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Trauma-Associated Reactions Following Adverse Work-Related Events in Forensic Mental Healthcare Professionals and Correctional Workers – A Systematic Literature Review

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Abstract

Background and aims: This systematic review aimed at synthesising the existing literature on trauma-associated symptomatology (including post-traumatic stress disorder [PTSD], vicarious trauma and compassion fatigue) in order to gain an insight into the scientific status quo concerning work related potentially traumatising experiences in forensic and correctional staff.

Methods: Two databases (APA PsycInfo, PSYNDEX) were used and 22 articles were included in this review, with seven reporting on forensic and 15 on correctional staff. Studies were screened in order to ensure their concurrence with the research questions and the eligibility criteria, and the quality of studies was appraised by means of two different scales.

Results: The majority of the original studies were cross-sectional. Levels of trauma-associated symptomatology showed a wide range, with PTSD-levels being generally high and compassion fatigue and vicarious trauma levels being low to moderate. Exposure to violence emerged as a relevant predictor for PTSD in forensic and correctional staff, with personal (e.g., neuroticism) and organisational factors (e.g., organisational support) influencing levels of trauma-associated symptoms. Avoidant coping mechanisms were associated with higher rates of PTSD and several personal, professional and other coping mechanisms were explored.

Conclusions: The findings suggest that organisations should provide both preventative actions (e.g., pre-trauma training, violence prevention) and supportive resources to staff affected by trauma symptoms (e.g., staff trauma services, supervision). Limitations of this review include the risk of bias concerning paper selection, the methodological limitations of the included studies and the narrative character of the synthesis.

Keywords: PTSD, vicarious trauma, compassion fatigue, trauma, forensic mental health care staff, correctional officer

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Trauma-assoziierte Reaktionen nach aversiven berufsbezogenen Vorfällen bei Forensik- und Gefängnispersonal – Eine systematische Literaturübersicht

Zusammenfassung

Hintergrund und Ziele: Diese systematische Übersicht zielte darauf ab, die vorhandene Literatur zu traumabedingten Symptomen (einschließlich posttraumatischer Belastungsstörung [PTBS], sekundärer Traumatisierung und Mitgefühlsermüdung) zusammenzufassen, um einen Einblick in den wissenschaftlichen Stand der Forschung zu potenziell traumatisierenden Erfahrungen im Arbeitsumfeld von forensischem und Strafvollzugspersonal zu gewinnen.

Methoden: Es wurden zwei Datenbanken (APA PsycInfo, PSYNDEX) verwendet und 22 Artikel in diese Übersicht aufgenommen, von denen sieben über forensisches und 15 über Strafvollzugspersonal berichteten. Die Studien wurden auf ihre Übereinstimmung mit den Forschungsfragen und den Einschlusskriterien überprüft, und die Qualität der Studien wurde anhand von zwei verschiedenen Skalen bewertet.

Ergebnisse: Die meisten der ursprünglichen Studien waren Querschnittsstudien. Die Ausprägung der traumabedingten Symptomatik war sehr unterschiedlich, wobei die PTBS-Werte im Allgemeinen hoch und die Werte für Mitgefühlsermüdung und sekundäre Traumatisierung niedrig bis moderat waren. Die Exposition gegenüber Gewalt erwies sich als relevanter Prädiktor für PTBS bei forensischem und Strafvollzugspersonal, wobei persönliche (z. B. Neurotizismus) und organisatorische Faktoren (z. B. organisatorische Unterstützung) das Ausmaß der traumabedingten Symptome beeinflussten. Vermeidende Bewältigungsmechanismen waren mit höheren PTBS-Raten assoziiert, und es wurden mehrere persönliche, berufliche und andere Bewältigungsmechanismen untersucht.

Schlussfolgerungen: Die Ergebnisse legen nahe, dass Organisationen sowohl präventive Maßnahmen (z. B. Prä-Trauma-Training, Gewaltprävention) als auch unterstützende Ressourcen für Mitarbeiter mit Traumasymptomen (z. B. Mitarbeiternachsorge, Supervision) bereitstellen sollten. Zu den Einschränkungen dieser Übersicht zählen das Risiko einer Verzerrung bei der Auswahl der Artikel, die methodischen Einschränkungen der eingeschlossenen Studien und der narrative Charakter der Synthese.

Schlüsselwörter: PTBS, sekundäre Traumatisierung, Mitgefühlsermüdung, Trauma, forensisches Personal in der psychischen Gesundheitsversorgung, Strafvollzugsbeamte

Background

Forensic mental health care professionals experience potentially distressing events at their workplace. These can originate from both organisational factors (Rodrigues et al., 2021), interpersonal factors among staff (Keller et al., 2022), and interactions with inpatients. In forensic and correctional settings, employees are at high risk to encoun-

ter adverse events such as interpersonal violence (e.g., aggression among inpatients, staff-directed aggression) or auto-aggression by service users (e.g., self-harming and suicidal behaviour, completed suicides). Rodrigues and colleagues (2021) compared the incidence of post-traumatic stress disorder (PTSD) symptoms and the impact of adverse workplace-related events of forensic mental healthcare professionals with general mental health staff, and they report higher risks in forensic mental healthcare institutions. While mental health staff scored moderately on the applied PTSD-scale, many forensic workers exceeded the threshold for diagnosis.

