



Perceived stress among police officers: an integrative model of stress and coping

Perceived stress
among police
officers

Jennifer H. Webster

*Department of Political Science, Criminal Justice & Organizational Leadership,
Northern Kentucky University, Highland Heights, Kentucky, USA*

839

Received 3 June 2014
Revised 8 September 2014
Accepted 8 September 2014

Abstract

Purpose – The purpose of this paper is to propose an original model of stress and coping as a complex interactive process between an individual and his or her environment.

Design/methodology/approach – A preliminary test of the model is conducted using data from a meta-analysis of perceived occupational stress among police officers. Collapsing correlates into predictor domains that mirror the proposed model of stress and coping allowed for a preliminary analysis of some of the constructs in the proposed model.

Findings – The findings suggest that each domain contributes to the perception of stress and that knowledge in this area might best be advanced by recognizing the importance of each in shaping an interactive process of stress and coping rather than attempting to rank individual correlates.

Research limitations/implications – The data do not provide definitive conclusions that personal characteristics or job characteristics, for example, are more important than others in shaping stress perception among police officers. Clearly, these findings suggest that questions about what is most important in shaping police stress have remained unanswered because the variables of interest make equally important contributions to a complex process.

Originality/value – Adopting the proposed integrative model of stress and coping may help researchers move beyond the flawed conceptualization of perceived stress among police officers as a simple operational/organizational dichotomy, allowing for a more rich understanding of stress and coping as a complex process.

Keywords Police stress, Stress and coping

Paper type Conceptual paper

Introduction

Reviews of studies of police occupational stress reveal that many have been conducted without the benefit of a clearly stated theoretical framework (e.g. Abdollahi, 2002). In fact, Zhao *et al.* (2003) stated, “To the authors’ best knowledge, there has not been a unified theory that is developed to explain police stress. Instead, multiple theories derived from different disciplines (e.g. management and psychology) are commonly used to generate hypotheses and develop measures for testing the utility of these predictors.” The authors then went on to say that literature on police socialization and social support would “likely suggest that there could be a differential impact” of the independent variable they chose to study (marital status) on police occupational stress (pp. 28-29). The problem with these atheoretical studies is they too often fail to treat stress as a transactional construct – an ongoing interaction between the objective environment and the person’s subjective experience of, and response to, that environment (McGrath, 1970; Toch, 2002; Zhao *et al.*, 2002). Rather, “researchers have



Policing: An International Journal of
Police Strategies & Management
Vol. 37 No. 4, 2014
pp. 839-857

© Emerald Group Publishing Limited
1363-951X
DOI 10.1108/PJPSM-06-2014-0064

The author would like to thank Lawrence F. Travis, III, Paula Smith, John Violanti, James Frank, and William J. Attenweiler for their comments on earlier versions of this work.

assumed that stressful demands [are] common to all individuals experiencing the event," (Anshel *et al.*, 1997). This, in spite of the fact it has been theorized that certain dangerous aspects of the work which have been assumed to produce distress may actually be sought after by officers as noble and/or stimulating aspects of the profession (e.g. Newman and Rucker-Reed, 2004) or that challenging events may be viewed as potential for mastery and achievement (Alexander *et al.*, 1993), thus producing eustress as opposed to distress. This assumption – that "stressfulness" rests largely in the nature of circumstances themselves – coupled with the prevailing notion that the occupation of policing is uniquely characterized by such stressful circumstances, has led researchers to emphasize potential sources of police stress while ignoring individual differences in stress vulnerability and in coping styles[1].

As such, the bulk of the extant police stress research in recent years has focussed on comparing the relative strength of those stressors that have been classified as "organizational" with those that are "operational" (e.g. Buker and Wiecko, 2007). According to this dichotomy, organizational stressors are related to the work environment and are stressors which might be found in a variety of organizations. They include such things as shift work, working long hours, and having little input in decision making (e.g. Slate *et al.*, 2007). Many such stressors have been identified (e.g. Noblet and Rodwell, 2009) and categorized (e.g. Brown and Campbell, 1994), revealing strong support for the independent and additive effects of job demand, control, and support on stress levels among police officers (e.g. Morash *et al.*, 2006). Operational stressors – those stressors that are considered unique to the operation of policing – have also been identified and are oft-cited by police officers themselves as highly stress-inducing (if rare in occurrence). These include such things as: having to fire a weapon or investigate the victimization of a child (e.g. Huddleston *et al.*, 2007), coping with the death or injury of a fellow officer in the line of duty (e.g. Gershon *et al.*, 2002), and responding to the threat of terrorism (e.g. Dowling *et al.*, 2006).

This narrow focus on an organizational/operational dichotomy has limited our understanding of police stress by largely ignoring (or at least not attempting to directly test) any guiding theory of stress and the individual differences in perception such a theory would likely emphasize. As a result, these studies have added in quantity to an already large, and often conflicting, body of research without meaningfully advancing the field.

Models of occupational stress

While a limitation common among many studies of police occupational stress is that they have been conducted without the benefit of a clearly stated theoretical framework (Abdollahi, 2002)[2], several studies have at least indirectly been informed by one of three models of occupational stress (each of which has received substantial attention and empirical support in that broader field). They are: the person-environment fit model (French *et al.*, 1982), the demand-control-support model (Karasek, 1979; Johnson and Hall, 1988; Karasek and Theorell, 1990), and the effort-reward imbalance model (Siegrist, 1996). A brief description of each will follow as an introduction to a new, integrative model being proposed here.

Person-environment fit

French *et al.* (1982) describe occupational stress as the "lack of accommodation [fit] between the demands of the employee and those of their organization" (p. 1). Muchinsky and Monahan (1987) extended the work of French *et al.* by identifying two

different forms of fit: complementary and supplementary. Complementary fit refers to the environment apart from its inhabitants and has most often been assessed as the fit between demands and abilities or needs and satisfaction. Measures of demand-abilities fit tend to be objective, focussing on specific job tasks and the knowledge, skills, and abilities of the employee to meet them. Needs-satisfaction fit utilizes subjective measures, as it focusses on the degree to which employees' needs, desires, or preferences are met by the jobs they perform. Supplementary fit defines the environment according to the people who inhabit it, and has most often been assessed using measures of similarities among or between individual employees and their co-workers, supervisors, or the organization as a whole along dimensions of demographics, values/beliefs, or goals[3]. Regardless of the type of measure used, P-E fit emphasizes the degree of compatibility between an individual and a work environment. According to this model, the less the compatibility, the more likely the individual will experience stress[4].

