Exploring Factors that Influence the Impact of Indirect Exposure to Trauma

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Abstract

Helping professionals are indirectly exposed to trauma through learning about their clients' experiences. This type of exposure has been linked to the onset of post-traumatic stress symptoms and adverse changes in beliefs about self, others, and the world. These negative reactions have been associated with a reduction in quality of care provided by professionals, high absenteeism, sick leave and a desire to leave the profession. Despite the prevalence of these issues, not all professionals experience these issues, suggesting factors beyond exposure may influence the onset of personal distress post-exposure. Previous research has aimed to identify these risk factors, although have consisted of conflicting findings and some factors are left unexplored. Consequently, this thesis was designed to shed light on what might influence reactions to indirect trauma to adversity with the aim of protecting professionals, maintain their wellbeing and allow them to continue working effectively in their occupations.

Through a mixed-methods approach, the author explored the complexities of indirect exposure to trauma. The author began with a qualitative inquiry delving into helping professionals' perceptions of factors contributing to distress and potential protective strategies. In subsequent experimental studies the impact of exposure type, a pre-exposure stressor, and cognitive interventions on distress levels was examined. Experimental findings indicated comparable levels of distress across different trauma stimuli modalities (video vs. transcript) and pre-exposure stress states. Furthermore, individual characteristics appeared to exert a more substantial influence on responses to indirect trauma exposure than the experimental manipulations designed to mitigate its impact. Through these investigations, a further understanding of factors (e.g., empathy, characteristics of traumata) which may lead professionals to experience personal distress in trauma

work is provided. The findings in this thesis call for a holistic understanding and exploration of the experience of indirect trauma when working as a health professional, as the culmination of factors is argued to lead professionals to experience distress. Additionally, a focus on how professionals can be protected is needed, such as restructuring beliefs associated with trauma work to be more adaptive, and tailoring self-care methods to an individual, rather than the current generic self-care methods recommended.

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Glossary of Terms

ANCOVA	Analysis of covariance
APA	American Psychiatric Association
BPS	British Psychological Society
BTQ	Brief Trauma Questionnaire
CF	Compassion fatigue
CIT	Cognitive interference task
CL	Cognitive load
CR	Cognitive reappraisal
CRT	Conservation of resources theory
CSDT	Constructivist self-development Theory
CWPP	Child welfare protection professionals
DSM	Diagnostic and Statistical Manual
ECQ	Empathy Components Questionnaire
EFT	Ecological Framework of Trauma
ER	Emotion regulation
ERQ	Emotion Regulation Questionnaire
ES	Expressive suppression
FR	First responder
GP	General public
HP	Helping professional
HTQ	Harvard Trauma Questionnaire
IET	Indirect exposure to trauma
JDRM	Job-demands and resources model
LC	Locus of control
MANCOVA	Multiple analysis of covariance

MH	Mental health
MHP	Mental health professional
MIST	Montreal Imaging Stress Task
MMU	Manchester Metropolitan University
EmotionQ	Emotion Questionnaire
NACMR	Negative alterations in cognition, mood and reactivity
NE	Norepinephrine
NIBS	Non-invasive brain stimulation
PB	Performance Bar
PC	Perceived control
PCL-C	Post-traumatic Stress Disorders Checklist – Civilians
PCW	Perceived control within the workplace
PFC	Pre-frontal cortex
PHQ	Patient Health Questionnaire
PI	Principal investigator
PIS	Participant information sheet
PO	Police officer
PP	Psychological preparedness
PS	Perceived stress
PTS	Post-traumatic stress
PTSD	Post-traumatic stress disorder
RTSQ	Rumination Thought Style Questionnaire
SS	Subjective stress
SSR	Subjective stress response
STAI	State Trait Anxiety Inventory
STS	Secondary traumatic stress

STSS	Secondary Traumatic Stress Scale
SW	Social worker
TFP	Trauma film paradigm
TSQ	Trauma Screening Questionnaire
VbITs	Verbal-interference tasks
VsITs	Visual-interference tasks
VT	Vicarious traumatisation
WM	Working memory
WoT	Window of tolerance
WRS	Work-related stress

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Thank you to you all. I'm lucky to have friends like you. And I can't forget Ozzie and Milo. You have given me freedom and loyalty. Thank you pups.

