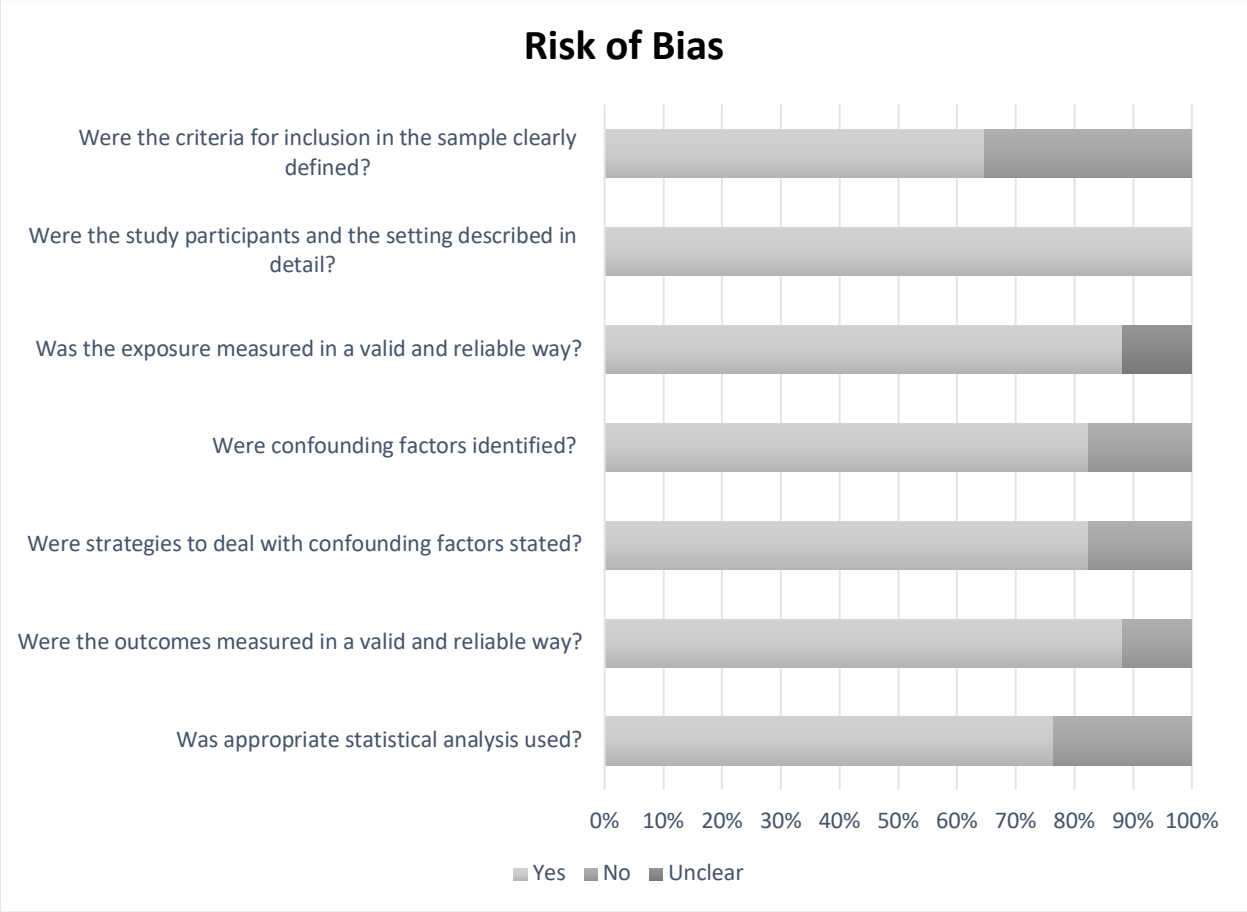
Supplementary Figure 1

Results of the Risk of Bias Analysis



Note. The JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (Moola et al., 2020) was used to assess risk of bias. This tool includes eight questions, each with a yes, no, unclear, or not applicable option. Coding disagreements were resolved through discussion and referencing the manuscript. None of the included studies used a design that compared exposed versus not exposed participants, thus all studies were rated "not applicable" in response to the question "Were objective, standard criteria used for measurement of the condition?" Responses to this question are not reflected in the figure. As seen in the figure, overall risk of bias in the included studies was mixed. The highest risk of bias was observed for use of inappropriate statistical analyses, followed by not identifying and using strategies to reduce the effects of confounders. Low reliability for stressor and outcome measures was operationalized as having alphas $\leq$ .70 for self-report measures, use of single items to reflect constructs, or other information reflecting low reliability. Lack of validity was deemed unclear when the study included a "home grown" measure and validity data was not reported.

Supplementary Table 1

List of Terms Used in the Search of Databases

Construct	Search Terms
First Responders	first responders, emergency responders, firefighters, police, paramedics, EMT, rescue workers, rescue personnel, emergency medical technicians, EMS personnel
Trauma	trauma, trauma exposure, occupational stressors, traumatic events, stressful work events, duty-related trauma exposure, traumatic incidents, traumatology, pathological secondary traumatization, traumatic stress
Mental Health	mental health, sleep disorders, burnout, behavioral risk taking, sexual risk taking, gambling, alcoholism, drug abuse, substance abuse, addiction, anxiety, behavioral health, depression, suicide, post-traumatic stress disorder

Supplemental Table 2

Coping and Appraisal Measures, Variables, and Significant Associations with Outcomes

Reference	**Coping or Appraisal Measure and Variables** (Bolding indicates significant coping or appraisal variable)	**Association of Coping or Appraisal Variables with Outcomes**