In their analysis of nationally obtained survey data, Fusco and colleagues (2021) report a prevalence rate for PTSD in a sample of Canadian correctional officers of 32,6% (Fusco et al., 2021). In a mixed-methods study, Ireland and colleagues (2022) report that nearly a fifth of the sample of secure forensic hospital staff presented trauma-associated symptomatology assessed by means of the Post-traumatic Stress Disorder Checklist, Civilian version ([PCL-C]; Conybeare et al., 2012). Kerner and colleagues (2019) investigated the relationship between perceived stress, exhaustion and adverse childhood experiences in forensic staff, using the cortisol level after awakening as a measure of stress. Neither the basic cortisol levels nor its increase after awakening were significant predictors of stress or exhaustion, but adverse childhood experiences predicted perceived stress and burnout (Kerner et al., 2019).

The effects of potentially psychologically traumatising event (PPTE) exposure in correctional and forensic staff negatively affects not only the employees' well-being and mental health, but can also have detrimental consequences on patient safety and the organisation itself (Hall et al., 2016). For instance, the rates of absenteeism are higher in the healthcare sector where professionals experience potential exposure to distressing events (Casselman, 2013; Wagner et al., 2024).

Research on trauma-associated responses in forensic or correctional employees in German-speaking countries is scarce.

Aim and relevance of this systematic review

The aim of this review is to summarise the scientific literature on work-related trauma-responses in correctional and forensic staff.

Given that issues emerging from adverse work-related events affect not only the staff, but patients and organisations, the far-reaching relevance of mental health in healthcare staff is undeniable. Both forensic and correctional staff, and patients or service users can benefit from a deeper understanding of potential impacts of adverse workplace events and from staff-supporting interventions. Moreover, considering the difficulties in recruiting and retaining suitable specialist staff in forensic institutions, this research topic is highly relevant for the professional practice and management of forensic institutions.

"Trauma" in the scientific literature

The trauma-associated concepts relevant to this review of the literature are post-traumatic stress disorder (PTSD), vicarious trauma and compassion fatigue. "Trauma" depicts a spectrum of potential reactions to one or more stressful event(s) that lead(s) to emotional and behavioural changes within the individual (Cloitre, 2020; Figley et al., 2017). PTSD is often equated with the concept of trauma and describes a complex of symptoms that can occur after the direct or indirect exposure to adverse or straining events outside of the typical human experience. Officially acknowledged as a mental disorder diagnosis in the DSM-III from 1980 (APA, 1980), PTSD became an increasingly relevant concept in the scope of psychological research. In line with the subsequent editions of the DSM, the PTSD criteria changed and evolved. The DSM-5 (American Psychological Association [APA], 2013) and the ICD-11 (World Health Organization [WHO], 2022) both define diagnostic criteria for the now well-established phenomenon of PTSD, with the ICD-11 including the novel diagnosis of complex PTSD (CPTSD), a form of trauma that involves the experience of multiple or chronic traumatic events (Cloitre, 2020). In the literature, CPTSD is mostly associated with individuals with experiences of "childhood sexual abuse and domestic violence" (Cloitre, 2020, p. 1) and requires either an extraordinarily dreadful event or several traumatic exposures. In the ICD-11, PTSD is allocated to disorders specifically associated with stress (WHO, 2022). Both, the ICD-11 (WHO, 2022), and the DSM-5 (APA, 2013), define a cut-off value above which an individual meets the diagnostic criteria for PTSD. The onset of symptoms can vary greatly in relation to circumstances of the traumatic event(s) and neurobiological and psychosocial risk factors in the traumatised individual (Carvajal, 2018). In the ICD-11 (WHO, 2022), the key characteristic of PTSD is re-experiencing fear, whereas the DSM-5 (APA, 2013) formulates a broader range of symptoms to characterise the diagnosis (O'Donnell et al., 2020). Out of the trauma-associated concepts explored in this systematic review, PTSD is the most clearly defined concept in the relevant literature.

There are multiple established diagnostic instruments to screen for symptoms of PTSD: Self-assessment scales (e.g., the PCL-5; Blevins et al., 2015), the Impact of Event Scale – Revised [IES-R]; Weiss, 2007) and interviews (e.g., the Clinician-Administered PTSD Scale for DSM-5 [CAPS-5]; Weathers et al., 2013) can be applied depending on the purpose of the assessment.

Vicarious trauma describes the experience of trauma-like symptoms in therapists who work with traumatised people (McCann & Pearlmann, 1990). By hearing about traumatic events retold by a client or service user, the person exposed to the story (e.g., a nurse, a therapist, or a correctional staff member) might experience symptoms resembling PTSD-associated symptoms (Pirelli et al., 2020). The prevalence of PTSD is higher in prisoners than in the general population (Facer-Irwin et al., 2019), increasing the probability for forensic staff of being in contact with traumatised clients and hearing about their traumatic experiences. Unlike the broader concept of PTSD, vicarious trauma focuses on the aspect of hearing about traumatic incidents in other people's

lives. Hence, it describes the aspect of the A criterion for PTSD in the DSM-5, namely, that it is not required that the individual has experienced trauma (APA, 2013). Indirect trauma, secondary traumatisation and vicarious trauma can be understood as synonyms for the same underlying phenomenon.

Vicarious trauma can be appraised with different questionnaires, for example with the Vicarious Trauma Scale ([VTS]; Vrklevski & Franklin, 2008), the Trauma and Attachment Belief Scale ([TABS]; Pearlman, 2003) or scales associated with the concept of secondary traumatic stress (e.g., secondary traumatic stress scale ([STSS]; Bride et al., 2004) and compassion fatigue (e.g., Professional Quality of Life Scale [ProQOL]; Stamm, 2010).

