Canterbury
Christ Church
University

Research Space
Journal article

'Getting on with the job': A systematised literature review of secondary trauma and post-traumatic stress disorder (PTSD) in policing within the United Kingdom (UK)

Foley, J., Hassett, A. and Williams, E.

Abstract.

The aim of this review is to identify and critically examine existing research relating to secondary trauma and Post-Traumatic Stress Disorder (PTSD) within UK police officers. A systematised literature review was conducted which identified twenty studies in police officers from Scotland, England, Wales and Northern Ireland. These studies comprised of terrorist incidents, mass disasters, general policing duties and officers working in rape and child abuse investigations. Key themes emerged regarding understanding the impact of trauma, the influence of police culture and understanding coping mechanisms. It also found a number of methodological limitations within the studies which are likely to have impacted on the results. This review highlighted that trauma in UK policing is still not understood and there is a stigma associated with officers seeking help. Recognising the impact of trauma on police officers and how trauma has affected them is crucial to ensure an effective and compassionate workforce which delivers a better service to the public. It is hoped that this review will address gaps in existing knowledge within the literature, consider implications for practice, as well as recommendations to be taken forward in this crucial area of research.

Introduction.

The concept of secondary trauma has been widely studied over the last thirty years and can be considered as exposure to trauma through the first-hand account or narrative of a traumatic event by another (Cieslak, et al., 2014; Figley, 1995), and has been described as an occupational hazard of working in a caring profession (McCann and Pearlman, 1990; Nimmo and Huggard, 2013). In extreme cases this subsequent cognitive or emotional representation of an event may result in symptoms and reactions that parallel PTSD, such as re-experiencing, avoidance and hyperarousal

(Cieslak, et al., 2014; Figley, 1995). The impact of secondary trauma has been studied within a number of professions such as social/child protection workers (Bride, 2007; Conrad and Kellar-Guenther, 2006), therapists and counsellors (Baird and Jenkins, 2003; Craig and Sprang, 2010; Kadambi and Truscott, 2007; Pearlman and Mac Ian, 1995; Sodeke-Gregson et al., 2013) and medical professionals (Duffy et al., 2015; Kellogg et al., 2018; Regehr et al., 2003), yet few studies relate to policing, or particularly policing within the United Kingdom (UK). There are a number of key concepts that relate to secondary trauma which are frequently used interchangeably (Bober and Regehr, 2006; Newell and MacNeil, 2010; Nimmo and Huggard, 2013; Sabin-Farrell and Turpin, 2003) such as Burn-out (Freudenberger, 1974; 1975; Maslach 1976), Vicarious Trauma (McCann and Pearlman, 1990), Compassion Fatigue (Joinson, 1992) and Secondary Traumatic Stress (Figley, 1995).

Research on secondary trauma in policing has predominately related to studies on those officers that investigate 'non-contact' offences, such as those investigating internet or digital offences against children (Bourke and Craun, 2014; Burns et al., 2008; Burress et al., 2018; Krause, 2009; Perez et al., 2010; Powell et al., 2014). The study of police officers who investigate 'contact' offences such as those who engage with traumatised victims on a daily basis (especially victims of sexual or child abuse) has yet to be properly explored and understood. The impact of this type of work on those who investigate these crimes, often referred to as 'secondary investigators' is an important piece of work to undertake as these are considered some of the most stressful and challenging cases to investigate (Bober and Regher, 2006; Carlier et al., 2000; Dane, 2000; Skogstad et al., 2013) as well as 'high risk' roles within UK policing (College of Policing, 2018; Graham et al., 2020; Hesketh and Tehrani, 2019).

This review will only focus on UK policing and not international research which could be considered relevant to this area of study. This is a deliberate omission as this review seeks to address the gap in the literature regarding understanding the causes of secondary trauma and PTSD in UK policing only.

Methodology.

A systematized literature review was chosen as it seeks to include the key aspects of a systematic review process (detailed search, appraisal and synthesis of available research), but due to their only being one reviewer it cannot be considered a full systematic review (Barr-Walker, 2017; Day and Petrakis, 2017; Grant and Booth, 2009).

Eligibility criteria.

Studies were included based on the following inclusion criteria. They must (a) contain empirical research on either secondary trauma or PTSD; (b) relate to police officers within the United Kingdom (UK); (c) be peer reviewed; (d) examine potential causes of trauma or PTSD, but not treatment; (e) not be mixed population studies (for example police officers and firefighters) and (f) be in the English language. Consideration was given to the potential limitations of only using articles relevant to UK policing and only articles that were peer reviewed (Griffiths and Norman, 2005; Kennedy, 2007), but in order to gain a detailed and critical understanding of the issue being explored within the UK, only research that was relevant to UK policing which had been critiqued and validated by peers was included within this literature review.

Search Strategy.

A Systematized review of the literature was conducted to identify relevant articles. Sixteen social science and medical electronic databases were individually searched, and grey literature was excluded. For each database, advanced searches were used

utilizing relevant Boolean logic search parameters. Speech marks were used to ensure searches did not highlight individual words within the search terms (i.e. not just 'stress' in post-traumatic stress disorder). Four categories of search terms were used as part of the search strategy in order to retrieve relevant literature. These were (1) secondary trauma, (2) secondary trauma and police, (3) post-traumatic stress disorder and (4) post-traumatic stress disorder and police, as well as the variations in their spelling (i.e. PTSD, Posttraumatic stress disorder, post traumatic stress disorder).

These searches initially highlighted 2478 articles on both PTSD and/or primary/secondary trauma in policing. Three additional papers were found after the search was completed but whilst writing up the review (Brewin et al., 2020; Burnett et al., 2019; Gray and Rydon-Grange, 2019), so were added to this literature review. After duplicate records were removed this left 1340 articles which were initially examined through reading the titles and abstracts. In addition, reference lists of identified studies were then manually searched for additional relevant articles. When this screening was completed 235 articles were left to be fully examined for relevance, which were then included or excluded as appropriate using the eligibility criteria. Based on the inclusion criteria, 215 articles were excluded, and 20 articles were selected in the final sample (Figure 1).

Table 1. presents an overview of the Twenty eligible studies, including types of study and design, main findings, strengths and limitations[1].

---

[1] The full table is available from the author upon request.

Figure 1 - PRISMA diagram of database searches.
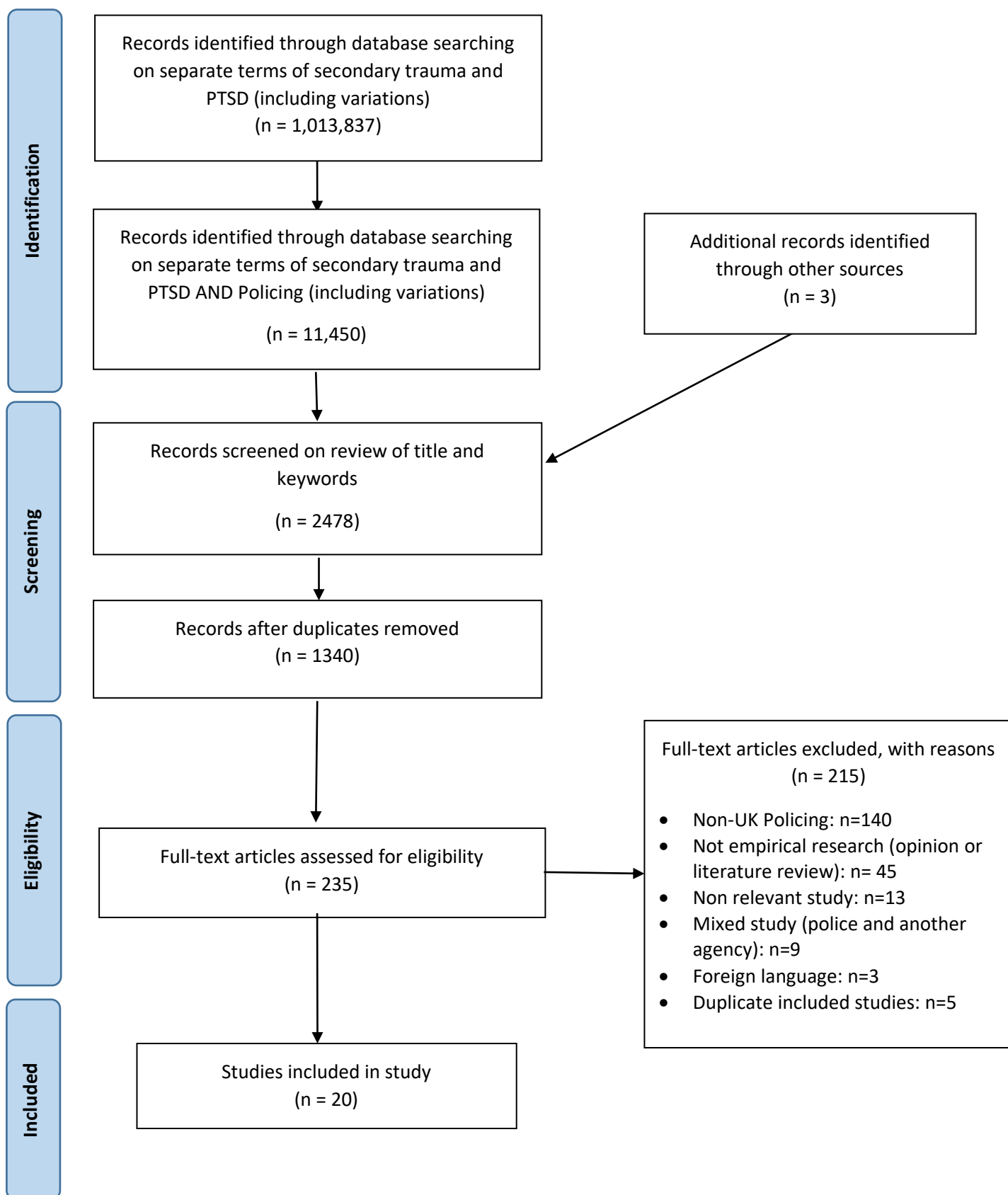
Table 1 - Reviewed studies, design and characteristics