On submitting this thesis, I feel one thing, love. Thank you everyone, this thesis is my tribute to the support and love you have given me.

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Chapter One: Introduction

1.1. The Research Context

Traumatic events can have serious consequences for those directly exposed to them, including significant psychological symptoms (Santiago et al., 2013). People who have experienced trauma and related negative consequences often seek support from health and social care services where they relay their traumatic experiences (Kanno & Giddings, 2017; Oral et al., 2020). Additionally, in some services, professionals (e.g., first-responders) respond directly in the occurrence of a traumatic event (e.g., car crash) to protect those involved from further harm (Meckes et al., 2021). The work of professionals who support trauma survivors and respond to traumatic events is pivotal in facilitating service-users' recovery from event-related adversities. (Kanno & Giddings, 2017; Reeves, 2014). Still, the impact of providing such services on helping professionals has come to light, with researchers reporting similar psychological symptoms in professionals as reported by those they support (Ogińska-Bulik & Gurowiec, 2021), and other adverse consequences such as issues with physical health (Lee et al., 2018) and further mental health problems (e.g., depression [Živanović & Vukčević Marković, 2020]). Also, the impact of work-related trauma exposure may have negative implications on professionals' work, such as reduction in quality of clinical work, disruptions in therapeutic relationships, and higher staff absenteeism (McNeillie & Rose; 2021; Mealer & Jones, 2013; Rainville, 2015). Therefore, this type of trauma exposure, hereafter termed 'indirect exposure to trauma' (IET) to align with definitions in previous literature (May & Wisco, 2016; Lee et al., 2017a; Szogi & Sullivan, 2018), may have considerable implications for helping professionals individually and for their clients.

Due to reports of significant psychological consequences for those exposed to adverse events indirectly, researchers have aimed to assess the prevalence of such adverse reactions to IET in professionals from different occupations, for example mental health professionals (MHPs), social workers (SWs) and first responders (FRs). The research shows that professionals maybe at risk of developing post-traumatic stress (PTS) symptoms (Armes et al., 2020) and experience negative shifts in the way they view themselves, others, and the world around them (McNeillie & Rose, 2021). However, not all professionals who experience IET go on to develop these psychological symptoms suggesting other factors, besides IET, may lead some to be more at risk. Further research has identified such factors including individual, situational, and organisational variables, which may influence the onset of distress (Cavanagh et al., 2020). Currently, demographics (e.g., age, gender) appear to have little influence (Hensel et al., 2015), whereas other personal characteristics such as empathy (Wagaman et al., 2015) and emotion regulation (Cho & Lee, 2023), and organisational factors (e.g., workload [Baugerud et al., 2018]) are reported to be more influential. Still, the available evidence-base includes conflicting results (Elwood et al., 2011; Hensel et al., 2015), making the identification of specific factors challenging. Also, some factors, such as types of traumatic events and the influence of stressors prior to exposure, have not been thoroughly explored, although these variables have been found to predict PTSD in people directly exposed to trauma (Kessler et al., 2017; McEwen, 2003). Further exploration of these facilitators and barriers of adverse reactions to IET is needed to enable the identification of professionals who may be at risk but also to increase understanding of what might help protect professionals to maintain their wellbeing and support them in providing good quality care for service-users.

Furthermore, methods of preparation and prevention for IET have been inadequately explored. In earlier studies with people directly exposed to trauma, psychological preparedness (PP) has been repeatedly found to predict lower PTSD symptoms (Başoğlu et al., 1994; 1996; 1997; Johnson & Thompson, 2010). Additionally, the use of cognitive interference tasks (CITs) immediately after or at the time of exposure has been proven to offset the development of PTSD symptoms in people exposed to direct trauma (Iyadurai et al., 2019), and also in non-clinical samples using trauma analogues (James et al., 2016), but yet to be explored with helping professionals. By facilitating helping professionals to develop PP for work-related IET and harness them with simple yet effective techniques such as CITs to buffer the impact of this type of exposure could help protect professionals in their work.

