Studies on martial arts, fights and sports combat with police: a systematic review

Corresponding author
Jonatas Deivyson Reis Da Silva Duarte
Federal University of Mato Grosso
Costa Verde Military Police Academy
jonatas00013@hotmail.com

Almir De França Ferraz
Faculty of Technology of Ipê
Costa Verde Military Police Academy

Abstract. Introduction: The profession of a military police officer is to maintain order and that is why he may find himself in stressful and life-threatening situations. Although they undergo specific military training, martial arts, fighting and combat sports (MA/F/CS) is a recommended way to maintain health and additional training for these military police officers. Objective: To analyze through a systematic review the studies carried out on MA/F/CS with police officers. Methods: The systematic search for this study was conducted through the Pubmed, Scielo, Lilacs, Medline and Portal de Periódicos da Capes (Brazilian indexing portal). Results: Five articles were included that showed the relationship of how the MA/F/CS can improve the performance of police officers, reducing stress, anxiety, injuries and medical certificates. Conclusion: The regular practice of MA/F/CS as an additional form for police officers appears to improve the performance of their duties. However, future studies should analyze health and quality of life markers in this population.

Keywords: Militarism, Physical Education, Self Defense, Public Security.

Introduction

Police officers are authorities legally created to maintain order (FERRAZ et al., 2020) and drug seizure (KANKAAPAA et al., 2016). The work of the military police deals with various urban conflicts, which must be done in a sensible, legal and technical way (JUNIOR et al., 2020). The task of enforcing laws can generate psychological stress at work, which can lead to problems of depression (GARBARINO et al., 2013) and heart attack (HINE; CAREY, 2021).

Some police have sedentary behavior and obesity (FERRAZ et al., 2020), this becomes worrying in terms of health. Hine and Carey (2021) defend the importance of strategies for preventing police deaths. A good strategy for this is the regular practice of physical exercise, as according to Almeida et al (2014) it is a way to maintain health and healthy longevity being the MA/F/CS one of the manifestations of physical exercise (WASIK; JACEK; WOJCICK, 2017), these sports can be practiced for both competitive, health and self-defense purposes (DA SILVA DUARTE et al., 2021; BALL; MARTIN, 2012).

By definition, a fight is any situation of opposition between two or more people, whereas martial arts are combat activities with a philosophical basis (FRANCHINI; DEL VECCHIO, 2012). Martial arts seek physical, ethical and spiritual improvement (CYNARSKI et al., 2015) with self-defense techniques, in contrast, combat sports modalities focus on sports competitions (JOHNSON; HÁ, 2015).

In this sense, with industrialization and urbanization, crimes are increased and, therefore, police officers must undergo training by the MA/F/CS (JEANG, 2015). It is recommended that the facilities allow the practice of diversified styles of MA/F/CS (JEANG, 2015). Therefore, in view of the importance of additional training for MA/F/CS in police officers, the objective of this systematic review is to survey and analyze the original studies related to the topic.

Contextualization and analysis

The first phase of this review was to search the indexing portals Pubmed, Scielo, Lilacs, Medline and Portal de Periódicos da Capes with the
keywords: “Police and Martial Arts” and “Police and Sport Combat”, the period was not established.
initial search. The search for articles was from 26/07/2021 to 28/07/2021. In the second phase, the
titles and objectives of the studies were read to
analyze the possible compatibility with the objective
of the work. In cases of doubt, complete summaries
were read.

Inclusion criteria
Original articles were included, which have
as part of the police sample universe and that has
MA/F/CS as the analyzed variable. Articles based on
the objectives and inclusion criteria.
A total of 3,482 documents were identified
from 1951 to 2021 when the keywords were used,
however, in the Portal de Periódicos da Capes most
documents were not scientific articles, hence the
expressiveness of exclusion. After applying the
eligibility criteria, ten articles were selected, after
analyzing the repeated and review articles, five
remained (Flowchart 1).
The sample size of the studies was
1,402,659 volunteers. Table 1 shows the types of
studies, sample quantities, objectives and
results/conclusion. Four studies were found related
to the psychological impact (anxiety and confidence)
at work and only one study on certificates and
injuries.
Most studies were carried out in Europe
(Spain, Germany, United Kingdom and
Netherlands), and the Netherlands was the country
with the most original studies carried out (two)
according to this systematic review. In America, a
study was found in the United States (Table 2).

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Figure 1. Procedures used in the search and selection of articles
Table 1 - Main methodological characteristics and results of systematic review studies involving martial arts, fights and combat sports with police officers

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Objective</th>
<th>Kind of study</th>
<th>Sample</th>
<th>Results/Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiménez et al (2020)</td>
<td>Analyze whether the course of operational tactical procedures (with martial arts elements) decreases medical certificates and injuries</td>
<td>Cohort (14 years)</td>
<td>Men (n = 154) and women (n = 8)</td>
<td>There was a decrease in medical certificates and incidence of injuries, during and after the course.</td>
</tr>
<tr>
<td>Renden et al (2015)</td>
<td>Through an online questionnaire, analyze the perception of police officers in dealing with violence on duty</td>
<td>Transverse</td>
<td>Men (n = 741) and women (n = 180)</td>
<td>61.4% of the sample never practiced martial arts. Officials reported that self-defense and prison skills training are moderately usable and having additional stressful experiences helped improve self-perceived performance.</td>
</tr>
<tr>
<td>Renden et al (2015a)</td>
<td>Investigate whether officers experienced in MA/F/CS training (in their leisure time) perform better in (simulated) prison and self-defense scenarios under low and high pressure compared to officers who rely only on regular police training</td>
<td>Experimental</td>
<td>Men (n = 59) and women (n = 7)</td>
<td>There was an improvement in the performance of regular MA/F/CS practitioners (krav maga, kickboxing, karate and jiu-jitsu) only in situations of high anxiety compared to police officers who do not practice MA/F/CS. However, the performance of both worsened in the high anxiety situation.</td>
</tr>
<tr>
<td>Towers (2018)</td>
<td>Examine whether MA/F/CS training impacts confidence in police practice</td>
<td>Transverse</td>
<td>Police officers (n = 1,064), the authors do not specify the genders, they only state that 92% of the sample are men</td>
<td>Police officers who practice MA/F/CS are more confident in carrying out their duties.</td>
</tr>
<tr>
<td>Staller et al (2017)</td>
<td>Analyze the possible attention bias to risky situations and trait anxiety in police officers.</td>
<td>Transverse</td>
<td>Men (n = 152) and women (n = 53)</td>
<td>Police officers and non-MA/F/CS practitioners, martial artists, and non-police and non-martial arts individuals (control group) had no difference regarding threat-related attention bias. In contrast, the control group had higher levels of trait anxiety.</td>
</tr>
</tbody>
</table>

