

Police Officer Critical Incident Stress: Sources and Outcomes

Gregory S. Anderson, Ph.D.
University of the Fraser Valley



What We Know About Police Officers

During a normal shift and critical incident...

Policing is primarily sedentary

- Sitting
- Standing
- Walking






Police work can be physically demanding

- Police work can be extremely physically demanding for short periods of time
- Critical incidents
- Running, pushing, pulling etc.





Police work can be stressful

- Physical stress
 - Running, pushing, pulling etc.
- Psycho-social Stress
 - Anticipation
 - Suspect contact
 - Organizational

Six Seconds...




Previous Research

- Police work is not more stressful than other occupations
(McLaren et al., 1998; Hart & Wearing, 1995; Anson & Bloom, 1988)
- Police work is one of the most stressful occupations
(Anshel, 2000; Brown & Grover, 1998; Violanti & Aron, 1995)




Understanding Stress

- A combination of a stressor and stress reactivity; a stimulus and response
- Physical stress – response to the physical demands of police work
- Psycho-social stress – response to the self-perceived imbalance between demands and resources

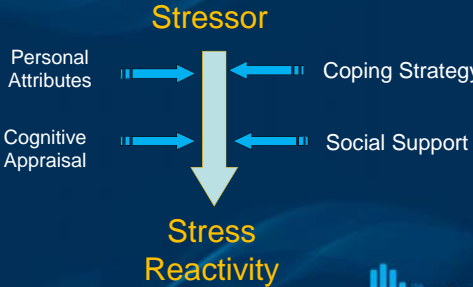



Acute vs Chronic Stress

- Acute stress – sudden onset of a critical nature, resolved quickly
 - i.e. a critical incident
- Chronic stress – builds over time, lasting over long periods
 - i.e. organizational stress




Stress: Stressor and Stress Reactivity

Stressors

- Anything that leads to stress reactivity
 - Situations perceived as threatening or challenging
- Past research focuses on perceived stress and stressors
 - Self-report data using questionnaires
 - Lacks frequency data
 - Repression




Stress Reactivity

Ready for Action!

Nervous System


- Sympathetic Nervous System
 - Increase heart rate, cardiac output
 - Blood FFA
 - Muscle contractility
 - Blood distribution
 - Ventilation



Stress Reactivity


Ready for Action!
Hormones

- Catecholamines
 - (eg. adrenalin)
 - Increase heart rate, cardiac output, FFA, contractility, ventilation
- Glucocorticoids
 - (eg. cortisol, thyroxin)
 - Increase metabolism, protein turnover, blood pressure, reduce WBC



Critical Incidents

Anderson, Plecas and Segger (2001). Police officer physical abilities testing: Re-validating a selection criteria. Policing: An International Journal of Police Strategies and Management. 24(1): 8-31.



Critical Incidents

- 37% Observed
- 50% Dispatched
- 31% Result of investigation
- 12% Domestic violence
- 10% Social violence
- 43% Something else (not predictable)

N = 278



Critical Incidents

Can occur at any time, almost anywhere, and without warning


- 89% Involve a suspect
 - 20% 2 suspects
 - 12% 3 suspects
 - 06% 4 or more suspects



Controlling the Problem:

Subject Characteristics


	#1	#2	#3	#4
Suspect	89%	77%	77%	77%
Male	88%	77%	87%	91%
Violent	60%	30%	45%	38%
Under the Influence	15%	12%	21%	19%
Mentally Unstable	11%	10%	10%	6%
Average + Fitness	84%	85%	74%	89%



Controlling the Problem:

Relative Size and Age


- 39% of the suspects **weighed** more than the officer
- 41% of the suspects were **taller** than the officer
- the average **suspect** (mean = 26 y) was younger than the **officer** (mean = 29 y)



Controlling the Problem:


Resistance Encountered


	#1	#2	#3	#4
Push/Pull Officer	57%	34%	42%	24%
Grasp Officer Clothes	28%	17%	16%	18%
Wrestled Officer	26%	15%	6%	18%
Grasped Object	23%	9%	23%	12%
Struck Officer	23%	9%	16%	6%
Other Resistance	14%	19%	10%	29%



Physical Evidence of Police Officer Stress


Anderson, Litzenberger and Plecas (2002).
Physical evidence of police officer stress.
Policing: An International Journal of Police Strategies and Management. 25(2): 399-420.



