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Factors Associated with Police Depression: A Systematic Review

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Abstract

Police population experience considerable job-related stressors, making them vulnerable to depression. The purpose of this article is to provide an in-depth analysis of the factors that impact psychological health of police forces with a primary focus on depression. A systematic database search conducted based on predefined inclusion, and exclusion criteria resulted in 43 studies for the review. The study suggests that concerning the police as an institution, organizational factors are more influential factors that can lead to depression as compared to other inherent factors responsible for the same. However, some factors (e.g., workability, availability of welfare facilities, public service) that may protect against the growth of depressive symptoms are also present. Trends imply a lower reporting rate among the police forces compared to the general population. Some of the gaps include retrospective, cross-sectional nature of design using male-dominated samples. Future research with more rigorous methodologies and factors is warranted. Police officers are responsible for the vital task of community safety. In-depth awareness of risk and protective factors of depression can aid policymakers, researchers, and the public to reduce the risk of depression in the police.

Keywords: Police, Law-enforcement, Depression, Mental health.

Introduction

Policing, as a demanding and stressful profession, has been reported extensively (Crank & Caldero, 1991; Kroes, Margolis, & Hurrell, 1974; Liberman et al., 2002). Given the volatile and dynamic work profile of the forces, officers need to have an uncompromised calm and professional work habits. Such a requirement requires police officers to have mental health of superlative degree (Kelley, 2005). Time and again, it has been observed that conditions like depression, anxiety, Post-traumatic Stress Disorders (PTSD) and burnout are a dominant part of mental health fabric of the police forces (Gershon, Lin, &

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Li, 2002; Ivie & Garland, 2011; Santa Maria et al., 2018). Stress factors are further compounded due to taboos and prejudices like macho culture (Kop & Euwema, 2001) police training and mental health stigma (Berg, Hem, Lau, & Ekeberg, 2006b; Luft et al., 2012; Violanti, 1993). Such pre-existing beliefs in turn increases the burden of performance to a large extent on the female workforce within the organization (Balkin, 1988; Burke, Richardsen, & Martinussen, 2006) as it leads to extra pressures of at times confirming, sometimes resisting and somehow overcoming these prejudices in order to do a successful job.

Among the mental health concerns experienced by police officers, depression is a global health concern. As per World Health Organization forecast, depression is expected to be the second most troubling disease of the world by 2020 (Wang et al., 2010). Police stress is strongly and significantly related to depression (Oslo & Surrrette, 2004). Existing literature also suggests that police officers are more prone to depression than the general population (Chen et al., 2006; Johnson, Cooper, Cartwright, Donald, Taylor, & Millet, 2005).

Depression does not strike in isolation. It is known to have far-reaching negative consequences on the health and wellbeing of an otherwise physically fit person. It is one of the chief risk factors for substance abuse (Chopko, Palmieri, & Adams, 2018; Pancheri et al., 2002), suicide (Kessler, Borges, & Walters, 1999; Bishopp & Boots, 2014) and poor life quality (Chen et al., 2006; Tewksbury & Copenhaver, 2016) in the police. Depression bearing such consequences can risk police officers' crucial task of community safety and cause huge accountability costs to the police agency.

Given the above, the study aims to provide a review of the quantitative literature on antecedents associated with police depression using a systematic search strategy. By doing so, it addresses the gap in police stress literature specifically associated with depression. A better understanding of correlates can aid future research and interventions targeted to create a healthy police force.

1. Methods

1.1. Search Criteria

The following inclusion criteria were adopted to extract relevant literature. (i) Articles in the English language; (ii) Articles in scholarly journals; (iii) Articles focused on police or mixed samples; and (iv) Articles reporting quantitative data on factors affecting depression in the police.

1.2. Search Strategy and Results

A three-step procedure was adopted to obtain the papers for the review. In the first step, a systematic search of peer-reviewed articles in Web of Science, Medline, Scopus databases using keywords 'police', 'law enforcement,' 'depression,' 'mental health' under various permutations yielded 1157 papers. In the second step, after reading titles/abstracts and removing for duplications, we retained 133 papers. In the third step, reading the full-text version of articles, 43 studies were selected for the final review.

2. Study Characteristics

Eight studies focused on depression, and others measured depression along with other health outcomes. The Buffalo Cardio-Metabolic Occupational Police Stress (BCOPS) study was the first population-based study to measure various physiological and psychological responses of stress, and oldest study of the review was by Violanti and Aron (1993). Table 1 provides an overview of the studies relating to police depression. As the table shows, the majority of the studies took place in developed countries, predominantly with male officers and employed a retrospective cross-sectional design. Also, most of the studies used a validated measure for depression, and the Center for Epidemiological Studies–Depression (CES-D) was the most widely used scale.

Table 1. Summary of the Studies Examining Police Depression

Study	Country	Sample	Sample size	male n	Female n	Measure
^a Andrew et al. (2008)	US	Officers	105	65	40	Center for Epidemiological Studies–Depression (CES-D)
^a Baka (2015)	Poland	Officers	607	483	124	CES-D
^{a,c} Beagley et al. (2018)	U.S./Ferguson violence	Officers	189	147	42	CES-D–Revised (CES-D-R)
^a Berg et al. (2006a)	Norway	Officers	3272	2692	501	Hospital Anxiety and Depression Scale (HADS)
^a Bishopp et al. (2018)	US	Officers–3 large cities	1400	1176	224	self-developed (Cronbach $\alpha=.83$)
^b Bowler et al. (2012)	US/WTC disaster	Officers	2940	2527	413	interview question
^a Chen et al. (2006)	Taiwan	City police	832	776	56	Disaster Related Psychological Screening Test (DRPST)
^{b,f} Chongruksaa et al. (2012)	Thailand/terrorist attacks	Officers	20(experimental) + 22(control)	Unspecified	Unspecified	Beck Depression Inventory (BDI), General Health Questionnaire (GHQ-28)
						Continued

