secondary degrees. One of the foundational contributions to this literature is [Klahm and Tillyer's \(2010\)](#) comprehensive review, which systematically examined officer characteristics,

situational dynamics, and organizational influences. Their analysis revealed that officers with higher levels of education were significantly less likely to resort to physical force, highlighting formal education as a meaningful individual-level factor shaping field-level policing practices.

Building on this foundation, subsequent studies have explored how post-secondary education intersects with other officer-level characteristics to influence high-stakes decision-making in critical encounters. [Johnson et al. \(2019\)](#), for example, examined racial disparities in fatal encounters between law enforcement and civilians, incorporating key officer-level variables such as age, race, gender, years of service, and educational attainment. Their findings revealed that officers possessing higher levels of formal education were significantly less likely to be involved in fatal officer-involved shootings. This evidence suggests that higher education may actively moderate officer decision-making in situations where the potential for lethal force arises, reinforcing the perspective that college-educated officers demonstrate greater restraint, emotional regulation, and conflict resolution skills when confronted with volatile or life-threatening encounters.

The theoretical mechanisms underlying these empirical findings are multifaceted. Higher education coursework, particularly in disciplines such as criminal justice, sociology, psychology, and the humanities, exposes officers to broader concepts related to cultural diversity, social inequality, human behavior, and procedural justice. This broader intellectual grounding can attenuate implicit bias and foster more thoughtful, measured cognitive processing during high-stress interactions ([Vespucci, 2020](#)). Early work by [Carter and Sapp \(1990\)](#) similarly demonstrated that college-educated officers consistently show higher levels of cultural competence, stronger written and verbal communication abilities, and an enhanced capacity to navigate the complex social dynamics inherent in community policing. Consequently, degree-holding officers tend to generate fewer civilian complaints, experience more positive public interactions, and exhibit a deeper commitment to ethical policing standards.

Taken together, these findings underscore the value of education not only as an individual asset for officer career development, but as an institutional strategy for minimizing harm, improving community relations, and mitigating disparities in policing outcomes. As public calls for comprehensive police reform intensify, integrating higher education requirements into departmental recruitment and promotion standards has been repeatedly identified as a promising avenue for reshaping organizational culture

toward de-escalation, procedural fairness, and institutional accountability ([Carter & Sapp, 1990](#); [Lersch & Kunzman, 2001](#)).

Additional empirical studies reinforce and expand upon this perspective. [Rydberg and Terrill \(2010\)](#) analyzed observational and administrative data, reporting that college-educated officers used force significantly less frequently and were far more likely to rely on verbal communication and tactical de-escalation techniques. Their work indicates that higher education fosters critical thinking skills and emotional intelligence that directly translate into measured, proportional responses in the field. Similarly, [Chapman \(2012\)](#) examined the relationship between officers' educational levels and their use of force within minority communities, finding that higher education was associated with reduced force incidents even after controlling officer experience and neighborhood demographics. Chapman suggested that college coursework enhances officers' understanding of cultural diversity and bolsters their ability to de-escalate potentially volatile encounters. Interestingly, Chapman also observed that more experienced officers were more likely to use force, suggesting that prolonged, cumulative exposure to high-stress, dangerous environments may increase force reliance over time, a finding that points to the critical necessity of continuous professional development and stress management interventions.

Research by [Stickle \(2016\)](#) further evaluated the combined effects of education, pre-employment psychological screening, and field training on officer behavior across multiple law enforcement agencies. The findings indicated that agencies enforcing higher educational requirements, comprehensive psychological evaluations, and expanded field training hours experienced significantly fewer citizen complaints regarding excessive force. While formal education demonstrated a clear protective effect in reducing force complaints, Stickle emphasized that education operates most effectively when paired with rigorous screening processes and practical, ongoing scenario-based training. This underscores the argument that while higher education provides a crucial cognitive foundation, it must be integrated with robust organizational screening and operational support to optimize officer decision-making.

While much of the extant research focuses on street-level operational officers, [Hippert \(2024\)](#) shifted the analytical lens toward police supervisors, who play a pivotal role in guiding, mentoring, and monitoring officers through daily supervision and administrative oversight. Hippert found that educational attainment, particularly in criminal justice and leadership disciplines, fosters superior legal interpretation,

enhanced critical analysis, and stronger ethical oversight among supervisors. Educated supervisors are better equipped to communicate policy expectations, interpret legal frameworks accurately, and guide subordinate officers toward ethically and legally sound field decisions. This line of research adds important depth to the literature, supporting the premise that academic preparation elevates police accountability and operational effectiveness at both the line-officer and supervisory levels.