In light of the aforementioned evidence of significant distress in helping professionals who experience work-related IET and implications on individual wellbeing and professional practice, in this thesis the author sought to fill the current gaps in knowledge. Specifically, the author aimed to explore factors which influence the onset of distress, how professionals may prepare for IET, and if the use of a CIT may buffer the impact of exposure to trauma.

1.2. Chapter Outlines

To address the overall aim of this thesis, the present structure was used.

Chapter Two: Literature Review

This chapter presents a comprehensive overview of the extant research examining the impact of IET on helping professionals. The chapter commences with an exploration of the definitional and conceptual boundaries of distress associated with IET. Subsequently, a review of prevalence rates of IET-related distress across diverse helping professions is undertaken. Building upon this

foundation, the author delves into the empirical evidence concerning the individual, interpersonal, and organisational consequences of such distress. Then an examination of the literature exploring potential antecedents of IET-related distress follows, culminating in an in-depth exploration of interventions and preventative strategies derived from the PTSD and trauma analogue literature for their applicability to mitigating the effects of IET on professionals.

Chapter Three: Thesis Rationale and aims, and Methodological Approach

This chapter states the thesis rationale and aims developed after reviewing the available literature on factors associated adverse reactions to IET considering gaps in the literature. Then, the epistemological and methodological approach employed to address the thesis aims are outlined.

Chapter Four: Study One: Listening to Other People's Traumatic Experiences: What Makes It Hard and What Could Protect Professionals from Developing Related Distress? A Qualitative Investigation

This chapter presents the first empirical study, a qualitative exploration aiming to explore key research questions: a) When is it harder to listen to other people's trauma accounts?, (b) What does effective coping (i.e., adapting to the negative impact of listening to trauma) involve and what could hinder or promote it?, and (c) What could psychologically prepare a person before they listen to a trauma account? A mixed group of helping professionals was recruited to gain a range of perceptions. This study aimed to elucidate potential factors contributing to the development of distress related to IET. Given the inconsistent findings and unexplored areas within the existing literature, this research sought to identify previously overlooked or understudied variables.

Chapter Five: Study Two: The Effect of Audio-Visual Information and Situational Stress on Psychological Responses to Indirect Exposure to Trauma

In Chapter Five, an experimental study examining the impact of IET using a trauma analogue and the effect of audio-visual stimuli and experience of a psychosocial stressors prior to exposure on short (subjective stress and emotions) and longer term (intrusions) distress is presented. This study aimed to explore variables inadequately investigated in previous research using an experimental design to allow for cause-effect relationships to be established.

Chapter Six: Study Three: Differences in Distress Related to Indirect Exposure to Trauma Between Mental Health Professionals and Non-Mental Health Professionals and the Impact of a Cognitive Task

In Chapter Six, the second experimental investigation is presented which investigates the impact of using a CIT when exposed to trauma using a trauma analogue on peritraumatic subjective stress and negative emotion, and the development of intrusions associated with the analogue in a one-week follow-up. This study sought to explore the use of a preventative methods (i.e., CITs) which have been found to buffer the impact in people exposed directly to adverse events, and in previous experimental studies using the trauma analogue paradigm.

Chapter Seven: General Discussion

In Chapter Seven, the core findings of the thesis and their significance within the broader context of IET literature are synthesised. Commencing with a recapitulation of the study's primary aims and objectives, the chapter subsequently provides a concise overview of the key results obtained from each empirical investigation. An analysis of these findings follows, exploring their theoretical and practical implications for advancing knowledge in the field. The chapter concludes with a discussion of the thesis strengths and limitations and offers recommendations for future research endeavours.

Chapter Two: Indirect Exposure to Trauma – a Literature Review

2.1. Introduction

Exposure to a traumatic event can lead to post-traumatic stress disorder (PTSD; Stein et al., 2016), a debilitating psychiatric condition with the potential of persisting for several years (Kessler et al., 2017). Numerous studies have investigated predisposing factors which contribute to the development of PTSD in those directly exposed to trauma, however, growing research has highlighted that people indirectly exposed to trauma are also at risk (Cieslak et al., 2013). PTSD symptoms are common in various professional groups that are routinely faced with indirect exposure to trauma (IET), including mental health professionals (MHPs; Makadia et al., 2017), social workers (SWs; Gil & Weinberg, 2015), midwives (Sheen et al., 2015), first responders (Lee et al., 2017b), lawyers (Maguire & Byrne, 2017), and other groups such as family carers (Muomah et al., 2021) and adolescents (Yazdani et al., 2016).