Demand-control-support

In 1979, Karasek introduced a model of job strain[5] that attempted to draw upon and clarify the often-contradictory findings in the disparate job demands-strain and job decision latitude-strain literatures. Using nationally representative data from workers in both Sweden and the USA, including longitudinal data from the Swedish subset, Karasek presented evidence that mental strain results from the interaction of job demands and decision latitude. His most consistent finding was that low decision latitude and heavy job demands predicted mental strain. Karasek's study was particularly influential for several reasons: it was a well-designed study that included nationally representative samples from two industrialized countries and some longitudinal analysis; it used both objective and subjective outcome measures; and it found a strong relationship between job dissatisfaction and overall life dissatisfaction. However, the study was also limited in some important ways. Specifically, Karasek failed to consider the impact of social relations at the group and organizational level and the impact of individual differences in perception of job demands. Johnson and Hall (1988) extended the model to account for the impact of social support. The resulting demand-control-support model allows for the possibility that inadequate social support (often termed "isolation") can interact with demands and control to produce more negative outcomes (i.e. stress). On the other hand, the strong social support of colleagues can be a resource that acts to buffer job demands. According to this model, individuals experiencing high demands under conditions of low control and low social support are the most likely to experience job stress.

Effort-reward imbalance

Siegrist (1996) introduced his effort-reward imbalance model in an attempt to address what he saw as limitations of the two models described above. Specifically, if an individual is "misfit" with his/her work environment, why not simply adapt by altering either the situation itself or the individual's response to it? The answer, Siegrist claimed, was related to the definition of the "control" element of the demand-control-support model. By treating "control" primarily as an objective measure of scope of authority/resources, the model failed to take into consideration individual differences in perception and motivation that might preclude an individual from being able to either alter a situation or adequately cope with it. According to Siegrist's model:

Effort at work is spent as part of a socially organized exchange process to which society at large contributes in terms of rewards. Societal rewards are distributed by three transmitter

systems to the working populations: money, esteem, and status control [...] The model of effort-reward imbalance claims that lack of reciprocity between costs and gains (*i.e.*, high-cost/low-gain conditions), define a state of emotional distress with special propensity to autonomic arousal and associated strain reactions (pp. 29-30).

Siegrist identified two sources of effort: extrinsic (*i.e.* the objective requirements of the job) and intrinsic, which he describes as “the motivations of the individual worker in a demanding situation” (p. 30). These motivations, he proposed, arise from “those personal characteristics that influence the perception of and the search for control” (p. 29). In related work, Matschinger *et al.* (1986) and Siegrist and Matschinger (1989) define the concept “need for control” – later termed “overcommitment” by Siegrist *et al.* (2004) – as a distinct individual pattern of coping with work demands based on Type A behaviors which had already long been associated with stress vulnerability in the medical field (Friedman and Rosenman, 1959). In the effort-reward imbalance model, perception regarding the ability of the individual to produce the amount of effort required to elicit the expected reward may be systematically influenced by the individual’s need for control (*i.e.* personality characteristics).

An integrative model of occupational stress and coping

Each of the three models described above makes unique and valuable contributions to the conceptualization of the stress and coping process. Furthermore, empirical evidence has been found in support of elements of each model[6]. Therefore, it is expected that a more holistic model which integrates the unique elements of each of these three models would provide the most comprehensive platform from which to understand the existing body of police stress research and from which to guide future inquiries. Figure 1 presents such a model and is discussed in detail below.

The environmental situation

Most conceptualizations of the stress and coping process start with what researchers call a “stressor” or “demand.” However, to automatically label a given environmental situation as constituting a demand is to make the a priori assumption that the cognitive appraisal process will evaluate the situation as such. Yet, cognitive appraisal might result in the situation being classified as “benign,” and thus, not a demand at all. Therefore, it is more appropriate to avoid value-laden labels at the start and simply acknowledge that any given “environmental situation” has the potential to present a demand. A true demand, then, would be anything in an individual’s environmental situation that, if not altered, has the potential to result in a direct harm or loss to the individual or in the lost opportunity for reward.

Cognitive appraisal

Primary appraisal. The process of cognitive appraisal begins with the primary appraisal, which evaluates the environmental situation in light of two questions, the first of which is: Would failure to alter the situation result in a negative (harm/loss)?[7]. This is a fairly straightforward acknowledgement of the negative consequence element of the process of cognitive appraisal presented by Lazarus and Folkman (1984) except that “threat” is not listed as a separate potential consequence. The argument made here is that “threat” is implied in the need for a cognitive appraisal. It is the threat of harm or loss that is being evaluated. Any harm or loss that has already been sustained is part of the situation being evaluated.