	Author, year and title.	Participants and sample size.	Study design.	Main findings	Strengths	Limitations.
1	**Alexander and Wells (1991).**	71 Scottish officers.	HADS [2] ; EPQ [3] ; IESr [4] ; Flotta/Mortuary Questionnaire; Coping strategy scale.	• Little impact of this disaster on officers involved. • Use of volunteers • Use of debriefing and professional help being available when needed. • Being prepared through education and raising awareness.	This study had pre and post disaster information using the HADS scale.	Use of unvalidated assessment tools (the coping strategy scale and the Flotta/Mortuary Questionnaire).
2	**Brewin, Miller, Soffia, Peart and Burchell B (2020).**	10, 401 UK police officers.	Initial screening question, then ITQ[5].	• Prevalence of PTSD was 8.0% and of CPTSD was 12.6%. • Both disorders were more common in male officers. • CPTSD was more prevalent in lower ranks and those with more years of service.	Large study looking at comparisons between Complex PTSD (CPTSD) and PTSD in UK police officers.	• 7% response rate and potential bias through use of a policing charity for officers that have suffered from physical or psychological harm. • Unclear what police forces responded and what was the sample size within those forces (urban vs rural). • Unclear what roles those officers that responded performed (front line officers vs. office based).
3	**Brown, Fielding and Grover (1999).**	593 English officers.	PES[6]; SSS[7]; WAS[8]; NAEES[9]; GHQ-12[10] and occupational and demographic questions.	• Three types of stressors identified (traumatic, routine and vicarious). • More than 40% of those surveyed scored at or over the threshold for psychological distress. • Impact of Police occupational culture on male officers. • Positive impact of Social support on trauma.	This study was one of the first to look at operational stress in UK police officers.	• Main findings are based on an unvalidated assessment tool (the Policing Events scale) • Unclear how the sample was selected and the roles they perform. • Response bias has not been addressed.

---

[2] Hospital Anxiety and Depression (HAD) Scale (Zigmond and Snaith, 1983).
[3] Eysenck Personality Questionnaire (EPQ; Eysenck and Eysenck,1975).
[4] Revised Impact of Event (IES) Scale (Horowitz et al, 1979).
[5] International Trauma Questionnaire (Cloitre et al., 2018).
[6] Policing events scale (Brown, Fielding and Grover, 1999).
[7] Social support scale (Joseph, Andrews, Williams, and Yule 1992).
[8] World assumptions scale (Janoff-Bulman, 1989).
[9] Negative Attitudes to Emotional Expression Scale (Joseph, Williams, Irwing, and Cannock, 1994).
[10] General Health Questionnaire (Goldberg and Williams, 1988).

#	Study	Sample	Measures	Findings	Strengths / Purpose	Limitations
4	**Burnett, Sheard and St Clair-Thompson (2019).**	605 staff, officers or volunteers from a UK police force.	PSS [11] ; ProQOL [12] ; the neuroticism & conscientiousness subscales of the BFI[13]; MTQ48[14] and 'self-care' questionnaire.	20% of those surveyed suffered from the 'negative effects' of police with males having higher levels than females.	Attempted to identify protective factors in policing against stress and compassion fatigue and sought to measure the impact of shift work; mental toughness; personality factors and 'self-care' on officers, staff and volunteers.	• 12% response rate and the issue of potential bias was not addressed. • Use of unvalidated assessment tools and unclear if relevant to policing.
5	**Duckworth (1986).**	234 police officers involved in the Bradford fire disaster.	GHQ-60.	35% of the officers that received counselling would have met the criteria for PTSD, but after treatment all but 2 officers had scores in the 'likely non-case' status.	An early attempt to understand the effects of trauma on police officers involved in a disaster.	This early study had very few limitations, and those that existed may not have been recognised as an issue in 1986, such as the impact of response bias.
6	**Evans, Pistrang and Billings (2013).**	19 police officers from Birmingham and London.	Semi structured interviews to understand the experiences of both supportive and unsupportive interactions following exposure to traumatic incidents, using thematic analysis.	Three key domains and themes emerged. 1. Dilemmas of talking. 2. The work context. 3. Support outside work.	• Questions were piloted prior to the study commencing. • Consensus approach between authors to agree the main domains and key themes.	• The sampling approach (snowballing) highly likely to have led to bias. • No contrast/comparison between those in the different roles (force, rank, and role) it was unclear what exposure level to trauma was and how 'generalizable' findings are.
7	**Gray and Rydon-Grange (2019).**	78 police 'staff' from sexual and violent offending teams in North Wales.	STSS [15] ; ProQOL; GHQ-12; ECR-R[16]; FFMQ[17]; AAQ-II [18]and CSE[19].	• Only mild or average levels of secondary trauma, burnout and compassion satisfaction with no significant gender differences found. • Psychological resilience significantly associated with decreased levels of secondary trauma, burnout and mental ill-health and increased levels of compassion satisfaction.	Attempted to identify the impact of protective factors in specialist policing team's in relation to secondary trauma and burnout, as well as the moderating impact of compassion on officers, staff and volunteers.	• Does not refer to or breakdown of rank or role, or even police officer, staff or volunteer. • Use of unvalidated assessment tools. • 78 participants used which is below the recommended sample size of 85 as per power analysis.
8	**Hetherington (1993).**	306 road traffic patrol officers from 6 British police forces.	An early attempt at a mixed method study using the impact of events scale, and qualitative data.	• 40% of officers disturbed by a traumatic event. • Denial of trauma due to police culture and that family support was important to deal with trauma.	• This paper looked to try to understand the impact of trauma using mixed methods. • It addresses response bias within the sample (306 responses from 612 officers).	• Quantitative results were basic with little explanation of the findings. • IES was 'abbreviated' and reliability of using the scale in this way has not been explained.

---

[11] Perceived Stress Scale (Cohen, Kamarck, and Mermelstein, 1983).
[12] Professional Quality of Life (ProQOL) scale (Stamm, 2010).
[13] Big Five Inventory (John and Srivastava, 1999).
[14] Mental Toughness Questionnaire 48 (Clough et al., 2002).
[15] Secondary Traumatic Stress Scale (Bride et al., 2004).
[16] Experiences in Close Relationships Questionnaire-Revised (Fraley et al., 2000).
[17] Five Facet Mindfulness Questionnaire (Baer et al., 2006)
[18] Acceptance and Action Questionnaire-II (Bond et al., 2011)
[19] Coping Self-Efficacy Scale (Chesney et al., 2006).

