



Stress and Coping across Occupational and Personal Environments (SCOPE)

in Canadian Paramedics and their Spouses

Research Summary

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Table of Contents

Table of Contents.....	2
Acknowledgments.....	3
Research Background.....	4
Study Overview.....	5
Research Methods.....	6
Phase 1.....	6
Phase 2.....	6
Phase 3.....	6
Demographic Information.....	7
Job-Related Information.....	7
Job Satisfaction.....	7
Preliminary Findings.....	8
Occupational Burnout.....	8
Depressive Symptoms.....	8
Post-Traumatic Stress.....	9
General Health & Well-Being.....	9
Work-to-Home Spillover and the Role of Spouses.....	10
Future Plans.....	11
Stay in Touch.....	11
Table 1. Paramedic Demographics and Job Information (Part 1).....	12
Table 2. Paramedic Demographics and Job Information (Part 2).....	13

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Research Background

Paramedics represent a population at high risk for stress exposure and stress-related outcomes. Due to the unique nature and high demands of the job, paramedics regularly experience stress not common to the general population, such as death of a patient under their care, violence, assault, and more generally, exposure to human suffering and tragedy (Regehr, Goldberg, & Hughes, 2002). These stressors are in addition to occupational stressors typically experienced by paramedics, such as high call volume, changing schedules, and scrutiny of job performance for purposes of quality assurance (Regehr, 2005). As a result, paramedics are at an increased risk for post-traumatic stress disorder (PTSD) and trauma-related symptoms such as depression, anxiety, detachment, sleep disturbance, and emotional numbness, among others (Regehr et al., 2002; Regehr, 2005). Between one fourth and one third of paramedics show traumatic stress symptoms in the high to severe range at any given time (Alexander & Klein, 2001; Regehr et al., 2002). Resulting somatic outcomes, such as pain complaints, are more numerous and frequent compared to those reported by the general public at large (Beaton, Murphy, & Pike, 1996).

Paramedics play a critical role in pre-hospital care, yet turn-over rates due to burnout are high (Patterson, Probst, Leith, Corwin, & Powell, 2005), indicating a need to understand the stress and coping processes unique to this population.

Furthermore, research has demonstrated that spouses of paramedics deal with stressors resulting from the occupational stress of their significant others (Regehr, 2005). Patterson et al. (2005) note that working as a paramedic often negatively affects relationships at home. Not yet investigated is the on-the-job partnerships and relationships with co-workers. In Canada and the United States, the majority of full-time paramedics are consistently partnered with the same co-worker, often for years at a time, resulting in a very close working relationship somewhat unique to this work environment. In addition to spousal interaction at home, on-the-job partner interaction may be a critical source of both stress and support on and off the job.

We propose that the paramedic's partner at work constitutes a close relationship that is critical to the stress experienced in the work setting. On all emergency calls, two partnered paramedics must depend heavily on one another for technical/physical support (e.g., lifting), patient communication, medical intervention, and crisis management. As such, stress severity and reactivity likely depend heavily on the stress reactivity of one's partner. To date, the interactions between two partnered paramedics have not been investigated.

We have demonstrated that stress is contagious across roles, particularly from the work setting to the home setting and vice-versa (Bolger, DeLongis, Kessler, & Wethington, 1989). That is, stress experienced at work can transfer to the home and, conversely, stress experienced at home can transfer to work. This process is known as spillover. In addition, stress experienced at work can transfer to the spouse in the home setting, a process known as crossover. Interviews conducted by Regehr (2005) suggest that crossover is prevalent among the spouses of paramedics. In particular, traumatic calls at work appear to lead to heightened stress experienced by all immediate family members in the home. Such spillover and crossover effects might also occur from the home environment to the work setting and work partner.

Study Overview

The UBC SCOPE Study was a research project conducted at the University of British Columbia from March, 2011, to February, 2012, by the Centre for Health & Coping Studies in the Department of Psychology.

This study was initiated by Dr. Anita DeLongis and Dr. David King as part of David's doctoral thesis in Health Psychology. Dr. Anita DeLongis served as the Principal Investigator for the study.

All research was designed and conducted independently of any EMS service, members of management, or any affiliated unions. It operated under the standards of the UBC Behavioural Research Ethics Board. Research was not in any way motivated by political interests or potentially conflicting interests.

Our Purpose

The SCOPE Study sought to explore relationships among variables such as stress, coping, and indicators of mental and physical well-being in paramedics, their work partners, and their spouses.

In particular, this research aimed to analyze the unique stressors that paramedics encounter daily, the impact of this stress on important health-related outcomes, and how this population is able to cope with these stressors both on and off the job.

