

Review Paper

The Scoping Review of Depression and Suicidal Ideation among Police and Front-liners

Noor Azeiah Che Sat*, Nor Ba'yah Abdul Kadir, Rusyda Helma Mohd &
Hilwa Abdullah @ Mohd Nor

Faculty of Social Science and Humanities, Universiti Kebangsaan Malaysia,
43600 Bangi, Selangor, Malaysia

*Corresponding Author: noorazeiah16190@gmail.com

Received: 6 October 2024

Accepted: 8 January 2025

Abstract: Police and other front-liners (e.g., firefighters, paramedics, first responders, law enforcers) constitute unique jobs that require sacrifices in many situations when undertaking their duties and often lead to mental health issues including depression. Suicidal ideation is among the worrying risk factors that can result from depression. Thus, it is crucial to understand the relationship between depression and suicidal ideation and the risk factors involved, and their implications for police and front-liners. This scoping review was designed to identify studies examining depression and suicidal ideation among police and front-liners as well as the risk factors. A scoping review search was conducted using Google Scholar, PubMed, SAGE Journal, SCOPUS, Elsevier, APA, and JSTOR databases. The initial database search returned 2,240 articles. Following the review and scoping only 33 studies were selected based on the inclusion criteria before being manually extracted and independently screened by two reviewers. Participants in the articles were primarily police officers or law enforcers, with few articles involving firefighters, paramedics, and other first responders. Most studies were quantitative and the systematic literature reviews focused on depression, suicide, mental health, work, and traumatic stress. Recognizing the risk factors of depression and suicidal ideation and their dynamic association helps provide police officers and other front-liners with a perspective of the psychological challenges in their job. Further research is needed to better understand the risk factors and suggest protective adaptive strategies and programmes to promote mental health among police and front-liners.

Keywords: Police officers; front-liners; law enforcers; depression; suicidal ideation

Introduction

Police and other front-liners are frequently exposed to situations that have negative implications for their mental health. Depression is the mental health problem most reported among police and other front-liners and often acts as a predictive factor of suicidal ideation. The World Health Organization (2021) reported that suicide is a global epidemic phenomenon and that more than 703,000 die by suicide every year. Several studies corroborate the finding that individuals tend to think of suicide when they are feeling depressed (Alayon, 2021; Dahlan et al., 2021; Jang et al., 2021; Lee & Kim, 2021; Prihadi et al., 2020). To date, only one study was found that identified the risk factors of depression and suicidal ideation involving police (Syed et al., 2020). A preliminary search of Google Scholars, Pub Med, SAGE Journal, JSTOR, SCOPUS, Elsevier, and APA was conducted and no current systematic review or scoping review on the topic was identified. Therefore, a scoping review incorporating empirical research is useful to help understand this context.

Acknowledging the importance of determining the interaction of depression as a risk factor for suicidal ideation and other contributing risk factors among police and other front-liners compared to the general population, this research identifies publications that focus on depression and suicidal ideation. The main

objectives being to explore the themes emerging from the literature, about the risk factors of depression and suicidal ideation and the association of these variables.

Methodology

This scoping review was undertaken according to the scoping review developed by Arksey and O'Malley (2005); and Levac, Colquhoun, and O'Brien (2010). Scoping allows scrutiny of all the relevant evidence on the issue without considering individual study designs while ensuring a systematic and rigorous process (Efendi et al., 2021). Through this scoping, it was expected that the risk factors and the association between depression and suicidal ideation would be identified.

1. Step One: Research Question

The review was guided by the following research question: "What are the risk factors of police and front-liners depression and suicidal ideation and their association?"

2. Step Two: Identification of Relevant Studies

This study adopted a three-step search strategy, in accordance with the Joanna Briggs Institute (JBI) scoping review guidelines (Peter et al., 2015). The initial searches of Google Scholars, Pub Med, SAGE Journal, JSTOR, SCOPUS, Elsevier, and APA were conducted in Jun 2023. The key terms used were "police depression", "depression and suicidal ideation among police", "police suicide", "front-liners", "depression and suicide", "law enforcers' depression and suicide", "first responders depression and suicidal ideation", and "police personnel suicide and depression". Next, the essential search was determined for publications within five years from 2018 until June 2023 involving seven databases: Google Scholar, Pub Med, SAGE Journal, JSTOR, SCOPUS, Elsevier, and APA. Only English language literature and articles were considered in this scoping.

3. Step Three: Selection of Studies and Data Management Process

The studies were included based on the following criteria: (i) primary studies focusing on depression among police and front-liners (ii) primary studies focusing on suicidal ideation or suicide among police and front-liners, and (iii) primary studies focusing on the association between depression and suicidal ideation among police and front-liners. However, realising the small number of studies available, the authors expand the search to include the mental health and psychological issues among police, front-liners, paramedics, firefighters, first responders, and law enforcers.

The exclusion criteria were English, with at least one of the following criteria: (i) published in a language other than English; (ii) non-research-based publications including books (iii) studies not involving police, and front-liners (e.g., firefighters, paramedics, first responders, law enforcers), and (iv) studies only discussing the prevalence and magnitude without outlines the cause or risk factors. A total of 2240 references were available as open access and retrieved from seven databases: Google Scholar, Pub Med, SAGE Journal, JSTOR, SCOPUS, Elsevier, and APA: Google Scholar (1,590 references), Pub Med (352 references), SAGE Journal (147 references), JSTOR(34 references), SCOPUS (34 references), Elsevier (31 references) and APA (52 references). Afterward, four duplicate records were removed and 2,174 studies with irrelevant titles and abstracts were also discarded. Thus, only 62 studies were scrutinized. Later, only 34 studies were included for full-text review after 28 studies were excluded as irrelevant. In-depth reading found that only 33 studies met the scope and criteria for inclusion in this scoping article.