Compassion fatigue emerged as a derivative of Secondary Traumatic Stress (STS) and describes the experiences of individuals indirectly traumatised through their provision of support to primary trauma victims (Figley, 1993). A defining characteristic of compassion fatigue is the sudden onset of symptoms, unlike burnout, which manifests gradually (Maslach & Jackson, 1981). People in caregiving roles for traumatised individuals often exhibit a strong inclination to mitigate the suffering of others, leading to an intricate balance of empathy and objectivity (Todaro-Franceschi, 2013). This compassion-driven approach can result in multiple behavioural, emotional, and physical symptoms, including but not limited to, emotional stress processing difficulties, compromised empathy-objectivity equilibrium, sleep disturbances, frequent headaches, and heightened anxiety (Todaro-Franceschi, 2013). Healthcare practitioners afflicted by compassion fatigue often exhibit signs of disengagement, marked changes in clinical practice, and may even contemplate leaving the profession altogether, echoing the trajectory observed in vicarious traumatisation (Sorenson et al., 2017). Compassion fatigue has shared characteristics with vicarious trauma, PTSD and burnout, and thus can be regarded as an umbrella term uniting different facets of concepts from the trauma-spectrum (Rivera-Kloppel & Mendelhall, 2023). In some studies, the terms compassion fatigue, STS and vicarious trauma are even employed interchangeably.

In occupational contexts, the compassion fatigue-subscale of the ProQOL is the gold standard for measuring compassion fatigue. The IES-R is another broadly applied assessment instrument for compassion fatigue (Bride et al., 2007).

Burnout, although highly relevant in the context of work-related strain in forensic professions, is not specific to trauma-related phenomena and is not covered in this review. Burnout can be the consequence of cumulative strain at the workplace and symptoms can amass progressively (Maslach & Jackson, 1981), whereas the emergence of vicarious trauma is caused by working with traumatised individuals (McCann & Pearlmann, 1990) and is known for a rather sudden onset (Pirelli et al., 2020). Per definition, burnout and appearances of the trauma-spectrum clearly differentiate by the occurrence of a potentially traumatising event that triggers the symptoms, which is one major criterion for PTSD.

Research questions

This systematic review intended to elaborate on and discuss the following questions:

RQ1: How prevalent are traumatic reactions (including PTSD, vicarious trauma and compassion fatigue) following adverse work-related events in forensic and correctional settings?

RQ2: Which events can cause traumatic reactions in forensic mental healthcare professionals and correctional workers and how can workplace trauma impact them?

RQ3: Responding to adverse work-related events in forensic and correctional settings

A) Which coping strategies use forensic mental healthcare professionals and correctional workers in order to meet distressing work-related events?

B) Which factors prevent, promote, or influence the occurrence of trauma-associated symptoms in forensic mental healthcare professionals and correctional workers?

Methods

PRISMA-statement and search strategy

We conducted the literature research and report the results following the recommendations of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA; Page et al., 2021). The APA online database "PsycInfo" and the German online data network "PSYNDEX" were searched for papers in English or German that had been published between 2000 and 2024 in a peer-reviewed scientific journal.

Inclusion criteria

Population. Both people working in correctional (i.e., prisons, jails) and forensic (i.e., forensic psychiatric centres, secure forensic units) were included in this review.

Study designs. Articles with different methodological paradigms were reviewed and included. The majority of the included original studies used a cross-sectional design; two studies used a mixed methods design (Hatcher & Noakes, 2010; Ireland et al., 2022).

Assessment of trauma-associated symptomatology. Only studies that used an established assessment tool for PTSD, vicarious trauma, compassion fatigue, or a systematic approach to analyse trauma-associated symptoms were considered for inclusion.

Exclusion criteria

Articles that exclusively investigated burnout or other work-stress related mental health outcomes, but not PTSD, vicarious trauma, and compassion fatigue were not included. Studies conducted in settings where no criminal offenders were given inpatient treatment (such as child advocacy centres or private psychotherapeutic practices), single case studies and COVID-19 related studies were not considered for inclusion. In order to ensure sufficient comparability, studies that were not conducted in Western industrialised countries were not considered; the selected original studies had been conducted in Australia, Canada, France, the Netherlands, Switzerland, the United States, and the United Kingdom. The systematic reviews included in this paper integrated articles from different countries (e.g., Page & Robertson, 2021 included works from Australia, China, Israel, and the USA).

Search of databases

On the basis of the selected search terms, 113 results could be identified. The shortened version of the list of search terms and search strategies is displayed in figure 1; the full version can be requested from the authors.

