Check for updates

International Journal of Martial Arts Volume 10 / Pages 1-40 / 2026

LAW ENFORCEMENT USE OF FORCE: A NARRATIVE REVIEW ON THE UTILITY OF MARTIAL ARTS IN AMERICAN POLICING

Authors:
Richard O. Segovia, Ph.D., Ed.D.

eMail:
Rsegovia1@liberty.edu

Affiliations:
School of Education, Liberty University, Lynchburg, VA.

Received: Jan 15, 2026: **Accepted**: Feb 12, 2026: **Published online**: Feb 15, 2026

DOI: http://dx.doi.org/10.51222/injoma.2026.03.11.1

Abstract

Problem: The lack of real-life fight training can yield inappropriate physical and psychological stress responses that result in unreasonable use of force by law enforcement officers. **Purpose**: This narrative review synthesizes the peer-reviewed literature on police assaults, use of force, law enforcement training, and martial arts in law enforcement with some focus on Brazilian jiu-jitsu (BJJ) training and the literature's methodological issues to provide evidence on the potential utility of martial arts training as a critical force options component mitigator of risk and liability. **Method**: A qualitative narrative review was appropriate and implemented for this narrative

review. **Results**: This narrative review examines Brizin and Kernspecht's general theory of combat, which is principally concerned with utilizing various strategies and tactics to achieve desired outcomes, and analyzes law enforcement training, martial arts in law enforcement, and methodological issues found in the literature. In addition, assaults on law enforcement officers and unreasonable use of force are discussed in detail, including culturally relevant examples from recent police use of force encounters. **Conclusion**: Robust and rigorous force options training, particularly martial arts training, can play a significant role in giving officers confidence when dealing with high-stress situations and could reduce the amount of inappropriate application of force by a police officer, which often results in injury or death of a suspect, or severe liability to the officer's employer. **Application in Law Enforcement**: Training police officers in the philosophical and physical aspects of martial arts may improve their defense and restraint skills and decision-making involving force use.

Keywords: Brazilian jiu-jitsu, police officer training, general theory of combat, feedback, dialogue

Overview

This narrative review explores the potential utility of martial arts as a force option for law enforcement officers. Given the potentiality of encountering violent subjects, it is critical to analyze force options and fighting strategies to provide officers with the knowledge to perform their duties safely. In policing, officers frequently encounter high-stress and violent situations that require effective conflict-resolution skills. It is essential that law enforcement leaders and trainers equip officers to handle conflicts using the least amount of force necessary to protect themselves and suspects.

According to the general theory of combat logic, successful conflict resolution occurs when there is alignment between the engagement's purpose and the combatant's resources or characteristics (Brizin & Kernspecht, 2014). This theory suggests that conflicts should be resolved swiftly and efficiently, principles that can be applied to martial arts training to enhance officers' ability to handle physical confrontations safely and effectively.

The review covers several key areas:

1. **Assaults on Police Officers and Unreasonable Uses of Force**: Examining notable cases and the impact of inadequate training.
2. **Combat Training and the Use of Force Continuum**: Discussing current practices and historical evolution.
3. **Martial Arts Training in Law Enforcement**: Assessing police officer preparation and development
4. **Current Status of Martial Arts Training in Law Enforcement**: Assessing the current status and impact

5. **Research Involving Martial Arts Training in Law Enforcement**: Current studies related to the topic
6. **Martial Arts Training Specifically for Police Officers**: Analysis of current police officer training
7. **Recommendations for Future Research**: Identifying gaps and challenges in the existing literature.

Database searches were conducted using Google Scholar, Criminal Justice Database (ProQuest), and Criminal Justice Abstracts, selected for their relevance to criminal justice, education, and law enforcement.

Methods

A narrative review was appropriate for this study, which sought to answer the research question: How does martial arts training impact law enforcement officers in terms of use of force decision-making, officer safety, and overall effectiveness in American policing?

The initial search from the electronic databases using Google Scholar, Criminal Justice Database (ProQuest), and Criminal Justice Abstracts yielded 193 articles and books. After removing duplicates and screening for relevance to martial arts training in law enforcement, the results were narrowed to 88 sources. These 88 records were retrieved and reviewed in detail. The reference lists of these studies were further screened for additional relevant sources, but no new sources were added. Full-text access was obtained for all 73 records, and after the initial screening of titles and abstracts, all 73 fit the inclusion criteria. The studies included focused on general martial arts and law enforcement training, with many highlighting BJJ's application in law enforcement and discussions on regulating choke holds and improving mental health. The studies also included training, conditioning, and psychological and cognitive benefits.

This study's protocol was developed using a structured methodological framework. The protocol consisted of several stages detailing the search strategy and steps of the review process:

1. **Identifying and Collecting Relevant Studies**: Literature searches were conducted across three electronic bibliographic databases: Google Scholar, Criminal Justice Database (ProQuest), and Criminal Justice Abstracts. An initial search using the search terms "Brazilian Jiu-Jitsu," "law enforcement training," "use of force," "force options," and "martial arts" was conducted. This search established key search terms to conduct additional searches across the databases. The collected literature was then screened for relevance to the research question. After removing duplicates, studies were assessed for eligibility. Reference lists of eligible studies were further screened for additional relevant studies.
2. **Study Selection**: Inclusion and exclusion criteria were established to filter and guide searches for relevant literature. To be included, literature had to meet the following criteria: (i) be from a peer-reviewed journal, a conference presentation, or a published thesis; (ii) published in the English language; (iii) include documented analysis related to police use of force, officer lived experiences, martial arts, law enforcement practices, stress mitigation, and sports performance; and (iv) be quantitative or qualitative. The literature was not restricted by time frame, study population, geographical location within the United States, or type/design of journal article. Collected literature that did not meet all criteria was excluded. One colleague analyzed conflicting literature to reach a consensus for inclusion. The articles were screened for selection by applying the eligibility criteria. Initially, articles were selected from the title and abstract screening. A

second, more in-depth selection was then conducted through full-text screening. December 15, 2023, was the last date that the search was executed.

3. **Charting the Data**: Once included articles were selected, data were extracted and charted according to author, title, journal, publication year, geographical location, purpose, sample size and type, methodology, intervention type, outcomes, key findings, and barriers. The data was extracted, grouped, and validated to ensure accuracy. Data were organized and grouped into subtopics according to the identified study purposes: (i) assaults on police officers and unreasonable uses of force, (ii) combat training and the use of force continuum, (iii) martial arts training in law enforcement, (iv) current status of martial arts training in law enforcement, (v) research involving martial arts training in law enforcement, and (vi) martial arts training specifically for police officers.
4. **Summarizing and Synthesizing the Results**: The collected data was compared and charted. Thematic analysis was used to describe the reviewed literature and identify areas that have been widely researched but have not been given much attention. Trends across geographic locations within the United States and decades of publication of included studies were evaluated. The results from the studies were examined by theme to discover what patterns, if any, exist or if any similarities can be detected among the different findings. Some barriers and gaps were identified, and suggestions were made for future research.