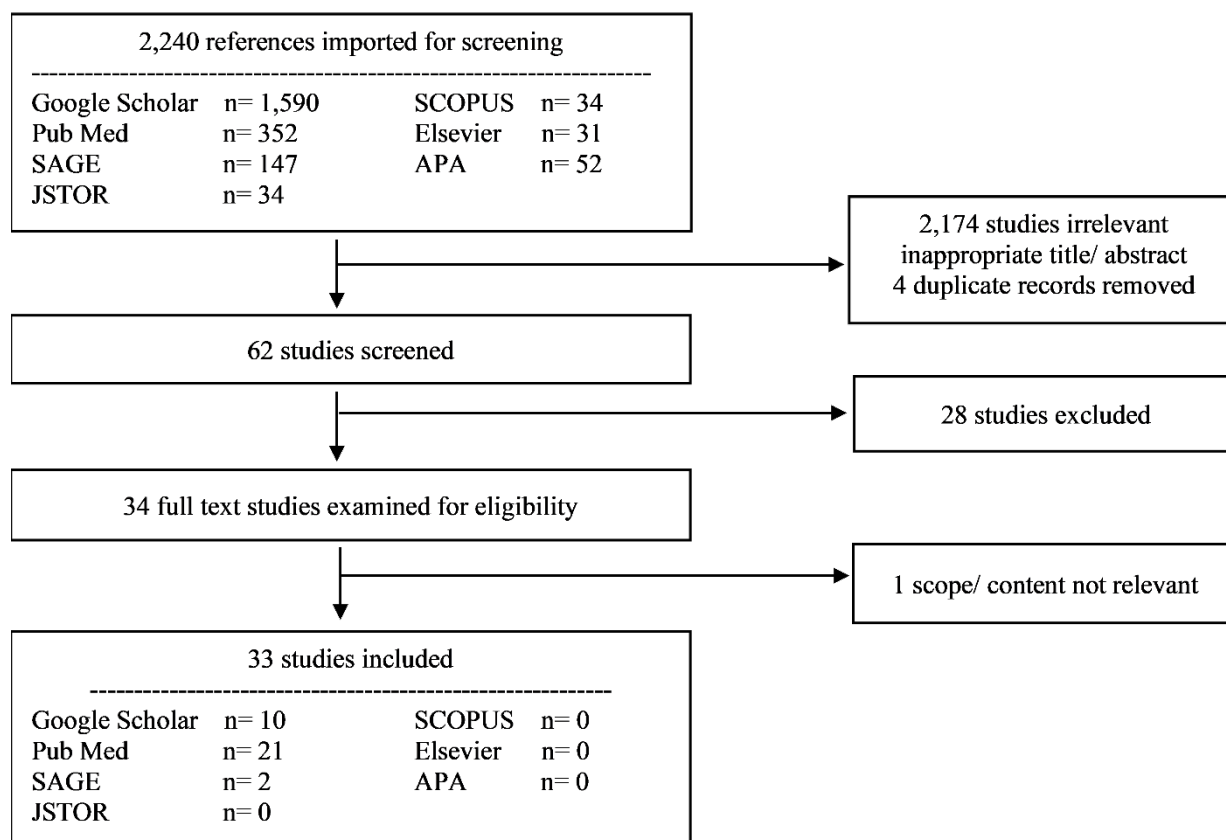


Figure 1. PRISMA diagram
Source: Tricco et al. (2018); PRISMA Extension for Scoping Review (PRISMA-ScR)
(Efendi et al., 2021)

4. Step Four: Charting the Data

In this stage, thirty-three studies that complied with the scope we examined were put into a table with the headings:- author-year-title, study aims, study design, participants and sample size, key findings, and limitations. This is a crucial stage to map the data and extract the information.

5. Step Five: Collating, Summarizing, and Reporting Results

The researchers organised the data and coding into different themes in this stage. Thematic analysis was used to organise the emerging patterns.

The Findings

A total of thirty-three papers were included: 15 quantitative, eight systematic literature reviews, three mixed methods, three from staff data or records; one scoping review, one qualitative, one literature review, and one thematic review. The research was conducted in different countries including India, Switzerland, Canada, Scotland, the United Kingdom, Ethiopia, and China. The results of all the papers with regards to the risk factors of depression and suicidal ideation among police and front-liners are as shown in Table 1 while the identified themes are depicted in Table 2.

Table 1. Summary of included studies

Author, Year, Title	Study Aim	Study Design	Participants & Sample Size	Key finding	Limitation
Acquadro Maran et al. (2022) Identifying Organisational Stressors That	To highlight the organisational factors that might influence perceived	Thematic review PsycINFO, SCOPUS, Web of Science, PubMed,	20 papers.	Lack of organisational social support, organisational culture, leadership, and bureaucracy are the	-The selected studies were cross-sectional - Different methods may have influenced the results.

Could be a Source of Discomfort in Police Officers: A Thematic Review	discomfort in police officers.	Cochrane Library; Google Scholar		organisational factors associated with police officers' perceived discomfort.	-Only papers written in English were considered.
Allison et al. (2019) Police Stress and Depression Symptoms: Role of Coping and Hardiness	To evaluate the association between police stress and depressive symptoms and the potential influences of coping and hardiness.	-Cross-sectional Survey	464 officers.	-Work stress: physical/ psychological threat, administrative/ organisational pressure, and lack of support are associated with higher symptoms of depression. -Police culture recognised as an obstacle to effective treatment programmes.	-Cross-sectional study design prevents investigation of a causal relationship.
Anders et al. (2022) Profiling Police Forces against Stress Risks and Protective Factors for Post-Traumatic Stress Disorder (PTSD) and Burnout in Police Officers	-To determine which coping strategies and personality traits could act as protective or risk factors in relation to PTSD and BO (Burnout) -To determine whether certain profiles of police officers could be identified as high risk for developing mental disorders.	-Cross-sectional Online survey. Questionnaires	1073 French-speaking police officers in Switzerland.	-Neuroticism is a major risk factor for PTSD among police and openness is protective. -Adaptive strategies (e.g., humour or active coping) tend to predict lower PTSD symptoms. -Maladaptive coping strategies (e.g., distraction, denial, or substance abuse) emerge as risk factors for PTSD. -Coping strategies, such as religion, emotional support, and emotional expression have been described as adaptive.	-Cross-sectional studies prevents causal relationships. -Written questionnaires are not a substitute for diagnosis.
Andrew et al. (2018) Law Enforcement Suicide	To provide a review of law enforcement suicide research from 1997 to 2016.	PRISMA systematic review methodology.	44 articles in the review.	-Law enforcement suicide rates show conflicting results. -Suicide Stressor;- lack of organisational support, traumatic events, shift work, the stigma associated with asking for help, or problems associated with fitting in with the police culture. -Main precursors;- domestic relationship problems and alcohol use.	-Lack of theory, -Under-reporting of suicides. -Guarded survey responses from police officers.
Andrews et al. (2022) Exposure to Potentially Psychologically Traumatic Events among Canadian Coast Guard and Conservation and Protection Officers	-To provide estimates of lifetime Potentially Psychologically Traumatic Events (PPTE) exposures. - To assess for association between PPTEs, mental health disorders, and	Self-report survey	Participants; Canadian Public Safety Personnel (PSP).	-Current results further support association between PPTE exposures and higher odds of screening positively for several different mental disorders. -Risk factors: PTSD, including assault with a weapon, sexual assault and other unwanted or uncomfortable sexual	-More reliable assessments are needed. -Need for clinical interviews.

	socio-demographic variables.			experiences, and captivity.	
Andrews et al. (2023) Potentially Psychologically Traumatic Event Exposure History of New Royal Canadian Mounted Police Cadets	-To provide estimates of lifetime Potentially Psychologically Traumatic Events (PPTe) exposure -To assess for associations with mental disorders.	Self-report Survey.	772 RCMP cadets.	- PPTes worst event;- Serious transport accidents (11.1%), physical assault (9.5%), sudden accidental death (8.4%) - All were associated with positive screens for one or more mental disorders.	- Sample may not be entirely representative of the population. -The reliability and validity of web-based self-reported remain ambiguous.
Bernier (2018) Suicide in Law Enforcement: Protecting Those Who Serve	To identify effective suicide prevention protocols currently being used by law enforcement.	Comparison of two case studies.	-Montreal Police.	-Risk factors: PTSD, hopelessness, aggression and impulsivity, problem-solving deficits, genetics, neurobiology, existing mental disorder, culture barriers to self-reporting, isolation.	Limited research as imprecise reporting led to an inaccurate suicide rate.
Burke (2020) Democratic Policing and Officer Well Being	-To identify relationship by asking: How do procedurally just and community-oriented policing strategies impact officer well-being? -To examine the reciprocal and occupational stress?	-Mixed- method survey, Convenience sampling, and interview.	-Patrol division of the California Police Department (CPD).	-Officers' increased support for community-oriented and procedurally just police strategies is significantly associated with decreased job stress, depression, anxiety, and negative affect, controlling for race, gender, perceived job dangerousness, cynicism, and year of service.	The convenience sampling method does not yield a random selection of patrol officers. - Findings of this study only generalizable to police-civilian interactions.
Butner (2022) The Effect of Post-Traumatic Stress Disorder (PTSD) on First Responders Following a Disaster: A Literature Review	-To search for evidence on PTSD in first responders following a disaster. -To identify the factors associated with the development of PTSD.	Three academic database searches.	18 articles were included in the review.	Studies included in this review provided evidence of PTSD in first responders following a disaster.	- Further research on the factors associated with the development of PTSD is needed.
Carleton et al. (2020) Assessing the Relative Impact of Diverse Stressors among Public Safety Personnel	To quantify occupational stressors across Public Safety Personnel (PSP) categories and assess for relationships with PPTes and mental health disorders.	Online self-report survey.	4820 PSP.	PPTes may be inevitable for PSP and are related to mental health; however, leadership style, organisational engagement, stigma, sleep, and social environment are variables that are significantly related to mental health.	-Responses were anonymous, allowing for potential problems with missing, and biased data. -Mental disorder assessments were based on self-report screens.
Civilotti et al. (2021) Trauma and Coping Strategies	To explore how Police Officers (Pos) describe the experience of	Quantitative-qualitative method.	39 municipal police of Collegno.	Traumatic events at work predominantly concerned aggression, witnessing deaths, forced	The sample numbers was small.