Study	Country	Sample	Sample size	male n	Female n	Measure
^a Chopko et al. (2018)	US	Senior officers	193	180	13	Patient Health Questionnaire (PHQ-9)
^a Chopko et al. (2018)	US	Senior officers	193	180	13	Patient Health Questionnaire (PHQ-9)
^a Darensburg et al. (2006)	US	BCOPS	100	58	42	CES-D
^a du Preez et al. (2011)	South Africa	Police trainees	1145	648	497	Symptom Check List - 90-Revised (SCL-90-R)
^a Everding et al. (2016)	US	Officers	379	356	23	CES-D
^a Galovski et al. (2016)/	US/Ferguson violence	Police officers + Community members	261(police)+ 304(community)	198(police)+ 117 (community)	55(police)+ 177 (community)	CES-D
^a Garbarino et al. (2012)	Italy	Special force police	289	289	nil	BDI, Profile of Mood States (PMOS)
^a Garbarino et al. (2013)	Italy	Special police force	289	289	nil	BDI-2nd ed (BDI-II)
^a Gershon et al. (2002)	US	Senior officers	105	103	2	SCL-90-R
^a Gershon et al. (2009)	US	Officers	1072	919	153	SCL-90-R
^{a,d} Hartley et al. (2007)	US	BCOPS	99	58	41	CES-D
^a He et al. (2002)	UK	Officers	1100	943	157	Continued Brief Symptom Inventory (BSI) - modified SCL-90
^{c,d} Huizink et al. (2006)	Netherlands/Amsterdam air disaster	Officers	834(Exposed)+ 634(Reference)	738(Exposed)+538 (Reference)	96(Exposed)+ 96(Reference)	SCL-90
^{c,d} Huizink et al. (2006)	Netherlands/Amsterdam air disaster	Officers	834(Exposed)+ 634(Reference)	738(Exposed)+538 (Reference)	96(Exposed)+ 96(Reference)	SCL-90
^a Kim et al. (2016)	South Korea	Officers	492	426	66	BSI modified
^{b,c} Komarovskaya et al. (2011)	US	Junior police	341	290	51	BDI-II
^{a,d} McCanlies et al. (2018)	US/Hurricane Katrina	Officers	116	86	30	CES-D
^{a,d} McCanlies et al. (2017)	US	BCOPS	328	249	79	CES-D
^{b,f} McCraty & Atkinson (2012)	US	Officers	29 (experimental) +36(control)	55	10	Personal and Organizational Quality (POQA)
^a Nelson & Smith (2016)	Jamaica	Officers	134	84	50	Well-Being Process Questionnaire (WBQ)
^a Pancheri et al. (2002)	Italy	Municipal officers	590(Traffic)+ 590(Clerical)	403(Traffic)+217 (Clerical)	187(Traffic)+3 73(Clerical)	Rapid Stress Assessment (RSA)
^{a,d} Pietrzak et al. (2012)	US/WTC disaster	Officers	8466	7210	1256	PHQ-9

Continued

Study	Country	Sample	Sample size	male n	Female n	Measure
^a Rajaratnam et al. (2011)	US, Canada	Officers	4957	4079	861, 17 (Not known)	self-developed
^{a,d} Renck et al. (2002)	Sweden/Sweden fire	Officers	41	36	5	GHQ-28
^a Santa Maria et al. (2018)	Germany	Officers	843	609	234	PHQ-4
^a Slaven et al. (2011)	US	Officers	391	284	107	CES-D
^a Tehrani(2018)	UK	Child Abuse Investigators	2289	1009	1279	Goldberg Anxiety & Depression Scale
^a van der Velden et al. (2013)	Netherlands	Police officers + other occupation	647(police)+3234 (other occupations)	571(Police)+1820 (other occupation)	76(Police)+ 1414 (other occupation)	SCL-90-R
^a Vancini et al. (2018)	Brazil	Elite male officers	87	87	nil	BDI
^a Violanti &Aron (1993)	US	Officers	103	Unspecified	Unspecified	CES-D
^{a,d} Violanti et al. (2011)	US	Officers	99	61	38	CES-D
^{b,c} Wang et al. (2010)	US	Junior police	119	103	16	SCL-90-R, BDI-II
^a Wang & Leather (2016)	China	Officers	175	175	nil	BDI Chinese version
^a West et al. (2008)	US/Hurricane Katrina	Officers	912	724	188	CES-D
^a Wickramasinghe et al. (2016)	Sri Lanka	Officers	709	591	118	Peradeniya Depression Scale (PDS)
^a Yoo & Franke (2013)	US	Officers	106	Unspecified	Unspecified	Continued CES-D
^{b,d} Zvolensky et al. (2015)	US/WTC disaster	Officers+ other responders	8466(Police)+ 10430+ (other responders)	7221(Police)+8980 (others)	1245(Police)+ 1450(others)	PHQ-9, CES-D

Note 1) some studies provided a percentage of gender distribution in the sample; n values represent the closest approximation in such studies

2) ^a cross-sectional, ^b longitudinal, ^c prospective, ^d retrospective, ^e historical, ^f experimental

3. Theoretical Foundation

Though most of the research on police depression lacks a theoretical base, it is well known that theory-guided research helps to understand and predict behaviors, which assist policymakers to make informed decisions. Two dominant stress theories that explain police depression are Agnew's (1992) General strain theory (GST) and Hobfoll's (1989) Conservation of Resources (COR) theory.

GST has been used in the policing context to explain a link between stress, negative feelings, and misconduct. The fundamental element of the theory is that it focuses on the negative aspects of the environment to explain a direct relationship between stressful conditions and negative emotions.

