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# INJURY PROFILES OF POLICE OFFICERS FROM A LOCAL LAW ENFORCEMENT AGENCY

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## Abstract

Musculoskeletal injuries sustained by law enforcement officers (LEOs) can result from a variety of occupational situations and circumstances. These injuries can result in decreased physical abilities, impact an officer's ability to serve their communities, and may come with notable financial costs to the department. Profiling LEO musculoskeletal injuries is a necessary initial step for developing and implementing musculoskeletal injury mitigation strategies.

**PURPOSE:** To profile musculoskeletal injuries sustained by LEOs from one agency and identify injury patterns to inform mitigation strategies.

**METHODS:** Retrospective injury data from a local law enforcement agency spanning a period of four-years were examined. Reported injuries were grouped into musculoskeletal or non-musculoskeletal. The musculoskeletal injuries were further broken into anatomical sites. The data were examined based on common anatomical sites of musculoskeletal injuries. Descriptive statistics (i.e. frequency and percentage) were utilized to profile the data.

**RESULTS:** Across the four-year time period, a total of 39 injuries were reported. Of these, 66% (n=26) were musculoskeletal. Three body areas accounted for approximately half of all reported injuries: shoulder (15%, n=6), knee/quad (15%, n=6), and hand/wrist (18%, n=7).

**CONCLUSION:** Injury prevention strategies should focus on mitigating injuries in the shoulder, knee, and hand. This injury profile is able to provide important information to aid in reducing the injury occurrence; thus, helping to maintain the operational ability of the individual officer and department as a whole. Injury prevention strategies should include integration of corrective activities and defensive tactics into occupation specific strength and conditioning programs.

## Introduction

As part of their essential job duties law enforcement officers (LEOs) may be required to perform a variety of physically demand tasks. These tasks may include sprinting, lifting heavy objects, jumping and climbing over barriers and performing defensive tactics and arrest control techniques. Ironically, officers may also spend a large portion of their time on duty engaged in sedentary behavior (e.g., writing reports, sitting in a car, driving, etc.). Based on these requirements, officers may be prone to a variety of acute and chronic injuries. These injuries can create a significant financial and staffing burden to law enforcement agencies. It is crucial that law enforcement agencies take proactive measures to keep their officers healthy to make certain they are able to perform their occupational duties safely and effectively.

**Purpose:** To determine the type and frequency of musculoskeletal injuries sustained in one local US based law enforcement agency.

## Methods

Archived records of injuries occurring between January of 2016 and August of 2019 from one local law enforcement agency were reviewed to determine the most common type and frequency of musculoskeletal injuries that occurred. Injury data were first grouped into musculoskeletal and non-musculoskeletal injuries by determining the nature and mechanism of the injury. The term "Musculoskeletal" was defined as anything related to the muscular or skeletal system such as joints, ligaments, muscles, bones, tendons, etc. Additionally, the data was limited to occurrences in which the proximate cause of the injury was unrelated to blunt force trauma (i.e., car crash, gunshot wound, being struck with an implement, or battery). In order to further analyze the data the injuries were then broken down further by labeling them by anatomical sites. After separating the data into anatomical groups the furthering results were then profiled by the use of Descriptive Statistics (e.g., percentages, ratios, and frequencies.)

## Results

- Within the near four-year time period there were a total of 39 injuries sustained to police officers while on duty. The injuries were evaluated and it was determined that 67% were musculoskeletal. (n=26)
- Injury classification in order of frequency were Wrist/Hand (26.9% n=7), Shoulder (23.1% n=6), Knee/Quad (23.1% n=6), Foot/Ankle (15.4% n=4), Elbow (7.7% n=2), and Neck (3.8% n=1) (Figure 1).

