Police suicide: Prevalence, risk, and protective factors

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Police suicide: prevalence, risk, and protective factors

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Abstract

Purpose – The purpose of this paper is to explore risk and protective factors associated with suicidal ideation among law enforcement personnel.

Design/methodology/approach – The methodology employed is based on the "Best Evidence Synthesis" approach, whereby researchers systematically examine and integrate the most empirically sound available research on the topic under investigation.

Findings – Results of studies showed that the interaction of multiple risk factors had a cumulative effect in increasing the risk for suicidal ideation. In total, five prominent aspects of policing were associated with risk for suicidal ideation: organizational stress; critical incident trauma; shift work; relationship problems; and alcohol use and abuse. Studies also indicated that protective factors and preventative measures had stress-buffering effects which decreased the impact of police stressors.

Research limitations/implications – The model is limited because few studies have employed methodologically-sound research designs to test risk and protective factors related to police suicide. This conceptual overview may facilitate theory development and provide directions for future research.

Practical implications – Law enforcement agencies which implement programs that assist police personnel in developing active coping styles, identify and access available social support systems, as well as utilize community-based services may decrease risk for suicidal ideation. This review provides practical applications for law enforcement training, education, and program development.

Originality/value – The paper represents the most recent review of risk and protective factors related to suicidal ideation among police personnel. This integration of research provides police practitioners with an evidence-based ecological framework that can be applied universally in police management settings.

Keywords Police, Individual behaviour, Stress, Suicide, Police management, Police suicide, Risk and protective factors, Law enforcement stress

Paper type Conceptual paper

Over the past decades, a substantial body of research and theory has been devoted to understanding the psychological processes that underlie suicidal behavior (Nock *et al.*, 2008; Shneidman, 2001). Early work on this subject (e.g. Freud, 1917; Menninger, 1938) focussed primarily on the treatment of severely depressed patients in clinical settings. More recently, however, public health advocates and other health-related professionals reported that suicidal behavior is becoming an epidemic, worldwide problem (Nock *et al.*, 2008). Data indicate that suicide is the 11th leading cause of death in the USA (Centers for Disease Control and Prevention (CDC), 2006) and the 16th leading cause of death in developing countries (World Health Organization (WHOGROUP), 2004). In a comprehensive study from the WHOGROUP, Ajdacic-Gross *et al.* (2008) found that across cultures, death by hanging was identified as the most common method of suicide. In the USA, however, the most frequently employed method is death by firearm, representing 52 percent of all suicides (CDC, 2009). It is difficult to account for this finding, but scholars have suggested there is mounting evidence indicating that access to firearms substantially elevates the risk of suicidal behavior (CDC, 2006; Kaplan *et al.*, 2009; Miller and Hemenway, 1999). Brent and Bridge's (2003) review of

research on access to firearms and suicide concluded that, "the firearms suicide rate and, in general, the overall suicide rate [in the U.S.] are related to [...] the prevalence of gun ownership" (p. 1206).

This finding, however, is not isolated to the general public. Studies have indicated that among law enforcement personnel in the USA, roughly 80-90 percent of police suicides involved the officer's revolver (Violanti, 1996, 2007; Violanti and Aron, 1995). Similarly, Marzuk *et al.* (2002) found that among 80 certified suicides by New York City police officers, 94 percent involved the officer's firearm. Lsikewise, data from 2003 to 2007 indicated that over 80 percent of completed suicides among police officers in New Jersey involved a firearm (State of New Jersey, 2009). These findings are particularly disconcerting since these officials play a critical role in preserving law and order within communities.

Currently, there is a substantial body of research on police suicide. However, much of this scholarly work has focussed on exploring whether law enforcement personnel are at greater risk for suicide than those in the general population (DeLange and Neeleman, 2004; Hem *et al.*, 2001; Kapusta *et al.*, 2010; Marzuk *et al.*, 2002; Violanti, 2007). While this line of research is significant, it is also important to explore prominent factors associated with suicide risk. Based on our assessment of the extant literature, at least five prominent themes emerged as content domains that were positively associated with police suicide: organizational stress, critical incident trauma, shift work and atypical work hours, relationship problems, and alcohol use and abuse. Although the degree to which these stressors influence each other is unclear, the research literature suggests that the interaction of multiple risk factors – not one factor in isolation – may account for the elevated risk of suicide among police officers.

Accordingly, the authors contend that by developing a broader understanding of the complex interaction of multiple stressors that precipitate suicidal ideation, law enforcement agencies, and administrators may be better prepared to develop effective intervention and prevention programs. To this end, we present research findings on the risk factors associated with police suicide. Additionally, protective factors and interventions that promote resilience among law enforcement personnel are presented. The authors employed an ecological systems model highlighting variables that potentially mediate the effects of police stressors.

Terminology: suicidal ideation and suicide

Historically, there has been little consistency in the use of terminology associated with suicide and suicidal ideation (Berg *et al.*, 2003; Shneidman, 1993). In reference to suicide, scholars have used multiple terms interchangeably (e.g. suicidal ideation, suicidal intent, and suicidal behaviors). This practice, however, can lead to confusion as the meanings of these clinical terms vary considerably. For the purpose of this paper, suicidal ideation refers to thoughts and cognitions about ending one's life. This may include specific plans and means by which to complete the suicide (Reynolds, 1991). In the current integration of research, the suicide measures included in the review exclusively assessed cognitions and thoughts about ending one's life. Accordingly, the terms suicidal ideation and thoughts of suicide will be used interchangeably hereafter

Risk factors
Organizational and operational stressors
Police work is a highly stressful occupation characterized by unpredictable events, exposure to trauma, extended periods of boredom, inconsistent shift work, and tension

associated with organizational issues (Violanti *et al.*, 2011). Although researchers have identified multiple types of stressors within the law enforcement profession, prominent scholars concur that police stress may be attributed to both organizational (i.e. structural/functional stress from the police organization) and operational tension (i.e. day to day strain from routine police work) (Lanterman *et al.*, 2010; McCreary and Thompson, 2006; Paton *et al.*, 2009; Shane, 2010).

First, organizational strain emerges as a result of structural stressors within the law enforcement setting as well as functional stressors related to aspects of organizational life (Lanterman *et al.*, 2010; Shane, 2010; Zhao *et al.*, 2002). Structural stressors are attributed to the departmental and administrative culture, which include bureaucratic styles of management, lack of autonomy, and interpersonal conflicts between officers. Functional stressors consist of aspects of organizational life that cause emotional strain, such as rotating shift work, irregular work hours, and consecutive work days (Kecklund *et al.*, 2008; Vila, 2006).

Second, operational stress emerges from routine policing responsibilities within the community. Operational stressors manifest from the cumulative effects of exposure to extended periods of inactivity and boredom punctuated by emotionally intense experiences of potential trauma and fear. Operational stress also arises from critical incident experiences in policing, which include the violent and dangerous nature of some aspects of police work.

Organizational stressors

Structural elements of police organizations

According to Violanti (2007), a number of law enforcement departments operate from a bureaucratic model of leadership where members are stratified based on rank and status. Typically, police organizations maintain a culture of excessive formality and routine whereby appropriate procedures and regulations function as core aspects of everyday operations. Such protocols are consistent with authoritarian models of military leadership. In fact, Wester and Lyubelsky (2005) likened police training to military boot camp wherein officers "are not paid to think, but to follow their superior's order – right, wrong, or indifferent" (p. 8). This administrative paradigm allows officers in supervisory roles to use arbitrary judgment in directing, and at times, micro-managing subordinates to adhere to detailed regulations and protocols (Stinchcomb, 2004). Adherence to such strict bureaucratic regulations can be an obstacle to organizational efficiency, particularly with regard to interpersonal communication and collaboration. Indeed, Shane (2010) found that officers who reported more serious communication problems received less favorable performance evaluations ($\beta = -0.290$, $p < 0.001$). These findings echo the concerns of McCreary and Thompson (2006) who asserted that communication problems between junior and senior level officers can impact performance assessments, which in turn, may compromise the overall objectivity of employee work evaluations.

Several other researchers have also raised concerns regarding performance appraisal methods among law enforcement officers (Miller, 2006; Paton *et al.*, 2009). Shane (2008) suggested that administrators and supervisors tend to use subjective approaches to measure performance. He noted that factors such as favoritism, coercion, and ability to assimilate into the police subculture can influence advancement (Stinchcomb, 2004; Woody, 2005). Paton *et al.* (2009) added that the promotion process has often been viewed as lacking integrity and merit. For example, they described

various cases where officers had been promoted as a result of political influence and social connections, rather than merit.

Gardner and Pierce (1998) noted that when power within organizations is not dispersed, employees may feel their contributions to the workplace are not recognized and valued. As a result, employees may experience diminished job satisfaction, reduced motivation, and elevated stress. Given the overwhelming nature of police stressors in the organization, it is not surprising that some officers determine that premature retirement may be their best option (Violanti, 2007). Indeed, Brough and Frame (2004) found that officers who reported inadequate supervisory support and scored high on measures of job dissatisfaction collectively predicted high job turnover rates. Likewise, Johnson *et al.* (2010) studied Federal Law Enforcement personnel to determine whether job satisfaction and level of congruence (i.e. degree to which an officer's skills matched requirements of the vocation) predicted job turnover. The researchers found that low scores on both variables were significant predictors of occupational turnover.

Review of research: structural factors, stress, and suicidal ideation
There is a commonly held belief, perpetuated in part by the media, that police stress and symptoms of poor psychological functioning are a direct result of exposure to trauma and critical incidents. However, a growing body of empirical research suggests that mental health problems among law enforcement personnel may be better accounted for by administrative inefficiency, poor management, and work-related stressors in routine policing (Liberman *et al.*, 2002; Maguen *et al.*, 2009). For example, Gershon *et al.* (2009) examined the effects of perceived work stress in police officers in a large urban department. Results of their study indicated that organizational stressors, and not critical incidents, were robust predictors of clinical depression (OR = 9.9), anxiety (OR = 6.1), and traumatic stress symptoms (OR = 3.25). Study outcomes also showed that police personnel who reported high levels of organizational job dissatisfaction were three times (OR = 3.2) more likely to experience elevated levels of work stress.

In another study, Amaranto *et al.* (2003) investigated job-related stressors associated with exposure to violence in various police departments in an urban setting. Results showed that the majority of participants identified stressors within the context of the police organization as being the most prominent. Common themes noted by officers include: low morale, lack of acknowledgement for achievements, and political barriers associated with advancement and promotion. Additionally, participants indicated that senior officers were more likely to employ deficit-based motivation techniques, such as "excessive punishment for a minor infraction" and having "one's firearm confiscated" if an officer self-disclosed that he or she had been dealing with "stress-related problems."