in Police Officers: A Quantitative-Qualitative Pilot Study	traumatic accidents, the effects they reported and their coping Strategies.			hospitalisation, and domestic violence involving children.	
Demou et al. (2020) Understanding the Mental Health and Wellbeing Needs of Police Officers and Staff in Scotland	-To understand mental health issues and risk factors for poor MH in officers. -To gather their ideas of workplace wellbeing interventions.	-Survey; Face-to-face/ telephone interviews. -In-depth semi-structured interviews.	30 officers and eight stakeholders.	-High levels of occupational stress and anxiety, were reported experiences of PTSD, anxiety, and depression. -The main stressors reported;- working hours, workload, culture, leadership, and organisational change.	-Participants fear research information could be ‘used against them’ may limit honesty. -Not capturing current personal experiences of officers of other ranks.
Dixon (2021) Law Enforcement Suicide: The Depth of the Problem and the Best Practices for Suicide Prevention Strategies	To review the current literature on the prevalence of suicide deaths, attempts, ideation, and resistance to seeking help among law enforcement officers.	Literature review.	Suicide prevention programmes literature.	Risk factors: Traumatic & horrific tragedies, substance use disorder, help-seeking behaviours.	The hypothesis and theory presented were based on inconsistent data.
Foley et al. (2023) ‘Holding onto Trauma?’ The Prevalence and Predictors of PTSD, Anxiety and Depression in Police Officers Working With Child Abuse, Rape and Sexual Exploitation Victims	To examine the prevalence and predictors of PTSD and CMD in UK police officers.	-Cross-sectional survey design. - Online survey.	353 officers.	- Clinical levels of PTSD (23%), moderate to severe levels of anxiety (26%), moderate to severe levels of depression (35%). -Female officers; constable rank, working with victims of child abuse, and those with lowest levels of social support had poorer mental health. -Social support moderated depression.	-Cross-sectional design and only one police area, potentially limiting generalisation. -The small sample sizes.
Grover et al. (2022) Psychological Impact of COVID-19 Duties During Lockdown on Police Personnel & their Perception about the Behaviour of the People; An Exploratory Study from India	To evaluate the psychological issues among police personnel during the COVID-19 pandemic.	An online survey was conducted using the Survey Monkey platform.	623 responses from police personnel.	-Risk factors for psychological issues; long work schedules/ working hours, job-related traumatic events, and non-availability. - Lack of adequate leave/off-duty periods, getting exposed to human suffering and death very frequently -COVID-19 led to significant stress.	-Online cross-sectional study and was limited to police personnel who had WhatsApp services. -No standard face-to-face interviews. -The questionnaire was not validated.
Huang et al. (2022) Prevalence Of Depression, Anxiety and Stress Among First Responders for Medical Emergencies	-To explore the prevalence of depression, anxiety, and stress among first responders for medical emergencies during the	Databases search.	17 studies were included with 8,096 first responders.	-High prevalence of depression, anxiety, and stress during the COVID-19 pandemic. -Depression risk: Married. -Gender shows no significant association	-Inability to examine the influence of individual-related factors and work-related factors.

<p>During Covid-19 Pandemic: A Meta-analysis</p> <p>Irizar et al. (2022) A Latent Class Analysis of Health Risk Behaviours in the UK Police Service and their Association with Mental Health and Job Strain</p>	<p>COVID-19 pandemic.</p> <p>To examine how health risk behaviours cluster together in individuals in a high-stress occupation, and the associations with mental health and job strain.</p>	<p>Data was obtained from the Airwave Health Monitoring Study.</p>	<p>25,234 male and 14,989 female police Employees.</p>	<p>-Men and women with depression, anxiety, and/or PTSD had double the odds of being assigned to the “high health risk behaviours” class, compared to those with no mental health problems. -Men and women reporting high strain had increased odds of being assigned to the “low-risk drinker”.</p>	<p>The cross-sectional study (associations between the classes and mental health or job strain could not be determined).</p>
<p>Isabirye et al. (2022) Prevalence and Factors Associated with Post Traumatic Stress Disorder among Field Police Patrol Officers Serving in Kampala Metropolitan Region</p>	<p>To determine the prevalence and factors associated with post-traumatic stress disorder among field police patrol officers.</p>	<p>-Cross-sectional study -Mini International Neuro-psychiatric Interview (M.I.N.I.).</p>	<p>392 field police patrol officers.</p>	<p>The prevalence of PTSD was 7.4%. The factors significantly associated with PTSD; are all related to the presence of psychiatric comorbidities (a current major depressive episode; an alcohol use disorder; and the presence of dissociation symptoms).</p>	<p>-As cross-sectional Study (limit causality) -Some of the variables used suffered from recall bias. -Challenges accessing all the police officers in the division.</p>
<p>James et al. (2023) The Effects of Shift-Work Schedules on The Sleep, Health, Safety, and Quality of Life of Police Employees During The COVID-19 Pandemic</p>	<p>To measure the effects of different shift schedules on police employee health, safety, and quality of life.</p>	<p>-Cross-sectional research design survey.</p>	<p>319 employees of police service.</p>	<p>-Working night shifts significantly decreased sleep quality and increased excessive sleepiness. -poor sleep quality (77.4%), excessive daytime sleepiness (25.7%), PTSD symptoms (50.2%), depressive symptoms (51.9%), and anxiety symptoms (40.8%). Predictors: problematic substance use; presence of depression and previous suicide attempts; differences in trauma response; exposure to excessive job-related stress, absence of a stable intimate relationship.</p>	<p>-The effects of overtime employment were not measured. -Limited racial and ethnic diversity -Cross-sectional research designs (as opposed to longitudinal designs).</p>
<p>Krishnan et al. (2022) A Systematic Review of Risk Factors Implicated in the Suicide of Police Officers</p>	<p>To elucidate the risk factors or predictors implicated in the suicidal behaviours of police officers.</p>	<p>Systematic qualitative review.</p>	<p>20 papers that met the inclusion criteria.</p>	<p>Predictors: problematic substance use; presence of depression and previous suicide attempts; differences in trauma response; exposure to excessive job-related stress, absence of a stable intimate relationship.</p>	<p>-The search for studies was limited by publication and language bias. -Limited predictive power in cause and effect.</p>
<p>Lentz et al. (2021) Compromised Conscience: A Scoping Review of Moral Injury Among Firefighters, Paramedics, and Police Officers</p>	<p>-To identify the extant empirical research regarding the construct of moral injury, its associated constructs, and how it relates to moral distress.</p>	<p>Scoping review databases.</p>	<p>32 papers that met the inclusion criteria.</p>	<p>-Stressors: Traumatic events & occupational stressor -Moral distress;- ethical climate and job characteristics, low levels of structural empowerment, psychological</p>	<p>Studies have not properly explored the current issues.</p>

