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Review article

Psychosocial risk and protective factors associated with burnout in police officers: A systematic review

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ABSTRACT

Background: The specific factors that may influence burnout levels in police officers are not yet clear. Our aim was to systematically identify the psychosocial risk and protective factors associated with burnout among police officers.

Methods: This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). A protocol was registered in PROSPERO. A search strategy was applied to Medline via OvidSP, PsycInfo, Scopus and Web of Science. The quality assessment entailed the use of the CASP checklist for cohort studies. The data was reported through a narrative synthesis.

Results: After removing studies based on the selection criteria, 41 studies were included in this review. The findings were synthesized under the following subheadings: socio-demographic factors; organisational factors; operational factors; personality variables and coping strategies. Organisational and operational factors were found to be the most predominant risk factors for burnout. Personality variables and coping strategies appeared as both risk and protective factors. Socio-demographic factors were weak in explaining burnout.

Limitations: Most studies are from high-income countries. Not all used the same burnout measurement tool. All relied on self-reported data. Since 98 % had a cross-sectional design, causal inferences could not be made.

Conclusions: Burnout, despite being strictly defined as an occupational phenomenon, is related to factors outside of this context. Future research should focus on examining the reported associations by using more robust designs. More attention must be paid to police officers' mental health by investing in developing strategies to mitigate adverse factors and maximise the effects of protective factors.

1. Introduction

In 2019, the World Health Organization (WHO) recognised burnout as an occupational phenomenon and included it in the 11th Revision of the International Classification of Diseases (ICD-11) (World Health Organization, 2019), as a syndrome resulting from chronic workplace stress that has not been successfully managed and that can be characterized by three core dimensions: (i) feelings of energy depletion or exhaustion; (ii) increased mental distance or cynical attitudes towards co-workers and service users; and (iii) feelings of reduced professional efficacy or reduced personal accomplishment (World Health Organization, 2019).

In our society, the police have the power and duty to enforce laws, preserve the peace, prevent crimes, protect civil rights and liberties, and provide services to the community (Hess, 2008). It is of utmost importance that, to maintain and secure these interests, police officers are in the best possible state of their physical and mental health. For many police officers, the tasks associated with their line of work can be exhausting and debilitating as they remain in constant surveillance and are often exposed to stressful and traumatic scenarios (Waters and Ussery, 2007). A systematic review investigating the risk factors for stress among police officers reported that officers who worked in big cities were more prone to higher levels of stress and posttraumatic stress disorder as they were more frequently exposed to violent and extreme situations (Galanis et al., 2021). Negative work-related conditions such as increased working hours, increased workloads, work-family conflicts,

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and a negative work environment were also associated with increased levels of stress (Galanis et al., 2021).

Police activity is, thus, described in the literature as stressful, leading to poor physical and mental health outcomes over time, in which burnout is included (Magnavita et al., 2018; Purba and Demou, 2019). In the USA, the prevalence of burnout was investigated in a sample of 13,000 police officers from across 89 police agencies (McCarty et al., 2019), describing that 19 % of the sample felt emotionally exhausted on a weekly basis and 13 % had severe levels of depersonalisation. In Sweden (Backteman-Erlanson et al., 2013), in a sample of 856 patrolling police officers, 28 % reported high levels of emotional exhaustion and 56 % increased levels of depersonalisation. In Spain, in a sample of 747 officers from the National Police, 32 % also revealed high levels of burnout (De la Fuente Solana et al., 2013).

The consequences for police officers who suffer from chronic workplace stress are numerous and can affect their personal integrity and that of others (Violanti et al., 2017). Literature shows that burnout can lead to suicidal behaviours (Krishnan et al., 2022), triggering aggressive attitudes, excessive use of force towards civilians (Queirós et al., 2013), worse job performance, turnover intention (Gomes et al., 2022), and several physical and psychological outcomes such as cardiovascular diseases, musculoskeletal pain, prolonged fatigue, depressive symptoms, insomnia, and use of antidepressant treatment (Salvagioni et al., 2017).

It is, therefore, necessary to go beyond stress and understand the occupational phenomenon of burnout in depth, raising awareness of the risks among policymakers and police departments, and providing more information and pathways for research, prevention strategies at primary, secondary or tertiary levels, as well as interventions. The main objective of this systematic review of the literature is to contribute to ameliorating this problem by identifying which psychosocial risk and protective factors are associated with the development of burnout syndrome among police officers.

2. Methods

2.1. Search strategy

This study is a systematic review of the literature that was conducted according to the guidelines established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021). A protocol based on the PICO framework (Eriksen and Frandsen, 2018) was developed to establish the methods and plan of action used in this study and was registered in the PROSPERO database for public consultation (CRD42022290022). The following electronic databases were searched: Medline (via OVID SP); APA PsycInfo; Scopus, and Web of Science; until Dec 20, 2021. No timeline restrictions or other filters were used. The search terms used were refined through a series of initial searches in all four databases to find similar terms and test the use of truncation "*" and wildcards "?" increasing, this way, their sensitivity. The final search strategy used was as follows: ("burnout" OR "burn out" OR "emotion* exhaust*" OR "energy depletion" OR "nervous exhaust*" OR "nervous breakdown" OR "mental* collaps*" OR "psychological cris*" OR "depersonali*" OR "cynicism" OR "personal accomplishment" OR "professional effic*") AND ("police*" OR "law enforcement*" OR "cops") AND ("psychosocial*" OR "risk factor*" OR "protective factor*" OR "protection factor*" OR "social support" OR "group support" OR "imbalance" OR "effort-reward" OR "overcommitment" OR "lack of control" OR "work demand*" OR "job demand*" OR "material resource*" OR "police culture" OR "organi?ational culture" OR "emotional intelligence" OR "career opportunit*" OR "job opportunit*" OR "psychological resilienc*" OR "hardiness").

2.2. Inclusion and exclusion criteria

Studies to be included would have to a) examine samples composed of police officers actively working in full exercise of their duties and b) report outcomes of interest (relationships between risk and protective factors with burnout). Studies that a) did not include primary data; b) did not present a quantitative design; c) had samples composed of mixed populations and treated data as a whole; d) reported the partial use of questionnaire items to measure burnout and its dimensions; e) used a burnout definition rather divergent from the WHO's definition; and f) were conducted based on big-scale events (e.g., COVID-19, terrorism, natural catastrophes), were excluded. No language restrictions were applied as long as the studies had an abstract in English.

2.3. Screening procedures

Duplicates were excluded. Two main reviewers (LAl and LAb) screened the studies independently by title and abstracts. Any disagreements found were solved upon discussion with two additional researchers (MPC and EP). Full texts were then assessed according to the selection criteria.

2.4. Data analysis and quality assessment

Data extracted consisted of study identification; study aims; the country where the study was conducted; population characteristics; sample size; study design; burnout measurement tool used; and outcomes of interest. Two authors (LAI and LAb) independently performed the quality assessment of the studies using the CASP Checklist for Cohort studies (CASP, 2018). This tool does not offer a global scoring system for quality assessment. A narrative synthesis of data was carried out following the Guidance on the Conduct of Narrative Synthesis in Systematic Reviews (Popay et al., 2006). The review findings were separately grouped by factor type (i.e., socio-demographic, organisational, operational, personality variables, and coping strategies).

3. Results

The search resulted in a total of 904 records, of which 274 were duplicates and therefore excluded. The remaining 630 records went through a first screening phase based on the title and abstract, and 548 records were excluded. Full texts of 82 records were screened and 41 were finally included in the review. The PRISMA flow chart reflects the study selection process (Fig. I). The quality assessment of the included studies can be found in the supplementary materials (Appendix I). The majority of the studies had strong to moderate quality.

