

## Highly Rated and most Frequent Stressors among Police Officers: Gender Differences

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**Abstract** This descriptive study examined the top five most frequent and highly rated occupational stressors from the Spielberger Police Stress Survey among 365 police officers enrolled in the Buffalo Cardio-Metabolic Occupational Police Stress (BCOPS) Study (2004–2009). Prevalence, frequency, and rating of stressors were compared across gender. Poisson regression was used to estimate the prevalence and prevalence

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ratio (PR) of events. Analysis of variance was used to compare mean frequency of occurrence and mean stress ratings by gender. Many reported stressors dealt with violent situations. Responding to family disputes (83 %) was reported as the most frequent stressor and exposure to battered children (27 %) was the most highly rated stressor (mean rating:  $67.6 \pm 35.3$ ). Killing someone in the line of duty (mean rating:  $66.3 \pm 43.0$ ) and experiencing a fellow officer being killed (mean rating:  $65.3 \pm 40.6$ ) were highly rated but infrequent (0.27 % and 3.6 %, respectively). Male officers tended to report more frequent stressors which took away from their time off duty such as court appearances (PR = 1.26, 1.04–1.52) and working second jobs (PR = 2.37, 1.57–3.57). In contrast, female officers reported experiencing a 37 % higher prevalence of lack of support from supervisor (PR = 0.63, 0.48–0.82) relative to male officers. Results of the present study are discussed within the context of specific police stressors and gender.

**Keywords** Police · Stress · Ratings · Frequency · Gender differences

## Introduction

There is a general consensus that police work is an occupation replete with stress (Violanti & Aron, 1995; Finn & Tornz, 2000; Deschamps, Paganon-Badinier, Marchand, & Merle, 2003; Collins & Gibbs, 2003; Kirshman, 2006; Marmar, et al., 2006; Weiss et al., 2002; O'Toole, Vitello, & Palmer, 2014; Violanti, et al., 2006). Given this previous research evidence, police officers and others who work in high stress occupations are appropriate groups in which to study the effects of work stress.

Several sources of police work stressors have been identified: (1) the obvious inherent aspect, which involves danger and job risk; (2) the police administrative organization; and (3) lack of organizational support (Spielberger, Westberry, Grier, & Greenfield, 1981, 1982; Martelli, Waters, & Martelli, 1989; Bonnar, 2000; Kop & Euwema, 2001; Patterson, 2002; Patterson, 2003; Violanti, 2014). Of these, the police administrative organization appears to be a frequently mentioned source of stress for officers. Administrative stressors include, job demands, job insecurity, insufficient pay, and excessive paperwork (Violanti et al., 2014).

Despite previous research on police stressors, a question that needs further exploration is how officers rate work stressors and the frequency at which these stressors occur. Frequency could be an important aspect, as incidence of occurrence may strongly influence ratings. A few studies have reported the self-rated stressfulness of police events but not their frequency. For example, Violanti and Aron (1994, 1995) found that the top four of sixty most stressful police work events were killing someone while on duty, witnessing a fellow officer killed, being physically attacked, and seeing abused and battered children. O'Toole et al. (2014) found that physical threats, lack of support, and organizational pressure were the highest ranked stressors. Collins and Gibbs (2003) found that the police organizational culture and an officer's workload were the highest ranked stressors. These prior studies have often used stressors that are highly rated because of the public attention that these events receive but there is little or no information on prevalence of frequently occurring stressors and their potential association with health outcomes. In addition, literature on the association between frequency

of occurrence and the rating of stressfulness is not available. Therefore, it is worthwhile to examine events that occur frequently, even if they are not highly rated, along with those that are highly rated but occur rarely.

## Gender Issues

A host of prior studies conducted in the 1980s and 1990s (Haarr, 1997; Martin, 1992; Wexler and Logan, 1983) highlight some of the unique stressors female officers experienced. These include negative attitudes of male officers towards female officers, the lack of acceptance by police agencies, feeling the need to prove themselves, and experiencing sexual harassment. While progress has been made to increase the number of female officers in U.S. police agencies (Lonsway, 2007), many of these same stressors still persist. Morash, Kwak and Haarr (2006) found that women officers reported significantly higher levels of harassment, bias, underestimation of physical abilities, and lack of influence than their male counterparts. Thompson, Kirk and Brown (2006) found that interpersonal stressors and lack of support, contributed significantly to stress levels. Haarr (1997) and Shelley, Morabito & Tobin-Gurley (2011) reported that women felt that men officers questioned their abilities to do the job. Sexual harassment and discrimination are often mentioned as stressors among women officers (Deschamps et al., 2003; Thompson et al., 2006; Chaiyavej & Morash, 2008).

A recent study (Kurtz, 2008) suggests that most research on police stress fails to address a fundamental concern—that of gender. The results from this study suggests that stress and burnout by police officers is not just simply a response to high stress environment, rather it is embedded in the gender structure and process of policing. A few studies have focused on gender differences in the relationship between police stress and health outcomes, yet opportunities exist to expand our understanding. Among these, Hartley et al. (2011) reported that police stressors were associated with the metabolic syndrome in female but not male police officers. Yoo and Franke (2010) found that female police officers had higher levels of stress than male police officers and higher levels of hypercholesterolemia and diabetes than the general female population.