Research has also suggested that the police organizations have generally been unsupportive and unresponsive to employee needs (Brough, 2004; Carlier *et al.*, 1997; Plaxton-Hennings, 2004; Violanti and Aron, 1995). Plaxton-Hennings (2004) investigated the quality of police debriefings and follow-up support for officers involved in critical incidents. She noted that one recurring complaint among recovering police personnel was that departmental administrators did not seem concerned about officers recovering from potentially life threatening experiences. Plaxton-Hennings concluded, "it is clear from the data that following [critical events], the department tended to separate itself from their deputies" (p. 59). Similarly, in a longitudinal

analysis, Carlier *et al.* (1997) studied officers who had been involved in a critical event and were subsequently hospitalized. The authors found that participants developed symptoms of clinical depression, post-traumatic stress disorder, and suicidal ideation. Further, when the researchers interviewed the injured law enforcement personnel, analysis of the responses indicated that most officers did not attribute traumatic stress symptoms to the critical incident, but rather to the absence of any follow-up or debriefing from their respective police departments. Carlier *et al.* (1997) concluded, "therefore, it appears that the traumatic event may not be the event itself, but rather the organization's response to the officer, making them feel isolated, unsupported, disempowered, and ultimately, traumatized" (p. 501).

An increasing number of studies have examined structural factors associated with policing and risk for suicide. For example, Rothmann and Strijdom (2002) found that officers who reported inadequate supervisor support, pervasive administrative and departmental strain, and low levels of job satisfaction showed a greater likelihood of being at risk for suicide. Similarly, Pienaar *et al.* (2007) found that officers who encountered extensive organizational stress tended to employ avoidance type coping styles and were less involved with their spiritual faith. The authors concluded that the interaction of stressors and use of avoidant coping styles predicted risk for suicidal ideation.

Functional aspects of police organizations
There is growing evidence suggesting that functional aspects of some police organizations are associated with elevated risk for health-related problems (Dawson and Reid, 1997; Vila, 2006). Functional aspects of organizational life such as erratic work hours and fluctuating work shifts have long been identified as risk factors for suicidal ideation among physicians and other emergency personnel (Schernhammer and Coditz, 2004). Similarly, increasing evidence suggests that officers assigned to extensive shift work duties are at elevated risk for experiencing health-related consequences (Gerber *et al.*, 2010; Violanti *et al.*, 2008). Violanti and Aron (1995) administered the Police Stress Survey to a sample of 103 officers who were instructed to rank order 60 aspects of police work based on perceived level of stress. An analysis of participant responses showed that shift work was the top ranked work-related stressor. Gerber *et al.* (2010) study of police personnel provides support for Violanti and Aron's (1995) survey results. They conducted a study with 460 police officers, almost half of which ($n = 240$) were shift workers. Results of their investigation showed that police personnel who worked overtime during night shifts reported substantially more work-related stress, occupational dissatisfaction, and sleep disturbances compared to their colleagues who engaged in little or no shift work.

Sleep disturbances often emerge as officers become habituated to the practice of strategic napping during brief interludes of non-work periods between shifts. Unpredictable rotating work shifts can disrupt the biochemical and neurological processes generated by signals from the brain, known as circadian rhythms (Haus and Smolensky, 2006). Circadian rhythm disorders refer to both endogenous and exogenous factors that interfere with the body's natural ability to restore normal bodily functioning such as natural sleep-wake cycles, hormone secretion, and emotion regulation. Such disruptions can lead to irregular sleep patterns and diminished rapid eye movement (REM) sleep, impulsivity, emotional dysregulation, and aggressive outbursts (Agargun and Cartwright, 2003; Roman *et al.*, 2005; Vila, 2006). Bernert and Joiner's (2007) review of research on sleep disturbance showed that insufficient REM sleep was associated with diminished serotonergic activity within the central nervous

system as well as depressive symptomology (i.e. feelings of hopelessness, despair, and thoughts of suicide).

Research studies have indicated that law enforcement personnel who engage in frequent shift-work are at risk, not only for experiencing adverse physiological and emotional effects, but also for exhibiting symptoms of compromised judgment, perception, and psychomotor functioning (Eriksen and Kecklund, 2007; Kecklund *et al.*, 2008; Vila, 2009). For example, Vila (2009) studied the effects of sleep deprivation among law enforcement officers working late night shifts. He indicated that participants who had not slept in 24 hours exhibited deficits in hand-eye coordination, executive functioning, and cognitive impairment equivocal to an individual with a blood alcohol level (BAL) of 0.10, which is beyond the legal BAL of 0.08. In another study with non-police officers, Dawson and Reid (1997) found that moderate levels of sleep deprivation also produced psychomotor impairment commensurate with responses of individuals with a BAL beyond the legal limit. Participants who stayed awake for 17 straight hours were administered assessments on psychomotor skills, reaction time, and hand-eye coordination. Results showed that their responses were similar to those who had a BAL of 0.05. Participants who stayed awake for 24 hours showed greater cognitive deficiencies than individuals with a BAL of 0.10. Dawson and Reid (1997) concluded that sleep deprivation substantially compromises the ability to engage in daily functions such as driving, activities requiring hand-eye coordination, as well as perception.

The impact of shift work and erratic work hours have serious implications for police officers because of their unique responsibilities as first responders to emergencies, enforcers of the law, and their role as peace makers within the community (Vila *et al.*, 2002). In contrast to other professionals working in occupations that require shift work (e.g. physicians), the responsibilities of law enforcement professionals are, "especially problematic because of the scope of their duties and powers" (Vila, 2006, p. 973).

Review of research: functional aspects of organizations and suicidal ideation
Research has shown a positive relationship between increased shift work, sleep restriction, and elevated risk for suicidal ideation (Cukrowicz *et al.*, 2006; Violanti *et al.*, 2008). In a study with 115 randomly selected police officers, Violanti *et al.* (2008) conducted a cross-sectional investigation to explore the relationship of shift work, traumatic stress symptoms, depression, and prevalence of suicidal ideation. The results showed that roughly 25 percent of both male and female officers were at risk for suicidal ideation; this percentage is substantially higher than the average rate of 13.5 percent in the general US population (Kessler *et al.*, 2005). Through examining payroll records and work history, Violanti *et al.* (2008) found that officers who worked a high percentage of midnight shifts were more likely to report symptoms of suicidal ideation. Results showed that for every ten-unit increase in percentage of working the midnight shift, there was a concomitant increase in risk for suicidal ideation.

Other studies have rendered similar results as Violanti *et al.* (2008). Burke and Mikkelsen (2007) studied police officers from Norway and found that unpredictable shift work was a significant predictor of suicidal ideation. Similarly, Cantor *et al.* (1995) found that officers who worked night shifts on a regular basis also reported elevated levels of suicidal ideation. Specifically, their research showed that the more shift work officers completed, the greater the likelihood of experiencing suicidal thoughts.

Gender and organizational stress

A growing body of research has focussed on exploring organizational factors related gender and police work. As noted earlier, persistent exposure to various types of police activities can take an emotional toll (Chapin *et al.*, 2008). Such stressors may be specific to policing but may not bear the threat of physical danger. In one study, Violanti (2004) found that while both male and female officers reported similar levels of stress from trauma-related incidents, further examination of the data showed that among female officers, symptoms of traumatic stress were elevated particularly among those who frequently tended to children who had been abused or beaten. Female officers were also at greater risk for manifesting traumatic symptoms when dealing with domestic violence issues compared to male officers. In a similar vein, Gehrke and Violanti (2006) found that female officers who worked with victims of domestic violence and abuse were substantially more likely to exhibit symptoms of traumatic stress than their male counterparts.

In another study, Violanti *et al.* (2008) found that female police officers who experienced symptoms of depression and were assigned afternoon shifts showed higher scores on suicidal ideation. However, female officers who worked more frequently on the midnight shift showed reduced risk for suicidal ideation and PTSD. It is difficult to account for this result. One interpretation was proposed by Toch (2002) who noted that female police officers may perceive working night shifts as a way to prevent work overload as they strive to strike a balance between vocational roles and familial responsibilities. Toch suggests that despite sociopolitical advancements, female officers must negotiate multiple roles as women, as mothers, and as principle caregivers of their children. As such, because many family-related issues tend to emerge during the day, women may find that negotiating responsibilities as a police officer and a caretaker may be particularly overwhelming. Therefore, working the night shift may be perceived as a viable way to prevent their work from interfering with family life.

It is also important to note that female officers often experience occupational barriers in the workplace during the traditional nine to five hours of the work day. Given the context of a male-dominated police culture, female officers must negotiate a number of job-related challenges such as gender discrimination, sexism, and sexual harassment from male colleagues (Burke and Mikkelsen, 2005). In many cases, these officers are exposed to comments and gestures intended to undermine personal and career-related competence (Morash and Haarr, 1995; Somvadee and Morash, 2008). By working the night shift, female officers may avoid having to deal with these work place hassles.

These results indicate that exposure to various aspects of police work can have differential effects on men and women. It is noteworthy to point out that Violanti *et al.* (2008) study was the only empirical investigation we could locate that showed a positive relationship between number of hours working the day shift and prevalence of suicidal thoughts among female officers. Due to the exploratory nature of the study, these results should be interpreted with caution. It is evident that further research on gender differences in policing is warranted.

Operational stressors

In contrast to stressors that arise as a result of structural and functional aspects of the police organization, operational stressors emerge from elements of routine policing within the community. Operational stressors are linked to the content of police work, which may include prolonged periods of quiescent repetitious work and taking on tasks for which they are not trained (Shane, 2010). Despite being an infrequent event, exposure to violence and trauma serve as potentially debilitating stressors for law

enforcement personnel (Lanterman *et al.*, 2010). These stressors may be caused by exposure to trauma, such as chasing after an armed suspect, being involved in a high-risk drug raid, as well as shooting someone in the line of duty. Scholars suggest that negotiating the transition from extended periods of inactivity to intense emergency action can substantially elevate stress levels (Crank, 2004). In fact, research suggests that law enforcement personnel who frequently experience sudden transitions in emotional states may be at serious risk for suffering long-term physiological and psychological consequences (Burke and Mikkelsen, 2007).

Review of research: operational stressors and suicidal ideation

Operational stressors that emerge from critical incident experiences highlight the violent and dangerous nature of some aspects of police work. Scholars suggest that exposure to critical events increases the risk for alcohol and substance abuse, PTSD, aggressive behavior, and suicidal ideation (Gershon *et al.*, 2002; Maia *et al.*, 2007; Swatt *et al.*, 2007; Violanti, 2004; Violanti *et al.*, 2006).

