

## **Introduction to Special Issue: Stress and Health in Law Enforcement**

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There are approximately 765,000 sworn police officers in the United States, represented by 17,784 agencies. Despite the large size of this workforce and the strain of this occupation, the police are understudied in terms of the influence that the workplace has on work's psychological well-being and physical health. Policing is a psychologically stressful work environment filled with danger, high demands, ambiguity in work encounters, human misery, and exposure to death.

In 2004, the Buffalo Cardio-Metabolic Occupational Police Stress (BCOPS) study was initiated in collaboration with the National Institute for Occupational Safety and Health (NIOSH) along with contributions from the National Institute of Justice. The study was completed in 2009 and was among one of the first structured scientific attempts to gather both psychological and physiological data on a large sample of police officers. Four hundred and sixty-four police officers participated in the BCOPS study. The study provided an opportunity to investigate associations between stress, traumatic incidents lifestyle (smoking, diet, exercise, sleep), stress biomarkers, body measures physical activity, shift work, and subclinical metabolic and cardiovascular disease outcomes in police officers.

This special issue of the International Journal of Emergency Mental Health is only a partial representation of the extensive amount of investigation resulting from the BCOPS study. As an introduction, the first paper provides an overview of health disparities in the police compared to other major health studies in the U.S. population. Findings indicate that the prevalence of depressive symptoms in police officers was

nearly double (11.3% vs. 6.8%) that of the general population. Over 25% of police officers had the metabolic syndrome, a constellation of factors which are believed to increase the risk of heart disease, compared to 18.7% of the U.S. employed population. Officers also appeared to have less sleep, as they were nearly four times more likely to sleep less than six hours in a 24-hour period than the employed general population (31.4% vs. 8.0%).

There exists a general conception that retired officers are more likely to commit suicide due to the strain of separation from police work. The second paper in this issue examines this assumption by assessing the risk of suicide between working and retired police officers. A 55-year retrospective cohort mortality study was conducted, consisting of 3,228 officers who worked between 1950 and 2005. Adjusted for age and years of service, suicide rates were 8.4 times higher in working officers vs. separated/retired officers. Previous research indicated that the majority of suicides in working officers occur in the five years just prior to retirement eligibility, suggesting a period of decision anxiety. This finding does not negate the need for suicide prevention efforts in both working and retired officers. Retirement preparation seminars are important to help officers in the transition to civilian life.

Police officers report more stress and less sleep than the general population. The third paper in this issue explores the association between perceived stress and sleep duration among officers. Prevalence of poor sleep quality increased with increasing levels of perceived stress; the trend was significant among male officers, and gender significantly

modified this association. Compared to those in the first quartile of perceived stress, women in the fourth quartile were almost four times and men almost six times more likely to have poor sleep quality. Perceived stress was inversely associated with sleep duration and positively associated with poor sleep quality.

The fourth paper returns to a more in-depth examination of the metabolic syndrome and its association with stress in police officers. There are five components that are considered part of the metabolic syndrome: (1) abdominal obesity, (2) hypertension, (3) reduced high density lipoprotein cholesterol (HDL-C), (4) elevated triglycerides, and (5) glucose intolerance. The multivariate-adjusted number of metabolic syndrome components increased significantly in women across tertiles of police officer stress, including administrative and organizational pressure and lack of support indices for the previous month. No association was found among male officers. Abdominal obesity and reduced HDL-C levels were consistently associated with police stress in women. Police stress, particularly organizational pressure and lack of support, was associated with metabolic syndrome among female but not male police officers.

Previous research suggests that obesity is a health problem among police officers. Stress is also a concern in police work and can lead to depression. The fifth paper addresses the association between obesity and depression. Measures of obesity included body mass index (BMI), abdominal height, waist circumference, and depressive symptoms. Significant positive trends were observed in multivariate-adjusted mean depression symptom scores across increasing tertiles of BMI and abdominal height for men officers. No significant associations were found between depression symptoms and obesity in women officers. Additional factors that might influence this association should be examined prospectively in future work to help clarify causal direction.

Poor sleep quality has been shown to adversely affect emotional regulation, including an increase in depression symptoms. Police officers are at increased risk of poor sleep

quality due to occupational factors. Paper six addresses the association between poor sleep and depressive symptoms in police officers. As sleep quality worsened, depressive symptom scores increased significantly. This trend held for both male and female officers, although the association was slightly weaker in women. Sleep quality was significantly and independently associated with depressive symptoms as evidenced by a trend of increasing depressive symptom scores with decreasing sleep quality in both male and female officers.

Police officers not only deal with stress and trauma in their work, they are also exposed to occupational hazards and materials which may be carcinogenic (e.g. clandestine labs, chemical spills) which may put them at increased risk of cancer. Paper seven looks at the incidence of cancer among a cohort of 2,234 police officers. Four hundred and six officers (18.2%) developed cancer between 1976 and 2006. The risk of overall cancer among police officers was found to be similar to that of the U.S. general white-male population. An elevated risk of Hodgkin's lymphoma was observed relative to the general population. The risk of brain cancer, although only slightly elevated relative to the general population, was significantly increased with 30 years or more of police service.

Information gained through the BCOPS study may be useful not only to aid further investigation of the health status of the police, but may also be generalizable to other high stress occupations as well. Examples are firefighters, EMTs (emergency medical technicians), nurses, physicians, air traffic controllers, and the military. In general terms, results found in this study may add to existing knowledge of associations between psychological and physiological disease outcomes in first responder occupations.

Were it not for the cooperation of Buffalo police administration, the Police Benevolent Association, and the exceptional men and women of the Buffalo Police Department, this study would not have been possible. Our sincere thanks to them, as we look forward to our follow-up study.



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The **International Journal of Emergency Mental Health** provides a peer-reviewed forum for researchers, scholars, clinicians, and administrators to report, disseminate, and discuss information with the goal of improving practice and research in the field of emergency mental health.

The **International Journal of Emergency Mental Health** is a multidisciplinary quarterly designed to be the premier international forum and authority for the discussion of all aspects of emergency mental health.

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