In the present paper, we add to past research on police stressors by describing by gender the ranking, frequency, and prevalence of stressors based on the comprehensive listing found in the 60-item Police Stress Survey (Spielberger et al., 1981). The Police Stress Survey allowed an analysis of specific and unique work stressors found in policing. This instrument is standardized and well-accepted in the literature. Here we will describe the standardized appraisal of stressors and describe important differences between men and women officers in the frequency, ratings, and prevalence of work stressors.

## Method

### Design and Study Participants

Participants were police officers who were enrolled in the Buffalo Cardio-Metabolic Occupational Police Stress (BCOPS) Study. The BCOPS Study was a cross-sectional epidemiologic study conducted between 2004 and 2009 to examine the association

between workplace stress and subclinical cardiovascular disease (CVD). The Center for Health Research, School of Public Health and Health Professions, State University of New York at Buffalo in Buffalo, NY served as the data collection site. At the initiation of the study in 2004, all 710 police officers working in the Buffalo Police Department were invited. Of the 710, 466 chose to participate but we excluded two pregnant officers, yielding 464 officers who participated in the study. These 464 officers were examined once between the period from 2004 to 2009. No specific inclusion criteria were used for the study, other than the participant would be a sworn police officer and willing to participate in the study. The study was approved by the University of New York at Buffalo Internal Review Board and the National Institute for Occupational Safety and Health Human Subjects Review Board. For the current study we restricted the analyses to those officers who had data on the relevant police stress survey items and have worked in the past month ( $n = 365$ ).

## Measures

The Spielberger Police Stress Survey is a 60-item instrument for assessing specific sources of stress in police work (Spielberger, et al., 1981). For each item, the officer rates the perceived stressfulness of experiencing the event from 0 to 100 (0 = no stress, 100 = maximum stress), which creates a stress rating for each event. The officer also provides the frequency of occurrence of each event over the past month (total frequency in past month) and past year (total frequency in past year). The 60-item survey consists of three subscales: administrative and organizational pressure (23 items- sample items: excessive paperwork, negative attitudes toward police officers, insufficient manpower to adequately handle a job); physical and psychological threat (24 items- sample items: dangerous situations and experiences; and lack of support (13 items- sample items: political pressures and relationships with supervisor and coworkers). The subscales have acceptable internal consistency scores (Cronbach's alpha >0.90). The Spielberger Police Stress Survey has no standard or reference to use in rating the event's stressfulness and, therefore, each item was rated independently.

On the examination date of the BCOPS study, questionnaires were administered to collect demographic and lifestyle characteristics including gender, race/ethnicity, years of education, marital status, smoking status, rank, age, years of police service, body mass index, alcohol consumption, sleep duration, and physical activity. Objective work history records which contained a day-by-day account of activities, for each officer, were used to determine shift work.

## Statistical Analysis

Officers who had worked during the past month and had complete data on the Spielberger Police Stress Survey were included in the current analyses ( $n = 365$ , 265 men and 100 women). Data from the work history records were used to verify whether each officer worked in the past month or not. The chi-square test and analysis of variance (ANOVA) were used to describe and compare the demographic and lifestyle characteristics of the study participants by gender.

The top five police stressors (from the 60-item survey) were identified using two approaches. In the first approach, the stressors were ranked using mean frequency of

occurrence in the past month. To minimize recall bias, we used frequency of occurrence in the past month rather than frequency of occurrence in the past year. This approach yielded the top five most frequently occurring events in the past month. In the second approach, the stressors were ranked using mean stress rating (0–100) and the top five most stressful events were selected. The two approaches were also used to select the top five stressors for each of the three subscales of the Police Stress Scale - administrative and organizational pressure; physical and psychological threat; and lack of support. To describe whether the top five stressors differed by gender, separate ranking of the events were conducted for men and women officers.

Prevalence was defined as occurrence of the event (stressor) at least once in the past month. The prevalence of each of the top five stressors (overall prevalence as well as prevalence by gender) and the prevalence ratio (PR) comparing prevalence in men relative to women were estimated using the Poisson regression model. Unadjusted prevalence ratios and their 95 % confidence intervals were estimated. The analysis of variance (ANOVA) was used to compare the mean frequency of occurrences and the mean stress ratings between men and women. For all tests, statistical significance was assessed at the 5 % level and all analyses were conducted using the SAS system, version 9.3. (SAS Institute, Cary, NC).

## Results

The study sample (Table 1) consisted of 73 % males and the majority was white (78 %), married (74 %), held the rank of patrol officer (72 %), and were never smokers (60 %). The mean age was 41 years (SD = 6.6). Male officers had significantly higher body mass index (BMI) and alcohol consumption compared to women (Table 1). Education, marital status, and smoking status differed significantly across gender with female officers being more educated, less likely to be married, and more likely to be a current or former smoker. In addition, a significantly smaller percentage of women worked the night shift compared to their male counter parts.