COR theory (Hobfoll, 1989), is a comprehensive stress theory which explains human reactions to stressful conditions and the impact of those reactions on their wellbeing. According to this theory, individuals try to acquire, maintain, protect, and develop resources. Resources include entities valued by the individual or serve as a means to obtain valued resources (e.g. optimism, support, attachment). Any potential or actual loss of resources leads to stress and further depletion of resources called "loss spiral" (Hobfoll,

2002). Further, the theory proposes that possession of resources can lead to resource accumulation called “gain spiral” which helps deal with resource loss.

Job demand Resource (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) builds upon COR theory and earlier stress models (Job Demand-Control-Support, Effort- Reward Imbalance) to explain complex mechanisms between stressful work situations and health outcomes. The model distinguishes job characteristics as demands and resources. Job demands are related to poor health while job resources promote health and wellbeing.

4. Factors Influencing Police Depression

Abdohalli (2002) stratified police stressors into operational, organizational, and individual factors. In addition, the present review categorized the factors as operational vs. organizational, protective, and demographic factors.

4.1. Operational Factors

Operational factors in policing expose officers to human misery and casualty. These include but not limited to witnessing deaths, shooting encounters, high-speed chases, rescuing children subjected to crime and court proceedings (Crank & Caldero, 1991; Gerson et al., 2002; Violanti & Aron, 1993). Exposure to trauma can induce psychological disorders like PTSD (American Psychiatric Association, 2013) and sleep disturbances (Everding et al., 2016) which reinforce depressive feelings. The present study classifies operational factors as traumatic incidents and PTSD and sleep disorders.

4.1.1. Traumatic incidents

Police officers experience traumatic and life-threatening incidents putting them at the risk of mental health disturbances. Several studies in the US showed an association between exposure to critical incidents and depression (Galovski et al., 2016; West et al., 2008; Zvolensky et al., 2015). In a longitudinal retrospective study, Zvolensky et al. (2015) tested police and non-traditional responders of World Trade Center disaster (WTC) for the direct and indirect link between exposure, depression and post-disaster stressful life events. Both police and nontraditional responders reported WTC exposures (working in a dust cloud, losing someone, someone injured) to be related to depression on both the visits. Further, post-disaster stressful life events mediated between depression at first and follow up visit. Another study attributes proximity to violence (connectedness, media exposure, media reactions, and fear from exposure) for depression among police and community members (Galovski et al., 2016).

Police tend to report lower depression than nontraditional/community responders despite experiencing more trauma (Galovski et al., 2016; Zvolensky et al., 2015). The authors explained the unexpected result with reasons like selection process, training, and underreporting due to stigma.

Two studies conducted in Europe evaluated the impact of Sweden fire and Amsterdam Air disaster (Huizink et al., 2006; Renck, Weisaeth, & Skarbö, 2002). In a cross-sectional investigation with Swiss police officers, Renck et al. (2002) reported 18 months after the incident, officers displayed depressive symptoms. A historical study examined long term health consequences of a fatal air disaster (Huizink et al., 2006).

Police officers involved in rescue work had much higher depression levels as compared to the unexposed group. However, laboratory tests did not confirm officers self-report.

In prospective longitudinal research, Komarovskaya et al. (2011) assessed junior police (36 months in job). 10% of officers experienced a relatively rare incident of “Killing or injuring someone in the line of duty,” and it was moderately associated with depression ($\beta=0.13$, $p=0.60$).

4.1.2. PTSD and sleep disorders

According to the American Psychiatric Association (2013), PTSD is a psychiatric disorder experienced by people exposed to trauma. PTSD symptoms comprise hyperarousal, avoidance, and re-experiencing trauma frequently resulting in sleep disorders, annoyance, and uncontrolled behavior. The nature of the police job makes them more susceptible to PTSD and police with PTSD are likely to experience comorbid mental health conditions like depression and anxiety. A longitudinal study showed the highest comorbidity for PTSD and depression, followed by PTSD, depression, and anxiety (Bowler et al., 2012). Partial or subsyndromal PTSD, which often goes unnoticed, can be a risk factor for depression. It was found to be as high as 15.4% in WTC police responders (Pietrzak et al., 2012) and showed significant association with depression. Chopko et al. (2018) argued for underlying mechanisms in PTSD, sleep problems, and health. The study proved that sleep disorders mediated between PTSD (avoidance, hyperarousal) and depression. However, the mediation effect was smaller than the direct effect.

The nature of police work disrupts officers' sleep. Sleep disorders include both quality and quantity of sleep can risk mental health. Several studies in the US verified the association between sleep disorders and depression (Everding et al., 2016; Slaven et al., 2011; Rajaratnam et al., 2011). Rajaratnam et al. (2011) utilized a large national sample of officers to reveal that the incidence of depression increased by 2.6 times for officers screening positive on sleep disorders. Mean depression scores and the percentage of cases increased with deteriorating sleep quality (Everding et al., 2016; Yoo & Frankee, 2013). Slaven et al. (2011) found a strong correlation between depression and sleep disorders in a cohort of police sample. Depression score increased with the increasing score on the Pittsburgh Sleep Quality Index (PSQI) for both male and female officers. In further analysis, PSQI components “subjective sleep quality and “day time dysfunction” were significant for both genders while males showed significant results for “sleep latency,” “sleep disturbances,” and “use of medication” also.

4.2. Organizational Factors

Organizational factors refer to the environment within the police agency. These include but not limited to justice, communication, supervisor/peer support, and leadership (Garbarino et al., 2013; Nelson & Smith, 2016; Santa Maria et al., 2018).