A summary table containing the characteristics of the included studies can be found in Table I. The studies were published between the years 1991 and 2021. Almost half are 10 or more years old (49 %) whilst only eight studies are <5 years old (20 %). These studies were conducted in the USA (k = 9), Norway (k = 5), Poland (k = 4), China (k = 3), Spain (k = 3), India (k = 2), Mexico (k = 2), Netherlands (k = 2), Sweden (k = 2), Ukraine (k = 2), Brazil (k = 1), Chile (k = 1), Germany (k = 1), Italy (k = 1), South Africa (k = 1), Taiwan (k = 1), and Turkey (k = 1). All studies were cross-sectional (k = 40) except one that had a longitudinal design. The total number of study participants was 16,017, the sample sizes ranged from 50 to 1794, and the percentage of female officers ranged from 0 % to 44 % with three studies including only men. This review's sample has a mean age of 36.55 years with a standard deviation of 8.95 years (based on available data from k = 23). The most common instruments used to measure burnout were the Maslach Burnout Inventory – Human Services Survey (MBI-HSS) (Maslach et al., 1996) and the General Survey version (MBI-GS) (Maslach et al., 1996). MBI-HSS was used in 19 studies (46 %), MBI-GS was used in 13 studies (32 %), followed by the Oldenburg Burnout Inventory (OLBI) (Halbesleben and Demerouti, 2005) that was used in four (10 %), Professional Quality of Life version V (ProQOL-V) (McClure, 2022) (5 %), Copenhagen Burnout Inventory (CBI) (Kristensen et al., 2005) (5 %) in two studies each, and Spanish Burnout Inventory (SBI) in one study (2 %) (Figueiredo-Ferraz et al., 2013).

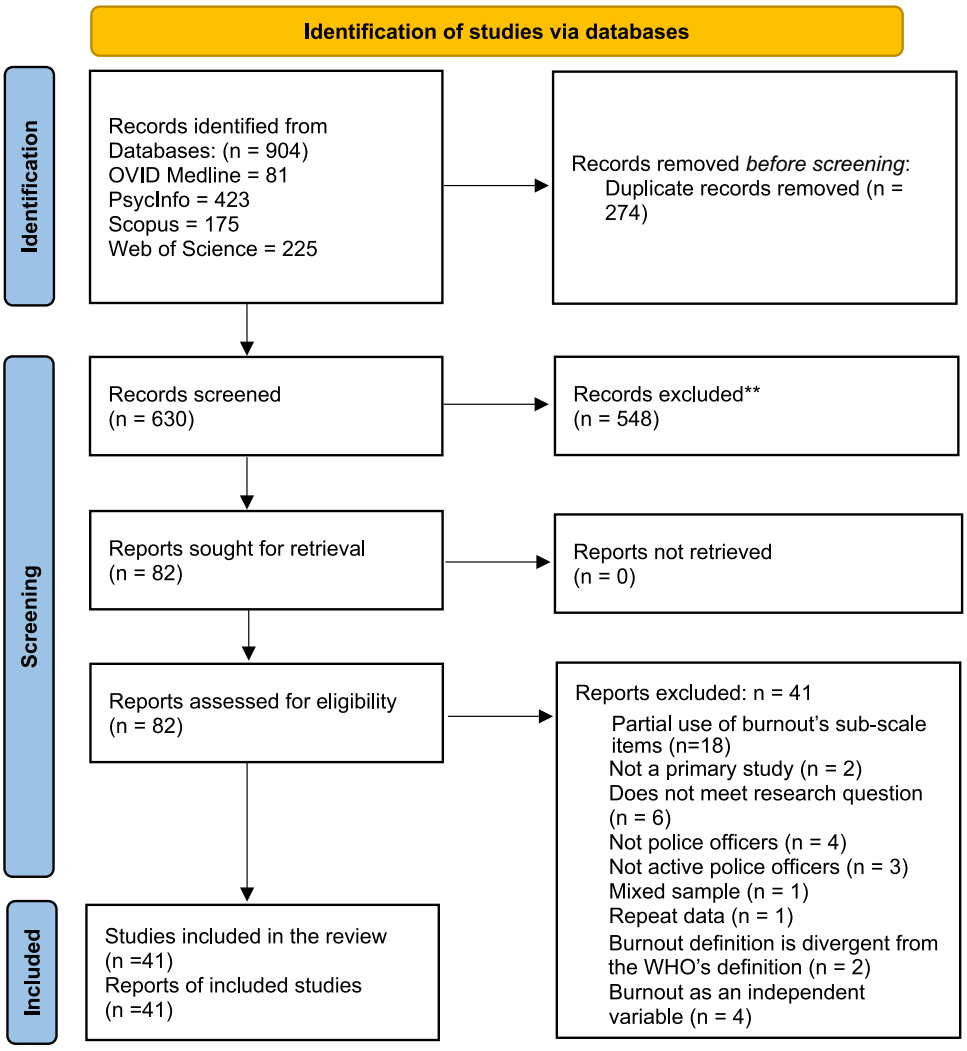

Fig. I. PRISMA flow diagram of the screening procedure via online databases.
From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: https://doi.org/10.1136/bmj.n71.
For more information, visit: http://www.prisma-statement.org/.

3.1. Socio-demographic factors

A total of fifteen studies examined age association with burnout (Backteman-Erlanson et al., 2013; Baruch-Feldman et al., 2002; Bawa and Kaur, 2011; Brady, 2017; De la Fuente Solana et al., 2013; Fyhn et al., 2016; Martinussen et al., 2007; Medina, 2007; Mella and Boutin, 2013; Miller et al., 2017; Mostert and Rothmann, 2006; Richardsen et al., 2006; Smoktunowicz et al., 2015; Violanti et al., 2018; Yang et al., 2019). Mixed results were described, with four studies (Backteman-Erlanson et al., 2013; Baruch-Feldman et al., 2002; Miller et al., 2017; Violanti et al., 2018) reporting that being younger contributed to increased burnout levels, four other studies (De la Fuente Solana et al., 2013; Martinussen et al., 2007; Medina, 2007; Smoktunowicz et al., 2015) reporting that being older was exacerbating burnout, and seven studies showing age as not being associated with burnout (Bawa and Kaur, 2011; Brady, 2017; Fyhn et al., 2016; Mella and Boutin, 2013; Mostert and Rothmann, 2006; Richardsen et al., 2006; Yang et al., 2019). Conflicting results were also found between biological sex and burnout. One study (Miller et al., 2017) reported men having higher overall burnout compared to women, whereas another study (Brady, 2017) reported lower burnout for men. Exhaustion (Garcia-Rivera et al., 2020; Smoktunowicz et al., 2015) and depersonalisation (Backteman-Erlanson et al., 2013) were higher in men whereas cynicism was higher in women (Richardsen et al., 2006). One study reported higher levels of professional efficacy in men compared to women (Burke and Mikkelsen, 2006). Ten studies reported no differences (Baruch-Feldman et al., 2002; Burke et al., 2006; De la Fuente Solana et al., 2013; Durán et al., 2006; Fyhn et al., 2016; Martinussen et al., 2007; Medina, 2007; Mostert and Rothmann, 2006; Valieiev et al., 2019; Violanti et al., 2018). With relation to ethnicity, one study stated that being African-American was negatively associated with burnout as compared to being Caucasian (Miller et al., 2017). One other study described that Caucasians suffered from higher depersonalisation compared to Hispanic individuals (Medina, 2007) and in another, Caucasians reported higher exhaustion levels compared to Indians (Mostert and Rothmann, 2006). Officers' marital status was investigated in eight studies and parental status in three studies. With respect to marital status, two studies reported that having a partner was a risk factor (Backteman-Erlanson et al., 2013; Fyhn et al., 2016). However, six studies found no significant association with burnout (Durán et al., 2006; Garbarino et al., 2013; Garcia-Rivera et al., 2020; Medina, 2007; Mella and Boutin, 2013; Miller et al., 2017). Having children was experienced by police officers as associated with lower personal accomplishment (De la Fuente Solana et al., 2013), however, this was also reported as a protective factor against depersonalisation (Garbarino et al., 2013). In another study, the higher the number of children the lower the level of burnout (Brady, 2017). No significant relationships were found between educational level and burnout (Bawa and Kaur, 2011; De la Fuente Solana et al., 2013; Garbarino et al., 2013; Medina, 2007; Miller et al., 2017; Yang et al., 2019).