Table 2 presents the top five most frequently occurring stressors in the past month. These included dealing with family disputes and crisis situations, responding to a felony in progress, fellow officers not doing their job, making critical on-the-spot decisions, and insufficient manpower to adequately handle a job. Overall 77 % to 83 % of the officers experienced these stressors at least once in the past month but the prevalence of these events did not differ between men and women. Three of the top five most frequent stressors represented physical/psychological danger. Examination of the top five stressors for each of the subscales shows that gender differences in prevalence were evident only for the following three events: court appearances on day off or following night shift, inadequate or poor quality equipment, and working a second job. Among men, the prevalence of court appearances on day off or following night shift was 26 % higher compared to women officers (PR = 1.26, 1.04–1.52). Working a second job was two times more prevalent in men compared to women (PR = 2.37, 1.57–3.57). On the other hand, women officers experienced higher prevalence of inadequate or poor quality equipment compared to men (unadjusted PR = 0.82, 0.69–0.97).

Table 3 presents the five most highly rated stressful events. These included exposure to battered or dead children, killing someone in the line of duty, fellow officer killed in

**Table 1** Demographic and life style characteristics of study participants, BCOPS Study, 2004–2009

Characteristics	All (n = 365)		Men (n = 265)		Women (n = 100)	
	N	% or mean ± SD	N	% or mean ± SD	N	% or mean ± SD
<b>Race</b>						
White	279	77.7	207	79.9	72	72.0
Black/Hispanic	80	22.3	52	20.1	28	28.0
<b>Education<sup>*</sup></b>						
≤ High school/GED	39	10.7	35	13.3	4	4.0
College <4 yrs	206	56.8	145	55.1	61	61.0
College 4+ yrs	118	32.5	83	31.6	35	35.0
<b>Marital status<sup>*</sup></b>						
Single	44	12.1	21	8.0	23	23.0
Married	268	73.8	209	79.5	59	59.0
Divorced	51	14.1	33	12.6	18	18.0
<b>Smoking status<sup>*</sup></b>						
Current	62	17.2	36	13.6	26	26.8
Former	83	23.0	54	20.5	29	29.9
Never	216	59.8	17	65.9	42	43.3
<b>Rank</b>						
Patrol officer	263	72.3	184	69.7	79	79.0
Sergeant/Lieutenant	48	13.2	36	13.6	12	12.0
Captain/Detective	53	14.6	44	16.7	9	9.0
<b>Shift work (past month)<sup>†*</sup></b>						
Day	186	51.0	110	41.5	76	76.0
Afternoon	101	27.7	93	35.1	8	8.0
Night	78	21.4	62	23.4	16	16.0
Age (years)	365	41.2 ± 6.6	265	41.2 ± 6.9	100	41.1 ± 5.8
Years of service (years)	364	14.6 ± 6.9	264	14.9 ± 7.1	100	13.8 ± 6.5
Body mass index(kg/m <sup>2</sup> ) <sup>*</sup>	364	29.4 ± 4.8	265	30.5 ± 4.2	99	26.2 ± 4.7
No. of alcohol drinks/week <sup>*</sup>	360	5.6 ± 9.5	262	6.3 ± 10.5	98	3.7 ± 6.2
Average hours of sleep/day	363	6.2 ± 1.2	262	6.3 ± 1.2	100	6.4 ± 1.2
Hours of physical activity/week <sup>‡</sup>	364	15.9 ± 13.4	265	15.2 ± 13.1	99	17.6 ± 14.3
Second job hours/week <sup>*</sup>	365	4.4 ± 7.4	265	5.4 ± 7.9	100	2.0 ± 5.2

\* Represent significant differences in mean levels or distribution between men and women (P-value <0.05).

† Physical activity hours include occupational, household, and leisure time activities. +Shift work refers to the dominant shift an officer spent during the past month derived using payroll work history records

the line of duty, situations requiring use of force, and physical attack on one's person. The prevalence of these top five stressful events in the past month ranged from 0.3 % to 59 %; killing someone in the line of duty (0.3 %) and fellow officer killed in the line of duty (3.6 %) had the lowest prevalence, while situations requiring use of force (58.5 %) had the highest prevalence in the past month. The prevalence of these top five stressors

**Table 2** Prevalence and prevalence ratio (PR) of the top five most *frequently occurring* stressor events in the past month by gender