Allison et al. (2019)	Brief COPE (Carver, 1997): - **active** (active coping, planning, positive reframing, acceptance) - **passive** (self-distraction, denial, substance abuse, behavioral disengagement, venting, self-blame) - support seeking (instrumental support, emotional support)	Work stress was more strongly associated with depressive symptoms under conditions of (a) high versus low passive coping and (b) low versus high active coping although there were some differences by the stress subscales. No differences for support-seeking coping.
Armstrong et al. (2014)	Coping Response in Rescue Workers (McCammon et al., 1998): - **Cognitive reappraisal of work events** - seeking support and emotional expression - general cognitive reappraisal - self-care	More reappraisal of work events associated with greater severity of PTSD symptomatology.
Beaton et al. (1999)	Coping Responses of Rescue Workers (McCammon et al., 1998): - secondary appraisal in aftermath - behavioral distraction and social support seeking - **cognitive behavioral avoidance and numbing** - foster positive attitudes - cognitive positive self-talk - inward search-philosophical self-contemplation	Greater cognitive behavioral avoidance and numbing was associated with greater PTSD symptoms.
Hruska & Barduhn (2021)	**Meaning Made** constructed from items on the Brief COPE (Carver, 1997): - consisted of 4 items reflecting positive reframing, acceptance, religion, and growth	More occupational stressors but not meaning made were associated with greater PTSD symptom severity; for the model predicting depressive symptoms, higher meaning made, but not occupational stressors, was significantly associated with less severe depressive symptoms.
Ivie & Garland (2010)	**Constructive coping (5 items) & destructive coping** (8 items)	Analyses conducted separately for officers with/out military background. Results were the same for both groups - constructive coping was negatively associated with burnout and destructive coping was positively associated with burnout.
Levy-Gigi et al. (2016)	Regulatory Choice Flexibility: - created from an emotional regulation choice task where adaptive **regulatory choice flexibility** is defined as choosing distraction	Greater regulatory choice flexibility moderated the association between duty-related traumatic exposure and PTSD symptoms but not depressive