						• The paper does not give a breakdown of gender, rank, experience.
9	**Hurrell, Draycott and Andrews (2018).** .	101 child abuse investigation police officers from England and Wales.	STS; HADS & Brief COPE Inventory[20].	• 35% the officers would meet the criterion for PTSD, 12% meeting the criterion for anxiety and 6% meeting the criteria for depression. • No relationship was found between amount of time in the unit and levels of Secondary traumatic stress (STS.) • A significant relationship was found between both depression, anxiety and both positive and negative coping styles and STS.	• Designed and supported by three police forces. • The scales used were well known and appropriate to research the aims and was short to complete (about 70 questions in total).	• All 43 police forces in England and Wales approached, only 12 agreed to participate, and only 101 officers taking part. • It is unknown what forces took part, the roles that those officers performed as the authors referred to those 'primarily' working in child abuse investigation units. • Non-Response bias was not addressed, although potential response bias was addressed.
10	**MacEachern, Dennis, Jackson and Jindal-Snape (2019).**	63 detectives involved in child protection cases in a UK police force.	Mixed methods study using secondary traumatic stress scale as well as a set of open questions.	• No gender differences in levels of STS. • Half the participants experienced little or no STS. • Qualitative results reported feeling burnt-out; sleep difficulties, altered emotional response to the work and changes in empathy towards complainers and witnesses.	• The sample is homogenous • The qualitative questionnaire was piloted to strengthen validity.	• The author's state that the secondary traumatic stress scale, was 'tailored' to be used on British based police officers although how it was tailored and the validation of such a change is not clear. • Question regarding 'Trauma' was not clarified so the understanding of what this means may vary between officers and impact on the overall results.
11	**Parkes, Graham-Kevan and Bryce (2018a).**	11 officers working in sexual offence investigation in England.	Qualitative study using Interpretative Phenomenological Analysis (IPA).	Coping strategies identified • avoidance through minimising exposure. • cognitively detaching from the offence or victim. • focusing on the process of investigation to shield against personal thoughts and feelings.	• The lead author is clear about her role within the process and aware of 'confirmation bias'.	The analysis of data appears to have only been coded by one researcher, with no reference to any other researchers checking for consistency.
12	**Parkes, Graham-Kevan and Bryce (2018b).**	11 officers working in sexual offence investigation in England.	This qualitative study is a follow on from the earlier study using a two-stage interpretative model of analysis.	• This study had a number of themes and subthemes, the largest being the 'impact of the role'.	The original sample was expanded to eight officers during the study to explore new themes that were emerging.	• This study (and not the previous study) clarifies that 1 of the participants was not currently involved in working with sexual offences.

---

[20] Brief COPE Inventory (Carver, 1997).

					• The analysis of data appears to have only been coded by one researcher, with no reference to any other researchers checking for consistency.	
					• No reflexivity discussed in this study (but discussed in earlier study).	

| 13 | **Sheard, Burnett and St Clair-Thompson (2019).** | 602 Police officers from a North Eastern police force. | PSS, ProQOL and the self-rating anxiety scale. | • Shifts workers had significantly higher levels of perceived stress.
• 24/7 officers reported higher levels of compassion fatigue and lower levels of compassion satisfaction.
• Resolution without deployment officers reported high levels of secondary traumatic stress.
• Firearms officers had lower levels of perceived stress and anxiety
• A number of police personnel had previously experienced mental health problems.
• Working for the police has a negative impact on mental health. | The ProQOL, clarified the participant's current job role, which meant that those with no direct interaction with the general public did not complete this survey, so the results were likely to be more accurate, even with the wide variety of roles. | • It is not clear whether this research is representative of the force or how many are police officers or staff.
• It is unclear if the question relating to a previous mental health problem related to a condition brought on by something that had previously occurred in their role in policing, had occurred prior to joining the police force; what type of mental health problem they had suffered and was it clinically or self-diagnosed? |
| 14 | **Sims and Sims (1998).** | 70 police officers involved in the Hillsborough football stadium disaster. | Self-developed scale for PTSD from the DSM-IIIR; HADS; IDA[21]; GHQ-30 and EPI[22] | Nearly all those that took part were positive for PTSD symptomology (all 11 women and 49 of the 59 men were positive for PTSD, with 31 having severe PTSD and 29 having moderate PTSD, with levels of depression and anxiety being significantly associated with increased severity of PTSD.

However, all 70 officers considered themselves to have been damaged psychologically by their experiences of the Hillsborough disaster and were referred for a medico-legal assessment of psychological injury by a firm of solicitors. | There findings within this study are very clear with a breakdown of the results for individual findings. | • Likely to be significant selection bias, confirmation bias and response bias which is not addressed by the authors.
• The scale for PTSD was created by the authors (as part of the clinical interview) and its validity is unknown. |

---

[21] Irritability, Depression and Anxiety scale (IDA, Snaith et al, 1978
[22] Eysenck Personality Inventory (Eysenck and Eysenck, 1964).

15	**Tehrani (2016).**	126 internet child abuse investigators from 2 UK police forces.	GADS[23]; ProQOL; IES-E[24] and EPQ.	•	Low levels of STS with female investigators suffering more than males.	This research used data from two police forces which had introduced mandatory psychological screening and support.	• The study does not address whether these investigators were police officers or police staff; their experience in policing or investigating internet offences or individual/unit workloads which may all impact on the results. • The author developed their own version of the Impact of events scale which does not appear to be widely used or validated.
16	**Tehrani (2018).**	2294 child abuse investigators over seven police forces, over a three-year period (surveillance screening).	GADS; ProQOL; IES-E and a single-item question WAI[25]		Increased time in the role may lead to increased levels of primary trauma.	This study had a significant amount of data from seven police forces and was one of the first in the UK to assess the impact of secondary trauma, anxiety and depression on child abuse investigators.	• The breakdown of the results does not differentiate between police officers or police staff; their ranks; their experience in policing or investigating internet offences; internet, historic, contact or non-contact offences; or individual/unit workloads which may all impact on the results. • The author developed their own version of the Impact of events scale which does not appear to be widely validated • The study used a single-item question to assess 'workability', yet the author admits that this is the first time that this has been used as an indicator of vulnerability to develop traumatic stress symptoms.
17	**Thompson and Solomon (1991).**	31 police officers from London involved in body recovery.	GHQ; IES; EPQ and occupational information.	•	Very low levels of psychological distress (16%).	To address the potential for false answers due to concerns over confidentiality, the EPQ was used as it has a 'lie scale' to detect those that may not be giving truthful answers to the questions asked.	• It appears that the 3 female officers were excluded from the main results analysis as they were not involved in body handling (although clearly part of the team), and it is not clear what part they played in the research and impact of their trauma potentially being acknowledged. There was also reference to their role being addressed separately in the

---

[23] Goldberg anxiety and depression scale (Goldberg et al, 1988)
[24] Impact of events scale-E (Tehrani, Cox and Cox, 2002)
[25] Work Ability Index (Ilmarinenare, 1999)

						• discussion which was not addressed by the authors. • The results do not differentiate between those involved in all three disasters compared to those newer in the team (other than a mean of 1.8 body recovery incidents). It is therefore unclear whether the results were different for those new to the team.
18	**Turgoose, Glover, Barker and Maddox (2017).**	142 officers involved in rape investigation in London.	A demographics questionnaire; a single item empathy question; ProQOL; STSS; and a modified version of the TEQ[26].	• Minimal evidence of compassion fatigue, secondary traumatic stress or burnout. • Factors such as age, sex and ethnicity, showed no significant relationships with levels of compassion fatigue, secondary traumatic stress and burnout. • Those who had more time in the role had higher levels of compassion fatigue, secondary traumatic stress and burnout scores, yet not replicated with years of overall experience.	In relation to the relationship between empathy and compassion fatigue, STS and burnout the authors attempted to address the potential lack of experience with a correlation analysis of officers who had worked in the command for more than a year (n=40), which resulted with similar relationships as before.	• The study was based on a sample of largely inexperienced police officers dealing with rape and serious sexual assault victims (mean years of service 1.7 years), which may have impacted on the results. • The study was also unclear on relevant measures such as rank, role, workloads, all of which may have been relevant to the results due to their individual impact.
19	**Walker (1997).**	25 police officers involved in body recovery at the site of the Lockerbie air crash.	This qualitative case study was conducted in order to address some of the perceived failings of police stress research where cultural issues may impact on the results of quantitative studies.	• Key themes included the impact of emotional effects; interpersonal effects and physical effects. • It was clear that the officers involved in this study were suffering from PTSD but remained undiagnosed as the officers could not admit the extent to which involvement in the Lockerbie disaster had affected them) due to the impact of 'police culture'.	• Attempts were made to try to triangulate the data with access to personnel records and interviews with partners where possible.	• The role of the researcher is not clearly described but that may be down to the age of the paper. • Only one researcher appears to have coded the data and identified the themes.
20	**Wilson, Poole and Trew (1997).**	95 officers from the RUC in Northern Ireland.	MPSS-SR[27]; BDI[28]; and CSI. [29]	• Most officers had not sustained any physical injury as a result of an incident (72.5%) with the remainder having received what was described as a 'minor' flesh wound (27.4%) • 5.4% reached the cut off score for PTSD; for depression 19.4% had mild to	The paper describes the types of terrorist incident that occurred and results for those that responded as well as the type of incident with non-responses.	• This early study had very few limitations, and those that existed may not have been recognised as an issue in 1997 (such as ethical approval). • Although response bias was considered and there is reference to

[26] Toronto Empathy Questionnaire (Spreng, McKinnon, Mar, and Levine, 2009).
[27] Modified PTSD Symptom Scale – Self Report (Falsetti, Resick, Resnick and Kilpatrick, 1992)
[28] Beck Depression Inventory (Beck, Rush, Shaw and Emery, 1979)
[29] Crisis Support Inventory (Joseph et al, 1992)

moderate symptoms and 5.4% in the moderate to severe range.

