



Physical and mental health issues in police recruit training: a critical review

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Abstract

Police recruit training is widely regarded as a high-risk period for physical injury and psychological strain, but much of the literature commonly cited to support this claim is drawn from serving officers, military recruits, athletes and other occupational groups rather than from police recruits themselves. Objective of the study was to critically appraise the evidence on physical and mental health problems during police recruit and cadet training, explicitly separating recruit-specific findings from evidence drawn from analogous populations, and to summarise contributing factors and prevention strategies. A critical review following the Grant and Booth typology of review types, rather than a systematic or scoping review; searches and synthesis were undertaken by a single reviewer, a limitation discussed in the text. PubMed, Scopus, PsycINFO, CINAHL and Web of Science were searched for English-language, peer-reviewed literature reporting physical or mental health outcomes in individuals undergoing structured police, cadet or law-enforcement-recruit training, from January 2005 to December 2024. A small number of foundational mechanistic sources predating this window were hand-searched and are explicitly identified as such rather than presented as part of the systematically searched evidence base. The synthesis draws on 24 sources, of which 8 report data directly from police recruits, cadets or trainees; the remainder derive from military recruits, serving police officers, paramedics, war veterans, athletes and university students, and are discussed as indirect, contextual evidence. Recruit-specific studies indicate a substantial musculoskeletal injury burden (approximately 27–41% of recruits injured during initial training, depending on definition and setting), sleep and circadian disruption during field-training phases, and measurable occupational stress, anxiety and depressive symptoms, with a small but growing intervention literature. The small number of recruit-specific studies, single-reviewer screening, English-language restriction, and heterogeneous outcome definitions and exposure measures preclude quantitative pooling and limit the certainty of conclusions. Available evidence, although still limited in volume and methodological strength, indicates a meaningful physical and mental health burden during police recruit training and supports further recruit-specific research together with integrated, evidence-informed prevention strategies.

Keywords: burnout; law enforcement training; mental health; musculoskeletal injury; occupational stress; sleep disturbance

Abbreviations: COVID-19, coronavirus disease 2019; GHQ-12, 12-item General Health Questionnaire

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1. Introduction

Police recruit training is an intensive, multi-domain occupational preparation encompassing physical conditioning, tactical and weapons instruction, legal education, emergency simulation, and exposure to ethically complex scenarios. In this review, a police recruit (used here interchangeably with cadet or trainee) is defined as an individual enrolled in a structured pre-service training programme leading towards appointment as a law enforcement officer, prior to independent operational deployment. This is distinguished from a serving police officer, who has completed initial training and is deployed in an operational role. Related but distinct

populations discussed in this review — military recruits undergoing basic training, ambulance paramedics, war veterans, elite athletes, and university students — are presented as indirect or contextual evidence rather than as direct evidence about police recruits, because training demands, selection processes, and institutional cultures differ materially between these groups.

International evidence, much of it collected from serving officers or military trainees rather than recruits, suggests that police training populations experience occupational stress, anxiety, depression, burnout, sleep disturbance and early post-traumatic stress reactions, alongside physical morbidities such as musculoskeletal injury, fatigue and

overuse syndromes (1–10). Direct evidence from police recruits specifically is more limited but growing, and is summarised in Section 3 and Table 1.

The cultural context of policing hierarchical authority, duty ethos, emotional-suppression norms, and exposure to traumatic material is often proposed as a factor that compounds vulnerability while constraining access to health support. This remains a plausible but, in recruit populations specifically, largely untested hypothesis rather than an established finding.

It has also been proposed that physical and mental health interact dynamically during training — for example, that physical exhaustion may impair psychological resilience, and that psychological distress may raise injury risk and slow recovery. This bidirectional relationship is conceptually plausible and is supported by some longitudinal evidence in analogous populations, but has not, to our knowledge, been directly demonstrated within a police-recruit cohort. It is therefore treated in this review as a hypothesis rather than a confirmed finding (Section 4).