Type of stressor	Description	Prevalence (%)			Prevalence ratio (PR) and 95 % CI
		All (n = 365)	Men (n = 265)	Women (n = 100)	
Overall (60 stressors)	Dealing with family disputes and crisis situations	82.9	82.5	84.0	0.98 (0.89–1.09)
	Responding to a felony in progress	80.3	81.5	77.0	1.06 (0.94–1.20)
	Fellow officers not doing their job	77.8	77.2	79.6	0.97 (0.86–1.09)
	Making critical on-the-spot decisions	78.1	80.0	73.0	1.10 (0.96–1.25)
	Insufficient manpower to adequately handle a job	77.0	75.1	82.0	0.92 (0.82–1.03)
Administrative/Professional (23 stressors)	Insufficient manpower to adequately handle a job	77.0	75.1	82.0	0.92 (0.82–1.03)
	Experiencing negative attitudes toward police officers	74.5	73.1	78.0	0.94 (0.83–1.06)
	Public criticism of police	79.4	80.7	76.0	1.06 (0.94–1.20)
	Court appearances on day off or following night shift	67.7	71.7	57.0	1.26 (1.04–1.52)
	Excessive paperwork	56.9	58.0	54.0	1.07 (0.87–1.32)
Physical/Psychological danger (24 stressors)	Dealing with family disputes and crisis situations	82.9	82.5	84.0	0.98 (0.89–1.09)
	Responding to a felony in progress	80.3	81.5	77.0	1.06 (0.94–1.20)
	Making critical on-the-spot decisions	78.1	80.0	73.0	1.10 (0.96–1.25)
	Frequent changes from boring to demanding activities	64.8	64.8	65.0	1.00 (0.84–1.18)
	Exposure to adults in pain	70.1	70.5	69.0	1.02 (0.88–1.19)
Lack of support (13 stressors)	Fellow officers not doing their job	77.8	77.2	79.6	0.97 (0.86–1.09)
	Inadequate or poor quality equipment	59.9	56.3	69.0	0.82 (0.69–0.97)
	Working a second job	39.8	47.4	20.0	2.37 (1.57–3.57)
	Political pressure from within the department	44.1	47.2	36.0	1.31 (0.98–1.75)
	Inadequate support by department	44.1	43.0	46.9	0.92 (0.71–1.18)

Prevalence ratios compare prevalence of the event in men relative to women

did not differ by gender. Note that all the top five most stressful events represent physical/psychological danger. The prevalence of the top five most stressful events

**Table 3** Prevalence and prevalence ratio (PR) of the top five *most stressful* events in the past month by gender

Type of stressor	Description	Prevalence (%)			Prevalence ratio (PR) and 95 % CI
		All (n = 365)	Men (n = 265)	Women (n = 100)	
Overall (60 stressors)	Exposure to battered or dead children	27.1	27.2	27.0	1.01 (0.69–1.47)
	Killing someone in the line of duty	0.27	0.38	0.00	NA
	Fellow officer killed in the line of duty	3.6	3.77	3.00	1.26 (0.35–4.48)
	Situations requiring use of force	58.5	61.4	51.0	1.20 (0.97–1.49)
	Physical attack on one's person	23.0	23.8	21.0	1.13 (0.73–1.75)
Administrative/Professional (23 stressors)	Insufficient manpower to adequately handle a job	77.0	75.1	82.0	0.92 (0.82–1.03)
	Distorted or negative press accounts of police	70.1	72.0	65.0	1.11 (0.94–1.30)
	Public criticism of police	79.4	80.7	76.0	1.06 (0.94–1.20)
	Court leniency with criminals	61.1	62.7	56.6	1.11 (0.91–1.35)
Physical/Psychological danger (24 stressors)	Ineffectiveness of the judicial system	61.1	63.8	54.0	1.18 (0.96–1.45)
	Exposure to battered or dead children	27.1	27.2	27.0	1.01 (0.69–1.47)
	Killing someone in the line of duty	0.27	0.38	0.00	NA
	Fellow officer killed in the line of duty	3.6	3.77	3.00	1.26 (0.35–4.48)
	Situations requiring use of force	58.5	61.4	51.0	1.20 (0.97–1.49)
Lack of support (13 stressors)	Physical attack on one's person	23.0	23.8	21.0	1.13 (0.73–1.75)
	Inadequate support by department	44.1	43.0	46.9	0.92 (0.71–1.18)
	Fellow officers not doing their job	77.8	77.2	79.6	0.97 (0.86–1.09)
	Assignment of incompatible partner	9.3	10.2	7.1	1.44 (0.65–3.20)
	Inadequate support by supervisor	35.1	30.2	48.0	0.63 (0.48–0.82)
	Inadequate or poor quality equipment	59.9	56.3	69.0	0.82 (0.69–0.97)

Prevalence ratios compare prevalence of the event in men relative to women. NA = not available

from each of the Spielberger police stress subscales did not differ by gender except for the following two stressors: inadequate support by supervisor, and inadequate or poor

quality equipment. The prevalence of inadequate support by supervisor was 37 % higher in women compared to men ( $PR = 0.63$ , 0.48–0.82) while the prevalence of inadequate or poor quality equipment was 18 % higher among women relative to men officers ( $PR = 0.82$ , 0.69–0.97).