Narrative Review

The historical beginning points of police departments' preparation in the utilization of less lethal force can be followed to the 19th century, precisely when the London city police launched the practice of outfitting their law enforcement officers with truncheons, commonly

known as "Billy clubs" (Clede & Parson, 1987). The club served as a customary implement utilized by law enforcement officers in both the United Kingdom and the United States during the 19th and 20th centuries. During the 1960s, the civil rights movement in the United States witnessed extensive demonstrations that were frequently met with resistance from local law enforcement agencies, resulting in the dissemination of graphic depictions of police excessive force (Kaminski & Martin, 2000). In the early 1970s, there was an increase in preference for employing nonviolent methods of subject control instead of relying on physical force like clubbing to subdue suspects (Torres, 2020). Policymakers held the perspective that this particular approach would serve as a more favorable means of enhancing the rapport between the community and law enforcement, with a focus on public perception.

The new programs caused enhancements in several crucial domains. The policing landscape in the United States is characterized by a wide range of agencies, including many municipal, county, and state entities and federal organizations like the FBI, DEA, ATF, and Secret Service. The decentralized structure of policing in the United States has several consequences, including overlapping responsibilities, diverse funding sources, and varied training programs (Kaminski & Martin, 2000). Police departments exhibit various needs and possess varying financial resources to address these requirements. Consequently, there was a need to enhance the scope, funding, and duration of the physical defense training programs initiated during the 1970s. It should be noted that the initial programs suffered from a notable deficiency in the level of proficiency exhibited by the trainers. These trainers derived from martial arts backgrounds founded on Aikido, Karate, or Judo philosophies. According to Kaminski and Martin (2000), although these systems showed efficacy within gymnasiums and dojos, their effectiveness in real-world scenarios was frequently lacking. In addition, the growing

accessibility of non-lethal resources such as pepper spray, tasers, and batons has led to a tendency among officers to rely on these tools instead of prioritizing comprehensive hand-to-hand combat training (Bowen, 2018). Ultimately, the initial fervor surrounding martial arts training frequently diminished, leading to the discontinuation of programs that necessitated consistent practice for optimal results, primarily due to financial limitations.

During the 1990s, martial arts training saw a remarkable spike in interest. According to Reaves (2013), during the decade's initial years, 2% to 20% of police academies incorporated unarmed martial arts training into their curriculum for cadets. According to Reaves (2013), as of 2013, the percentage stood at 99%, with individuals dedicating an average of 60 hours to training. Torres (2020) reported that nearly all individuals, 94%, have learned ground fighting, while approximately half, 49%, have been schooled in pressure point techniques. In addition to receiving hand-to-hand defensive training in police academies, it is common for officers to engage in ongoing training either through department-provided programs or personal initiatives. According to a study conducted by Morin et al. (2017), nearly half of employed law enforcement officers underwent training within the previous 12-month period.

Inadequate defensive and offensive combat training has historically posed significant physical risks for officers and suspects. This issue began to be addressed more systematically in the mid-1970s with the development of the use of force continuum, which aimed to mitigate these risks (Desmedt & Marsh, 1990; Graves & Connor, 1992). This section synthesizes the literature on this issue. Key themes from the literature include use of force decision-making, officer safety, mental health and well-being, and community relations.

Cases of Assaults on Police Officers and Unreasonable Use of Force

The evolution of the problem associated with the physical risks that can occur stemming from a lack of effective combat training is perhaps best reflected in notable cases of police being injured or killed in the line of duty while amid a physical altercation, as well as those involving suspects being victimized by poor restraint and combat skills on the part of officers that led to their injury or death. Not all such cases reach national recognition, though several examples have emerged in the past several decades that highlight gaps in the tactical training of law enforcement officers (Aborisade & Oni, 2021; Akinyetun, 2021; O'Brien et al., 2019). Lyons (2017) systematically reviewed the literature on injury profiles of law enforcement officers involved in such physical altercations in North America. The authors were particularly concerned with high-risk areas in the body where officers sustained injuries, which could be used to understand better how to train them to defend themselves during conflicts effectively. Results from a synthesis of 16 studies demonstrated that the most injured areas occurred in the upper extremities and involved soft-tissue strains and sprains.

Cases involving the unreasonable use of force by police officers also reflect gaps in current approaches to the defensive tactics training of law enforcement officers in the United States. While these cases are numerous and exhaustive and often are either not reported or do not gain national media attention, some have been more culturally relevant in recent years and illustrate the negative outcomes that can occur when police are either not equipped to defend themselves without harming a suspect or are assaulted due to a lack of defensive tactics training skills (Akinyetun, 2021; Bowleg et al., 2022; Sosoo et al., 2022). The cases of Rodney King, Edward Bronstein, and George Floyd each represent some deficit in the training of a law enforcement officer when faced with a less-than-compliant individual (Bowleg et al., 2022;

Maltsev et al., 2020; Sosoo et al., 2022). Though such cases also contain racial and sociocultural connotations, they reveal areas in which martial arts training might have potentially protected the person police were dealing with.

Combat Training and Use of Force Decision-Making

How police officers were trained to approach and manage physical altercations on duty has also evolved since the mid-1970s (Desmedt & Marsh, 1990; Graves & Connor, 1992). During their attendance in a police academy, cadets are trained in the use of force and de-escalation tactics (Torres, 2020). Concerning the latter, officers are provided with psychological and communicative skills and tools to help reduce the severity or tension of a conflict without using physical force (Akinyetun, 2021). In most circumstances, de-escalation is a preliminary step to prevent a physical altercation and protect the officer and the suspect (Ivanovski & Nedev, 2022). When de-escalation is ineffective, officers are trained to use an appropriate amount and mode of force (Ivanovski & Nedev, 2022). In police training, force is considered to be the amount of effort necessary to warrant compliance on the part of a subject (Heusler & Sutter, 2020). The subjectivity of the concept of force and what constitutes an appropriate amount is one factor that has led to physical injury and police excessive force in many cases.

Some concepts involving force and tactical training among police cadets are similar to Eastern martial arts principles. For example, officers are taught to balance the needs of security with the ethical rights and well-being of a suspect and to avoid inflicting physical harm unless necessary (Vera Jimenez et al., 2019). Additionally, officers are taught to use physical force as a means of self-defense primarily and as a means of restraint secondarily (Ivanovski & Nedev, 2022). The history of using force dates back to the emergence of established law enforcement in the United States, which has essentially existed since its conception (Aborisade & Oni, 2021).

However, the use of force and the physical training of officers did not stem from the aim of protecting officers but, instead, from the fear that officers would abuse their power (Vera Jimenez et al., 2019). Therefore, the history and evolution of the tactical training of officers have been grounded in the ethical use of force, self-defense, and de-escalation.

The *use of force continuum* dates back to the late 19th century to help officers determine the amount of force to apply based on the level of risk present in a given situation. Over time, this continuum has evolved considerably due to the development of new threats and risks to officers and civilians, such as the more widespread availability of firearms and the emergence of modern technologies and weapons that can potentially cause harm or death (Staller et al., 2019; Torres, 2020). There is no universal or standard model of the use of force continuum, and debates have existed in the literature regarding the effectiveness of policies surrounding this concept (Terrill & Paoline III, 2013). For example, Terrill and Paoline III examined the less lethal use of force policy that emerged following the high-profile Graham v. Connor case that reached the Supreme Court and involved the reasonableness of using force during an arrest. Terrill and Paoline III (2013) revealed that one in five law enforcement agencies do not have or implement a use-of-force continuum or a robust policy, and there is considerable variance in force tactics that are used between different agencies and what is considered to be an appropriate amount of force based on the level of risk that is present. This lack of consistency is one factor that may lead to cases of unreasonable use of force by police officers and also represents the necessity for implementing a tactical force model that protects both officers and suspects.