Demands and resources in work situations impact psychological wellbeing. Different types of work demand comprise workload, work time, skill discrepancy, role ambiguity, interpersonal conflict, organizational constraints, etc. (Baka, 2015, Garbarino, Cuomo, Chiorri, & Magnavita, 2013; Nelson & Smith, 2016; Santa Maria et al., 2018; Wang & Leather, 2016). Similarly, resources include supervisor/peer support, positive leadership, shared values, and autonomy. Authors have generally supported the presence of mediating

variable between work characteristics and depression. In a recent study, with German officers, Santa Maria et al. (2018) hypothesized a link between job demands, job resources, and depression, and mediating role of emotional exhaustion. The hypothesized relations were supported such that higher demands lead to exhaustion, which further increased depression. Similarly, Wang and Leather (2016) reported the mediating role of job support and career satisfaction between demands, control, and depression. Effort–Reward–Imbalance (ERI) refers to high job effort and unsatisfactory reward in the form of pay, self-esteem, and growth. A study in Italy with a sample of special police force demonstrated that Effort-Reward imbalance >1 increased depression by seven times (Garbarino et al., 2013).

Tehrani (2018) employed a single-item measure of workability – “What is your current ability to work as compared to your highest ability to work?” for the first time to indicate the susceptibility of depression in UK Child Abuse Investigators (CAI). The measure demonstrated a strong negative association with depression score. In a large study, Chen et al. (2006) surveyed 832 Taiwanese police officers. Officers reported family problems (marital discord, problems with child-rearing and less family time) as stronger predictors of depression than workplace characteristics. That hints towards the importance of home characteristics for psychological wellbeing.

The findings unequivocally demonstrate an association between factors intrinsic to the police agency and depression scores. Prevalence of depression showed divergent results. It was high, at 21.6% (Chen et al., 2006) for Taiwanese police, while Italian special police force had a low prevalence rate at 7 % (Garbarino et al., 2013). The authors explain that the low prevalence rate was due to the sample being a cohort of the select group high on emotional stability and subjected to rigorous selection and training procedures.

4.3. Operational vs. Organizational Factors

Organizational stressors are stronger correlates of depression compared to occupational factors (Evans & Coman, 1993). Consequently, researchers have examined both making it possible to compare organizational and operational factors.

Most of the studies regard organizational issues more important for police depression compared to operational factors (Bishopp, Piquero, Worrall, & Piquero, 2018; Gershon Barocas, Canton, Li, & Vlahov, 2009; Violanti & Aron, 1993). Violanti and Aron (1993) in the US reported organizational stressors (delayed court decisions restricting police, disagreeable duties, lack of recognition for good work, unlikable regulations, lack of autonomy and unnecessary discipline) were 6.3 times more influential on depression compared to police specific stressors (exposure to crime, chasing, crises, physical attack and death/ injury of fellow officers). The study also showed the presence of mediating mechanisms through job satisfaction and goal orientation such that both the stressors reduced the impact of job attitudes on psychological distress. A similar study assessed five categories of stressors, including organizational unfairness, job dissatisfaction, discrimination, critical incident exposure, and poor cooperation for their relationship with perceived stress (Gershon et al., 2009). Organizational stressors– unfairness and job dissatisfaction were the most influential contributors to perceived stress. Further, officers reporting higher perceived stress were also found to be high on depression scores.

Major life events not related to the job displayed some conflicting results (Hartley, Violanti, Fekedulegn, Andrew, & Burchfiel, 2007; Wang et al., 2010). A prospective longitudinal study in the US aimed to predict depressive symptomatology in junior police (Wang et al., 2010). Investigating three types of stressors in police service, namely critical incidents, work stress, and significant negative life events, only work stress related to daily environmental factors was a significant predictor of depression. Conversely, Hartley et al. (2007) noted a significant link between adverse life events and depression ($p=0.0479$).

The literature has extensively explored the presence of stressful variables in the operational domain. However, in Sri Lanka, Wickramasinghe, Wijesinghe, Dharmaratne, and Agampodi (2016) identified community service and social status inversely associated with depression. As public scrutiny on police is on the rise, resources like a satisfactory sense of public service and status acquired can help mitigate depressive feelings.

Two studies found a similar/considerable impact of police-specific issues as compared to organizational factors (Berg, Hem, Lau, & Ekeberg, 2006a; Gershon et al., 2002). A nationwide study in Norway found similar effects of "lack of support- frequency" and "work injuries- frequency" on depression (Berg et al., 2006a). Similarly, Gershon et al. (2002) showed aging police officers' depressive symptoms to be related to police specific stressors (e.g. police funeral, needle stick injury, internal investigation). While discussing the results, Berg et al. (2006a) concluded that officers were not trained to handle day to day stressors. Therefore, organizational stressors were more crucial for mental health. Gershon et al. (2002) explained the results, providing two reasons. Firstly, senior officers learn to cope with organizational circumstances with age. Second, the officers unable to handle routine stress might have already left the force.

Organizational factors irrefutably influence police depression over and above police factors. Therefore, police stress inquiry should focus on organizational issues (Violanti & Aron, 1993). Modifiable stressors and psychological training intervention programs can address the mounting concern of depression in the police (Gershon et al., 2009).

4.4. Individual Factors

Circumstances in organizational and operational domain play a decisive role in predicting health outcomes; nonetheless, the role of individual differences also exist (Garbarino, Chiorri, Magnavita, Piattino, & Cuomo, 2012).

Psychological screening during selection and training indicates that certain personality factors are more prone to mental health concerns. Resilience is a trait which helps an individual bounce back from stressful situations. It is related to hardiness, which is the subjective reaction of an individual to critical incidents in life. Hardiness consists of three components-control, commitment, and challenge. Individuals high on hardiness are also resilient. A study in the US reported that hardiness-control was inversely related to depression for both the genders, while hardiness-commitment was significant for females (Andrew et al., 2008). Garbarino et al. (2012) measured resilience with big five personality traits, namely extroversion, friendliness, conscientiousness, emotional stability, and openness. Officers of special force unit in Italy high on resilience were less likely to experience depression than less resilient officers.