Participant Recruitment

Participants were recruited by various means, including e-mails and flyers distributed by the British Columbia Ambulance Services (BCAS), word of mouth by paramedics, and targeted Facebook advertising campaigns throughout Canada. Paramedics were recruited from the provinces of British Columbia (primarily), Ontario, Manitoba, and Nova Scotia.

Research Methods

This research addresses the above mentioned issues in a sample of over 100 individuals working as paramedics in urban centres across Canada. Of the participating paramedics, 87 also had participating spouses/romantic partners. Participation required the expressed interest of two partnered paramedics or a paramedic and his/her spouse. Both full-time and part-time paramedics were able to participate if available for a period of 4 consecutive work shifts (day, night, or mixed).

Phase 1

Data collection occurred in three phases. Phase 1 involved the completion of a short series of online questions about work-related experiences, education/training as a paramedic, job satisfaction, professional burnout, and health. At this time, consent for participation in the entire study was obtained. A phone call was also scheduled in order to coordinate Phase 2 participation.

Phase 2

Phase 2 followed participants for a period of 1 week (1 day off, 4 days on, and 2 days off), during both work and non-work days. Daily process methods (using brief questions on a repeated, daily basis) were used to examine specific thoughts, feelings, and behaviours related to stress. This allowed for the assessment of daily stress and coping processes close to their real-time occurrence, reducing any biases that may occur in retrospection. All questions were available in online format in order to improve ease, confidentiality, and privacy of responding. Daily questions measured quality of sleep, daily stress, burnout, partner support, methods of coping with stress, and mood. During participating work days, paramedics were asked to answer these questions three times per day: once upon waking, once upon returning home from work, and once before going to bed. While at home, participants were asked to answer similar questions twice per day: once upon waking and once before going to bed. This occurred for one day before the first participating work day and two days after the last participating work day, in order to examine a complete cycle of days on and off work. Participants were not asked to answer any questions while at work or during working hours, in order to avoid interference with their work.

Participating spouses answered similar questions on a daily basis (only twice daily) using comparable procedures. The participation of spouses added greatly to our understanding of how stress in the work environment transfers to the home environment.

Phase 3

Finally, Phase 3 involved the online assessment of demographics including age, sex, socio-economic status, and education. In addition, participants completed questionnaires describing personality traits, relationship satisfaction, social support, emotional expressivity, forgiveness, rumination, post-traumatic stress, and depressive symptoms, among other variables.

Demographic Information

A total of 106 paramedics participated in the study, 78% male and 21% female. The average age of paramedics was 41 years, with the youngest paramedic being 25 and the oldest paramedic being 62 years of age.

The vast majority of participating paramedics reported their ethnicity as Caucasian (86%). Approximately 95% of paramedics reported being in a relationship (married, engaged, or otherwise committed) at the time of participation. In addition, 61% of paramedics reported having at least one child living with them.

Among the 87 participating couples, the average length of the relationship was 13 years, while average length of cohabitation was 12 years.

Of the participating spouses, 79 self-identified as Caucasian. The mean age of spouses was 41 years (range: 24 to 74 years), with the majority being female (75). In total, 72 spouses reported being employed at the time of participation (56 full-time).

Job-Related Information & Job Satisfaction

Most of the paramedics in our sample were employed full time (95%).

Regarding level of certification, 79% of paramedics were Primary Care Paramedics (PCPs), while 17.9% were Advanced Care Paramedics (ACPs), and 2.8% of paramedics were Critical Care Paramedics (CCPs). Approximately 50% of participating paramedics reported that being a paramedic was their primary career choice.

On average, paramedics reported beginning work as a paramedic at around the age of 25 (range: 18 to 42). Paramedics had been working for an average of 15 years as a paramedic (range 1 to 35) at the time of the study. Since beginning their work as a paramedic, 83% of participants reported having taken a medical or disability leave at least once during their career.

Refer to Tables 1 and 2 at the end of this document for a summary of these findings.

Paramedic job satisfaction was also assessed. This allowed us to examine the attitudes of paramedics about different aspects of their job, such as the nature of the work, pay and benefits, and opportunities for promotion. The overall average level of job satisfaction in the current sample of paramedics was 119 on the *Job Satisfaction Survey* (Spector, 1994). This is lower than the average reported by many Canadians (134, based on a normative sample of 581 adults in various job roles).

This survey also measured satisfaction with specific job-related factors. Compared to the average Canadian, this sample of paramedics scored lower on satisfaction with pay, satisfaction with promotion opportunities, satisfaction with supervision, satisfaction with co-workers, and satisfaction with communication. Despite these slightly lower rates of job satisfaction, paramedics reported higher satisfaction with operating conditions and the nature of the work.

