

Operational and Organizational Police Stress in an Ontario Police Department: A Descriptive Study

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ABSTRACT

Although research indicates that Canadian police officers generally experience a high degree of job-related stress, the majority of these studies examine *perceived* stress (i.e., stress that might be felt if certain situations were encountered) rather than actual stress (i.e., stress that has been felt when certain situations are encountered). Furthermore, when actual stress is investigated, there is a tendency to examine a narrow range of stressors. The present study examines the stress of Ontario police officers by having them rank the degree of stress caused by operational and organizational stressors. Officers ($N = 154$) completed a demographic questionnaire, the Operational Police Stress Questionnaire (PSQ-Op) and Organizational Police Stress Questionnaire (PSQ-Org). Results indicate that none of the stressors cause a great deal of stress but, overall, organizational stressors cause more stress than operational stressors. Ratings of stress did not differ with respect to gender, rank, marital status, having children, amount of exercise, and alcohol intake, but differences were found in relation to age, education-level, health problems, and job satisfaction.

Although there is relatively little research examining the topic of stress amongst Canadian police officers, the small amount of research that does exist suggests that officers are exposed to a wide range of operational and organizational stressors and experience a high degree of stress as a result (Anderson, Litzenberger, & Plecas, 2002; Golembiewski & Kim, 1990; Loo, 1986). Operational stressors are caused by work-related tasks (e.g., officer-involved shootings), whereas organizational stressors are generated by the police agency itself (e.g., inadequate departmental support) (Abdollahi, 2002). It may be argued that the degree of stress experienced by police officers is cause for significant concern, not only for the individual officer and their family, but also for the police agency (Tangri, 2003). Indeed, exposure to police stressors can lead to serious physical and psychological health problems, and these problems can result in reduced work productivity, increased absenteeism, higher turnover, and so on (Parsons, 2004).

While there is a vast literature that has examined the issue of police stress (see Abdollahi, 2002), this research is limited in several ways. First, the majority of research conducted in this area does not examine *actual* feelings of police stress (i.e., the stress that has been felt when certain situations are encountered), preferring instead to focus on perceived stress (i.e., the stress that might be felt if certain situations were encountered). Second, when research has examined actual feelings of police stress, a narrow range of stressors has typically been focused on (e.g., either operational or organizational stressors). Third, and related to the first two problems, research remains mixed as to what factors moderate the actual stress felt by officers. Taking steps to overcome these three limitations, using a sample of Canadian police officers, is the primary purpose of the current study. However, before presenting the details of this study, a brief review of the literature surrounding the issues discussed above will be undertaken.

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MEASURING PERCEIVED POLICE STRESS

The most common method for researching police stress is to have officers rank the level of stress associated with various police stressors using self-report questionnaires. Historically, these questionnaires have focused on measuring perceived stress experienced by officers by asking them to rank various stressors in terms of how much stress they would cause *if* the stressors were in fact encountered by the officer. For instance, in a representative study, Crowe and Stradling (1993) measured perceived stress in a sample of English police officers by asking them to rate the degree of stress that would be caused by various operational tasks. Results indicated that the main factors described were dealing with death and distressed relatives, routine deployments, dealing with people “not like us” (e.g., drug users), violent disturbances, and public disorder.

Similarly, Violanti and Aron (1994) sampled 103 police officers regarding their perceived stress by having them rank 60 police stressors using the Police Stress Survey (Spielberger, Westberry, Grier, & Greenfield, 1981). This survey asks officers to rate each potential stressor on a scale from 0 (no stress) to 100 (maximum stress). Results revealed that traumatic operational stressors were perceived as the most stressful, with the highest-ranked stressors including killing someone in the line of duty, a fellow officer being killed, and being involved in a physical attack. Many other studies of perceived stress have also been conducted (see e.g., Band & Manuele, 1987; Evans & Coman, 1993; Lawrence, 1984).

While studies of perceived stress may have some value, they are not without their limitations. Most obviously, these questionnaire studies reveal little about how much actual stress is caused by particular stressors. Indeed, many of the stressors included in perceived stress surveys may relate to things that police officers rarely ever experience (e.g., killing someone in the line of duty; Toronto Police Services, 1998). Thus, it is difficult to know how much weight to put on findings from these surveys. Perceived stress ratings may indicate how much stress an officer would experience when they do encounter a particular stressor, but the ratings could just as likely reflect wild guesses on the officer’s part, socially desirable responding, or conformity with police culture (Crowe & Stradling, 1993). The practical value of these findings is therefore questionable, as they say little about the genuine day-to-day stress experienced by officers.

MOVING TOWARD THE MEASUREMENT OF ACTUAL POLICE STRESS

More recently, questionnaire research in this area has begun to shift toward measuring actual police stress. While

such research has the advantage that it provides information that may be of significant practical value, the problem with much of this research is that it tends to focus on a narrow range of police stressors in any single study. In other words, the emphasis in this research tends to be on a particular type of stressor (e.g., traumatic or non-traumatic operational stressors). Rarely do studies examine the actual stress levels that are associated with stressors from various categories.