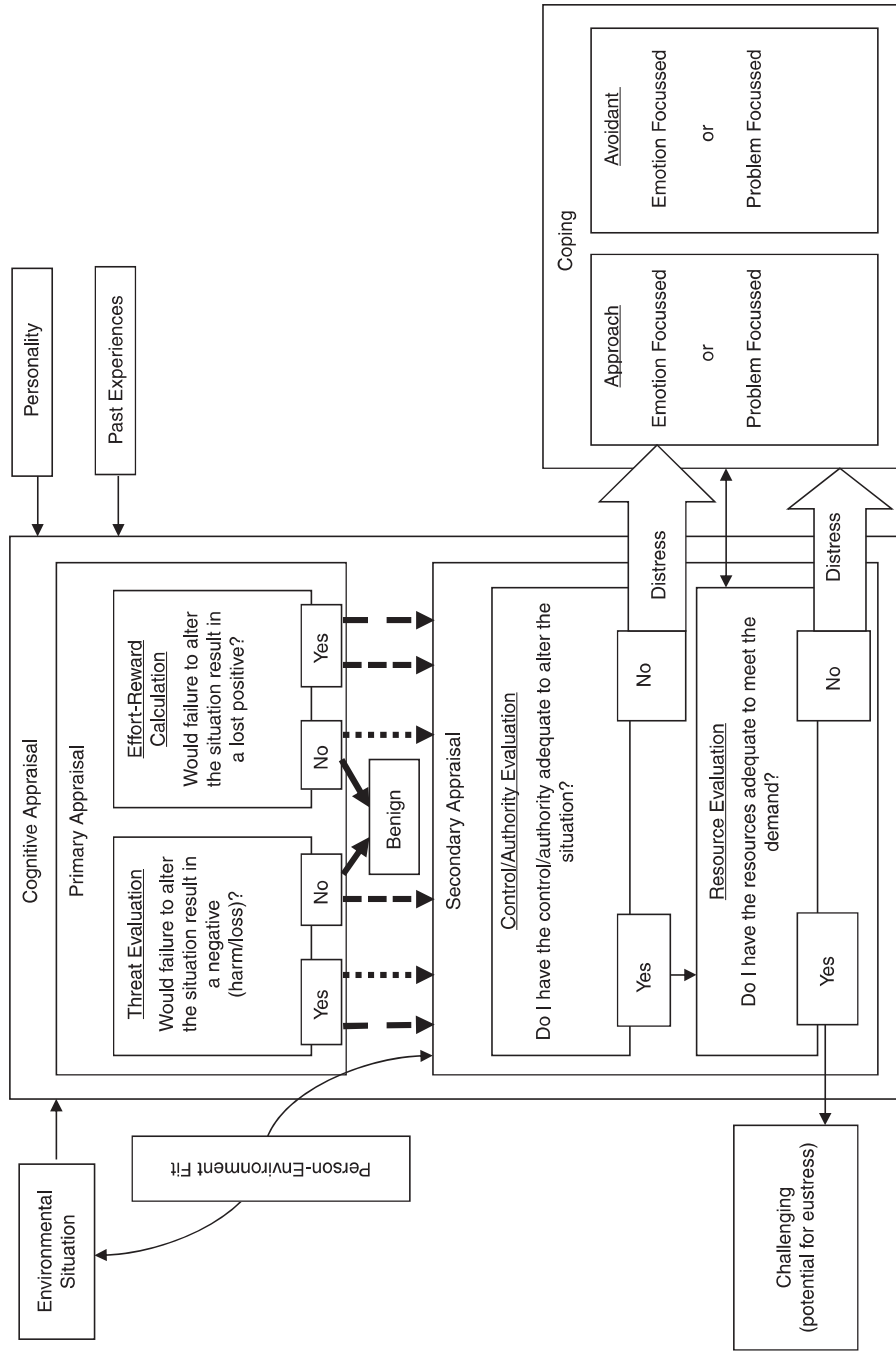


Figure 1.
An integrative model
of occupational stress
and coping

The second question simultaneously being addressed during primary appraisal is: Would failure to alter the situation result in a lost opportunity for reward? This question deals with both the “challenge” element of the cognitive appraisal model as presented by Lazarus and Folkman (1984) and the implied effort-reward calculation element of Siegrist’s (1996) model. An environmental situation would be labeled a “challenge” – something with the potential to result in eustress – if the effort-reward calculation leads to an expectation that a reasonable expenditure of effort on the part of the individual would likely lead to some reward desirable enough to have made the effort worthwhile.

If the answer to both of the above questions is “no,” then the environmental situation will be evaluated as benign (i.e. there is no demand after all). If the answer to either or both of the above questions is “yes,” then the environmental situation constitutes a demand and a secondary appraisal occurs.

Secondary appraisal. This process evaluates both the “capabilities and resources” included in McGrath’s (1976) working definition of stress. It begins with the question of control: Do I have control adequate to meet the demand? This question might be answered objectively or subjectively. Objectively, laws or rules may deny an individual the authority to exercise control over a given situation. This refers to the “decision latitude” element first introduced by Karasek (1979) and later incorporated in the “control” portion of the demand-control-support model (Johnson and Hall, 1988; Karasek and Theorell, 1990). Subjectively, an individual might not perceive the ability to influence the situation to the degree necessary to affect the desired change – irrespective of the individual’s objective scope of authority. This perception might exist for a number of reasons. First, the individual might not (objectively) possess the skills which would be necessary to control the situation. Several studies of the demand-control-support model have begun to measure “control” along these two distinct dimensions – decision latitude as mentioned above and skill discretion. Yet it is argued here that skill discretion is to some degree subjective (in that even an individual who possesses adequate skills might not perceive himself as doing so). It is further argued that this assessment is really one of resource availability, as discussed below[8]. A second reason an individual might not evaluate himself as having adequate control is because he possesses personality characteristics which systematically shape appraisal in a negative way. In the field of personality psychology, several characteristics have been linked with increased stress vulnerability. These include: external locus of control, certain dimensions of Type A behavior pattern (specifically, the dimensions of aggression, hard-driving, and eagerness-energy)[9], and certain of the so-called “Big Five” personality traits (specifically, Neuroticism). It is argued here that individuals who possess these specific personality characteristics or traits are more vulnerable to stress because they are either less likely to believe they possess control over life’s circumstances generally or because they have a need for control to such a high degree that it consistently outweighs available resources (as discussed below). However, the question of control is evaluated (i.e. objectively, subjectively or both), if the answer is “no,” then emotion-focussed coping becomes the only method of coping available.

The second question – Do I have the resources adequate to meet the demand? – evaluates the availability of resources for both problem- and emotion-focussed coping. Resources might include those internal to the individual, such as perceived knowledge, skills, or abilities gained through the benefit of education, training, or previous experience. They might also include those external to the individual (either tangible or

not) such as equipment, supplies, or social support. Regardless of the type or source, if the individual perceives having adequate control, but inadequate resources, then stress occurs. Alternatively, if the individual perceives having adequate resources to employ problem-focussed coping, but no authority to do so, stress will also occur. It is only when the individual perceives having both the control and the resources adequate to cope with the demand that it will be appraised as challenging (with the potential for eustress) or re-appraised as benign.

Coping. In addition to being classified according to focus (problem vs emotion), coping strategies can be classified as “approach” or “avoidant[10].” Approach strategies are generally considered healthy, as they attempt to address problems or emotions head-on. Avoidant strategies are not generally considered healthy, as they are used to simply escape problems or emotions, sometimes to the point of denying their existence. The selection of coping strategies (and the degree of success realized through their utilization) can alter the primary appraisal of the demands which initially gave rise to the coping or can create new demands. Further, some argue that tendencies toward the selection of certain styles of coping are themselves shaped by personality traits (see Lazarus and Folkman, 1984, for a discussion of this issue).

Person-environment fit

Clearly, the appraisal process is heavily influenced by personal characteristics and experiences which shape perception, as described above. The degree to which the capabilities and expectations of the individual allow for meeting the demands and expectations of the organization (and vice versa) is a measure of the person-environment fit (French *et al.*, 1982). To the extent that individual characteristics and experiences systematically influence the individual's perception of his or her capabilities and/or resources as inadequate, regardless of objective measures, the individual will not be a good fit with the organization (or at least his or her specific assignment within the organization). To the extent that the demands of the organization are driven by operational requirements (and thus, unalterable), the individual may not be a good fit with the occupation as a whole, particularly if the act of meeting those demands does not fulfill some need or desire within the individual. However, if the individual's perceived capabilities or access to resources or rewards can be altered through awareness or training, the misfit may be addressed.

A preliminary test of the proposed model

In a previous publication, Webster (2013) takes stock of the research on perceived occupational stress among police officers by quantitatively synthesizing the available empirical literature on the subject via meta-analysis. The current study collapses correlates identified through that meta-analysis into broad domains then maps them to the integrative model of stress and coping presented above[11]. Overlapping confidence intervals do not permit this researcher to definitively state that the predictor domains are unique constructs nor does the small number of cases permit a reliability analysis such as Cronbach's α ; however, similar patterns of weighted effect sizes among the individual variables that make up each construct suggest the a priori groupings are meaningful. The following sections describe the selection of variables for each predictor domain and summarize the findings within. Specifically, Tables I-XIV include the number of studies using each individual predictor comprising the domain (k), the total number of cases upon which the mean effect size of the predictor is calculated (n), the unweighted mean effect size for each predictor (M_r), the weighted mean effect size

for each predictor (Mz^+), and the 95 percent confidence interval for each weighted mean effect size (CI). Table XV then summarizes the information for each predictor domain into one table for ease of comparison. Figure 2 is a copy of the integrative model of stress and coping (Figure 1), presented with the predictor domains created in the police stress meta-analysis in italics. Sub-categories within broader constructs of the model are included in parentheses, also in italics.