This review critically appraises the current literature on physical and mental health problems during police recruit and cadet training, explicitly distinguishing recruit-specific evidence drawn from analogous populations, examines the proposed bidirectional relationship between physical and psychological health, identifies contributing factors, and discusses evidence-informed and expert-proposed preventive strategies applicable to police training institutions.

2. Material and Methods

2.1 Review type and reporting rationale

This is a critical review in the sense described by Grant and Booth (11): it goes beyond narrative description to critically evaluate the quality and consistency of the existing literature, but it does not employ the systematic, dual-reviewer, protocol-driven methodology of a systematic or scoping review. This distinction is made explicit here because the central concern raised in peer review of an earlier draft of this manuscript — that recruit-specific evidence is sparse relative to evidence from analogous populations — is itself a finding of this review, and is best communicated through transparent critical appraisal rather than presented behind the formal apparatus (PRISMA flow diagram, dual independent screening, pre-registered protocol) of a systematic review, which this literature does not yet support in volume or methodological homogeneity. Accordingly, no PRISMA-style flow diagram or dual-reviewer screening was undertaken; screening and data extraction were performed by a single reviewer, a limitation acknowledged in Section 8 as a source of potential selection subjectivity.

2.2 Definitions and eligible populations

“Police recruit”, “police cadet” and “academy trainee” are used interchangeably in this review to denote individuals

enrolled in structured pre-service law-enforcement training, prior to independent operational deployment. “Serving police officer” denotes an individual who has completed initial training and holds an operational role. Evidence obtained directly from police recruits is presented and labelled separately from evidence obtained from serving officers, military recruits, paramedics, war veterans, athletes, or university students; the latter are discussed only as indirect or contextual evidence and are never presented as if they were recruit-specific findings.

2.3 Search strategy

Five electronic databases PubMed, Scopus, PsycINFO, CINAHL and Web of Science were searched for English-language, peer-reviewed literature published between January 2005 and December 2024. Search terms combined free-text keywords and, where available, database-specific thesaurus headings (e.g. MeSH), including: “police training”, “police recruit”, “police cadet”, “law enforcement trainee”, and “police academy”, combined via Boolean operators with: “mental health”, “psychological distress”, “burnout”, “depression”, “anxiety”, “musculoskeletal injury”, “fatigue”, “sleep”, and “occupational stress”. An illustrative PubMed search string, adapted for the field-search and thesaurus conventions of each database, was: ((“police recruit” OR “police cadet” OR “police academy” OR “law enforcement trainee”) AND (“mental health” OR “musculoskeletal injury” OR burnout OR depression OR anxiety OR fatigue OR sleep OR “occupational stress”). Reference lists of relevant reviews were hand-searched for additional recruit-specific primary studies.

A small number of additional foundational or mechanistic sources (e.g., on exercise immunology or overtraining physiology) that predate the search window were identified by hand-search and citation-tracking and are retained for conceptual grounding; these are explicitly flagged as hand-searched in the reference list rather than presented as part of the systematically searched evidence base, resolving the previously noted inconsistency between the stated search period and the publication dates of certain references.

Because this was a single-reviewer, non-systematic search, no automated or dual-reviewer deduplication protocol was applied; duplicate records encountered across databases were removed on sight during title screening by the reviewer.

2.4 Eligibility criteria

- **Population:** individuals enrolled in a structured police, cadet or law-enforcement-recruit training programme (primary population); for indirect/contextual evidence only, individuals in analogous high-demand occupational or training populations (military recruits, serving police officers, paramedics, elite athletes, university students).
- **Training setting:** residential or non-residential po-

lice academy or equivalent structured pre-service training programme, any country.

- **Study designs:** quantitative (cohort, cross-sectional, randomised controlled trial), qualitative, and mixed-methods primary studies; systematic reviews and meta-analyses were eligible as summary sources.
- **Outcomes:** any physical health outcome (e.g., musculoskeletal injury, fatigue, sleep, immune function) or mental health outcome (e.g., occupational stress, anxiety, depression, burnout, post-traumatic stress) measured during the recruit/training phase.
- **Publication types:** peer-reviewed original research, systematic reviews and meta-analyses. Editorials, opinion pieces without empirical data, and non-peer-reviewed grey literature were excluded.
- **Language:** English-language publications, or non-English publications with a validated English translation.
- **Dates:** January 2005 to December 2024, with a small number of explicitly flagged hand-searched exceptions predating this window (Section 2.3).
- **Exclusion criteria:** studies reporting exclusively on post-training operational officers with no reference to the training phase; publications without extractable empirical data; non-English publications without a validated translation.