These patterns are further corroborated by comparative international research. [Veic and Cajner Mraovic \(2004\)](#) examined police education and training reform within Croatia during its democratic transition, noting that nations establishing rigorous, post-secondary educational benchmarks for police officers report lower rates of officer misconduct, fewer corruption allegations, and higher levels of public legitimacy. Their comparative analysis indicates that educational standards enhance not only individual officer competence but also the broader institutional authority and democratic legitimacy of law enforcement agencies, highlighting the global relevance of higher education as an evidence-based mechanism for police reform.

Psychological, Cognitive, and Experiential Factors

Beyond formal education, individual psychological traits and cognitive processing capacities play critical roles in shaping officer decision-making under stress. Negative emotionality, characterized by a tendency to experience anxiety, anger, and hyperarousal, has been linked to heightened threat perception and intrusive stress responses in law enforcement settings ([Exum et al., 2024](#)). Officers exhibiting elevated negative emotionality may interpret ambiguous citizen behavior as hostile, potentially increasing the likelihood of coercive force deployment. Conversely, cognitive reflection, the capacity to override intuitive, visceral impulses in favor of analytical processing, is theorized to enhance decision-making accuracy during high-stakes encounters, promoting deliberate evaluation before responding to potential threats ([Frederick, 2005](#)).

Crucially, individual traits operate within the context of an officer's career experiences, particularly exposure to trauma. Line-of-duty victimization, such as having been shot at, assaulted with a deadly weapon, or severely injured in the line of duty, represents a profound operational stressor that can fundamentally alter threat perception. Research on trauma and occupational hypervigilance indicates that

officers who have experienced prior lethal threats often develop heightened autonomic arousal and acute threat-sensitivity ([Gilmartin, 2002](#); [Jetelina et al., 2020](#)). While adaptive for immediate self-preservation in volatile environments, this heightened state of readiness can narrow an officer's perceptual field and lower the threshold for perceiving mortal danger in subsequent citizen encounters.

The Research Gap

Despite the substantial body of empirical literature documenting the benefits of higher education in policing, several significant theoretical and methodological gaps remain. A primary limitation in the existing literature is the tendency to combine all forms of force, ranging from minor verbal coercion and soft wrist locks to intermediate weapons and deadly force, into aggregate force continuum scales. Relatively fewer studies isolate career involvement in *lethal force encounters* as a distinct binary outcome to test whether the protective cognitive shield of a bachelor's degree holds up under life-or-death pressure.

Secondly, while prior studies have controlled basic demographic variables (such as age, race, gender, and tenure), they rarely account simultaneously for psychological attributes (such as negative emotionality or cognitive reflection) and personal history of trauma, such as line-of-duty violence. Exposure to traumatic violence can fundamentally alter an officer's threat perception, physiological stress response, and decision-making thresholds during acute crises. Failing to control for prior line-of-duty victimization risks confounding or masking the true independent effect of educational attainment.

As scholars like [Haberfeld \(2003\)](#) have argued, while higher education is a powerful asset, it does not exist in a vacuum. It interacts with organizational culture, psychological resilience, and personal trauma. There remains a clear need for empirical models that evaluate whether formal education retains its protective statistical significance or strong directional influence when placed in direct competition with powerful experiential predictors like officer personality traits and personal trauma. The present study directly addresses these gaps by evaluating the independent impact of holding a bachelor's degree on officers' career involvement in lethal force incidents within a multivariate model that simultaneously controls for negative emotionality, cognitive reflection, prior military service, and line-of-duty victimization across a sample of officers.

Methodology

Research Question

The current study addresses the central research question: *What impact does higher education have on officers' likelihood of using lethal force when evaluated alongside psychological traits, cognitive attributes, and line-of-duty victimization?* Specifically, the study explores whether officers holding a bachelor's degree differ in their career involvement in lethal force compared to non-degree-holding officers, while assessing how negative emotionality, cognitive reflection, prior military service, and line-of-duty victimization contribute to officers' behavioral outcomes in high-stakes encounters.