Individual characteristics like social support, gratitude, life satisfaction, and resilience were associated with fewer depressive symptoms among police responders of Hurricane

Katrina (Mc Canlies, Gu, Andrew & Violanti, 2018) while maladaptive coping was directly related to depression (Nelson & Smith, 2016). Self-directed (behavioral adaption) police trainees of South–Africa measured low on depressive symptoms. On the other hand, harm avoidance (behavioral inhibition) reinforced symptoms (du Preez, Cassimjee, Lauritz, Ghazinour, & Richter, 2011). Some studies indicate that lower feelings of self-worth and emotional stability in stressful police environment make officers prone to symptoms (Garbarino et al., 2013; Wang et al., 2010).

Peritraumatic dissociation (PD) is a diverse set of dissociations that occur at the time of trauma (Candel & Merckelbach, 2004). Though PD is directly associated with depression, the experience of prior trauma moderated the link between PD and experience of depression (McCanlies Sarkisian, Andrew, Burchfiel, & Violanti, 2017). Other studies in the US and Europe have also established a definite link between prior trauma and police depression (Tehrani, 2018; Wang et al., 2010).

4.5. Protective Factors

Several studies have stressed the need for planned interventions to protect police officers from psychological distress (Baka, 2015; Chen et al., 2006; Gershon et al., 2009; Mc Canlies et al., 2018; West et al., 2008). Two studies investigated the impact of interventions in preventing the development of depression. Chongruksa, Parinyapol, Sawatsri, and Pansomboon (2012) carried out a longitudinal experimental study on a group exposed to terrorist attacks in Thailand. The program included a series of interventions aimed to develop resilience, self-confidence, and healing in the experimental group. The target group displayed a considerable reduction in depression from baseline to termination, but at one-month follow-up, symptoms reappeared. The control group had significantly higher depression than the experimental group at mid-intervention, and one month follow up. The authors feel that relapse of mental health issues could be due to unresolved issues like unfairness, lack of superior support, unsatisfactory welfare. A similar study intended to develop resilience and self-regulation in a sample of police not related to any particular traumatic incident (McCraty & Atkinson, 2012). Depression reduced by 13% in trained officers while it increased by 17% in the control group, in the same period. The authors consider that resilience training can help officers recover from trauma after effects and also manage their day to day hassles.

4.6. Demographic Factors

Many scholars opine gender differences in police stress (Burke et al., 2006; He, Zhao, & Archbold, 2002). Consequently, gender has been the most common demographic explored by scholars. However, skewed gender distributions of samples make it difficult to assess gender differences.

In cross-sectional studies, factors related to stress were examined for possible gender differences (He et al., 2002; Kim, Wells, Vardalis, Johnson, & Lim, 2015). For both, the genders work-family conflict and destructive coping were directly related to depression (He et al., 2002) while community relationship was inversely related (Kim et al., 2015). Furthermore, some factors were gender-specific. Unlike males, females employed constructive coping styles to fight depression (He et al., 2002). For males' camaraderie, marriage, task identity, and autonomy helped reduce symptoms (He et al., 2002; Kim et

al., 2015). Male officers also found traumatic exposures, bureaucracy, and years of experience as factors intensifying depression scores. Beagley, Peterson, Strasshofer, and Galovski (2012) verified that empathy aggravated the impact of exposure to violence on depression for females, not males. Further, the authors contend that empathy promotes community relationship, which ameliorates depression symptoms. Therefore, interventions should be planned to prevent empathic individuals from developing depression.

Females tend to report more depression than males (He et al., 2002; Pancheri et al., 2002; Tehrani, 2018). Some studies noted, the difference was insignificant (Andrew et al., 2008; Beagley et al., 2012; Darensburg et al., 2006; Kim et al., 2015; Slaven et al., 2011) and Tehrani (2018) clarified that effect size was clinically irrelevant. Interestingly Berg et al. (2006a) reported significantly more depression in males than females. In terms of prevalence, a seemingly large difference between females (12.3%) and males (6.3%) was not statistically significant (Andrew et al., 2008). On the other hand, owing to cultural factors, male depression was higher in Taiwan (Chen et al., 2006).

Prevalence rate and depression scores increase with age among police (Berg et al., 2006a; Darensburg et al., 2006; Garbarino et al., 2013). Darensburg et al. (2006) divided the sample into three age groups (<40, 40–49, >50). Prevalence and depression scores for the age group 40–49 were higher than officers under 40 years. The authors explained that the older age group had longer exposures to trauma and therefore displayed higher depression. Garbarino et al. (2013) supported the positive association between length of employment and depression. However, the oldest age group (>50) was low on depression due to retirement or turnover (Darensburg et al., 2006).

The stressful nature of police work increases the chances of obesity. A study with Brazilian elite police confirmed the link between excess weight and depression (Vacini et al., 2018), but the results were marginally significant ($p=0.0369$). Another study supported the association between obesity and depression, but only for male officers (Violanti et al., 2011).

Samples examined can differ on account of demographic factors (Pancheri et al., 2002; Bishopp et al., 2018). In the municipal police department, traffic police were higher on depression than clerical police (Pancheri et al., 2002). Similarly, police samples from similar cities differed, as white officers of an agency were higher on symptoms than other agencies (Bishopp et al., 2018). Comparison with other occupational groups does not hint police as more stressful than other less risky professions (van der Velden et al., 2013). The authors believe that the unexpected results could be due to the rigorous selection, training, and generally high tolerance level among police personnel.

Other demographic factors related to depression were religion (Wickramasinghe et al., 2016), marital status (Komarovskaya, 2011; Violanti et al., 2011) and problems with the English language (du Preez et al., 2011).

5. The Present State of Literature

The studies reviewed had two main strengths. The review contained seven articles with organizational focus, and eight articles examined both police specific and organizational factors. As organizational factors are more critical for depression-related mental health, knowledge of these factors can better address the issue of police depression.