Extensive evidence suggests that individuals who have been exposed to persistent, highly stressful traumatic experiences are at increased risk for suicidal ideation (Burke and Mikkelsen, 2007; Violanti, 1997; Violanti *et al.*, 2006). Traumatic stress symptoms consist of distinct patterns of experience that emerge in reaction to a psychologically traumatic event (Barlow, 2001). Symptoms include flashbacks that lead to re-experiencing the traumatic event, avoidance of activities associated with the trauma, emotional numbing, and increased anxiety (American Psychiatric Association (APA), 1994). Although most police officers have experienced varying degrees of stress associated with trauma, research studies have indicated that 7-19 percent of police officers exhibit symptoms that satisfy the DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders*, 4th ed.) criteria for PTSD (APA, 1994; Carlier *et al.*, 1997; Sheehan *et al.*, 2004).

A number of studies have shown a relationship between post-traumatic stress symptoms and elevated risk of suicidal ideation among law enforcement officers (e.g. Violanti, 2004; Violanti *et al.*, 2006). In a study with an elite group of Brazilian officers, Maia *et al.* (2007) examined the extent to which frequent exposure to violence and trauma was associated with symptoms of traumatic stress and suicidal ideation based on DSM-IV criterion (APA, 1994). They found that 14 officers satisfied the full diagnosis for PTSD, while 25 manifested some symptoms of post-traumatic stress. The other 116 officers did not show significant signs of PTSD. The primary results from logistic regression analyses indicated that officers diagnosed with PTSD were seven times (OR = 6.9) more likely to report suicidal ideation compared to those who did not report traumatic stress symptoms.

Violanti (2004) administered a battery of instruments to assess stress-related symptoms, exposure to violence, suicidal ideation, and ways of coping with stress to 115 active police officers. Results indicated that the cumulative effect of post-traumatic stress symptoms and alcohol use was associated with elevated risk for suicidal ideation. Specifically, Violanti found that participants who exhibited traumatic stress symptoms and used alcohol were four times more likely (OR = 4.4) to experience suicidal ideation.

Brough (2004) examined the effects of organizational and operational stressors among 686 officers from New Zealand. Regression analyses indicated that operational stressors associated with traumatic work-related experiences predicted elevated levels of anxiety, depression, and avoidant coping styles above and beyond the variance accounted for by organizational stressors. While manifestation of just one of these

stressors did not place a person at risk for suicidal ideation, the interactive effect of all three significantly elevated the risk for suicidal ideation (Wang *et al.*, 2010).

In another study, Violanti *et al.* (2006) found that police officers who worked in close proximity to the World Trade Center terrorist attacks on September 11, 2001 showed elevated risk for experiencing symptoms associated with traumatic stress and suicidal ideation. The researchers used data from Cop2Cop, a NJ-based peer support program for police officers experiencing psychological issues. The study assessed 62 officers who had been receiving peer support for symptoms of traumatic stress and suicidal ideation prior to the terrorist attacks. A follow-up assessment of the same officers three years later showed a 65 percent increased (OR = 1.65) likelihood of manifesting symptoms of suicidal ideation.

The above mentioned studies underscore how exposure to both organizational and operational stressors in police work can negatively influence the overall quality of life for police personnel and their families. The cumulative impact of frequent encounters of stress from daily policing duties combined with exposure to traumatic critical incidents can result in a wide range of psychological and physical problems (Paton *et al.*, 2009).

The other side of policing: alcohol use and relationship problems
Many factors contribute to increasing the risk of suicidal ideation among law enforcement personnel. Thus far, we have explored organizational and operational risk factors linked with suicidal ideation. However, little has been presented regarding the effects of these stressors on officers outside of their place of work. Our review of research showed that alcohol use and relationship problems have emerged in the professional literature as stressors associated with suicidal ideation.

Alcohol and suicidal ideation
Alcohol dependency and abuse has long been perceived as a problem among police officers. As indicated by a number of studies, many law enforcement officers consume alcohol as a way to cope with the daily stressors and tension inherent in their work (Lindsay and Shelley, 2009; Madonna and Kelly, 2002; Richmond *et al.*, 1998). Some researchers have suggested that police departments have historically been recognized as a culture of drinking not only in the USA, but in many countries (Lindsay and Shelley, 2009; Richmond *et al.*, 1998). Dietrich and Smith (1986) indicated that in law enforcement, "alcohol is not only used but very much accepted as a way of coping with tensions and stress of the day" (p. 304).

Despite the seemingly ubiquitous approval of excessive drinking, hazardous consumption of alcoholic beverages has been identified as a major maladaptive approach to coping, which has contributed to increased risk for suicidal ideation and other health-related concerns. In one study, Violanti (2004) found that law enforcement officers who consumed excessive amounts of alcohol to help manage symptoms related to traumatic stress were substantially more likely to experience suicidal ideation. Likewise, Pienaar and Rothmann (2005) found that South African police officers who used alcohol as a means to relieve psychological strain were more likely to report job dissatisfaction and chronic marital problems. Results further indicated that the incremental increase in consumption of alcoholic beverages per week was directly related to elevated risk for suicidal ideation. In a sample of 287 South African police officers, Rothmann and Van Rensburg (2002) found that officers who consumed 14 or more alcoholic drinks a week were at increased risk of suicidal ideation. They also scored substantially lower on measures of active coping, self-efficacy, and willingness to seek help compared with the control group.

Richmond *et al.* (1998) examined the lifestyle behaviors of law enforcement officials in the UK and found that excessive consumption of alcohol was a pervasive problem. Among 852 police officers, 48 percent of the men and 40 percent of the women engaged in excessive drinking (e.g. hazardous, binge drinking). In another study, Cantor *et al.* (1995) conducted a retrospective study of police suicides in Australia and found that over 50 percent of the deceased were identified as having alcohol-related problems. Other estimates have been more conservative, attributing 25 percent of police deaths each year to alcohol use (Swatt *et al.*, 2007; Violanti, 2007).

For many officers, alcohol consumption is not only a socially acceptable way to cope with stress, but it is also serves as a means to socialize more easily within the police community (Lindsay and Shelley, 2009). Davey *et al.* (2001) found many officers feel pressured to consume alcoholic beverages with other officers. Their research indicated that among the officers who did drink, 31 percent stated they perceived non-drinkers as suspicious and unsociable. Lindsay and Shelley (2009) found that police officers consumed alcohol to cope with stress and to socialize more easily with other officers. Richmond *et al.* (1999) cited one officer who noted that drinking alcohol was one of the only ways he could endure the organizational politics: "The only way that I'm going get into that group is to be one of them, so I've got to start drinking alcohol whether I like it or dislike it, so it can have a massive positive impact on the workplace" (p. 1517). The research findings suggest a strong link between law enforcement and alcohol consumption. Specifically, the aforementioned studies show that police personnel consume alcohol not only to cope with work stress, but also to achieve a sense of belonging within the insular police subculture. Interestingly, in both scenarios the rationale for alcohol consumption was attributed to ameliorating life stressors and enhancing social performance. In response to such commonly held views, Goldman *et al.* (1987) noted, "if any characteristic has been seen as a central, defining aspect of alcohol use, it is the presumed capacity of alcohol to alter anxiety, depression and other moods" (p. 200). In fact, research indicates that elevated alcohol consumption is more likely to induce symptoms of psychological disorders rather than promote mental health (Caetano and Kaskutas, 1995).

Relationship problems and suicidal ideation

Scholars have documented the challenges of negotiating police work, family life, and intimate partner relations (Violanti and Samuels, 2007). Researchers suggest that the high levels of stress associated with policing can have deleterious effects that permeate other aspects of an officer's personal life. It is not uncommon, therefore, for officers to allow their work stress to manifest in their interactions with a significant other as well as other family members (Reese and Castellano, 2007; Triplett *et al.*, 1999). Street and Arias (2001) noted that marital discord was not uncommon among police officers and their spouses. Their results showed that 60 percent of 479 spouses of officers were verbally and emotionally abused. However, the authors noted that many partners expressed hesitation in contacting the police for intervention because they feared the consequences of violating the "code of silence."

Berg *et al.* (2003) conducted a study with 3,272 Norwegian police officers. The authors assessed a number of variables such as mental health issues, marital and family relations, job dissatisfaction, and suicidal ideation. Research indicated that officers who experienced diminished job satisfaction, chronic stress in the work place, and inadequate organizational support were more likely to encounter work-related stressors in their personal and family life. For many of these law enforcement

personnel, repressed frustration and anger was redirected toward family members. Berg and colleagues found that officers who were involved in intact marriages or healthy committed relationships were resistant to such stressors. However, results indicated that the effect of multiple risk factors predicted increased risk for suicidal ideation. Specifically, stressors associated with being female (OR = 3.2), separated or divorced (OR = 6.4), and anxious (OR = 4.15) substantially increased the risk for suicidal ideation. Berg *et al.* (2003) concluded that suicidal ideation is not something that is caused by one stressor experienced at one point in time. Rather, it emerges as a result of the interaction of multiple stressors experienced over an extended time, eventually leading to the gradual narrowing of perceived life options.

Neidig *et al.* (1992) conducted a study with 385 male officers and 115 spouses who attended an "in-service training" on law enforcement in the south. The researchers were interested in assessing the extent to which violent behavior took place in relationships where at least one partner was an officer. Data indicated that on average approximately 40 percent of couples reported there was physical violence throughout their relationship. Results also showed that the more hours officers worked per week, the greater the likelihood of domestic violence. For example, among male officers who worked 40 hours a week, < 26 percent of wives reported violent interactions. However, for male officers who worked 50 or more hours per week, 47 percent of the wives reported violent interactions. The authors suggest that stressors from shift work, over time, and organizational politics may, in part, account for this increase. Neidig *et al.* (1992) results are consistent with other studies (e.g. Johnson *et al.*, 2005). However, Johnson *et al.* (2005) found that the addition of excessive alcohol consumption substantially elevated the risk for severe domestic violent encounters as well as suicidal ideation.

In another study, Janik and Kravitz (1994) investigated differences among 134 police officers who were being assessed for "fitness for duty." Among those evaluated, psychiatric records indicated 55 percent ($n = 74$) had made at least one suicide attempt. The remaining 60 officers had been identified as behaving inappropriately or unruly, but had no history or risk of self-harm. Further analyses indicated that the majority of officers with a prior history of suicidal behavior also reported significantly more marital problems compared to the non-suicidal group. Logistic regression analyses indicated that officers with a history of attempted suicides and marital conflicts were approximately five times (OR = 4.8) more likely to engage in suicidal behavior than the comparison group.

These studies suggest that the combination of work problems, relational issues, and mental health concerns collectively predicted suicidal ideation. In some cases, the overwhelming stress an officer experiences in conjunction with other risk factors (e.g. exposure to domestic violence) can substantially elevate the risk of exhibiting violent behavior with intimate partners as well as family. Lott (2007) indicated that the use of psycho-education and suicide prevention programs must become an integral component of the organizational structure of law enforcement departments.