- Those officers with good levels of support had lower scores for depression and PTSD.

those that had not responded possibly suffering from 'acute distress', there is no reference to what steps if any were taken to contact those who didn't respond, or the impact of this on the study/sample size.

- The authors attempt to address some of the reasons for the low levels of PTSD and Depression following such as the difficulties with self-survey questionnaires (referred to as illusionary mental health) but wider issues such as the impact of police culture was not explored, which is likely to have had a significant impact during these troubled times in Northern Ireland.

Overview of Findings

Each of the twenty studies were critically examined and as topics emerged, themes and subthemes were highlighted and documented. A number of sub themes soon became apparent such as the importance of humour within the role (Alexander and Wells, 1991; Evans et al., 2013; Thompson and Solomon, 1991); being a volunteer (Alexander and Wells, 1991; Tehrani, 2016; Thompson and Solomon, 1991); being mentally prepared through raising awareness, education or training (Alexander and Wells, 1991; Hetherington, 1993; Tehrani, 2018; Thompson and Solomon, 1991; Turgoose et al., 2017 and the positive aspects of the role (Alexander and Wells, 1991; Parkes et al., 2018b). There were however three main themes which occurred consistently throughout the papers which related to the impact of trauma, the influence of police culture and understanding coping mechanisms. These appeared to have the greatest impact on how an individual would cope with traumatic events.

Understanding the Impact of Trauma.

Policing has been widely accepted as a stressful and traumatic occupation (Asmundson and Stapleton, 2008; Gershon et al., 2009; Skogstad et al., 2013) yet the findings regarding the impact of trauma on the officers within these studies was mixed, with a number of studies showing no increased levels of trauma.

Seven studies related to police officers performing a body recovery role following a mass disaster, terrorist incidents or dealing with death on the roads. Wilson et al. (1997) looked at the impact of terrorist related incidents on police officers in Northern Ireland and found that only 5.4% had levels of probable PTSD or moderate to severe depression. Three other studies (Alexander and Wells, 1991; Duckworth, 1986; Thompson and Solomon, 1991) showed no increases in anxiety, depression or PTSD. These results were surprising as these officers would have dealt with some of the most

unpleasant and traumatic events imaginable in policing (terrorist incidents including bomb explosions, mortar/missile and grenade attacks; body recovery of those submerged in water for a period of time, burned or disarticulated). These experiences are certainly beyond that normally experienced within policing, yet even when exposed to these traumatic events these rates of PTSD and depression are less than or similar to the prevalence rates within the UK population of 5% for PTSD and 3% for depression (Baker, 2020). Hetherington's (1993) study of traffic officers dealing with fatalities on the roads found that 40% of officers stated that they had experienced at least one event in their careers that had affected them, yet the quantitative results showed only moderate distress. This is notable as the qualitative data however showed significant symptoms of avoidance and intrusion mirroring PTSD symptomology in some officers. The remaining two studies (Sims and Sims, 1998; Walker, 1997), both evidenced clinical levels of PTSD, depression and anxiety. Walker (1997) demonstrated that some officers were suffering from symptoms associated with PTSD (re-experiencing, intrusive thoughts, detachment), but they remained undiagnosed, which Walker argued was due to the officers not being able to admit to themselves or others the extent to which their participation in the Lockerbie disaster had affected them. The research by Sims and Sims (1998) showed significant levels of trauma in the police officers who were involved in the Hillsborough football stadium disaster, but should be treated with a degree of caution, as the officers already considered themselves to have been damaged psychologically by their experiences from the disaster and were referred for a medico-legal assessment of psychological injury by a firm of solicitors.

Thirteen studies related to the impact of work-related or secondary trauma, with eight focusing on police officers investigating sexual offences and child abuse, and five

relating to 'general' policing (officers involved in a number of policing roles). The findings of the studies relating to police officers investigating sexual offences and child abuse again was mixed. Hurrell et al. (2018) found 35% the officers would meet the criterion for PTSD, with 12% meeting the criterion for anxiety and 6% meeting the criteria for depression. MacEachern et al. (2019) found more than half of those involved in their study had symptoms of secondary traumatic stress, with 115 with symptoms in the high or severe range. Parkes et al. (2018b) found that a number of those in their study were at risk of PTSD due to the negative impact of the role they were performing. Gray and Rydon-Grange (2019); Tehrani (2016) and Turgoose et al. (2017) however all found that levels of secondary trauma were low, or average compared to the UK population. In general policing populations only two showed any indicators of psychological distress, with Brown et al. (1999) reporting that more than 40% of those surveyed scored at or over the threshold for psychological distress and Brewin et al. (2020) reporting the prevalence of PTSD was 8.0% and of CPTSD was 12.6%, within their study of 10,401 officers. However, the findings of Sheard et al. (2019) gave mixed results and both Burnett et al. (2019) and Evans et al. (2013) found little or no distress in officers.

In some studies, there were clearly some differences regarding the impact of trauma between officers undertaking different roles. Brown et al. (1999) identified that dealing with victims of rape and child abuse may lead to vicarious trauma needing professional intervention. Sheard et al. (2019) demonstrated that firearms officers had lower levels of perceived stress and anxiety than other roles, with uniform response officers (referred to as 24/7 officers) reporting higher levels of compassion fatigue and lower levels of compassion satisfaction than several other roles. Perhaps surprisingly office-based staff (resolution without deployment officers) also reported higher levels of

secondary traumatic stress than those in other roles. They also found that those officers working shifts had significantly higher levels of perceived stress, than those who did not work shifts.

Taken at face value a number of these studies would suggest that there is minimal impact on officers when dealing with trauma, however Hetherington (1993), suggested there that the impact of organisational culture (denial of trauma) which may have impacted on the results. This is supported by Walker (1997) who identified that officers could not admit how their roles recovering bodies from the Lockerbie disaster had affected them, which meant that their mental health conditions remained undiagnosed and the officers failed to get the help and support that they needed. The impact of police culture on the validity of the results within some of these studies is potentially significant as it may be that some officers are 'hiding' their true experiences from others due to potential stigma associated with admitting they are suffering and asking for help. Worryingly however, some officers may be in denial or unaware of how the traumatic nature of the role has affected them, which may prevent them from recognising the impact of trauma and seeking help when they need it.

The impact of police culture, whether it be a fear of appearing 'weak', an inability to trust researchers, a fear of a breach of confidentiality, or the inability to ask for or seek help when needed may in some way explain the findings found in the studies.

Understanding the influence of Police Culture.

Police culture has also been extensively studied (Chan, 1996; Cockcroft, 2013; Loftus, 2010; 2012; Reiner, 2010; Waddington, 2008; Westmarland, 2016) with both the positive and negative aspects to police culture being widely debated. The influence on police culture on policing studies is arguably the biggest factor to consider when

conducting research in policing as the negative aspects (such as not being seen to show weakness, and concerns regarding confidentiality) are likely to have a significant impact on the accuracy of the results (Alexander and Wells, 1991; Brown et al., 1999; Burnett et al., 2019; Duckworth, 1986; Evans et al., 2013; Parkes et al., 2018a, 2018b; Tehrani, 2016; Thompson and Solomon, 1991; Walker, 1997).

Evans et al. (2013) found mixed views towards talking to others about their experiences, with one central theme being 'talking is risky'. This was believed to be because emotional expression and seeking support were perceived as being 'weak' and going against the 'macho' culture of policing as officers were just expected to 'get on with the job'. Burnett et al. (2019) supported the impact of culture arguing that police culture is still prevalent today due to the 'masculine ideals of emotional self-control' impacting on the responses as officers may fear that by answering questions honestly their careers may suffer. Parkes et al. (2018a; 2018b) found that there was a culture of 'invincibility' within the role, with officers not being able to discuss feelings when unable to cope. Worryingly some of these comments related to the officers' supervisors, which would significantly impact on their ability to cope with the potentially traumatic nature of the role. They also highlighted that there was still a culture of 'getting on with the job', which made it difficult to normalise the trauma experienced through undertaking such work.