Hypotheses

Hypothesis 1: Officers with a bachelor's degree or higher will demonstrate significantly lower odds of career involvement in lethal force incidents compared to officers without a four-year degree. Formal higher education acts as a protective cognitive shield, enhancing verbal de-escalation capacities, critical thinking, and emotional self-regulation during high-stress civilian encounters.

Hypothesis 2: Officers exhibiting higher levels of negative emotionality will demonstrate increased odds of career lethal force involvement. Elevated anxiety and stress reactivity lower an individual's threshold for threat perception, making them more likely to interpret ambiguous citizen behaviors as actively hostile or life-threatening.

Hypothesis 3: Higher levels of cognitive reflection will be inversely associated with officer involvement in lethal force. A greater capacity for cognitive reflection allows officers to suppress intuitive, visceral impulses in favor of deliberate, analytical processing, resulting in more measured behavioral responses under pressure.

Hypothesis 4: A personal history of line-of-duty victimization involving lethal threats will be a powerful, positive predictor of career lethal force involvement. Surviving operational trauma induces chronic physiological hypervigilance and acute threat sensitivity. While adaptive for immediate self-preservation, this heightened readiness lowers the cognitive threshold for deploying lethal force in subsequent critical incidents.

Data & Sample

This study employed a quantitative research design utilizing secondary data analysis. Secondary data analysis provides an efficient, rigorous, and non-intrusive

approach to examining sensitive research questions in criminal justice using existing, verified datasets (Maxfield & Babbie, 2018). This strategy allows researchers to evaluate complex multivariate relationships without imposing additional research burdens on active-duty law enforcement personnel. The dataset used in this study was originally collected between 2018–2020 by Exum et al. (2024). The dataset was acquired via the Inter-university Consortium for Political and Social Research (ICPSR) public repository. Because the study involved secondary analysis of fully anonymized, publicly archived data, institutional review board (IRB) exemption was verified. The respondent sample included 64 officers from seven agencies across two states (North Carolina and South Carolina).

Variables & Operationalization

The dependent variable in this study, *Use of Lethal Force*, was operationalized as a binary indicator of whether an officer had ever used lethal force (1=Yes, 0=No). This measure was derived from the self-reported survey item: "*Over the course of your career as a law enforcement officer, how many times – if any – have you used lethal force against another person in the line of duty?*" The primary independent variable, *Educational Attainment*, was operationalized as a dichotomous measure indicating whether the officer held a bachelor's degree or higher (1=Yes, 0=No). This operationalization aligns with police education literature testing the specific threshold of a four-year degree against lower educational levels.

Control variables were organized into three distinct domains: demographic factors, psychological and cognitive attributes, and experiential factors.

Demographic factors that were initially considered for the study included officer gender, race, age, and law enforcement tenure. Gender and race were coded dichotomously (1=Male, 0=Female) and (1=White, 0=non-White), respectively. Age was operationalized as a continuous variable representing the officer's self-reported age at the time of data collection. Law enforcement tenure was similarly measured as a continuous variable reflecting officers' self-reported total year of service.

Psychological and cognitive attributes included two variables: negative emotionality and cognitive reflection. Negative emotionality was measured as a continuous factor score derived from the Multidimensional Personality Questionnaire (MPQ) subscale assessing dispositional anxiety, stress reactivity, and emotional instability, with higher scores reflecting greater levels of negative emotionality. Cognitive reflection was measured as a continuous composite score ranging from 0 to

3, derived from the three-item Cognitive Reflection Test (CRT; [Frederick, 2005](#)), which assesses an individual's capacity to suppress intuitive, visceral impulses in favor of deliberate, analytical reasoning.

Experiential factors included prior military service and line-of-duty victimization. Military service was operationalized as a dichotomous indicator of prior service in any branch of the armed forces (1=Yes, 0=No). Line-of-duty victimization was operationalized as a dichotomous indicator of an officer's prior experience of having lethal force used against them (1=Yes, 0=No).

Analytical Strategy

Binary logistic regression was used to evaluate the relationship between educational attainment, other officer characteristics, and use of lethal force. Logistic regression is specifically suited for analytical designs featuring a dichotomous outcome measure, as it estimates the log-odds of an event occurring as a linear combination of one or more independent predictor variables ([Maxfield & Babbie, 2018](#)). This multivariate modelling approach enabled the simultaneous evaluation of educational attainment while controlling psychological, cognitive, and experiential factors.