Sources: The authors
Note: n = number of participants; MA/F/CS = martial arts, fighting and combat sports

Table 2 - Nationality of police officers studied in the systematic review

<table>
<thead>
<tr>
<th>Authors and year</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiménez et al (2012)</td>
<td>Spain</td>
</tr>
<tr>
<td>Renden et al (2015a)</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Towers (2018)</td>
<td>United States</td>
</tr>
<tr>
<td>Staller et al (2017)</td>
<td>Germany and United Kingdom</td>
</tr>
</tbody>
</table>

Source: Authors
As far as we know, this is the first study to analyze the studies carried out on the MA/F/CS theme with police officers. Only five original studies were found, which was not expected. Our main findings are that all studies analyzed how MA/F/CS can help police officers in carrying out their duties even in stressful situations (RENDEN et al., 2015; RENDEN et al., 2015a; TORRES, 2018; STALLER et al., 2017) and how its practice can prevent injuries and reduce medical certificates (JIMÉNEZ et al., 2020). Figure 1 illustrates the main findings of this study.

Police officers are often exposed to situations of conflicts and arrests with violent criminals (VIOLANTI; DOUGLAS, 1999), and police officers who work in urban areas tend to have greater problems (JEANG, 2015). Due to these problems, police officers must be proficient in a variety of self-defense techniques (O'NEILL et al., 2019; KÖRNER; STALLER, 2018). However, police training must be based on simulations of real situations for greater transfers and be preparing physiological and psychological mechanisms (ANDERSON et al., 2016).

In the study by Renden et al (2015), in the perception of some police officers, traditional training is moderately usable and real experience becomes important. Police officers who practice martial arts in their free time tend to have more confidence in carrying out the demands of their work (TORRES, 2018). In a controlled environment of high anxiety, officers who practice martial arts fared better (RENDEN et al., 2015a).

Unfortunately, there is a record in the scientific literature of police officers with sedentary behavior (FERRAZ et al., 2020). This may be related to the incidence of obesity (ARREDONDO, 2018), hypertension (YATES et al., 2021) and type 2 diabetes mellitus (YU et al., 2016) in this population. Regular physical exercise is a way of treating and preventing these pathologies and improving mental health (FERNÁDEZ GUIJARRO, 2019). A fourteen-year cohort study showed that 150 minutes per week of rigorous exercise improves health and longevity (ALMEIDA et al., 2014).

The regular practice of MA/F/CS is an important aspect for health and fitness. For Irving, Orr and Pope (2019), police officers must be conditioned to carry out their tasks. Another important aspect of the practice of MA/F/CS in police officers is the reduction of injuries during work and medical leaves (JIMÉNEZ et al., 2020). The decrease in injuries by these police officers may be because the techniques learned in MA/F/CS have the effect of preventing injuries caused by everyday situations (for example, falling) (BOGUSZEWSKI et al., 2015). On the other hand, MA/F/CS training can cause injuries due to its inherent characteristic of contact, in this sense, it is up to MA/F/CS teachers to seek to avoid situations of heavy physical contact and high volumes of training to prevent possible injuries avoidable during training (JAMES, 2014).

The decrease in medical certificates found in the study by Jiménez et al. (2020) may be because the regular practice of physical exercise contributes to the health status (FERRAZ et al., 2018). Studies show that the practice of MA/F/CS is a good way to improve cardiovascular health (BELO et al., 2021), bone density (ITO et al., 2017), metabolic diseases (HAMASAKI, 2016) and well-being psychological (CROOM, 2014).

In our search, few studies on the subject were found in the portals surveyed, and further studies are needed to promote the topic in question. We recommend studies that analyze aspects of the markers of quality of life, physical and mental health.
of police officers practicing MA/F/CS and not just the effect on the application of their duties.

**Final considerations**

There are few studies on MA/F/CS with police officers, and the studies found only analyze how their additional training can improve the performance of officers in the application of their duties. Most of them being carried out on the European continent. Additional MA/F/CS training seems to reduce anxiety in times of risk and stress, it also seems to reduce work-related injuries and medical certificates.

It is important that public safety professionals are oriented about the benefits and importance of the practice of MA/F/CS to improve their health and their performance as a police officer. We recommend public safety policies that optionally offer these modalities in gyms and barracks.

**Recommendations**

- Investments in dojos and fitness centers in barracks and gyms.
- Offer MA/F/CS in an optional and complementary way for military police officers.
- Have periodic and scientific lectures on the benefits of regular physical exercise.
- Specialized training should be as close to real conflict situations (ANDERSON et al., 2016).

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