Table 4 is a comparison of the mean frequency of occurrence in the past month between men and women for the top five most frequently occurring stressors in the past month. Note that this is an alternative approach to the data presented in Table 2. The

**Table 4** The mean frequency of occurrence for the top five most *frequently occurring* stressor events by gender

Stressor description	All (n = 365)	Men (n = 265)	Women (n = 100)	P-value
Overall (60 stressors)				
Dealing with family disputes and crisis situations	5.1 ± 4.0	5.1 ± 4.0	5.3 ± 3.9	0.505
Responding to a felony in progress	5.0 ± 3.8	5.2 ± 3.8	4.5 ± 3.9	0.105
Fellow officers not doing their job	3.9 ± 3.4	3.8 ± 3.5	4.4 ± 3.5	0.243
Making critical on-the-spot decisions	3.7 ± 3.5	3.7 ± 3.4	3.9 ± 3.8	0.364
Insufficient manpower to adequately handle a job	3.7 ± 3.7	3.5 ± 3.6	4.2 ± 3.7	0.089
Administrative/Professional (23 stressors)				
Insufficient manpower to adequately handle a job	3.7 ± 3.7	3.5 ± 3.6	4.2 ± 3.7	0.089
Experiencing negative attitudes toward police officers	3.4 ± 3.5	3.6 ± 3.7	3.0 ± 3.1	0.192
Public criticism of police	3.2 ± 3.2	3.5 ± 3.3	2.6 ± 2.7	0.028
Court appearances on day off or following night shift	3.1 ± 3.4	3.5 ± 3.5	2.3 ± 2.9	0.003
Excessive paperwork	2.6 ± 3.5	2.5 ± 3.3	2.9 ± 3.7	0.444
Physical/Psychological danger (24 stressors)				
Dealing with family disputes and crisis situations	5.1 ± 4.0	5.1 ± 4.0	5.3 ± 3.9	0.505
Responding to a felony in progress	5.0 ± 3.8	5.2 ± 3.8	4.5 ± 3.9	0.105
Making critical on-the-spot decisions	3.7 ± 3.5	3.7 ± 3.4	3.9 ± 3.8	0.364
Frequent changes from boring to demanding activities	3.4 ± 3.6	3.5 ± 3.7	3.2 ± 3.5	0.488
Exposure to adults in pain	2.9 ± 3.1	3.0 ± 3.1	2.9 ± 3.2	0.768
Lack of support (13 stressors)				
Fellow officers not doing their job	3.9 ± 3.4	3.8 ± 3.5	4.4 ± 3.5	0.243
Inadequate or poor quality equipment	2.3 ± 3.1	2.1 ± 3.0	2.9 ± 3.4	0.031
Working a second job	2.2 ± 3.4	2.6 ± 3.6	1.1 ± 2.4	0.001
Political pressure from within the department	1.4 ± 2.4	1.6 ± 2.6	1.0 ± 2.0	0.040
Inadequate support by department	1.4 ± 2.5	1.5 ± 2.5	1.1 ± 2.0	0.240

The results are unadjusted mean frequency ± standard deviation. The *p*-values compare mean values between men and women

data in Table 2 compares prevalence (at least one occurrence in the past month) between men and women while Table 4 takes into account all occurrences of the event in the past month (initial plus recurrences). The mean frequency of occurrence in the past month differed significantly by gender for the following stressors: men reported higher recurrence than women for public criticism of police ( $3.5 \pm 3.3$  vs.  $2.6 \pm 2.7$ ,  $p = 0.028$ ), court appearances on day off or following night shift ( $3.5 \pm 3.5$  vs.  $2.3 \pm 2.9$ ,  $p = 0.003$ ), working a second job ( $2.6 \pm 3.6$  vs.  $1.1 \pm 2.4$ ,  $p = 0.001$ ), and political pressure from within department ( $1.6 \pm 2.6$  vs.  $1.0 \pm 2.0$ ,  $p = 0.040$ ); women reported a higher recurrence than men for inadequate or poor quality equipment ( $2.1 \pm 3.0$  vs.  $2.9 \pm 3.4$ ,  $p = 0.031$ ).

Table 5 presents the comparison of mean stress rating between men and women for the top five most stressful stressors. The mean stress rating differed significantly between women and men for the following five stressors with women reporting higher rating of