Table I.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for operational
exposure

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Job assignment (3)	2,332	0.21	0.21	−0.03 to 0.45
Global operational exposure (1)	197	0.53	0.53	
Threat to self (exposure) (1)	58	0.28	0.28	−0.03 to 0.28
Exposure to violence (1)	54	0.36	0.36	
Location (urbanism) (1)	338	−0.07	−0.07	
Crime rate (jurisdiction) (1)	812	−0.04	−0.04	
All (8)	3,791	0.15	0.13	

Table II.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for adaptive
personality characteristics

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Adaptivity (1)	51	−0.73	−0.73	−0.95 to 0.93
Masculinity (1)	116	−0.05	−0.05	
Social desirability (1)	100	−0.13	−0.13	−0.69 to −0.01
Emotional quotient (1)	31	−0.46	−0.46	
Extraversion (3)	407	−0.02	−0.01	
Self-esteem (5)	476	−0.32	−0.35	
Hardiness (4)	888	−0.21	−0.24	
All (16)	2,069	−0.20	0.06	−0.02 to 0.15

Table III.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for maladaptive
personality characteristics

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Neuroticism (3)	348	0.07	0.11	−0.00 to 0.21
Trait anxiety (7)	531	0.59	0.08	0.03 to 0.14
Control/compulsiveness (1)	104	−0.13	−0.13	−0.03 to 0.37
Type A (3)	879	0.17	0.17	
External locus of control (4)	730	0.29	0.31	
All (18)	2,592	0.26	0.06	0.01 to 0.10

Table IV.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for past
experiences of trauma/
illness/injury

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Previous trauma (general) (2)	299	0.24	0.25	0.00 to 0.49
Previous job trauma (8)	1,614	0.11	0.11	−0.09 to 0.32
Injury in previous year (1)	98	0.39	0.39	
Mean sick days in previous year (4)	999	0.21	0.21	−0.13 to 0.56
All (15)	3,010	0.17	0.07	

The environmental situation

Recall that most conceptualizations of the stress and coping process start with what researchers call a “stressor” or “demand.” Yet it is more appropriate to avoid value-laden labels at the start and simply acknowledge that any given environmental situation has the potential to present a demand. Most police stress research has focussed on demands originating from the operational environment or from the police organization itself. Therefore, in accordance with the integrative model of stress and coping represented in Figure 1, both “operational exposure” and “organizational setting” would be considered part of the environmental situation. Unfortunately, there were not enough effect size estimates generated in the meta-analysis to analyze “organizational setting” as a predictor domain. However, variables which constituted

Perceived stress among police officers

847

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI	Table V. Unweighted (<i>Mr</i>) and weighted mean effect sizes (<i>Mz</i> ⁺) for effort-reward calculation
Reward expectation (3)	3,006	−0.22	−0.22	−0.33 to −0.11	
Organizational fairness (5)	6,060	−0.22	−0.22	−0.32 to −0.12	
Effectiveness of CJ system (1)	59	−0.52	−0.52		
Justness of CJ system (1)	59	−0.33	−0.33		
All (10)	9,184	−0.22	0.10	0.03 to 0.17	

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI	Table VI. Unweighted (<i>Mr</i>) and weighted mean effect sizes (<i>Mz</i> ⁺) for control/ authority evaluation
Job control (6)	7,812	−0.34	−0.41	−0.82 to 0.00	
Rank (10)	4,183	−0.05	−0.06	−0.23 to 0.10	
Supervisory status (2)	319	0.11	0.11	0.04 to 0.17	
All (18)	13,214	−0.22	0.06	−0.01 to 0.12	

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI	Table VII. Unweighted (<i>Mr</i>) and weighted mean effect sizes (<i>Mz</i> ⁺) for resource evaluation (social support)
Global social support (4)	1,073	−0.25	−0.27	−0.76 to 0.23	
Social support (non-work) (6)	4,738	−0.26	−0.27	−0.41 to −0.13	
Social support (work) (7)	6,623	−0.33	−0.35	−0.44 to −0.26	
Social support (supervisor) (2)	543	−0.26	−0.26	−0.46 to −0.07	
Social support (peers) (1)	338	−0.25	−0.25		
Public attitude toward police (3)	459	−0.33	−0.35	−0.76 to 0.06	
All (23)	13,774	−0.29	0.04	0.02 to 0.07	

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI	Table VIII. Unweighted (<i>Mr</i>) and weighted mean effect sizes (<i>Mz</i> ⁺) for resource evaluation (other – gains)
Instrumental support (2)	2,278	−0.24	−0.24	−0.38 to −0.11	
Stress management training (4)	1,283	0.12	0.13	−0.13 to 0.38	
General health/well-being (5)	968	−0.18	−0.20	−0.75 to 0.35	
All (11)	4,529	−0.12	0.09	−0.09 to 0.27	

reasonable measures of the degree of exposure to potential operational demands were collapsed into a predictor domain called “operational exposure,” which is discussed in more detail below.

Operational exposure. Table I presents unweighted and weighted mean effect sizes for individual measures and a combined measure of operational exposure. Unfortunately, the table reflects data from a small number of effect sizes ($k = 8$), and should especially be interpreted with caution. Here, job assignment was coded such

Table IX.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for resource
evaluation (social
support + other gains)

Predictor (k)	n	Mr	Mz^+	CI
Global social support (4)	1,073	−0.25	−0.27	−0.76 to 0.23
Social support (non-work) (6)	4,738	−0.26	−0.27	−0.41 to −0.13
Social support (work) (7)	6,623	−0.33	−0.35	−0.44 to −0.26
Social support (supervisor) (2)	543	−0.26	−0.26	−0.46 to −0.07
Social support (peers) (1)	338	−0.25	−0.25	
Public attitude toward police (3)	459	−0.33	−0.35	−0.76 to 0.06
Instrumental support (2)	2,278	−0.24	−0.24	−0.38 to −0.11
Stress management training (4)	1,283	0.12	0.13	−0.13 to 0.38
General health/well-being (5)	968	−0.18	−0.20	−0.75 to 0.35
All (34)	18,303	−0.25	0.06	0.00 to 0.11

Table X.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for resource
evaluation (other – drains)

Predictor (k)	n	Mr	Mz^+	CI
Workload (8)	7,865	0.28	0.29	0.19 to 0.39
Depression (7)	582	0.51	0.60	0.33 to 0.88
Work-family conflict (6)	3,218	0.37	0.40	0.20 to 0.60
Global negative life events (5)	708	0.29	0.30	0.19 to 0.41
Recent divorce (1)	177	0.39	0.39	
All (27)	12,550	0.32	0.04	0.02 to 0.06

Table XI.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for approach
coping

Predictor (k)	n	Mr	Mz^+	CI
Active coping (4)	1,150	−0.16	−0.16	−0.43 to 0.10
Religious activity (2)	363	−0.04	−0.04	−0.15 to 0.07
Leisure activity (7)	1,557	−0.19	−0.19	−0.33 to −0.06
All (13)	3,070	−0.16	0.07	0.02 to 0.14

Table XII.
Unweighted (Mr) and
weighted mean effect sizes
(Mz^+) for avoidant coping

Predictor (k)	n	Mr	Mz^+	CI
Avoidant coping (4)	215	0.37	0.45	0.00 to 0.89
Surface acting (1)	196	0.58	0.58	
Alcohol use (7)	1,193	0.13	0.14	−0.12 to 0.39
Tobacco use (3)	570	0.05	0.05	−0.09 to 0.18
All (15)	2,174	0.17	0.07	0.02 to 0.11

that frontline assignments were assumed to produce more exposure to potential operational demands than administrative assignments.