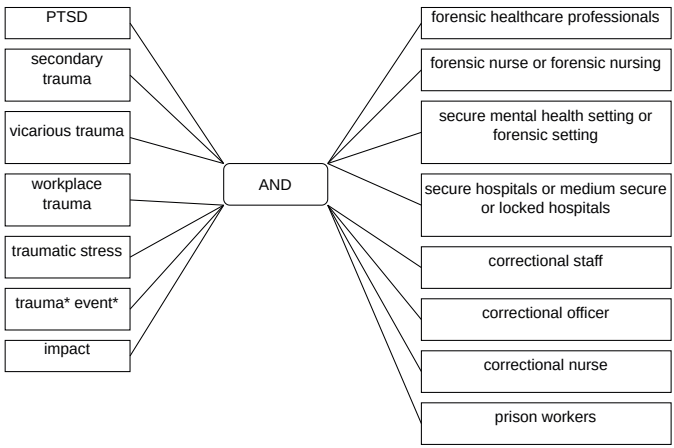

Figure 1

Search terms and search strategy

Titles, abstracts, and keywords were checked for relevance to the research questions. After removing duplicates, the abstracts of the remaining 49 publications were checked again for compliance with the inclusion and exclusion criteria and significant contribution to the research questions. The final selection comprised 20 empirical

studies, one scoping review (Newman et al., 2021) and one systematic review (Page & Robertson, 2021). The process of article identification and selection is depicted in figure 2.

Quality appraisal

The quality of the selected works was assessed by means of the Mixed Methods Appraisal Tool (MMAT, Hong et al., 2018), which provides checklists to appraise the quality of quantitative, qualitative and mixed-methods study designs. For the included systematic reviews, the Critical Appraisal Skills Programme (CASP, casp-uk.net, 2023) was used. The limitations of the included studies are addressed in the Discussion section.

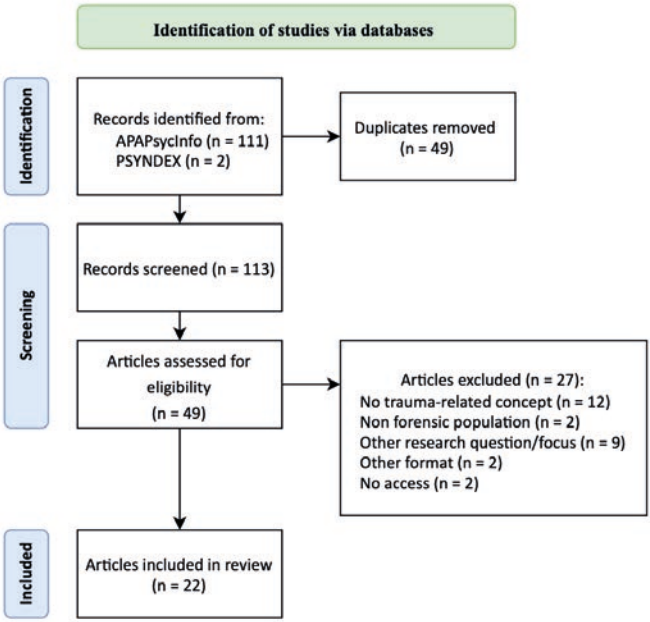

Figure 2

PRISMA flow diagram of article identification and inclusion

Results

The aims and key findings of the included studies are displayed in table 1 and table 2. The main findings will be compared and discussed in the following section.

Table 1

Study characteristics of research conducted in forensic settings

first author, year, origin	study design	sample size n = ...	aim	assessment of trauma-associated symptomatology	key findings
Cramer, 2020, UK	cross-sectional	170	To a) assess prevalence of depression, anxiety, distress, post-traumatic stress (PTS) and subjective well-being and b) to investigate Coping Self-Efficacy (CSE) and Need for Affect (NFA) as factors associated with mental health outcomes in staff	PCL-C	Nonclinical level of post-traumatic stress symptoms (+average levels in other assessed mental health symptom categories); negative association of approaching coping-style with PTS-symptoms, positive association of avoidant coping-style with PTS-symptoms
Ireland, 2022, UK	mixed-methods design containing: a) Systematic Literature Review (46 articles) b) Delphi study c) forensic hospital staff (n=153)	153	To assess prevalence and impact of stressful events in a forensic hospital setting	PCL-C, ProQOL	Positive PCL-screen in 19.6% of the sample; Significant predictors of trauma symptoms: Higher levels of secondary trauma, lower experienced safety, lower resilience; No significant difference of overall trauma rating related to sex of staff
Jankovic, 2021, the Netherlands	cross-sectional	353	To investigate associations of big 5 personality traits and perceived violence with PTSD-symptoms	self-rating inventory for posttraumatic stress disorder (SRIP, Hovens et al., 2002)	Association of increased levels of PTSD and neuroticism with heightened verbal workplace violence; in high conscientiousness individuals: positive association of physical violence exposure with PTSD-symptoms, in low agreeableness individuals: negative association of physical violence exposure with PTSD-symptoms

first author, year, origin	study design	sample size n = ...	aim	assessment of trauma-associated symptomatology	key findings
Lee, 2015b, Australia	cross-sectional	before = 97 after = 107	To compare measures of posttraumatic stress and distress in forensic mental health nurses prior to and after a case of double-homicide	PCL-C	No significant difference in PTSD-rates comparing before and after incident measures; Heightened PTSD-risk for nurses working on the unit where the homicides had taken place
Newman, 2021, Australia	scoping review	16 (number of articles)	To explore the extent and impact of workplace trauma concerning forensic mental health nurses	vicarious trauma scale (VTS, Vrklevski & Franklin, 2008), PCL-C, ProQOL	PTSD-symptomatology in 24% of sample (reported by two studies), diagnosable PTSD in 10% of sample (reported by one study), High levels of VT in 27.4% of a sample of forensic mental health nurses (reported by one study); Types of workplace trauma: physical violence, verbal abuse, self-harming behaviour in inpatients, sexual violence Frequently named effects of workplace trauma: psychological distress, requiring psychological support, decreased feelings of safety in the workplace