				empowerment, autonomy, & poor access to occupational resources -Feelings of powerlessness, medical environments, and lack of authority.	
Li et al. (2022) Mental Health Status among Prison Officers in the Process of Enforcing the Law During COVID-19 Epidemic: A Cross-Sectional Survey from China	To identify the prevalence and influencing factors on mental health status among frontline prison officers during the prevention of the COVID-19 epidemic.	Cross-sectional survey.	981 frontline prison officers.	-The main symptoms were unhappiness and depression, loss of sleep over worry, and constantly under strain. - Risk factors;- Male, lockdown shift inside the prison, more night shifts, more smoking, poor self-reported physical condition, and chronic or serious illness history. -Protective Factors;- Regular diet, exercise, and more communication with family members	-Limited access (snowball sampling). -Biased due to self-reports. -No causal inferences should be made.
Mars et al. (2020) Suicide among Ambulance Service Staff: A Review of Coroner and Employment Records	To investigate factors commonly associated with ambulance staff suicides.	Records of staff suicides, employment, disciplinary & and coroner data collection.	11 ambulance service trusts across the United Kingdom.	Risk factors;- a recent return to work following a period of sickness absence, poor mental health, relationship and debt problems, history of self-harm, and change in the job role.	The total sample included was small -Some risk factors may not have been recorded -Limited study samples
Nair & Bulgiba (2022) Prevalence and Associated Factors of Depression and Anxiety Among Healthcare Workers During the COVID-19 Pandemic	-To evaluate the mental health outcomes of Healthcare Workers (HCWs) in hospitals during the pandemic.	-Cross-sectional survey study design	705 HCWs.	-The prevalence of anxiety and depression among the HCWs were 12.2% and 1.4%, respectively. -Multiple logistic regression analysis further demonstrated that being male and having work-related stigma was significantly associated with anxiety.	-The sample size from one hospital may not represent the entire population.
Purba & Demou (2019) The Relationship Between Organisational Stressors and Mental Health Well-Being Within Police Officers: A Systematic Review	-To conduct a systematic review -To assess the relationship between organisational stressors and police officers' mental well-being.	A systematic review was conducted following PRISMA and Cochrane Collaboration guidelines of four databases and grey literature.	15 studies met the inclusion criteria.	Strong evidence of significant associations was identified for organisational stressors and the outcomes of, occupational stress, psychological distress, emotional exhaustion, and personal accomplishment.	-Arbitrary and subjective summarization due to incomplete data pooling and statistics.
Reid et al. (2022) A Cross-Sectional Study of Mental Health-, Posttraumatic Stress Symptoms and Post	To report the prevalence of depression, anxiety, posttraumatic development, and PTSD in Norwegian	Cross-sectional study design.	479 Norwegian ambulance personnel.	-Norwegian ambulance personnel report a prevalence of posttraumatic stress symptoms and depression; higher for men, and lower for the female when compared	-Low response rate. -Missing answers could influence results.

Exposure Changes in Norwegian Ambulance Personnel	ambulance personnel.			to the adult Norwegian population. -The majority of respondents reported personal growth because of their work experience, peer support and having a partner influence levels of PTSD.	
Stevellink et al. (2020) Probable PTSD, Depression and Anxiety In 40,299 UK Police Officers and Staff: Prevalence, Risk Factors and Associations with Blood Pressure	-To explore the prevalence of and risk factors for probable mental disorders. -To know the association between mental illness and alterations in blood pressure.	Data from Airwave Health Monitoring Study.	40,299 police.	-Probable depression was most frequently reported (9.8%), anxiety (8.5%) & PTSD (3.9%). -Groups at risk for probable mental disorders; police staff, and police employees who reported drinking heavily. -Police employees exposed to traumatic incidents in the past six months had a doubling in rates of anxiety or depression.	Not available.
Syed et al. (2020) Global Prevalence and Risk Factors for Mental Health Problems in Police Personnel: A Systematic Review and Meta-Analysis	-To study the prevalence and risk factors for mental health problems among police personnel worldwide.	11 databases	100 active eligible studies.	-The risk factor for depression and suicidal ideation was higher occupational stress -The risk factors for PTSD were higher occupational stress and avoidant coping strategies. -Higher levels of peer support was associated with significantly lower PTSD symptoms.	The need for effective intervention.
Tsehay et al. (2021) Generalized Anxiety Disorder, Depressive Symptoms, and Sleep Problem During COVID-19 Outbreak in Ethiopia among Police Officers: A Cross-Sectional Survey	To examine psychological health response among police officers in Ethiopia during the COVID-19 outbreak.	A cross-sectional study design.	385 police officers.	-The rate of depression (28.9%). -Participants who are men, married, highly resilient, and have high social support were associated with lower depression, anxiety, and insomnia scores than those of women, being single or widowed/divorced, low resilient coping score, and low social support, respectively.	The police authorities and health sectors should work on strengthening individual coping status.
Wijayanti & Fauzi (2020) Factors Affecting the Work Stress of Police Officers: A Systematic Review	To know the factors affecting the work stress of police officers.	Database searches.	5 quantitative journals.	-Role ambiguity, role conflict, and role excess are the biggest factors that influence higher work stress in police officers. -Perceived work stress; - exposure to critical incidents, discrimination at work, lack of cooperation among co-workers,	Researchers pay less attention to generalising their findings.

				job dissatisfaction and organisational justice.	
Yadav et al. (2022) Prevalence and Factors Associated with Symptoms of Depression, Anxiety, and Stress Among Traffic Police Officers in Kathmandu, Nepal: A Cross-Sectional Survey	To assess the prevalence of depression, anxiety, and stress, associated factors, and stress-coping strategies.	Cross-sectional survey.	300 traffic police officers.	-High prevalence of depression (41.3%), anxiety, and stress symptoms among traffic police officers. -Smoking and longer working hours were associated with an increased likelihood of depression, anxiety, and stress. -Lack of physical exercise was associated with depressive symptoms.	Not available
Yuan et al. (2020) A Survey of Psychological Responses During the Coronavirus Disease 2019 (COVID-19) Epidemic among Chinese Police Officers in Wuhu	To assess the prevalence and severity of psychological responses among police officers during the COVID-19 pandemic and find influencing factors in depression and anxiety.	A cross-sectional online questionnaire	3,517 police officers.	-Older and married police officers were at higher risk of anxiety. - Risk of depression/anxiety;- Those with a bachelor's degree or above, living near the city centre, and taking sleeping pills. -Auxiliary police had lower depression and anxiety than security police, prison guards, criminal police, and political security.	-Lacked previous measurements of depression and anxiety of the officers.
Zhang et al. (2021) Prevalence and Dynamic Features of Psychological Issues Among Chinese Healthcare Workers During the COVID-19 Pandemic: A Systematic Review and Cumulative Meta-analysis	-To outline the prevalence and dynamic changing features of medical workers' psychological issues -To review the related national policies during the COVID-19 pandemic.	Systematic Review of 12 electronic databases.	26 studies were included.	-The prevalence of psychological distress peaked at the beginning of the pandemic. -Risk factors;- COVID-19 pandemic (longer working hours and less social support, increase in workload, shortage of supplies, uncertainty about the diseases and risk infection, etc.)	-The study did not reach a causal association. -Small samples and numbers of studies.

Table 2. Identified themes

Themes	Detailed Aspects	Sources
1. Risk factors of depression or psychological issues	Traumatic event; past trauma; PTSD	Grover et al. (2022); Stevelink et al. (2020); Wijayanti & Fauzi (2020); Andrews et al. (2022); Andrews et al. (2023); Civilotti et al. (2021); Irizar et al. (2022); Foley et al. (2023); Isabirye et al. (2020); Butner (2022)
	Long hours work schedule	Grover et al. (2022); Zhang et al. (2021); Demou et al. (2020); James et al. (2023); Yadav et al. (2022)
	Inadequate leave/ off-duty period	Grover et al. (2022)
	Occupational resources	Lentz et al. (2021); Zhang et al. (2021)
	Lack of support	Lentz et al. (2021); Acquadro Maran et al. (2022); Wijayanti & Fauzi (2020); Zhang et al. (2021); Allison et al. (2019); Tschay et al. (2021)
	Moral & ethical distress (stigma)	Lentz et al. (2021); Carleton et al. (2020); Nair & Bulgiba (2022)