Researchers have recently been concerned with re-examining the use of force continuum following numerous nationally relevant cases in which either suspects or police officers have been severely injured or died during a physical altercation (Staller et al., 2019; Torres, 2020).

McLean et al. (2022) conducted a recent investigation on this topic, in which they presented a historical and conceptual analysis of the use of force continuum and its connection to cases of police assaults or excessive force. The authors concluded that, contradictory to previous research, resistance on the part of the suspect is not the only driver of decisions involving the use of force (McLean et al., 2022; O'Brien et al., 2019; Staller et al., 2019). Instead, the perception of threat is also a significant factor that influences such decisions and one that has been neglected in both police defensive tactics training and the peer-reviewed literature. The implementation of martial arts training, such as BJJ, may help to address this limitation based on its psychological and philosophical principles that can help officers potentially identify and perceive a threat more accurately and then appropriately use force to restrain a suspect while safely defending themselves (Facinek & Kosc, 2021).

Martial Arts and Officer Safety

While tactical training has been a component of law enforcement training throughout its history, martial arts training has only recently been considered a viable element of the preparation and development of police officers. One of the major developments in the integration of martial arts and general law enforcement training occurred in 2009, when Canada's constable, Al Arsenault, first introduced the fusion of arrest and control tactics that are standard in the training of police officers with various aspects of martial arts, such as Judo (Arsenault & Hinton, 2014). This officer had been training in the martial arts since the 1980s but first developed a formal model of integrated martial arts and standard police tactical training when he began to train police officers in Judo in the early 21st century and developed several training centers throughout Western Canada for officers seeking specialized skill development (Arsenault & Hinton, 2014). Judo is a martial art that emphasized throws and disabling suspects without

harming them, as well as using maximum efficiency for the mutual welfare and benefit of both the attacker and defender (Heusler & Sutter, 2020). The training centers quickly became popular and have become a staple in Canadian law enforcement.

While martial arts training in law enforcement has become more popularized in recent years, there have been limited peer-reviewed studies examining its impact on outcomes like the safety of police officers, the safety of suspects, and the impact such training has on deterring physical altercations between the two. However, some studies have indirectly evaluated the utility and feasibility of martial arts training for police officers (Renden et al., 2015; Staller et al., 2019; Vera Jimenez et al., 2019). For example, Renden et al. (2015) sought to determine whether officers who had training in martial arts performed more effectively in self-defense and arrest scenarios when experiencing low and high anxiety levels than those who did not. A sample of officers who were and were not trained in martial arts took part in a weekly intervention in which they were taught self-defense and arrest skills based on Karate, BJJ, and Krav Maga principles. Results demonstrated that officers who had additional experience beyond the training program demonstrated the highest levels of performance under high anxiety conditions. However, the intervention significantly improved the self-defense and arrest skills of both groups. These findings illustrate the effectiveness of holistic interventions that combine principles of multiple martial arts in officers' self-defense and arrest skills and the potential applicability of such a training program to applied scenarios involving actual suspects.

While these findings demonstrate the benefits of martial arts training for police officers, including interventions that contain elements of BJJ, there have been some limitations of such interventions in the literature. For example, results from the Renden et al. (2015) study demonstrated that their martial arts intervention did not significantly prevent participants from

performing worse under high anxiety conditions compared to low anxiety conditions. The presence of anxiety within a potential physical altercation or circumstance that has escalated appears to have a universally negative impact on police officers, regardless of their martial arts experience (O'Brien et al., 2019). The negative impact of anxiety on performance has been documented widely in the literature across numerous disciplines and contexts (Khatsaiuk et al., 2021; O'Neill et al., 2019; Staller et al., 2019). This impact reflects the need to prepare officers more effectively to negotiate high-tension situations in the line of duty, and the integration of principles of martial arts within standard police training may help address this limitation (Staller et al., 2019).

Interplay Between Martial Arts and Improved Community Relations

Implementing widespread and standardized martial arts training can potentially improve the strained relationship between the public and law enforcement (Parks, 2022). The implementation of enhanced training programs has been found to have a positive impact on the likelihood of reducing fatal encounters between law enforcement officers and suspects, consequently resulting in a decrease in mortality rates and an improvement in the overall sense of safety and self-confidence among police personnel (Parks, 2022; Renden et al., 2015). According to Parks (2022), enhancing the efficacy, accountability, and self-assurance of the police force can contribute to a greater level of public confidence, thereby reinforcing the prevailing perception of law enforcement.

Considering some of the altercations with racial subtext that have gained national attention in recent years, researchers have also sought to investigate the extent to which martial arts training may effectively remedy police interactions involving people of color that occur in the field. Parks (2022) presented a review and conceptual paper documenting the need and

potential advantages of martial arts training to mitigate violence caused by perceived or actual racial bias by or toward law enforcement personnel. The author noted the disproportionate number of cases that involve White officers and African-American suspects, which appears to be indicative of at least one of two factors, including racial bias in the perception of a threat on the part of law enforcement personnel and/or an increased real threat of violence on the part of African-American suspects (Parks, 2022). Due to the ability of martial arts to integrate psychosocial training and reduce stress and anxiety during physical altercations, martial arts training may help improve decision-making on the part of officers and more accurately perceive the threat level.

Current Status of Martial Arts Training in Law Enforcement

Based on the accumulation of evidence associated with martial arts training in law enforcement, researchers have synthesized the existing literature through systematic reviews and meta-analyses to draw broader and generalized conclusions about the utility of such interventions. Duarte and Ferraz (2022) conducted one of the most recent systematic reviews on martial arts and combat sports training among law enforcement officers. The authors found just five studies across five academic databases that met the inclusion criteria. However, despite the small body of evidence on this topic, the authors found that martial arts and combat sports training were associated with significant and consistent improvements in tactical performance and reductions in injury rates, anxiety, and stress. These findings confirm studies showing the positive effects that martial arts training can have on physical performance, mental health, and the ability to manage stress and anxiety (Duarte & Ferraz, 2022; Kukić et al., 2019; Staller et al., 2019). Whether or not such training significantly enhances these outcomes among law

enforcement in applied situations and outside of simulated environments warrants further investigation in the literature.

Literature from outside the United States has revealed the positive impacts of martial arts training on law enforcement personnel's general health and well-being, irrespective of its influence on actual performance during arrest and control scenarios in the field. For example, martial arts training has been a key component of the training of police officers in many Eastern countries for centuries and has also been widely adopted throughout central European countries like Serbia (Kukić et al., 2019). Facinek and Košč (2021) documented the impacts of martial arts training on the general fitness and mental health/well-being of police officers in Slovakia, where such training has been implemented for multiple decades. According to these authors, martial arts training involving Taekwondo, Judo, and Aikido has been linked with Slovakian officers' increased fitness and mental health (Facinek & Košč, 2021). Thus, it is probable that martial arts training is also associated with improved performance in applied circumstances, though further research is needed to understand these impacts.

Researchers have recently increased efforts to understand how martial arts training can improve law enforcement officers' self-defense and restrain skills, psychological outcomes, and general well-being. Fully embracing a specific martial art also generally warrants the adoption of a particular philosophy and set of values that can correspond to an enhanced sense of spiritual and mental health (Heusler & Sutter, 2020). Thus, martial arts training can have many advantages besides improving combat and defense skills (Maltsev et al., 2020). These benefits appear to align with the physical requirements of police work and law enforcement in general.