For example, Mitchell, Cowan, and Hamilton (1998) focused on ranking the most dangerous experiences for a Scottish sample of 300 police officers using a questionnaire and subsequent interview with 37 officers who had recently experienced threatening incidents. These researchers explicitly stated that they would pay very little attention to non-threatening incidents, even though it was acknowledged that these types of stressors also have the potential to cause stress. Findings showed the top three ranked stressors amongst this group of officers were injury and physical danger, negative consequences (e.g., being the subject of a complaint), and incidents getting out of control.

In contrast to the study by Mitchell et al. (1998), Lau, Hem, Berg, Ekeberg, and Torgersen (2006) recently examined the severity and frequency of police stress in the last six months using the 9-point rating scale from the Job Stress Survey (Vagg & Spielberger, 1999). This 20-item survey examines two main factors relating to stress: 10 items devoted to job pressure and 10 items devoted to lack of support. While these two potential sources of stress were extensively examined, and their relation to police personality and coping investigated, the results say nothing about a wide range of other potential police stressors, such as the operational tasks focused on by Mitchell et al (1998).

Although studies of the type discussed above do indicate the degree to which certain stressors cause actual stress amongst police officers, by focusing on a specific category of stressors it is not possible to determine whether certain types of stressors cause more stress than other types. One potential way around this problem is to conduct a study like that by Crank and Caldero (1991), where they used an open-ended questionnaire format to determine officers’ actual sources of stress. Such an approach certainly helps to minimize problems associated with closed-ended surveys, and has resulted in several interesting findings, such as the fact that organizational stressors seem to account for most of the actual stress experienced by officers. Another possible approach, and the approach that will be adopted in the current study, is to distribute close-ended surveys to officers, but to ensure that a variety of stressors are included as survey items.

POTENTIAL MODERATORS OF POLICE STRESS

Previous research has demonstrated that certain factors moderate the level of stress experienced by police officers, though it is not always clear as to the type of stress (e.g., operational or organizational) that is moderated (Brown & Fielding, 1993; He, Zhao, & Archbold, 2002; Kirkcaldy, Brown, & Cooper, 1998; Zachar, 2004). Many of these moderators are best characterized as demographic characteristics (e.g., gender, age, rank, etc.), while others can be characterized as personal characteristics (e.g., family structure, education-level, health problems, etc.). The results from studies examining the role of these moderators mirror results from studies that have examined police stress more generally. That is to say that support for many potential moderators is mixed, though some general trends have emerged in relation to others.

For example, with respect to demographic moderators, gender of the officer has produced mixed results. Some research (e.g., Martin, 1996; Patterson, 2003; Wherle-Einhorn, 1980) has found that, compared to their male counterparts, female officers experience higher levels of work-related stress. However, other research (e.g., Burke & Mikkelsen, 2005; Griffin, 2006; Haarr & Morash, 1999) finds little to no gender differences in relation to stress. Similarly, in regards to the age of officers, some research has found that age is negatively correlated with job stress, perhaps because older officers possess higher ranks (Patterson, 2003) or because older officers possess more adaptive coping mechanisms (Burke, 1993). However, other research has shown a curvilinear relationship between age and stress (Savery, Souter, & Weaver, 1993; Violanti & Aron, 1995).

In contrast to these inconsistent findings, rank has been found to be a fairly stable moderator of police stress, with certain ranks reporting significantly higher levels of stress (Deschamps, Paganon-Badinier, Marchand, & Merle, 2003; Kirkcaldy et al., 1998). Sergeants appear to be particularly stressed (Garcia, Nesbary, & Gu, 2004; Violanti & Aron, 1995), perhaps because, compared to officers at other ranks, officers at this rank are exposed to a wide range of operational *and* organizational stressors (Brown & Campbell, 1994; Gudjonsson & Adlam, 1985). Alternatively, it is possible that Sergeants experience more stress because these officers are most likely in the middle of their career, and thus at the peak of the potential curvilinear relationship between age and stress.

With respect to personal moderators, family variables such as marital status and having children have occasionally been found to relate to police stress (He, Zhao, & Ren, 2005; Morash, Haarr, & Kwak, 2006). Such forms of social support can potentially help officers deal with stressful events (Kirkcaldy et al., 1998). However, other

aspects of police work (e.g., shift work) make it difficult to balance the job with family responsibilities, which can cause increased feelings of stress on the part of officers with families (Burke, 1993; Singleton & Teahan, 1978). Likewise, physical exercise has not been found to be a consistent moderator of police stress, with some research indicating that exercise can help alleviate stress (Alexander & Walker, 1994), and other research indicating that it is not an effective coping mechanism (Iwasaki, Mannell, Smale, & Butcher, 2005; Long & Flood, 1993).