Table I
Summary table with the characteristics of the included studies.

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
Backteman-Erlanson et al. (2013)	Sweden	Cross-sectional	Patrol Officers; 437 women (56 %) and 419 men (53 %); Mean age of 34 (SD = 6.9) and 39 (SD = 10.7) years for women and men, respectively.	N = 856	Swedish version of the MBI translated and validated by (Hallsten, 1985).	Men had higher depersonalisation (DP). Sex showed no significance with emotional exhaustion (EE). Age and years of experience showed negative correlation only with DP. High demands; lack of decision latitude; social support; organisational culture and organisational climate showed positive correlation with both MBI subscales. Leadership was only negatively correlated with EE.
Baka (2015)	Poland	Cross-sectional	The group of participants consisted of 124 (20 %) women and 483 (80 %) men, aged between 21 and 61 years; Mean age of 36.64 (SD = 7.81); Work experience among the participants ranged from 1 to 36 years.	N = 607	OLBI	Interpersonal conflicts, organisational constraints and workload showed a significant relationship with job burnout.
Bakker and Heuven (2006)	Netherlands	Cross-sectional	65 men (64 %) and 36 women (36 %); Their age ranged from 20 to 58 years with an average of 35 years (SD = 8.04); Mean organisational tenure was 5 years (SD = 0.96).	N = 101	MBI-GS	Emotional dissonance and emotional demands showed positive correlations with exhaustion and cynicism.
Baruch-Feldman et al. (2002)	USA	Cross-sectional	Traffic police officers; 92 men and 119 women; Mean age of 35.4 years (range 21–62 years).	N = 211	MBI	Age showed a negative correlation with burnout. Sex did not show any significant correlation. Family support and Unit supervisor support were negatively correlated with burnout. Immediate supervisor and co-worker support did not show any significance. Trait anger was positively correlated with burnout.
Basinska et al. (2014)	Poland	Cross-sectional	15 % women (N = 29); Mean of professional experience was 14.6 years (SD = 5.0, range 5 to 28 years).	N = 169	OLBI	Acute fatigue was positively correlated with exhaustion and disengagement. Low-arousal negative emotions (sadness) partialy mediated the relationship between acute fatigue and exhaustion. Low-arousal positive emotions were not significant (calm). High-arousal positive emotions (enthusiasm) and high-arousal negative emotions (anxiety) also partialy mediated.
Bawa and Kaur (2011)	India	Cross-sectional	Average job experience of 24.6 years; Mean age of 48 years old (SD = 6.08) and ranged from 25 to 56 years old with a mean of 48 years.	N = 150	MBI	Role overload, role conflict, unreasonable group and political pressures, responsability for persons, under participation, intrinsic impoverishment, strenous working conditions and occupational stress were positively correlated with exhaustion. Role ambiguity, powerlessness, poor peer relations, low status, unprofiability, designation, age and education did not show significance. Under participation was the only factor positively correlated with low personal accomplishment. No variables showed significance concerning depersonalisation. Role overload, role conflict, unrealistic group and political pressures, responsibility for people, under participation, strenous working conditions and occupational stress showed positive correlations with overall burnout. The remaining factors did not show significant correlations.

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
Beltran et al. (2009)	Mexico	Cross-sectional	Traffic Police officers; 802 (91.6 %) were men whilst 73 (8.4 %) were women; 36 % were between 30 and 39 years old and 27 % between 40 and 49 years old.	N = 875	MBI-HSS	The frequency and satisfaction of work-related social support increased the risk of burnout. The frequency and satisfaction of family-related social support increased the risk of burnout.
Brady (2017)	USA	Cross-sectional	Internet Crimes Against Children Personnel; 72 % male; Age ranging from 40 to 49 (40.6 %); 47.5 % were within their first 5 years in the ICAC task forces.	N = 433	ProQOL-V	Home life support (family) and the use of positive coping strategies showed a negative correlation with burnout. Low organisational support, feeling overwhelmed and frequent indirect exposure to crimes against children were positively correlated with burnout. Sex, the number of children and the number of weekly hours working ICE cases were positively correlated with burnout. Trauma history, spiritual coping, age of child victim and working undercover did not show significant correlations with burnout.
Burke and Mikkelsen (2006)	Norway	Cross-sectional	84 % were male; 73 % worked in urban areas; 39 % held tenure of 21 years or more; 42 % had 46 years old or more.	N = 766	MBI-GS	Working in urban environment, high workload and emotional demands increased exhaustion. Social support and a bigger sense of community decreased exhaustion. Bigger department sizes decreased cynicism. Longer tenure, lower social support, role conflict, less information, more quantitative demands and fewer cognitive demands increased cynicism. Being men and having greater cognitive demands, social support and sense of community increased professional efficacy. Working continuous shift-work decreased professional efficacy.
Burke et al. (2006)	Norway	Cross-sectional	78 % male; 46 % worked in urban areas; 54 % worked 11 years or more; 72 % were in non-management jobs. >61 % had 31 to 50 years of age.	N = 221	MBI-GS	No difference was found among male or female police officers in relation to burnout dimensions.
De la Fuente Solana et al. (2013)	Spain	Cross-sectional	88.2 % were male; Mean age of 35.7 years (SD = 8.33); 54 % had partner; 54.8 % had at least one child;	N = 747	Spanish Version of MBI was used adapted by Seisedos (1997)	Having partner increased exhaustion, depersonalisation and decreased personal accomplishment. Having children decreased personal accomplishment. Being older and having more years of service decreased personal accomplishment. Age, sex, number of children, level of studies, work post and rank were not related to exhaustion or depersonalisation. Working rotating shift-work was positively associated with exhaustion and depersonalisation. Regarding Personality variables: only openess correlated with personal accomplishment. Neuroticism and low agreeableness increased exhaustion and depersonalisation. Agreeableness, conscientiousness and extraversion increased personal accomplishment.
Dudek et al. (2001)	Poland	Cross-sectional	96.2 % male; Mean age of 32 years old (SD = 5.7); Average tenure of 9.6 years.	N = 160	MBI	Sense of control was significantly increased exhaustion, depersonalisation and decreased personal accomplishment.
Durán et al. (2006)	Spain	Cross-sectional	89.2 % are men; Average age of 38 years old (SD = 10);	N = 232	Spanish Version of MBI by Seisedos (1997).	Active coping style was only negatively associated with DP Sex and marital status were not associated with any burnout component.