Protective factors and resiliency
Police stress and its correlates have been associated with suicidal ideation. The review of the extant literature suggests that multiple factors play a role in generating psychological tension and strain among law enforcement personnel. However, several research studies also contend that stressors may be mediated by preventative factors that promote resilience, such as social support, family connectedness, and friendship networks in the community. The ability to access internal and external psychological

resources to adapt and negotiate adverse life situations highlights core aspects of the construct of resiliency (Luthar and Brown, 2007). An ecological systems approach is useful in exploring the complex interaction between the individual and the larger sociocultural context (Bronfenbrenner, 2005; Green and Kreuter, 1991). Accordingly, this section presents protective factors in law enforcement at four different systemic levels: individual, marriage and family, community and organization, and cultural level.

Individual level
The individual level ecological system consists of face-to-face interpersonal relations between the person and other influential people in his or her immediate social context. An individual level system is considered healthy if the social context fosters growth and increased resiliency (Bronfenbrenner, 2005). A healthy individual level system is an important resource for law enforcement personnel because officers frequently encounter stressors that can influence an officer's overall quality of life. The methods by which officers cope with these stressors can impact their physical and psychological health.

Coping has been defined as "cognitive and behavioral attempts to master, reduce or tolerate the internal/external demand created by the stressful transaction" (Lazarus and Folkman, 1984, p. 843). Research on coping responses with members of the general population has generally shown that employing an active coping style produces more favorable psychological outcomes than avoidance type coping (Fortes-Ferreira *et al.*, 2006; Halbesleben, 2010). Active coping refers to the ability to identify specific sources of stress and the capacity to develop a plan of action to resolve the issue. In contrast, avoidance style coping is characterized by the desire to escape, withdraw, or deny the existence of a stressor. In recent years, researchers have tested the effectiveness of various models of coping with law enforcement officers (Fortes-Ferreira *et al.*, 2006; LeBlanc *et al.*, 2008; Violanti, 1992). Several studies have shown that law enforcement participants were more likely to employ avoidance type coping methods (Fortes-Ferreira *et al.*, 2006; Shakespeare-Finch *et al.*, 2005). Paton and colleagues asserted that "police officers primarily [turn to] 'escape avoidance' and 'distancing' […] when confronted with stress" (p. 102). They suggest that because law enforcement professionals are socialized to believe they are "invincible" and "superhuman" (Violanti, 2007), they are likely to disregard information that conflicts with their police role and identity. Thus, an officer who is informed that he might have a mental health problem would likely respond with a sense of disbelief and reluctance to allow the disturbing information into conscious thought. The officer may seek to affirm his sense of "power" through engaging in maladaptive coping methods such as excessive drinking, initiating physical altercations, and generally engaging in highly aggressive behavior.

Although several empirical investigations have indicated that police personnel tend to employ avoidance type coping methods, other studies have shown that officers who employed active coping styles experienced stress-buffering effects against life stressors (Burke and Mikkelsen, 2007; Shakespeare-Finch *et al.*, 2002). For example, Burke and Mikkelsen (2007) research showed that employing an active coping style predicted reduced risk for suicidal behavior. The authors observed that officers who employed active coping styles were more likely to identify the source of strain and tension and establish a plan of action to ameliorate stress-related symptomatology. Likewise, Paton *et al.* (2009) noted that officers who used active coping styles were able to reduce stress by confronting the source of tension and working toward resolving issues. In a sample of emergency personnel, Shakespeare-Finch *et al.* (2002) found that use of active coping mechanisms produced

growth outcomes, such as positive reframing and elevated capacity to tolerate a wider range of stressors associated with critical incident experiences.

More recently, research on post-traumatic growth (PTG) has been a topic of increasing interest (Tedeschi and Calhoun, 2004; Violanti *et al.*, 2011). Mental health professionals who assist law enforcement personnel to employ an active coping style encourage officers to speak about, and in effect, re-experience the traumatic, emotion laden content of the incident within the context of a safe working alliance. In these sessions, the individual determines which aspects of the trauma will be discussed, sets the pace in which thoughts and emotions are disclosed, and decides the depth of exploration of the particular event. Through repeated engagement of the trauma-related material, the officer is better able to translate the experience into words, which helps provide meaning, structure, and perspective on the experience (Paton, 2006; Paton *et al.*, 2009). The process of re-experiencing trauma manifests in the increased adaptive capacity to tolerate a broad range of stressors and the ability to develop more sophisticated working models for processing psychologically distressful encounters (Paton, 2005; Tedeschi and Calhoun, 2004). Changes in affect may become evident as the officer incrementally allows emotion laden content into awareness until he or she can envision and develop insight about the event. Confronting the trauma helps the individual achieve a sense of control and power over the traumatic experience. As a result, "Individuals who appraise life crisis as a challenge that they can master may cope more actively with the problem and thus may be more apt to grow from the experience" (Schaefer and Moos, 1998, p. 115).

Although empirical research in the area of PTG is in its relative infancy, a small number of studies have emerged in the extant literature. Of note, Chopko and Schwartz (2009) conducted a study with 183 frontline police officers from urban departments. Multiple regression analyses showed that officers who exerted greater effort in finding meaning and insight of prior traumatic experiences scored higher on PTG ($\beta = 0.25$, $p = 0.001$). Results also showed that individuals who used avoidance type coping styles showed lower levels of PTG ($\beta = -0.27$, $p = 0.002$).

Other related research has suggested that individuals who use visualization and imagery as a prevention strategy may reduce the effects of disturbing trauma-related symptoms. Alexander and Wells (1991) examined reactions of officers who were assigned to help in recovery efforts of a natural disaster. Results showed that officers who psychologically prepared themselves by anticipating worst case scenarios through visualization were less impacted by the trauma compared with officers who did not employ the visualization techniques. The authors proposed that the preparation and steps taken to reduce and modify the impact of the traumatic event were "powerful antidotes to the more serious and enduring adverse reactions to potentially traumatic experiences" (Alexander and Wells, 1991, p. 554). These antidotes, as echoed by the authors, were attributed to the officers' increased sense of perceived control and mastery. This research is consistent with Hiroto and Seligman's (1975) work on learned helplessness. Their research indicated that individuals who were cued prior to receiving a shock reported higher scores on perceived control and mastery of their environment compared to the control group that did not receive a cue.

In addition to coping, a number of individual level protective factors have been identified with regard to shift work and irregular work hours. Vila (2006) indicated that officers who preferred to work evening hours did not suffer the same effects as those who were obligatorily assigned shift work. Among those in the former group, working the same late night shifts was associated with reduced health-related problems.

Researchers also indicated that some departments made adjustments to enhance officer performance by allowing officers to compress their time by working a few longs days while having time to recuperate during the week; this change at the administrative level resulted in higher levels of job satisfaction among officers at the individual level. Eriksen and Kecklund (2007) indicated that officers who were afforded flexibility in determining their schedule for shift work were better able to integrate their work into their private lives and were less likely to experience sleep disturbances. Thus, having control in establishing one's work hours contributed to overall job satisfaction, a factor researchers have shown to reduce risk of suicidal ideation (Vila *et al.*, 2002).

Marital and family systems

The second ecological systems level consists of the social circle of peers, significant others, and family members who interact with one another and contribute to a range of personal experiences. Among married couples and partners in a committed relationship, conflicts and personal problems are commonly dealt with through respectful dialogue, an attitude of understanding and a mutual desire to resolve relational discord. Gottman (2011) contends that when couples can work through the natural struggles and disputes inherent in most relationships, the attachment becomes increasingly resilient and resistant to extraneous stressors. This sense of resilience among committed couples has been supported in other research with police officers (Territo and Sewell, 2007).

Our review of current studies showed that police officers involved in a committed relationship experienced lower levels of psychological stress, depressive symptomology, and suicidal ideation than those who were single (Shaffer, 2010; Violanti *et al.*, 2009). Berg *et al.* (2006) found that officers who were married or in a committed relationship experienced lower levels of organizational stress. Specifically, they found that married female officers were substantially less likely to be emotionally debilitated by adverse job stressors and organizational pressures (Lindsay, 2008). Similarly, Burke and Mikkelsen (2007) found that single police officers were at substantially greater risk of suicidal ideation compared to officers who were married or in a committed relationship. In a study that explored domestic violence among officers, Neidig *et al.* (1992) found that separated or divorced officers reported higher rates of severe violent encounters in relationships compared with married officers. Violanti *et al.* (2009) found that among unmarried female officers, for each increase of one standard deviation in depression, risk for suicidal ideation increased fourfold when compared to their married counterparts. Qin *et al.* (2003) added that married female officers with children experienced substantially less stress than single female officers without children.

There is considerable evidence that suggests multiple role involvement is associated with social and emotional net gains and privileges (Johnson *et al.*, 2005; Thoits, 1983). Studies indicate that employment can serve as a buffer against stressors experienced in other roles (Barnett and Baruch, 1985). Several scholars (e.g. Violanti and Samuels, 2007) have indicated that officers who maintain multiple roles are less likely to experience burn out, abuse alcohol, and exhibit symptoms of depression. Adding to this dialogue, Violanti (2007) noted the "greater number of social identities and clear distinction between those identities help prevent stressful events from spilling over to other identities" (p. 19). This assertion is consistent with social contagion theory which affirms that individuals have the power to determine the degree to which one's perceived success or failure in one role will pervade other identity domains. Hence, an officer who experiences ongoing stress at work can choose not to allow that tension and

strain to permeate his role as, for example, a parent or spouse. However, this process may be particularly challenging because the police culture socializes "officers into rigid behavior patterns which diminish the ability of officers to assume other roles" (Violanti, 1997, p. 703). Violanti further notes that in order to be accepted in the insular "police subculture," the officer must sacrifice his or her individuality.

Community and organizational level
Community and organizational systems refer to the structural and institutional systems within a social context. These social contexts include educational, religious, municipal, and workplace settings. Social ecology theories suggest that stressors that occur at this level can have indirect effects on the individual and family systems level. Bronfenbrenner (2005) suggested that individuals who experience occupational stressors at the community and organizational level may unintentionally redirect feelings of frustration and tension onto the spouse and family members. However, there are a number of factors that can assist in mediating the effects of police stressors.

One example of a protective factor at the community and organization level is peer assistance and counseling. Historically, peer support has played an integral role within the insular culture of law enforcement agencies. Although professional counseling services are available, officers who struggle with mental health problems have generally been unwilling to seek help. A number of factors may account for this reluctance. One reason is that law enforcement officers tend to associate negative social stigma with professional counseling. Officers may assume that they will be labeled as weak or unfit if they meet with a counselor. Others may be reluctant due to the fear that they may be forced to surrender their firearm. Additionally, seeking professional mental health treatment ostensibly runs contrary to police socialization training, which "instills in officers a sense of superhuman emotional and survival strength to deal with adversity" (Violanti, 2007, p. 59). Thus, officers may perceive the idea of seeing a counselor as violating traditional masculine norms such as being self-reliant, being in control, and being able to overcome life challenges without the help of others (Wester *et al.*, 2010). In short, admitting that one has a need for help from others runs contrary to the ideology of police culture and the conceptualization of a "successful police officer."