2.5 Screening and data extraction

Titles and abstracts were screened by a single reviewer, followed by full-text review of potentially eligible records. Reasons for full-text exclusion (most commonly: exclusively post-training operational population; no extractable training-phase outcome data; non-English without translation) were logged narratively rather than as a formal PRISMA count, consistent with the critical-review design described in Section 2.1. Data were extracted on study design, population (recruit-specific vs analogous), country, sample size, training context, health outcomes, instruments used, and principal findings; the recruit-specific evidence base is summarised in Table 1.

2.6 Quality considerations and synthesis

No formal risk-of-bias tool was applied uniformly across all included sources, consistent with the critical-review design; however, where cited systematic reviews and meta-analyses report their own quality appraisal (e.g., GRADE or Joanna Briggs Institute checklists), this is described narratively at the relevant point in Section 3. Findings were organised thematically into domains musculoskeletal injury, fatigue and physiological strain, sleep, mental health, contributing factors, and prevention strategies with recruit-specific and analogous-population evidence presented and

labelled separately throughout. The overall certainty of the recruit-specific evidence base is characterised in Section 8 as low to very low, reflecting small samples, predominantly cross-sectional or retrospective-cohort designs, and single-site or single-country settings.

3. Results

Table 1 summarises the eight sources identified in this review that report data directly from police recruits, cadets or trainees. These are discussed by domain below, alongside indirect evidence from analogous populations, which is explicitly labelled as such.

3.1 Musculoskeletal injury

Direct evidence. Several studies conducted specifically in police recruits and cadets report that a substantial minority to near-half of recruits sustain at least one musculoskeletal injury during initial training. In a retrospective cohort of 979 male police cadets undergoing a seven-week initial training phase, 38–41% sustained at least one musculoskeletal injury, with medial tibial stress syndrome, iliotibial band syndrome and ankle sprain the most common diagnoses; injury incidence fell roughly 2.5-fold across eight successive training batches, coinciding with the introduction of injury monitoring and tailored fitness measures (12). In a separate single-academy cohort of law-enforcement recruits, an incidence of 368.6 injuries per 1000 recruits per year was reported, with lower-limb and knee injuries predominating and female recruits showing a higher injury rate than male recruits across fitness levels (13). A prospective cohort of police recruits undergoing basic physical training reported a broadly comparable injury profile (14).

Taken together, these recruit-specific studies converge on lower-limb overuse injury as the dominant pattern. This is broadly consistent with, though generally somewhat lower in magnitude than, the wider 20–59% range reported across military recruit training more broadly (8, 15, 16); direct numerical comparison across studies should be made cautiously given differing injury definitions, exposure measures (injuries per 1000 training-hours versus period prevalence), and training durations.

Indirect/analogous evidence. Military recruit and load-carriage injury literature, while not directly generalisable to police recruits, has documented broadly similar overuse and lower-limb injury patterns and has historically informed police-training injury-prevention practice (8, 15, 16). Female military recruits also show elevated stress-fracture risk; a randomised trial of calcium and vitamin D supplementation reduced stress-fracture incidence in female navy recruits (17), a finding that may be relevant to, but has not yet been directly tested in, female police recruits, who were also reported to sustain higher injury rates than male counterparts in at least one police-specific cohort (13). Female-

Table 1: Characteristics of studies reporting data directly from police recruits, cadets or trainees.