	when viewing high emotional intensity pictures to selecting reappraisal when viewing low intensity pictures.	symptoms. Firefighters who could flexibly regulate their choice of regulatory strategy showed no changes in PTSD symptoms over repeated duty-related trauma while those with less flexibility showed elevated PSTD symptoms.
Maran et al. (2018)	Brief COPE (Carver, 1997): - self-distraction - active coping - denial - substance use - emotional support - instrumental support - behavioral disengagement - venting - positive reframing - **planning** - **humor** - acceptance - religion - self-blame	Perceived distress was negatively associated with planning and humor.
Martin et al. (2009)	Coping Inventory for Stressful Situations (Endler & Parker, 1990): - task-oriented coping - emotion-oriented coping - avoidance-oriented coping	Coping was not associated with either partial or full PTSD diagnoses.
McCarty et al. (2007)	**Constructive coping** (5 items) & **destructive coping** (8 items)	Analyses conducted separately for male and female officers. For burnout – results were the same for both groups – constructive coping was negatively associated with burnout and destructive coping was positively associated with coping.
Meyer et al. (2012)	Brief COPE (Carver, 1997): - religious coping - **self-blame** - humor - **using substances to cope** - positive coping - support-seeking - denial	Greater self-blame was associated with higher composite symptoms, more PTSD symptoms, and alcohol abuse. Using substances to cope was associated with greater composite symptoms and alcohol abuse. Self-blame and social support interacted such that the low-social-support-high-self-blame group had higher composite symptoms, PTSD symptoms, and anxiety symptoms compared to other groups.
Ortega et al. (2007)	5 subscales constructed via factor analysis: 1)ACTIVE 2)Socializing 3)Social support 4)Ignoring 5)Moaning and grouching	No significant direct association was found between coping strategies and wellbeing factors.

Nelson et al. (2016)	Well-being Process Questionnaire (Williams & Smith, 2012) - **emotion-focused coping (self-blame, wishful thinking, avoidance)** - action-oriented coping (problem-focused, seeking social support)	Greater emotion-focused coping was associated with more anxiety and depressive symptoms.
Prati et al. (2010)	Survey questionnaire used in the workplace: - **perceived threat appraisals**	A cluster analysis was conducted with risk and protective factors for PTSD. Variables in the cluster analysis included exposure to trauma, peritraumatic distress, perceived threat, self-esteem, and support from colleagues, friends, and family. Two clusters emerged with differences on everything except trauma exposure. Cluster membership predicted: PTSD, use of sleeping pills. Cluster membership did not predict: alcohol intake, smoking. The "non-resilient officer group" had greater perceived threat which predicted more PTSD symptoms and use of sleeping pills.
Sattler et al. (2014)	Adapted from Carver, Scheier, & Weintraub (1989): - problem-focused coping - emotion-focused coping - **disengagement coping**	Disengagement coping had poor reliability but was positively associated with PTSD symptoms.
Skeffington et al. (2017)	Brief COPE (Carver, 1997): - adaptive subscale (active coping, planning, positive reframing, acceptance, humor, religion, emotional support, instrumental support) - **maladaptive subscale** (**self-distraction**, denial, **venting, substance use,** behavioral disengagement, **self-blame**)	Maladaptive coping was positively associated with PTSD symptoms. Of the maladaptive strategies, more self-distraction, venting, substance use, and self-blame was predictive of greater PTSD symptoms.
Setlack et al. (2021)	**Posttraumatic cognitions inventory** (Wells et al., 2019): - Three subscales assess negative cognitions of self, the world, and self-blame for a traumatic event	Higher levels of posttraumatic cognitions underlay the association between first responder workplace violence and past-year threat to life or injury and PTSD, Depression, and anxiety.
Soravia et al., (2021)	**Coping strategies** - **problem-focused coping strategies** - **dysfunctional coping strategies** - **emotion-focused strategies**	Dysfunctional coping and problem-focused coping explained between 37 – 78% of posttraumatic symptoms with dysfunctional coping being the strongest predictor out of the coping strategies.