“Global operational exposure” reflects an overall measure of the frequency and intensity of exposure to a list of specific operational events, as measured by the Speilberger Police Stress Survey (1981)[12]. The “threat to self” item represents a similar measure; however, it was only a frequency count of exposure to operational events likely to produce a threat of harm to the police officer. “Exposure to violence” was a measure reflecting the frequency and intensity of exposure to the suffering of others due to violence. Location and crime rate of the jurisdiction were included in this domain because it has been theorized that officers working in more urban areas and in areas with higher overall crime rates have greater potential for exposure to operational events that might be considered stressful. The pattern of effect size estimates suggests

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Job dissatisfaction (20)	8,600	0.39	0.44	0.32 to 0.56
Intention to quit (3)	1,328	0.37	0.39	−0.06 to 0.84
Organizational culture (bias) (3)	2,474	0.43	0.47	−0.01 to 0.95
Sexual/gender harassment (4)	2,855	−0.11	−0.13	−0.73 to 0.47
Racial/ethnic harassment (1)	1,087	0.17	0.17	
All (31)	16,344	0.29	0.03	0.01 to 0.06

Table XIII.
Unweighted (*Mr*) and
weighted mean effect sizes
(*Mz*⁺) for person-
environment (mis)fit

Predictor (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Race (8)	3,603	0.04	0.13	−0.21 to 0.46
Gender (36)	16,949	0.07	0.03	0.01 to 0.04
Age (20)	6,808	−0.02	0.05	−0.06 to 0.16
Education (15)	5,987	−0.02	0.07	−0.13 to 0.26
Marital status (11)	3,093	−0.07	0.09	−0.01 to 0.18
Time on the job (23)	8,309	0.02	0.04	−0.01 to 0.10
All (113)	44,749	0.02	0.05	−0.19 to 0.30

Table XIV.
Unweighted (*Mr*) and
weighted mean effect sizes
(*Mz*⁺) for
sociodemographics

Predictor Domain (<i>k</i>)	<i>n</i>	<i>Mr</i>	<i>Mz</i> ⁺	CI
Operational exposure (8)	3,791	0.15	0.13	−0.03 to 0.28
Adaptive personality characteristics (16)	2,069	−0.20	0.06	−0.02 to 0.15
Maladaptive personality characteristics (18)	2,592	0.26	0.06	0.01 to 0.10
Past experiences of trauma/illness/injury (15)	3,010	0.17	0.07	0.02 to 0.12
Effort-reward calculation (10)	9,184	−0.22	0.10	0.03 to 0.17
Control/authority evaluation (18)	13,214	−0.22	0.06	−0.01 to 0.12
Resource evaluation (social support) (23)	13,774	−0.29	0.04	0.02 to 0.07
Resource evaluation (other – gains) (11)	4,529	−0.12	0.09	−0.09 to 0.27
Resource evaluation (other – drains) (27)	12,550	0.32	0.04	0.02 to 0.06
Approach coping (13)	3,070	−0.16	0.07	0.02 to 0.14
Avoidant coping (15)	2,174	0.17	0.07	0.02 to 0.11
Person-environment (mis)fit (31)	16,344	0.29	0.03	0.01 to 0.06
Sociodemographics (113)	44,749	0.02	0.05	−0.19 to 0.30

Table XV.
Unweighted (*Mr*) and
weighted mean effect sizes
(*Mz*⁺) by predictor
domain

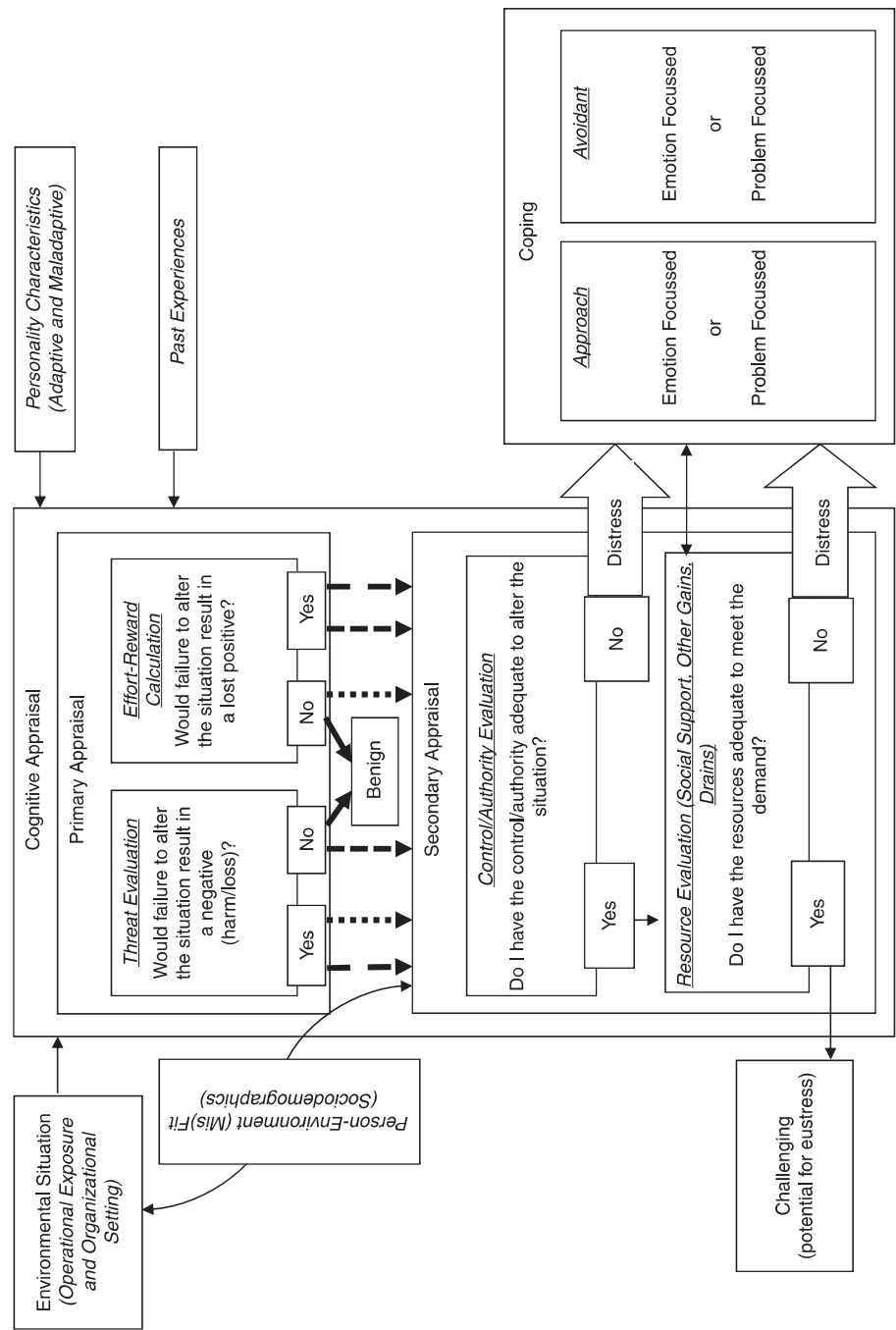


Figure 2.
An integrative model of
occupational stress and
coping with predictor
domains in italics

these latter two measures might not be measuring exposure in the same way as the previous four; however, the number of studies is so small that no definitive conclusion can be made about the appropriateness of combining these measures. When considered collectively as a measure of operational exposure, these variables produced a weighted mean effect size of only 0.13, implying the potential for stress originating from the demands of fieldwork is noteworthy, but perhaps not as important as the popular image of policing would suggest.