	Workload	Lentz et al. (2021); Zhang et al. (2021); Demou et al. (2020)
	COVID-19	Huang et al. (2022); Grover et al. (2022); Zhang et al. (2021)
	Changes in job or work environment	Carleton et al. (2020); Demou et al. (2020)
	Sickness, illnesses, or disability, on medication	Li et al. (2022); Yuan et al. (2020)
	Disciplinary action; blocked career	Lentz et al. (2021)
	Powerless, discrimination, injustice in organization	Lentz et al. (2021); Wijayanti & Fauzi (2020)
	Leadership & bureaucracy and administrative (organisational engagement)	Acquadro Maran et al. (2022); Allison et al. (2019); Carleton et al. (2020); Demou et al. (2020); Lentz et al. (2021)
	Organisational culture/ police culture	Acquadro Maran et al. (2022); Demou et al. (2020); Allison et al. (2019)
	Psychiatric symptoms and history	Purba & Demou (2019); Isabirye et al. (2022)
	Job dissatisfaction (role ambiguity/ conflict)	Wijayanti & Fauzi (2020)
	Lack of coping strategies; resiliency	Tsehay et al. (2021)
	Sleep deprivation/night shift	Zhang et al. (2021); Carleton et al. (2020); James et al. (2023); Li et al. (2022)
	Smoking	Yadav et al. (2022); Li et al. (2022)
	Lack of exercise	Yadav et al. (2022)
	Alcohol use	Isabirye et al. (2022); Stevelink et al. (2020)
	Married	Huang et al. (2022); Yuan et al. (2020)
	Single/ widowed/ divorce	Tsehay et al. (2021)
	Older	Yuan et al. (2020)
	Bachelor's degree and above (working position)	Yuan et al. (2020) Foley et al. (2023)
	City centre workplace	Yuan et al. (2020)
	Men	Reid et al. (2022); Li et al. (2022); Nair & Bulgiba (2022)
	Female	Foley et al. (2023); Tsehay et al. (2021)
	Rank	Foley et al. (2023)
2. Risk factors of suicidal ideation	Lack of organisational support	Andrews (2018)
	Traumatic events	Andrews (2018); Krishnan et al. (2022); Lentz et al. (2021); Dixon (2021)
	Shift works	Andrews (2018)
	Stigma with asking for help or help-seeking behaviour	Andrews (2018); Dixon (2021)
	Problem fitting in with police culture	Andrews (2018); Acquadro Maran et al. (2022)
	Inadequate leave/ off-duty period	Andrews (2018)
	Job dissatisfaction	Krishnan et al. (2022); Lentz et al. (2021)
	Debt	Mars et al. (2020)
	Changes in job or work environment	Mars et al. (2020)
	Sickness or disability	Mars et al. (2020)
	Domestic relationship problem/ absence of a stable intimate relationship	Andrews (2018); Krishnan et al. (2022); Mars et al. (2020)
	Alcohol use	Bernier (2018)
	Substance use	Krishnan et al. (2022); Dixon (2021)
	Post Traumatic Syndromes Disorder (PTSD)	Bernier (2018); Grover et al. (2022); Anders et al. (2022)
	Hopelessness	Bernier (2018)
Aggression & impulsivity	Bernier (2018)	
Problem-solving deficits	Bernier (2018)	
Genetics	Bernier (2018)	
Neurobiology	Bernier (2018)	
Existing mental disorder/ psychiatric history	Bernier (2018); Mars et al. (2020)	
Culture barriers to self-reporting	Bernier (2018)	
Isolation	Bernier (2018)	
3. Risk factors of depression and suicidal ideation	Occupational stress	Syed et al. (2020)

4.Protective	Openness	Anders et al. (2022)
Adaptive	Humour	Anders et al. (2022)
Strategies	Active coping	Anders et al. (2022)
	Religion	Anders et al. (2022)
	Emotional or social support	Anders et al. (2022); Foley et al. (2023)
	Community-oriented & procedurally just police strategies	Burke 2020

1. Risk factors of Depression or Psychological Issues

Overall, the risk factors of depression or psychological issues are related to occupational or organisational sources. Among the risk factors with regard to occupation such as police or front-liners, which might affect depression or psychological issues are long hours of work (Demou et al., 2020; Grover et al., 2022; James et al., 2023; Yadav et al., 2022; Zhang et al., 2021), inadequate leave or off-duty period (Grover et al., 2022), limited resources or supplies or facilities in the job (Lentz et al., 2021; Zhang et al., 2021), workload (Demou et al., 2020; Lentz et al., 2021; Zhang et al., 2021); and changes in job or work environment (Carleton et al., 2020; Demou et al., 2020).

Demou et al. (2020) concluded police particularly in special forces or operating teams at risk for mental health disturbances due to the constant risk of being injured, wounded, or even killed during their job besides exposure to witnessing violence and death (Garbarino et al., 2013), adverse work conditions (Sanne et al., 2005), and hierarchical, male-dominated paramilitary structures as compared to other workers in other organization (Violanti, 2011). Mohd Zaimi Zainuri and Rusyda Helma Mohd (2023) outlined the data from the Royal Malaysia Police (RMP), from 2010 to 2014; 1,324 police officers died, meanwhile 359 were injured or ended up classified as 'Person with Disabilities' (PWD) while performing their jobs mainly in the operational or task force.

Furthermore, a feeling of powerless, discrimination or injustice in the organisation (Lentz et al., 2021; Wijayanti & Fauzi, 2020), job dissatisfaction because of role ambiguity or conflict (Wijayanti & Fauzi, 2020), disciplinary action or blocked career (Lentz et al., 2021) and traumatic event or past trauma or PTSD (Andrews et al., 2022; Andrews et al., 2023; Butner, 2022; Civilotti et al., 2021; Foley et al., 2023; Grover et al., 2022; Irizar et al., 2022; Isabirye et al., 2020; Stevelink et al., 2020; Wijayanti & Fauzi, 2020) were also reported as being associated with depression and psychological issues among police officer and front-liners. Organisational cultures might also influence the perceived discomfort among police officers and front-liners (Acquadro Maran et al., 2022; Allison et al., 2019; Demou et al., 2020). Allison et al. (2019) added that police culture is commonly recognised as an obstacle to the effective use of prevention and treatment programmes related to occupational stress.

Nevertheless, due to the occupational nature of police or front-liners, depression is also associated with individual social factors, such as lack of support (Acquadro Maran et al., 2022; Allison et al., 2019; Lentz et al., 2021; Tsehay et al., 2021; Wijayanti & Fauzi, 2020; Zhang et al., 2021), lack of coping strategies and resiliency (Tsehay et al., 2021; Wijayanti & Fauzi, 2020), sleep deprivation (Carleton et al., 2020; James et al., 2023; Li et al., 2022; Zhang et al., 2021), moral and ethical distress (Carleton et al., 2020; Lentz et al., 2021; Nair & Bulgiba, 2022), and sickness, illness, or disability or on medication (Li et al., 2022; Yuan et al., 2020). In a cross-sectional study design involving Ethiopian police officers, Tsehay et al. (2021) reported that the rate of depression was 28.9% and that high social support was associated with lower depression, anxiety, and insomnia scores.

Other than that, the COVID-19 pandemic was also identified as a risk factor as multiple studies reported an association between depression and psychological well-being. Zhang et al. (2021) reported a systematic review in which the prevalence of psychological distress peaked at the beginning of the pandemic and exhibited a slow downward trend during the COVID-19 pandemic in China as the front-liners were confronting longer working hours, increased workload, shortage of supplies, uncertainty about the disease and risk infections and stressful mental state. The same study summarized the prevalence of depression from 18 studies in three phases that are early, peak, and post-COVID-19, reporting the prevalence of 26.2 percent (early), 37.2 to 50.6 percent (peak), and 26.2 to 29.2 percent (post), which showed a gentle decline of psychological problems including anxiety and depression after high prevalence at early and peak phases of

COVID-19 (Zhang et al., 2021). The outbreak of COVID-19, significantly accelerated the prevalence of major depressive disorder by 28 percent globally by 2020 (Zhao et al., 2024).