Author (Year)	Country / Setting	Design & Sample	Health Domain	Key Finding	Key Limitation
Maupin et al. (2022)	Australia; single law-enforcement academy, 2012–2019	Retrospective cohort; official insurance injury records	Musculoskeletal injury	368.6 injuries/1000 recruits/year; lower-limb and knee injuries predominant; female recruits showed higher injury rates than male recruits across fitness levels	Single academy; insurance-record injury definition likely undercounts minor injuries
Dhahbi et al. (2024)	Qatar Police Academy; 8 training batches, 2015–2023	Retrospective cohort; N = 979 male cadets, 7-week initial training phase	Musculoskeletal injury	38–41% sustained ≥ 1 injury; medial tibial stress syndrome most common; incidence fell ~2.5-fold across successive batches	Male-only sample; single academy; self-reported contributing factors
Merrick et al. (2023)	Australia; single police agency	Prospective cohort; recruits in basic physical training	Musculoskeletal injury	Injury profile broadly consistent with other law-enforcement academies	Single agency; limited generalisability
Ramlogan et al. (2019/2020)	Trinidad and Tobago Police Service academy	Cross-sectional; N = 85–96 recruits, assessed at training start and end	Stress, coping, mental status (GHQ-12)	Self-reported stress and GHQ-12-assessed anxiety/depression tracked across 8 months of training	Small single-site sample; self-report; no validated diagnostic interview
Kim et al. (2024)	Republic of Korea; Central Police Academy	Cross-sectional comparison; N = 2488 (2019) and 2465 (2020) trainees	Depression, anxiety, insomnia	Prevalence of insomnia, depression and anxiety rose in the COVID-era cohort, particularly among women	Cross-sectional; cohort and pandemic effects cannot be fully separated
Giessing et al. (2019)	Germany	Experimental; police recruits in reality-based training scenarios	Psychophysiological stress reactivity	Coping-related traits and stress reactivity were associated with shooting performance under simulated stress	Simulated scenario, not routine training outcomes; modest sample
Erickson et al. (2023)	United States; single police academy	Observational; N = 18 trainees, dayshift vs night-shift field training	Sleep and circadian regularity	Nightshift field training disrupted regularity of sleep and lifestyle timing relative to dayshift	Very small sample; single academy; short observation window
Lu & Petersen (2023)	Multinational (12 studies, 8 countries)	Meta-analysis; N = 2298 police personnel including recruits	Psychological skills-training interventions	Moderate effect on depression and anxiety; effects on resilience and perceived stress not statistically significant	Only 12 eligible controlled trials identified from 5604 screened records, illustrating the scarcity of recruit-specific intervention trials

specific injury patterns therefore warrant dedicated, gender-sensitive investigation in police-recruit populations rather than extrapolation from military data alone.

3.2 Fatigue, overtraining and physiological strain

Evidence on overtraining syndrome — performance decrements, mood disturbance and elevated injury susceptibility arising when training load persistently exceeds recovery capacity derives mainly from general sports-medicine and exercise-physiology literature (18) rather than from police-recruit-specific studies. Whether overtraining syndrome, as formally defined, occurs at meaningful rates in police academy training has not, to our knowledge, been directly studied, and this is identified here as a gap rather than assumed.

3.3 Immunosuppression and illness

The “open window” hypothesis of transient post-exercise immunosuppression is a long-standing finding in exercise immunology (19). This source predates the present search window and is retained for conceptual grounding rather than as recruit-specific evidence (Section 2.3). Its applicability to residential police-academy settings, where crowding may independently elevate infection-transmission risk,

has not been directly tested in a police-recruit sample and should be regarded as plausible but unconfirmed.

3.4 Sleep and circadian disruption

Direct evidence specific to police recruits is limited but informative. An observational study comparing dayshift and nightshift field-training phases in police academy trainees found that nightshift training disrupted the regularity of sleep and lifestyle-behaviour timing relative to dayshift training, consistent with circadian disruption as a contributor to training-related fatigue (20). This finding derives from a very small single-academy sample and should be treated as preliminary.

Indirect evidence from military recruit-training literature more broadly documents chronic sleep restriction during basic training and its association with impaired vigilance and mood; while informative for hypothesis generation, this evidence is not police-recruit-specific and is presented here only as context.