PTSD was first added as a psychiatric condition in the third edition of the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Health Disorders (DSM) III in 1980, and revised in 1987 (i.e., DSM-IIIR). For a diagnosis of PTSD, the DSM-IIIR criteria required a person to have witnessed or experienced directly a traumatic event, or to have been indirectly exposed to an event experienced by one's child, close relative or friend, or to have experienced sudden destruction of their house or community (APA, 1987). Around the same time, researchers also reported the presentation of PTSD-like symptoms in helping professionals who worked with survivors of trauma (Munroe, 1990; Shepherd & Hodgkinson, 1990). As DSM-IIIR did not view this type of exposure to qualify for a diagnosis of PTSD, experts began to develop new concepts to define this second-hand traumatisation (Figley, 1983) such as secondary traumatic stress

(STS; Figley, 1995) and vicarious traumatisation (VT; McCann & Pearlman, 1990). Various studies examining the prevalence and risk factors associated with the effects of IET used measures specifically designed to record symptoms of secondary trauma and not PTSD (Elwood et al., 2011).

In the fourth edition of the DSM (i.e., DSM-IV), Criterion A was amended slightly to state that a person must have experienced, witnessed, or been confronted by threatened or actual death, severe injury, or risk to physical integrity of self or a close associate or friend (APA, 1994). The addition of 'being confronted with' or learning about a trauma experienced by 'a close associate', suggested a person could be traumatised indirectly. However, what remained unclear was whether a patient or client who had experienced trauma could be considered a 'close associate' of a professional who was working with them.

In 2013, the DSM-5 (APA, 2013) revised the diagnostic criteria for PTSD and included several key alterations to Criterion A. For example, "experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse)" (APA, 2013, p. 271) was added to the list of qualifying exposures. Therefore, the DSM-5 acknowledged that repeated experiences of IET can lead to the onset of PTSD symptoms, with the exclusion of exposure through media (e.g., television and news broadcasts), unless that exposure was work-related (Pinchevski, 2016). Even so, the revised version of Criterion A is restrictive as it does not account for the presence of PTSD symptoms in people who have experienced an event not defined as trauma in Criterion A (Howard et al., 2024), or acknowledge the subjective nature of trauma (Pai et al., 2017), in other words, the perception of an event as stressful influenced by a person's subjective appraisal (Janoff-Bulman, 1992). Furthermore, several studies reported PTSD symptoms in

non-helping professionals after exposure to trauma through media coverage (Ben-Zur et al., 2012; Fallahi & Lesik, 2009; Yue et al., 2020) but these tended to be short-lived and generally did not entirely meet the diagnostic criteria for PTSD (May & Wisco, 2016). In recent years, with the increasing use of social media which exposes people worldwide to unfiltered live-streaming (e.g., murder of George Floyd [Maxie-Moreman & Tynes, 2022]) of traumatic incidences (Holman et al., 2020) and excessively disseminates information about aversive events (e.g., COVID-19 pandemic) (World Health Organization, 2020), further research is warranted to assess the unique influence of this type of IET in the development of PTSD (Hall et al., 2019; Leaning & Guha-Sapir, 2013).

With the addition of IET in Criterion A, the use of concepts other than PTSD, (e.g., STS, compassion fatigue [CF], VT) which had previously been established to describe post-IET distress, has been contested (Horesh, 2016). Nonetheless, these concepts are regularly used in contemporary research (Pellegrini et al., 2022). Furthermore, they are used either interchangeably, or as independent constructs (Rauvola et al., 2019). Due to the conflicting use of terms to describe reactions to IET (e.g., STS, CF, VT) and the subsequent addition of IET in the DSM-5 diagnostic criteria for PTSD, the reactions observed in helping professionals after IET are yet to be clearly conceptualised and defined (Ellis & Knight, 2021). In this chapter, the author will describe and critically discuss the different concepts used to define distress related to IET and related phenomena.