Education-level as a moderator of police stress has come under greater scrutiny recently (Scott, 2004), perhaps because of the increasingly higher demands for educational credentials amongst police candidates (Roberg & Bonn, 2004). Research in this area remains mixed, whereby some findings suggest a positive relationship between education-level and stress (Band & Manuele, 1987; Chen et al., 2006; Kirkcaldy et al., 1998) and other findings suggest no relationship (Burnett, 2001; Haarr & Morash, 1999). Interestingly, Kirkcaldy et al. (1998) found that officers with the most education do typically experience the highest levels of stress. However, this education-stress link seems to be an indirect one, with the amount of education impacting job satisfaction (i.e., the degree to which an individual is content with their job), which in turn influences levels of stress (i.e., those officers that are most satisfied with their job experience the lowest levels of stress).

In contrast to the mixed results associated with the previously mentioned personal moderators of police stress, research has consistently shown that there is a positive relation between certain health problems (e.g., cardiovascular disease) and stress, though the direction of causality (i.e., whether the health problems caused the stress, or vice versa) in this relationship is still a matter of debate (Parsons, 2004).

THE CURRENT STUDY

Based on issues that emerged from the literature review, the aims of the current study are four-fold:

1. To address the perceived versus actual stress issue in questionnaire research by using a self-report survey that focuses on extracting officers' actual feelings of stress associated with stressors encountered over the past six months.
2. To address the problems associated with focusing on one specific type of police stressor by using both an operational and an organizational police stress questionnaire on a single sample of active police officers.
3. To examine potential demographic and personal moderators of police stress in order to determine

how these variables relate to levels of police stress associated with operational and organizational stressors.

4. To fill the gap in Canadian police stress research by collecting data from a Canadian sample of active police officers.

METHOD

Participants

Participants included 154 police officers currently employed by a large urban Ontario police department. The sample consisted of 119 males and 35 females, aged between 24 to 58 years ($M = 38.94$; $SD = 7.87$), with an average of 15.70 ($SD = 8.73$) years of police experience. Included in the sample were 2 Superintendents, 5 Inspectors, 10 Staff Sergeants, 18 Sergeants, 17 Detectives, 101 Constables, and 1 unknown rank. The questionnaires used in this study were made available online to all 1600 departmental officers on a departmental server (overall response rate: 9.6%). However, of the 237 officers that opened the questionnaire link, 154 completed the questionnaire (submitted response rate: 65%). While Horn (1996) has indicated that it is often difficult to recruit police officers as participants, the size of the current sample is comparable to other stress studies conducted using police officers (e.g., Kohan & Mazmanian, 2003; Loo, 1994; Martelli, Waters, & Martelli, 1989; Violanti & Aron, 1994; Zhao, Thurman, & He, 1999).

Materials

A two-part questionnaire was used to assess officer stress. The first section included 18 questions regarding demographic variables (e.g., gender, age, rank) and personal information (e.g., family structure, education-level, health problems). The second section contained the Operational Police Stress Questionnaire (PSQ-Op) and the Organizational Police Stress Questionnaire (PSQ-Org), both of which were created by Dr. Donald McCreary and are available for use on-line (McCreary, 2004). These questionnaires consist of 20 items each and participants are required to circle how much stress each item caused them within the past six months. The scale for each item ranges from 1 (no stress at all) to 7 (a lot of stress). Participants also had the choice of selecting "not applicable" for each item (note that this is not a feature inherent in McCreary's surveys, but was included by the authors in this particular study).

McCreary and colleagues have validated both questionnaires using samples of Ontario police officers (McCreary, 2004), however norms for the questionnaires have not yet been made available. The questionnaires have acceptable internal consistency scores (Cronbach's

alphas > 0.90), high levels of convergent validity (as indicated by large positive correlations between the PSQ's, the Perceived Stress Scales (Cohen, Kamarck, & Mermelstein, 1983), and the Daily Hassles Scale (McCreary & Sadava, 1998)), and high levels of divergent validity (as indicated by large negative correlations between the PSQ's, the Job Satisfaction Survey (Spector, 1997), and the Job-Related Affective Well-Being Scale (Van-Katwyn, Fox, Spector, & Kelloway, 2000)).

Procedure

Police administration at the Ontario department consented to have their officers participate in the completion of the questionnaires. An email was subsequently distributed to all officers via the departmental server, requesting officers to follow the link and complete the online questionnaires. After the completion of the questionnaires, participants were prompted to electronically submit their responses and they were debriefed online.

RESULTS

Ranking of Police Stressors

Table 1 provides a summary of operational stressor rankings reported in order from most to least stressful. As illustrated in this table, the top three ranked stressors out of a possible 7-point rating were fatigue ($M = 4.47$, $SD = 1.86$), not enough time available to spend with friends and family ($M = 4.09$, $SD = 2.01$), and shift work ($M = 4.04$, $SD = 1.93$). The three lowest ranked stressors included making friends outside the job ($M = 2.60$, $SD = 1.76$), working alone at night ($M = 2.47$, $SD = 1.68$), and risk of being injured on the job ($M = 2.13$, $SD = 1.30$). The overall mean operational stress ranking was 3.33 out of 7.00 ($SD = 1.21$).