Cognitive appraisal

In accordance with the proposed model, an environmental situation is categorized as a demand, as benign, or as challenging through the process of cognitive appraisal. That process begins with the primary appraisal, which evaluates the environmental situation in light of two questions: "Would failure to alter the situation result in a negative (harm/loss)?" and "Would failure to alter the situation result in a lost positive?" If the answer to both is "no," then the situational is appraised as benign. If the answer to either is "yes," then a secondary appraisal evaluates the individual's capabilities and resources for addressing the situation. Recall that personality characteristics and past experiences are believed to influence that entire cognitive process. Therefore, predictor domains related to each are next discussed, followed by discussions of predictor domains within the more specific constructs of primary and secondary appraisal, respectively.

Personality characteristics. Table II and III present the unweighted and weighted mean effect sizes for adaptive and maladaptive personality characteristics, respectively. Adaptive characteristics include those theorized to make an individual more likely than not to evaluate themselves as able to respond favorably to difficult situations. Maladaptive characteristics are those theorized to make an individual less likely to see themselves as being able to respond well to difficult situations. One would expect these two categories of personality characteristics to have equal effects (in terms of magnitude) on the process of cognitive appraisal, and that is exactly the result found here.

Adaptive characteristics. Table II summarizes effect size estimates for a number of adaptive personality characteristics. The first is literally a measure of one's ability to adapt to a changing environment. Masculinity is the second, and was included with other adaptive characteristics because it was reasoned that, in the male-dominated workforce of policing, having a more masculine than feminine personality would better serve an individual in adapting to difficult situations in ways likely to be deemed acceptable by the subculture of the work organization. Social desirability is the third and reflects a measure of an individual's ability to act in ways that are suitable to others. Fourth is emotional quotient (also called emotional intelligence), which is thought to influence adaptivity by allowing for a more nuanced understanding of difficult situations and their potential consequences. The final three are measures more commonly found in stress studies than were the less-common measures discussed above. Extraversion and higher levels of self-esteem have long been linked with better outcomes in response to stress, and hardiness is by definition a measure of one's resiliency in the face of demands. While the number of effect size estimates for any one of these characteristics is small, taken together, the domain of "adaptive characteristics" appears to have a modest (0.06) effect on the perception of stress.

Maladaptive characteristics. Like adaptive characteristics, we can see from Table III that maladaptive personality characteristics have a modest effect (0.06) on the

perception of stress among those studies in the meta-analysis. All of the individual characteristics included in this predictor domain are fairly common among stress studies, and have long been linked with more negative stress outcomes. It may be, however, that the influence of personality characteristics has been somewhat overstated.

Past experiences. Table IV presents the unweighted and weighted mean effect sizes for the past experiences of trauma, illness, and injury, both individually and as a combined measure. While there has been some debate about whether past experiences of trauma or other negative events help make a person more resilient to future stress or adds to a cumulative experience of stress, we can see that, in combination, these variables have only a modest influence (0.07) on perceived stress. It should be noted, however, that these variables were coded such that the relationship should be interpreted as previous negative experiences are related to an increase in perceived stress, lending support for the cumulative theory, at least among these studies.

Primary appraisal. The primary appraisal includes both the threat evaluation and the effort-reward calculation. However, there were not enough effect size estimates generated in the current meta-analysis to allow for the calculation of a predictor domain representing threat evaluation. Therefore, the following section presents only that information pertaining to effort-reward calculation.

Effort-reward calculation. Table V presents the unweighted and weighted mean effect sizes for reward expectation, organizational fairness, perceived effectiveness of the criminal justice system, perceived justness of the criminal justice system, and the combination of those variables as an overall measure of effort-reward calculation. Reward expectation included various measures of the degree to which officers' expectations regarding rewards for work efforts had been met. The assumption was if officers' previous efforts had not been sufficiently rewarded, that would alter their perceptions regarding future expenditures of effort.

Organizational fairness represented measures of officers' perceptions about the practices of their respective organizations. The measure was included here based on the assumption that officers would not expect consistent or fairly applied rewards-for-effort in organizations viewed as generally unfair. Perceptions regarding the effectiveness and justness of the criminal justice system were included here based on the assumption that officers would find their crime-fighting efforts worthwhile if they viewed the system as being fair and just, less so otherwise. As indicated by Table V, the pattern of unweighted mean effect sizes was consistent, and, in combination, these measures do have a modest (0.10) impact on perceived stress.

Secondary appraisal. Secondary appraisal involves the evaluation of both one's control or authority to address a difficult situation and his or her resources for doing so. The studies in the meta-analysis provided enough effect size estimates to create predictor domains reflecting both of these evaluations. The following sections discuss each.

Control/authority evaluation. Table VI presents the unweighted and weighted mean effect sizes for job control, rank, and supervisory status as individual measures and as a combined measure of control/authority evaluation. Job control is the most direct measure of the construct, as it measures subjects' perceptions of the degree of control or influence they have over work activities. This measure was coded such that increased perceived job control was related to lower levels of perceived stress. Rank and supervisory status were both included in this predictor domain because it is

assumed that both an increase in rank and a move from non-supervisor to supervisor would include an increase in job control. However, the differential pattern for supervisory status may also reflect the fact that an increase in freedom to make decisions may be accompanied by increased accountability for those decisions, resulting in more, not less, perceived stress. Regardless, the collective influence of these variables on perceived stress is modest (0.06) among the studies included in the meta-analysis.

Resource evaluation. Table VII through 10 present the unweighted and weight mean effect sizes for the umbrella domain of resource evaluation. Among this category of correlates, measures were conceptualized as those that would be expected to contribute to resources (gains) vs those that would be expected to deplete resources (drains). Of those measures expected to contribute to resources, social support was most often measured among those studies included in the analysis. Therefore, social support measures are presented both separately (Table VII) and in combination with other resources gains (Table IX).

Social support. Table VII suggests that higher levels of social support, regardless of the source, are correlated with lower levels of perceived stress within a fairly narrow 95 percent confidence interval. However, social support variables, collectively, exert a very modest influence on perceived stress (0.04) among the included studies.