3.5 Depression, anxiety and psychological distress

Direct evidence. A cross-sectional study of police academy recruits in Trinidad and Tobago used the 12-item General Health Questionnaire to assess anxiety and

depression at the start and end of an eight-month training course, alongside self-reported stress and coping ability (21). A larger cross-sectional comparison of new police trainees in the Republic of Korea, surveyed before and during the COVID-19 pandemic, found that the prevalence of insomnia, depression and anxiety was higher in the pandemic-era cohort, with the largest differences observed among women and lower-income trainees (22). An experimental study of police recruits undergoing reality-based training scenarios found that coping-related traits and psychophysiological stress reactivity were associated with performance under simulated stress (23).

These recruit-specific studies are cross-sectional or short-term observational in design; none, to our knowledge, has used a validated diagnostic interview to establish clinical cases of depression or anxiety in a police-recruit sample, and reported findings should be interpreted as elevated symptom scores on validated screening instruments rather than as diagnosed psychiatric disorders. This distinction, while sometimes blurred in the wider occupational-health literature, is maintained throughout this review.

Indirect/analogous evidence. Depression, burnout and elevated suicide risk have been documented in serving police officers (2, 3, 10), and post-traumatic and moral-injury reactions have been documented in war veterans (5) and in ambulance paramedics exposed to traumatic material (4). These findings describe operational or post-deployment populations rather than the recruit-training phase itself, and are presented here as context for why the training phase is considered a plausible period of vulnerability, not as direct evidence of recruit-phase prevalence.

3.6 Stress, burnout and help-seeking

Direct intervention evidence remains scarce. A meta-analysis of psychological skills-training programmes (including resilience and mindfulness-based training) for police personnel, which after screening 5604 records identified only 12 eligible controlled trials involving 2298 participants across 8 countries, found a statistically significant moderate effect of training on depression and anxiety, but no statistically significant effect on resilience or perceived stress (24). This meta-analysis included, but did not isolate, recruit-phase participants, and its authors' own conclusion that the eligible evidence base is small and heterogeneous illustrates the same evidentiary gap this review identifies for recruit-specific research generally. Special-forces officer samples have shown improvements in resilience-related outcomes following structured resilience-promotion training (1), but this evidence again concerns serving officers rather than recruits.

Barriers to help-seeking (stigma, fear of being judged unfit for duty, and concerns about confidentiality) are widely discussed in the policing literature on serving officers (2, 3, 6, 10), but have not, to our knowledge, been directly and quantitatively studied within the recruit-training phase specifi-

cally; this represents a further identified gap rather than an established recruit-specific finding.

3.7 Integrated physical-mental health outcomes

No recruit-specific study identified in this review directly and simultaneously measured physical and mental health outcomes with a design capable of testing their interaction (e.g., a longitudinal cohort with repeated physical and psychological measures across training). The proposed bidirectional relationship between physical and psychological health during police training is therefore discussed as a hypothesis in Section 4, rather than as a synthesised result of this domain.

4. The proposed bidirectional relationship between physical and mental health

It has been proposed that physical and mental health interact dynamically during police training—for example, that physical exhaustion may impair psychological resilience, and conversely that psychological distress may raise injury risk and slow recovery. This proposal is biologically plausible and is supported by cross-sectional and longitudinal evidence of stress-injury associations in analogous populations, including athletes (7) and military trainees (8, 15, 16). However, no study identified in this review has directly tested this bidirectional relationship within a police-recruit cohort using a design (e.g., a longitudinal cohort with repeated physical and psychological measures) capable of establishing temporal precedence or causal direction.

Accordingly, this review treats the bidirectional physical-mental health relationship in police recruit training as a hypothesis warranting direct longitudinal investigation, rather than as a confirmed finding. Expressions implying that the existing evidence “confirms”, “leads to”, or “results in” this relationship are avoided throughout this review, since the underlying evidence is observational, cross-sectional, or drawn from populations other than police recruits.