Table 1: Ranking Order of Operational Police Stressors (out of 7.00)

Stressor (N)	M	SD
Fatigue (e.g. shift work, overtime) (153)	4.47	1.86
Not enough time available to spend with friends and family (151)	4.09	2.01
Shift work (134)	4.04	1.93
Finding time to stay in good physical condition (156)	3.98	1.80
Work related activities on days off (147)	3.67	1.75
Eating healthy at work (156)	3.62	1.70
Occupational-related health issues (146)	3.60	2.16
Feeling like you are always on the job (154)	3.47	2.02
Negative comments from the public (152)	3.47	1.92
Paperwork (154)	3.45	1.80
Over-time demands (143)	3.37	1.83

Managing your social life outside of work (155)	3.36	1.84
Lack of understand from friends and family about your work (154)	3.12	1.98
Limitations to your social life (154)	2.95	1.78
Upholding a "higher image" in public (155)	2.87	1.86
Friends/family feel the effects of stigma associated with your job (153)	2.74	1.71
Traumatic events (143)	2.66	1.61
Making friends outside the job (154)	2.60	1.76
Working alone at night (118)	2.47	1.68
Risk of being injured on the job (143)	2.13	1.30

Table 2 provides a summary of organizational stressor rankings reported in order from most to least stressful. As illustrated in this table, the top three ranked stressors out of a possible 7 rating were the feeling that different rules apply to different people ($M = 4.78$, $SD = 1.78$), feeling like you always have to prove yourself to the organization ($M = 4.41$, $SD = 1.82$), and inconsistent leadership style ($M = 4.36$, $SD = 1.99$). The three lowest ranked stressors included internal investigations ($M = 2.63$, $SD = 1.76$), if you are sick or injured your co-workers seem to look down on you ($M = 2.53$, $SD = 1.93$), and lack of training on new equipment ($M = 2.50$, $SD = 1.63$). The overall mean organizational stress ranking was 3.55 out of 7.00 ($SD = 1.17$).

Table 2: Ranking Order of Organizational Police Stressors (out of 7.00)

Stressor (N)	M	SD
The feeling that different rules apply to different people (153)	4.78	1.78
Feeling like you always have to prove yourself to the organization (154)	4.41	1.82
Inconsistent leadership style (153)	4.36	1.99
Dealing with the court system (144)	4.17	2.02
Bureaucratic red tape (153)	4.14	1.77
Perceived pressure to volunteer free time (152)	3.91	1.90
Staff shortages (154)	3.81	1.83
Excessive administrative duties (152)	3.66	1.90
Dealing with co-workers (154)	3.60	1.64
Leaders over-emphasize the negatives (154)	3.58	2.15
Lack of resources (153)	3.54	1.80
Dealing with supervisors (153)	3.43	1.78
Unequal sharing of work responsibilities (153)	3.42	1.83
Constant changes to policy/legislation (154)	3.40	1.69
The need to be accountable for doing your job (153)	3.39	1.88
Too much computer work (152)	2.97	1.78
Inadequate equipment (147)	2.71	1.65
Internal investigations (147)	2.63	1.76
If sick or injured your co-workers seem to look down on you (149)	2.53	1.93
Lack of training on new equipment (152)	2.50	1.63

A paired samples t-test revealed that there was a significant difference between the overall average ranking for operational and organizational stressors, with organizational stressors ($M = 3.55$, $SD = 1.17$) being ranked

significantly higher than operational stressors ($M = 3.33$, $SD = 1.21$), $t(153) = 3.40$, $p < .01$. A one-way ANOVA also revealed that there were many significant differences between the average stress ratings for individual stressors. Perhaps of most interest is the finding that the average rating for traumatic events ($M = 2.79$, $SD = 1.60$) is significantly lower than the average rating for all remaining operational and organizational stressors ($M = 3.45$, $SD = 1.09$), $t(94) = 4.56$, $p < .001$.

Demographic and Personal Moderators

A variety of demographic and personal characteristics were examined using correlations, t-tests, and ANOVA statistics to determine whether they act as moderators of police stress. The following moderators were found to lack statistical significance: gender, rank, marital status, having children, amount of exercise, and alcohol intake. For a more extensive description of the findings related to these characteristics see Table 3. In contrast to these characteristics, a variety of demographic and personal characteristics were found to be significant moderators of police stress. Significant moderators included: age, the presence of health problems, education-level, and degree of job satisfaction (see Table 4). These significant moderators are described in more detail below.