However, police culture is not always negative and can in certain circumstances can provide support to officers. Both Alexander and Wells (1991) and Walker (1997) emphasised that the positive aspects of police culture meant that there was a strong 'esprit de corps', with feelings of loyalty and a sense of belonging amongst the officers. Tehrani (2016) considered that a possible reason for the participants having lower levels of traumatic stress symptoms than expected, was the supportive organisational

culture that had introduced mandatory psychological screening and support for the teams, including pre-deployment screening, six monthly screening and an hour of individual support. This allowed for individual concerns to be highlighted early, leading to officers feeling supported and forming closely knit teams. Thompson and Solomon (1991) explained that the relatively low scores of distress in their study may be due to those involved being volunteers and the supportive leadership and managerial culture within the group, where debriefing sessions were undertaken allowing the officers to openly talk about their reactions to the incident. This compassionate approach meant that supervisors had the welfare of officers constantly on their minds with officers being reminded of their volunteer status and the ability to withdraw from the role at any time. This continued with the team working and dining together with little regard to rank between the supervisors and their team.

The impact and nature of the trauma, as well as the influence of police culture on an individual officers ability to cope with trauma is clearly significant, yet as we have seen from these studies, not all officers are affected in the same way. The coping mechanisms both at an individual and organisational level can make a considerable difference to how someone processes and recovers from both primary and secondary trauma.

Understanding Coping Mechanisms.
Coping strategies in policing have been widely studied with poor coping skills being seen as an important factor in how someone copes with the impact of stress and trauma (Anshel, 2000; Can and Hendy, 2014). Maladaptive coping strategies such as excessive alcohol use is widely used in some parts of policing as part of an occupational culture to deal with the traumatic nature of the role (Davey et al., 2001; Menard and Arter, 2013; Violanti, 1999). Whilst in moderation this may be accepted

means of socialising with others to talk through and debrief a shared experience (Leino et al., 2011; Lindsay and Shelley, 2009) when used to excess, it may lead to significant harm including increased risk of suicidal ideation (Pienaar and Rothmann, 2005; Violanti, 2004).

The studies as part of this review found a number of positive and supportive coping mechanisms that were used to deal with the traumatic nature of their work. These included focusing on the positive aspects of the role (Alexander and Wells, 1991; Parkes et al., 2018b) and being prepared for the traumatic events through education and raising awareness (Alexander and Wells, 1991; Hetherington, 1993; Tehrani, 2018; Thompson and Solomon, 1991; Turgoose et al., 2017). One of the most important coping mechanisms which was highlighted was the impact of both peer and social support, which has been widely studied with a number of researchers highlighting its importance after a traumatic event (Brewin et al., 2000; Graf, 1986; Ozer et al., 2003; Patterson, 2003; Stephens, Long and Miller, 1997; Van Hasselt et al., 2019).

Ten of the twenty studies specifically mentioned peer or social support, with all but one of them highlighting the positive effects in managing the effects of trauma. Evans et al. (2013), emphasised the differences between both supportive and unsupportive social interactions, informal and formal mechanisms of social support and actual and perceived support between police officers. They highlighted that although officers may not always want to talk about the traumatic events which have occurred (as talking was sometimes seen as 'risky') the use of humour and banter was seen as an important way of both giving and receiving social support, which was supported by Alexander and Wells (1991); Hetherington (1993); Thompson and Solomon (1991) and Walker (1997). This was expanded upon by Alexander and Wells (1991); Brown

et al. (1999); Hetherington (1993); Parkes et al. (2018a); Tehrani, (2016; 2018); Thompson and Solomon (1991) and Walker (1997) who all agreed that whilst both peer and social support were important, an understanding by their peers and supervisors of what they may be going through was the most important aspects in coping with the trauma. They suggested that the ability to go through a debriefing with others was important in order to normalise an individual's trauma and any adverse feelings that they may be experiencing. The importance of talking to family was also highlighted by Hetherington (1993); Thompson and Solomon (1991) and Walker (1997) with some officers indicating that support from their spouses was crucial with dealing with their trauma and make sense of their experiences. However, whilst peer and social support were generally seen as supportive, Parkes et al. (2018b) evidenced that participants indicated a reluctance to seek support from peers or supervisors, until they had reached breaking point. More than half of those in the study also felt that they could not talk to those close to them, for fear of contaminating them with details of the traumatic nature of their role.

Methodological issues within the studies.

A number of the studies had methodological issues in their design which may have impacted on the results. These included mixed populations within a study, use of adapted or not validated questionnaires to measure results, large numbers of questions, and not acknowledging the impact of 'bias' within the studies.

Mixed populations.

Policing is not a homogeneous organisation and consists of a number of different ranks and roles which will lead to differing levels of exposure to both primary and secondary trauma on a daily basis. The studies that used mixed populations within their research were predominately those within the last few years, as earlier studies

focused on homogenous samples such as those involved in body recovery and mass disasters. Those studies which conducted research on officers and staff working with child abuse, sexual offending or domestic abuse teams within individual forces, had varied populations as officers were described as working with direct and/or indirect contact with both child and adult crime victims or offenders, online child sexual abuse, domestic violence teams, Public Protection Units (PPU), Child Sexual Exploitation (CSE) teams and Criminal Investigation Division (CID) teams. Only Sheard et al. (2019) highlighted the differences between individual policing roles who took part in their study. Importantly they also presented the results individually for each role which highlighted the differences, such as firearms officers having significantly lower perceived stress than some other roles such as response and safeguarding officers.

The reporting of individual ranks and roles in policing is particularly important as it allows an assessment of the impact of trauma in different roles, and a greater understanding of why some roles may suffer less trauma than others (i.e. do firearms officers have greater support regarding traumatic incidents than safeguarding officers?) This enhanced understanding of individual ranks and roles within policing will allow the development of greater support and treatment for those officers in roles which are impacted by trauma the most.

The use of questionnaires.

The limitations regarding the use of questionnaires for research has been widely documented within a number of studies. All the quantitative and mixed methods studies were cross sectional in design, which meant that the results only captured what was happening at the moment in time and the context behind the results could not be obtained. Additional limitations regarding the use of questionnaires include

those answering may not understand what is being asked, or perhaps particularly relevant to policing they may not answer honestly

Seven studies also used adapted or not validated questionnaires, which may have impacted on the validity of the results. Hurrell et al. (2018) however did recognise the potential limitations of questionnaires and the importance of having an accessible survey which was short (due to the demands already placed on the officers' time) and that was completely anonymous and confidential. The importance of confidentiality has already been discussed within a cultural context, yet it is also important that surveys are easily accessible outside the work environment which may satisfy additional concerns regarding confidentiality and should be as brief as possible as officers are more likely to take the time to complete. There is also potentially the impact of bias within questionnaires due to those that answer, or perhaps more importantly do not answer quantitative studies.

The introduction of Bias.

'Bias' is defined by as 'a systematic error in data collection or analysis, caused by inadequate technical procedures', and is usually linked to a lack of objectivity by the researcher (Payne and Payne, 2011). Bias should clearly be addressed in individual studies, but only eight of the twenty studies considered bias or reflexivity in any way (Brewin et al., 2000; Brown et al., 1999; Hetherington, 1993; Hurrell et al., 2018; MacEachern et al., 2019; Parkes et al., 2018a; Sheard et al., 2019; Wilson et al., 1997)..

Discussion.

The aim of this review was to obtain a detailed understanding of existing literature in relation to secondary trauma and PTSD in police officers within the UK, and critically

examine how these findings may impact on those officers performing a number of roles. The discussion thus far has focused the need to have a greater understanding of the nature of trauma in policing, the impact of culture within the organisation, as well as understanding coping mechanisms, all of which can greatly impact both positively and negatively on an individual's response to trauma.

From the studies relating to primary trauma it is apparent that there was either no trauma or minimal impact on the officers involved. These results are based primarily on older quantitative studies, but it is perhaps worthy of note that those studies that also had qualitative research found that there are clearly signs of trauma amongst some officers, with potentially behaviours linked to avoidance and intrusion remaining undiagnosed and hidden due to the impact of police culture (Hetherington, 1993; Walker, 1997). The studies relating to secondary or work-related trauma had results which appeared lower than the authors expected with only four (Brewin et al., 2020; Brown et al., 1999; Hurrell et al., 2018; Parkes et al., 2018b) showing signs of psychological trauma.

A number of reasons were given by the various authors regarding why there were no signs of trauma in both the primary and secondary trauma studies. Some related to those involved being volunteers and having had the time to mentally prepare for what they were about to experience. Others referred to how supportive supervisors, peers and family members may have reduced the impacts of trauma, but what appeared to be the main factor in whether the results were accurate on not, and whether an individual recovered from a traumatic event was the influence of police culture, and the ability to be honest about the impact of what they had experienced.