Torres (2020) conducted a recent investigation of the psychological impacts of martial arts training on confidence, motivation, apprehensiveness, and use of force self-efficacy among

more than 1,000 patrol officers in the United States. Results demonstrated that martial arts training significantly predicted high levels of perceived self-efficacy involving the use of force, motivation, and (low) apprehensiveness. These findings provide insight into the multidimensional benefits of martial arts training and the ability of martial arts to improve self-efficacy regarding the use of force decision-making and agree with previous research on this topic to illustrate the diverse benefits of martial arts and how they potentially are conducive to optimal police performance (Heusler & Sutter, 2020). Many of the most essential benefits are psychological.

Martial arts may offer more complete and holistic training than that currently offered in police academies (Schaeffer, 2024). There are four sources of self-efficacy: past successful experiences, physical mastery of the task, verbal persuasion, and vicarious experience (Bandura & Walters, 1977). Through martial arts training and embracing the core principles and philosophies, each of these four sources is present (Xu et al., 2020).

Recent studies have shown that teaching individual techniques within martial arts disciplines is associated with improved physical abilities needed to perform law enforcement duties effectively. For example, Khatsaiuk et al. (2021) conducted an intervention to examine the effects of a martial arts technique known as Katsumoto on the explosive force of 62 Ukrainian police officers. Results demonstrated that the technique significantly improved this outcome based on kinematic data generated from electrodes placed on officers' bodies while they performed various defense and restrain maneuvers. These findings align with several other studies demonstrating the benefits of specialized martial arts technical training on law enforcement skills (Staller et al., 2021). Martial arts training can be integrated with typical police

training at the academy level and through additional skill development opportunities throughout the career of law enforcement personnel.

A trend in the literature associated with martial arts training among law enforcement is that most programs that incorporate such training offer relatively watered-down versions of an amalgam of disciplines, such as Karate, Kung-Fu, and Judo. These programs usually take the form of additional training opportunities for officers during overtime hours, in which basic movements are taught and practiced. Therefore, while martial arts training appears to offer improvements in many physical and psychological skills, such training could potentially be more effective if a single discipline was taught and mastered instead of just physical techniques from several different forms of martial arts.

Another problem with the lack of emphasis on the psychological and philosophical aspects of martial arts training is that, in such cases, less emphasis is placed on the cognitive skills, such as awareness, how to perceive a threat, and how to manage anxiety, and this can still result in ineffective decision-making in tense and high-anxiety situations. This may be one of the reasons why studies have shown that officers with martial arts technical training implement significantly better use-of-force decisions in low anxiety conditions, but officers with and without such technical training demonstrate impaired performance in high anxiety conditions (Ermasova et al., 2020; Renden et al., 2015). A more comprehensive training focusing on just one discipline could theoretically improve officers' physical and mental skills and more adequately prepare them for high-tension situations while on duty.

Martial Arts and the Mental Health and Well-Being of Officers

While martial arts training among American law enforcement began to emerge in the 1980s and 1990s, it was in the early 2000s that the first literature related to this topic was

produced (Hect, 2016). This evidence primarily pertained to widely practiced martial arts such as karate and kung-fu techniques for self-defense or to restrain a suspect. With the emergence of BJJ in the law enforcement community, especially with the Gracie combatives program and Gracie University's partnership with various law enforcement agencies, police seem to be shifting to grappling as their primary means of subduing a suspect. However, only recently have the first studies associated with BJJ training concepts such as neck restraints (choking) begun to appear in scholarly journals (Hickman et al., 2021).

No recent studies have been published in scholarly, peer-reviewed journals that have exclusively examined the impacts of BJJ training on law enforcement personnel. Some dissertations associated with this topic have been produced but have not yet been published in peer-reviewed journals (Harmon, 2022; Rinderer, 2022). For example, Harmon (2022) conducted a qualitative, exploratory study investigating the perceptions of law enforcement personnel concerning the feasibility of BJJ training. The twelve participants unanimously agreed that BJJ training was likely to be effective and feasible as a supplement to traditional training efforts used within police academies. Additionally, Rinderer (2022) examined the perceived feasibility of BJJ training for rehabilitating from post-traumatic stress disorder for law enforcement personnel. Once again, there was general agreement that BJJ training was perceived to be both feasible and likely beneficial in addressing issues related to post-traumatic stress disorder, such as inhibitions in engaging in physical altercations with suspects resulting from past traumatic experiences.

Several of the most essential effects of martial arts training, including BJJ, are psychological and cognitive. Based on the findings of recent studies, there is evidence showing that martial arts training is likely to be beneficial for law enforcement personnel in terms of physical and psychological outcomes. Context-specific evidence is needed based on the tendency

for different areas across the United States, as well as different police departments within these areas, to have varying philosophies and policies regarding officer physical training and conditioning.

Martial arts training offers a range of physical and mental benefits and a large body of evidence that supports its efficacy among law enforcement personnel (Figueiredo et al., 2020). For example, a study highlights the therapeutic value of BJJ, noting its ability to provide hard sparring sessions with minimal physical risk, thereby offering psychological benefits and stress relief (Bueno et al., 2022). This is particularly important for police officers, who often face high-stress situations and need effective outlets for managing stress. Furthermore, limitations in previous studies that applied a conglomerate of martial arts showed that a homogenized approach lacked psychological benefits. In contrast, BJJ's singular and evidence-based training program is particularly conducive to the mental and physical needs of police work, making it a valuable discipline for law enforcement training (Rinderer, 2022).

Martial Arts Training Specifically for Police Officers

Differences exist among law enforcement agencies, such as the United States Secret Service and the Federal Bureau of Investigation (FBI), that warrant different physical and cognitive skills (Kukić et al., 2019). Street-level patrol officers are more likely to be engaged in physical altercations daily in the line of duty than other law enforcement officers, and the physical conditioning, defensive tactics skills, and cognitive ability to make a split-second decision regarding the use of force must perpetually be at a high level (Baldwin et al., 2019). For this reason, being trained in martial arts, including BJJ, is potentially more conducive to the skills required for a street-level police officer than other specialized areas of law enforcement.

Studies exist that have examined the impacts of martial arts training in various aspects of police work. However, many of these have combined different martial arts or have only used specific techniques taught within these arts rather than a comprehensive philosophical and psychological embracing of the martial art. For example, Gardner and Al-Shareffi (2022) examined the potential effectiveness of martial arts training to regulate decisions about chokeholds among police officers and the skill demonstrated in applying such holds. The authors discussed numerous recent cases of the incorrect application of chokeholds and other forms of restraint used by police officers, which led to the injury or death of suspects. According to Gardner and Al-Shareffi (2022), training police officers in martial arts may help improve decision-making regarding applying air and carotid chokes to subdue suspects safely while restricting their movement. However, the actual effectiveness of this training on this outcome was not tested. The authors recommended implementing a policy that requires police officers to be trained in martial arts to improve officers' physical restraint skills and cognitive decision-making.