As illustrated in Table 4, a significant negative correlation was observed between officer age and overall stress rankings, indicating that younger officers experience more stress than older officers. A significant negative correlation was also found between age and operational stress, but not between age and organizational stress.

An independent samples t-test indicated that officers who were experiencing health problems at the time of the current study felt significantly more overall stress compared to the officers who reported no health problems. This same finding emerged when operational and organizational stressors were examined separately.

A one-way ANOVA revealed significant differences between an officer's education-level and overall levels of police stress. Post-hoc tests revealed a significant difference, whereby officers with a high school diploma were significantly less stressed compared to those who received a university degree. This same finding was observed between officers' education-level and rankings of organizational stress, but no group differences were observed with respect to operational stress.

Police Stress

Table 3: Non-significant Demographic and Personal Moderators of Police Stress

Variable	Operational M (SD)	Significance	Organizational M (SD)	Significance	Overall M (SD)	Significance
Gender						
Male	3.32 (1.27)	$t(152) = .61, ns$	3.49 (1.21)	$t(152) = .06, ns$	3.41 (1.17)	$t(152) = 1.12, ns$
Female	3.33 (.98)		3.74 (.99)		3.54 (.90)	
Rank						
Superintendent	3.31 (1.97)	$F(6, 145) = 2.92, ns$	3.18 (1.15)	$F(6, 145) = 1.03, ns$	3.25 (1.89)	$F(6, 145) = 2.05, ns$
Inspector	2.84 (.23)		3.43 (.95)		3.13 (.57)	
Staff Sergeant	2.42 (.83)		2.86 (1.05)		2.64 (.75)	
Sergeant	2.79 (.94)		3.31 (.79)		3.05 (.80)	
Detective	3.05 (1.21)		3.46 (1.10)		3.26 (1.12)	
Constable	3.59 (1.22)		3.67 (1.22)		3.63 (1.15)	
Unknown	4.30 (0)		4.30 (0)		4.30 (0)	
Marital Status						
Married	3.25 (1.21)	$t(152) = -1.17, ns$	3.43 (1.14)	$t(152) = -1.97, ns$	3.34 (1.10)	$t(152) = -1.67, ns$
Unmarried	3.51 (1.19)		3.84 (1.19)		3.67 (1.12)	
Children						
Has children	3.23 (1.17)	$t(151) = -1.34, ns$	3.49 (1.12)	$t(151) = -1.14, ns$	3.37 (1.07)	$t(151) = -1.33, ns$
No children	3.54 (1.26)		3.72 (1.23)		3.63 (1.18)	
Exercise						
1-1 hrs	3.16 (1.23)	$F(5, 147) = .75, ns$	3.45 (1.24)	$F(5, 147) = .57, ns$	3.30 (1.20)	$F(5, 147) = .64, ns$
2-3 hrs	3.42 (1.24)		3.60 (1.19)		3.51 (1.12)	
4-5 hrs	3.09 (1.03)		3.29 (1.01)		3.19 (.92)	
6-7 hrs	3.27 (1.35)		3.74 (1.38)		3.51 (1.21)	
8-9 hrs	3.59 (1.37)		3.72 (1.22)		3.65 (1.32)	
10 hrs or more	3.76 (.69)		3.55 (.27)		3.43 (1.11)	
Alcohol Intake						
Everyday	3.49 (1.15)	$F(5, 148) = 1.01, ns$	3.66 (1.06)	$F(5, 148) = .34, ns$	3.57 (.98)	$F(5, 148) = .65, ns$
4-6 drinks per week	3.27 (1.20)		3.62 (1.19)		3.45 (1.11)	
2-3 drinks per week	3.36 (1.22)		3.44 (1.14)		3.40 (1.12)	
1 drink per week	3.43 (1.31)		3.64 (1.21)		3.54 (1.21)	
1-3 drinks per month	3.19 (1.16)		3.45 (1.21)		3.28 (1.11)	
Never	4.18 (.93)		3.96 (1.09)		4.07 (.89)	

Table 4: Significant Demographic and Personal Moderators of Police Stress

Variable	Operational M (SD)	Significance	Organizational M (SD)	Significance	Overall M (SD)	Significance
Age		$r = -.22, p < .01$		$r = -.15, ns$		$r = -.22, p < .01$
Health Problems						
Yes	3.72 (1.16)	$t(151) = 3.38, p < .01$	3.91 (1.10)	$t(151) = 3.10, p < .01$	3.81 (1.05)	$t(151) = 3.47, p < .01$
No	3.12 (1.18)		3.36 (1.16)		3.24 (1.10)	
Education-level						
High-school	2.95 (1.26)	$F(3, 149) = 3.28, ns$	2.87 (1.07)	$F(3, 149) = 6.43, p < .001$	2.91 (1.12)	$F(3, 149) = 5.15, p < .01$
College	3.21 (1.09)		3.57 (1.10)		3.39 (.99)	
University	3.66 (1.26)		3.89 (1.16)		3.78 (1.15)	
Post-graduate	2.66 (.76)		2.64 (.84)		2.65 (.78)	
Job Satisfaction						
Extreme unsatisfied	4.06 (1.45)	$F(4, 149) = 5.36, p < .001$	4.85 (1.09)	$F(4, 149) = 9.68, p < .001$	4.46 (1.17)	$F(4, 149) = 8.21, p < .001$
Unsatisfied	3.85 (1.17)		3.91 (.92)		3.88 (.97)	
Neutral	3.67 (1.15)		4.00 (1.11)		3.84 (1.09)	
Satisfied	3.02 (1.12)		3.22 (1.11)		3.11 (1.03)	
Extreme Satisfied	2.74 (.97)		2.75 (.82)		2.75 (.80)	