Model overall fit was assessed using the omnibus chi-square test of model coefficients, along with Cox & Snell R^2 and Nagelkerke R^2 metrics to evaluate explained variance. Classification accuracy tables were examined to determine the model's predictive precision. Parameter estimates are presented using unstandardized regression coefficients (B), standard errors (SE), and exponentiated coefficients $\text{Exp}(B)$ representing odds ratios to interpret the direction and magnitude of effects, with statistical significance evaluated at the standard $p < .05$ threshold.

Results

Descriptive Statistics

Descriptive statistics for the sample of 64 law enforcement officers are presented in Table 1. Across the full sample, approximately one in five officers (21.9%, $n=14$) reported career involvement in a lethal force incident. Over one-third of the sample (35.9%, $n=23$) held a bachelor's degree. In terms of demographic composition, the sample was predominantly male (89.1%, $n=57$) and White (89.1%, $n=57$). Respondents' ages ranged from 21 to 54 (mean=35.8). Approximately one-fifth of the sample (20.3%, $n=13$) reported prior military service experience. Notably, nearly four

in ten officers (39.1%, n=25) reported having experienced line-of-duty victimization involving lethal force. For psychological and cognitive attributes, normalized factor scores on the Negative Emotionality scale exhibited a continuous distribution ranging from 34.41 to 77.80 (mean=46.5). Composite scores for the Cognitive Reflection Test (CRT) varied across the sample: exactly half of the officers (n=32) scored 0, 26.6% (n=17) scored 1, 17.2% (n=11) scored 2, and 6.3% (n=4) achieved a maximum score of 3.

Table 1: Descriptive Statistics (N=64)

Variable	Coding / Range	n	%	Mean
Dependent Variable				
Use of Lethal Force	1=Yes, 0=No	14	21.9%	—
Primary Independent Variable				
Educational Attainment	1=Bachelor's Degree, 0=No Degree	23	35.9%	—
Control Variables				
Gender	1=Male, 0=Female	57	89.1%	—
Race	1=White, 0=Non-White	57	89.1%	—
Age	Continuous (21-54)	—	—	35.80
Law Enforcement Tenure	Continuous (1-31+)	—	—	10.14
Negative Emotionality	Continuous (34.41–77.80)	—	—	46.50

Table 1: Descriptive Statistics (N=64)				
Variable	Coding / Range	n	%	Mean
Cognitive Reflection	Score range 0–3			
Score=0		32	50.0%	—
Score=1		17	26.6%	—
Score=2		11	17.2%	—
Score=3		4	6.3%	—
Military Service	1=Yes, 0=No	13	20.3%	—
Line-of-Duty Victimization	1=Yes, 0=No	25	39.1%	—

Multivariate Binary Logistic Regression Analysis

A binary logistic regression model was used to test whether educational attainment predicts officer involvement in lethal force while controlling negative emotionality, cognitive reflection, military service, and line-of-duty victimization. Although demographic variables were initially considered, they were excluded from the final multivariate model due to extreme homogeneity and near-zero variance within the sample. Furthermore, given the constraints of a small sample size, limiting the number of predictor variables was a deliberate methodological decision to conserve degrees of freedom, minimize the risk of model over-fitting, and optimize statistical power for the primary variables of interest.

The results of the binary logistic regression model predicting officer involvement in lethal force are presented in Table 2. The overall model was statistically significant, $\chi^2(5)=23.166$, $p<.001$, indicating that the model reliably distinguished between officers who had and had not been involved in lethal force encounters. The model explained a substantial proportion of variance in lethal force involvement, yielding a Cox & Snell $R^2=.304$ and a Nagelkerke $R^2=.467$ ($-2 \text{ Log likelihood}=44.076$).

Table 2: Binary Logistic Regression Predicting Officer Involvement in Lethal Force (N=64)

Predictor Variable	B	SE	Wald	p	Exp(B)
Educational Attainment (1=Bachelor's degree)	- 1.641	.931	3.103	.078	.194
Negative Emotionality	.056	.043	1.634	.201	1.057
Cognitive Reflection	-.061	.413	.022	.883	.941
Military Service (1=Yes)	-.700	1.238	.320	.572	.497
Line-of-Duty Victimization (1=Yes)	2.864	.912	9.862	.002	17.525

Note: B=unstandardized regression coefficient; SE=standard error; Exp(B)=odds ratio; Model Chi²(5)=23.166, $p<.001$; Cox & Snell $R^2=.304$; Nagelkerke $R^2=.467$; Overall Classification Accuracy=84.4%.