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
			Average job tenure of 13.2 years.			Officers between 6 and 15 years of service reported higher levels of EE and DP and lower levels of PA. Avoidance coping style increased burnout, and job tenure decreased it. Sex and marital status showed no significance.
Euwema et al. (2004)	Netherlands	Multi-method study (Survey and field observations).	83 % male; Mean age of 32.7 years (SD = 7.7); Average work experience was 13.9 years;	N = 358	Dutch version of MBI-HSS by Schaufeli and Van Dierendonck (2000)	Job demands and rewards imbalance (lack of reciprocity) showed positive correlatiopns with EE and DP.
Farfán et al. (2019)	Spain	Cross-sectional	75.95 % male and 24.05 % women; Mean age of 37.72 years old; Job tenure average was 14.04 years.	N = 237	MBI-GS spanish version by Gil-Monte and Moreno-Jiménez (2007)	Lack of social support was positively correlated with EE and DP, and negatively correlated with PA. Neuroticism was also positively correlated with EE and DP, and negatively correlated with PA.
Fedorenko et al. (2020)	Ukraine	Cross-sectional	Criminal police officers Two groups based on lenght of service (46.2 % had 3 months tenure and 53.8 % had 5–15 years tenure).	N = 65	Russian validated version of MBI by N. Vodopyanova and O. Starchenkova (2009)	Comparisons between two groups of police officers composed according to the lenght of service were made. In the first group of officers (3 month) coping strategies of social contact were associated with EE; manipulative actions with EE and DP; avoidance with PA and distancing with overall burnout. The mechanisms of defence objection and projection were negatively associated with EE, substitution with DP, and no relation was found for PA. In the second group of officers (5–15 years), assertive actions, impulsive actions and avoidance were associated with EE; Self-control and positive reevaluation with DP; Distancing and agressive actions with PA. The mechanisms of defence objection was positively related to DP, and rationalization was negatively related to it. No relation was showed for EE and PA.
Fyhn et al. (2016)	Norway	Cross-sectional	Police Investigators; 59 % men; Mean age was 41.4 years (SD = 7.8).	N = 156	MBI-GS	Age, police experience and sex showed no association with burnout. Marital status and social support showed positive and negative relationship with burnout, respectively. Meaningfullness was negatively correlated with burnout. Hardiness (commitment) showed a negative association with burnout. The other two dimensions of psychological hardiness (control and challenge) did not show an association.
Garbarino et al. (2013)	Italy	Cross-sectional	Police Special Force Unit ("VI Reparto Mobile"); 289 men; 48.4 % held the rank of superintendent or technical staff; Mean age of 35.4 years (SD = 7.5); Average lenght of service of 14 years.	N = 289	MBI Italian version by Sirigatti and Stefanile (1993)	Rank showed a negative relationship with EE, lenght of employment showed a negative ralationship with EE, children revealed a negative relationship with DP; the remaining socio-demographic variables showed no significance (education, marital status). Emotional stability was negatively associated with EE and DP, agreeableness was negatively related with DP. All personality variables were positively related with PA. Demands, effort and overcommitment were positvely associated with EE. Reward was negatively associated with EE. Control, social support and reward showed a negative association with DP. Higher effort and overcommitment were positively associated with DP. Only control was positively associated with PA. All the other occupational stress variables were not significant.

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
Garcia-Rivera et al. (2020)	Mexico	Cross-sectional	Municipal Police Officers; 87 % men and 13 % women; Age between 23 and 42 years old; 34.8 % of 2 to 5 years, 58.7 % have job tenure of 6 to 10 years and the remaining of 11 to 15 years.	N = 276	SBI	Officers who engage in sports activities have lower mental exhaustion than those who do not. Being male is associated with higher levels of mental exhaustion. Officers with daily operational stressors also had higher mental exhaustion and guilt scores than officers with ocasional operational stressors. There were no differences found in relation to officers marital status and recreational activities participation.
Hills and Norvell (1991)	USA	Cross-sectional	Highway patrol officers; 100 % men; Mean age was 33.6 years old (SD = 8.16); Job tenure of 8.02 years.	N = 234	MBI	Neuroticism was significant and positively associated with EE. From the independent variables (Perceived stress scale, Daily hassles scale, Police stress scale) only perceived stress scale was associated with increased burnout.
Hu et al. (2016)	China	Cross-sectional	401 males and 65 females; Mean age of 36.76 (SD = 9.82).	N = 466	MBI-GS chinese version by Hu and Schaufeli (2011)	Workload, mental demands, physical demands, supervisor support, colleague support, *renqing* reward and *renqing* investment showed positive correlations with exhaustion and cynicism. Job control and participation in decision showed negative correlations with exhaustion and cynicism. Job demands and guanxi exchange were positively associaed with burnout. Having social resources was not associated with burnout. Task resources was negatively associated with burnout.
Hu et al. (2017)	China	Longitudinal	Mean age of 36.0 (SD = 9.2) years; 239 = males and 37 = female.	N = 466 (First stage; year 2012) N = 273 (Second stage; year 2013)	Chinese version MBI-GS (Hu and Schaufeli, 2011)	Chronic exposure to high and low job demands was associated with an increase in burnout; Chronic exposure to high job resources was associated with a descrease in burnout; Chronic exposure to low job resources was not associated with an increase in burnout; Increased exposure to job demands and job resources was associated with an increase and a decrease in burnout, respectively; Decreased exposure to job demands was not associated with a decrease in burnout; Decreased exposure to job resources was associated with an increased burnout; Chronic exposure to low job resources in a high-demands environment was associated with an increase in burnout; Chronic exposure to high job resources in a high-demands environment was not associated with a decrease in burnout; Increased and decreased exposure to job resources in a high-demands environment is associated with a decrease and an increase in burnout;
Kepple (2018)	USA	Cross-sectional	85.8 % (n = 103) male and 14.2 % as female (n = 17); Mean age of 37.9 years old (ranging 21–62); Average of 10 years of experience (ranging 1–33 years).	N = 120	OLBI	Organisational and operational stress were potively associated with burnout. Trait mindfulness was negatively associated with burnout.
Kula (2017)	Turkey	Cross-sectional	92.6 % were men; The largest group of officer (n = 158) had 15 years of service.	N = 538	CBI	Organisational and operational stress were positively related to burnout. Supervisor support was not directly associated with burnout.
Kumar and Kamalanabhan (2017)	India	Cross-sectional	Inspectors and sub-inspectors; 81.7 % male; The majority (43 %) aged between 31 and 39 years;	N = 491	MBI	Role ambiguity, work support, work overload, inflexible working hours, perceived unfairness, work-family conflict and family-work conflict, were associated to all three burnout dimensions. Political interference and

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
						Public interaction were not associated with burnout.
Martinussen et al. (2007)	Norway	Cross-sectional	173 men, 48 women and 2 not reported; 28 % had management responsabilities; Mean age was 36.8 years (SD = 8.3); Avarage work experience was 11.5 years.	N = 223	MBI-GS	Sex was not associated with burnout. Exhaustion was the only burnout dimension that showed a significant relationship with age. Positive correlations were found between ehxaustion and work conflict and work-family pressure. Autonomy and social support where negatively correlated. Overtime work was not significant. Regarding cynicism, leadership, autonomy and social support showed negative correlations. Positive correlations were found with work conflict and work-family pressure and burnout. Overtime work was not significant. Only work conflict and work-family pressure were negatively correlated with professional efficacy. Leadership and overtime work were not significant. Autonomy and social support were positively correlated with professional efficacy.
Medina (2007)	USA	Cross-sectional	Patrol officers; 89 % male and 11 % female; Age ranged from 30 to 41 years; Tenure ranged from 6 to 10 years.	N = 132	MBI	Race was only related to depersonalisation. Age was related to exhaustion and personal accomplishment. Sex, education, marital status and shift hours were notassociated with burnout. Operational stress and organisational stress were positively correlated with burnout. 16 Personality factors: Warmth; emotional stability; social boldness; openness to change; were negatively related with EE and DP; Vigilance, apprehension, self-reliance and tension were positively related to EE and DP (with exception of apprehension). Warmth; emotional stability; liveliness; social boldness and openness to change were positively related with PA, vigilance, privatness, self-reliance and tension were negatively related. Big Five: Extraversion and agreeableness were negatively related to EE and DP and anxiety was positively related. Extraversion, independence, agreeableness were positively related to PA and neuroticism was negatively related. Confrontative coping, accepting a lot of responsibility, or avoiding organisational and operational stressors increased EE. Not seeking social support, use confrontative coping, avoid organisational or operational stressors increased DP Seeking social support and not avoiding organisational or operational stressors, increased PA
Mella and Boutin (2013)	Chile	Cross-sectional	100 % male; Age ranged from 20 to 49 years; Job tenure ranged from 1 to 29 years; 1 to 14 (60.9 %) and 15 to 29 year (39.1 %).	N = 338	MBI	Age and marital status showed no association with burnout. Focusing on emotions, mental disengagment and seeking social support were associated with EE. (social support was the only to show a negative direction) The same coping strategies showed associations with personal accomplishment. (social support was the only to show a positive direction).
Thomas (2021)	USA	Cross-sectional	87.2 % male and 12.8 % females; Age ranges from 21 to 60+ years.	N = 195	MBI	Emotional intelligence components were significantly associated with burnout dimensions Only two constructs of EI (use of emotions