**Table 5** The mean stress rating for the top five *most stressful* events by gender

Stressor description	All ( <i>n</i> = 365)	Men ( <i>n</i> = 265)	Women ( <i>n</i> = 100)	<i>P</i> -value
Overall (60 stressors)				
Exposure to battered or dead children	$67.6 \pm 35.3$	$66.6 \pm 34.9$	$70.5 \pm 36.2$	0.256
Killing someone in the line of duty	$66.3 \pm 43.0$	$64.3 \pm 43.3$	$71.6 \pm 42.0$	0.135
Fellow officer killed in the line of duty	$65.3 \pm 40.6$	$62.9 \pm 40.8$	$71.6 \pm 39.7$	0.065
Situations requiring use of force	$59.6 \pm 31.2$	$57.4 \pm 30.9$	$65.6 \pm 31.5$	0.018
Physical attack on one's person	$58.6 \pm 36.6$	$56.9 \pm 36.6$	$63.0 \pm 36.3$	0.147
Administrative/Professional (23 stressors)				
Insufficient manpower to adequately handle a job	$52.6 \pm 30.1$	$50.0 \pm 30.2$	$59.4 \pm 28.7$	0.006
Distorted or negative press accounts of police	$47.4 \pm 29.4$	$47.5 \pm 29.0$	$47.1 \pm 30.5$	0.802
Public criticism of police	$43.4 \pm 28.0$	$43.1 \pm 27.9$	$44.3 \pm 28.5$	0.840
Court leniency with criminals	$41.0 \pm 30.0$	$40.6 \pm 29.8$	$42.2 \pm 30.7$	0.662
Ineffectiveness of the judicial system	$41.1 \pm 29.1$	$40.4 \pm 29.0$	$43.1 \pm 29.3$	0.320
Physical/Psychological danger (24 stressors)				
Exposure to battered or dead children	$67.6 \pm 35.3$	$66.6 \pm 34.9$	$70.5 \pm 36.2$	0.256
Killing someone in the line of duty	$66.3 \pm 43.0$	$64.3 \pm 43.3$	$71.6 \pm 42.0$	0.135
Fellow officer killed in the line of duty	$65.3 \pm 40.6$	$62.9 \pm 40.8$	$71.6 \pm 39.7$	0.065
Situations requiring use of force	$59.6 \pm 31.2$	$57.4 \pm 30.9$	$65.6 \pm 31.5$	0.018
Physical attack on one's person	$58.6 \pm 36.6$	$56.9 \pm 36.6$	$63.0 \pm 36.3$	0.147
Lack of support (13 stressors)				
Inadequate support by department	$49.2 \pm 33.2$	$47.6 \pm 33.1$	$53.6 \pm 33.4$	0.134
Fellow officers not doing their job	$48.8 \pm 29.5$	$46.0 \pm 29.0$	$56.5 \pm 29.7$	0.013
Assignment of incompatible partner	$41.3 \pm 37.2$	$39.7 \pm 36.6$	$45.6 \pm 38.6$	0.250
Inadequate support by supervisor	$41.1 \pm 34.2$	$37.1 \pm 32.4$	$51.8 \pm 36.7$	0.001
Inadequate or poor quality equipment	$40.3 \pm 29.8$	$36.8 \pm 29.4$	$49.5 \pm 29.1$	0.001

The results are unadjusted mean stress rating  $\pm$  standard deviation. The *p*-values compare mean values between men and women

stressfulness compared to men: situations requiring use of force (65.6 vs. 57.4,  $p = 0.018$ ), insufficient manpower to adequately handle a job (59.4 vs. 50.0,  $p = 0.006$ ), fellow officers not doing their job (56.5 vs. 46.0,  $p = 0.013$ ), inadequate support by supervisor (51.8 vs. 37.1,  $p = 0.001$ ), and poor quality equipment (49.5 vs. 36.8,  $p = 0.001$ ).

## Discussion

This study described the five most frequent and highly rated police occupational stressors from the Spielberger Police Stress Survey, which consists of 60 specific stressor events grouped into three categories (1) administrative and organizational pressure; (2) physical and psychological threat; (3) and lack of support. Results indicated that mean occurrences in the past month for the top five most frequent stressors (dealing with family disputes, responding to a felony in progress, fellow officers not doing their job, making critical on-the-spot decisions, and insufficient personnel) were similar for both men and women. Overall 77 % to 83 % of the officers experienced these stressors at least once in the past month. The top five most highly rated police events included exposure to battered or dead children, killing someone in the line of duty, fellow officer killed in the line of duty, situations requiring use of force, and physical attack on one's person. The prevalence of these stressful events in the past month ranged from 0.3 % to 59 %.

Four of the five top rated stressors involved acts of violence, yet it was interesting that some of these stressors had a high rating but low prevalence. Of these, exposure to battered or dead children was ranked highest (Table 2). Involvement with child crimes is a difficult task for police officers and it requires a special ability and social support system in order to avoid traumatization. Organizational support and increased resiliency are factors which may help (Violanti, 2014). Prior research regarding police investigations of children related crimes, such as neglect, homicide, or sexual abuse suggest that officers are often at greater risk for developing secondary traumatic stress (Krause, 2013; Chouliara, Hutchinson & Karatzias, 2009; Powell & Tomyn, 2011; Burns, Morley, Bradshaw & Domene, 2008; Violanti & Gehrke, 2004), and depression and anxiety (Powell & Guadagno, 2013; Russ, Lonne & Darlington, 2009). Powell and Guadagno (2013) also suggest that officers may be at higher risk for vicarious traumatization, a cumulative effect of trauma upon one's self. Wright, Powell and Ridge (2006) found that the two key sources of negative work stress frequently associated with child abuse investigation were heavy caseloads and unavailability of formal coping mechanisms.