Research studies have provided evidence that law enforcement officers are generally unwilling to seek professional counseling. Berg *et al.* (2006) assessed help seeking attitudes among police officers in Norway. The researchers found that due to stigma associated with seeing a mental health professional, officers (81 percent of female officers; 61 percent of male officers) were more likely to turn to their primary care physicians for health care. Overall, 4 percent of women and 2 percent of men sought help from a psychologist or psychiatrist. Wester *et al.* (2010) conducted a study with 178 police officers and found that officers who adhered more strongly to masculine norms reported higher levels of perceived stigma and were less open to seeking professional counseling. In a study with 1,114 police officers in Alabama, Carlan and Nored (2008) found that stigma associated with seeing a professional counselor was the most common reason given for their unwillingness to seek mental health services.

Peer counseling: police organization providing peer assistance (POPPA) and Cop2Cop. In light of the stigma and shame associated with seeking professional mental health services, researchers have encouraged law enforcement agencies to develop alternative methods of helping through the development of 24 hours peer counseling helpline programs (He *et al.*, 2002). He *et al.* (2002) identified some advantages of peer counseling in law enforcement. First, peer counselors are familiar with the demands of

police work and therefore may be better able to understand the unique stressors inherent in the work. Second, officers who seek support from them tend to find that peer counselors are more accessible than traditional professional counselors who often require advanced scheduling for an appointment. Last, law enforcement personnel may favor peer counseling over traditional therapy due to the absence of power imbalance between the two officers. To date, only a handful of effective and reliable peer counseling programs for law enforcement officials have been established.

Two notable and prominent peer counseling programs include the POPPA and Cop2Cop (Dowling *et al.*, 2005; Lanterman *et al.*, 2010; Violanti *et al.*, 2006; Waters and Ussery, 2007). In New York City, the treatment provider POPPA provides peer support by phone as well as through face-to-face individual meetings. The helpers are known as peer support officers who are active New York City law enforcement personnel trained to engage in active listening, conduct mental health screening, and provide appropriate referral services. POPPA began in 1996 and continues to provide resources to officers and their families (POPPA, 2011). Key objectives of POPPA include identifying signs and indicators of potential risk for suicide, self-harm, substance abuse, family conflicts, and trauma symptoms. By identifying risk factors early, mental health professionals may be better able to develop and implement intervention strategies designed to prevent exacerbation of symptoms. Although the organization does not maintain records of callers, POPPA estimates that they have prevented 40 suicides (POPPA, 2011). The helpline receives 900-1,200 calls per year (Dowling *et al.*, 2005; POPPA, 2011).

In addition, New Jersey has a nationally recognized statewide confidential peer-counseling program, known as Cop2Cop. The peer support service program is a free and confidential 24-hour telephone helpline for New Jersey law enforcement officers created through legislation in 1998 (State of New Jersey, 2009). Since its inception in 1999, Cop2Cop has responded to approximately 50,000 calls. Peer counselors consist of retired police officers and mental health counselors. Peer counselors place particular importance on active empathic listening. While working with callers, the helpline counselor assesses the severity of the callers' concerns and provides referrals for clinical services. When cases are deemed severe, the counselor may inquire about available social support systems, obtain knowledge about coping methods, and gain more in-depth information of the caller's personal life. The peer counselor may also inquire whether it would be acceptable for him or her to follow-up with the caller in order to continue to assess the status of the callers' well-being. The follow-up calls can range from one or two weeks to several months depending on the level of care needed and the type of working relationship built during the phone counseling session. All calls are documented through assessments and descriptions of concerns and symptoms.

Cop2Cop also offers outreach services by providing clinical assessments for officers and their families, maintains a referral network of licensed clinical providers, and deploys aid to all New Jersey critical incident stress management teams throughout the state (Amaranto *et al.*, 2003). Additionally, Cop2Cop provides seminars on peer counselor training and stress management training to law enforcement departments. Currently, data collected from the Cop2Cop records are being tested and analyzed to determine the overall effectiveness of the program. Preliminary evidence indicates that Cop2Cop has served as an important source of support for law enforcement personnel dealing with various life and work-related stressors (Omer *et al.*, 2008; Waters and Ussery, 2007).

In addition to peer counseling programs, increasing numbers of police organizations have begun to incorporate psycho-education and prevention training programs.

Prabhu and Turner (2007) provided an overview of community advocacy organizations that work in conjunction with police departments to provide education and prevention strategies regarding domestic violence issues. In these trainings, officers learn about early warning indicators, incident response protocols, and programs for increasing victim safety and empowerment.

Stinchcomb (2004) proposed that the most effective way to implement prevention methods in police agencies is through active cooperation at the organizational level. Specifically, she identified three key components to effect change: commitment, participation, and action. First, police administrators and supervisors must be committed to recognizing and identifying sources of organizational stress. Second, police management must be fully engaged in the process of uncovering the most pervasive chronic stressors. Last, police administrators must be proactive in implementing strategies aimed toward creating a work climate that focusses not only on deficits but also on strengths and recognition for effective policing. Also, it is necessary that police leadership develop policy changes that promote better communication, allow for greater autonomy, and endorse increased administrative support. Finally, police administrators must employ management techniques that will help monitor, identify, and resolve potential issues before manifesting into more serious problems.

Cultural level
The cultural level consists of the broad societal context in which the lower level systems are inextricably interwoven. The larger sociocultural system shapes cultural ideology, political context, values, media as well as belief systems. Scholars suggest that cultural ideology and socialization processes play a significant role in shaping how individuals from different demographic groups are perceived by society and how they, in turn, perceive themselves. Historically, cultural ideology has shaped perceptions of gender roles (e.g. masculine, feminine script), socio-economic status (e.g. wealth, education), as well as perceptions associated with age (Bronfenbrenner, 2005). Some research has identified protective factors linked to these sociocultural variables.

Research findings have indicated that age may serve as a protective factor. Richmond *et al.* (1998) found that older officers between the ages of 45 and 65 were at the lowest risk for harmful drinking behavior and suicidal ideation. Similarly, Lindsay (2008) found that older officers were at reduced risk for engaging in problematic drinking compared to their younger colleagues. In a study with 233 police officers, Patterson (2003) found that older officers were more likely to have tenure, report fewer stressors, and score higher on job-related self-efficacy. Similarly, Violanti *et al.* (2008) found a linear relationship between age and shift work. That is the more elderly the officer, the greater percentage working only day shifts. These findings apply for both older male and female officers.

Research studies have also suggested that gender may serve as a protective factor (Burke and Mikkelsen, 2005). In a retrospective analysis of 80 police suicides, Marzuk *et al.* (2002) found that the rate of suicide among male officers was similar to other men in the larger population. However, female officers were four times more likely to commit suicide compared to women in general. With regard to alcohol consumption, Pienaar and Rothmann (2005) found that female officers were significantly less likely to drink alcoholic beverages compared to their male colleagues who drank more heavily and also were at greater risk for suicidal ideation. Burke and Mikkelsen (2005) also found that male police officers were significantly more likely to use alcohol to cope with stress compared to female officers ($p < 0.001$). Kraft *et al.* (1993) noted that

drinking among male police officers was a way to bond with other male cops. They suggested that because the police workforce is predominantly male, female officers often feel excluded from social functions and as a result may not experience pressure to drink. When dealing with police-related stressors, Haar and Morash (1999) found that women were more likely to turn to religious and spiritual guidance and social support from family and friends compared to male officers.

Other studies have indicated that higher levels of education may serve as a protective factor. Crank *et al.* (1993) found there was an inverse relationship between perceived stress and years of education. That is, officers who had obtained higher levels of formal education (e.g. undergraduate and graduate school) reported lower levels of stress from police work. In a similar vein, Zhao *et al.* (2002) found that higher levels of education were associated with lower levels of perceived stress. The authors specifically found that higher formal education was associated with the ability to apply more sophisticated problem-focussed coping styles to deal with stressors. Likewise, Burke and Mikkelsen (2005) found that among female officers, higher levels of education were associated with the use of problem focussed coping mechanisms. This result suggests that women with more advanced education were particularly adept in assessing and identifying potential sources of stress and moving forward to develop and implement a plan of action to resolve the specific problem or concern. Finally, in a study with 1,718 police participants, Pienaar and Rothmann (2005) found that law enforcement officers who did not fulfill the minimum secondary education requirements showed an elevated risk for suicidal ideation. This was in sharp contrast to officers who had completed high school and college, as these officers were not at risk for thoughts of suicide.

Conclusion
In this review of research, the authors identified risk and protective factors associated with suicidal ideation among police personnel. Prominent themes in the risk category include: organizational stress, health problems linked to shift work/ sleep restriction, traumatic stress symptoms, problems with interpersonal relationships, alcohol use as a maladaptive coping method, and the cumulative interaction of these variables. While exposure to the above mentioned stressors have been associated with mental and physical health problems, it is important to note that on an individual level, people respond to life stressors and traumatic events in diverse ways. The findings in the current review are based on results of aggregate data, and therefore, it should not be assumed that all individuals will respond in the same way when confronted with psychological distress.

This review suggests that exposure to persistent, low level stressors punctuated by emotionally intense experiences increase risk for suicidal ideation (Lanterman *et al.*, 2010). Chronic exposure to low-level stress can yield debilitating effects that prevent officers from providing adequate services to the community. The current review underscores the challenges of negotiating police work, family life, and marital relations. Research findings indicate work stress can permeate other aspects of an officer's personal life. Consequently, officers may turn to maladaptive coping mechanisms, such as alcohol consumption to deal with work and life stress. Officers who experienced post-traumatic stress symptoms were likely to consume alcohol as a way to avoid engaging feelings and thoughts associated with painful experiences. Further, quantitative studies showed considerable support for the relationship between increased shift work, sleep disturbance, and suicidal ideation. Of note, research

underscored the parallels between sleep restriction and intoxication. Further, structural aspects of the police organization (e.g. bureaucratic leadership) can be a source of chronic anxiety and tension. Factors such as minimal support from supervisors, few opportunities for advancement, and poor working conditions contribute to feelings of isolation and despair – factors that predict suicidal ideation. Overall, perhaps the most important finding of this review is that it is not one particular factor that predisposes an officer to suicidal ideation; rather it is the concentrated effect of multiple risk factors that increases the risk for suicidal ideation.