Table 5: Correlations Between Potential Moderators

	Gender	Rank	Marital Status	Having Children	Exercise	Alcohol	Age	Health Problems	Education-level	Job Satisfaction
Gender	1.00	.00	.35**	.15	.22**	.22**	-.16*	.03	.14	-.07
Rank		1.00	-.08	-.28**	.14	-.20*	.52**	-.04	.26**	.04
Marital Status			1.00	.47**	.35**	.09	-.24**	.06	-.09	-.07
Having Children				1.00	.34**	.12	-.42**	.00	.20*	-.07
Exercise					1.00	.15	-.29**	.10	.04	-.05
Alcohol						1.00	-.06	-.07	.04	.11
Age							1.00	-.03	-.29**	.21**
Health Problems								1.00	.07	.23**
Education-level									1.00	-.16*
Job Satisfaction										1.00

* $p < .05$

** $p < .01$

Finally, a one-way ANOVA revealed significant differences between an officer's rating of job satisfaction and overall police stress. Post-hoc tests revealed significant differences, whereby officers with extremely unsatisfied or unsatisfied ratings experienced significantly higher levels of overall stress compared to officers who had satisfied or extremely satisfied job ratings. A similar finding occurred for operational stress rankings, where officers who were extremely unsatisfied or unsatisfied with their job ranked their operational stress levels as significantly higher than those with satisfied or extremely satisfied ratings. Likewise for organizational stressors, where officers who were extremely unsatisfied with their job ranked their organizational stress levels as significantly higher than those with satisfied or extremely satisfied job ratings.

Correlations between Potential Moderators

Previous research has indicated that certain moderators of police stress may be related to one another (Kirkcaldy et al., 1998; Patterson, 2003). To examine this issue we explored the inter-correlations between all potential moderators examined in the current study. Several significant correlations were revealed and can be examined in Table 5.

DISCUSSION

The aim of the current study was to examine actual feelings of police stress experienced by a sample of Canadian police officers with respect to both operational and organizational stressors, and to identify potential moderators of this stress. This was accomplished by having 154 police officers from a large urban police agency in the province of Ontario complete a demographic questionnaire and two psychometrically sound stress surveys – the Operational Police Stress Questionnaire (PSQ-Op) and the Organizational Police Stress Questionnaire (PSQ-Org) (McCreary, 2004). The results from this exploratory study revealed several important findings that are worthy of further investigation.

Operational and Organizational Police Stress Rankings

The current study revealed three main findings in regard to stress experienced by Ontario police officers: (1) on average, none of the stressors included on the PSQ-Op or the PSQ-Org ranked in the extreme ranges, (2) overall, organizational stressors ranked significantly higher than operational stressors, and (3) the traumatic events stress item ranked significantly lower than the other police stressors included on the surveys. Each of these findings will be discussed separately.

Average rankings - Each officer ranked stressors on a 7-point scale ranging from 1 (no stress at all) to 7 (a lot of stress) and the average rating for each individual stressor was found to fall consistently within the moderate range. More specifically, the stressor that was ranked the lowest across both stress surveys was risk of being injured on the job ($M = 2.13$) and the highest ranked stressor was the feeling that different rules apply to different people ($M = 4.78$). This finding is extremely interesting and is inconsistent with much previous research, especially perceived stress research, where very high levels of stress are often reported (e.g., Violanti & Aron, 1994). It indicates that officers at this Ontario police agency do not experience excessive amounts of stress in relation to any of the stressors included on the surveys, or at least they do not report such feelings when asked to do so.

Such a result could emerge for a variety of reasons. First, although it seems unlikely that the officers sampled in the current study are substantially different from officers surveyed in other stress studies, it may be that our particular sample of officers is comprised of individuals who either possess stress-resistant personality traits (e.g., hardiness) (Kobasa, 1979), or have developed relatively adaptive coping skills (Anshel, 2000). No personality or coping measures were used in the current study, which would have been useful in addressing this issue. Second, while the police agency examined in this study is among the largest municipal police services in Ontario, it remains one of the safest regions in Canada with a below average crime rate. This fact could contribute to the low levels of police stress observed in our sample, especially in relation to operational stressors.

