
Comfort Assessment of Law Enforcement Officers: Moving Toward an Alternative Carriage Method

Mercan Derafshi Ph.D., Oklahoma State University, USA

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Health care expenditures are rising steeply in the United States with back pain being one of the costliest health problems and common reason to miss work (Cassidy et al., 2005; Gary Hart, Deyo, & Cherkin, 1995). The Bureau of Labor Statistics (BLS, 2016) identifies police officers as having “one of the highest rates of injuries and illness of all occupations” and the cost of filing for worker’s compensation claims are increasing up \$28 million only in the state of California (Dolan, 2015). Over the last two decades, officer duties and responsibilities have expanded, requiring them to adopt new technologies into the patrol car and onto their uniform. Furthermore, the introduction of less lethal weapons such as the TASER, pepper spray, and the baton, has added weight to officers’ duty gear, total weight being 18-22 pounds (Edmonds & Lawson, 2001; Stubbs et al., 2008). Low back pain in patrol officers is a universal issue and not limited to the United States¹ (Brown et al., 1998; Filtness, Mitsopoulos-Rubens, & Rudin-Brown, 2014; Jahani, Motevalian, & Asgari, 2002; Ramstrand & Larsen, 2012). Past research provides evidence that heavy-duty belt affect officers’ discomfort while conducting occupational tasks (Donnelly et al., 2009; Holmes et al., 2013). However, it is unclear which items on the duty belt cause perceived discomfort and what could possibly be removed to help reduce the discomfort by officers. Therefore, the purpose of this study was to assess perceived discomfort based on the equipment officers carry on their duty belt, to suggest a lighter duty belt by removing some of the items of the duty belt with the intention of placing them in other areas on the body, and to assess the effectiveness of a lighter duty belt using subjective measures. The hypotheses addressed in this study were:

H₀1: There are no significant differences in perceived discomfort between the reduced duty belt and full duty belt.

H₀2: There are no significant differences in perceived ease of movement between the reduced duty belt and full duty belt.

Methodology

An online survey was administered at the state level. Percentages and frequency tables were employed to rank the importance of the duty gear equipment. First, a baseline duty belt was determined that included all the equipment a right-dominant hand officer would carry on his/her duty belt. Second, a lighter duty belt was determined based on officers’ discomfort and duty belt configuration preferences. Survey answers were ranked, conflicted criteria were reported, and a final decision was made as to which items would be appropriate to be removed from the duty belt and placed in alternative places. Three garment treatments including a control group (CON = uniform without duty belt) were obtained as a result of the survey. A laboratory assessment of the duty belt was conducted with volunteer officers. Subjective measures were assessed using a 100 mm Visual Analog Scale and a 5-point Likert scale adapted from previous studies (ASTM,

¹ Other studies reported low back pain in officers include but not limited to articles from Iran, Turkey, Britain, Germany, Sweden, Canada, and Australia.

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