The current research also explored the extant literature on factors that may mediate the effects of work and life stressors that impinge upon law enforcement personnel. Indeed, this integration of research highlights not only the impact that job stress and tension can have on police officers, but it also underscored protective factors that exist at different levels of ecological systems. Several researchers emphasized the importance of addressing preventative factors that promote resiliency and reduce the negative impact of life stressors.

Research suggests that a healthy and supportive social context is not the only important protective factor. Officers must also develop effective ways of dealing with life stressors. An important theme that emerged in the literature on protective factors is the salience of perceived control and its ability to reduce risk of suicidal ideation. Our review of research indicated that police officers who employed active coping styles were most successful in negotiating life stressors. Employing an active coping style helps officers to confront and engage traumatic experiences. The process of re-experiencing trauma can lead to PTG, wherein the individual feels a sense of power over the experience. Other evidence-based approaches include the use of visualization and imagery as a prevention strategy to reduce the effects of disturbing trauma.

In addition to active coping styles, the current review underscored the importance of strong social connection and support systems. Data showed that police officers who were married or in a committed relationship experienced substantially lower levels of psychological stress, depressive symptomology, and suicidal ideation compared to single or divorced officers. An important support system for officers is peer-counseling programs, which consist of trained officers and mental health counselors who offer valuable empathic assistance as well as resources for officers. These peer counseling programs often serve as liaisons for professional counseling services. Overall, these protective factors may play a critical role in preventing suicidal behavior.

A number of notable methodological limitations in the police literature in general, and more specifically, police suicide, are worth mentioning. There have been a number of issues that compromise the strength of police suicide studies. In particular, several studies have used small samples of participants, which influence important factors such as effect size and generalizability of findings. Additionally, there is substantial heterogeneity in the measures used to assess similar constructs. Researchers who replicate other studies using the same measures would enhance the overall quality of studies that address suicidal ideation. Other methodological concerns include psychometric factors such as reliability and validity of tests. Burke and Mikkelsen (2007) study of 766 officers from Norway included a measure of active coping that rendered a Cronbach's α of 0.40. Acceptable α coefficients are 0.70 or greater. Also, many studies have been conducted in various regions of the USA and internationally. In the USA, for example, some studies were conducted in rural settings, while other investigations took place in urban contexts. Such distinct demographic differences make it difficult to extract meaningful conclusions. Similar concerns may be indicated

for international studies. These limitations suggest there is a need for continued research and evaluation with regard to various demographic aspects of law enforcement that predispose officers to suicidal behavior.

Clearly, this review of research calls attention to the need for the development of policies aimed at preventing and treating officers at risk for suicidal ideation. Further, the risk of experiencing adverse psychological and physiological health consequences among police officers warrant increased attention by mental health professionals and public policy advocates. In this vein, health care providers may benefit from increased awareness, knowledge, and skills of issues related to working with law enforcement personnel. Such efforts may help managers and other personnel to identify potential warning signs and symptoms worthy of further exploration. Moreover, current research on police suicide indicates the need for researchers to exert greater efforts in exploring factors that contribute to police suicide. In particular, it may be fruitful to employ quantitative methods to investigate causal attributes derived from theoretical speculation and anecdotal evidence. Indeed, research that explores the effects of cognitive role constriction, hardiness, coping style, and adherence to traditional masculine norms may enhance knowledge and understanding of predisposing factors associated with suicidal ideation. Ongoing research should continue to investigate issues associated with gender, ethnic group differences as well as potential sociocultural barriers that may impact job performance. Last, employing diverse research designs that are not strictly limited to cross-sectional survey based investigations (e.g. qualitative, mixed-methods, and longitudinal designs) may provide researchers and clinicians alike with a broader understanding of the impact of potential risk and protective factors that impinge upon law enforcement officers.

References

Agargun, M.Y. and Cartwright, R. (2003), "REM sleep, dream variables, and suicidality in depressed patients", *Psychiatry Research*, Vol. 119, pp. 33-9.

Ajdacic-Gross, V., Weiss, M., Ring, M., Hepp, U., Bopp, M., Gutzwiller, F. and Rössler, W. (2008), "Methods of suicide: international suicide patterns derived from the WHO mortality database", *Bulletin of the World Health Organization*, Vol. 86, pp. 726-32.

Alexander, D.A. and Wells, A. (1991), "Reactions of police officers to body-handling after a major disaster: a before and after comparison", *British Journal of Psychiatry*, Vol. 159, pp. 547-55.

Amaranto, E., Steinberg, J., Castellano, C. and Mitchell, R. (2003), "Police stress interventions", *Brief Treatment and Crisis Intervention*, Vol. 3, pp. 47-53.

American Psychiatric Association (APA) (1994), *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., APA, Washington, DC.

Barlow, D.H. (2001), *Clinical Handbook of Psychological Disorders: A Step-By-Step Treatment Manual*, 3rd ed., Guilford Press, New York, NY.

Barnett, R. and Baruch, G.K. (1985), "Women's involvement in multiple roles and psychological distress", *Journal of Personality and Social Psychology*, Vol. 49, pp. 135-45.

Berg, A.M., Hem, E., Lau, B. and Ekeberg, O. (2003), "Suicidal ideation and attempts in Norwegian police", *Suicide & Life Threatening Behavior*, Vol. 33, pp. 302-12.

Berg, A.M., Hem, E., Lau, B. and Ekeberg, O. (2006), "An exploration of job stress and health in the Norwegian police service: a cross sectional study", *Journal of Occupational Medicine and Toxicology*, Vol. 1, pp. 26-35.

Bernert, R.A. and Joiner, T.E. (2007), "Sleep disturbances and suicide risk: a review of the literature", *Neuropsychiatric Disease and Treatment*, Vol. 3, pp. 735-43.

Brent, D.A. and Bridge, J.A. (2003), "Firearms availability and suicide: evidence, interventions, and future directions", *American Behavioral Scientist*, Vol. 46, pp. 1192-210.

Bronfenbrenner, U. (2005), *Making Human Beings Human: Bioecological Perspectives on Human Development*, Sage, Thousand Oaks, CA.

Brough, P. (2004), "Comparing the influence of traumatic and organizational stressors on the psychological health of police, fire, and ambulance officers", *International Journal of Stress Management*, Vol. 11, pp. 227-44.

Brough, P. and Frame, R. (2004), "Predicting police job satisfaction and turnover intentions: the role of social support and police organizational variables", *New Zealand Journal of Psychology*, Vol. 33, pp. 8-16.

Burke, R. and Mikkelsen, A. (2005), "Gender differences in policing: signs of progress?", *Employee Relations*, Vol. 27, pp. 425-35.

Burke, R. and Mikkelsen, A. (2007), "Suicidal ideation among police officers in Norway", *Policing: An International Journal of Police Strategies & Management*, Vol. 30, pp. 228-36.

Caetano, R. and Kaskutas, L. (1995), "Changes in drinking patterns among Whites, Blacks and Hispanics", *Journal of Studies on Alcohol*, Vol. 56, pp. 558-65.

Cantor, H., Tyman, R. and Slater, P. (1995), "A historical survey of police suicide in Queensland, Australia, 1843-1992", *Suicide and Life-Threatening Behavior*, Vol. 25, pp. 499-507.

Carlan, P.E. and Nored, L.S. (2008), "An examination of officer stress: should police departments implement mandatory counseling?", *Journal of Police and Criminal Psychology*, Vol. 23, pp. 8-15.

Carlier, I., Lamberts, R. and Gersons, B. (1997), "Risk factors for posttraumatic stress symptomology in police officers: a prospective analysis", *The Journal of Nervous and Mental Disease*, Vol. 185, pp. 498-506.

Centers for Disease Control and Prevention (CDC) (2006), "National suicide statistics at a glance: twenty leading causes of death highlighting suicide among persons ages 10 years and older, United States", available at: www.cdc.gov/violenceprevention/suicide/statistics/leading_causes.html (accessed February 3, 2011).

Centers for Disease Control and Prevention (CDC) (2009), "Suicide: facts at a glance", available at: www.cdc.gov/violenceprevention/pdf/Suicide-DataSheet-a.pdf (accessed May 4, 2011).

Chapin, M., Brannen, S.J., Singer, M.I. and Walker, M. (2008), "Training police leadership to recognize and address operational stress", *Police Quarterly*, Vol. 11, pp. 338-52.

Chopko, B. and Schwartz, R. (2009), "The relation between mindfulness and post-traumatic growth: a study of first responders of trauma-inducing incidents", *Journal of Mental Health Counseling*, Vol. 31, pp. 363-76.

Crank, J.P. (2004), *Understanding Police Culture*, 2nd ed., Anderson Publishing, Cincinnati, OH.

Crank, J.P., Giacomazzi, A. and Heck, C. (1993), "Fear of crime in a non-urban setting", *Journal of Criminal Justice*, Vol. 31, pp. 249-63.

Cukrowicz, K., Otamendi, A., Pinto, J., Bernert, R., Krakow, B. and Joiner, T. (2006), "The impact of insomnia and sleep disturbance on depression and suicidality", *Dreaming*, Vol. 16, pp. 1-10.

Davey, J.D., Obst, P.L. and Sheehan, M.C. (2001), "It goes with the job: officers' insights into the impact of stress and culture on alcohol consumption within the policing occupation", *Drugs: Education, Prevention, and Policy*, Vol. 8, pp. 141-9.

Dawson, D. and Reid, K. (1997), "Fatigue, alcohol, and performance impairment", *Nature*, Vol. 388, pp. 235-7.

DeLange, A. and Neeleman, J. (2004), "The effect of the September 11 terrorist attacks on suicide and deliberate self-harm: a time trend study", *Suicide and Life-Threatening Behavior*, Vol. 34, pp. 439-47.

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Dietrich, J. and Smith, J. (1986), "The non-medical use of drugs including alcohol among police personnel: a critical literature review", *Journal of Police Science and Administration*, Vol. 14, pp. 300-6.

Dowling, F.G., Genet, B. and Moynihan, G. (2005), "A confidential peer-based assistance program for police officers", *Psychiatric Services*, Vol. 56, pp. 870-1.

Eriksen, C. and Kecklund, G. (2007), "Sleep, sleepiness and health complaints in police officers: the effects of a flexible shift system", *Industrial Health*, Vol. 45, pp. 279-88.

Fortes-Ferreira, L., Peiro, J., Gonzalez-Morales, M.G. and Martin, I. (2006), "Work-related stress and well-being: the roles of direct action coping and palliative coping", *Scandinavian Journal of Psychology*, Vol. 47, pp. 293-302.

Freud, S. (1917), "Mourning and melancholia", in Strachey, A. and Strachey, J. (Eds), *Sigmund Freud: Collected Papers*, Vol. 4, Hogarth Press and the Institute of Psychoanalysis, London, pp. 152-72.