- ### Direct Observation
- 75, 867 minutes of observed data
 - 121 ride-a-longs over 12 months
 - Time-matched observational and heart rate data
 - Above resting heart rate and % heart rate reserve
- Anderson et al., *PIJPSM*, 24(1): 8-31, 2001
- 


Evidence of Anticipatory Stress

	Above Resting Heart Rate		%age Heart Rate Reserve	
	Mean	SD	Mean	SD
First 15 minutes	29	14	22 %	10 %
First 30 minutes	27	13	21 %	10 %
First 60 minutes	25	13	20 %	9 %
Last 60 minutes	19	12	15 %	10 %
Average Shift	22	12	17 %	9 %




Evidence of Psycho-social Stress

	Above Resting Heart Rate		%age Heart Rate Reserve	
	Mean	Max	Mean	Max
Hand on Gun, No Suspect	29	52	15 %	29 %
Hand on Gun, Suspect	40	52	31 %	43 %
Snap Open, No Suspect	45	49	31 %	31 %
Snap Open, Suspect	49	49	35 %	30 %
Average Standing	27		21 %	




	Above Resting Heart Rate		%age Heart Rate Reserve	
	Mean	SD	Mean	SD
• Code 1, assigned	20	11	15 %	7 %
• Code 1, back-up	21	12	16 %	7 %
•• Code 2, assigned	25	11	18 %	8 %
•• Code 2, back-up	27	12	21 %	9 %
••• Code 3, assigned	28	17	21 %	13 %
••• Code 3, back-up	41	10	32 %	7 %



Evidence of Physical Stress


	Above Resting Heart Rate		%age Heart Rate Reserve	
	Mean	Max	Mean	Max
Wrestling	65	97	51 %	73 %
Tussle	58	107	46 %	85 %
Full Fight	54	112	43 %	85 %
Handcuffing	45	88	34 %	72 %
Average Shift	23	93	18 %	95 %



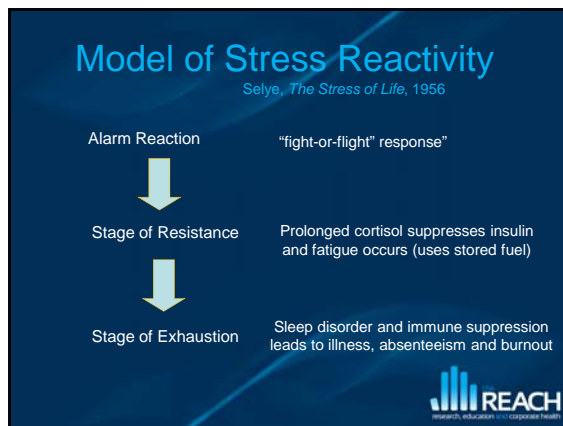
- ### Lack of Recovery
- Comparing heart rates in the last hour for **those in a critical** to those not in a critical
 - Talking to suspect **35 : 24**
 - Normal driving **27 : 18**
 - Standing **31 : 21**
 - Sitting writing **28 : 20**
 - Average all activities **29 : 20**
- 

	30-60 min Prior		During a Critical		30-60 min After	
	HR	% HR	HR	% HR	HR	% HR
Talk to Suspect	22	20 %	52	40 %	45	35 %
Driving	23	18 %	35	28 %	38	29 %
Standing	33	26 %	48	38 %	46	35 %
Sitting	20	16 %	29	23 %	32	25 %
Average All	26	20 %	45	35 %	38	30 %



- Demonstrated physiological and psychosocial (including anticipatory stress)
 - Many sources of stress-reactivity, many of which officers are unaware of
 - Lack of complete recovery after a critical, with officers leaving work with stress
 - Slow recovery from critical incidents
- 

Impact of Stress

Dr. Kevin Gilmartin

Emotional Survival for Law Enforcement

- Safety requires cynicism not complacency
- Risk leads to hypervigilance
 - sympathetic nervous system
 - fight or flight
 - alive, alert, engaged
 - down side to every up side




Stress and Health

- Frequency, duration, intensity of stress related to illness
- Effort without distress \Rightarrow catecholamines
- Negative affect, distress \Rightarrow cortisol


Frankenhaeuser, Ann. Behav. Med. 13: 197-204, 1991
- Chronic over-production of cortisol linked to immunosuppression

Saplosky, IN: Behavioral Endocrinology, 1992




Stress Hormones and Health

Catecholamines	Cortisol
<ul style="list-style-type: none"> • Increased CHD • Hypertension • Heart attacks • Slows digestion 	<ul style="list-style-type: none"> • Reduced lymphocytes • Immunosuppression • Link to illness • Link to cancer?



For every action there is an equal and opposite reaction...

