

Predictors of Police Suicide Ideation

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Further inquiry into processes that lead to suicide in the police occupation is necessary. Suicide ideation in police officers and possible correlates associated with such ideation is explored in this paper. The focus was on psychologically traumatic police work experiences, the development of posttraumatic stress (PTSD) in officers, and the inordinate use of alcohol associated with this condition. The impact of these occupationally based factors and their association with suicide ideation has not yet been fully explored. Results suggest that certain traumatic police work exposures increase the risk of high level PTSD symptoms, which subsequently increase the risk of high alcohol use and suicide ideation. The combined impact of PTSD and increased alcohol use led to a ten-fold increase risk for suicide ideation.

Much has been written about suicide in law enforcement (Charbonneau, 2000; Hem, Berg, & Ekeberg, 2001; Kposowa, 1999; Marzuk, Nock, Leon, Portera, & Tardiff, 2002; Violanti, Vena, & Petralia, 1998), and studies have shown varied results concerning police suicide rates (see Hem, Berg & Ekeberg, 2001 for methodological concerns; Cantor, Tyman, & Slater, 1999; Charbonneau, 2000; Darragh, 1991; Forastiere et al., 1994; Hartwig & Violanti, 1999; Helmkamp, 1996; Lester, 1992; Marzuk et al., 2002; Rothman & Strijdom, 2002; Violanti, Vena, & Marshall, 1996). Since police officers are generally a psychologically tested and healthy working population (McMichael, 1976), suicide rates should be lower than unemployed or general population rates. The fact that they are not estab-

lishes a cause for concern. Further inquiry is necessary to help clarify the variance in suicide rates among these studies. One strategy would be to examine premorbid factors which may increase suicide risk among police officers (Gershon, Lin, & Li, 2002). The present study examined suicide ideation in police officers and potential predictors of such ideation, including demographic variables, police work exposures, posttraumatic stress (PTSD) symptoms, and alcohol use.

POTENTIAL PREDICTORS OF POLICE SUICIDE

The studies discussed below suggest associations among traumatic work exposures, PTSD symptomatology, and alcohol use and that these conditions exist in police work. We posit that these factors may increase the risk of suicide ideation among police officers, which may in turn increase the risk of attempted or completed suicide.

Suicide Ideation

Suicidal ideation is an important risk factor for suicide attempts and completed sui-

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cide (Lynch et al., 1999; Lyon et al., 2000; Nugent & Williams, 2001). Kessler, Borges, and Walters (1999) found that 13.5% of respondents in the National Comorbidity Survey (NCS) reported lifetime suicide ideation.

It is also important to understand predictors of suicide ideation. Ideation predictors can help to identify officers who are engaging in suicidal thinking (Bongar et al., 1998; Lynch et al., 1999). A number of demographic correlates of suicidal ideation have been found, including age, gender, ethnicity, marital status, and social support (Bongar, 1991; Fremouw, de Perczel, & Ellis, 1990). Psychosocial correlates of ideation are depression (DeFillippo & Overholser, 2000), family discord (Meneese & Yutrzecka, 1990), personal stress (Fremouw et al., 1990), and alcohol abuse (Fremouw et al., 1990; Bongar, 1991).

Posttraumatic Stress

PTSD is a unique set of symptoms brought about by exposure to a traumatic event that compromises the physical integrity or life of an individual and produces intense fear (APA, 1994). Responses include reliving the traumatic experience, avoidance of stimuli associated with the trauma or psychic numbing, and hyperarousal and physiological reactivity to events resembling the trauma.

Faced with situations involving fatal accidents, crime, child abuse, homicide, suicide, and rape, police officers are exposed to potential factors that can precipitate a traumatic response (Carlier, Lambert & Gersons, 2000; Paton, Violanti, & Smith, 2000; Sugimoto & Oltjenbruns, 2001). Studies of veterans with PTSD have reported an increased risk of suicidal behavior (Ferrada-Noli, Asberg, Ormstad, Lundin, & Sundbom, 1998; Freeman, Roca, & Moore, 2000).

Alcohol Use

Alcohol use has been characterized as a problem among police officers (Davey, Obst, & Sheehan, 2000; Richmond, Wodak, Kehoe, & Heather, 1998; Violanti, Marshall,

& Howe, 1985). Richmond, Kehoe, Hailstone, Wodak, and Uebel-Yan (1999) found that 48% of their male and 40% of their female police sample were drinking alcohol to an excess. Alcohol use was even higher among younger police officers.

RESEARCH DESIGN AND METHODS

Selection of Police Sample

The sample site for this study was a Northeastern police agency consisting of 934 full-time sworn police officers. Sampling was stratified by race and gender and police officers were randomly selected using a computer-generated random number table. The method resulted in a 100% response rate ($N = 115$).

Measures

Suicide Ideation. The 19-item Scale for Suicide Ideation (SSI; Beck & Kovacs, 1979) was used to detect and determine the intensity of the police officer's suicide ideation. Each item was rated on a 3-point scale ranging from 0 to 2. The first five SSI items served as a screen for suicide ideation. A "0" response in items four (indicating no active suicidal intention) and five (indicating avoidance of death if presented with a life-threatening situation), prompted the officer to skip the next 14 SSI items, which addressed specific information about suicide plans and attitudes. Otherwise, the officer rated the next 14 items. The severity of ideation was then determined by a total score ranging from 0 to 38 (Beck & Steer, 1993).