Huang et al. (2022) also reported a high prevalence of depression (31%) during the COVID-19 pandemic. Meanwhile, a study in India by Grover et al. (2022) found that 18% showed significant depressive symptoms. A few studies also suggested that other individuals' lifestyle and demographic criteria contributed to the risk factors of depression like smoking (Li et al., 2022; Yadav et al., 2022), lack of exercise (Yadav et al., 2022), alcohol use (Isabirye et al., 2022; Stevelink et al., 2020), married (Huang et al., 2022; Yuan et al., 2020), older age (Yuan et al., 2020), and male (Li et al., 2022; Nair & Bulgiba, 2022; Reid et al., 2022). However, in contrast the study of UK police officers by Foley et al. (2023) found that female officers, those of constable rank with victims of child abuse, and those with the lowest levels of social support had poorer mental health.

Meanwhile, in a study of police officers in Ethiopia, Tsehay et al. (2021) found evidence of an association between women, being single or widowed/divorced, low resilient coping score, and low social support with depression. Research among police officers in China claimed that officers with a bachelor's degree or above and living near the city centre were at greater risk of depression and anxiety (Yuan et al., 2020). Yuan et al. (2020) further suggested that higher positions had an influence on the psychological state of the officers. Research by Isabirye et al. (2022) revealed an association between psychiatric comorbidities and depressive episodes among police patrol officers in Uganda. Earlier, in their systematic review of police officers' mental well-being, Purba and Demou (2019) proposed strong evidence of a significant association between occupational stress, psychological distress, emotional exhaustion, and personal accomplishment.

2. Risk Factors of Suicidal Ideation

Suicide risk factors are usually embedded in police work or the front lines itself when it involves shifts, less leave or off-duty periods (Andrews, 2018), and changes in job or work environment (Mars et al., 2020), as these often lead to job dissatisfaction (Krishnan et al., 2022; Lentz et al., 2021). Meanwhile, other contributing risk factors in the individual's social life, the lack of organisational support (Andrews, 2018), domestic relationship problems, or absence of stable intimate relationship (Andrews, 2018; Krishnan et al., 2022; Mars et al., 2020) and isolation (Bernier, 2018). Traumatic events (Andrews, 2018; Dixon, 2021; Krishnan et al., 2022; Lentz et al., 2021) and post-traumatic stress disorder (PTSD) (Anders et al., 2022; Bernier, 2018; Grover et al., 2022) also considered as the main precursors of suicide. Moreover, the inability to self-report because of cultural barriers (Bernier, 2018), the stigma of asking for help (Andrews, 2018; Dixon, 2021), and a problem fitting in with police culture (Acquadro Maran et al., 2022), are the main issues exposing them to problematic psychological issues including suicide.

Meanwhile, individuals with certain personalities and tendencies of hopelessness, aggression or impulsivity, and problem-solving deficits (Bernier, 2018) are at greater risk. Also, sickness or disability, debt issues (Mars et al., 2020), alcohol (Bernier, 2018), and substance use (Dixon, 2021; Krishnan et al., 2022) significantly influence suicidal behaviours. Bernier (2018) also proposed that genetics, neurobiology, and psychiatric history (Mars et al., 2020) are risk factors for suicide among ambulance service staff in the United Kingdom.

3. Risk Factors of Depression and Suicidal Ideation

During the scoping review search involving 33 studies, only one study proposed a direct link between depression and suicidal ideation among police officers. The systematic review and meta-analysis of Syed et al. (2020) of 100 active eligible studies identified the strongest risk factor for depression and suicidal ideation as higher occupational stress and the strongest risk factors for PTSD were higher occupational stress and avoidant coping strategies.

4. Protective Adaptive Strategies

Only a few studies were found that suggested protective adaptive strategies and, hence discussed the risk factors of depression and suicidal ideation. The studies that suggested adaptive strategies include Anders et al. (2022), Burke (2020), Foley et al. (2023), and Li et al. (2022). Anders et al. (2022) in their study of protective

and risk factors for PTSD and burnout, marked the importance of neuroticism as a major risk factor of PTSD among French police and openness as a protective measure. The study further suggested adaptive strategies like humour or active coping to reduce the PTSD Symptoms and religion, emotional support, and emotional expression were described as adaptive coping strategies. Burke's (2020) study outlined that officers' increased support for community-oriented and procedurally just police strategies were significantly associated with decreased job stress, depression, anxiety, and other negative effects. Foley et al. (2023) claimed there was tentative evidence that social support statistically moderated the relationship between tenure and depression. Meanwhile, Li et al. (2022) suggested that regular diet, exercise, and more communication with family members were protective factors against anxiety and depression.

Discussion

This scoping review sought to understand the risk factors for depression and suicidal ideation and their association and various factors were identified. Most focused on the organisational stressors as risk factors which refer to the overwhelming nature of the job itself. Organisational stressors including ineffective leadership, issues with tenure and promotion processes, understaffing, lack of resources, and organisational culture can cause serious challenges for police officers (Gatens & Otto, 2020). Among the organisational stressors identified in this study are long hours work schedule, the burden of workload, and shift work with less leave or off-duty periods which were prevalent during the COVID-19 pandemic. In addition, the changes in the job or work environment; lack of resources, supplies, or facilities; leadership style; bureaucracy; and administration add to the increased tension of the job.

Some research suggested that departmental factors were associated with the risk of suicidal ideation (Pienaar, Rothmann, & Van De Vijver, 2007 in Gatens & Otto, 2020). Such factors can worsen if the workplace also suffers from a lack of support from colleagues or social circle, tied with the culture of moral and ethical stigma that hinders individuals from getting help and thus the concomitant problems of fitting in with the work culture and feeling isolated. These organisational stressors can add up to become the main risk factors for depression and suicidal ideation among police and other front-liners.

However, throughout the scoping of the literature, a few other factors were recognized as risk factors, which are embedded in the individuals themselves and their lifestyle. Individuals with certain demographic statuses were recognized as being more fragile and vulnerable to depression and suicidal ideation. These included those with PTSD, having faced traumatic events in their job, having psychiatric history, alcohol, and substance use, those having illnesses or disabilities, and facing relationship problems and financial issues. A study corroborates that PTSD and increased alcohol use were linked to a marked increase in suicidal ideation in police officers (Violanti, 2004). Motor vehicle accidents, assaults, homicides, as well as natural cause deaths, and suicide are common workplace situations for police officers (Carpenter, 2021) and front-liners in their daily jobs.

A few studies also provide evidence that personality traits including aggression, impulsivity, problem-solving deficits, genetics, neurobiology, and feeling hopeless and powerless also contributed as risk factors. Civilotti et al. (2022) contended that depression and emotional exhaustion significantly increased the risk of hopelessness and affected the mental health status of the officers. However, several studies suggested that openness, humour, active coping, religion, emotional or social support, community-oriented, regular diet, exercise, and more communication with family members would play a huge part as protective adaptive factors in combatting depression and psychological issues. Moreover, education and advocacy at different levels of management, digital sharing, and other alternatives in seeking help should also be made available. Routine mental checks should be normalized, and certain standard operating procedures should be revised including the firearm policy or accessibility to medicine for those observed having a tendency for suicide and facing high levels of depression.

This scoping review included published studies, open access, and in English language only. Most studies sample police officers, law enforcement officers, patrol officers, and first responders in the medical sectors, hence it does not reflect the bigger picture of the challenges faced by the different sections of police officers or front-liners and the risk factors involved. Furthermore, this study only focuses on seven databases and a period of five years which limits the articles found and discussed. Therefore, it is highly recommended

that more attention should be given to establishing more study and wellness programmes, making psychological services accessible in the best possible way and providing professional care to police officers and front-liners.

