

Fatigue, shiftwork, and safety outcomes in Canadian paramedics

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Introduction. Research conducted on American paramedics has illustrated an empirical link between fatigue and safety-related outcomes. However, significant structural differences exist in the delivery of paramedicine in the United States and Canada. Therefore, it is necessary to explore if the established relationships between fatigue and safety outcomes, including paramedic injury, behaviors that may compromise patient and provider safety, and medical errors, are also evident in Canadian paramedics. The purpose of this study was to determine if fatigue, shift length, hours worked weekly, and shift type were related to safety outcomes in Canadian paramedics.

Methods. An online survey was conducted with ten EMS services with a 40.5% response rate (n= 717). Respondents reported levels of fatigue using the Chalder Fatigue Scale, safety outcomes, work patterns (types of shifts, hours worked weekly) and demographic characteristics. Univariate and chi-square analyses were used to assess for significant differences.

Results. In this sample, 55% of paramedics reported being fatigued at work. Primary Care Paramedics were more likely to be fatigued than Advanced Care Paramedics (OR 1.6, 95% CI 1.1, 2.3). Paramedics who worked over 40 hours weekly were more likely to be fatigued (OR 1.7, 95% CI 1.1, 2.4). Fatigued paramedics were more likely to report injuries (OR 2.7, 95% CI 1.8, 4.0), more likely to report safety compromising behaviors (OR 3.9, 95% CI 1.6, 10.0), and medication errors (OR 1.6, 95% CI 1.1, 2.0). Paramedics who rotate between day and night shifts were more likely to report injury (OR 1.9, 95% CI 1.2, 2.8) and medication errors (OR 1.7, 95% CI 1.2, 2.4). Paramedics who worked 12 or more hours per shift were more likely to report injury (OR 3.1, 95% CI 1.4, 7.0) and medication errors (OR 3.7, 95% CI 1.6, 8.5). Finally, paramedics who worked over 40 hours weekly were more likely to report injury (OR 2.0, 95% CI 1.3, 3.1) and were more likely to report safety compromising behaviors (OR 5.9, 95% CI 2.6, 13.4).

Conclusion. Despite significant structural differences in American and Canadian paramedicine, fatigue remains a significant predictor of injury, safety compromising behaviors, and medication errors.