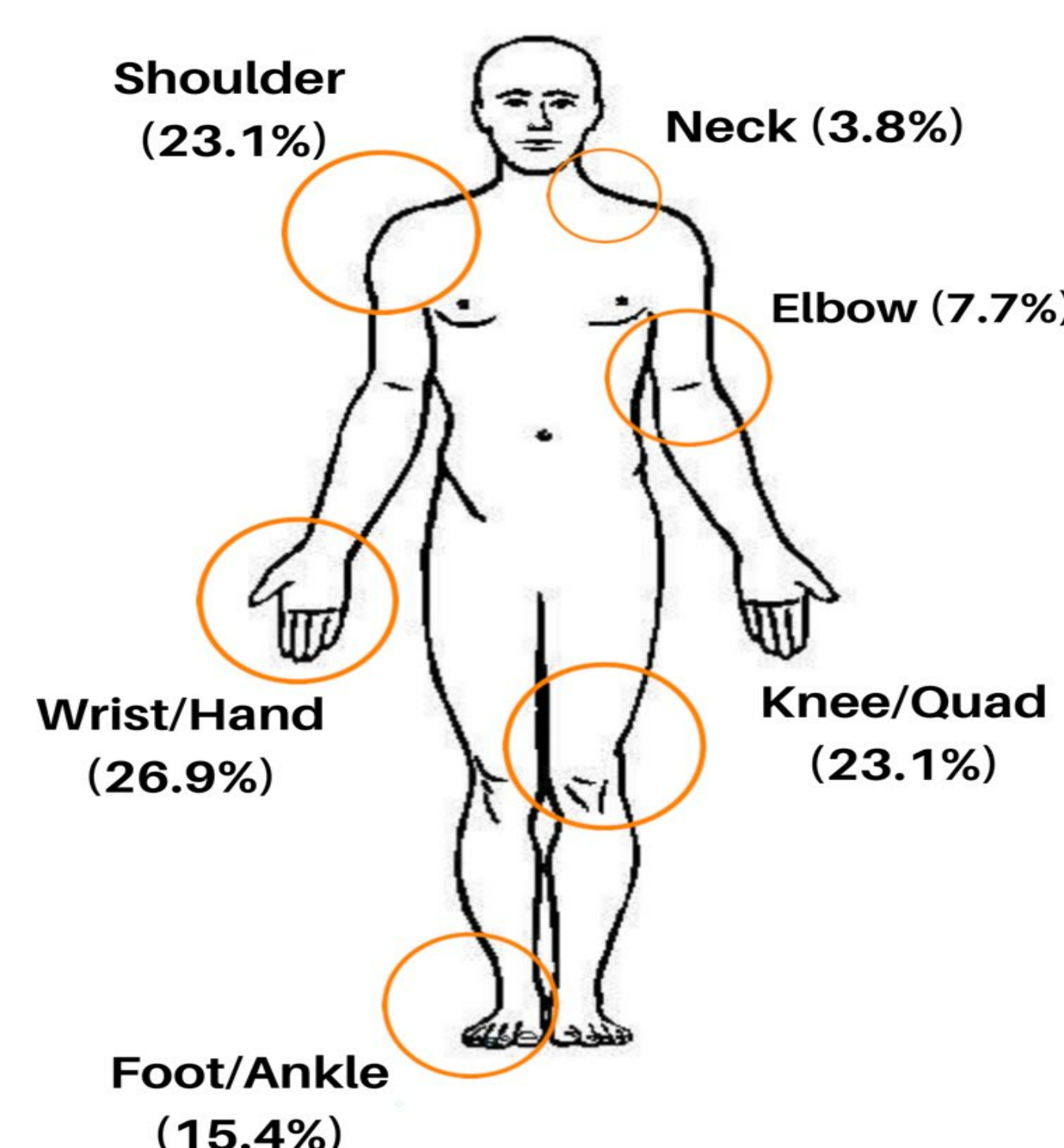
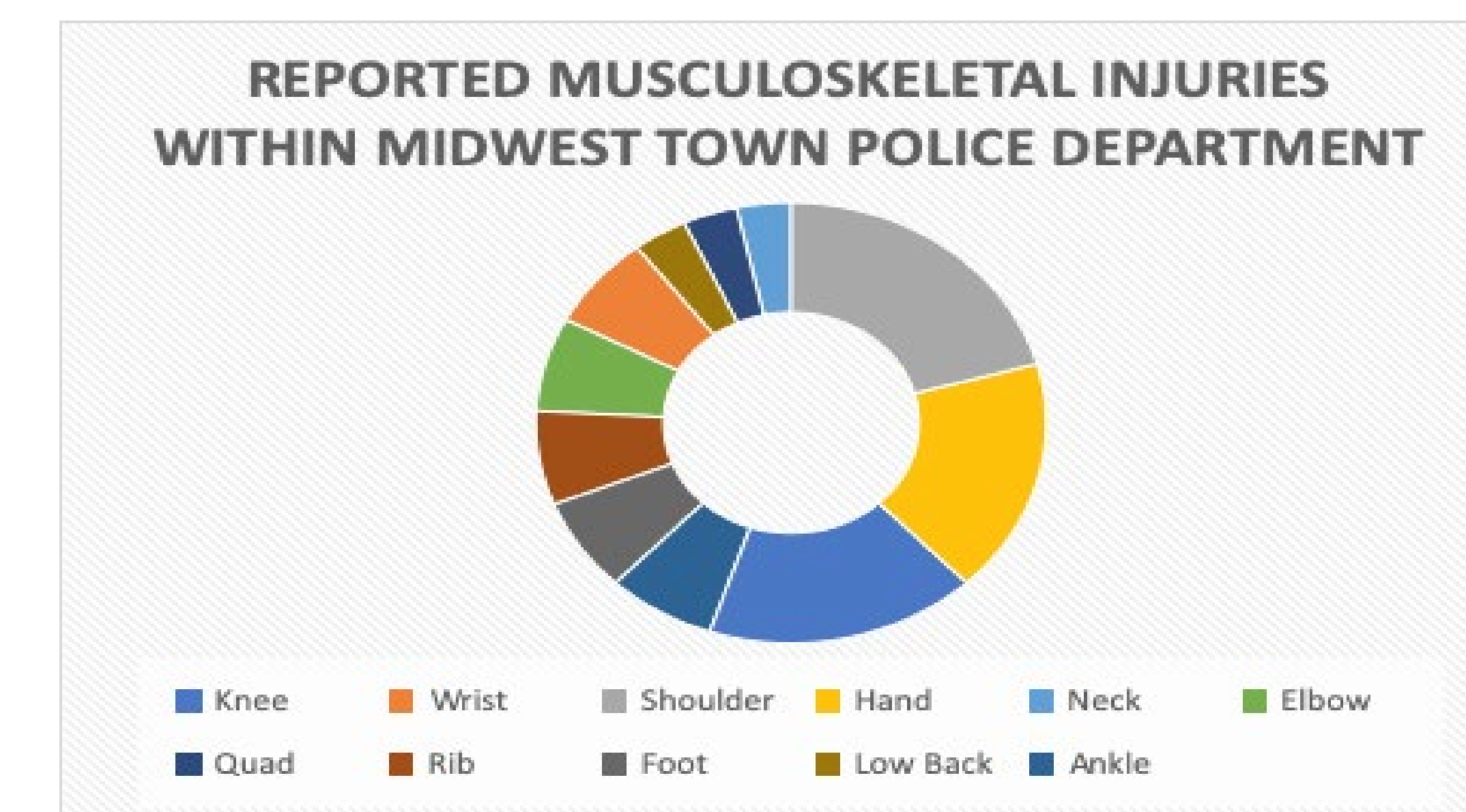


Figure 1: Percentage of Injuries by location

## Results (Cont.)

Figure 2: Frequency of Injuries by anatomical location



## Discussion

- Injuries can result in decreased physical abilities, impact an officer's ability to serve their communities, and may come with notable financial costs to the department.
- This investigation sought to profile musculoskeletal injuries sustained by LEO's initial step for developing and implementing musculoskeletal injury mitigation strategies.
- Our study concluded that the most commonly injured areas include the three most injured areas included the wrist/hand, shoulder, and knee/quad.
- Similar injury profiles have been reported in other investigations involving LEOs (1-3)
- Screening for potential injuries via the use of movement assessments (i.e., Functional Movement Screen) may be useful in reducing musculoskeletal injuries within this population.
- Developing strength and conditioning programs aimed at developing strength, mobility and flexibility to areas commonly injured may help mitigate or reduce the severity of these types of musculoskeletal injuries within these populations.

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