2.2. Conceptual and Definitional Issues

2.2.1. Secondary Traumatic Stress

The term 'Secondary Traumatic Stress' was developed by Figley (1993), a leading expert in the field, to describe an acute stress reaction which can develop after IET through learning about another's experience of trauma and caring or

wanting to care for that person (Figley, 1995). Symptoms of STS are nearly identical to those of PTSD (i.e., intrusions, avoidance, hypervigilance, emotional distress, and functional impairment), except STS is a result of secondary exposure whereas PTSD develops after primary exposure (Bride et al., 2004). STS is argued to develop quickly, sometimes after a single episode of IET, and can commence with no warning (Figley, 1995) unlike other concepts of post-IET distress such as VT.

Since the publication of the DSM-5 (APA, 2013), some researchers question the distinction between PTSD and STS (Horesh, 2016). Studies highlight significant overlap between symptoms of STS and PTSD. Mordeno et al. (2017) examined the goodness of fit of the symptom structure of STS in six different models comprising of the updated DSM-5 PTSD criteria. The authors reported adequate to excellent fit of all PTSD models using STS symptoms, implying STS symptom-factors are akin to PTSD. This supported Figley's claim that symptoms of STS are almost identical to PTSD (Figley, 1995), but also questioned the need for a separate term to describe PTSD symptoms which develop after IET. Others argued that the DSM-5 criteria for PTSD are limited and fail to consider factors which differentiate STS from PTSD (Sorenson et al., 2017), such as the influence of the empathic relationship between professional and client (Figley, 2013), which has been reported in several studies (Arnedo & Casellas-Grau, 2016; Mehus & Becher, 2016). However, even if the aetiology of STS and PTSD differ in some respects, the symptoms are reported to be matching, thus regarding each as a separate condition is unfounded. Further research is needed to clarify whether indeed PTSD and STS are identical or different phenomena, to allow for clear diagnosis, treatment, and investigation of predicting factors of post-IET distress (Benuto et al., 2021).

2.2.2. Compassion Fatigue

Similar to STS, the term 'compassion fatigue' has been used to describe the impact of caring for survivors of trauma (Nimmo & Huggard, 2013). CF was first used by Joinson (1992) to describe the adverse effects (e.g., depression, apathy, helplessness, anger) experienced by nurses which lead to a decreased ability to provide compassionate care. Joinson (1992) regarded CF to be a form of burnout, that is a disorder argued to develop in professionals due to constant active involvement in helping people overcome physical, psychological and/or social problems (Maslach & Jackson, 1981). However, Joinson (1992) did not provide a rationale or evidence to support the assumption that these two constructs are synonymous (Sinclair et al., 2017). CF was adopted by Figley (1995) to describe the fatigue experienced by therapists when working with trauma survivors. He defined CF as "*the formal caregiver's reduced capacity or interest in being empathic or bearing the suffering of clients and [is] the behavioural and emotional state that results from knowing about a traumatizing event experienced by another person*" (Figley, 1995, p. 15) and regarded CF as a broader term and an outcome of STS and burnout. Authors have aimed to differentiate CF and STS by characterising the latter as the development of PTSD-like symptoms after exposure to IET, and the former as the result of IET and empathic engagement with survivors of trauma (White, 2006). Figley (2002) regarded empathy to be critical in the development of both CF and STS, which again raises questions about whether the two concepts are in anyway distinct. Some argue that in contrast with STS and VT, CF is not specifically related to working or caring for trauma survivors, but can also develop when working with non-trauma survivors (Sabin-Farrell and Turpin, 2003). Figley also suggested CF and STS to be comparable phenomena (Figley & Ludick, 2017) and CF to be a less stigmatising

term which could be used as a substitute of STS (Figley, 1995). In the context of these conceptual and definitional debates, the two concepts were sometimes treated as synonymous and other times as separate constructs (Najjar et al., 2009).

In contemporary research, CF is viewed as a bi-dimensional construct including STS and burnout (Rauvola et al., 2019). Cavanagh et al. (2020) conducted a meta-analysis of studies investigating the prevalence of CF in healthcare providers and found that 69 of 71 studies used the Professional Quality of Life Scale (ProQOL) (Stamm, 2010). The ProQOL (Stamm, 2010) is a self-report measure which assesses CF, as a bi-dimensional construct composed of STS and burnout, alongside compassion satisfaction (CS), a construct which describes the happiness experienced by a professional when helping others (Geoffrion et al., 2019; Stam, 2010). Although the ProQOL has been used in numerous studies (Watts & Robertson, 2015), relatively little is known about its psychometric properties (Hemsworth et al., 2018). The available evidence highlights problems in its convergent and construct validity and factor structure particularly for the STS and burnout subscales (Hotchkiss & Wong, 2022). These findings raise questions about the ProQOL and about the proposed construct of CF (Samson et al., 2016).