Culture is clearly significant in policing, with how an officer deals with the impact of trauma an important area of study. Some of the studies in this review evidenced the positive impact of police culture such as a strong sense of 'esprit de corps', and feelings of loyalty and a sense of belonging amongst the officers which can help officers through traumatic incidents (Alexander and Wells, 1991; Tehrani, 2016; Thompson and Solomon, 1991; Walker, 1997). However, a number of the studies also highlighted the negative aspects of culture such as officers should not talk (or be honest) about the impact of trauma and be able to 'take everything in their stride' (Alexander and Wells, 1991; Brown et al., 1999; Burnett et al., 2019; Duckworth 1986; Evans et al., 2013; Parkes et al., 2018a, 2018b). The impact of culture in policing has significant implications for research, particularly regarding the validity of the studies and how officers deal with trauma exposure. If an officer cannot be honest regarding the impact of trauma, they may feel isolated and alone, and turn to maladaptive strategies (such as drugs and alcohol) in order to cope, as well as not seeking help when needed. This has far reaching ramifications for not only the officers themselves but also for their families, colleagues and policing in general.

The importance of peer and social support, particularly through supportive supervisors and managers has been well evidenced within these and other studies, with the ability to talk to others with a shared understanding of what you have gone through highlighted as a positive aspect of police culture. When officers are in a supportive and in a 'safe' environment, peer and social support are strong protective factors against secondary trauma and PTSD. However, what is clear from the studies is that not only do the officers need to be ready to talk/disclose what they have gone through, but they also need to be comfortable in doing so. Humour and banter are sometimes used to break down the barriers and as a way of giving and receiving peer or social

support in a more informal setting (Alexander and Wells; 1991; Brown et al., 1999; Evans et al., 2013; Parkes et al., 2018a; Tehrani, 2016; Tehrani 2018; Thompson and Solomon, 1991), with some studies evidencing the importance of having the more formal debriefing processes following traumatic events as well as the informal coping mechanisms (Alexander and Wells; 1991; Hetherington, 1993). Although a number of the studies highlighted the importance of peer and social support, very few actually quantitively measured its impact, which is a recommendation for future research.

The methodological issues that have already been highlighted may have impacted on the results leading to the unexpected findings relating to the impact of trauma. The use of questionnaires, impact of bias and the use of mixed populations within policing are important areas that need to be highlighted and addressed within research, as they can give misleading and conflicting results. There are various roles within policing which will all have a differing level of trauma on a daily basis. It is therefore important that future studies which look at stress and trauma in policing use homogeneous populations rather than heterogeneous ones. However, if heterogeneous samples are to be used, it is imperative that results are presented for individual groups, so it is clear which roles may be especially traumatic. This will lead to a better understanding of the impact of individual roles and 'why' some police officers are suffering more than others, which will lead to better support and treatment for officers who are suffering the most.

Limitations of this study.

There are a number of limitations of this study that need to be considered.

The first is that as this is a systematised review it was conducted by a single author, which may lead to an element of bias in both the final screening of the studies selected and as well as the categorization of the themes identified. There was an attempt to

mitigate this potential risk of bias through a thorough search strategy and making contemporaneous note of identified themes as they emerged.

Second, the search strategy and eligibility criteria may also be seen as limitations. Although sixteen electronic databases were individually and extensively searched, there will be others that were not accessed. In addition, due to the inclusion/exclusion criteria applied there were a number of studies from outside the UK, studies involving mixed populations and those not in an English language were deliberately excluded. This was because they did not focus on UK police officers, but they may contain valuable research and insights into trauma, which could be relevant to UK policing.

A final potential limitation is that grey literature was deliberately excluded with only empirical research that was peer reviewed included in the final studies under review. This was a deliberate exclusion as it was felt important in order to get a detailed and critical understanding of the issues to be explored, only research that has been critiqued and validated by peers should be included within this literature review.

Implications for practice and areas of further research.

The findings of this research may have implications for practice when treating police officers, as the traumatic nature of policing is clearly still unclear and not understood. There needs to be a better understanding of trauma in policing, both in order to support and treat officers suffering but also in order to break the stigma and cultural issues associated with asking for help. This review has raised a number of questions for future research. Is policing unique in that the way that officers respond and deal with trauma? Does the nature of the trauma, the impact of culture and how officers cope compared to other occupations present new challenges in how police officers should be treated by clinicians?

It is therefore recommended that there needs to be a more evidence informed understanding of the impact of trauma in policing, with future studies being conducted on homogeneous populations (within an individual force) so as to get a better understanding 'why' certain roles may impact on officers more than others, and add to generalisability of any findings. These studies should be confidential and be easily accessible outside policing systems, with quantitative research using short validated (and not adapted) assessment tools, so the results can be properly interpreted and understood. Although a number of the studies in this review highlighted the importance of peer and social support, very few actually quantitively measured its impact, which should also be included in future studies.

Finally, future research should consider the use of 'mixed methods' using both quantitative and qualitative data to get a better understanding of the issues being experienced by police officers within the UK.

Conclusions.

From conducting this review, it is clear from the limited studies that more research is needed in order to understand trauma in UK policing. There are a number of gaps in the research, but most notably is the impact of trauma on individual roles in UK policing.

Whilst it is clear that a positive police culture can build resilience amongst officers, through a sense of bonding and a shared understanding of what each other has gone/is going through, the negative side of police culture can lead to issues of mistrust regarding how they are feeling which can in some circumstances lead to secondary trauma or mental health conditions. Policing as an organisation and supervisors in particular, have a significant part to play in rebuilding police culture. This includes

breaking the stigma of talking about how an officer feels and making policing into an organisation where officers can discuss and share their feelings openly and freely without concerns regarding a breach of confidentiality or losing their job.

Understanding coping mechanisms within policing is also vital in recognising how to reduce symptoms after a traumatic event. It is apparent from the studies that not all officers will be affected by the same incident and that what works as a coping mechanism is individual for each person, with officers knowing that support is there when they are ready to. This is an important aspect of the research as the ability to talk when ready can reduce trauma when implemented properly or increase trauma when culturally talking about trauma is not perceived to be a safe thing to do. Although a number of the studies highlighted the importance of peer and social support, very few actually quantitatively measured its impact, which is why it is amongst the recommendations for future research.

In order to compensate for some of the methodological weaknesses, and to start to understand the nature of police trauma it is suggested that future studies should be conducted on homogeneous populations within policing with short, validated questionnaires as part of a larger mixed methods design. The potential impact of bias and the fact that it has not been considered is evident in a number of studies. Whilst this may be expected for the older and more targeted studies the level of more recent studies not considering bias or reflexivity where appropriate was surprising and may call into question some of the findings. The importance of using qualitative (or mixed methods) methodology rather than just quantitative is also apparent and future studies should take this into account, in order to get a greater understanding of the unique aspects of policing.

Finally, it is hoped that this literature review will address gaps in existing knowledge, highlight implications for practice and the recommendations will be taken forward in future research.

The need to understand the impact of trauma and mental health conditions in UK police officers is a critical but under researched area, so future studies should look at individual roles in policing including those considered to be high risk, such as that investigate rape and child abuse.

References

Articles with ** relate to those in the systematised review

** Alexander DA and Wells A (1991) Reactions of police officers to body-handling after a major disaster: a before-and-after comparison. *British Journal of Psychiatry* 159: 547-555.

Anshel MH (2000) A Conceptual Model and Implications for Coping with Stressful Events in Police Work. *Criminal Justice and Behavior* 27(3): 375–400.

Asmundson GJG and Stapleton JA (2008) Associations Between Dimensions of Anxiety Sensitivity and PTSD Symptom Clusters in Active-Duty Police Officers. *Cognitive Behaviour Therapy* 37(2): 66-75.

Baer RA, Smith GT, Hopkins J, Krietemeyer J and Toney L (2006) Using self-report assessment methods to explore facets of mindfulness. *Assessment* 13(1): 27–45.

Baird S and Jenkins SR (2003) Vicarious traumatization, secondary traumatic stress, and burnout in sexual assault and domestic violence agency staff. *Violence and victims* 18(1): 71-86.

Baker C (2020) Mental health statistics for England: prevalence, services and funding (Briefing paper 6988). *House of Commons Library.* Available at: https://researchbriefings.files.parliament.uk/documents/SN06988/SN06988.pdf

Barr-Walker J (2017) Evidence-based information needs of public health workers: a systematized review. *Journal of the Medical Library Association* 105(1): 69–79.