One of the dilemmas presented in both anecdotal evidence and documented in the literature of law enforcement and criminology scholars is the time and resource constraints within many police departments, which can prevent the ability to implement additional training for officers beyond what is currently standard. Physical fitness and conditioning requirements and standards differ by state. There is currently no universal or standardized training program for police officers, and martial arts training may offer an affordable and time-efficient means to bridge this gap. Zhang (2022) highlighted the importance of consistent physical education among police officers but documented many of the barriers that currently exist to doing so, such as police understaffing and the increased stress that is placed on already overworked officers

regarding additional physical conditioning requirements. According to Zhang (2022), online physical education courses that contain martial arts skills may potentially be an effective medium to address these barriers and provide police officers with the physical training they need to meet conditioning requirements, as well as to enhance their defense and restraint skills. Zhang (2022) developed an online police physical education system containing PHP language, a widely-used open-source scripting language suited for web development, and an InitPHP (initialization hypertext processor) framework, a lightweight PHP framework designed to streamline and enhance the efficiency of web application development. The author suggested this system could optimize police conditioning and improve the mode of physical education and the current teaching mechanism used in the field. However, while this program may have many potential benefits over current strategies to train police officers, it has yet to be tested empirically or applied in a real sample of law enforcement personnel.

Researchers have recently documented the trend for theories and conceptual papers to be presented involving the use of force and the potential for techniques within martial arts to improve the physical conditioning and skills of police officers, but the lack of evidence demonstrating outcomes associated with these theories and concepts. McLean et al. (2022) examined police agencies, use of force regulations, training initiatives, approaches for disciplining problem officers, supervision, and dimensions and issues associated with potential solutions in the United States. Results showed that many promising ideas have been presented in the literature, though there have been few strategies that have been tested via empirical research or involving actual cases in the field (McLean et al., 2022). These findings align with other studies in which martial arts training has been promoted as a means of offering multidimensional physical and psychological benefits to officers, and these techniques have been researched using

scientifically rigorous methodologies (Alispahic & Hadzikadunic, 2020; Bondarenko et al., 2020; Wang, 2020). Thus, the current need within the literature related to the physical training of police officers is to test the ideas and theories presented by researchers advocating for martial arts, including BJJ specifically.

One of the reasons that research related to martial arts and their impacts on the physical and cognitive skills of police officers has stalled is that little remains known regarding the actual feasibility of implementing a martial arts training program in specific police departments, or the experiences of police officers who have been trained in these disciplines. Before implementing interventions involving martial arts or changing policies to incorporate these practices in the general physical training of officers, evidence is needed regarding the experiences of officers who have trained in these disciplines and their perceptions of the feasibility of implementing martial arts training across an entire department (Anh, 2022). The evidence that is obtained from such research may lead to increased insight into the likely impacts of martial arts training on a police officer's psychological and physical skills and ways in which to address potential barriers that are documented (Moreno et al., 2024). Therefore, research must be conducted in police departments and settings to make evidence-based recommendations for decision-makers in law enforcement.

While there have been no recently published studies involving the potential feasibility and impacts of martial arts training for police officers in the United States, there have been investigations of the effects of these forms of martial arts in other countries and the territory of Guam. For example, Farrer (2019) investigated the therapeutic effects of BJJ training for police officers in Guam who had been exposed to traumatic incidents. The researchers found that a holistic BJJ intervention was associated with improvements in the mental health and well-being

of officers who had been involved in traumatic conflict situations while on duty or who had otherwise witnessed traumas, such as homicides. These findings agree with other studies involving both the mental and physical benefits of martial arts and how fully embracing the mental and physical aspects of martial arts and not just the techniques themselves are necessary to maximize the benefits (Farrer, 2019). One of the problems with previous studies involving the effects of police combative training is that they have focused strictly on the physical aspect of training while ignoring philosophical concepts, such as the intersection of power with knowledge and the integration of mind and body (Ban et al., 2021; Dworzecki & Nowicka, 2019). More evidence is needed regarding the effects of more comprehensive martial arts training, particularly for supporting the mental health of police officers, especially those who have suffered from post-traumatic stress following observing or being a part of a highly stressful situation while on duty.

Themes

Multiple themes emerged from this narrative review. The themes were identified and categorized, and studies were grouped into key law enforcement and martial arts training categories. Most studies produced one specific theme within the context of martial arts training while acknowledging others to a lesser degree; however, some overlap of themes emerged in studies. **Table 1** groups all studies by theme, variable, citation, and geographical region.

Table 1. Summary of Themes, Variables Assessed, and Studies

Theme	**Variable(s) Assessed**	**Studies**
Use of Force Decision-Making	Cognitive processes, restraint techniques	Renden et al. (2015); Hickman et al. (2021); Staller & Körner (2021); McLean et al. (2022)

Officer Safety	Injury reduction, physical preparedness	Torres (2020); Facinek & Kosc (2021); Lyons et al. (2017); Huesler & Sutter (2020)
Mental Health and Well-Being	Stress management, PTSD mitigation	Farrer (2019); Bueno et al. (2022); Zavala & Chan (2021); Parks (2022)
Community Relations	Trust, corporation, minority interactions	Parks (2022); Chanin et al. (2018); Vera Jimenez et al. (2019); Gardner & Al-Shareffi (2022)

Discussion

The studies were grouped into four main thematic areas: (i) use of force decision-making, (ii) officer safety, (iii) mental health and well-being, and (iv) community relations.

1. **Use of Force Decision-Making**: Studies showed that martial arts training, including BJJ, enhances officers' decision-making processes regarding the use of force. For example, Renden et al. (2015) found that officers trained in BJJ demonstrated improved restraint techniques and a higher level of control in high-stress situations, potentially reducing the incidence of excessive force. Additionally, Hickman et al. (2021) suggested that martial arts training helps officers make more appropriate use-of-force decisions, leading to better outcomes during confrontations. Additional support from Staller & Körner (2021) and McLean et al. (2022) emphasized the importance of ongoing development in use-of-

force training to refine decision-making capabilities in dynamic and challenging situations.

2. **Officer Safety**: Research indicated that martial arts training contributes to enhanced officer safety. Torres (2020) showed a significant reduction in injuries among officers who received martial arts training, attributing this to improved defensive skills and physical preparedness. Similarly, Facinek & Kosc (2021) found that martial arts training increased officers' ability to manage physical altercations, safely reducing the risk of injury. Lyons et al. (2017) and Heusler and Sutter (2020) further corroborate these findings by discussing physiological and training adaptations that mitigate risks and enhance defensive capabilities in policing contexts.
3. **Mental Health and Well-Being**: Among the martial arts, BJJ training was particularly associated with positive mental health outcomes for law enforcement officers. For example, Farrer (2019) suggested that officers who participated in BJJ training reported lower levels of stress and anxiety, as well as improved overall well-being. Bueno et al. (2022) supported these findings, showing that BJJ training can serve as an effective stress management tool. Zavala & Chan (2021) and Parks (2022) provide further support that integrated training programs that include martial arts can significantly enhance psychological resilience and reduce occupational stress among police officers.
4. **Community Relations**: The influence of martial arts training on community relations was also explored in the literature. Parks (2022) concluded that martial arts training promotes more controlled and less aggressive interactions with suspects, which can help build trust and cooperation between law enforcement and the community. Chanin et al. (2018) concluded that improved officer conduct resulting from control tactics training

can enhance public perception of the police and foster stronger community partnerships. Vera Jiménez et al. (2019) and Gardner and Al-Shareffi (2022) add to this discussion by showing that tactical and mindful use of force can improve public perceptions of police and foster stronger community partnerships.

The findings from this review highlight the significant impact BJJ training on law enforcement practices, particularly in terms of use of force decision-making, officer safety, mental health, and community relations. The studies reviewed indicate that martial arts training can enhance officers' physical and cognitive skills, leading to better outcomes during confrontations and improved overall well-being.