Gardner, D.G. and Pierce, J.L. (1998), "Self-esteem and self-efficacy within the organizational context: an empirical examination", *Group & Organization Management*, Vol. 23, pp. 48-70.

Gehrke, A. and Violanti, J.M. (2006), "Gender differences and posttraumatic stress disorder: the role of trauma type and frequency of exposure", *Traumatology*, Vol. 12, pp. 229-35.

Gerber, M., Hartmann, T., Brand, S., Holsboer-Trachsler, E. and Pühse, U. (2010), "The relationship between shift work, perceived stress, sleep and health in Swiss police officers", *Journal of Criminal Justice*, Vol. 38, pp. 1167-75.

Gershon, R., Lin, S. and Li, X. (2002), "Work stress in aging police officers", *Journal of Occupational and Environmental Medicine*, Vol. 44, pp. 160-7.

Gershon, R.M., Barocas, B., Canton, A.N., Li, X. and Vlahov, D. (2009), "Mental, physical, and behavioral outcomes associated with perceived work stress in police officers", *Criminal Justice and Behavior*, Vol. 36, pp. 275-89.

Goldman, M.S., Brown, S.A. and Christiansen, B.A. (1987), "Expectancy theory: thinking about drinking", in Blane, H.T. and Leonard, K.E. (Eds), *Psychological Theories of Drinking and Alcoholism*, Guilford Press, New York, NY, pp. 181-226.

Gottman, J. (2011), *The Science of Trust: Emotional Attunement for Couples*, W. W. Norton & Co, New York, NY.

Green, L. and Kreuter, M. (1991), *Health Promotion Planning: An Educational and Ecological Approach*, 3rd ed., Mayfield Press, Mountain View, CA.

Haar, R. and Morash, M. (1999), "Gender, race, and strategies of coping with occupational stress in policing", *Justice Quarterly*, Vol. 16, pp. 303-36.

Haus, E. and Smolensky, M. (2006), "Biological clocks and shift work: circadian dysregulation and potential long-term effects", *Cancer Causes Control*, Vol. 17, pp. 489-500.

Halbesleben, J. (2010), "Spousal support and coping among married coworkers: merging the transaction stress and conservation of resources models", *International Journal of Stress Management*, Vol. 17, pp. 384-406.

He, N., Zhao, J. and Archbold, C.A. (2002), "Gender and police stress: the convergent and divergent impact of work environment, work family conflict, and stress coping mechanisms of female and male police officers", *Policing: An International Journal of Police Strategies & Management*, Vol. 25, pp. 687-707.

Hem, E., Berg, A. and Ekeberg, O. (2001), "Suicide in police: a critical review", *Suicide and Life-Threatening Behavior*, Vol. 31, pp. 224-33.

Hiroto, D. and Seligman, M. (1975), "Generality of learned helplessness in man", *Journal of Social Psychology*, Vol. 31, pp. 311-27.

Janik, J. and Kravitz, H.M. (1994), "Linking work and domestic problems with police suicide", *Suicide and Life-Threatening Behavior*, Vol. 24, pp. 267-74.

Johnson, A.E., Sachau, D.A. and Englert, D. (2010), "Organizational and occupational embeddedness of federal law enforcement personnel", *Journal of Police and Criminal Psychology*, Vol. 25, pp. 75-89.

Johnson, L., Todd, M. and Subramanian, G. (2005), "Violence in police families: work-family spillover", *Journal of Family Violence*, Vol. 20, pp. 2-12.

Kaplan, M.S., McFarland, B.H. and Huguet, N. (2009), "Characteristics of adult male and female firearm suicide decedents: findings from the national violent death reporting system", *Injury Prevention*, Vol. 15, pp. 322-7.

Kapusta, N.D., Voracek, M., Etzersdorfer, E., Niederkrotenthaler, T., Dervic, K., Plener, P.L., Schneider, E., Stein, C. and Sonneck, G. (2010), "Characteristics of police officer suicides in the federal Austrian police corps", *Crisis*, Vol. 31, pp. 265-71.

Kecklund, G., Eriksen, C.A. and Akerstedt, T. (2008), "Police officers attitude to different shift systems: association with age, present shift schedule, health and sleep/wake complaints", *Applied Ergonomics*, Vol. 39, pp. 565-71.

Kessler, R., Berglund, P., Borges, G., Nock, M. and Wang, P. (2005), "Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990-1992 to 2001-2003", *Journal of the American Medical Association*, Vol. 293, pp. 2487-95.

Kraft, J.M., Blum, T.C., Martin, J.K. and Roman, P.M. (1993), "Drinking patterns and the gender mix of occupations: evidence from a national survey of American workers", *Journal of Substance Abuse*, Vol. 5, pp. 157-74.

Lanterman, J., Boyle, D., Pascarella, J. and Furrer, S. (2010), "Police stress and access to confidential support services", in Peters, J.M. (Ed.), *Police Psychology*, Nova Science Publishers Inc, New York, NY, pp. 57-73.

Lazarus, R.S. and Folkman, S. (1984), *Stress, Appraisal, and Coping*, Springer, New York, NY.

LeBlanc, V., Regehr, C., Jelley, R. and Barath, I. (2008), "The relationship between coping styles, performance, and responses to stressful scenarios in police recruits", *International Journal of Stress Management*, Vol. 15, pp. 76-93.

Liberman, A.M., Best, S., Meltzer, T.J., Fagan, J., Weiss, D.S. and Marmar, C. (2002), "Routine occupational distress in police", *Policing: An International Journal of Police Strategies & Management*, Vol. 25, pp. 421-41.

Lindsay, V. (2008), "Police officers and their alcohol consumption: should we be concerned?", *Police Quarterly*, Vol. 11, pp. 74-87.

Lindsay, V. and Shelley, K. (2009), "Social and stress-related influences of police officers' alcohol consumption", *Journal of Police and Criminal Psychology*, Vol. 24, pp. 87-92.

Lott, L. (2007), "Deadly secrets: violence in the police family", in Territo, L. and Sewell, J. (Eds) *Stress Management in Law Enforcement*, 2nd ed., Carolina Academic Press, Durham, NC, pp. 223-30.

Luthar, S. and Brown, P. (2007), "Maximizing resilience through diverse levels of inquiry: prevailing paradigms, possibilities, and priorities for the future", *Development and Psychopathology*, Vol. 19, pp. 931-55.

McCreary, D. and Thompson, M. (2006), "Development of two reliable and valid measures of stressors in policing: the operational and organizational police stress questionnaires", *International Journal of Stress Management*, Vol. 13, pp. 494-518.

Madonna, J. and Kelly, R. (2002), *Treating Police Stress: The Work and Words of Peer Counselors*, Charles C. Thomas Publishers, Springfield, IL.

Maguen, S., Metzler, T.J., McCaslin, S., Inslicht, S.S., Henn-Haase, C., Neylan, T.C. and Marmar, C. (2009), "Routine work environment stress and PTSD symptoms in police officers", *Journal of Nervous and Mental Disease*, Vol. 197, pp. 754-60.

Maia, D.B., Marmar, C.R., Metzler, T., Nóbrega, A., Berger, W., Mendlowicz, M.V., Coutinho, E.S. and Figueira, I. (2007), "Posttraumatic stress symptoms in an elite unit of Brazilian police officers: prevalence and impact on psychosocial functioning and on physical and mental health", *Journal of Affective Disorders*, Vol. 97, pp. 241-5.

Marzuk, P.M., Nock, M.K., Leon, A.C., Portera, L. and Tardiff, K. (2002), "Suicide among New York City police officers, 1977-1996", *American Journal of Psychiatry*, Vol. 159, pp. 2069-71.

Menninger, K. (1938), *Man Against Himself*, Harcourt, Brace, New York, NY.

Miller, L. (2006), *Practical Police Psychology: Stress Management and Crisis Intervention for Law Enforcement*, Charles C. Thomas Publishers, Springfield, IL.

Miller, L. and Hemenway, D. (1999), "Guns and suicide in the United States", *New England Journal of Medicine*, Vol. 359, pp. 989-91.

Morash, M. and Haarr, R.N. (1995), "Gender, workplace problems, and stress in policing", *Justice Quarterly*, Vol. 12, pp. 113-40.

Neidig, P.H., Russell, H.E. and Seng, A.F. (1992), "Interspousal aggression in law enforcement families: a preliminary investigation", *Police Studies*, Vol. 15, pp. 30-8.

Nock, M., Borges, G., Bromet, E., Cha, C., Kessler, R. and Lee, S. (2008), "Suicide and suicidal behavior", *Epidemiological Review*, Vol. 30, pp. 133-54.

Omer, S.B., Barnett, D.J., Castellano, C., Wierzba, R.K., Hiremath, G.S. and Balicer, R.D. (2008), "Impact of homeland security alert level on calls to a law enforcement peer support hotline", *International Journal of Emergency Mental Health*, Vol. 9, pp. 253-8.

Paton, D. (2005), "Posttraumatic growth in protective services professionals: individual, cognitive and organizational influences", *Traumatology*, Vol. 11 No. 4, pp. 335-46.

Paton, D. (2006), "Critical incident stress risk in police officers: managing resilience and vulnerability", *Traumatology*, Vol. 12, pp. 198-206.

Paton, D., Violanti, J., Burke, K. and Gehrke, A. (2009), *Traumatic Stress in Police Officers: A Career-Length Assessment from Recruitment to Retirement*, Charles C. Thomas Publishers, Springfield, IL.

Patterson, G. (2003), "Examining the effects of coping and social support on work and life stress among police officers", *Journal of Criminal Justice*, Vol. 31, pp. 215-26.

Pienaar, J. and Rothmann, S. (2005), "Suicide ideation in the South African police service", *South African Journal of Psychology*, Vol. 35, pp. 58-72.

Pienaar, J., Rothmann, S. and Van De Vijver, F.J.R. (2007), "Occupational stress, personality traits, coping strategies, and suicide ideation in the South African police service", *Criminal Justice and Behavior*, Vol. 34, pp. 246-58.

Plaxton-Hennings, C. (2004), "Law enforcement organizational behavior and the occurrence of posttraumatic stress symptomology in law enforcement personnel following a critical incident", *Journal of Police and Criminal Psychology*, Vol. 19, pp. 53-63.

Police Organization Providing Peer Assistance (POPPA) (2011), available at: www.poppanewyork.org/ (accessed November 18, 2011).

Prabhu, S. and Turner, S. (2007), "Rising to the challenge: preventing police officer domestic violence", in Territo, L. and Sewell, J. (Eds), *Stress Management in Law Enforcement*, 2nd ed., Carolina Academic Press, Durham, NC, pp. 245-54.