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
						and emotions regulation) revealed a significant negative effect in EE. Only others appraisal, use of emotions and emotions regulation showed a positive effect in PA Only emotion regulation showed a significant negative effect in DP
Miller et al. (2017)	USA	Cross-sectional	85.4 % were male; 71.4 % married; Age between the ages of 19 and 73 years old and a mean age of 43 years old; Job tenure of 15.8 years ranging from 0 to 45 years; 85,4 % caucasian followed by 4,6 % African American.	N = 826	ProQOL-V	Being older, woman and African-American were negatively associated with burnout. Years of service showed a positive association with burnout. Marital status, educational level, employment status were not associated with burnout. Perceived organisational and co-worker support was negatively related to burnout. Psychological resilience revealed a negative relationship with burnout. The abscence of formal debriefing was associated with increased burnout.
Mostert and Rothmann (2006)	South Africa	Cross-sectional	Age ranged between 19 and 66 with an average of 34.53 years old (SD = 6.23); Mean job tenure was of 12.98 years old; 81.90 % male and 18.10 % female; 40 % caucasian and 3.9 % Indian.	N = 1794	MBI-GS	Age and sex were not associated with burnout. Being Caucasian showed a positive association with increased burnout when compared to indian police officers. Job Stress (because of job demands and lack of resources) was positively associated with exhaustion and cynicism. Only emotional stability and conscientiousness were associated with burnout (low levels of both tend to increase ehxaustion and cynicism).
Nascimento et al. (2020)	Brazil	Cross-sectional	Military police officers; 83.5 % males and 16.5 % females; Age between 21 and 55; 72.4 % had ≤20 years of service time; 27.6 % had >21 years of service time;	N = 254	MBI-GS	The higher the service time (professional experience) the lower was the risk for developing burnout. Low levels of physical activity increased the risk for developing burnout.
Padyab et al. (2016)	Sweden	Cross-sectional	Patrolling Police officers; 419 male and 437 female; Mean age of 34 (SD = 7.0) years for women and 40 (SD = 11) years for men.	N = 856	MBI swedish version by Hallsten (1985)	Stress of conscience, demands, low decision and low social support were positively correlated with EE and DP for both women and men Psychological distancing revealed to be significantly related to EE and DP for both women and men. Wishful thinking was significant only for EE. Planful problem solving, confrontative coping, self-control and positive reappraisal had very weak correlations or were not significant.
Ricca (2004)	USA	Cross-sectional	Municipal police officers; 98 % male (n = 49) and 2 % female (n = 1); Job tenure ranged from 3 months to 32.5 years.	N = 50	MBI-HSS	Negative correlations were found between EE and DP and emotional intelligence components (EQIT). PA showed a positive correlation. The relationship between negative mood regulation expectancies (NMRT), and burnout, displayed a negative relationship with EE and positive with PA.
Richardsen et al. (2006)	Norway	Cross-sectional	119 were men and 30 were women; The mean age for women was 33.9 years (SD = 7.2) and for men was 37.2 years (SD = 8.0); Average years of experience was 13.4 years.	N = 150	MBI-GS	Being female, work conflict, work-family pressure and supervisor support were positively correlated with cynicism whilst leadership, autonomy and co-worker suport were negatively correlated. Overtime work and age were not associated with cynicism. Individual characteristics (Type A Behaviour) like achievement striving was negatively associated and irritability was positively associated with burnout. Leadership and supervisor social support were negatively related to cynicism. Work-family pressure was positively associated. Work conflict, autonomy,

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Table I (*continued*)

Author, year	Country	Design	Sample characteristics	Sample size	Burnout scale	Findings
						coworker social support were not associated.
Santa Maria et al. (2019)	Germany	Cross-sectional	72 % (n = 587) were male and 28 % (n = 224) female; Mean age of 44.9 years (SD = 9.0); Average of service of 24 years.	N = 811	German version of the Copenhagen Burnout Inventory by Hanebuth et al. (2012)	The three components of health-oriented leadership were negatively associated with burnout. Follower self-care behaviour was also negatively associated with burnout. Health-oriented Leadership showed to be negatively related with Health problems (operationalised by burnout, depression and physical complains). Followers Health-behaviours were not associated with health outcomes (thus, burnout).
Smoktunowicz et al. (2015)	Poland	Cross-sectional	124 (20 %) women and 483 (80 %) men; Mean age 36.64 years (SD = 7.81); Tenure average was 12.83 years.	N = 625	OLBI	Job demands (positive direction), job control and social support (negative direction) were significantly correlated with exhaustion and disengagement.
Tang and Lau (1996)	China	Cross-sectional	101 male and 16 female; The mean age is of 29.39 years (SD = 4.52); Tenure average is 10.93 years.	N = 117	Chinese version of the MBI	For Men, both masculine and feminine gender role stress were positively correlated with EE and DP. For Women, masculine and feminine gender role stress was negatively correlated with personal accomplishment.
Valieiev et al. (2019)	Ukraine	Cross-sectional	129 men (70.1 %) and 55 women (29.9 %); Age ranged from 20 to 45 with average 30.45 (SD = 6.56); Tenure ranged from 1 to 25 (mean 8.75 years); 126 were on field work whilst 58 were on office service.	N = 184	MBI-HSS adapted version by Vodopyanova and Starchenkova (2009).	Tenure and sex were not associated with burnout. Primary workplace (field of work) revealed to be positively associated with EE and DP, but not with PA.
Violanti et al. (2018)	USA	Cross-sectional	Mean age of 46 years (SD = 7.0); 57 women (29 %), 143 men (72 %); 55 % rank of patrol officer.	N = 200	MBI-GS	Age was significant only with professional efficacy. Sex was not associated with burnout. Effort-reward imbalance was positively associated with cynicism and exhaustion but not with professional efficacy. Overcommitment was associated with all three dimensions of burnout, increased cynicism and exhaustion and a decrease in professional efficacy.
Yang et al. (2019)	Taiwan	Cross-sectional	Immigration Officers (ports and airports); 179 males and 52 females; Tenure was 8.24 years in immigration service and 6.47 years in the respective unit.	N = 231	MBI-GS (adapted to immigration jobs)	A positive correlation was found between role conflict and burnout. A correlation was found between work stress and burnout in a positive direction. Social support was negatively correlated with burnout. Age, educational level, tenure were not associated with burnout.

Note – MBI-HSS (Maslach Burnout Inventory – Human Service Survey); MBI-GS (Maslach Burnout Inventory – General Survey); OLBI (Oldenburg Burnout Inventory); CBI (Copenhagen Burnout Inventory); ProQOL-V (Professional Quality of Life Questionnaire – version V); SBI (Spanish Burnout Inventory).