Beck, Brown, Steer, Dahlggaard, and Grisham (1999) determined a cutoff score of two or greater on the SSI to be indicative of those who later completed suicide in their samples. Based on this ideation screening criteria of positive responses to SSI item 4 (indicating active suicidal intention) and item 5 (avoidance of death), we classified police officers as either suicide ideators or non-idea-

tors. The SSI has been found to have moderately high internal consistency and good concurrent and discriminant validity (Beck, Brown, & Steer, 1997). In the present study police sample, the Chronbach alpha coefficient was .76 for the SSI.

Posttraumatic Stress Disorder. Police officers were asked to report work events that they perceived as particularly “traumatic” or “disturbing.” Categories established were: (1) The homicide of another officer; (2) self-involvement in a shooting incident; (3) abused children; (4) serious traffic accidents; (5) witnessing death; (6) seeing dead bodies; (7) serious assault victims; (8) homicide victims; and (9) other disturbing incidents.

The Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979) was used to assess PTSD symptomatology. The IES scale consists of 15 items, with subscales measuring intrusive and avoidance symptoms associated with PTSD. Respondents are asked to rate the items on a four-point scale according to how often each has occurred in the past 7 days. The subscales of the IES show very good internal consistency (Corcoran & Fischer, 1994; Weiss & Marmar, 1997). A Chronbach alpha value of .97 was found for IES in the present study sample.

Alcohol Use. Two alcohol screening instruments were used in the present study: The 10-question AUDIT (World Health Organization) and 4-question CAGE. The AUDIT has been used widely to identify problem drinkers in primary care settings (Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) and has demonstrated high sensitivity and specificity in identifying heavy drinkers. A suggested cutoff score of eight was used in the present study, as this score has been found to yield the optimal sensitivity and specificity range with the AUDIT (Allen, Litten, Fertig, & Babor, 1997). The CAGE (Cherpitel, 1997a) is a 4-question instrument that has been used primarily in clinical settings to identify people who have ever been alcohol dependent. A positive response to two or more of the four items is generally considered the optimal cutoff value, indicating a potential alcohol problem. With

this cutoff value, the CAGE’s sensitivity in various populations ranges from 61–100%, and its specificity ranges from 77–96% (Cherpitel, 1997a).

RESULTS

The sample consisted of n = 115 police officers. Forty-five (39.1%) of the participants were female and 70 (60.9%) were male. The mean age for officers was 39.5 years (SD = 7.53). Eighty-three (72.2%) participants were Caucasian, 24 (20.8%) were African American, and 8 (7%) were Hispanic. The officers served an average of 13.16 years (SD = 8.81). There were no significant differences in measures between gender or ethnic considerations. Psychological testing information was protected and not available for analysis. In comparison to those with fewer years of police service (1–9 years), officers with increased years of police service (10–19 years) had less risk of PTSD and suicide ideation (OR = .560).

Prior to administration of the SSI, an initial screening question was asked of respondent officers: “Have you ever thought of suicide?” Twenty-seven (23%) officers responded “yes.” Of these, 52% (n = 14) completed the entire SSI measure. The mean score for the SSI was 9.82 in this police sample. Table 1 provides information on mean and standard deviation scores of the IES and CAGE/AUDIT alcohol measure for suicide ideators and non-ideators.

TABLE 1
Means and Standard Deviations: Police Suicide Ideation, PTSD Symptoms (IES), and Alcohol Use

Suicide Ideation (SSI)	IES			CAGE/AUDIT		
	M	n	SD	M	n	SD
Yes	23.5	14	16.4	12.6	12	8.4
No	13.7	101	16.2	6.5	93	6.6
Totals	14.9	115	16.5	7.2	105	7.1

N = 115.
SSI mean score = 9.82.

Odds-Ratios for Suicide Ideation

Calculations of odds ratios (OR) for police suicide ideation and the sensitivity and specificity of independent measurement instruments in detecting such ideation were dependent on the determination of optimal cut-off scores. A cutoff score of eight for AUDIT and two for the CAGE have been previously established and have proved to be valid and reliable in detecting problem alcohol users (Allen et al., 1997; Cherpitel, 1997b). AUDIT and CAGE measures were calculated as a composite measure utilizing these cutoff values.

An optimal cut-off score for the IES trauma symptom scale was derived from receiver operating characteristic (ROC) analyses (Gleitman, 1986). Results indicated that an IES cutoff score of 21 provided the optimal rate of sensitivity and specificity to detect suicide ideation in the present police sample. Raw total scores of less than 21 on the IES were considered to have low PTSD symptomatology, and those at 21 or higher were considered to have high PTSD symptomatology. To evaluate the contributions of independent measures while controlling for possible confounding effects, the IES, traumatic police work events, alcohol measures, and demographic variables were entered in a multiple logistic regression model, with suicide ideation dichotomized as the dependent measure. Logistic was chosen over OLS regression because dichotomous dependent and independent variables best fit the exploration of the study hypothesis. In addition, logistic regression does not require assumptions of normality, homoscedasticity, and linear relationships.