Conclusion

Most of the studies were looking at the prevalence, risk factors, and lack of discussions on the adaptive strategies or protective measures to balance the knowledge shared. This study highlights the importance of addressing the risk factors of depression and suicidal ideation among police and front-liners from a more dynamic perspective. The risk factors for depression and suicidal ideation are varied across regions and cultures. However, the common factors usually stem from the nature of the occupation as police officers or front-liners itself. Therefore, to understand the dynamic association of the risk factors of depression and suicidal ideation, further in-depth study needs to consider the multiple factors involved as well as the protective factors that might help as preventive measures. Thus, more studies involving police officers and front-liners are needed as they are the main people facing a real challenge in their jobs.

Acknowledgment: We extend our sincere appreciation to all colleagues who offered their help and facilitated this study.

Conflicts of Interest: The authors declare that there is no presence of any conflict of interest.

References

- Acquadro Maran, D., Magnavita, N., & Garbarino, S. (2022). Identifying organisational stressors that could be a source of discomfort in police officers: A thematic review. *International Journal of Environmental Research and Public Health*, *19*, 3720. <https://doi.org/10.3390/ijerph19063720>.
- Alayon, N.D. (2021). Predictors of depression and suicidal ideation of Filipino college freshmen in a Philippine state college. *Philippine Social Science Journal*, *4*(1), 9-19. <https://doi.org/10.52006/main.v4i1.296>.
- Allison, P., Mnatsakanova, A., McCanlies, E., Fekedulegn, D., Hartley, T. X., Andrew, M.E., & Violanti, J.M. (2019). Police stress and depressive symptoms role of coping and hardiness. *Policing: An International Journal*, *43* (2), 247-261. <https://doi.org/10.1108/pijpsm-04-2019-0055>.
- Anders, R., Willemin-Petignat, L., Rolli Salathé, C., Samson, A.C., & Putois, B. (2022). Profiling police forces against stress: Risk and protective factors for post-traumatic stress disorder and burnout in police officers. *International Journal of Environmental Research and Public Health*, *19*(15), 9218. <https://doi.org/10.3390/ijerph19159218>.
- Andrew, M. Fekedulegn, D., McCanlies, E., Owen, S.L., & Violanti, J.M. (2018). Law enforcement suicide: A review. *Policing: An International Journal*, *42*(2),141-164. <https://doi.org/10.1108/pijpsm-05-2017-0061>.
- Andrews, K.L., Jamshidi, L., Nisbet, J., Teckchandani, T.A., Price, J.A.B., Ricciardelli, R. Anderson, G.S., & Carleton, R.N. (2022). Exposures to potentially psychologically traumatic events among Canadian Coast Guard and conservation and protection officers. *International Journal of Environmental Research and Public Health*, *19*, 15116. <https://doi.org/10.3390/ijerph192215116>.
- Andrews, K.L., Jamshidi, L., Nisbet, J., Brunet, A., Afifi, T.O., Asmuindson, G.J.G., Fletcher, A.J., Maguire, K.Q., Teckchandani, T.A., Lix, L., Sauer-Zarala, S., Saveen, J., Keane, T.M., Neary, J.P., & Carleton, R.N. (2023). Potentially psychologically traumatic event exposure histories of new Royal Canadian Mounted Police Cadets. *Canadian Journal of Psychiatry*, 1-19. <https://doi.org/10.1177/0706437221149467>.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*, 1, 19-32. <https://doi.org/10.1080/1364557032000119616>.
- Bernier, R.J. (2018). *Suicide in law enforcement: Protecting those who serve* [Master's thesis, Naval Postgraduate School]. California. <http://hdl.handle.net/10945/60345>.

- Burke, K.C. (2020). Democratic policing and officer well-being. *Frontiers in Psychology, 11* (874). <https://doi.org/10.3389/fpsyg.2020.00874>.
- Butner, B. (2022). The effect of post-traumatic stress disorder on first responders following a disaster: A literature review. *Capstone Experience, 191*. https://digitalcommons.unmc.edu/coph_slce/191.
- Carleton, R.N., Afifi, T.O., Taillieu, T., Turner, S., Mason, J.E., Ricciardelli, R., McCreary, D.R., Vaughan, A.D., Anderson, G.S., Krakauer, R., Donnelly, E., Camp II, R.D., Groll, D., Cram, H.A., MacPhee, R.S., & Griffiths, C.T. (2020). Assessing the relative impact of diverse stressors among public safety personnel. *International Journal of Environmental Research and Public Health, 17*(4), 1234. <https://doi.org/10.3390/ijerph17041234>.
- Carpenter, M.J. (2021). *Risk factors and precursors to police suicide*. [Applied Doctoral Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education, School of Criminal Justice]. NSUWorks, Abraham S. Fischler College of Education-Portal. https://nsuworks.nova.edu/fse_etd/316.
- Civilotti, C., Acquadro Maran, D., Garbarino, S., & Magnavita, N. (2022). Hopelessness in police officers and its association with depression and burnout: A pilot study. *International Journal for Environmental Research and Public Health, 19* (9), 5169. <https://doi.org/10.3390/ijerph19095169>.
- Civilotti, C., Di Fini, G., & Maran, D.A. (2021). Trauma and coping strategies in police officers: A quantitative-qualitative pilot study. *International Journal of Environmental Research and Public Health, 18*(3), 982. <https://doi.org/10.3390/ijerph18030982>.
- Dahlan, A., Shahid, M., & Masuri, M.G. (2021). Suicidal ideation among people with depression in mental hospital. *Environment Behaviour Proceeding Journal (E-BPJ), 6* (16), 145-151 <https://doi.org/10.21834/ebpj.v6i16.2619>.
- Demou, E., Hale, H., & Hunt, K. (2020). Understanding the mental health and wellbeing needs of police officers and staff in Scotland. *Police Practice and Research, 21*(6), 702–716. <https://doi.org/10.1080/15614263.2020.1772782>.
- Dixon, S.S. (2021). Law enforcement suicide: The depth of the problem and best practices for suicide prevention strategies. *Aggression and Violent Behaviour, 61*. <https://doi.org/10.1016/j.avb.2021.101649>.
- Efendi, F., McKenna, L., Reisenhofer, S., Kurniati, A., & Has, E.M.M. (2021). Experiences of healthcare worker returnees in their home countries: A scoping review. *Journal of Multidisciplinary Healthcare, 14*, 2217-2227. <https://doi.org/10.2147/jmdh.S321963>.
- Foley, J., Jones, F., Hassett, A., & Williams, E. (2023). ‘Holding onto trauma?’ The prevalence and predictors of PTSD, anxiety, and depression in police officers working with child abuse, rape, and sexual exploitation victims. *The Police Journal: Theory, Practice and Principles, 1-24*. <https://doi.org/10.1177/0032258X231183638>.
- Gatens, A., & Otto, H. D. (2020). *Understanding police officer stress: A review of the literature*. Chicago, IL: Illinois Criminal Justice Information Authority.
- Grover, S., Sahoo, S., Dua, D., Mehra, A., & Nehra, R. (2022). Psychological impact of COVID-19 duties during lockdown on police personnel and their perception about the behaviour of the people: An exploratory study from India. *International of Mental Health Addiction, 20*, 831–842. <https://doi.org/10.1007/s11469-020-00408-8>.
- Huang, G., Chu, H., Chen, R., Liu, D., Banda, K.J., O’Brien A.P., Jen, H.-J., Chiang, K.-J., Chiou, J.-F., & Chou, K.-R. (2022). Prevalence of depression, anxiety, and stress among first responders for medical emergencies during COVID-19 pandemic: A meta-analysis. *J Glob Health, 12* (05028). <https://doi.org/10.7189/jogh.12.05028>.
- Irizar, P., Gage, S.H., Fallon, V., & Goodwin, L. (2022). A latent class analysis of health risk behaviours in the UK Police Service and their associations with mental health and job strain. *BMC Psychiatry, 22*(1), 426. <https://doi.org/10.1186/s12888-022-04054-3>.
- Isabirye, R.A., Namuli, J.D., & Kinyanda, E. (2022). Prevalence and factors associated with post-traumatic stress disorder among field police patrol officers serving in Kampala metropolitan region. *BMC Psychiatry, 22*, 706. <https://doi.org/10.1186/s12888-022-04317-z>.