Preliminary Findings

A number of other variables were assessed by this research, including burnout, post-traumatic stress, depressive symptoms, and self-reported health. Select findings are discussed below, while others will be reported in forthcoming publications in academic journals.

Please visit www.davidbking.net/scope, where we will provide updates and abstracts to all subsequent publications. We have included in this report the information that we believe is of greatest relevance to paramedics and their spouses.

Occupational Burnout

Burnout is a measure of mental and physical exhaustion that results from chronic work stress. It is comprised of three factors, emotional exhaustion, depersonalization, and an impaired sense of personal accomplishment. Burnout is often associated with decreased job performance, and has been shown to lead to increased absenteeism and higher turnover.

In the current sample of paramedics, 74% reported high burnout on one or more of the three factors (according to recommended cut-off values), with 14 paramedics reporting high burnout on all three factors.

When comparing rates of burnout to normative data from North American nurses and physicians, paramedics in the current sample were more emotionally exhausted and reported lower levels of personal accomplishment. This suggests that these paramedics are experiencing a great deal of psychological and emotional distress that is leaving them feeling frustrated, drained, and disconnected from their work (i.e., burned out).

On days when paramedics experienced more stress and burnout at work, they tended to have a harder time shaking this stress when leaving work, and continued to feel stressed after returning home. In other words, feelings of burnout at work are often being brought home, potentially impacting health and well-being in the home setting. Similar results were observed for stress and negative emotions originating in the work setting, which also led to increased stress at home on a daily basis.

Depressive Symptoms

Depressive symptoms were also measured in the current sample. Self-reported symptoms are indicative of low mood but do not represent a true diagnosis of depression. Nevertheless, such symptom reports give us a rough idea of the emotional well-being of participants.

In the current sample, between one quarter and one third of paramedics reported depressive symptoms in the significant/high range.

Post-Traumatic Stress

Post-traumatic stress was also explored in the current sample of paramedics. Post-traumatic stress may be felt following the experience of a single traumatic event or multiple, repeated traumatic events over time. One may experience intense flashbacks, fear, and numbness as a result of the event(s).

Previous research has suggested that paramedics are at an increased risk for post-traumatic stress disorder (PTSD), a clinical diagnosis that is often made in cases where post-traumatic stress is interfering with daily functioning for a significant period of time. This study evaluated symptoms of PTSD only, and as such, we cannot make conclusions regarding the diagnosis of PTSD.

According to self-reported symptoms only, approximately 33% of the paramedics in the current sample demonstrated post-traumatic stress in the high range (according to recommended cut-off values). In comparison, it is estimated that approximately 8% of the general population will develop PTSD at some point in their lives. These findings suggest that paramedics have an increased risk of developing PTSD.

General Health & Well-Being

Our health survey included self-reports of physical functioning, emotional well-being, and pain. This provided an overall sense of participants' health and well-being at the time of the study.

The *Medical Outcomes Health Survey Short-Form (SF-36)* was used to measure various domains of self-reported health. Each domain gets at a different aspect of health according to participants' own perceptions only. The domains that are examined look at health from a more holistic perspective, getting at aspects of physical and mental well-being.

We were able to compare average scores from paramedics and spouses to normative data collected from a large sample of Canadians. Based on these comparisons, we can conclude that paramedics and spouses were better than average, close to the average, or worse than average on each domain of health. This information is summarized below:

SF-36 Health Factor	Paramedics	Spouses
Physical Functioning	average	better than average
Role Limitations due to Physical Health	worse than average	average
Energy/Fatigue	worse than average	worse than average
Well-Being	worse than average	worse than average
Bodily Pain	worse than average	worse than average
General Health (Overall)	worse than average	worse than average

Work-to-Home Spillover and the Role of Spouses

On a daily basis, feelings of work-related stress and burnout were brought into the home, potentially impacting the health and well-being in the home setting.

Paramedics who reported higher levels of stress and burnout on a daily basis were also more likely to report higher levels of stress and negative emotions at home. This phenomenon is often referred to as *stress spillover*.

Measuring the Impact on Spouses

One of the unique features of the current study was its inclusion of paramedics' spouses. This was done in order to examine the impact of paramedics' stress on spouses, as well as to understand their role in paramedics' ability to cope with stress at home.

The current study found evidence for another important phenomenon called *stress crossover*. This refers to stress being brought home from work by one spouse and having an impact on the other spouse.

In the current sample of paramedics and spouses, work-related stress and burnout reported by paramedics on a daily basis was also associated with increased stress for spouses at home (following the paramedic's work day). This suggests that work stress is transferring across settings and between individuals, and is not limited to the paramedics themselves.