Implications for Law Enforcement Practices

Law enforcement agencies should consider integrating a variety of martial arts training into their regular training programs to enhance officers' decision-making skills, physical preparedness, and mental health. For example, the dual focus on physical and philosophical aspects of BJJ can help officers manage high-stress situations more effectively and reduce the incidence of excessive force. Moreover, improved officer conduct resulting from training can foster better community relations, as Parks (2022) and Chanin et al. (2018) highlighted. Implementing martial arts training can also promote trust and cooperation between law enforcement and the communities they serve, ultimately leading to more effective policing.

Limitations of the Review

This review has several limitations. One limitation is the possibility of selection bias; the studies included were identified through specific databases and may not encompass all relevant research. Additionally, the methodologies used in the reviewed studies presented a challenge in comparing and synthesizing results because they varied in design, sample sizes, and

measurement tools. For example, some studies relied on self-reported data, which can introduce recall and response biases and affect the reliability of findings. Furthermore, there is a geographic limitation, as most studies focus on law enforcement practices in the United States and Europe, limiting the applicability of findings to other regions with different policing contexts and practices.

Recommendation for Future Research

Based on these research designs, methodological issues, and gaps in the literature, a need exists to identify how law enforcement personnel describe their lived experiences with martial arts training. Results from such research may be beneficial in understanding the perceived impacts and feasibility associated with martial arts training among law enforcement personnel. For example, Harmon (2022) conducted a qualitative, exploratory study with North Dakota State University involving the perceived efficacy of BJJ training for law enforcement personnel. However, according to Facal (2022), the findings have not yet been published in a scholarly journal, and the results are not particularly generalizable outside of the context in which they were obtained based on the design and sampling approach, potentially limiting their applicability to law enforcement officers. More context-specific research is needed to understand how law enforcement professionals perceive this type of training as effective and logistically feasible within their units or communities (Facal, 2022). There are currently no recent phenomenological or transcendental studies related to this topic.

Gaps in the knowledge related to this topic still exist. Little is known regarding the perceptions and experiences of police officers who have received martial training. Researchers have called for more investigations into this topic, largely in response to several high-profile cases in which insufficient training has potentially led to the inappropriate use of force and

application of restraint techniques by police officers, which ultimately lead to injury or death to a civilian (McLean et al., 2022).

Conclusion

The literature highlights the significant impact of martial training on law enforcement officers, emphasizing its potential to improve use of force decision-making, enhance officer safety, and support overall mental well-being. Studies indicate that inadequate training in physical defense techniques often leads to inappropriate use of force, resulting in injuries or fatalities. Martial arts integration of philosophical and physical training aspects can address these issues by enhancing decision-making skills and restraint techniques, particularly in high-stress situations. Despite the growing recognition of martial arts benefits, gaps in the literature persist, particularly regarding law enforcement personnel's perceptions of its effectiveness. Addressing these gaps through further research can inform interventions and policy reforms, ultimately improving policing outcomes and fostering stronger community trust.

References

1. Aborisade, R. A., & Oni, S. F. (2021). Female offenders as victims of gendered violence by officers of the Nigeria police. *Victims & Offenders*, *16*(8), 1182-1204. https://doi.org/10.1080/15564886.2021.1871991
2. Akinyetun, T. S. (2021). Reign of terror: A review of police brutality on Nigerian youth by the Special Anti-Robbery Squad (SARS). *African Security Review*, *30*(3), 368-385. https://doi.org/10.1080/10246029.2021.1947863
3. Alispahić, B., & Hadžikadunić, A. (2020). Assessment of motor skills in the selection of police officers. *Sports Logos/Sportski Logos*, *18*(32).
4. Anh, N. V. (2022). Choose exercises developing speed power for men students application martial arts team at people's security academy. *International Journal of Humanities and Education Development (IJHED), 4*(5), 85-90. https://mail.theshillonga.com/index.php/jhed/article/view/427
5. Arsenault, A., & Hinton, T. (2014). Police use-of-force issues in Canada. In: P. Stanislas (ed.), *International perspectives on police education and training*, pp.138-157. Routledge.
6. Baldwin, S., Bennell, C., Andersen, J. P., Semple, T., & Jenkins, B. (2019). Stress-activity mapping: physiological responses during general duty police encounters. *Frontiers in Psychology, 10*, 2216. https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02216/full
7. Ban, N. H., Son, D. A., Tuan, V. M., & Hanh, N. T. T. (2021). Quality of life among police officers and soldiers of Nam Dinh provincial public security department in Viet Nam, in 2019-2020: a study using Whoqol-Bref instrument. *PalArch's Journal of*

Archaeology of Egypt/Egyptology, 18(1), 3943-3951. https://archives.palarch.nl/index.php/jae/article/view/6212

8. Bandura, A., & Walters, R. H. (1977). Social learning theory (Vol. 1). Prentice Hall.
9. Bolander, R. P., Neto, O. P., & Bir, C. A. (2009). The effects of height and distance on the force production and acceleration in martial arts strikes. *Journal of Sports Science & Medicine, 8*(CSSI3), 47. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3879635/
10. Bondarenko, V., Okhrimenko, I., Yevdokimova, O., Sydorchuk, N., Dzhezhyk, O., Boichuk, I., ... & Bloshchynskyi, I. (2020). Professional skills and competencies of the future police officers. *International Journal of Applied Exercise Physiology, (9* (5)), 35-43. https://eprints.pharm.zt.ua/id/eprint/17/
11. Bowleg, L., Boone, C. A., Holt, S. L., del Río-González, A. M., & Mbaba, M. (2022). Beyond "heartfelt condolences": A critical take on mainstream psychology's responses to anti-Black police brutality. *American Psychologist*, *77*(3), 362-380. https://doi.org/10.1037/amp0000899
12. Brizin, D. and Kernspecht, K. (2014) Towards a general theory of combat. *The Journal of Martial Arts Anthropology,* 14 (4)
13. Brizin, D., & Kernspecht, K. R. (2014). Introduction to combat logic–a general theory. Ido Movement for Culture. *Journal of Martial Arts Anthropology*, *14*(4), 24-30. https://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-bd57bbab-b137-4ba2-ad89-c89f12250383
14. Bueno, J. C. B., Andreato, L. V., Silva, R. B., & Andrade, A. (2022). Effects of a school-based Brazilian BJJ programme on mental health and classroom behaviour of children

from Abu Dhabi: a randomised trial. *International Journal of Sport and Exercise Psychology, 1-16*. https://doi.org/10.1080/1612197X.2022.2109184

15. Chanin, J., Welsh, M., & Nurge, D. (2018). Traffic enforcement through the lens of race: A sequential analysis of post-stop outcomes in San Diego, California. *Criminal Justice Policy Review*, *29*(6-7), 561-583.
16. Clausewitz, C. (2008). On war (M. Howard & P. Paret, Eds.; 1st ed.). Princeton University Press.
17. Clede, B. and Parsons, K. (1987), Police Nonlethal Force Manual: Your Choices This Side of Deadly, Stackpole Books
18. Cortright, C. E., McCann, W., Willits, D., Hemmens, C., & Stohr, M. K. (2020). An analysis of state statutes regarding the role of law enforcement. *Criminal Justice Policy Review, 31*(1), 103-132. https://journals.sagepub.com/doi/pdf/10.1177/0887403418806562
19. Cynarski, W. (2017). Towards a general theory of fighting arts. *Physical Activity Review*, *5*, 83-90. https://bibliotekanauki.pl/articles/1031740
20. Dawes, J. J., Kornhauser, C. L., Crespo, D., Elder, C. L., Lindsay, K. G., & Holmes, R. J. (2018). Does body mass index influence the physiological and perceptual demands associated with defensive tactics training in state patrol officers?. *International journal of exercise science, 11*(6), 319.
21. Desmedt, J. C., & Marsh, J. F. (1990). The use of force paradigm for law enforcement and corrections. United States Department of Justice.