Prior line-of-duty victimization emerged as the single strongest and only statistically significant predictor in the multivariate model ($B=2.864$, $p=.002$). Controlling for educational, psychological, and cognitive factors, officers who had previously experienced lethal force in the line of duty demonstrated over seventeen times greater odds ($\text{Exp}(B)=17.525$) of having used lethal force compared to non-victimized officers.

In alignment with the directional hypothesis, educational attainment had a substantial protective inverse relationship with lethal force involvement. Controlling for covariates, holding a bachelor's degree was associated with an 80.6% reduction in the odds of lethal force involvement relative to non-degree holders ($\text{Exp}(B)=0.194$, $B=-1.641$); however, the statistical significance of this relationship ($p=.078$) was slightly below the standard significance threshold ($p<.05$). None of the remaining control variables achieved statistical significance in the multivariate model.

Discussion & Policy Recommendations

The primary empirical objective of this study was to examine whether higher educational attainment, specifically holding a bachelor's degree, predicts differential officer involvement in lethal force incidents when evaluated alongside psychological, cognitive, and experiential controls. Based on the results of the binary logistic model, holding a bachelor's degree was not statistically significant at the traditional $p < .05$ threshold ($B = -1.641$, $p = .078$). Nevertheless, supporting the primary hypothesis, higher education demonstrated a strong protective directional effect, associated with an 80.6% reduction in the odds of an officer having used lethal force ($\text{Exp}(B) = 0.194$). This substantial, almost statistically significant, finding aligns with foundational and contemporary literature asserting that post-secondary education serves as a protective cognitive shield in law enforcement (Carter & Sapp, 1990; Johnson et al., 2019; Klahm & Tillyer, 2010; Rydberg & Terrill, 2010; Vespucci, 2020).

Several interconnected mechanisms likely account for this strong protective directional effect. Broadly, higher education exposes individuals to diverse perspectives, complex problem-solving environments, and coursework emphasizing critical thinking, sociological dynamics, and human behavior. In high-stakes policing encounters, these cognitive frameworks may translate into superior verbal de-escalation skills, heightened situational awareness, and an enhanced capacity to process rapidly evolving information under pressure (Rydberg & Terrill, 2010; Vespucci, 2020). Rather than relying on physical authority or lethal weaponry, college-educated officers may be inclined to employ communication strategies to resolve volatile encounters before they escalate to deadly force.

Evaluating higher education in isolation, however, provides an incomplete and potentially misleading picture of high-stakes police decision-making. The multivariate model revealed that an officer's personal history of line-of-duty victimization was the single most powerful and only statistically significant predictor of lethal force involvement ($B = 2.864$, $p = .002$). Officers who had previously experienced a lethal threat or assault in the line of duty exhibited a striking 17.5 times greater odds ($\text{Exp}(B) = 17.525$) of using lethal force compared to officers without such traumatic experiences. Meanwhile, control measures for negative emotionality and cognitive reflection failed to reach statistical significance, demonstrating that the immediate behavioral impact of occupational trauma heavily dominates over dispositional traits in predicting use of force outcomes.

The Role of Prior Victimization and Trauma

The striking magnitude of the relationship between prior line-of-duty victimization and lethal force use underscores the profound impact that exposure to trauma exerts on officers' cognitive processing, threat perception, and behavioral choices. Surviving life-threatening violence in the line of duty can induce chronic physiological hypervigilance, altered threat detection thresholds, and heightened stress reactivity (Exum et al., 2024; Gilmartin, 2002). When confronted with ambiguous or rapidly shifting situations in the field, officers with unaddressed traumatic experiences may perceive imminent lethal danger more rapidly than non-traumatized peers. This survival-driven, hyper-reactive state can narrow an officer's perceptual field, potentially short-circuiting the reflective, analytical decision-making pathways that formal higher education aims to cultivate.