In addition, most of the studies, except for two used validated measures for depression. Validated measures help in obtaining reliable results.

The review identified some methodological limitations. First, all but two studies were retrospective (Table 1). Officers tend to forget various facets of traumatic incidents, and thus, retrospective self-report studies can induce memory bias in results (Candel & Merckelbach, 2004). Second, most of the studies were cross-sectional (Table 1), and thus, unable to ascertain the causal relationship between variables. Also, psychological health factors like depression evolve with time and therefore, longitudinal designs become essential to understand the underlying mechanisms. Thirdly, the review encountered scanty literature in the developing economies (Table 1). Researchers have also highlighted the paucity of studies on police depression in these countries (Masilamani et al., 2013; Wickramasinghe et al., 2016). Wong (as cited in Masilamani et al., 2013) explained relatively less literature in developing countries by citing reasons like political control, theory-practice gap and conventional beliefs preventing information disclosure and promoting police mystery. Given, the fact that the police in the developing economies face high prevalence rates, future studies can employ samples based in these countries. Fourthly, samples employed were predominantly male (Table 1) making gender assessment difficult. As female demographic in policing is steadily increasing (He et al., 2002) equal gender distribution in samples need to be adopted as far as possible to get more accurate results. Finally, police officers report lower depression than the general population. Scholars can report relative effect sizes to prevent underestimation of police depression.

In addition to methodological limitations, some gaps exist in terms of the factors examined. Subjective assessment of stress is essential. Thus, future studies can further explore individual variables like personality and coping styles. Related literature proves inadequate use of professional help services for mental health (Berg et al., 2006b). Seeking help for mental health issues can be an area of future studies. Police stress is contagious such that family and friends also experience police stress. Future scholars can explore family variables to establish their impact on police health. Finally, future research should examine heterogeneity in samples to determine if the impact of different sources of depression is uniform across officers belonging to the same or different departments.

The review itself is not free from limitations. The study excluded conference papers, theses, and articles in a language other than English. The present study also did not include literature published after sampling the articles. Articles not reporting police depression separately while employing a sample of police along with other similar occupation (e.g., firefighters) and studies using measures of psychological health but not reporting depression separately were excluded.

Conclusion

The present study aimed to provide a concise, systematic review of quantitative literature focusing on the experience of depression by law enforcement officers. The nature of the job profile of police officers in maintaining law and order can produce a high level of stress, posing an increased risk of depression due to both work-related and personal factors. Studies also show that organizational issues are more dominant causes of depression as compared to occupational issues. Further depression in the police force can

be gender-selective with females having to overcome more physiological, biological, and cultural obstacles. Given the above, the paper aims to develop further understanding of depression in the police, aids police practice, and identify potential fields of research in the area of police depression.

References

- Abdollahi, M. K. (2002). Understanding police stress research. *Journal of Forensic Psychology Practice*, 2(2), 1-24.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.
- Andrew, M. E., McCanlies, E. C., Burchfiel, C. M., Charles, L., Hartley, T. A., Fekedulegn, D., & Violanti, J. M. (2008). Hardiness and psychological distress in a cohort of police officers. *International Journal of Emergency Mental Health*, 10(2), 137-148.
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30(1), 47-88.
- Baka, L. (2015). The effects of job demands on mental and physical health in the group of police officers. Testing the mediating role of job burnout. *Studia Psychologica*, 57(4), 285-299.
- Balkin, J. (1988). Why Policemen Don't Like Policewomen. *Journal of Police. Science & Administration*. 16(1), 29-38.
- Beagley, M. C., Peterson, Z. D., Strasshofer, D. R., & Galovski, T. E. (2018). Sex differences in posttraumatic stress and depressive symptoms in police officers following exposure to violence in Ferguson: The moderating effect of empathy. *Policing: An International Journal*, 41(5), 623-635.
- Berg, A. M., Hem, E., Lau, B., & Ekeberg, Ø. (2006a). An exploration of job stress and health in the Norwegian police service: a cross sectional study. *Journal of Occupational Medicine and Toxicology*, 1(1), 26. doi: 10.1186/1745-6673-1-26.
- Berg, A. M., Hem, E., Lau, B., & Ekeberg, Ø. (2006b). Help-seeking in the Norwegian police service. *Journal of occupational health*, 48(3), 145-153.
- Bishopp, S. A., & Boots, D. P. (2014). General strain theory, exposure to violence, and suicide ideation among police officers: A gendered approach. *Journal of Criminal Justice*, 42(6), 538-548.
- Bishopp, S. A., Piquero, N. L., Worrall, J. L., & Piquero, A. R. (2018). Negative affective responses to stress among urban police officers: A General Strain Theory approach. *Deviant Behavior*, 40(6), 635-654.
- Bowler, R. M., Harris, M., Li, J., Gocheva, V., Stellman, S. D., Wilson, K., & Cone, J. E. (2012). Longitudinal mental health impact among police responders to the 9/11 terrorist attack. *American Journal of Industrial Medicine*, 55(4), 297-312.
- Burke, R. J., Richardsen, A. M., & Martinussen, M. (2006). Gender differences in policing: reasons for optimism?. *Policing: An International Journal of Police Strategies & Management*, 29(3), 513-523.
- Candel, I., & Merckelbach, H. (2004). Peritraumatic dissociation as a predictor of post-traumatic stress disorder: A critical review. *Comprehensive Psychiatry*, 45(1), 44-50.