first author, year, origin	study design	sample size n = ...	aim	assessment of trauma-associated symptomatology	key findings
Lee, 2015a, Australia	cross-sectional	196 (97 forensic, 99 mainstream)	To compare exposure to inpatient aggression and work stress between general mental health and forensic nurses, to investigate factors influencing PTSD- symptoms	PCL-C	No significant difference in prevalence rates of PTSD between forensic and general mental health care nurses; PTSD-rates assessed with different scoring methods: forensic nurses: 12/17% general mental health nurses: 16 -18% Predictors of hyperarousal symptoms: increased staffing stress, frequency of aggression, hours of aggression management courses attended during employment, last participation in aggression management course
Rodrigues, 2021, Canada	cross-sectional	633	To compare forensic and non-forensic nurses regarding PTSD-prevalence and exposure to critical incidents in the workplace	PCL-5	Statistically significant difference in prevalence rates of PTSD between forensic and non-forensic nurses (forensic nurses: 22%, non-forensic nurses: 11%); Exposure to a) more critical events b) more types of critical events in forensic staff; Predictors of PTSD: employment in forensic unit, direct exposure to critical events, chronic stressors, workload

Abbreviations: PCL-C = PTSD Checklist - Civilian Version (Conybeare et al., 2012), PCL-5 = PTSD Checklist for DSM–5 (Blevins et al., 2015); ProQOL = Professional Quality of Life Scale (Stamm, 2010). Note: Lee, 2015a and Rodrigues, 2021: forensic and non-forensic staff

Table 2

Study characteristics of research conducted in correctional settings

first author, year, origin	study design	sample size n = ...	aim	assessment of symptomatology	key findings
Boudokha, 2013, France	cross-sectional	240	To investigate correctional officer BO and PTSD, to establish risk profiles for developing PTSD based on BO subscales	IES-R	High rates of PTSD-symptoms in sample; Victimisation and stress level positively associated with PTSD-measure; Risk profile for PTSD: emotional exhaustion, stress, and depersonalisation differentiate high vs low risk profile
Carleton, 2018, Canada	cross-sectional	5.813 overall sample (no indication of proportion of correctional workers given)	To estimate levels of mental disorders (including PTSD) in Canadian PSP	PCL-5, LEC-5	29.1% positive screens in correctional workers (drawn from a sample of PSP)
Cassidy, 2019, UK	cross-sectional	211	To investigate the influence of prior experience of cases of suicide in custody on PTSD-rates in correctional workers	Trauma Symptom Index (TSI, Briere, 1995)	Clinical PTSD rates in correctional workers involved in inmate suicides: 31.8%
Easterbrook, 2022, Canada	longitudinal	265	To appraise mental health levels (including PTSD) in correctional officers, to explore potential protective factors for menstrual health	PCL-5	2.4% clinical PTSD in Canadian correctional staff

first author, year, origin	study design	sample size n = ...	aim	assessment of symptomatology	key findings
Harney, 2021, USA	cross-sectional	5.500	To explore problem-focused and avoidant coping (alcohol abuse) in relation to PTSD rates in correctional officers	PCL-C	Problem-focused coping associated with lower PTSD and fewer intentions to leave profession; alcohol abuse associated with higher PTSD-rates; Exposure to violence significantly increases PTSD levels
Hatcher, 2010, Australia	mixed methods	48	To explore VT, CF, CS and BO in sex offender treatment providers, to investigate the role of work-related factors, coping, collegial support in experience of trauma-associated symptomatology	ProQOL, IES-R, qualitative questions (coping, collegial support)	Low PTSD prevalence assessed with quantitative measures, qualitative findings indicate cognitive schema changes (VT); Effects of work: Altered perceptions of humanity and self, hypervigilance, increased suspicion; Professional, personal, and other coping strategies existent in sample
Kunst, 2009, the Netherlands	cross-sectional	151	To investigate influences of type D personality and exposure to inmate aggression on PTSD in correctional workers	SRIP (Self-rating Inventory for PTSD, Hovens et al., 2002)	Peer-aggression associated with higher PTSD than inmate-aggression; Type D personality associated with higher PTSD
Lavender, 2021, USA	cross-sectional	420	To explore associations of unit and shift variables with PTSD-levels in correctional officers	PCL-5	27.2% clinical PTSD rates in correctional officers; Time spent with service-users, facility type (men's only) increases PTSD severity
Lerman, 2021, USA	cross-sectional	4.300	To investigate associations of violence-exposure in corrections with PTSD and suicide risk	PTSD Checklist PCL-2, primary care PTSD scale (PC-PTSD, Fox et al., 2012)	34.3% of correctional staff reported PTSD intrusions; Workplace violence and lack of organisational support associated with increased PTSD and suicide risk