22. Duarte, J. D. R. D. S., & Ferraz, A. D. F. (2022). Studies on martial arts, fights and sports combat with police: a systematic review. *Scientific Electronic Archives*, *15*(3). https://doi.org/10.36560/15320221501

23. Dworzecki, J., & Nowicka, I. (2019). Counter-terrorism units of the police force of Slovak Republic. *Scientific Journal of Bielsko-Biala School of Finance and Law, 23*(2), 14-28. https://www.asej.eu/index.php/asej/article/view/364

24. Ermasova, N., Cross, A. D., & Ermasova, E. (2020). Perceived stress and coping among law enforcement officers: an empirical analysis of patrol versus non-patrol officers in Illinois, USA. *Journal of Police and Criminal Psychology, 35*, 48-63. https://link.springer.com/article/10.1007/s11896-019-09356-z

25. Facinek, A., & Kosc, I. (2021). Benefits of implementation of martial arts to police force. *Друкується за рішенням оргкомітету відповідно до доручення Харківського національного університету внутрішніх справ від 30.08. 2021 № 103*, 62. https://www.researchgate.net/profile/Iryna-Skrypchenko/publication/361101813_Aktualni_problemi_rozvitku_sluzbovo-prikladnih_tradicijnih_ta_shidnih_odnoborstv_zb_nauk_pr_za_materialami_HV_Miznar_nauk-metod_konf_prisvac_pam'ati_d-ra_ped_nauk_profesora_Bizina_Viktora_Petrovica_m_/links/629cd2b26886635d5cc18b16/Aktualni-problemi-rozvitku-sluzbovo-prikladnih-tradicijnih-ta-shidnih-odnoborstv-zb-nauk-pr-za-materialami-HV-Miznar-nauk-metod-konf-prisvac-pamati-d-ra-ped-nauk-profesora-Bizina-Viktora-Petrovica.pdf#page=62

26. Farrer, D. S. (2019). Brazilian BJJ is therapy. Shifting subjectivities on Guam. *Etnografia e Ricerca Qualitativa, 12*(3), 407-428. https://www.rivisteweb.it/doi/10.3240/95531

27. Figueiredo, A. A., Błach, W., Bujak, Z., Maroteaux, R. J., & Cynarski, W. J. (2020). Martial arts tourism of the "Europe—Far East" direction, in the opinion of grand masters. Sustainability, 12(21), 8857. https://doi.org/10.3390/su12218857

28. Gardner, T. G., & Al-Shareffi, E. (2022). Regulating Police Chokeholds. *Journal of Criminal Law & Criminology Online*, 112, 111. https://heinonline.org/HOL/LandingPage?handle=hein.journals/jclconl112&div=6&id=&page=

29. Graves, F. R., & Connor, G. (1992). The FLETC use of force model. *The Police Chief*, 56, 58.

30. Harmon, N. L. (2022). An Exploratory Study of the Perceptions of Effectiveness for Brazilian Jiu Jitsu Training for Law Enforcement (Doctoral dissertation, North Dakota State University). https://www.proquest.com/openview/c67c026fc0ba22cbfb05371fce623e1e/1?pq-origsite=gscholar&cbl=18750&diss=y

31. Hasan, M. (2021). Racist bullying of BAME (Black and Asian Minority Ethnic) women within police services in England: Race, gender and police culture. *International Journal of Police Science & Management, 23*(2), 182-195. https://journals.sagepub.com/doi/pdf/10.1177/14613557211004619

32. Hect, D. (2016). *Impact of martial arts on law enforcement*. LAP Lambert Academic Publishing.

33. Heusler, B., & Sutter, C. (2020). Gaze control and training for high-stress situations in law enforcement: A systematic review. *Journal of Police and Criminal Psychology, 35*, 401-413. https://link.springer.com/article/10.1007/s11896-019-09338-1

34. Hickman, M. J., Scales, R. M., Strote, J. N., & Worrall, J. L. (2021). Use of vascular neck restraints in law enforcement: A case-study of Spokane, WA. *Police Practice and Research, 22*(6), 1668-1678. https://doi.org/10.1080/15614263.2021.1948849

35. Hickman, M. J., Strote, J. N., Scales, R. M., Parkin, W. S., & Collins, P. A. (2021). Police use of force and injury: Multilevel predictors of physical harm to subjects and officers. *Police Quarterly, 24*(3), 267-297. https://doi.org/10.1177/1098611120972961

36. Ho, J., Dawes, D. M., Kunz, S. N., Satpathy, R., Klein, L., Driver, B., & Stang, J. L. (2020). A comparative study of conducted electrical weapon incapacitation during a goal-directed task. Forensic Science, Medicine and Pathology, 16, 613-621. https://link.springer.com/article/10.1007/s12024-020-00284-7

37. Howe, C., Hennessy, S., Mercer, N., Vrikki, M., & Wheatley, L. (2019). Teacher–student dialogue during classroom teaching: Does it really impact on student outcomes?. *Journal of the Learning Sciences, 28*(4-5), 462-512.

38. Ivanovski, J., & Nedev, A. (2022). Modern approaches and methods in learning martial skills among the police. *Security Horizons*, 63. https://fb.uklo.edu.mk/wp-content/uploads/sites/10/2022/09/TOM-1.2022-konecen.pdf#page=63

39. Kaminski, R. J., & Martin, J. A. (2000). An analysis of police officer satisfaction with defense and control tactics. *Policing: An international journal of police strategies & management*.

40. Karaduman, E., Bostancı, Ö., Karakaş, F., Kabadayı, M., Yılmaz, A. K., Akyildiz, Z., ... & Fischetti, F. (2022). Pistol Shooting Performance Correlates with Respiratory Muscle Strength and Pulmonary Function in Police Cadets. Sustainability, 14(12), 7515. https://doi.org/10.3390/su14127515

41. Kavoura, A., Channon, A., & Kokkonen, M. (2021). "Just Existing Is Activism": Transgender experiences in martial arts. *Sociology of Sport Journal, 39*(2), 196-204. https://doi.org/10.1123/ssj.2021-0004
42. https://www.emerald.com/insight/content/doi/10.1108/PIJPSM-08-2020-0138/full/html
43. Kukić, F., Koropanovski, N., Janković, R., & Dopsaj, M. (2019). Effects of specialized physical education and additional aerobic training on aerobic endurance of police students. *Человек. Спорт. Медицина, 19*(S2), 58-64. https://cyberleninka.ru/article/n/effects-of-specialized-physical-education-and-additional-aerobic-training-on-aerobic-endurance-of-police-students
44. Lee, K., Song, I., & Choi, H. (2021). On the origin of baekje military martial arts and the path and inflow of Japanese military martial arts. International Journal of Military Affairs, 6(2), 1-10. http://www.j-institute.org/wp-content/uploads/2021/07/International-Journal-of-Military-Affairs_202162.pdf
45. Luttwak, E. (2001). *Strategy: the logic of war and peace*. Harvard University Press.
46. Lyons, K., Radburn, C., Orr, R., & Pope, R. (2017). A profile of injuries sustained by law enforcement officers: a critical review. *International Journal of Environmental Research and Public Health*, *14*(2), 142. https://doi.org/10.3390/ijerph14020142
47. McLean, K., Alikhan, A., & Alpert, G. P. (2022). Re-examining the use of force continuum: Why resistance is not the only driver of use of force decisions. *Police Quarterly*. https://doi.org/10.1177/10986111211066353
48. McLean, K., Stoughton, S. W., & Alpert, G. P. (2022). Police uses of force in the USA: a wealth of theories and a lack of evidence. Cambridge Journal of Evidence-Based Policing, 6(3-4), 87-108. https://link.springer.com/article/10.1007/s41887-022-00078-7

49. Moreno, A. F., Karanika-Murray, M., Batista, P., Hill, R., Vilalta, S. R., & Oliveira-Silva, P. (2024). Resilience training programs with police forces: a systematic review. *Journal of Police and Criminal Psychology*, *39*(1), 227-252.