- Chen, H. C., Chou, F. H. C., Chen, M. C., Su, S. F., Wang, S. Y., Feng, W. W., ... & Tsai, T. C. (2006). A survey of quality of life and depression for police officers in Kaohsiung, Taiwan. *Quality of life research*, 15(5), 925-932.
- Chongruksa, D., Parinyapol, P., Sawatsri, S., & Pansomboon, C. (2012). Efficacy of eclectic group counseling in addressing stress among Thai police officers in terrorist situations *Counselling Psychology Quarterly*, 25(1), 83-96.
- Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2018). Trauma-related sleep problems and associated health outcomes in police officers: a path analysis. *Journal of interpersonal violence*, 0886260518767912. doi: 10.1177/0886260518767912.
- Crank, J. P., & Caldero, M. (1991). The production of occupational stress in medium-sized police agencies: A survey of line officers in eight municipal departments. *Journal of Criminal Justice*, 19(4), 339-349.
- Darensburg, T., Andrew, M. E., Hartley, T. A., Burchfiel, C. M., Fekedulegn, D., & Violanti, J. M. (2006). Gender and age differences in posttraumatic stress disorder and depression among Buffalo police officers. *Traumatology*, 12(3), 220-228.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512.
- du Preez, E., Cassimjee, N., Lauritz, L. E., Ghazinour, M., & Richter, J. (2011). Personality and mental health: an investigation of South African police trainees. *Psychological Reports*, 108(1), 301-316.
- Evans, B. J., & Coman, G. J. (1993). General versus specific measures of occupational stress: An Australian police survey. *Stress Medicine*, 9(1), 11-20.
- Everding, B., Hallam, J. E., Kohut, M. L., Lee, D. C., Anderson, A. A., & Franke, W. D. (2016). Association of sleep quality with cardiovascular disease risk and mental health in law enforcement officers. *Journal of Occupational and Environmental Medicine*, 58(8), e281-e286.
- Galovski, T. E., Peterson, Z. D., Beagley, M. C., Strasshofer, D. R., Held, P., & Fletcher, T. D. (2016). Exposure to violence during Ferguson protests: mental health effects for law enforcement and community members. *Journal of Traumatic Stress*, 29(4), 283-292.
- Garbarino, S., Chiorri, C., Magnavita, N., Piattino, S., & Cuomo, G. (2012). Personality profiles of special force police officers. *Journal of Police and Criminal Psychology*, 27(2), 99-110.
- Garbarino, S., Cuomo, G., Chiorri, C., & Magnavita, N. (2013). Association of work-related stress with mental health problems in a special police force unit. *BMJ Open*, 3(7), e002791. doi:10.1136/bmjopen-2013-002791
- Gershon, R. R., Barocas, B., Canton, A. N., Li, X., & Vlahov, D. (2009). Mental, physical, and behavioral outcomes associated with perceived work stress in police officers. *Criminal Justice and Behavior*, 36(3), 275-289.
- Gershon, R. R., Lin, S., & Li, X. (2002). Work stress in aging police officers *Journal of Occupational and Environmental Medicine*, 44(2), 160-167.
- Hartley, T. A., Violanti, J. M., Fekedulegn, D., Andrew, M. E., & Burchfiel, C. M. (2007). Associations between major life events, traumatic incidents, and depression among Buffalo police officers. *International Journal of Emergency Mental Health*, 9(1), 25-35.

- He, N., Zhao, J., & 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*, 25(4), 687-708.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307-324.
- Huizink, A. C., Slottje, P., Witteveen, A. B., Bijlsma, J. A., Twisk, J. W., Smidt, N., & Smid, T. (2006). Long term health complaints following the Amsterdam Air Disaster in police officers and fire-fighters. *Occupational and Environmental Medicine*, 63(10), 657-662.
- Ivie, D., & Garland, B. (2011). Stress and burnout in policing: does military experience matter *Policing: An International Journal of Police Strategies & Management*, 34(1), 49-66.
- Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology*, 20(2), 178-187.
- Kelley, T. M. (2005). Mental health and prospective police professionals. *Policing: An International Journal of Police Strategies & Management*, 28(1), 6-29.
- Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry*, 56(7), 617-626.
- Kim, J. L., Wells, W., Vardalis, J. J., Johnson, S. K., & Lim, H. (2016). Gender difference in occupational stress: A study of the South Korean National Police Agency. *International Journal of Law, Crime and Justice*, 44, 163-182.
- Komarovskaya, I., Maguen, S., McCaslin, S. E., Metzler, T. J., Madan, A., Brown, A. D., & Marmar, C. R. (2011). The impact of killing and injuring others on mental health symptoms among police officers. *Journal of Psychiatric Research*, 45(10), 1332-1336.
- Kop, N., & Euwema, M. C. (2001). Occupational stress and the use of force by Dutch police officers. *Criminal Justice and Behavior*, 28(5), 631-652.
- Kroes, W., Margolis, B., & Hurrell, J. (1974). Job Stress in Policemen. *Journal of Police Science & Administration*, 2, 145-155.
- Liberman, A. M., Best, S. R., Metzler, T. J., Fagan, J. A., Weiss, D. S., & Marmar, C. R. (2002). Routine occupational stress and psychological distress in police. *Policing: An International Journal of Police Strategies & Management*, 25(2), 421-441.
- Luft, B. J., Schechter, C., Kotov, R., Broihier, J., Reissman, D., Guerrera, K., & Pietrzak, R. H. (2012). Exposure, probable PTSD and lower respiratory illness among World Trade Center rescue, recovery and clean-up workers. *Psychological Medicine*, 42(5), 1069-1079.
- Masilamani, R., Bulgiba, A., Chinna, K., Darus, A., Isahak, M., Kandiben, S., & Koh, D. (2013). Prevalence and associated factors of stress in the Malaysian Police Force. *Preventive Medicine*, 57, S57-S59.
- McCanlies, E. C., Gu, J. K., Andrew, M. E., & Violanti, J. M. (2018). The effect of social support, gratitude, resilience and satisfaction with life on depressive symptoms among