Other gains. The variables included in Table VIII collectively exert a more substantial, though still modest, influence on perceived stress (0.09). However, the pattern among the variables is not consistent, suggesting stress management training might not fit with other resource-gain measures. That said, it is possible that participation in stress management training, while ostensibly providing more tools for coping, also makes individuals more able to recognize the stress they are experiencing, thus more likely to report higher levels of perceived stress than those not having participated in stress management training.

When considering social support measures in combination with other measure of resource gains, we again see a modest weighted mean effect size of 0.06 (see Table IX). However, the narrower confidence interval for social support measures reported in Table VII suggests, at least among these studies, that social support should be considered separately from the other resource gain measures summarized in Table VIII.

Drains. Table X includes variables thought to drain resources, either tangible or intangible, from “reserves” that might otherwise be used to cope with work stress. Indeed, the pattern of effect size estimates is consistent with this assumption. Though the overall contribution of these variables as a combined measure is, again, very modest (0.04), the 95 percent confidence interval is reasonably narrow, offering a degree of confidence in the reliability of these combined measures.

Coping

Table XI,XII present the unweighted and weight mean effect sizes for the predictor domains of approach coping and avoidant coping, respectively. Approach (or active) coping, is most often associated with more improved stress outcomes than is avoidant coping in the general stress and coping literature. The prevailing notion is that approach coping strategies work to alleviate either the demand itself or the negative emotions associated with it whereas avoidant coping only masks problems and emotions.

The patterns revealed among variables within each table suggest this is the case, with approach coping variables consistently associated with lower levels of perceived

stress and avoidant coping variables associated with higher levels. Yet, weighted mean effect size estimates for both predictor domains are equally modest at 0.07.

Person-environment (mis)fit

Table XIII presents the unweighted and weighted mean effect sizes for measures of person-environment fit, actually conceptualized here as the degree of misfit between the person and his or her environment[13]. Job dissatisfaction and intention to quit were both seen as reasonable proxy measures for P-E misfit, as intention to quit suggests some level of dissatisfaction and dissatisfaction implies some degree of misfit. Measures of the degree of bias in the organizational culture actually tapped individuals' perceptions of the degree of bias exhibited toward them. A high degree of experienced bias, therefore, seemed a reasonable measure of misfit. Finally, the experience of sexual/gender and racial/ethnic harassment were specific measures of organizational bias. While the pattern of mean effect size estimates was not wholly consistent, the overall influence of person-environment misfit as a predictor domain was extremely modest (0.03).

Sociodemographics

Table XIV summarizes unweighted and weighted mean effect sizes for individual sociodemographic variables and for a combined measure of those variables. They are not included under the broad category of P-E fit because they can only constitute a measure of fit when considered in combination with workgroup make up. However, sociodemographics are more often measured than other categories of variables and have been theorized to influence perceived stress in a variety of ways. They are presented together here simply to demonstrate that, in combination, their influence on perceived stress is modest (0.05), though, when considered individually, race appears to have the greatest influence (0.13). However, as with all the predictor domains presented here, the 95 percent confidence interval is broad enough to warrant further investigation before drawing any firm conclusions.

Summary of results by predictor domain

Table XV summarizes unweighted and weighted mean effect sizes by predictor domain. Note that weighted mean effect sizes range from 0.03 to 0.13 with most domains at 0.07 or less. While the "operational exposure" domain generated the largest weighted mean effect size, it also included the fewest individual effect size estimates ($k = 8$) and therefore has a very broad 95 percent confidence interval. When considering the small number of individual effect sizes and the subsequent limitation in our ability to interpret these data with confidence, perhaps the best summation that can be offered is that, among these studies, each predictor domain appears to make a fairly modest contribution to the experience of perceived stress. Further, this finding is not entirely unexpected. Refer to McGrath's (1976) working definition of stress as a potential that exists:

[...] when an environmental situation is *perceived* as presenting a *demand* which threatens to exceed the person's *capabilities and resources* for meeting it, under conditions where he *expects* a substantial differential in the *rewards and costs* from meeting the demand versus [*failing* to meet] it (p. 1352, italics added).

Conclusion

It is the interaction of an individual's perception and the reality of his or her environment that ultimately shapes the experience (or non-experience) of stress.

Perhaps it should not be surprising that the factors which influence each of these offer equally important contributions to the process. This conceptualization of stress may allow researchers to move beyond the surface-level search for so-called stressors that has characterized much of the research for the past forty years (in the area of police stress) to more meaningful and theoretically driven analyses of the process itself. The current study was a rudimentary test of a new conceptual model. Further testing of the model is necessary to determine its ultimate value to this sub-field of police research.

Notes

1. This criticism is not unique to research in policing. In a discussion of occupational stress research, generally, Hints *et al.* (2010) point out that "individual differences in work stress are largely ignored because work stress is considered to originate mainly from work" (p. 6).
2. There are exceptions, such as Lawrence (1984), but these are notable for their rarity.
3. For a meta-analytic review of P-E fit, see Kristof-Brown *et al.* (2005).
4. This is very similar to Festinger's (1957) explanation of "cognitive dissonance."
5. Karasek's use of "strain" is synonymous with "stress" as we have been using the term here.
6. For reviews see: Ahmad, 2010 (person-environment fit); van der Doef and Maes, 1999 (demand-control-support); van Vegchel *et al.*, 2005 (effort-reward imbalance).
7. For simplification, the model is set up based on "yes-no" responses to a series of questions. However, the author does not mean to imply these are discrete variables. Rather, these are continuous variables, with responses based on evaluation of the answers as more or less likely. Also, it is important to note these evaluations often (if not usually) take place on a sub-conscious level.
8. While questions of control and resource adequacy are clearly related (and likely take place almost simultaneously), it is possible that conflicting findings related to the "control" element of the job demand-control-support model exist because of this lack of specificity (van der Doef and Maes, 1999).
9. For a recent, longitudinal analysis of the impact of Type A dimensions of a variety of outcomes, including work stress, see Hints *et al.* (2010).
10. For an excellent review of the history and development of the "coping" concept, see Lazarus and Folkman (1984).
11. For a complete list of studies included in the meta-analysis, see Webster (2013).
12. The particular study from which this effect size was estimated used a different measure for overall perceived stress. Therefore, a correlation between operational exposure and overall perceived stress could be calculated, making it appropriate to include this particular measure in a "predictor" category.
13. To ensure consistency across measures and be able to combine them into a meaningful overall measure, job satisfaction items were reverse-coded and presented as job dissatisfaction.

References

- Abdollahi, M.K. (2002), "Understanding police stress research", *Journal of Forensic Psychology Practice*, Vol. 2 No. 2, pp. 1-24.
- Ahmad, K.Z. (2010), "Person-environment fit: a critical review of the previous studies and a proposal for future research", *International Journal of Psychological Studies*, Vol. 2 No. 1, pp. 71-78.