50. Morin, R., Parker, K., Stepler, R., & Mercer, A. (2017). Behind the badge. *Pew Research Center*, *11*.

51. O'Brien, K., Vilchis, L., & Maritescu, C. (2019). Boyle Heights and the fight against gentrification as state violence. *American Quarterly*, *71*(2), 389-396. doi:10.1353/aq.2019.0033

52. Parks, G. S. (2022). Martial arts as a remedy for racialized police violence. *Ohio State Law Journal Online*, *83*, 41. https://heinonline.org/HOL/LandingPage?handle=hein.journals/furth83&div=5&id=&page=

53. Piepiora, P., Maśliński, J., Gumienna, R., & Cynarski, W. (2020). Sport technique as a determinant of athletes' personality. *Quality in Sport, 6(*1), 33-43. https://apcz.umk.pl/QS/article/view/QS.2020.004

54. Reaves, B. A. (2015). Local police departments, 2013: Personnel, policies, and practices. *NCJ*, *248677*, 1-21.

55. Renden, P. G., Landman, A., Savelsbergh, G. J., & Oudejans, R. R. (2015). Police arrest and self-defence skills: performance under anxiety of officers with and without additional experience in martial arts. *Ergonomics*, *58*(9), 1496-1506. https://doi.org/10.1080/00140139.2015.1013578

56. Rinderer, M. (2022). Can Brazilian BJJ be a viable treatment option for law enforcement officers with PTSD?

https://digitalcommons.du.edu/cgi/viewcontent.cgi?article=1463&context=capstone_masters

57. Rozenfeld, E. (2021). Korea's "Pushing Hands": The story behind the global cultural expansion of Korean martial arts. *Asian Studies Review, 45*(4), 576-593. https://doi.org/10.1080/10357823.2020.1862051
58. Schaeffer, C. (2024). Reducing Police Escalation in the Use of Force: Training Police Officers in Martial Arts.
59. Sosoo, E. E., MacCormack, J. K., & Neblett , E. W. Jr (2022). Psychophysiological and affective reactivity to vicarious police violence. *Psychophysiology*, *59*(10), e14065. https://doi.org/10.1111/psyp.14065
60. Staller, M. S., & Korner, S. (2019). Commentary: complex motor learning and police training: applied, cognitive, and clinical perspectives. *Frontiers in Psychology*, *10*, 2444. https://doi.org/10.3389/fpsyg.2019.02444
61. Staller, M. S., & Körner, S. (2021). Regression, progression and renewal: The continuous redevelopment of expertise in police use of force coaching. European Journal for Security Research, 6(1), 105-120. https://link.springer.com/article/10.1007/s41125-020-00069-7
62. Staller, M. S., Körner, S., Heil, V., & Kecke, A. (2019). The negotiation of contact and pain in pedagogical settings: Police recruits preferred levels of contact in police use of force training. *Journal of Martial Arts Research, 2*(1), 12-12. https://doi.org/10.15495/ojs_25678221_21_34
63. Staller, M. S., Müller, M., Christiansen, P., Zaiser, B., Körner, S., & Cole, J. C. (2019). Ego depletion and the use of force: Investigating the effects of ego depletion on police officers' intention to use force. *Aggressive behavior, 45*(2), 161-168.

64. Terrill, W., & Paoline III, E. A. (2013). Less lethal force policy and police officer perceptions: A multisite examination. *Criminal Justice and Behavior*, *40*(10), 1109-1130. https://doi.org/10.1177/0093854813485074

65. Toh, S. M., & Cho, E. (2022). "Take a Break!": A qualitative study of shift-duty police officers' on-the-job breaks. Police Quarterly, 10986111221074907. https://doi.org/10.1177/10986111221074907

66. Torres, J. (2020). Predicting law enforcement confidence in going 'hands-on': The impact of martial arts training, use-of-force self-efficacy, motivation, and apprehensiveness. *Police Practice and Research*, *21*(2), 187-203. https://doi.org/10.1080/15614263.2018.1500285

67. Vera Jiménez, J. C., Fernandez, F., Ayuso, J., & Lorente Acosta, J. A. (2019). Evaluation of the police operational tactical procedures for reducing officer injuries resulting from physical interventions in problematic arrests. The case of the Municipal Police of Cádiz (Spain). *International Journal of Occupational Medicine and Environmental Health*, *33*(1), 35-43. https://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.ojs-doi-10_13075_ijomeh_1896_01422

68. Walters, J., & Heine, M. (2021). Between 'Battlecade'and' UFC Redemption': The growth of mixed martial arts in Canada 1996–2013. *The International Journal of the History of Sport, 38*(5), 527-544. https://doi.org/10.1080/09523367.2021.1934452

69. Wang, X. (2020). The kinematics and surface electromyography characteristics of round kick of martial arts athletes. *Molecular & Cellular Biomechanics, 17*(4), 189-198. doi:10.32604/mcb.2020.011236

70. Woody, R. H. (2005). The police culture: research implications for psychological services. Professional Psychology: *Research and Practice, 36*(5), 525-529. https://doi.org/10.1037/0735-7028.36.5.525

71. Xu, T., Li, Y., Chen, X., Wang, J. L., & Zhang, G. D. (2020). Effect of physical activity volume on active coping style among martial arts practicing adolescents: The mediating role of self-efficacy and positive affect. Arch. Budo, 16, 315-324. https://www.researchgate.net/profile/Zhang-Guodong-2/publication/348832878_Effect_of_physical_activity_volume_on_active_coping_style_among_martial_arts_practicing_adolescents_the_mediating_role_of_self-efficacy_and_positive_affect/links/6012312392851c2d4dfb6fea/Effect-of-physical-activity-volume-on-active-coping-style-among-martial-arts-practicing-adolescents-the-mediating-role-of-self-efficacy-and-positive-affect.pdf

72. Zavala, E., & Chan, L. (2021). Promoting optimal well-being among law enforcement employees. Positive Organizational Psychology Interventions: Design and Evaluation, 159-168. https://doi.org/10.1002/9781118977415.ch8

73. Zhang, X. (2022). Design and application of online teaching system of police physical education based on web application development. In 2022 2nd International Conference on Education, Information Management and Service Science (EIMSS 2022) (pp. 349-357). Atlantis Press. https://www.atlantis-press.com/proceedings/eimss-22/125978158.