- Alive, alert, excitement, engaged
- Work
- Normal
- Home
 - tired, detached, isolated, apathetic

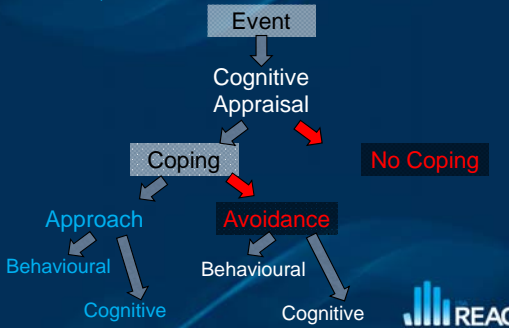
Stress and the Organization

What are the organization's responsibilities?




Conceptual Model for Coping

Anshel, 2000




```

graph TD
    Event[Event] --> Appraisal[Cognitive Appraisal]
    Appraisal --> Coping[Coping]
    Appraisal --> NoCoping[No Coping]
    Coping --> Approach[Approach]
    Coping --> Avoidance[Avoidance]
    Approach --> ApproachBeh[Behavioural]
    Approach --> ApproachCog[Cognitive]
    Avoidance --> AvoidanceBeh[Behavioural]
    Avoidance --> AvoidanceCog[Cognitive]
    
```




Approach Coping

- Process information to control situation
- Improve understanding
- Resourcefulness in dealing with stress
 - Thoughts – approach cognitive
 - Actions – approach behavioral




Preferred method when...

- Situation is controllable (ie arrest)
- Source of stress is known (ie speeding ticket)
- Person is receptive to discussion
- Person possesses good communication skills
- Adequate time to resolve the situation
- Failure to resolve may escalate the situation
- Person possesses good self-confidence




Approach Coping

<p>Approach-Behavioural</p> <ul style="list-style-type: none"> • Questioning • Use of authority in stance, posture and eye contact • Giving commands • Drawing a weapon • <i>High stress; high control</i> 	<p>Approach-Cognitive</p> <ul style="list-style-type: none"> • Analyzing (thoughts) • Planning; Imaging • Self-statements • Psyching up • Re-appraisal • <i>High stress; high control</i>
--	--




Avoidance Coping

- Remove oneself from stress source
- High demand and low control
- Increase time to react
- Replace unpleasant, non-constructive thoughts
 - Maintain attention and focus




Preferred method when...

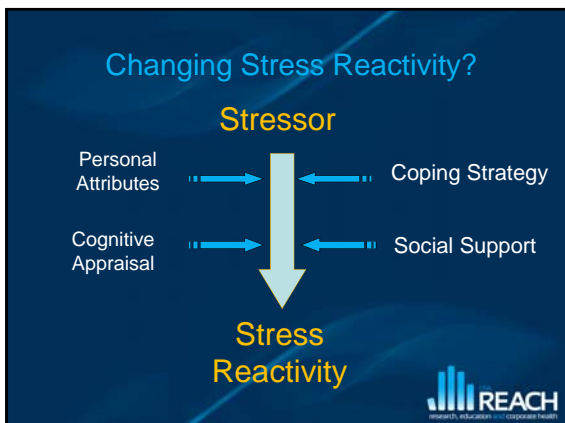
- Situation is not controllable (ie aggression)
- Officer's emotional resources are limited
- Information overload must be reduced
- Source of stress is unclear
- Time is needed to assimilate information
- Little chance of resolving the issue



Avoidance Coping

<p>Avoidance-Behavioural</p> <ul style="list-style-type: none"> • Physically removing one's self • Eliminating thoughts of unpleasant stress • Can be adaptive or mal-adaptive • <i>High stress; low control</i> 	<p>Avoidance-Cognitive</p> <ul style="list-style-type: none"> • Distracting thoughts • Denial • Rationalization • Humor • Psychological distance • <i>High stress; low control</i>
---	---





- ### Places for Intervention
- Personal Attributes
 - Hiring and psychological and sociological screening
 - Cognitive Appraisal
 - Education, simulation, appropriate cues, locus of control
 - Coping Strategies
 - Education: How to... When to... Why to...
 - Social Support
 - Organization, mentors, debriefing,
 - (Peer) Counselling, family
- REACH
research, education and corporate health

- ### Organizational Responsibility
- | | |
|---|---|
| <p>Physical</p> <ul style="list-style-type: none"> • Recruitment • Time to train • Training programs • Education | <p>Psycho-Social</p> <ul style="list-style-type: none"> • Recruitment • Debriefing • Counseling Services • Family Services |
|---|---|
- REACH
research, education and corporate health

- ### Workplace Wellness Programs
- Reduce health care costs
 - Increase productivity
 - Reduce absenteeism
 - Reduce employee turnover
 - Positive return on investment
- REACH
research, education and corporate health