- Alexander, D.A., Walker, L., Innes, G. and Irving, B.L. (1993), *Police Stress at Work*, The Police Foundation, London.
- Anshel, M., Robertson, M. and Caputi, P. (1997), "Sources of acute stress and their appraisals and reappraisals among Australian police as a function of previous experience", *Journal of Occupational and Organizational Psychology*, Vol. 70 No. 4, pp. 337-356.
- Brown, J.M. and Campbell, E.A. (1994), *Stress and Policing: Sources and Strategies*, John Wiley, New York, NY.
- Buker, H. and Wiecko, F. (2007), "Are causes of police stress global? Testing the effects of common police stressors on the Turkish National Police", *Policing: An International Journal of Police Strategies and Management*, Vol. 30 No. 2, pp. 291-309.
- Dowling, F.G., Moynihan, G., Genet, B. and Lewis, J. (2006), "A peer-based assistance program for officers with the New York City Police Department: Report of the effects of Sept. 11, 2001", *American Journal of Psychiatry*, Vol. 163 No. 1, pp. 151-153.
- Festinger, L. (1957), *A Theory of Cognitive Dissonance*, Stanford University Press, Stanford, CA.
- French, J.R.P. Jr, Caplan, R.D. and Harrison, R.V. (1982), *The Mechanisms of Job Stress and Strain*, John Wiley & Sons, New York, NY.
- Friedman, M. and Rosenman, R.H. (1959), "Association of specific overt behavior pattern with blood and cardiovascular findings", *Journal of the American Medical Association*, Vol. 169 No. 12, pp. 1286-1296.
- Gershon, R.R.M., Lin, S. and Li, X. (2002), "Work stress in aging police officers", *Journal of Occupational and Environmental Medicine*, Vol. 44 No. 2, pp. 160-167.
- Hints, T., Hintsanen, M., Jokela, M., Pulkki-Räback, L. and Keltikangas-Järvinen, L. (2010), "Divergent influence of different Type A dimensions on job strain and effort-reward imbalance", *Journal of Occupational and Environmental Medicine*, Vol. 52 No. 1, pp. 1-7.
- Huddleston, L., Stephens, C. and Paton, D. (2007), "An evaluation of traumatic and organizational experiences on the psychological health of New Zealand police recruits", *Work*, Vol. 28 No. 3, pp. 199-207.
- Johnson, J.V. and Hall, E. (1988), "Job strain, work place social support, and cardiovascular disease", *American Journal of Public Health*, Vol. 78 No. 10, pp. 1336-1342.
- Karasek, R.A. (1979), "Job demands, job decision latitude, and mental strain: implications for job redesign", *Administrative Science Quarterly*, Vol. 24, June, pp. 285-308.
- Karasek, R.A. and Theorell, T. (1990), *Healthy Work: Stress, Productivity, and the Reconstruction of Working Life*, Basic Books, New York, NY.
- Kristof-Brown, A., Zimmerman, R.D. and Johnson, E.C. (2005), "Consequences of individuals' fit at work: a meta-analysis of person-job, person-organization, person-group, and person-supervisor fit", *Personnel Psychology*, Vol. 58 No. 2, pp. 281-342.
- Lawrence, R.A. (1984), "Police stress and personality factors: a conceptual model", *Journal of Criminal Justice*, Vol. 12 No. 3, pp. 247-263.
- Lazarus, R.S. and Folkman, S. (1984), *Stress, Appraisal, and Coping*, Springer-Verlag, New York, NY.
- McGrath, J.E. (1970), "A conceptual formulation for research on stress", in McGrath, J.E. (Ed.), *Social and Psychological Factors in Stress*, Holt, Rinehart, & Winston, New York, NY.
- McGrath, J.E. (1976), "Stress and behavior in organizations", in Dunnette, M.D. (Ed.), *Handbook of Organizational and Industrial Psychology*, Rand McNally College Publishing Co., Chicago, IL, pp. 1351-1395.
- Matschinger, H., Siegrist, J., Siegrist, K. and Dittmann, K.H. (1986), "Type A as a coping career: towards a conceptual and methodological redefinition", in Schmidt, T.H., Dembroski, T.M. and Blümchen, G. (Eds), *Biological and Psychological Factors in Cardiovascular Disease*, Springer, Berlin, pp. 104-126.

-
- Morash, M., Haarr, R. and Kwak, D. (2006), "Multilevel influences on police stress", *Journal of Contemporary Criminal Justice*, Vol. 22 No. 1, pp. 26-43.
- Muchinsky, P.M. and Monahan, C.J. (1987), "What is person-environment congruence? Supplementary versus complementary models of fit", *Journal of Vocational Behavior*, Vol. 31 No. 3, pp. 268-277.
- Newman, D.W. and Rucker-Reed, L. (2004), "Police stress, state-trait anxiety, and stressors among US Marshals", *Journal of Criminal Justice*, Vol. 32 No. 6, pp. 631-641.
- Noblet, A.J. and Rodwell, J.J. (2009), "Integrating job stress and social exchange theories to predict employee strain in reformed public sector contexts", *Journal of Public Administration Research and Theory*, Vol. 19 No. 3, pp. 555-578.
- Siegrist, J. (1996), "Adverse health effects of high effort/low reward conditions", *Journal of Occupational Health Psychology*, Vol. 1 No. 1, pp. 27-41.
- Siegrist, J. and Matschinger, H. (1989), "Restricted status control and cardiovascular risk", in Steptoe, A. and Appels, A. (Eds), *Stress, Personal Control and Health*, Wiley, Chichester, pp. 65-82.
- Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I. and Peter, R. (2004), "The measurement of effort-reward imbalance at work: European comparisons", *Social Science & Medicine*, Vol. 58 No. 8, pp. 1483-1499.
- Slate, R.N., Johnson, W.W. and Colbert, S.S. (2007), "Police stress: a structural model", *Journal of Police and Criminal Psychology*, Vol. 22 No. 2, pp. 102-112.
- Toch, H. (2002), *Stress in Policing*, American Psychological Association, Washington, DC.
- van der Doef, M. and Maes, S. (1999), "The job demand-control (-Support) model and psychological well-being: a review of 20 years of empirical research", *Work & Stress*, Vol. 13 No. 2, pp. 87-114.
- van Vegchel, N., de Jonge, J., Bosma, H. and Schaufeli, W. (2005), "Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies", *Social Science & Medicine*, Vol. 60 No. 5, pp. 1117-1131.
- Webster, J.H. (2013), "Police officer perceptions of occupational stress: the state of the art", *Policing: An International Journal of Police Strategies and Management*, Vol. 36 No. 3, pp. 636-652.
- Zhao, J., He, N. and Lovrich, N. (2002), "Predicting five dimensions of police officer stress: looking more deeply into organizational settings for sources of police stress", *Police Quarterly*, Vol. 5 No. 1, pp. 43-63.
- Zhao, J., He, N., Lovrich, N. and Cancino, J. (2003), "Marital status and police occupational stress", *Journal of Crime & Justice*, Vol. 26 No. 2, pp. 23-46.

About the author

Dr Jennifer H. Webster earned her PhD from the University of Cincinnati in 2012. She is currently serving as a Faculty and the Director of Integrative Studies at the Northern Kentucky University. Jennifer's research interests include industrial/organizational psychology as applied to police management, crime prevention and community sustainability, and the scholarship of teaching and service learning. Dr Jennifer H. Webster can be contacted at: websterj3@nku.edu

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.