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Michael G. Curtis

University of Nevada, Las Vegas, curtism9393@gmail.com

Russell T. Hurlburt

University of Nevada, Las Vegas, russell.hurlburt@unlv.edu

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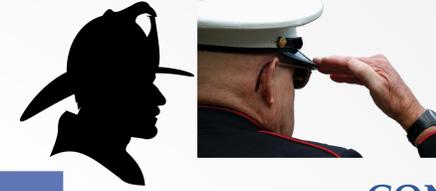
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Pre-traumatic Factors of Career-Related PTSD: A Systematic Review of the Literature



Michael Curtis, McNair Scholar, Psychology Major
Dr. Russell Hurlburt, Faculty Mentor, Department of Psychology



ABSTRACT

This paper examined and synthesized the (limited) available literature on the pre-traumatic predictors of PTSD, specifically targeting populations in which traumatic events are experienced frequently because of the requirements of their positions, i.e., firefighters, police, and military personnel. A total of 21 articles were included in the final literature review and were used to assess the current available knowledge of the pre-traumatic traits of career-related PTSD, and address potential gaps in the literature. The culmination of this research was used to create specific risk profiles for each of the high risk careers included in this review, firefighters, police, and military personnel. The research presented here discovered very little literature surrounding these high risk populations. Future research focusing on longitudinal prospective studies should be conducted on high risk populations so that training could better equip officers, firefighters, and military personnel to deal with PTEs, thus lowering the overall development of PTSD.

INTRODUCTION

- At one point or another in their lifetime every individual experiences a PTE, but only 8.7% of people in the United States meet the DSM criteria for PTSD by the age of 75 (Medina, 2010).
 - 44-47% of veterans and recently deployed soldiers develop PTSD (Medina, 2010),
 - 22% of firefighters develop PTSD (Heinrichs et al., 2005)
 - 7-19% of police officers develop PTSD (Maguen et al., 2009)
- These professional populations present a unique opportunity for researchers to examine pre-traumatic factors that may be associated with PTSD because researchers may be able to get baseline statistics before a PTE and follow up data shortly after one or multiple PTEs. However, very little such research has been performed.

METHODOLOGY

Each article must have met the following criteria:

- the study centered on pre-traumatic factors of PTSD,
- the study was conducted on a population that experiences frequent traumatic events related to their career, i.e. active duty military or veterans, firefighters, and police
- participants were assessed before and after a period of time in which a traumatic event occurred,
- the article was considered to be “recent” research published between within the last 10 years, and
- the study must have been written in English

RESULTS

- Total of 21 studies that met the above criteria.
 - 4 articles exclusively involved firefighters,
 - 5 articles involved police officers,
 - 11 articles involved military personnel.
- Average age of participants ranged from 18 – 31 years old.
- All research was conducted on men
- Majority being of Caucasian or white decent.

Citation	Population	Mean Age (SD)	Trauma Exposed Sample Size	Baseline	Follow-Up Assessment schedule	Primary findings
Bryant and Guthrie (2007)	Firefighters	PTSD: 30(7.13) Non-PTSD: 30.02(4.40)	33(52)	Prior to active duty	W1: 4 years later	Higher levels of negative appraisal of themselves before predicted PTSD symptoms
Bryant et al. (2007)	Firefighters	29.6(5)	60	Prior to active duty	W1: 4 years later	PTSD symptoms precluded a difficulty in recalling specific memories surrounding certain traumatic events
Guthrie and Bryant (2005)	Firefighters	30.1(5.1)	71	Prior to active duty	W1: 1 year later	Heightened biological arousal may be a vulnerability for PTSD
Heinrichs et al. (2012)	Firefighters	25.6(3.5)	15	While training at the academy	W1: 6 months W2: 9 months W3: 12 months W4: 24 months	High hostility and low self-efficacy predicted PTSD symptom severity
Orr et al. (2012)	Firefighters & Police Officers	27(6.5)	308	While training at the academy	W1: 19.4 days (SD=12.2), W2: 12.3 days after W1 (SD=11.5)	Inability to relax after a PTE; Lower IQ and higher levels of depression predicted PTSD symptoms.