Qin, P., Agerbo, E. and Mortensen, P. (2003), "Suicide risk in relation to socioeconomic, demographic, psychiatric, and familial factors: a national register based study

of all suicides in Denmark, 1981-1997", *American Journal of Psychiatry*, Vol. 160, pp. 765-72.

Reese, J. and Castellano, C. (2007), *Law Enforcement Families: The Ultimate Backup*, Richmond Hill Press, Williamsburg, VA.

Reynolds, W.M. (1991), "A school-based procedure for the identification of adolescents at risk for suicidal behaviors", *Psychological Assessment*, Vol. 2, pp. 382-90.

Richmond, R., Wodak, A., Kehoe, L. and Heather, N. (1998), "How healthy are the police? A survey of life-style factors", *Addiction*, Vol. 93, pp. 1729-37.

Richmond, R., Kehoe, L., Hailstone, S., Wodak, A. and Uebel-Yan, M. (1999), "Quantitative and qualitative evaluations of brief interventions to change excessive drinking, smoking, and stress in the police force", *Addiction*, Vol. 94, pp. 1509-21.

Roman, V., Walstra, I., Luiten, P. and Meerlo, P. (2005), "Too little sleep gradually desensitizes the serotonin 1A receptor system", *Sleep*, Vol. 28, pp. 1505-10.

Rothmann, S. and Van Rensburg, P. (2002), "Psychological strengths, coping and suicide ideation in the South African police services in the North West Province", *South African Journal of Psychology*, Vol. 28, pp. 39-49.

Rothmann, S. and Strijdom, G. (2002), "Suicide ideation in the South African police services in the North West Province", *South African Journal of Industrial Psychology*, Vol. 28, pp. 44-8.

Schaefer, J.A. and Moos, R.H. (1998), "The context for posttraumatic growth: life crises, individual and social resources, and coping", in Tedeschi, R.G., Park, C.L. and Calhoun, L.G. (Eds), *Posttraumatic Growth: Positive Changes in the Aftermath of Crisis*, Lawrence Erlbaum, Mahwah, NJ, pp. 99-126.

Schernhammer, E. and Coditz, G. (2004), "Suicide rates among physicians: a quantitative and gender assessment", *American Journal of Psychiatry*, Vol. 161, pp. 2295-302.

Shaffer, T.J. (2010), "A comparison of firefighters and police officers: the influence of gender and relationship status", *Adultspan Journal*, Vol. 9, pp. 36-49.

Shakespeare-Finch, J., Gow, K. and Smith, S. (2005), "Personality, coping, and posttraumatic growth in emergency ambulance personnel", *Traumatology*, Vol. 11, pp. 325-34.

Shakespeare-Finch, J., Smith, S.G. and Obst, P. (2002), "Trauma, coping, and family functioning in emergency service workers", *Work & Stress*, Vol. 16, pp. 275-82.

Shane, J.M. (2008), "Developing a police performance measurement system", *FBI Law Enforcement Bulletin*, Vol. 77, pp. 8-23.

Shane, J.M. (2010), "Organizational stressors and police performance", *Journal of Criminal Justice*, Vol. 38, pp. 807-18.

Sheehan, D., Everly, G. and Langlieb, A. (2004), "Current best practices coping with major critical incidents", *FBI Law Enforcement Bulletin*, Vol. 73, pp. 1-13.

Shneidman, E.S. (1993), *Suicide as Psychache: A Clinical Approach to Self-Destructive Behavior*, Aronson, Northvale, NJ.

Shneidman, E.S. (2001), *Comprehending Suicide: Landmarks in 20th-Century Suicidology*, American Psychological Association, Washington, DC.

Somvadee, C. and Morash, M. (2008), "Dynamics of sexual harassment for police women working alongside men", *Policing: An International Journal of Police Strategies & Management*, Vol. 31, pp. 485-98.

State of New Jersey (2009), *New Jersey Police Suicide Task Force Report*, State of New Jersey, Trenton, NJ.

Stinchcomb, J.B. (2004), "Searching for stress in all the wrong places: combating chronic organizational stressors in policing", *Police Practice and Research*, Vol. 5, pp. 259-77.

Street, A. and Arias, I. (2001), "Psychological abuse and posttraumatic stress disorder in battered women: examining the roles of shame and guilt", *Violence & Victims*, Vol. 16, pp. 65-78.

Swatt, M.L., Gibson, C.L. and Piquero, N.L. (2007), "Exploring the utility of general strain theory in explaining problematic alcohol consumption by police officers", *Journal of Criminal Justice*, Vol. 35, pp. 596-611.

Tedeschi, R.G. and Calhoun, L.G. (2004), "Posttraumatic growth: conceptual foundations and empirical evidence", *Psychological Inquiry*, Vol. 15, pp. 1-18.

Territo, L. and Sewell, J. (2007), *Stress Management in Law Enforcement*, 2nd ed., Carolina Academic Press, Durham, NC.

Thoits, P. (1983), "Multiple identities and psychological well-being: a reformulation and test of the social isolation hypothesis", *American Sociological Review*, Vol. 48, pp. 174-87.

Toch, H. (2002), *Stress in Policing*, American Psychological Association, Washington, DC.

Triplett, R., Mullings, J.L. and Scarborough, K.E. (1999), "Examining the effect of work-home conflict on work-related stress among correctional officers", *Journal of Criminal Justice*, Vol. 27, pp. 371-5.

Vila, B. (2006), "Impact of long work hours on police officers and the communities they serve", *American Journal of Industrial Medicine*, Vol. 49, pp. 972-80.

Vila, B. (2009), "Sleep deprivation: what does it mean for public safety officers?", *NIJ Journal*, Vol. 262, pp. 1-6.

Vila, B., Morrison, G.B. and Kenney, D.J. (2002), "Improving shift schedule and work-hour policies and practices to increase police officer performance, health, and safety", *Police Quarterly*, Vol. 5, pp. 4-24.

Violanti, J.M. (1992), "Coping strategies among police recruits in a high-stress training environment", *Journal of Social Psychology*, Vol. 132, pp. 717-29.

Violanti, J.M. (1996), "Violence turned inward: police suicide in the workplace", in Vanden Bos, G.R. and Bulatao, E.Q. (Eds) *Violence on the Job: Identifying Risks and Developing Solutions*, American Psychological Association, Washington, DC, pp. 229-49.

Violanti, J.M. (1997), "Suicide and the police role: a psychosocial model", *Policing: An International Journal of Police Strategy & Management*, Vol. 20, pp. 698-715.

Violanti, J.M. (2004), "Predictors of police suicide ideation", *Suicide and Life Threatening Behavior*, Vol. 4, pp. 277-83.

Violanti, J.M. (2007), *Police Suicide: Epidemic in Blue*, 2nd ed., Charles C. Thomas Publishers, Springfield, IL.

Violanti, J.M. and Aron, F. (1995), "Police stressors: variations in perception among police personnel", *Journal of Criminal Justice*, Vol. 23, pp. 287-94.

Violanti, J.M. and Samuels, S. (2007), *Under the Blue Shadow: Clinical and Behavioral Perspectives on Police Suicide*, Charles C. Thomas Publishers, Springfield, IL.

Violanti, J.M., O'Hara, A. and Tate, T. (2011), *On the Edge: Recent Perspectives on Police Suicide*, Charles C. Thomas Publishers, Springfield, IL.

Violanti, J.M., Castellano, C., O'Rourke, J. and Paton, D. (2006), "Proximity to the 9/11 terrorist attack and suicide ideation in police officers", *Traumatology*, Vol. 12, pp. 248-54.

Violanti, J.M., Charles, L.E., Hartley, T.A., Mnatsakanova, A., Andrew, M.E. Fekedulegn, D. (2008), "Shift-work and suicide ideation among police officers", *American Journal of Industrial Medicine*, Vol. 51, pp. 758-68.

Violanti, J.M., Fekedulgen, D., Charles, L.E., Andrew, M.E., Hartley, T.A. Mnatsakanova, A. (2009), "Suicide in police work: exploring potential contributing influences", *American Journal of Criminal Justice*, Vol. 34, pp. 41-53.

Wang, Z., Inslicht, S., Metzler, T., Henn-Haase, C., McCaslin, S., Tong, H., Neylan, T. and Marmar, C. (2010), "A prospective study of predictors of depression symptoms in police", *Psychiatry Research*, Vol. 175, pp. 211-16.

Waters, J.A. and Ussery, W. (2007), "Police stress: history, contributing factors, symptoms, and interventions", *Policing: An International Journal of Police Strategies & Management*, Vol. 30, pp. 169-88.

Wester, S.R. and Lyubelsky, J. (2005), "Supporting the thin blue line: gender-sensitive therapy with male police officers", *Professional Psychology: Research and Practice*, Vol. 36, pp. 51-8.

Wester, S.R., Arndt, D., Sedivy, S.K. and Arndt, L. (2010), "Male police officers and stigma associated with counseling: the role of anticipated risks, anticipated benefits and gender role conflict", *Psychology of Men & Masculinity*, Vol. 11, pp. 286-302.

Woody, R.H. (2005), "The police culture: research implications for psychological services", *Professional Psychology: Research and Practice*, Vol. 36, pp. 525-9.

World Health Organization (WHOGROUP) (2004), "Annex Table 2: deaths by cause, sex and mortality stratum in WHO regions, estimates for 2002", The world health report 2004 – changing history, available at: www.who.int/entity/whr/2004/annex/topic/en/annex_2_en.pdf (accessed March 5, 2011).

Zhao, J.S., 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, pp. 43-62.

Further reading

Barnett, R. (2004), "Women and work: where are we, where did we come from, and where are we going?", *Journal of Social Issues*, Vol. 60, pp. 667-74.

Burke, K.J. and Paton, D. (2006), "Predicting police officer job satisfaction: traditional versus contemporary models of trauma in occupational experience", *Traumatology*, Vol. 12, pp. 189-97.

Forastiere, F., Perucci, C.A., Di Pietro, A., Miceli, M., Rapiti, E., Baragaglia, A. and Borgia, P. (1994), "Mortality among urban policemen in Rome", *American Journal of Industrial Medicine*, Vol. 26, pp. 785-98.

Huddleston, L.M., Paton, D. and Stephens, C. (2006), "Conceptualizing traumatic stress in police officers: pre-employment, critical incidents, and organizational influences", *Traumatology*, Vol. 12, pp. 170-7.

Morash, M., Kwak, D.H. and Haar, R.N. (2006), "Gender differences in the predictors of police stress", *Policing: An International Journal of Police Strategies & Management*, Vol. 29, pp. 541-63.

Regehr, C., LeBlanc, V., Jelley, R.B. and Barath, I. (2008), "Acute stress and performance in police recruits", *Stress and Health: Journal of the International Society for the Investigation of Stress*, Vol. 24, pp. 295-303.

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