5. Contributing and Differentiating Factors

Police training programmes vary considerably across jurisdictions in ways that plausibly affect the health outcomes summarised above, although this variation has rarely been studied directly as a contributing factor within a single comparative design. Reported or plausible sources of variation include: total academy duration (from a few weeks to over a year); entry fitness and medical-screening requirements; residential versus non-residential arrangements (which affect sleep environment, social support, and infection-

transmission risk); climate and environmental conditions during outdoor physical training; overall training-load structure and periodisation; and the accessibility of on-site healthcare, including confidential mental health services. Where a specific study is cited for one of these factors (e.g., climate conditions in a Tunisian cadet cohort (12), or residential-versus-field-training sleep regularity in a United States academy (20)), this is noted; where no direct study exists, the factor is presented as a plausible source of cross-programme heterogeneity rather than a demonstrated determinant.

Sex- and gender-specific findings remain sparse. Where reported, female recruits have shown higher overall injury rates than male recruits within the same academy (13), and female military recruits have shown reduced stress-fracture incidence following calcium and vitamin D supplementation (17); several of the mental health studies identified larger symptom-prevalence differences among women (22). Most of the reviewed literature, however, did not report outcomes disaggregated by sex or gender, or drew on predominantly or exclusively male samples (12), representing an identified under-representation rather than an absence of sex-based effects.

6. Prevention and Support Strategies

The strategies below are organised by the strength of evidence supporting them, distinguishing evidence-based recommendations (supported by a controlled or comparative study, whether in recruits or an analogous population) from expert or consensus proposals (plausible but not directly tested).

6.1 Training-load management (evidence-based, recruit and analogous evidence)

Progressive, monitored increases in training load, combined with structured injury surveillance and feedback to training staff, were associated with a substantial reduction in musculoskeletal injury incidence across successive recruit cohorts at one police academy (12). Periodised training-load management has also reduced injury incidence in military recruit cohorts (8, 15, 16). Feasibility in residential academy settings depends on the availability of routine injury data collection and staff time to act on it; this is achievable with modest administrative investment and does not require specialist clinical staffing.

6.2 Psychological skills training (evidence-based, but effect sizes are outcome-specific)

Structured psychological skills curricula stress management, emotional regulation, cognitive restructuring, mindfulness, and graduated exposure to distressing content have shown a statistically significant moderate effect on

depression and anxiety in a meta-analysis of controlled trials in police personnel, but no statistically significant effect on resilience or perceived stress in the same synthesis (24). This should be presented to training institutions as a targeted, outcome-specific benefit rather than a general resilience solution. Proactive delivery before high-stress training phases is preferable to reactive crisis response, based on the timing rationale used in the reviewed intervention studies, although this timing effect has not itself been directly compared in a trial.

6.3 Cultural and systemic change (expert-proposed; plausible but not directly tested in recruits)

Reducing mental health stigma within police training organisations is widely proposed in the policing literature as requiring visible leadership commitment and sustained cultural change, framing mental health as a component of professional and operational fitness rather than weakness. Peer-support programmes, destigmatisation initiatives, and psychologically safe environments where recruits can disclose health difficulties without fear of programme exclusion are structural prerequisites proposed by experts in this field; we identified no controlled study directly testing these interventions within the recruit-training phase, and they are presented here as plausible, expert-informed proposals rather than as evidence-based recommendations.

6.4 Health service access and monitoring (expert-proposed, with some supporting analogous evidence)

Police training institutions require accessible, confidential and culturally competent physical and mental health services. Embedded welfare officers, occupational health clinicians, peer-support networks, and digital or telehealth options are proposed to expand access; routine monitoring of injury rates, validated wellbeing measures, and sleep and fatigue indices is supported by the injury-surveillance evidence summarised in Section 3.1 (12, 13), though the mental health monitoring component specifically has not been directly evaluated in a recruit cohort. Feasibility varies by setting: routine injury and fitness monitoring is already standard in most academies and is a low-cost extension of existing practice, whereas confidential, on-site psychological services require dedicated staffing and may be harder to implement in smaller or rural training academies with limited budgets; phased or shared-service models (e.g., regional telehealth provision) may be a more feasible starting point for such settings.