first author, year, origin	study design	sample size n = ...	aim	assessment of symptomatology	key findings
Munger, 2015, USA	cross-sectional	205	To assess rates of VT/ STS in correctional nurses	ProQOL	Low to medium STS risk in correctional nurses; Exposure to workplace violence increases STS risk
Page, 2021, UK	systematic review	19 papers included	To investigate severity and predictors of work-related distress in correctional staff	Various (Systematic Review)	Lower physical health, insecure attachment, work-related distress and client recidivism increase secondary trauma and burnout
Ricciardelli, 2023, Canada	cross-sectional	980	To a) assess prevalence and frequency of correctional-specific potentially psychologically traumatising event (PPTE) exposures, b) estimate associations of PPTEs with mental health symptoms	PCL-5	Exposure to most PPTEs in majority of staff members (“having been directly threatened or been the subject of abusive language from an inmate/client” as most common exposure in 94.6% of sample being associated with a positive PTSD-screen) Correctional professionals with direct client contact: higher PPTE-exposure than professionals with rather indirect contact; Hypothetical abolition of all PPTEs would lower PTSD incidence by 80.1%
Taylor, 2021, USA	cross-sectional	245	To compare problem-focused with emotion-focused coping strategies regarding PTSD-rates in correctional officers	PCL-5	Problem-focused coping associated with lower PTSD, emotion-focused associated with increased PTSD; Adverse childhood experiences, exposure to violence, injury, and death increase PTSD severity

first author, year, origin	study design	sample size n = ...	aim	assessment of symptomatology	key findings
Fusco, 2021, Canada	cross-sectional	1.308	To compare mental health measures (including PTSD) between correctional officers and wellness service staff	PCL-5	Higher PTSD in correctional officers (32.6%) compared to wellness service staff (17.2%); Increased PPTEs associated with higher PTSD rates
Vig, 2020, Canada	cross-sectional	592	To explore associations of perceived social support with PTSD and MDD (major depressive disorder)-levels	PCL-5, LEC-5	Higher perceived social support associated with lower PTSD and MDD rates

Abbreviations: IES-R = Impact of Event Scale, Revised (Weiss, 2007), LEC-5 = Live Events Checklist for DSM-5 (Weathers et al., 2013), PCL-C = PTSD Checklist - Civilian Version (Conybeare et al., 2012), PCL-5 = PTSD Checklist for DSM-5 (Blevins et al., 2015); PPTEs = Potentially Psychologically Traumatising Events, PSP = Public Safety Personnel, ProQOL = Professional Quality of Life Scale (Stamm, 2010), STS = Secondary Traumatic Stress, VT = Vicarious Trauma. Note: Fusco, 2021 and Vig, 2020: PSP samples

Discussion

Prevalence rates of trauma-associated symptomatology in forensic and correctional staff

The reported rates of PTSD are high in some studies (e.g., 34.3% in Lerman et al., 2021), but not in others (e.g., in Cramer et al., 2020). PTSD-levels appear to be higher among correctional staff with a bigger range of rates reaching from 2.4% (Easterbrook et al., 2022) to 34.3% (Lerman et al., 2021), than among forensic staff (Cramer and colleagues, 2020: non-clinical levels of PTSD-symptoms; Ireland and colleagues, 2022: higher rates of presumptive PTSD diagnoses in forensic staff). The scoping review by Newman and colleagues (2021) shows varying rates of PTSD in forensic mental healthcare professionals (Newman et al., 2021). High levels of compassion fatigue were associated with role problems (Hatcher & Noakes, 2010) and being the supervisor of a recidivistic inpatient (Lewis et al., 2013 in Page & Robertson, 2021). Vicarious trauma was practically not found in some samples (Hatcher & Noakes, 2010), whereas other studies report medium levels without clinical relevance (Lauvrud et al., 2009 in Newman et al., 2021; Munger et al., 2015). Positive shifts in cognitive schemas and psychological resilience (Hatcher & Noakes, 2010) were observed among treatment providers for sex offenders. Psychological resilience is described in the literature as "the ability to recover, type of functioning that characterizes the individual [referring to personal attitudes and conducts which aid maintaining healthy functioning], capacity to bounce back [i.e., supporting personal growth processes, defying hardship], dynamic process evolving over time [suggesting that resilience may be understood as a trait evolving over time in accordance with one's personal history], positive adaptation to life conditions" (Sisto et al., 2019). As a protective factor for PTSD (e.g., Lee et al., 2014), psychological resilience could play a promising role in developing mental health interventions for individuals confronted with psychological trauma. The considerable range of prevalence rates of trauma-associated symptomatology might be due to the use of different measurement instruments based on diverging conceptualisations of psychological trauma.

Organisational variables and trauma-associated symptomatology in forensic and correctional staff

Organisational support, such as peer support and supervision, were found to potentially lower PTSD symptoms in correctional staff, but its effectiveness varied between studies (Harney & Lerman, 2021; Lerman et al., 2021; Vig et al., 2020). According to Rodrigues et al. (2021), working at a forensic unit compared to a general psychiatric service correlates with an increased exposure to a wide range of critical incidents,

leading to heightened PTSD-rates in staff. In contrast, Lee and colleagues (2015b) found no statistically significant difference in PTSD rates between forensic and general mental health nurses. The perception of safety in the forensic facilities turned out to influence levels of trauma-symptoms as well (Ireland et al., 2022). These results can encourage organisations to foster a comfortable atmosphere and enhance staff's sense of feeling safe at the workplace. Staff climate has not been discussed in any of the included studies except in Kunst and colleagues (2009), where peer-violence as a risk-factor for PTSD was explored. Collegial support (Hatcher & Noakes, 2010), peer support interventions (e.g., Harney & Lerman, 2021; Rodrigues et al., 2021; Vig et al., 2020) and regular staff meetings (Munger et al., 2015), on the other hand, were suggested as potential protective factors assisting forensic and correctional staff in their daily work and being a resource in critical situations. The role that the size or kind (e.g., high vs low security hospital) of the investigated facilities may have played for the findings is questionable. Most papers included in this review do not provide a comprehensive description of the facilities, such as type or size.