Paramedic burnout was also associated with increased marital tension and conflict reported by both paramedics and spouses on a daily basis. This finding suggests that in addition to impacting stress at home, paramedic burnout is also contributing to tension and conflict between spouses.

Coping with Work Stress as a Couple

Our research also identified a number of coping strategies that influence these processes, either worsening or reducing the impact of work stress on paramedic and spouse functioning at home. Our findings show that spouses can play an important role in helping paramedics cope with work stress on a daily basis. Below is a brief summary of the adaptive and maladaptive coping strategies identified in the current sample of paramedics and spouses:

Adaptive Responses for Couples:

- *Empathic Responding* (showing empathy and understanding to one another)
- *Positive Reappraisal* (trying to see the positive in negative experiences)
- *Problem-Solving* (attempting to solve the problem head on, dealing with things)

Maladaptive Responses for Couples:

- *Interpersonal Withdrawal* (avoiding the person, not talking, isolating oneself)
- *Rumination* (dwelling on stressful experiences or overthinking things)
- *Avoidance* (ignoring the problem, not thinking about things)

Future Plans

This summary report provides a very brief overview of the basic findings gathered from the UBC SCOPE Study. More complex findings, including relationships between variables, will be presented in subsequent publications. We remain dedicated to the ongoing dissemination of results from this project.

Stay in touch...

If you are interested in staying informed about additional results from this project, please visit www.davidbking.net/scope, where we will provide updates and abstracts to all subsequent publications.

For questions or concerns, please contact us at stress.research@psych.ubc.ca.

You may also “Like” our Facebook page at www.facebook.com/medicscope to receive updates in your newsfeed.

Table 1. Paramedic Demographics and Job Information (Part 1)

	Full Sample	BCAS Only
	N (%)	N (%)
	105 (100)	86 (100)
	Missing : 1	Missing : 1
Gender		
Male	82 (78.1)	67 (77.9)
Female	22 (21.0)	19 (22.1)
Ethnicity		
Caucasian	90 (85.7)	81 (95.3)
Other	15 (14.3)	5 (5.8)
Primary Career Choice		
Yes	53 (50.5)	43 (50.0)
No	49 (46.7)	42 (48.8)
Missing	1 (0.9)	1 (1.2)
Changes to Job in last 6 months		
Full-time or part-time status	6 (5.7)	5 (5.8)
Schedule	34 (32.4)	29 (33.7)
Base station	26 (24.8)	22 (25.6)
Service area/location	19 (18.1)	17 (19.8)
Primary partner	38 (36.2)	32 (37.2)
Supervisor/management	44 (41.9)	38 (44.2)
Major policy or medical directive	43 (41.0)	30 (34.9)
Contract negotiations	41 (39.0)	28 (32.6)
Organized strike	6 (5.7)	4 (4.7)
Minor disciplinary action	11 (10.5)	9 (10.5)
Major disciplinary action	1 (0.9)	0 (0.0)
On the Job Injury or Job-Related Illness		
Yes	87 (82.9)	73 (84.9)
No	17 (16.2)	12 (14.0)
Missing	1 (0.9)	1 (1.2)
Medical Leave or Disability		
Y	57 (54.3)	46 (53.5)
N	46 (43.8)	38 (44.2)
Missing	2 (1.9)	2 (2.3)
Support received from Critical Incident Stress Peer Team		
Y	33 (31.4)	29 (33.7)
N	68 (64.8)	53 (61.6)
Missing	4 (3.8)	4 (4.7)

	Full Sample	BCAS Only
	N (%)	N (%)
	106 (100)	87 (100)
Province of Employment		
British Columbia	87 (82.1)	87 (100)
Ontario	25 (14.2)	
Nova Scotia	3 (2.8)	
Manitoba	1 (0.9)	
Level of Licensing		
Advanced Care Paramedic (ACP)	19 (17.9)	12 (13.8)
Critical Care Paramedic (CCP)	3 (2.8)	3 (3.4)
Primary Care Paramedic (PCP)	84 (79.2)	72 (82.8)
Employment Status		
Full-Time	101 (95.3)	82 (94.3)
Part-Time	5 (4.7)	5 (5.7)
Regular or Irregular		
Regular	---	67 (77.0)
Irregular	---	15 (17.2)
Missing	---	5 (5.7)
Relationship Status		
Married	74 (69.8)	62 (71.3)
In a committed relationship	26 (24.5)	19 (21.8)
Single or dating	4 (3.8)	4 (4.6)
Separated/Divorced	4 (3.8)	4 (4.6)
Widowed	0 (0.0)	0 (0.0)
Children		
Living with children	65 (61.3)	54 (62.1)

Table 2. Paramedic Demographics and Job Information (Part 2)