Crucially, these findings demonstrate that higher education and personal trauma operate concurrently rather than mutually exclusively in the operational environment. While a bachelor's degree provides officers with enhanced cognitive flexibility and latent de-escalation capabilities, exposure to violence imparts deep psychological impressions that can alter real-time threat assessments. The fact that education almost achieved significance ($p=.078$) despite a heavily constrained sample size ($N=64$) indicates that its protective influence is remarkably resilient, but it operates under the heavy shadow of trauma. Consequently, policy interventions must address both dimensions simultaneously, leveraging post-secondary education as a foundational recruitment standard while establishing aggressive, mandatory organizational mechanisms to mitigate the behavioral impacts of operational trauma.

Implications for Policing Policy and Practice

The dual findings of this study suggest direct, actionable implications for law enforcement leadership, recruitment strategists, and policy makers seeking evidence-based structural reforms. Given that a bachelor's degree may yield a massive reduction in the odds of lethal force involvement even after controlling for officer trauma and personality traits, state boards and municipal police departments should actively incentivize higher education. Agencies should establish tuition reimbursement initiatives, step-pay increases for degree holders, and preferential promotion tracks for officers holding bachelor's degrees in criminal justice, social sciences, or humanities. While the small sample size restricted statistical power to clear the traditional significance threshold, the massive effect size ($\text{Exp}(B)=0.194$) demonstrates that

raising baseline educational entry requirements remains a highly viable, evidence-based strategy for reducing lethal force incidents and enhancing departmental legitimacy over time ([Carter & Sapp, 1990](#); [Vespucci, 2020](#)).

Considering that prior line-of-duty victimization increases lethal force odds exponentially, agencies should not rely on administrative leave alone following violent encounters. Police organizations must mandate comprehensive, trauma-informed psychological screening and evidence-based mental healthcare ([Jetelina et al., 2020](#)). Officers should be required to complete structured clinical reintegration, hypervigilance management training, and peer support protocols prior to returning to full operational duty.

Higher education provides a crucial cognitive foundation, but it must be reinforced through continuous in-service training focused on acute stress management, tactical de-escalation, and emotional self-regulation under physiological arousal. Integrating scenario-based realistic training, such as shoot/don't shoot simulators combined with heart-rate variability tracking, allows officers to practice cognitive reappraisal and de-escalation techniques under simulated high-stress conditions, bridges abstract educational concepts with field operations, and actively counteracts the narrowing of attention caused by past trauma ([Stickle, 2016](#)).

Frontline supervisors play a pivotal role in detecting behavioral shifts, acute hypervigilance, and signs of vicarious trauma among subordinate officers ([Hippert, 2024](#)). Departmental Early Intervention Systems (EIS) should track line-of-duty injuries, violent victimizations, and high-stress calls alongside traditional disciplinary metrics. Equipping supervisors with actionable data enables timely, non-punitive interventions, mental health referrals, and temporary duty reassignments to alternative units before traumatic exposure translates into problematic use of force.

Law enforcement organizations must actively dismantle traditional police cultures of emotional stoicism and bravado. Given that prior victimization is a driver of lethal force, framing psychological support services as essential professional maintenance is a critical operational necessity. This encourages officers to seek help for post-traumatic stress and hyperarousal without fear of career stagnation or peer ostracization.

Beyond incentivizing degree completion, higher education programs in criminal justice and policing must actively align their curricula with high-stakes operational realities. Educational institutions should embed trauma-informed modules, critical

stress processing, and physiological self-regulation into higher education policing tracks. By bridging academic instruction on procedural justice with practical stress-mitigation techniques, police education programs can better prepare future officers to maintain cognitive flexibility and leverage their educational backgrounds even under extreme operational stress.

Limitations & Future Directions

While this study offers valuable empirical insights into the dual effects of educational attainment and personal trauma, several methodological limitations warrant consideration. First, the small sample size presents distinct analytical constraints. It restricts generalizability to broader national or international law enforcement populations and ultimately reduced statistical power, causing the protective effect size of bachelor's degree attainment ($\text{Exp}(B)=0.194$; $p=.078$) to not clear the traditional significance threshold ($p<.05$).

Second, the use of cross-sectional secondary data also presents a substantial limitation. The design inherently limits the ability to establish strict temporal ordering between prior line-of-duty victimization incidents, degree completion, and specific use of force events over time (Maxfield & Babbie, 2018). Because both prior line-of-duty victimization and lethal force involvement were captured as cumulative indicators, the dataset does not allow for granular temporal sequencing between specific events. It remains possible that for a subset of officers, line-of-duty victimization occurred during or after a lethal force incident rather than before it. While the theoretical framework robustly supports personal trauma as an antecedent threat-sensitizing mechanism, future research must incorporate event-level, longitudinal tracking to establish a definitive temporal sequence.