Third, it is also possible that the sampled officers merely adhered to a response bias when filling out the stress surveys and chose to consistently rank stressors as moderately stressful. Such a finding is common in other areas of psychology and often plagues survey research (Mazor, Clauser, Field, Yood, & Gurwitz, 2002). Finally, McCreary's (2004) surveys are somewhat unique in that they do not *explicitly* include many of the extreme stressors that are typically included on stress surveys (e.g., killing someone in the line of duty) (e.g., Finn & Tomz, 1997; Garcia, et al., 2004; Patterson, 2001; Violanti & Aron, 1994). Instead, many extreme stressors are grouped implicitly under one stressor: traumatic events. As a result, the sampled officers may have felt that the items included on the PSQ-Op and PSQ-Org simply did not warrant extreme ratings.

Operational versus organizational rankings - In the current study, organizational stressors, on average, were ranked significantly higher than operational stressors, which accords well with other research (e.g., Alexander,

Innes, Irving, Sinclair, & Walker, 1991; Ayres & Flanagan, 1994; Hogg & Wilson, 1995; Storch & Panzarella, 1996). If such a result can be replicated this would be encouraging for police agencies, as organizational stressors have the greatest potential for change through departmental structure and policy. For instance, inconsistent leadership style was ranked as relatively stressful. Police management can address this issue through various types of leadership or management training. For example, a flatter managerial structure and/or decentralized decision-making have been proposed as ways of dealing with problematic leadership issues (Fleming & Lafferty, 2000).

While this finding (i.e., that organizational stressors rank higher, on average, than operational stressors) is consistent with recent stress research in the policing domain, we are unsure how much weight should be put on these results. The cause for our hesitation centers around a variety of potential issues with McCreary's (2004) surveys. First, certain stressors included in McCreary's surveys are designated (as an operational or organizational stressor) in a way that is inconsistent with other stress research (e.g., McCreary defines shift work as an operational stressor, whereas other researchers have defined it as an organizational stressor or as belonging to both categories (e.g., Ayres & Flanagan, 1994; Finn & Tomz, 1997; Violanti & Aron, 1994)). Clearly, more effort has to be made by stress researchers to develop clearer definitions of stressor categories so that these sorts of issues can be resolved in the future. Second, there are instances in McCreary's surveys where individual survey items are also listed as examples under other survey items (e.g., shift work is a survey item, but it is also given as an example under fatigue, another survey item on the PSQ-Op). Such an issue might cause confusion amongst respondents when they are completing the surveys. Finally, several items included on the PSQ-Op and PSQ-Org are very similar (e.g., managing your social life outside of work, limitations to your social life, making friends outside of the job). It is not clear to us whether or how this issue might influence the results of the current study.

Routine versus traumatic stressors - In contrast to the findings reported by Violanti and Aron (1994), amongst others (e.g., Crowe & Stradling, 1993; Karlsson & Christianson, 2003), where traumatic stressors (e.g., killing someone in the line of duty) were found to be the most highly ranked items, the current study found that routine stressors (e.g., fatigue, the feeling that different rules apply to different people, feeling like you always have to prove yourself to the organization, etc.) were rated as more stressful than traumatic events. Indeed, traumatic events, which represents the only traumatic item in McCreary's (2004) surveys, was ranked 17 out of 20 on

the PSQ-Op, and was rated as significantly less stressful than all other stressors combined.

There are several possible explanations for this finding. First, it is highly likely that when officers are asked about actual feelings of stress, rather than perceived stress, stressors that may be mildly frustrating, but frequently occurring, cause more stress than highly traumatic, but extremely rare, incidents. In this regard, it would have been very useful to have the officers rate each survey item in terms of their frequency of occurrence as other researchers have recently done (e.g., Anderson et al., 2002). A second, equally likely explanation, is that the traumatic event item included on the PSQ-Op may not be sufficiently specific to elicit high ratings of actual stress. Indeed, when presented with this item, our participants may not have considered certain traumatic events (e.g., dealing with child victims of abuse) that would have caused them to rate this item as highly stressful. Alternatively, less traumatic events that came to a respondent's mind when reflecting on this item may have effectively canceled out the stress that might be associated with more serious traumatic events that came to mind. Regardless of the explanation, the general nature of the traumatic events item on the PSQ-Op is certainly at odds with how traumatic events are treated on other police stress surveys (where specific traumatic events are presented as separate survey items) (e.g., Patterson, 2001; Violanti & Aron, 1994) and the importance of this difference may be worthy of further investigation.