Overall, the term CF is conceptually unclear, with researchers viewing the concept as a synonym of STS, or as a bi-dimensional construct which consists of STS and burnout (Rauvola et al., 2019). Additionally, as Figley and Ludick (2017) regard CF as a form of PTSD, the argument to use terms such as CF and STS and not PTSD when identifying adverse reactions to IET is unclear.

2.2.3. Vicarious Traumatisation

Comparable to CF and STS, the term 'vicarious traumatisation' describes the negative effects of working with traumatised populations (McCann & Pearlman, 1990). VT was grounded in constructivist self-development theory (CSDT) which held a constructivist view of trauma and suggested a person's unique history shapes how one experiences a traumatic event (McCann & Pearlman, 1992). VT was based on the concepts of cognitive schemas and psychological needs in CSDT. Cognitive schemas are described to be complex belief structures about the self, others, and the world, which develop through life experiences, and are used to interpret the world and make sense of experience (Young et al., 2006). McCann and Pearlman (1990) argued that humans have seven fundamental psychological needs (i.e., trust, safety, power, self-esteem, intimacy, independence, and frame of reference) which manifest as central cognitive schemas. These central schemas shape one's identity (e.g., I am safe) and world perspective (e.g., the world is a safe place). Exposure to trauma is argued to disrupt these fundamental schemas, although the impact of this disruption is subject to the interaction between a person's previous life experiences, principal psychological needs, dominant features of the trauma, and social and cultural variables (Edwards & Miller, 2019). It is proposed that VT results from a disruption in a professional's cognitive schemas through the repeated empathic engagement with trauma survivors (Pearlman & Saakvitne, 1995), and is described to develop gradually, and be a pervasive and long-lasting (sometimes permanent) condition (Pearlman & Saakvitne, 1995; Middleton et al., 2022). For example, a therapist who has experienced domestic abuse (previous history) and currently working with several clients with similar experiences (dominant aspect of the trauma), begins to feel unsafe and lose interest in romantic relationships (disruption in safety and intimacy

schemas). Here, the practitioner may be experiencing VT, because after multiple engagements with clients who are survivors of domestic abuse, disruptions in their schemas of safety and intimacy have occurred.

Alongside changes in cognitive schemas, repeated IET is argued to lead to alterations in a professional's memory system, as they internalise the traumatic events endured by their clients (McCann & Pearlman, 1990). These changes in the memory system result in a professional experiencing PTSD symptoms, such as intrusions associated with clients' trauma (Regehr et al., 2004) which trigger negative affective states (e.g., anger, anxiety, fear, sadness) (McCann & Pearlman, 1990). A paper examining the psychometric properties of the Vicarious Trauma Scale (Vrklevski & Franklin, 2008), a self-report measure for VT, reported a two-dimensional model consisting of cognitive and affective components. The model fitted the data well, supporting the theoretical concept of VT containing cognitive (e.g., changes in schemas) and affective factors (e.g., negative emotional states resulting from experiencing PTSD symptoms) (Aparicio et al., 2013).

VT has some similarities with STS and CF, for example, a condition which develops after IET and characterised, at least partly, by PTSD symptoms. However, unlike STS and CF, VT is described as a pervasive, gradual, and longer-lasting condition characterised by disruptions in professionals' cognitive schemas concerning the self, others, and the world around them (Rauvola et al., 2019). Some studies supported the concept of VT and used CSDT as a framework to facilitate the understanding of VT in judges (Miller et al., 2010), social workers (Michalopoulos & Aparicio, 2012), and trauma therapists (Zaccari, 2017). However, authors sometimes use the term VT as synonymous with STS and CF (Molnar et al., 2017) and other times as distinct from them (Branson, 2019); this, again,