Third, operational measurement granularity should be refined in future research. Educational attainment was operationalized as a binary indicator comparing degree holders to non-degree holders. Future research should employ more granular measures differentiating specific academic majors. Researchers should also evaluate institutional tiers, online versus traditional learning modalities, and the specific timing of degree attainment relative to academy entry or critical field incidents. Similarly, dependent variable measures should distinguish between specific modalities of lethal force.

Fourth, reliance on self-report data and memory recall introduces potential avenues for measurement error. Relying entirely on officer self-reporting may

introduce social desirability bias or retrospective recall inaccuracies regarding past violent encounters. Combining administrative agency records, official officer-involved shooting investigation reports, and longitudinal survey data would significantly enhance measurement precision in future empirical evaluations.

In an ideal research environment, scholars should prioritize multi-site longitudinal studies that follow cohort samples of officers from academy entry through full career milestones. Such longitudinal designs can precisely map the shifting temporal sequences between higher education, personal trauma, supervisory dynamics ([Hippert, 2024](#)), and lethal force decision-making across diverse policing environments. This type of strategy would provide the necessary statistical power to more definitively map how the cognitive buffer of post-secondary education interacts with the powerful realities of personal trauma.

International & Comparative Perspective

Although this study analyzed data from law enforcement officers within the United States, the empirical findings carry implications for police reform and officer wellness internationally. Law enforcement organizations across the United Kingdom, Western Europe, Australia, and North America face shared societal demands for heightened police accountability, enhanced procedural justice, and reduced physical force ([Veic & Cajner Mraovic, 2004](#)).

International comparative analyses reveal significant variation in educational standards for entry-level officers. For instance, the United Kingdom's Police Education Qualifications Framework (PEQF) established standardized degree-level entry pathways for all new police recruits, formalizing post-secondary education as a core component of modern policing. Similar post-secondary requirements exist in Scandinavian nations like Norway and Sweden, where police education is conducted through accredited university colleges over a three-year curriculum. European research demonstrates that these university-based entry models enhance institutional legitimacy, elevate human rights awareness, and foster lower rates of civilian complaints and force usage ([Veic & Cajner Mraovic, 2004](#)).

However, the findings of this study highlight a universal behavioral reality that transcends national borders: formal academic preparation alone cannot fully insulate officers from the psychological impact of exposure to personal trauma. Surviving life-threatening violence fundamentally alters physiological stress processing, autonomic arousal, and subsequent threat perception. Consequently, international police leaders

must adopt a dual-pillar strategy that combines rigorous post-secondary educational standards with comprehensive, trauma-informed psychological care and stress-resilience training. Integrating academic rigor with operational mental healthcare represents a universal imperative for building professional, ethical, and resilient police institutions worldwide.

Conclusion

As contemporary law enforcement agencies face unprecedented demands for accountability, procedural justice, and harm reduction, identifying evidence-based mechanisms to optimize officer decision-making in high-stakes encounters remains paramount. This study suggests that higher education may serve as a powerful protective asset; however, this cognitive shield operates under the heavy shadow of personal trauma. The empirical model highlights the profound, lingering impact of victimization: officers with a history of line-of-duty victimization exhibited a staggering 17.5 times greater odds of using lethal force during their law enforcement careers, emerging as the sole statistically significant predictor in the multivariate framework.

The findings of this study indicate that higher education and personal trauma do not exist in separate vacuum chambers; rather, they operate concurrently in shaping field behavior and threat assessment thresholds. Consequently, meaningful police reform cannot rely solely on academic entry requirements or tactical training in isolation. To foster ethical, restrained, and resilient police organizations, policymakers must pursue a comprehensive dual-pillar strategy. This approach must aggressively combine post-secondary educational mandates and recruitment incentives with comprehensive, trauma-informed mental healthcare, immediate post-incident screening, and continuous emotional regulation training. Elevating academic standards while actively supporting officer psychological well-being offers an evidence-based roadmap for reducing unnecessary harm, protecting officer health, and rebuilding public trust in law enforcement worldwide.

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