Personal factors and trauma-associated symptomatology in forensic and correctional staff

Personality. Personality traits like neuroticism and conscientiousness were linked to the development of trauma-associated symptoms in a forensic sample (Jankovic et al., 2021), whereas type D personality (Kunst et al., 2009) was reported for the correctional setting. Prior exposure to violence and childhood trauma predicted PTSD in correctional staff (Fusco et al., 2021; Taylor & Swartz, 2021). The findings of Kerner and colleagues (2019) show that adverse childhood experiences predict higher perceived stress and burnout in forensic staff, underlining the relevance of potential factors predisposing individuals to negative consequences of workplace stress.

Gender. Gender was not found to significantly impact levels of trauma-associated symptomatology (Boudoukha et al., 2013; Ireland et al., 2022; Lee et al., 2015b) and was mostly included as a control variable, as was other sociodemographic data. This contrasts findings from previous World Mental Health surveys, which identified female gender as a risk factor of PTSD (Koenen et al., 2017).

Violence exposure and trauma. Exposure to violence and potentially psychologically traumatising events (PPTEs) in the workplace proved to be of overarching relevance both for people working in corrections and in forensic facilities. Being linked with increased risk to develop PTSD (Boudoukha et al., 2013; Harney & Lerman, 2021; Lerman et al., 2021) and identified as key risk factor of PTSD (Ireland et al., 2022; Lee et al., 2015b; Rodrigues et al., 2021), workplace violence emerged as the most significant predictor of PTSD in both occupational groups. Increased levels of exposure to inpatient-aggression are associated with the number of sick leave days (Newman et al., 2024). This should encourage organisations to prevent violence both in order to foster staff wellbeing and to lower rates of absenteeism. In their systematic

review, Steiner and Wooldredge (2015) report on decreased work ability relating to trauma-associated symptomatology and moderate to high associations of PPTE exposure with rates of absenteeism in correctional staff. Staff should feel prepared for the potential occurrence of violent incidents, which can be realised through aggression management training and crisis intervention coaching. Mental health first aid and staff support services should be accessible resources in cases of critical incidents. Forman-Dolan and colleagues (2022) explored correctional staff burnout and possible interventions in a two stage review, reporting on mindfulness-based stress reduction (MBSR) interventions, group and resilience training, psychoeducation and programmes specifically tailored to burnout-symptoms. Even though referring to burnout, some of these interventions may be applicable in correctional and forensic hospital staff affected by trauma-associated symptomatology. Cassidy and Bruce (2019) appeal for de-stigmatisation of mental health issues among correctional staff. To conclude, except for exposure to critical incidents (especially violence of different kinds), no other factor appeared to majorly influence the development of trauma-associated symptomatology. Instead, multiple factors (intra- and interpersonal factors, organisational conditions) moderated the development of trauma-associated symptomatology.

Cumulative trauma. The role of cumulative traumatic-exposures in correctional and forensic workplace settings is yet to be investigated by future research as well, as forensic and correctional staff can be confronted with repeated experience of diverse PPTEs, putting them at higher risk to exceed the threshold for clinical levels of trauma-associated symptomatology (Geronazzo-Alman et al., 2017).

Coping. Only a few studies on coping could be found, and only one paper (Cramer et al., 2020) explored coping in forensic staff. Problem-focused coping, such as seeking social support and planning, was consistently associated with reduced PTSD symptoms in correctional workers (Harney & Lerman, 2021; Taylor & Swartz, 2021). Avoidant coping, particularly alcohol abuse, was linked to higher PTSD symptoms (Harney & Lerman, 2021). A wide range of professional, personal, and other coping strategies were identified qualitatively by Hatcher and Noakes (2010), aligning with quantitative findings on the importance of coping. In addition, the authors note that while problem-focused strategies like supervision and peer support were beneficial, they were not enough to prevent negative health outcomes among staff (Hatcher & Noakes, 2010). Beyond the studies focusing on coping included in this review, Kerner and colleagues (2019) suggested that the lower physiological stress levels reported in their study could be due to a successful application of coping mechanisms in the investigated sample.

Limitations of systematic literature reviews

Selection and publication bias. The process of paper search is related to a selection and a publication bias, because studies with statistically significant results are more likely to be published (Song et al., 2009). Possible sources of bias are the used search words and the restriction to two databases (APA PsycInfo, PSYNDEX).

Inclusion/exclusion criteria and the role of burnout. Some of the inclusion criteria used in this review assumed an underlying distinction between different concepts of work-related strain. The conceptual differentiation of burnout, PTSD, vicarious trauma, and compassion fatigue ignores potential overlapping symptoms of these constructs, or a possible influential role of burnout for the severity of PTSD symptoms. In a review on associations of workplace violence with PTSD and burnout in nurses, Wang and colleagues (2022) highlight how both burnout and PTSD are associated with workplace violence, with individuals with exposure having two times higher adjusted odds ratios of developing PTSD than persons without workplace violence exposure.

The exclusion of studies that did not use an established diagnostic instrument for trauma symptoms (e.g., the PCL-5) resulted in a selection of mostly quantitative study designs. However, qualitative reports on the topic of interest may be informative, though difficult to evaluate in terms of the required methodological standards. Apart from a few open questions administered in some studies included in this review, only the mixed-methods study by Hatcher and Noakes (2010) provided qualitative data adding to the otherwise predominant survey data of the cross-sectional studies.