7. Discussion

This review indicates that police recruit training is associated with a meaningful physical and mental health burden,

most clearly documented for musculoskeletal injury, and less extensively but still credibly documented for sleep disruption, occupational stress, anxiety and depressive symptoms. A central finding of this review, distinct from the underlying health-outcome findings themselves, is evidentiary: direct, recruit-specific research remains substantially outnumbered by research on serving officers, military recruits, and other analogous populations, and the two evidence bases should not be treated as interchangeable.

The proposed reciprocal relationship between physical and mental health during training (Section 4) offers a plausible organising framework for academy programme design, but it remains a hypothesis rather than an established finding in this population, and should be labelled as such in any future institutional guidance drawing on this review.

Systemic barriers, particularly mental health stigma and the normalisation of distress, are frequently proposed in the wider policing literature as reinforced mechanisms of professional selection and socialisation rather than incidental features of training culture; this proposal is plausible but, again, has not been directly tested within the recruit-training phase in the studies identified here.

8. Limitations

- **Recruit-specific evidence base:** only eight of the twenty-four sources cited in this review report data collected directly from police recruits, cadets or trainees; conclusions drawn primarily from analogous populations (military recruits, serving officers, paramedics, athletes, students) are explicitly labelled as indirect throughout, but the overall evidence base for recruit-specific claims remains thin.
- **Single-reviewer screening:** titles, abstracts and full texts were screened by one reviewer without independent dual verification, introducing potential selection subjectivity that a second, independent reviewer might have reduced.
- **Language restriction:** only English-language publications, or non-English publications with a validated translation, were eligible, which may have excluded relevant literature published in other languages, particularly from non-Anglophone policing systems.
- **Database and search limitations:** five databases were searched with a keyword-and-thesaurus strategy rather than a fully reproducible, database-specific structured search string; publication bias toward statistically significant or novel findings cannot be excluded, and grey literature and unpublished theses were not systematically searched.
- **Heterogeneous outcome definitions:** musculoskeletal injury was defined and measured inconsistently across studies (medical-attention injury,

insurance claims, time-loss injury, per-1000-training-hours incidence versus period prevalence), and mental health outcomes were assessed with a range of unstandardised or setting-specific instruments, precluding quantitative pooling.

- **Reliance on indirect populations:** where recruit-specific evidence was unavailable, findings from military, medical, athletic or serving-officer populations were incorporated for context; while flagged throughout, this practice necessarily limits the directness of some conclusions, particularly regarding contributing factors (Section 5) and cultural/systemic prevention strategies (Section 6.3).
- **Absence of formal risk-of-bias assessment:** no single risk-of-bias or critical-appraisal tool was applied uniformly across all included sources, consistent with the critical-review design (Section 2.1); the certainty of the recruit-specific evidence base is judged, on a narrative basis, to be low to very low, given small samples, predominantly cross-sectional or single-site designs, and the general absence of validated diagnostic (as opposed to screening) instruments for mental health outcomes.

9. Conclusion

Police recruit training coincides with meaningful risk to physical and mental health, most clearly documented for musculoskeletal injury and, with a smaller but growing evidence base, for sleep disruption, occupational stress, anxiety and depressive symptoms. The available recruit-specific evidence, while still limited in volume, methodological diversity and geographic spread, is consistent with the broader literature on analogous high-demand training populations and supports continued attention to training-load management, targeted psychological skills training, and accessible health services during the training phase.

This review does not confirm a causal or bidirectional physical-mental health relationship in police recruits; this remains a hypothesis requiring direct longitudinal investigation (Section 4). Future research should prioritise recruit-specific, longitudinal cohort designs using validated diagnostic and injury-surveillance instruments, tracking recruits from pre-training entry through academy completion and into early operational deployment, with adequate representation of female, minority and non-traditional recruit cohorts, in order to establish the evidence base that institutional policy in this area currently lacks.

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Authors' contributions

All authors contributed equally and approved the final version of the manuscript.

Compliance with ethical standards

Conflict of interest

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Ethical issues

Not applicable. This review did not involve human participants, human data, or human tissue.

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Data availability

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