3.2. *Organisational factors*

A total of six studies examined work schedules' relation with burnout. Rotating work shifts were found to increase exhaustion and depersonalisation (De la Fuente Solana et al., 2013). In one study, working continuous shifts was associated with lower professional efficacy, although, no distinction was made as to which type of work shift is more prejudicial to professional efficacy (Burke and Mikkelsen, 2006). An inflexible work schedule was also found to be a risk factor for burnout (Kumar and Kamalanabhan, 2017). However, in four studies, work shifts and overtime work were not significantly associated with burnout (De la Fuente Solana et al., 2013; Martinussen et al., 2007; Medina, 2007; Richardsen et al., 2006). Rank and leadership were investigated in a total of five studies (Bawa and Kaur, 2011; De la Fuente Solana et al., 2013; Garbarino et al., 2013; Martinussen et al., 2007; Richardsen et al., 2006); two showed that leadership or supervisor responsibility diminished cynicism (Martinussen et al., 2007; Richardsen et al., 2006), and one study that higher ranks were associated with lower exhaustion (Garbarino et al., 2013). On the other hand, having responsibility was described as a risk factor for overall burnout and exhaustion in one study (Bawa and Kaur, 2011). Only one study found no significant relationship (De la Fuente Solana et al., 2013). Concerning job length, mixed results were found. In six studies, years of service contributed to increased burnout (Burke and Mikkelsen, 2006; De la Fuente Solana et al., 2013; Fedorenko et al., 2020; Garbarino et al., 2013; Medina, 2007; Miller et al., 2017). One study revealed a U-shape distribution where burnout increased until 6–15 years of service, and after 16 years would start decreasing gradually, predicting lesser exhaustion and depersonalisation (Durán et al., 2006). However, two studies reported job tenure to be associated with decreased burnout

levels (Backteman-Erlanson et al., 2013; Nascimento et al., 2020). Three studies found that job length had no association with burnout (Fyhn et al., 2016; Valieiev et al., 2019; Yang et al., 2019). Police officers' work-post was investigated in two studies. In one study, a variable called primary workplace which encompassed field and office service work contributed to increased exhaustion and depersonalisation (Valieiev et al., 2019). The second study found no associations with burnout (De la Fuente Solana et al., 2013). Overall, job-related stress characterized by an array of hassles, pressures, and organisational constraints was consistently related to higher burnout in six studies (Baka, 2015; Bawa and Kaur, 2011; Kepple, 2018; Kula, 2017; Medina, 2007; Mostert and Rothmann, 2006). Heavy workload was a risk factor for burnout in nine studies (Backteman-Erlanson et al., 2013; Baka, 2015; Bawa and Kaur, 2011; Burke and Mikkelsen, 2006; Garbarino et al., 2013; Hu et al., 2016; Kumar and Kamalanabhan, 2017; Padyab et al., 2016; Smoktunowicz et al., 2015). Physical, mental, and emotional demands also increased burnout, whereas cognitive demands seemed to help mitigate burnout (Bakker and Heuven, 2006; Burke and Mikkelsen, 2006; Hu et al., 2016). Acute fatigue and feeling overwhelmed from performing excessive demands were associated with higher burnout levels (Basinska et al., 2014; Brady, 2017). Similar findings relative to a lack of recognition or effort-reward imbalance were reported across four studies. Increased efforts were associated with higher burnout whilst increased rewards resulted in lower burnout (Garbarino et al., 2013). Imbalance between effort-reward was also consistently reported as a risk factor for burnout (Euwema et al., 2004; Violanti et al., 2018; Yang et al., 2019), as was overcommitment (Garbarino et al., 2013; Violanti et al., 2018), and perceived unfairness (Kumar and Kamalanabhan, 2017). With respect to police officers' control over their work, low decision latitude, inability to participate in the decision-making process, and its communication was associated with higher levels of burnout (Backteman-Erlanson et al., 2013; Bawa and Kaur, 2011; Padyab et al., 2016). On the other hand, having control and autonomy in the management of tasks was found to decrease burnout (Garbarino et al., 2013; Hu et al., 2016; Martinussen et al., 2007; Richardsen et al., 2006; Smoktunowicz et al., 2015). The sense of personal control at the workplace was also associated with a decrease in burnout (Dudek et al., 2001). Two studies reported role conflicts as a risk factor for burnout (Bawa and Kaur, 2011; Yang et al., 2019). Two others examined role ambiguity (lack or ambiguous information about assignments); one found that role ambiguity was associated with higher burnout levels (Kumar and Kamalanabhan, 2017), whilst the second one showed no relationship (Bawa and Kaur, 2011). Gender role stress (characterized by a gender-based cognitive appraisal of specific situations) was associated with increased exhaustion and depersonalisation in men, and decreased personal accomplishment in women (Tang and Lau, 1996). Organisational culture and climate increased burnout (Backteman-Erlanson et al., 2013). Officers working in urban environments were more prone to higher levels of exhaustion compared to officers who did not, and officers working in larger departments reported less cynicism (Burke and Mikkelsen, 2006). Political interference in the organisation was investigated in two studies, and whilst one study reported a positive association with overall burnout, in the other study, the relationship was not significant (Bawa and Kaur, 2011; Kumar and Kamalanabhan, 2017). Concerning leadership style, one study found that health-oriented leadership significantly contributed to decreasing the levels of burnout among police officers through the creation of favourable healthy work conditions (Santa Maria et al., 2019). The absence of leadership at work was significantly related to exhaustion's increment, representing a risk factor (Backteman-Erlanson et al., 2013). Factors related with social interactions were the most studied burnout factors in police officers (Backteman-Erlanson et al., 2013; Baka, 2015; Baruch-Feldman et al., 2002; Bawa and Kaur, 2011; Beltran et al., 2009; Brady, 2017; Farfán et al., 2019; Fyhn et al., 2016; Garbarino et al., 2013; Hu et al., 2016; Kula, 2017; Kumar and Kamalanabhan, 2017; Martinussen et al., 2007; Padyab et al., 2016; Richardsen et al., 2006; Smoktunowicz et al., 2015; Yang et al., 2019). In eight studies social support was reported as a protective factor against burnout (Backteman-Erlanson et al., 2013; Farfán et al., 2019; Fyhn et al., 2016; Garbarino et al., 2013; Martinussen et al., 2007; Padyab et al., 2016; Smoktunowicz et al., 2015; Yang et al., 2019). Similarly, high levels of work-related support diminish burnout and vice-versa (Brady, 2017; Kumar and Kamalanabhan, 2017). However, one study found that the higher the exposure and the satisfaction gathered from work-related support the higher the risk of burnout for police officers (Beltran et al., 2009). Regarding supervisors' social support, divergent results were reported in five studies. One study found that supervisor support was associated with more exhaustion (Hu et al., 2016). Three other studies reported protective effects of supervisors' social support on burnout (Baruch-Feldman et al., 2002; Miller et al., 2017; Richardsen et al., 2006). One study found no relationship (Kula, 2017). Co-worker support was found to be associated with lower levels of burnout in two studies (Miller et al., 2017; Richardsen et al., 2006), whilst one study reported an increase of burnout (Hu et al., 2016), and two others found no association (Baruch-Feldman et al., 2002; Bawa and Kaur, 2011). It was also described that conflicts in the workplace and unreasonable work group were related to higher burnout levels (Baka, 2015; Bawa and Kaur, 2011; Martinussen et al., 2007; Richardsen et al., 2006). The only longitudinal study (Hu et al., 2017) included in this review assessed 12 hypotheses examining the dynamic of job demands and job resources with burnout across a year. It was found that having constantly high job resources, even in an environment where the demands are high, did not help mitigate burnout levels, however, an inverse association was found indicating that when the job resources were constantly low, burnout increased. In addition, experiencing an increase or decrease in job resources, in a high-demand environment, contributed to a decrease or increase in burnout, respectively. Moreover, having chronic high or low job demands was not associated with burnout, but experiencing an increase or decrease in job demands exacerbates or mitigates the levels of burnout, respectively.