Comparing different publications. MMAT and CASP-checklists were used to enhance comparability of the included publications in terms of their methodological characteristics and standards. However, a narrative summary can lead to important aspects of individual studies being omitted and to a simplification of complex research results.

Investigated samples. Even though correctional and forensic psychiatric staff can potentially be exposed to similar distressing events in their workplace, the experience of distinct subgroups of professionals (e.g., nurses, wards, therapists) might differ. With seven studies from forensic hospitals and 15 publications on correctional settings, forensic institutions are underrepresented in this review, highlighting both the need for more research in forensic settings and the necessity to interpret findings from correctional and forensic facilities separately. The publications included in this review exclusively investigated populations from Western industrialised countries. It is beyond the scope of this review to investigate the impact of cultural variables on the wide range of prevalence rates and other findings presented in this review. Still, the healthcare and the penal systems in which the selected studies had been carried out are clearly heterogeneous, and this cannot be ruled out as potential factor limiting the comparability of the findings.

Several studies highlight how exposure to PPTEs and impact differ across occupational positions. Ireland and colleagues (2022), for instance, report how qualified nurses displayed higher PTSD-symptom severity than non-ward-based staff. Fusco and colleagues (2021) also found statistically significantly higher PTSD-rates in correctional officers compared to wellness service staff (in charge of upholding productivity and health and minimising absenteeism in staff), suggesting that proximity to inpatients increases critical exposures which were linked to raised chances of developing PTSD

(e.g., in Boudoukha et al., 2013; Harney & Lerman, 2021; Lerman et al., 2021; Munger et al., 2015).

Future research therefore should examine the extent to which staff groups differ and whether it is reasonable to subsume them in one representative sample of forensic or correctional workers. The gender distributions within the sample played a role in some publications. Especially in correctional officer populations, predominantly male-identified staff was investigated (e.g., in Cassidy & Bruce, 2019; Harney et al., 2021; Lavender & Todak, 2021), which, in the case of the United States, delineates prevailing gender proportions in corrections (Lavender & Todak, 2021). Nursing staff, on the other hand, mostly consisted of female-identified employees (e.g., in Munger et al., 2015).

Limitations of included studies

Study designs. Almost all the articles included in this review of the literature employed cross-sectional survey designs, which results in biases due to self-selection, self-reporting and the danger of non-response. In the majority of the selected articles (with exception of the mixed-methods studies), a presumptive diagnosis or mostly quantitative symptom measures of PTSD, vicarious trauma or compassion fatigue were reported, limiting the extent to which overarching conclusions can be drawn, as data was mostly gained in a uniform way (through established assessment tools for trauma-associated symptomatology) in almost all publications. Ireland and colleagues (2022) argue that not only PTSD-diagnoses should be considered when examining the impact of PPTEs in the forensic workplace, as not all individuals present with PTSD-associated symptoms, but other signs of the effects of straining work-related events (i.e., burnout). More longitudinal research in forensic and correctional staff is needed in order to capture the development of trauma-associated symptomatology over time and to identify protective as well as risk factors which might exert a lasting influence on the onset and the maintenance of trauma-associated mental health outcomes.

Other points of criticism. Participation encouraged through federal programmes like the National Institute for Health and Care Excellence (NICE) initiative to appraise personnel welfare (Cramer et al., 2020) might increase socially desirable answering as well. In some studies, participants rated their experience retrospectively (Fusco et al., 2021; Lee et al., 2015a; Ricciardelli et al., 2023). This can increase the risk of bias, as symptoms experienced by participants might be viewed differently or appear diminished in retrospect. Some researchers faced the difficulty of lack of statistical power due to small sample sizes (Hatcher & Noakes, 2010; Lee et al., 2015a), which reduces the external validity of the findings. Web-based data collection methods were employed in several studies (e.g., in Carleton et al., 2018; Fusco et al., 2021; Lavender & Todak, 2021), limiting accessibility and thus participation. Furthermore, more studies investigating biological markers of work-related stress (see Kerner et al., 2019 for an example) in forensic and/or correctional staff should be conducted in order to gain

multidimensional insides into the effects of distressful events and burden at the workplace.

Résumé

Even if research on trauma-associated symptomatology following distressing events in correctional and especially in forensic settings is scant, this review attempts to provide an overview on this topic. It displays multiple concepts associated with trauma and work related distress, types of potentially traumatising incidents and their impact on the individual as well as protective and risk factors to develop clinical levels of trauma-associated symptomatology. All in all, findings from this review underline the significance of considering personal differences and factors influencing individual vulnerabilities predisposing individuals to mental health issues. Even though the association of several PPTEs with trauma-associated symptomatology was identified across the articles included in this review, rather a big range of PTSD prevalence rates were observed in the examined samples. This highlights how the interaction of factors influencing the manifestation of trauma-associated symptomatology is yet to be understood more profoundly. Furthermore, this review emphasises the importance of distinguishing trauma-associated concepts like PTSD and compassion fatigue, and appeals for an attempt to categorise them on a trauma-spectrum including direct and indirect traumatic exposures and potential responses to PPTEs. With a high number of other studies reporting on negative impacts on mental health and problematic coping strategies in forensic and correctional staff, the issue of mental health and wellbeing in the concerned workplaces presents as an urgent one that requires further scientific efforts and innovative assessment approaches of trauma responses.

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Figures

Figure 2: Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ (Clinical research ed.), 372*, n71. https://doi.org/10.1136/bmj.n71