

Investigation of Patrol Officers' Musculoskeletal Health: Needs Assessment of Campus Patrol Officers

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Patrol officers are experiencing high incident rates of musculoskeletal injuries that has attracted the attention of researchers (Brown, Wells, Trotter, Bonneau, & Ferris, 1998; Sullivan & Shimizu, 1988). Low back pain has been identified as a major health concern for patrol officers mainly due to significant number of low back incidences reported by patrol officers (Brown et al., 1998; Burton, Tillotson, Symonds, Burke, & Mathewson, 1996; Sullivan & Shimizu, 1988). Patrol officers hold a unique work environment where they carry out sedentary tasks and repetitive movements such as driving, confront uncooperative subjects while typically carrying heavy gear. Repetitive movements such as driving and sitting in awkward postures inside the vehicle that activate low back muscles along with duty gear design and weight, might gradually result in overworking the muscles that is often associated with first-time back injuries in law enforcement personnel (Sullivan & Shimizu, 1988).

Investigating patrol officers' musculoskeletal issues particularly in relation to duty gear design, requires taking into account the diverse experiences officers encounter in their work environment. The purpose of this preliminary study was to better understand the underlying risk factors of musculoskeletal issues in patrol officers. The following research questions were addressed in this study:

RQ1: What are patrol police officers' experiences with respect to physical discomfort at the work place?

RQ2: What are police officers' perceptions regarding factors that contribute to musculoskeletal injuries?

A qualitative method was chosen to explore the experiences of patrol officers with regards to discomfort in their work environment. Officers with minimum of five years patrolling experience were recruited. Focus group discussions ($n = 12$), in-person interviews ($n = 2$), and shadowing sessions ($n = 6$) were carried out at a Mid-Western university with campus patrol officers. Grounded theory methodology was used to analyze the qualitative data and new data was constantly collected through interviews and shadowing sessions and constantly compared to old data to construct a model based on patrol officers' experiences.

The findings identified three major categories of risk factors that emerged from officers' narratives: duty gear, vehicle seat, and physical fitness (Figure 1). According to officers, the weight of the duty belt, shape of the vehicle seat, and working inside a cramped patrol vehicle contributed to their discomfort. Items attached to the duty belt were perceived to be bulky and hindering officers' movements while conducting seated occupational tasks. The duty belt was heavy and worn snug around the waist area amplifying the tight sensation into excruciating pain by the end of an 8-hour shift. All of the officers reported that they compromised comfort for the

“business-like” appearance of their current, high-gloss leather duty belt. The upholstery of the vehicle seat was reported to be smooth and slick thus causing officers to slide off from a neutral seated position into a slouched position. Likewise, the seats did not accommodate the bulk around the officers’ waist causing more pressure against soft tissues. It was also revealed that some officers neglected physical training, which was perceived to be a major contributor to a decline in their musculoskeletal health.

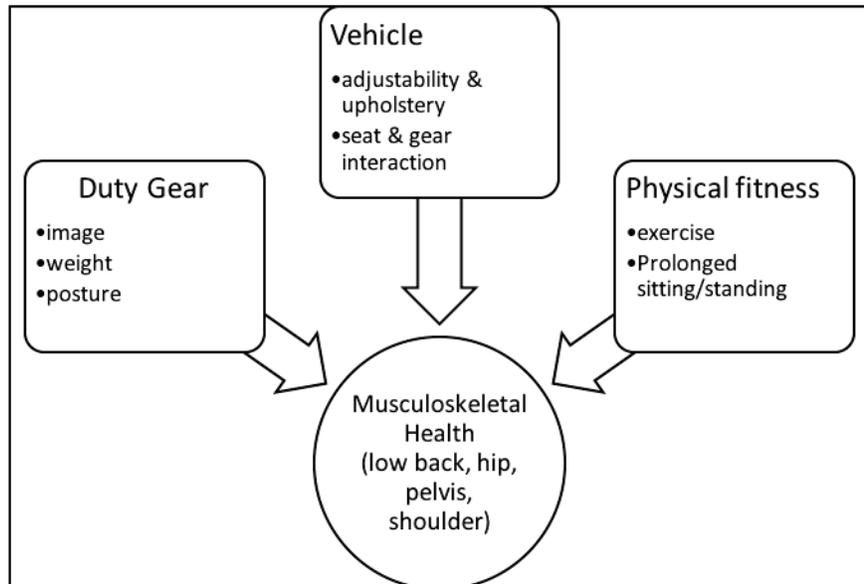


Fig. 1 Perceived contributing factors to musculoskeletal health

In conclusion, it is appropriate to note that the design of the current duty belt and vehicle seat are not up to par with officers’ prolonged hours of driving and seated tasks. The findings suggest that the vehicle seat design should accommodate the equipment placed on the posterior and dorsal/ventral regions of the body to reduce peak pressure between the driver and the duty belt. The duty belt configuration is a prominent candidate for ergonomic interventions as the officers have a tendency to maintain a professional image by wearing their current duty belt. The results of this study could potentially be presented as a guide to developing a strategic injury prevention plan that takes into account a wide range of factors effecting musculoskeletal health. Moreover, the findings of this research will provide information to police duty gear manufacturers and functional apparel designers on the topics that need to be addressed through ergonomic design solutions. This project will also benefit health educators by highlighting the need for continuous physical training programs in police departments. Lastly, the findings of this project are expected to bring the attention of policy makers to the health concerns of police officers.

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