- police officers following Hurricane Katrina *International Journal of Social Psychiatry*, 64(1), 63-72.
- McCanlies, E. C., Sarkisian, K., Andrew, M. E., Burchfiel, C. M., & Violanti, J. M. (2017). Association of peritraumatic dissociation with symptoms of depression and posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy*, 9(4), 479-484.
- McCraty, R., & Atkinson, M. (2012). Resilience training program reduces physiological and psychological stress in police officers. *Global Advances in Health and Medicine*, 1(5), 44-66.
- Nelson, K. V., & Smith, A. P. (2016). Occupational stress, coping and mental health in Jamaican police officers. *Occupational Medicine*, 66(6), 488-491.
- Olson, A. C., & Surrrette, M. A. (2004). The interrelationship among stress, anxiety, and depression in law enforcement personnel. *Journal of Police and Criminal Psychology*, 19(1), 36-44.
- Pancheri, P., Martini, A., Tarsitani, L., Rosati, M. V., Biondi, M., & Tomei, F. (2002). Assessment of subjective stress in the municipal police force of the city of Rome. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 18(3), 127-132.
- Pietrzak, R. H., Schechter, C. B., Bromet, E. J., Katz, C. L., Reissman, D. B., Ozbay, F., & Levin, S. M. (2012). The burden of full and subsyndromal posttraumatic stress disorder among police involved in the World Trade Center rescue and recovery effort. *Journal of Psychiatric Research*, 46(7), 835-842.
- Rajaratnam, S. M., Barger, L. K., Lockley, S. W., Shea, S. A., Wang, W., Landrigan, C. P., & Epstein, L. J. (2011). Sleep disorders, health, and safety in police officers. *Jama*, 306(23), 2567-2578.
- Renck, B., Weisaeth, L., & Skarbö, S. (2002). Stress reactions in police officers after a disaster rescue operation. *Nordic Journal of Psychiatry*, 56(1), 7-14.
- Santa Maria, A., Wörfel, F., Wolter, C., Gusy, B., Rotter, M., Stark, S., & Renneberg, B. (2018). The role of job demands and job resources in the development of emotional exhaustion, depression, and anxiety among police officers. *Police Quarterly*, 21(1), 109-134.
- Slaven, J. E., Mnatsakanova, A., Burchfiel, C. M., Smith, L. M., Charles, L. E., Andrew, M. E., & Violanti, J. M. (2011). Association of sleep quality with depression in police officers. *International Journal of Emergency Mental Health*, 13(4), 267-277.
- Tehrani, N. (2018). Psychological well-being and workability in child abuse investigators. *Occupational Medicine*, 68(3), 165-170.
- Tewksbury, R., & Copenhaver, A. (2016). How cops see themselves: Self-regard and physical confidence. *International Journal of Police Science & Management*, 18(4), 273-280.
- van der Velden, P. G., Rademaker, A. R., Vermetten, E., Portengen, M. A., Yzermans, J. C., & Grievink, L. (2013). Police officers: a high-risk group for the development of mental health disturbances? A cohort study. *BMJ Open*, 3(1), e001720. doi:10.1136/bmjopen-2012-001720
- Vancini, R. L., de Lira, C. A., Anceschi, S. A., Rosa, A. V., Lima-Leopoldo, A. P., Leopoldo, A. S., & Knechtle, B. (2018). Anxiety, depression symptoms, and physical

- activity levels of eutrophic and excess-weight Brazilian elite police officers: a preliminary study. *Psychology Research and Behavior Management*, 11, 589-595
- Violanti, J. M. (1993). What does high stress police training teach recruits? An analysis of coping. *Journal of Criminal Justice*, 21(4), 411-417.
- Violanti, J. M., & Aron, F. (1993). Sources of police stressors, job attitudes, and psychological distress. *Psychological reports*, 72(3), 899-904.
- Violanti, J. M., Charles, L. E., McCanlies, E., Hartley, T. A., Baughman, P., Andrew, M. E., & Burchfiel, C. M. (2017). Police stressors and health: A state-of-the-art review. *Policing: An International Journal of Police Strategies & Management*, 40(4), 642-656.
- Violanti, J. M., Fekedulegn, D., Andrew, M. E., Charles, L. E., Hartley, T. A., & Burchfiel, C. M. (2011). Adiposity in policing: mental health consequences. *International Journal of Emergency Mental Health*, 13(4), 257-266.
- Wang, W., & Leather, P. J. (2016). Work characteristics and psychological health in East Asian police personnel: Direct and mediated effects. *International Journal of Police Science & Management*, 18(2), 77-86.
- Wang, Z., Inslicht, S. S., Metzler, T. J., Henn-Haase, C., McCaslin, S. E., Tong, H., & Marmar, C. R. (2010). A prospective study of predictors of depression symptoms in police. *Psychiatry Research*, 175(3), 211-216.
- West, C., Bernard, B., Mueller, C., Kitt, M., Driscoll, R., & Tak, S. (2008). Mental health outcomes in police personnel after Hurricane Katrina. *Journal of Occupational and Environmental Medicine*, 50(6), 689-695.
- Wickramasinghe, N. D., Wijesinghe, P. R., Dharmaratne, S. D., & Agampodi, S. B. (2016). The prevalence and associated factors of depression in policing: a cross sectional study in Sri Lanka. *SpringerPlus*, 5(1), 1776. doi: 10.1186/s40064-016-3474-9
- Yoo, H., & Franke, W. D. (2013). Sleep habits, mental health, and the metabolic syndrome in law enforcement officers. *Journal of Occupational and Environmental Medicine*, 55(1), 99-103.
- Zvolensky, M. J., Kotov, R., Schechter, C. B., Gonzalez, A., Vujanovic, A., Pietrzak, R. H., & Feder, A. (2015). Post-disaster stressful life events and WTC-related posttraumatic stress, depressive symptoms, and overall functioning among responders to the World Trade Center disaster. *Journal of Psychiatric Research*, 61, 97-105.