Experiencing a fellow officer killed in the line of duty was also highly rated but infrequent (3.6 %). In 2014 in the United States, 61 officers were feloniously killed in the line of duty (<http://www.nleomf.org/facts/officer-fatalities-data/>) out of an occupational group of 865,000 police officers. As indicated in our sample, despite the low number of such tragic deaths, the occurrence of this event has a highly stressful effect on officers. Policing is a cohesive occupation, and co-workers are generally personally close. The felonious death of an officer has been perceived by other officers as similar to losing a family member (Violanti & Paton, 2006).

Another highly rated but infrequent stressor was killing someone in the line of duty (0.27 %). Similar to experiencing the death of a fellow officer, being involved in a

shooting and killing someone can be a very stressful and traumatic event for officers (Violanti, 2014; Bond, Hartley, Sarkisian, Andrew, Charles, Andrew and Violanti, 2014). The aftermath of a shooting can lead to scrutiny from the public, the police department, and the judicial system concerning the legality of the shooting and the proper use of justifiable deadly physical force by the officer. The officer may have to appear in court to determine whether his or her actions were legally justifiable and be placed on suspension for work while the incident is investigated. After such incidents it is important to have officers attend a post shooting intervention with either peer supporters or a mental health professional to help defuse the possibility of posttraumatic stress disorder (Trompeter, Corey, Schmidt & Tracy, 2013). It follows from shooting incidents that the stress of “making critical on-the-spot decisions” would also be high on the list of frequent stressors (78 %) among officers. Wheatcroft, Alison, and McGrory (2012) comment that trusting supervision is a key factor in officer decision making during critical incidents such as shootings. In our sample, the high reported frequency of critical decision-making may be related to perceptions of lack of support from the department (44 %).

Situations requiring use of force (58.5 %) was a frequent and highly rated stressor in the present study. On average, over the last decade, there have been 58,930 assaults against law enforcement each year, resulting in 15,404 officer injuries (National Law Enforcement Officers Memorial Fund, 2014). According to the Federal Bureau of Investigations (FBI) data for 2011, there were a total of 54,774 assaults (2208 assaults were by firearm, 997 by knife, 7808 by other dangerous weapons, and 43,761 by personal weapons) among a total police force of 535,651. This equated to a rate of 10.2 assaults per 100 officers with 26.6 % of the officers assaulted sustaining injuries (FBI, LEOKA, <http://www.fbi.gov/about-us/cjis/ucr/leoka/2011/tables/table-70>, 2014). Under such dangerous working conditions, officers are highly likely to be required to use justifiable force.

## Gender Differences

Although there were no reported gender differences *overall* among the top stressors, there were some differences between men and women officers in the prevalence, frequency, and rating of specific stressors. Recognizing this distinction is important as prior research findings have been mixed. In a survey of employees from a county police department, Pendergrass & Ostrove, (1984) reported that the perceived rating of job stress was higher among sworn female officers compared to civilian females working in police departments. A survey of workplace problems encountered by police officers (Morash and Haar, 1995) concluded that although the gendered nature of police organizations causes unique stressors for women, the level of reported stress did not significantly vary by gender. Yet most prior research highlight gender differences in work-related events in policing (Kurtz, 2008).

In our study female officers rated stressors concerning fellow officers not doing their job, inadequate support by supervisors, poor quality equipment, and situations requiring use of force as more stressful than did men. Female officers experienced a 37 % higher prevalence of inadequate support by their supervisor compared to male officers (PR = 0.63, 0.48–0.82). Women officers in past research have reported higher levels of harassment, bias in hiring, promotion and assignments, and an underestimation of their

physical and psychological abilities (Hartley, Mnatsakanova, Burchfiel & Violanti, 2014). Previous research suggests that police work tends to take away important family time from women officers and increases child care issues (Grennan, 1993). In our study, women officers rated having to use force as significantly more stressful compared to men (mean stress rating of 65.6 vs. 57.4). Previous research has shown that women rely on a policing style that uses less physical force and is less confrontational than men officers. Police women are much less likely to use excessive violence while performing their jobs (Horne, 2014). Kurtz (2008) found that concern for making a violent arrest was significantly associated with increased stress among women but not in men officers while emotional concern over knowing a victim or offender was a significant stressor for men but not women officers.

In a study by Bartol et al. (1992), female officers reported that frequent exposure to tragedy and the constant danger to themselves and colleagues as significantly more stressful than did their male colleagues. This is consistent with our result where female officers reported higher rating of stressfulness to events involving tragedy or danger. Compared to male officers, female officers also reported that rumors about themselves, made by co-workers, to be significantly more stressful. In contrast, male officers perceived their relationships with colleagues, the size of the department, and the lack of proper training to be more stressful compared to women. It is possible that these police specific stressful events may be experienced to an even greater degree among police women of some minority groups. Pogrebin et al. (2000) found that African-American police women experience persistent sexual and racial discrimination from their white male supervisors and also from white female and black male officers. The gender discrimination that they experience are often related to professional abilities, job performance, and supervisory responsibilities, and the racism is usually in the form of derogatory remarks and fewer opportunities in hiring and promotion. This additional burden of workplace discrimination may exacerbate the effects of the occupational stressors captured in the Spielberger Police Stress Survey. We were unable to examine the frequency and ratings of stressors among ethnic groups due to small sample sizes.