- James, L., James, S., & Atherley, L. (2023). The effects of shift-work schedules on the sleep, health, safety, and quality of life of police employees during the COVID-19 pandemic. *Frontier in Psychology, 14*, 1128629. <https://doi.org/10.3389/fpsyg.2023.1128629>.
- Jang, J., Jung, H.S., Wang, J., & Kim, S. (2021). Effects of health-related quality of life on suicidal ideation and depression among older Korean adults: A cross-sectional study. *Psychiatry Investigation, 18*(1):31-38. <https://doi.org/10.30773/pi.2020.0159>.
- Lee, E. & Kim, K.Y. (2021). The association between secondhand smoke and stress, depression, and suicidal ideation in adolescents. *Healthcare, 9*(39). <https://doi.org/10.3390/healthcare9010039>.
- Lentz L.M., Smith-MacDonald, L., Malloy, D., Carleton, R.N., & Brémault-Phillips, S. (2021). Compromised conscience: A scoping review of moral injury among firefighters, paramedics, and police officers. *Frontier in Psychology, 12*, 639781. <https://doi.org/10.3389/fpsyg.2021.639781>.
- Levac, D., Colquhoun, H., & O'Brien, K.K. (2010). Scoping studies: Advancing the methodology. *Implement Sciences, 5*(1), 1-9. <https://doi.org/10.1186/1748-5908-5-69>.
- Li, Y., Wen, Z., He, Y., & Huang, J. (2022). Mental health status among prison officers in the process of enforcing the law during COVID-19 epidemic: A cross-sectional survey from China. *BMC Psychiatry, 22*,33. <https://doi.org/10.1186/s12888-021-03679-0>.
- Mars, B., Hird, K., Bell, F., James, C. & Gunnell, D. 2020. Suicide among ambulance service staff: A review of coroner and employment records. *British Paramedic Journal, 4*(4), 10–15. <https://doi.org/10.29045/14784726.2020.12.4.4.10>.
- Mohd Zaimi Zainuri & Rusyda Helma Mohd (2023). The determining factors and propensity of accidents at work among the personnel of Royal Malaysia Police Narcotics Unit. *E-Bangi Journal of Social Sciences & Humanities, 20* (1), 364-377. <https://doi.org/10.17576/ebangi.2023.2001.30>.
- Nair, R., & Bulgiba, A. (2022). Prevalence and associated factors of depression and anxiety among healthcare workers during the Covid-19 pandemic. *Asia Pacific Journal of Public Health, 34*(5), 561–564. <https://doi.org/10.1177/10105395221098037>.
- Krishnan, N., Steene, L.M.B., Lewis, M. Marshall, D., & Ireland, J.L. (2022). A systematic review of risk factors implicated in the suicide of police officers. *Journal of Police and Criminal Psychology, 37*, 939–951. <https://doi.org/10.1007/s11896-022-09539>.
- Peters, M.D., Godfrey, C.M., Khalil, H., McInerney, P., Parker, D., & Soares, C.B. (2015). Guidance for conducting systematic scoping reviews. *International Journal Evidence-Based Healthcare 13* (3), 141-146. <https://doi.org/10.1097/xeb.0000000000000050>.
- Prihadi. K.D., C. Wong, Y.S., E. Chong, Y.B., K & Chong. Y.X. (2020). Suicidal thoughts among university students: The role of mattering, state self-esteem, and depression level. *International Journal of Evaluation and Research in Education (IJERE), 9*(3), 494. <https://doi.org/10.11591/ijere.v9i3.20587>.
- Purba, A & Demou, E. (2019). The relationship between organisational stressors and mental wellbeing within police officers: A systematic review. *BMC Public Health, 19*, 128. <https://doi.org/10.1186/s12889-019-7609-0>.
- Reid, B.O., Næss-Pleym, L.E., Bakkelund, K.E., Dale, J., Uleberg, O., & Nordstrand, A.E. (2022). A cross-sectional study of mental health, posttraumatic stress symptoms and post-exposure changes in Norwegian ambulance personnel. *Scandinavian Journal of Trauma, Resuscitation, and Emergency Medicine, 30*, 3. <https://doi.org/10.1186/s13049-021-00991-2>.
- Stevellink, S.A.M., Opie, E., Pernet, D., Gao, H., Elliott, P., Wessely, S., Fear, N.T., Hotopf, M., & Greenberg, N. (2020). Probable PTSD, depression, and anxiety in 40,299 UK police officers and staff: Prevalence, risk factors and associations with blood pressure. *PLoS One, 12*(15), 11. <https://doi.org/10.1371/journal.pone.0240902>.
- Syed, S., Ashwick, R., Schlosser, M., Jones, R., Rowe, S. & Billings, J. (2020). Global prevalence and risk factors for mental health problems in police personnel: A systematic review and meta-analysis. *Occupational and Environmental Medicine, 77*, 737-747.
- Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., Moher, D., Peters, M.D.J., Horsley, T., Weeks, L., Hempel, S., Akl, E.A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M.G., Garritty, C., Lewin, S., Godfrey, C.M., Macdonald, M.T., Langlois, E.V.,

- Soares-Weiser, K., Moriarty, J., Clifford, T., Tunçalp, Ö., Straus, S.E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467-473. <https://doi.org/10.7326/M18-0850>.
- Tsehay, M., Necho, M., Gelaye, H., Beyene, A., & Birkie, M. (2021). Generalized anxiety disorder, depressive symptoms, and sleep problem during Covid-19 outbreak in Ethiopia among police officers: a cross-sectional survey. *Frontiers in Psychology*, 12, 713954. <https://doi.org/10.3389/fpsyg.2021.713954>.
- Violanti, J. M. (2004). Predictors of police suicide ideation. *Suicide and Life-Threatening Behaviour*, 34(3), 277-283.
- World Health Organization. (2021, June 17). *Suicide*. <https://www.who.int/news-room/fact-sheets/detail/suicide>. Accessed August 16, 2023.
- Wijayanti, R. Y., & Fauzi, H.B. (2020). Factors affecting the work stress of police officers: A systematic review. *Psycho Idea*, 18(2), 112-123. <https://doi.org/10.30595/psychoidea.v18i2.6861>
- Yadav, B., Kc, A., Bhusal, S., & Pradhan, P.M.S. (2022). Prevalence and factors associated with symptoms of depression, anxiety, and stress among traffic police officers in Kathmandu, Nepal: A cross-sectional survey. *BMJ Open*, 12(6). <https://doi.org/10.1136/bmjopen-2022-061534>.
- Yuan, L., Zhu, L., Chen, F., Cheng, Q., Yang, Q., Zhou, Z.Z. Zhu, Y., Wu, Y., Zhou, Y., & Zha, X. (2020). Survey of psychological responses during the coronavirus disease 2019 (COVID-19) epidemic among Chinese police officers in Wuhu. *Risk Management and Healthcare Policy*, 13, 2689-2697. <https://doi.org/10.2147/rmhp.S269886>.
- Zhang, H., Li, W., Li, H., Luo, J., Zhu, Y. Wu, H., Zhu, Z., Xu, Y., Wang, J., & Li, C. (2021). Prevalence and dynamic features of psychological issues among Chinese healthcare workers during the COVID-19 pandemic: A systematic review and cumulative meta-analysis. *General Psychiatry*, 34(3), e100344. <https://doi.org/10.1136/gpsych-2020-100344>.
- Zhao, M., Nor Ba'yah Abdul Kadir, & Muhammad Ajib Abd Razak. (2024). A systematic review on the prevalence and risk factors of depression among Chinese undergraduate students. *E-Bangi Journal of Social Sciences and Humanities*, 21(3), 286-307. <https://doi.org/10.17576/ebangi.2024.2103.23>.