Moderators of Police Stress

In terms of the moderator analyses conducted in the current study, many of the findings were expected in light of previous literature. For example, the results from the present study indicate that gender, marital status, having children, and amount of exercise do not moderate levels of police stress amongst the officers we sampled, but that education level and age do. These results are not particularly surprising given that the results from previous research examining these potential moderators have been mixed (e.g., Alexander & Walker, 1994; Band & Manuele, 1987; Brown & Campbell, 1990; Brown & Fielding, 1993; Burke & Mikkelsen, 2005; Burnett, 2001; Haarr & Morash, 1999; He et al., 2005; Iwasaki, et al., 2005; Martin, 1996; Patterson, 2003). Our findings simply contribute to a mix of already confusing results. Likewise, the moderating effects of health (officers suffering from health problems report more stress) and job satisfaction (officers who are less satisfied with their job report more stress) are predictable from previous research, which has consistently shown that these factors reliably moderate levels of stress (e.g., Crank & Caldero, 1991; Manzoni & Eisner, 2006; Parsons, 2004; Zhao et al., 1999).

Amongst the most surprising findings in relation to the current moderator analyses was the fact that officer rank was not found to be a significant moderator of stress. In contrast to much published research, middle ranking officers in our study (specifically Sergeants) did not report significantly higher levels of stress compared to lower and higher ranked officers. Perhaps the best explanation for this finding is simply that the Sergeant rank was underrepresented in the current sample (i.e., only 18 out of the 154 participants were Sergeants, with the majority of participants ($n = 101$) being Constables). In addition, our study found alcohol intake to be unrelated to stress, which is surprising given that previous research has been quite consistent in showing that alcohol consumption is associated with higher levels of job stress amongst police officers (Carpenter & Hasin, 1999; McKay, 1999). Although it was clearly stated that the officers' responses to the surveys would be confidential, it is possible that this counter-intuitive result can be explained by officers being reluctant to provide accurate information about their alcohol intake (e.g., for fear of this being reported back to their police agency).

While the current study improved upon previous studies of police stress, by using a questionnaire that examined actual versus perceived stress in relation to both operational and organizational stressors, there are a variety of potential problems with the current study that necessarily limit our interpretation of the results.

First, and most obviously, the response rate of the online questionnaire was extremely low. The surveys were made available to 1600 sworn officers, yet only 237 accessed the link to the survey and only 154 submitted the survey. This low participation rate may in part be due to a lack of any incentive for completing the questionnaires or the lack of any face-to-face interaction and distribution. In the future, it will be beneficial to initially inform the participants of the length of the survey and the time it will take to complete the survey in order for them to properly gauge their choice to participate. Furthermore, it will be important in the future to inform all potential police participants (and participating police agencies) of the importance of stress research, to ensure that officers appreciate the value of taking part in such research endeavours.

Second, the demographic portion of the questionnaire may have been inadequate for dealing with certain potentially important moderators of police stress. For instance, instead of relying on a single question, job satisfaction could have been measured more systematically using the 20-item Minnesota Satisfaction Questionnaire – Short Form (Weiss, Dawis, England, & Loquist, 1967) or any of a large number of other survey instruments (see van Saane, Sluiter, Verbeek, & Frings-Dresen, 2003).

However, we feel it is important to emphasize that, as the overall comprehensiveness of the questionnaires that are used in this type of research increases, so will the time that is required to complete the surveys. In our opinion, this will likely have a negative impact on the participation rate.

Third, this study relied solely on a self-report questionnaire of police stress. The advantage of collecting data in this way is the ease with which the survey can be distributed and responded to by participants. However, with self-report questionnaires there is always the potential for response biases, especially for reasons of social desirability (Zerbe & Paulhus, 1987). This problem is especially relevant in the police culture as the desire to conform (i.e., report low levels of stress in order to appear resilient or to avoid admitting weaknesses) is typically high (Brown et al., 1999). In the future, it may be beneficial to combine subjective measures of stress (e.g., self-report questionnaires) with objective measures (e.g., cortisol levels). Such an approach has been recently tested in a Canadian study of police stress with very interesting results (Anderson et al., 2002).

Fourth, as highlighted in the Discussion, there are some potential problems with the use of McCreary's (2004) stress surveys, including the questionable designation of certain stressors as operational instead of organizational, the provision of examples for specific stressors when those examples are also provided as separate stressors, the use of very similar stressors as separate items, and a lack of clarity associated with other stressors, most notably the traumatic events item. The impact of these issues on the results of the findings in the current study (if they are in fact even serious issues) is unclear, but an examination of their impact in the future is warranted if the PSQ-Op and PSQ-Org are going to be extensively used to examine police stress in the future.

The current study provides a relatively positive outlook on the actual feelings of stress reported by one sample of Canadian police officers. Findings indicated that, overall, the current sample of officers are not experiencing excessive amounts of stress, though they are slightly more stressed by organizational stressors than operational stressors. Of course, these are just preliminary results, and they need to be replicated before any firm conclusions can be drawn (and we have no indication yet as to whether similar results would emerge in other Canadian police agencies). Once the most important police stressors are identified, future research can focus on the best remedial measures (both prevention and management) for dealing with stress. This research will have a positive impact on individual police officers and the agencies for which they work.

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