Citation	Population	Mean Age (SD)	Trauma Exposed Sample Size	Baseline	Follow-Up Assessment schedule	Primary findings
Inslicht et al. (2010)	Police Officers	27(4.60)	278	While training at the academy	W1: 1 year	A history of substance abuse, psychotic symptoms, and/or mood or anxiety disorders in first degree full biological relatives increased the of development of PTSD symptoms
Maguen et al. (2009)	Police Officers	27.2 (4.7)	180	While training at the academy	W1: 1 year	Work environment predicted PTSD symptom
McCaslin et al. (2008)	Police Officers	27.24(4.7)	180	While training at the academy	W1: 1 year	Dissociating from the emotions that the event produces increases the presence of PTSD symptoms
Meffert et al. (2008)	Police Officers	27.2 (4.7)	180	While training at the academy	W1: 1 year	Baseline trait anger predicts later PTSD symptoms and that PTSD symptoms are associated with increased state anger, independent of baseline anger
Yuan et al. (2011)	Police Officers	27.2 (4.6)	233	While training at the academy	W1: 1 year	A benevolent world was associated with lower symptoms of PTSD

Citation	Population	Mean Age (SD)	Trauma Exposed Sample Size	Baseline	Follow-Up Assessment schedule	Primary findings
Franz et al., (2013)	Military Personnel	25.7(5.9)	774	Prior to active duty,	W1: National Guard = 197.5(SD=34) days, Military = 73.5(SD=19.5) days	Identified 4 factors that directly affected threat appraisal: pre-deployment PTSD symptoms, prior history of warzone deployment, pre-deployment unity cohesion, and preparedness
LeardMann et al. (2009)	Military Personnel	NG	55021	While training at the academy	W1: 2.7 years (SD=.5)	Soldiers with overall poorer physical and mental health predicted the presence of PTSD
Lommen et al. (2014)	Military Personnel	23.82(4.94)	221	Baseline: Prior to active duty	W1: 2 months W2: 9 months	Trait anger before deployments predicted presence of PTSD symptoms
MacDonald et al. (2013)	Military Personnel	25.7(5.9)	774	Prior to active duty	W1: National Guard = 197.5(SD=34) days, Military = 73.5(SD=19.5) days	Overall severity of re-experiencing, avoidance, and hyperarousal symptoms increase significantly in post-deployment
Rademaker et al. (2011)	Military Personnel	31.1(8.98)	410	While training at the academy	W1: 4months W2: 6 months	Type D personality was shown to make military personnel more susceptible to the development of PTSD symptoms
Sandweiss et al. (2011)	Military Personnel	NG	22630	Prior to active duty,	W1: 1 to 3 years later W2: 4 to 6 years later	Severity of health functioning has also been shown to be marginally related to PTSD
van Liempt et al. (2013)	Military Personnel	28.85(9.06)	453	Prior to Deployment	W1: 6 months	Pre-deployment nightmares were demonstrated as being predictors of PTSD after deployment
Vasterling et al. (2008)	Military Personnel	NG	800	Prior to active duty	W1: average of 95.2 days	Health related functioning was found to be weakly related to PTSD; PTSD symptoms adversely affect physical and mental health causing increased negative day-to-day functioning
Vasterling et al. (2010)	Military Personnel	25.7(5.9)	774	Prior to active duty	W1: National Guard = 197.5(SD=34) days, Military = 73.5(SD=19.5) days	PTSD symptoms increased overall after deployment once scores were adjusted for pre-existing symptoms
Wright et al. (2012)	Military Personnel	49% between 18 and 25	522	2 months before deployment	W1: 3 months after 12-month deployment	Soldiers who scored lower in social functionality and had greater exposure to combat stress had higher levels of post-traumatic symptoms

CONCLUSION

- The high-risk profile for firefighters include individuals with individuals with higher levels of negative self-appraisal, difficulty recall memories surround a PTE, heightened biological arousal, high hostility, low self-efficacy, an inability to relax after a PTE, lower IQ levels and higher levels of depression (Bryant et al., 2007; Bryant & Guthrie, 2007b; Guthrie & Bryant, 2005; Heinrichs et al., 2005; Orr et al., 2012).
- For police officers this high-risk group are officers who have a history of substance abuse, psychotic symptoms, and/or mood disorders, poorer work environment, are more apt to dissociation from PTEs, have higher baseline trait anger, and have a malevolent outlook on the world (Inslicht et al., 2010; Maguen et al., 2009; McCaslin et al., 2008; Meffert et al., 2008; Yuan et al., 2011).
- Lastly, the high-risk group for military personnel includes personnel who have poorer physical and mental health, higher levels of trait anger before deployment, Type D personality, nightmares before deployment, and low social functionality (LeardMann et al., 2009; Lommen et al., 2014; Rademaker et al., 2011; Sandweiss et al., 2011; van Liempt et al., 2013; van Zuiden et al., 2011; Vasterling et al., 2008; Wright et al., 2012).

FUTURE RESEARCH

Future research focusing on longitudinal prospective studies should be conducted on high risk populations so that training could better equip officers, firefighters, and military personnel to deal with PTEs, thus lowering the overall development of PTSD.

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