Several logistic regression models were calculated and independent variables not reaching significance were eliminated from the model. A final logistic model was completed. The best fitting model was assessed with the variable classification table, the -2 times log of likelihood ($-2LL$), the model chi-square, and Hosmer and Lemeshow's Goodness of Fit.

Table 2 indicates that "persons dying" (OR = 3.37) had the greatest impact on

TABLE 2

Odd Ratios Final Logistic Model: Traumatic Work Exposures, PTSD Symptoms, Alcohol Use, and Suicide Ideation

<i>Police work exposures</i>	Trauma Symptoms (IES)	
	Odds Ratio	95% CI
Homicide of fellow officer	2.65*	.961–7.3
Persons dying	3.37*	1.4–8.0
Other disturbing incidents	2.84*	1.2–6.7
	Suicide Ideation (SSI)	
Trauma Symptoms (IES)	Odds Ratio	95% CI
	5.72*	1.4–25.1
	Increased Alcohol Use	
	Odds Ratio	95% CI
	2.55*	1.09–5.9
	Suicide Ideation (SSI)	
Increased Alcohol Use	Odds Ratio	95% CI
	4.45*	1.42–18.5

CI = Confidence Interval.

Adjusted for gender, race, age.

$-2LL = 59.8$.

Classification Table = 88.6%.

Goodness of fit Chi Sq = 14.8, sig. $p < .05$.

$R^2 = .26$.

*-sig. At $p < .05$.

PTSD symptom scores. Also significantly increasing PTSD were the homicide of a fellow officer (OR = 2.65), and miscellaneous disturbing incidents (OR = 2.84). If PTSD scores were elevated above the ROC cutoff score of 21, there was a significant increase in the odds of suicide ideation (OR = 5.72) and elevated alcohol use (OR = 2.55). Along with high PTSD symptoms, elevation in alcohol use also significantly increased the odds of suicide ideation (OR = 4.45).

DISCUSSION

Exposure to work events and PTSD symptomatology thus appear to significantly increase alcohol use and suicide ideation among police officers. Taken together, the comorbid risk of high PTSD and alcohol use increased the odds of suicide ideation approximately ten times over those officers who had lower trauma levels. These results concur with previous work (Carlier, Lamberts, & Gersons, 1997, 2000; Dunning, 1999; Violanti, 2003). Alcohol abuse has long been characterized as a problem among police officers (Richmond et al., 1998). The police culture reinforces the use of alcohol as a social and psychological device for coping with the stresses of the job (Violanti, 2003). Epidemiologic Catchment Area (ECA) survey findings have suggested that the rate of comorbid psychiatric-alcohol disorders significantly exceeds rates that would be expected by chance alone. Lifetime prevalence of mental disorders was found to be nearly twice as high among alcoholics than in the general population. Alcoholism is the second most common diagnosis among suicides, occurring more often in men than in women (Berglund & Ojehagen, 1998; Joiner & Rudd, 1995; Rudd, Dahm, & Rajab 1993; Volpicelli, Balaraman, Hahn, Wallace, & Bux, 1990). It was surprising that officers with increased police service had less risk of PTSD and suicide ideation. Generally, persons exposed to multiple trauma over time are more likely to exhibit PTSD symptoms. Older officers may have developed better and more varied coping skills to deal with work events over time, thus decreasing vulnerability risk to trauma (Violanti, 2003).

Limitations

Officers who reported suicidal ideation were limited to 23% of the sample. Although

this is a small percentage, it exceeds percentages of ideation in major epidemiological studies. Kessler and colleagues (1999), for example, found that 13.5% of respondents in the National Comorbidity Survey (NCS) reported suicide ideation. In addition, the number of officers exposed to life-threatening or severe traumatic events is small, approximated at 10–15% (Stulmiller & Dunning, 2000). This would impact results to some degree.

Further exploration of intervening variables that impact vulnerability to trauma in police is also needed. One such variable is resiliency (Bartone, 2000; Kobasa, 1979; Paton et al., 2003). The concept of a hardy personality has been noted as a source of positive resistance to debilitating effects of stressful life events on a person's health. Hardy personalities make use of effective coping strategies in dealing with stressful situations, and they are able to reduce the effects of stress and illness on themselves (Kobasa, 1979).

CONCLUSIONS

These results may be useful as starting points for intervention. Trauma exposure intervention, such as psychological debriefings (Mitchell, 1983) and suicide prevention training, for example, can act as catalysts for therapy for officers affected by PTSD. Reduction in PTSD symptoms can in turn help to reduce possible post-trauma consequences such as suicidal ideation and substance use. There is a need for improved police entrance screening assessment measures, improved suicide prediction, and more effective intervention approaches. Knowledge of relationships among precipitants of suicidal thinking in police officers may eventually tell us something more about suicidal behavior within this occupation (Jamison & Baldessarini, 1999).

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