3.3. Operational factors

Twelve studies reported on officers' exposure to operational stress and critical situations (Backteman-Erlanson et al., 2013; Baruch-Feldman et al., 2002; Beltran et al., 2009; Brady, 2017; Garcia-Rivera et al., 2020; Kepple, 2018; Kula, 2017; Kumar and Kamalanabhan, 2017; Martinussen et al., 2007; Medina, 2007; Padyab et al., 2016; Richardsen et al., 2006). In four studies, it was found that overall operational stress had a direct relationship with burnout, with one study showing that police officers with daily operational stressors had higher burnout levels compared to officers with occasional stressors (Garcia-Rivera et al., 2020; Kepple, 2018; Kula, 2017; Medina, 2007). In one study on internet child exploitation, the researchers reported that frequent indirect exposure to crimes against children and the weekly hours working in such cases were associated with an increase in burnout (Brady, 2017). Two studies found that stress of conscience from being exposed to morally ambiguous situations represented a risk factor for burnout (Backteman-Erlanson et al., 2013; Padyab et al., 2016). Interactions with the public were not significantly associated with burnout (Kumar and Kamalanabhan, 2017). Pressures on work-family relations were examined in two studies and in both, a conflict in the work-family dynamic contributed to an increment of burnout (Martinussen et al., 2007; Richardsen et al., 2006). Outside of the work sphere, two studies showed associations between family-related support and burnout, in opposite directions. High exposure and satisfaction related to family support were associated with increased burnout in one study whilst, in another, mitigated burnout levels (Baruch-Feldman et al., 2002; Beltran et al., 2009).

3.4. Personality variables

Six studies examined the relationships between the *Big Five*

personality traits and burnout (De la Fuente Solana et al., 2013; Farfán et al., 2019; Garbarino et al., 2013; Hills and Norvell, 1991; Medina, 2007; Mostert and Rothmann, 2006). Neuroticism was found to be a consistent risk factor for burnout (De la Fuente Solana et al., 2013; Farfán et al., 2019; Garbarino et al., 2013; Hills and Norvell, 1991; Medina, 2007; Mostert and Rothmann, 2006). Whereas, four studies reported negative associations between agreeableness, extraversion, conscientiousness, and openness with burnout (De la Fuente Solana et al., 2013; Garbarino et al., 2013; Medina, 2007; Mostert and Rothmann, 2006). Personality traits assessed using the *16 Personality Factor Questionnaire* (16PF) were also reported to be associated with burnout (Medina, 2007). Warmth, emotional stability, social boldness, openness, and liveliness were associated with decreased burnout. On the other hand, officers that displayed high levels of traits such as vigilance, self-reliance, tension, apprehension, and privateness were found to report higher burnout levels (Medina, 2007). Concerning dispositional personality traits, psychological hardiness and dispositional mindfulness protected against burnout (Fyhn et al., 2016; Hills and Norvell, 1991; Kepple, 2018). Trait anger increased burnout levels (Baruch-Feldman et al., 2002). Traits associated with type A personality, such as achievement striving and irritability were found to mitigate and exacerbate cynicism, respectively (Richardsen et al., 2006). With relation to psychological abilities and emotional states, two studies concluded that higher scores in emotional intelligence was protecting against burnout (Ricca, 2004; Thomas, 2021). Similar relationships were found between burnout, psychological resilience (Miller et al., 2017), and police officers' belief in the capacity to self-regulating negative mood states (Ricca, 2004). In another study, low and high-arousal negative emotions were associated with increased burnout whilst high-arousal positive emotions helped to mitigate it (Basinska et al., 2014). In addition, police officers with a higher trait of meaningfulness and a higher sense of community were less prone to burnout (Burke and Mikkelsen, 2006; Fyhn et al., 2016).

3.5. Coping strategies

Coping strategies used by police officers to protect themselves from adverse situations were examined in six studies. In five studies, maladaptive coping styles such as avoidance and distancing, manipulative actions, mental disconnection, accepting a lot of responsibility, aggressive and confrontative actions, focusing on emotions, and wishful thinking were associated with increased burnout (Durán et al., 2006; Fedorenko et al., 2020; Medina, 2007; Mella and Boutin, 2013; Padyab et al., 2016). On the other hand, six studies reported the protective role of healthy coping styles. Positive coping strategies in general, like getting sufficient sleep, taking sufficient breaks from work, positive reappraisal, active coping, seeking social support, being assertive, having self-control, and planning how to solve problems were found to mitigate burnout levels (Brady, 2017; Durán et al., 2006; Fedorenko et al., 2020; Medina, 2007; Mella and Boutin, 2013; Padyab et al., 2016). A study explored the associations between burnout and the defence mechanisms from *The Lifestyle Index questionnaire* (Davidson and MacGregor, 1998). Objection (characterized by a denial of reality), projection (characterized by passing negative feelings and thoughts onto another person), and substitution (characterized by channelizing unacceptable behaviours into acceptable ones) were all associated with a decrease in burnout in police officers with short service times (3 months). On the contrary, in the group of police officers with larger police tenure (5–15 years), objection was found to increase burnout and rationalization (characterized by cognitive distortions) was found to decrease it (Fedorenko et al., 2020). The practice of physical exercise or sports was a protective factor against burnout (Garcia-Rivera et al., 2020; Nascimento et al., 2020), whereas engaging in recreational and leisure activities revealed no significance in the alleviation of burnout (Garcia-Rivera et al., 2020).

4. Discussion

4.1. Key findings

Overall, half of the studies included in this review addressed sociodemographic variables within their research. However, the findings were not conclusive. For age, sex, marital and parental status, education, and ethnicity, inconsistencies and inexistent associations with burnout were found. Occupational factors and social interactions, on the other hand, were found to be the most investigated and consistent variables in terms of relationship directions with burnout. Social interactions, consisting mostly of social support proved to be a contributing protective factor against burnout, whereas work-related factors were all risk factors for burnout. Operational factors, however, were the least examined and the least specified. The studies were not detailed in stating what type of operational situations could be associated with burnout. With relation to personality traits and coping strategies, these were examined in 19 studies and showed consistency within the results.

4.2. Comparison with the literature

The wider literature seems to support that younger individuals are associated with a higher prevalence of burnout (Azam et al., 2017; Singh et al., 2016; Yates and Samuel, 2019). A review conducted with police officers (Galanis et al., 2021) had previously reported that stress increased with age, although a meta-analytical study revealed that age does not appear to have a significant relationship with burnout (Aguayo et al., 2017). This should be interpreted with caution as age can be confounded with work experience, resulting in a *survival bias* whereby early career workers reporting higher burnout levels are more inclined to leave their job, leaving a cohort of older workers that, by staying in the job, have likely shown a greater ability to adapt to burnout and are therefore more likely to report lower burnout levels (Maslach et al., 2001). Studies report that caucasians suffer more burnout than other ethnicities, however, the studies' populations were composed mainly of caucasian police officers with a small presence of other ethnicities. This issue was also reported by a systematic review conducted with underrepresented minorities in medicine (Lawrence et al., 2022), therefore caution with the interpretation of the findings is required. According to Maslach and Leiter (2016), demographic characteristics do not have much predictive power on burnout compared with situational and work-related factors, which may be a reflection of the occupational nature of the burnout syndrome.

In this review, the majority of the studies focused on organisational factors and less on operational factors (McCreary and Thompson, 2006). In terms or organisational factors, high job demands, effort-reward imbalance, low decision latitude, perceived injustice, low social support, lack of leadership, organisational culture, and working in urban environments were found to be associated with burnout, in line with the wide literature (Nieuwenhuijsen et al., 2010; Purba and Demou, 2019; Sherwood et al., 2019). Few of the included studies approached operational factors, and the ones that did were not specific in the type of stressors experienced by the police officers. The different impact that organisational and operational factors may have on police officers' mental health (Larsson et al., 2016), especially burnout, may be explained by the fact that the individuals entering the police force are aware of the operational risks but are not ready for the administrative and bureaucratic aspects of the job (Sherwood et al., 2019). It could also be that operational stressors such as emotional trauma due to exposure to violent situations show stronger associations with posttraumatic stress disorder (PTSD) (Mona et al., 2019) or other adverse psychological outcomes, compared to burnout. Nevertheless, all the included studies related to operational stressors showed significant relationships between those and burnout, in line with similar findings on the role of daily hassles in first responders (Larsson et al., 2016).