Beck AT, Rush AJ, Shaw BF and Emery G (1979) *Cognitive therapy of depression.* Guilford press.

Bober T and Regehr C (2006) Strategies for Reducing Secondary or Vicarious Trauma: Do They Work? *Brief Treatment and Crisis Intervention* 6(1):1-9.

Bond FW, Hayes SC, Baer RA, Carpenter KM, Guenole N, Orcutt HK . . . Zettle RD (2011) Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy* 42(4): 676–688.

Bourke ML and Craun SW (2014) Secondary traumatic stress among internet crimes against children task force personnel: Impact, risk factors, and coping strategies. *Sexual Abuse* 26(6): 586-609.

Brewin CR, Andrews B and Valentine B (2000) Meta-analysis of risk factors for posttraumatic stress disorder in trauma exposed adults. *Journal of Consulting and Clinical Psychology* 68: 748–766.

** Brewin CR, Miller JK, Soffia M, Peart A and Burchell B (2020) Posttraumatic stress disorder and complex posttraumatic stress disorder in UK police officers. *Psychological Medicine* 1–9.

Bride BE, Robinson MM, Yegidis B and Figley CR (2004) Development and validation of the Secondary Traumatic Stress Scale. *Research on Social Work Practice 14*(1), 27–35.

Bride BE (2007) Prevalence of Secondary Traumatic Stress among Social Workers. *Social Work* 52(1): 63–70.

** Brown J, Fielding J and Grover J (1999) Distinguishing traumatic, vicarious and routine operational stressor exposure and attendant adverse consequences in a sample of police officers. *Work & Stress* 13(4): 312-325.

** Burnett ME, Sheard I and St Clair-Thompson H (2019) The prevalence of compassion fatigue, compassion satisfaction and perceived stress, and their relationships with mental toughness, individual differences and number of self-care actions in a UK police force, *Police Practice and Research* 24(1): 383-400.

Burns CM, Morley J, Bradshaw R and Domene J (2008) The emotion impact on and coping strategies employed by police teams investigating Internet child exploitation. *Traumatology* 14: 20–31.

Burruss GW, Holt TJ and Wall-Parker A (2018) The hazards of investigating internet crimes against children: Digital evidence handlers' experiences with vicarious trauma and coping behaviors. *American Journal of Criminal Justice* 43(3): 433-447.

Can SH and Hendy HM (2014) Police Stressors, Negative Outcomes Associated with Them and Coping Mechanisms That May Reduce These Associations. *The Police Journal* 87(3): 167–177.

Carlier I, Lamberts R and Gersons B (2000) The dimensionality of trauma: a multidimensional scaling comparison of police officers with and without posttraumatic stress disorder. *Psychiatry Research* 9: 29–39.

Carver CS (1997) "You want to measure coping but your protocol's too long: consider the brief COPE". *International Journal of Behavioral Medicine* 4(1), 92.

Chan J (1996) Changing police Culture. *The British Journal of Criminology* 36(1): 109–134.

Chesney MA, Neilands TB, Chambers DB, Taylor JM and Folkman S (2006) A validity and reliability study of the Coping Self-Efficacy Scale. *British Journal of Health Psychology* 11(3): 421–437.

Cieslak R, Shoji K, Douglas A, Melville E, Luszczynska A and Benight CC (2014) A meta-analysis of the relationship between job burnout and secondary traumatic stress among workers with indirect exposure to trauma. *Psychological Services* 11(1): 75–86.

Cloitre M, Shevlin M, Brewin CR, Bisson, JI, Roberts NP, Maercker, A.,…Hyland, P (2018) The International Trauma Questionnaire: Development of a self-report measure of ICD-11 PTSD and complex PTSD. *Acta Psychiatrica Scandinavica* 138, 536–546.

Clough P, Earle K and Sewell D (2002) Mental toughness: The concept and its measurement. In I. Cockerill (Ed.), *Solutions in sport psychology*. London: Thomson, pp. 32–45.

Cockcroft T (2013) *Police Culture.* London: Routledge.

Cohen S, Kamarck T and Mermelstein R (1983) A global measure of perceived stress. *Journal of Health and Social Behaviour* 24, 386–396.

College of Policing (2018) Responding to trauma in policing - A practical guide. College of Policing. Available at: https://www.college.police.uk/What-we-do/Support/Health-safety/Documents/Responding-to-trauma-in-policing.pdf

Conrad D and Kellar-Guenther Y (2006) Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. *Child Abuse & Neglect* 30(10): 1071-1080.

Craig CD and Sprang G (2010) Compassion satisfaction, compassion fatigue, and burnout in a national sample of trauma treatment therapists. *Anxiety, Stress, & Coping* 23(3): 319-339.

Dane B (2000) Child Welfare Workers. An Innovative Approach for Interacting with Secondary Trauma. *Journal of Social Work Education,* 36(1): 27-38.

Davey DJ, Obst PL and Sheehan MC (2001) It goes with the job: Officers' insights into the impact of stress and culture on alcohol consumption within the policing occupation. *Drugs: education, prevention and policy* 8(2), 141-149.

Day K and Petrakis M (2017) Family interventions in early psychosis service delivery: A systematized review. *Social Work in Mental Health,* 15(6): 632-650.

** Duckworth DH (1986) Psychological problems arising from disaster work, *Stress Medicine* 2(4): 315-323.

Duffy E, Avalos G and Dowling M (2015) Secondary traumatic stress among emergency nurses: a cross-sectional study. *International emergency nursing* 23(2): 53-58.

** Evans R, Pistrang N and Billings J (2013) Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. *European Journal of Psychotraumatology* 4(1): 1-9.

Eysenck HJ and Eysenck SBG (1964) *Manual of the Eysenck Personality Inventory.* University of London Press.

Eysenck HJ and Eysenck SBG (1975). *Manual for the Eysenck Personality Questionnaire*. San Diego: Educational and industrial testing service.

Falsetti SA, Resick PA, Resnick HS and Kilpatrick DG (1992) *Post-traumatic stress disorder: The assessment of the frequency and severity of symptoms in clinical and nonclinical samples.* In 26th annual convention of the Association for Advancement of Behavior Therapy, Boston, MA.

Figley CR (1995) *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Brunner-Routledge; New York.

Fraley RC, Waller NG and Brennan KA (2000) An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology* 78(2), 350–365.

Freudenberger HJ (1974) Staff burn-out. *Journal of Social Issues* 30: 159-165.

Freudenberger HJ (1975) The staff burn-out syndrome in alternative institutions, *Psychotherapy: Theory, Research, Practice* 12(1): 73-82.

Gershon RR, Barocas B, Canton AN, Li X and Vlahov D (2009) Mental, physical, and behavioral outcomes associated with perceived work stress in police officers. *Criminal justice and behavior* 36(3): 275-289.

Goldberg DP, Bridges K, Duncan-Jones P and Grayson D (1998) Detecting anxiety and depression in general medical settings. *British Medical Journal* 297: 897–899.

Goldberg DP and Williams P (1988) *A User's Guide to the General Health Questionnaire.* Windsor: NFER-Nelson.

Graf FA (1986) The relationship between social support and occupational stress among police officers. *Journal of Police Science and Administration* 14(3), 178–186.

Graham L, Brown N, Plater M, Gracey S, Legate N and Weinstein N (2020*) National Police wellbeing survey 2019.* Policing Research Unit, Durham University. Available at: https://www.college.police.uk/News/College-news/Pages/Oscar-Kilo-wellbeing-survey-results-June-2020.aspx

Grant MJ and Booth A (2009) A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal* 26: 91-108.

** Gray C and Rydon-Grange M (2019) Individual characteristics, secondary trauma and burnout in police sexual and violent offending teams. *The Police Journal: Theory, Practice and Principles* 93(2): 146-161.

Griffiths P and Norman I (2005) Science and art in reviewing literature. *International Journal of Nursing Studies* 42(4): 373-376.

** Hetherington A (1993) Traumatic stress on the roads. *Journal of Social Behavior and Personality* 8(5): 369-378.

Hesketh I and Tehrani N (2019) Psychological trauma risk management in the UK police service. *Policing: A Journal of Policy and Practice* 13(4): 531-535.

Horowitz M, Wilner N and Alvarez W (1979) Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine* 41, 209-218.

** Hurrell A-K, Draycott S and Andrews L (2018) Secondary traumatic stress in police officers investigating childhood sexual abuse. *Policing: An International Journal of Police Strategies & Management* 41(5): 636-650.

Joinson C (1992) Coping with compassion fatigue. *Nursing* 22(4): 116-118.