Stressors where men reported significantly higher mean occurrences in the past month compared to women included public criticism of police, court appearances on day off or following night shift, political pressure from within the department, and working a second job. The prevalence of court appearances on a day off or after a night shift was 26 % higher for men than women officers ( $PR = 1.26$ , 1.04–1.52). Working a second job was more than twice as prevalent in men relative to women ( $PR = 2.37$ , 1.57–3.57). One possible explanation for these results is that male officers seem to be attending court and working second jobs *more frequently* than women and thus have less time away from work. In our sample, self-reported overtime hours per week (3.6 vs. 2.1,  $p = 0.015$ ), hours per week on second job (5.4 vs. 2.0,  $p = 0.0001$ ), court time hours per week (2.2 vs. 0.9,  $p < 0.001$ ), and proportion working the night or afternoon shift (58.5 % vs. 24 %,  $p < 0.001$ ) were all significantly higher for men officers compared to females. Overtime, shift work, court, and the inability to enjoy life outside of policing are factors which lead to increased stress among male officers (Vila & Kenney, 2002). Attending court after a night shift may impede the opportunity for proper sleep (Akerstedt, 2003). Neylan et al. (2002) suggested that police officers on both variable and stable shifts reported significantly worse sleep quality and more frequent disturbances in sleep quality than officers on the day shift.

## Limitations and Strengths

Limitations of this study include a cross-sectional study design, which precludes causal inferences and concern for generalizability to other police departments. Although the Spielberger police stress survey captures many stressors pertinent in policing, it does not contain occupational stressors that would pertain particularly to female officers such as sexual harassment. The responses to police stress survey items are based on self-report and hence there is a potential for bias (e.g. for example recall bias when reporting frequency of occurrence) and also ratings of stressfulness could be subject-dependent (e.g., two officers may rate the same event differently). Future longitudinal designs would be beneficial to better understand changes in perceptions of stressors over time and the factors associated with such changes.

The present study has several strengths. The Spielberger Police Stress Survey is a well standardized instrument designed to assess several different sources of police stress. The stressor items are specific instead of general, allowing us to accurately assess their ratings and frequency. Additionally, we limited recall of stressors to one month in an effort to reduce recall bias. We had an overall large sample size available and a relatively large sample of women officers enabling us to focus on gender differences.

## Conclusions

In summary, the present study examined the five most frequent and highly rated police occupational stressors from the 60-item Spielberger Police Stress Scale involving categories of organizational pressure, physical and psychological threat, and lack of support. Many of these stressors mention involvement with violence and traumatic incidents such as shootings, assaults, domestic violence, and abused children. Responding to family disputes was the most frequent stressor among officers (83 %). Killing someone in the line of duty and experiencing a fellow officer killed in the line of duty were among the highest rated stressors but among the lowest in frequency. Although there were no overall gender differences among the top five stressors, there were some differences in prevalence, frequency, and ratings. Male officers tended to report a higher prevalence of events which limited their time away from work such as court appearances and working second jobs. Men also reported frequent stress with the courts and judicial system, likely due to their more frequent contact with the criminal justice system. Women officers reported a greater prevalence and a higher mean stress rating regarding the lack of support by their supervisors and inadequate or poor quality equipment than their male colleagues.

Of importance were results suggesting gender differences in work stressors. Our findings suggest that women officers are generally more stressed than men by a lack of support, both by male co-workers and the organization. Women officers experienced a 37 % higher prevalence of inadequate support by their supervisor compared to male officers. The percentage of women officers varies by type of police agency (state, county, city, and local) and the size of the police department. In 2007 women accounted for about 15 % of the total sworn law enforcement officers in large local police departments (<http://www.bjs.gov/>

<content/pub/pdf/wle8708.pdf>). Police organizations need to establish further policy on issues of discrimination and training on the positive aspects of women in policing (Hartley et al., 2014). Schuck and Rabe-Hemp (2007) for example suggested that women may be better at policing than men due to fewer citizen complaints, excessive force liability lawsuits, and allegations of excessive force. Johnson (1991) found that women felt having better communication skills compensated for their lack of physical skills.

Questions remain for further research. It is important to understand whether the severity (ranking) or frequency of a stressor has the most deleterious personal stress effect on police officers. Our findings suggest that high ratings and low frequency of some stressors (for example killings and shootings) may be more personally stressful. Secondly, the effect of the interaction of frequency and ratings of stressors needs to be explored. Such a combination may increase personal stress regardless of the type of stressor. Further research should additionally consider examining the varying effects of stressors in association with perceived stress and physiological outcomes. Lastly, issues of ratings and frequency aside, exposure to events considered stressful by officers may result in debilitating psychological difficulties. Psychological and organizational support is important to help both women and men officers deal with stressful and traumatic events in this difficult occupation of policing.

**Disclaimer** The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the National Institute for Occupational Safety and Health.

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