High levels of personality traits such as neuroticism, vigilance,

tension, apprehension, privateness, and other dispositional traits, namely irritability (Type A personality) and negative emotional states were consistently associated with increased levels of burnout. On the contrary, high levels in traits such as agreeableness, extraversion, conscientiousness, openness, hardiness, mindfulness, achievement striving (Type A personality), emotional intelligence, mood regulation, and positive emotional states seemed to protect against burnout. Therefore, police officers who are more suspicious, impatient, worried, and introverted are likely to experience higher levels of burnout compared to those who show higher emotional stability, are more open to new experiences, experience more positive emotional states, and are psychologically more robust (Galanis et al., 2021; Sherwood et al., 2019).

Unsurprisingly, maladaptive coping and positive coping strategies were associated with an increase and decrease in burnout in police officers, respectively. A systematic review on risk factors of police officer's stress (Galanis et al., 2021) reported similar findings, in which police officers that used negative coping such as denial, avoidance, self-blame, distraction, lack of planning, lack of control and humour experienced higher levels of stress, whereas planning, immediate response to the problem, and seeking help from others were good strategies against stressful situations. Beyond that, another systematic review of police officers (Sherwood et al., 2019) found that negative coping strategies such as passive or avoidance coping were also associated with adverse psychological outcomes. The practice of sports activities and physical exercise were protective factors against burnout, consistent with the findings related to the police officers' stress (Galanis et al., 2021). It is well documented that physical activity has considerable beneficial effects on overall health, protecting against individual physical morbidities and improving psychological well-being by reducing stress, anxiety, and depression (Warburton et al., 2006).

4.3. Strengths and limitations

To the best of our knowledge, this is the first systematic review examining the risk and protective factors of burnout in police officers. All the studies included were considered strong or moderate in their quality. The samples included in this review covered a wide range of police officers, from specific police branches to general police forces, excluding those who were considered recruits or in training. No language restrictions were made, increasing the width and sensitivity of the review's search. Importantly, the included studies were conducted in different countries across the world, in different police institutions, and under different socio-cultural and crime contexts which makes this review representative. However, most of the studies are from high-income countries (70.7 %) which can compromise the applicability of the findings to lower-income countries. Not all studies used the same burnout measurement tool, and in some cases, burnout was measured through isolated subscales. Such discrepancies reflect the need for a concise burnout definition and assessment through standardised instruments with well-defined psychometric properties. Additionally, all included studies relied on self-reported data, which can be subjected to social desirability, dishonesty, interpretation, and self-evaluation capacity of the individual being surveyed, introducing self-reported bias. Furthermore, since 98 % of the included studies had a cross-sectional design, causal inferences could not be made. Lastly, although four of the most used databases were searched for eligible articles, there may have been articles published elsewhere which may not have been captured in this search.

4.4. Implications of the findings for future practice and research

This systematic review focused on the identification of psychosocial factors that may be used to raise awareness among policymakers and police departments, and to provide information for creating pathways for future research, prevention strategies at primary, secondary and tertiary levels, and interventions for police officers that can increase their workplace well-being.

Despite this review not being able to confirm causal effects, it seems evident that factors like heavy workload, lack of recognition, lack of control, lack of fairness, low social support, role conflicts, role ambiguity, lack of leadership, operational stress, neuroticism, negative emotions, and maladaptive coping strategies such as avoidance are significant risk factors for burnout in police officers, whereas social support, health-oriented leadership, psychological hardiness, agreeableness, extroversion and openness to new experiences, active and problem-focused coping strategies, and physical exercise are protective factors. Hence, the development of interventions that can mitigate the adverse factors and maximise the effects of the protective factors is of great importance.

According to a study developed with police officers in South Korea, organisational stressors do play a significant role in police officers' mental and physical health such as fatigue, indigestion, irritability, and anxiety (Cho and Park, 2021). Importantly, suicide among police officers is another serious problem. In 11 years (1999, 2003, 2004, 2007–2014) a total of 1241 suicide deaths of police officers occurred in the USA, making police officers 54 % more likely to die from suicide compared to all other worker decedents in the study (Violanti and Steege, 2021). A review on suicide risk factors in police officers, reported that burnout contributes as a risk factor to suicidal behaviours mediated by depression and anxiety (Krishnan et al., 2022) which is a more pressing reason to work on police officers' mental well-being. However, there is still insufficient research to establish well-grounded guidelines concerning the development of standard interventions for burnout (Heinemann and Heinemann, 2017). Still, changes and interventions in the police structure must be considered, taking into account the police culture and the stigma associated with mental health, as it represents a barrier that keeps police officers from seeking the help they need due to self-stigma, fear of punitive implications on their careers, and reputation among the general public (Demou et al., 2020; Jetelina et al., 2020).

It is also important to remember that police officers, in many cases, are the first to come in contact with people suffering from mental illness, leaving police officers with the discretionary task of making arrests or escorting these people for a mental health assessment or treatment (Soares and Pinto da Costa, 2019). The literature is wide in specialised training programmes to enable police officers to recognise such situations (Booth et al., 2017). Thus, investment should be made in training police officers to also be able to identify symptoms associated with their own mental health in order to avoid more severe outcomes.

The number of articles examining associations in relation to burnout in police officers reflects the interest in the topic. However, there are certain aspects that need to be further explored in the future. Almost all of the studies included were cross-sectional which does not allow for confirmation of causal relationships, therefore studies with a more robust design are recommended. In addition, despite the fairly good number of studies included in this review some of the factors were examined in a limited number of studies, not allowing comparison within the findings. Moreover, it was noticed that research on police officers' burnout is focusing more on the organisational aspects of the job leaving aside other factors. It is known that the aetiology of burnout as an occupational phenomenon is not restricted to occupational factors (Schaufeli and Enzmann, 1998), so further research on relevant personal and social factors is recommended. Future research should also take into account the differences across police units, as police officers may perform different roles based on their expertise. Furthermore, it was also noticed that research on burnout in police officers is focusing more on factors that may potentially cause burnout instead of those that may protect against it. Bi-directional relationships reported in this review with factors that can be modified such as coping strategies also call for cautious interpretation of the results, as burnout can have a potentially causal contribution towards them. More longitudinal studies are needed

addressing these aspects to enable a better understanding of the interactions between risk and protective factors and their impact on burnout within populations of police officers. Also, a meta-analysis to define the exact strength of the reported associations between protective and risk factors and burnout seems a reasonable step forward, though to date there are not sufficient studies focusing on each of the explored factors. Finally, although it was not the aim of this review to investigate the impact of specific events, such as natural catastrophes, COVID-19 and terrorist, on police officers' burnout, these are certainly relevant topics which future research should focus on.

5. Conclusions

This systematic review points out the most prominent risk and protective factors associated with burnout in police officers. It seems that burnout, despite being strictly defined as a phenomenon of the occupational context, is also influenced by factors outside of this domain. Police officers are known to suffer high levels of exposure to stressful and critical situations, which requires a constant need to monitor their well-being. Police organisations and their leaders should pay more attention to their people's health, especially at a psychological level which is more concealed, and lead by example encouraging a job culture that values people's well-being above all. Creating changes and implementing interventions in police organisations with this purpose may be a complex task. Still, working in the direction of developing prevention strategies and raising awareness seems to be the needed path.

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CRediT authorship contribution statement

LAl, EP and MPC designed the search strategy and selection criteria. LAl conducted the search. LAl and LAb screened the eligibility of the articles, reviewed them independently, and constructed the tables and figures. EP and MPC supervised the project throughout. LAl wrote the first draft of the manuscript, with input from EP and MPC. LAb proofread the manuscript. All authors contributed to the final manuscript and approved it.

Declaration of competing interest

There are no conflicts of interest to report.

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