Kadambi MA and Truscott D (2007) Vicarious Trauma Among Therapists Working with Sexual Violence, Cancer and General Practice. *Canadian Journal of Counselling and Psychotherapy* 38(4). Available at: https://cjc-rcc.ucalgary.ca/article/view/58744

Kellogg MB, Knight M, Dowling JS and Crawford SL (2018) Secondary traumatic stress in pediatric nurses. *Journal of pediatric nursing* 43: 97-103.

Kennedy MM (2007) Defining a Literature. *Educational Researcher* 36(3):139–147.

Krause M (2009) Identifying and managing stress in child pornography and child exploitation investigators. *Journal of Police and Criminal Psychology* 24: 22–29.

Ilmarinen J (1999) Ageing workers in the European Union: status and promotion of work ability, employability, and employment. *Finnish Institute of Occupational Health* Ministry of Social Affairs and Health, Ministry of Labour.

Janoff-Bulman R (1989) Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social cognition* 7(2), 113-136.

John OP and Srivastava S (1999) The big five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin LA and John OP (Ed.), *Handbook of Personality: Theory and Research, (second edition).* The Guildford Press: New York / London. pp. 102–138.

Joseph S, Andrews B, Williams, R and Yule W (1992) Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology* 31(1), 63-73.

Joseph S, Williams R, Irwing P and Cammock T (1994) The preliminary development of a measure to assess attitudes towards emotional expression. *Personality and Individual Differences* 16(6), 869-875.

Leino T, Eskelinen K, Summala H and Virtanen M (2011) Work-Related Violence, Debriefing and Increased Alcohol Consumption among Police Officers. *International Journal of Police Science & Management* 13(2): 149–157.

Lindsay V and Shelley K (2009) Social and stress-related influences of police officers' alcohol consumption. *Journal of Police and Criminal Psychology* 24(2): 87-92.

Loftus B (2010) Police occupational culture: classic themes, altered times. *Policing and Society* 20(1): 1-20.

Loftus B (2012) *Police Culture in a changing world.* Oxford: Oxford University Press.

** MacEachern AD, Dennis AA, Jackson S and Jindal-Snape D (2019) Secondary Traumatic Stress: Prevalence and Symptomology Amongst Detective Officers Investigating Child Protection Cases. *Journal of Police & Criminal Psychology* 34(2): 165-174.

Maslach C (1976) 'Burned-out', *Human Behavior* 9(5): 16-22.

McCann IL and Pearlman LA (1990) Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress* 3(1): 131-149.

Ménard KS and Arter ML (2013) Police officer alcohol use and trauma symptoms: Associations with critical incidents, coping, and social stressors. *International Journal of Stress Management* 20(1): 37-56.

Newell JM and MacNeil GA (2010) Professional burnout, vicarious trauma, secondary traumatic stress, and compassion fatigue: A review of theoretical terms, risk factors, and preventive methods for clinicians and researchers. *Best Practices in Mental Health: An International Journal* 6(2): 57-68.

Nimmo A and Huggard P (2013) A systematic review of the measurement of compassion fatigue, vicarious trauma, and secondary traumatic stress in physicians. *Australasian Journal of Disaster and Trauma Studies* 1: 37-44.

Ozer EJ, Best SR, Lipsey TL and Weiss DS (2003) Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin* 129(1): 52–73.

** Parkes R, Graham-Kevan N and Bryce J (2018a) 'I put my "police head" on': Coping strategies for working with sexual offending material. *The Police Journal: Theory, Practice and Principles* 92(3): 237-263.

** Parkes R, Graham-Kevan N and Bryce J (2018b) You don't see the world through the same eyes anymore: The impact of sexual offending work on police staff. *The Police Journal: Theory, Practice and Principles* 92(4):316-338.

Patterson G (2003) Examining the effects of coping and social support on work and life stress among police officers. *Journal of criminal justice Volume* 31(3): 215-226.

Payne G and Payne J (2011) *Key Concepts in Social Research*. SAGE Publications, Ltd: London.

Pearlman LA and Mac Ian PS (1995) Vicarious traumatization: An empirical study of the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice* 26(6): 558-565.

Perez LM, Jones J, Englert DR and Sachau D (2010) Secondary Traumatic Stress and Burnout among Law Enforcement Investigators Exposed to Disturbing Media Images. *Journal of Police & Criminal Psychology* 25(2): 113-124.

Pienaar J and Rothmann S (2005) Suicide Ideation in the South African Police Service. *South African Journal of Psychology* 35(1): 58–72.

Powell M, Cassematis P, Benson M, Smallbone S and Wortley R (2014) Police officers' strategies for coping with the stress of investigating Internet child exploitation. *Traumatology: An International Journal* 20(1): 32–42.

Reiner R (2010) *The politics of the police.* Oxford: Oxford University Press

Regehr C, Hill J, Goldberg G and Hughes J (2003) Postmortem inquiries and trauma responses in paramedics and firefighters. *Journal of Interpersonal Violence* 18(6): 607-622.

Sabin-Farrell R and Turpin G (2003) Vicarious traumatization: Implications for the mental health of health workers? *Clinical Psychology Review* 23(3): 449-480.

** Sheard I, Burnett M and St Clair-Thompson H (2019) Psychological distress constructs in police with different roles. *International Journal of Emergency Services,* 8(3): 264-279.

** Sims A and Sims D (1998) The phenomenology of post-traumatic stress disorder. A symptomatic study of 70 victims of psychological trauma. *Psychopathology* 31(2): 96-112.

Skogstad M, Skorstad M, Lie A, Conradi HS, Heir T and Weisaeth L (2013) Work related post-traumatic stress disorder. *Occupational Medicine* 63(3): 175–182.

Snaith RP, Constantopoulos AA, Jardine MY and McGuffin P (1978) A clinical scale for the self-assessment of irritability. *British Journal of Psychiatry* 132(2): 164-171.

Sodeke-Gregson EA, Holttum S and Billings J (2013) Compassion satisfaction, burnout, and secondary traumatic stress in UK therapists who work with adult trauma clients. *European journal of Psychotraumatology* 4(1): 1-4.

Spreng RN, McKinnon MC, Mar RA and Levine B (2009) The Toronto Empathy Questionnaire: Scale development and initial validation of a factor-analytic solution to multiple empathy measures. *Journal of personality assessment* 91(1): 62-71.

Stamm BH (2010) *The concise ProQOL manual* (2nd ed.), Pocatello, ID: ProQOL.org.

Stephens C, Long N and Miller I (1997) The impact of trauma and social support on Posttraumatic Stress Disorder: A study of New Zealand police officers*. Journal of Criminal Justice* 25(4): 303-314.

Tehrani N, Cox SJ and Cox T (2002) Assessing the impact of stressful incidents in organizations: The development of an extended impact of events scale. *Counselling Psychology Quarterly* 15(2): 191-200

** Tehrani N (2016) Extraversion, neuroticism and secondary trauma in Internet child abuse investigators. *Occupational Medicine* 66(5): 403-407.

** Tehrani N (2018) Psychological well-being and workability in child abuse investigators. *Occupational Medicine* 68(3): 165-170.

** Thompson J and Solomon M (1991) Body recovery teams at disasters: Trauma or challenge? *Anxiety Research* 4(3): 235-244.

** Turgoose D, Glover N, Barker C and Maddox L (2017) Empathy, compassion fatigue, and burnout in police officers working with rape victims. *Traumatology* 23(2): 205-213.

Van Hasselt VB, Klimley KE, Rodriguez S, Themis-Fernandez M, Henderson SN and Schneider BA (2019) Peers as Law Enforcement Support (PALS): An early prevention program. *Aggression and Violent Behavior* 48: 1-5.

Violanti JM (1999). Alcohol abuse in policing. *FBI Law Enforcement Bulletin* 68(1): 16 – 18. Available at: https://heinonline.org/HOL/LandingPage?handle=hein.journals/fbileb68&div=6&id=&page=

Violanti JM (2004). Predictors of police suicide ideation. *Suicide and Life-Threatening Behavior* 34(3): 277-283.

Waddington PAJ (2008) Police culture, in T. Newburn and P. Neyroud (eds) *Dictionary of Policing.* Cullompton, Devon: Willan.

** Walker M (1997) Conceptual and methodological issues in the investigation of occupational stress. A case study of police officers deployed on body recovery at the site of the Lockerbie air crash. *Policing and Society: An International Journal* 7(1): 1-17.

Westmarland L (2016) Governance of policing and cultural codes: interpreting and responding to policy directives. *Global crime* 17(3-4): 352-369.

** Wilson FC, Poole AD and Trew K (1997) Psychological distress in police officers following critical incidents. *Irish Journal of Psychology* 18(3): 321-340.

Zigmond AS and Snaith RP (1983) The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica* 67(6): 361-370.