creates some confusion, especially when trying to make sense of risk factors associated with VT. A previous study including 152 MHPs investigated the discriminant validity of measures of STS, VT, and burnout (Devilly et al., 2009). All three concepts were found to be highly convergent and suggested that they all assess the same phenomenon. Also, exposure to client trauma was non-significantly associated with STS, VT, or burnout. Therefore, the researchers questioned the validity of STS, VT, and the argument that VT and STS result specifically from working with trauma survivors. In contrast, other studies have found significant associations between trauma caseload frequency and volume and STS (Hensel et al., 2015). Overall, these findings further the uncertainty around concepts such as VT which define reactions to IET.

Some research has found an association between dysfunctional beliefs and the onset and maintenance of PTSD symptoms after IET (Bennett et al., 2009; Pyevich et al., 2003; Mâirean et al., 2014; Turliuc et al., 2015), suggesting a link between dysfunctional beliefs (i.e., disturbances in cognitive schemas) and PTSD symptoms in professionals exposed to second-hand trauma, as claimed by the theoretical underpinnings of VT. However, these studies were retrospective, and thus did not offer strong support for a pre- to post- IET change in cognitive schemas. Furthermore, there is limited empirical research investigating the overlap between VT and PTSD. Advocates suggest VT is different to PTSD as the condition develops through repeated empathic engagement with survivors of trauma and occurs over-time, compared to PTSD which can develop acutely after one exposure (Benuto et al., 2021). In a study that examined factors associated with VT, personal distress (a component of empathy) was significantly positively related to negative beliefs about self and others (i.e., cognitive distortions, a component of VT) (DelTosta et al., 2019). This suggested that some types of

empathy may be related to the development of VT. Still, these findings provide little evidence that VT and PTSD are unique constructs. Finklestein et al. (2015) measured PTSD and VT in MHPs who, whilst working in a warzone, where directly exposed to trauma through air raids and vicariously exposed by working with survivors of such attacks. The findings reported that practitioners were experiencing both PTSD and VT symptoms, although the concepts were found to be highly intercorrelated and shared some predictors. Still, unlike PTSD, VT was also predicted by years of education and professional support. These findings suggest that PTSD and VT are similar but may have different contributing factors. However, although this study claimed to measure VT, a measure of CF was used, therefore one of the two components of VT (cognitive distortions) was not investigated, limiting possible comparisons between of PTSD and VT symptoms.

Overall, the definition of VT provides some explanation of the impact of IET, and the CSDT offers a framework through which researchers could explore and understand factors which influence a professional's unique experience of post-IET distress. However, the lack of evidence for VT's construct validity and inconsistent use has added to the existing confusion in the field and poses difficulties in making sense of related evidence about predictors of post-IET distress (Bercier & Maynard, 2015).

2.2.4. Other Terms

2.2.4.1. Countertransference

Sigmund Freud introduced the term countertransference to describe the phenomenon of a therapist's unconscious reactions (stemming from their own unresolved conflicts) to their client in psychotherapy (Freud & Ferenczi, 1993). Freud first argued that countertransference could act as barrier in therapy and something that should be suppressed, but later suggested that studying

countertransference reactions could enhance a therapist's understanding of a client's presenting problems (Stefana, 2015). The definition of countertransference has evolved over time and is contemporarily understood as "the therapist's unconscious [and often conscious] reactions to the patient and to the patient's transference. […] based on the therapist's own psychological needs and conflicts […]" (American Psychological Association, n.d.), and seen as a ubiquitous part of the therapeutic relationship which can lead to positive or negative outcomes (Manning, 2005; Rossberg et al., 2010). Symptoms of countertransference include behavioural (e.g., avoiding clients and client material, or overinvolvement and nurturing of the client), cognitive (e.g., negative view of client), somatic (e.g., sleepiness, headaches, and muscle pains) and affective (e.g., happiness, hope, anger, anxiety) (Fauth, 2006).

Like STS, CF and VT, countertransference can include avoidance (e.g., changing the subject in a therapy session or ignoring clients' affective states) (Bandura et al., 1960), enmeshment (e.g., becoming overinvolved with a client and their presenting problems) and in-session anxiety (Shamoon et al., 2017). However, countertransference is limited to the therapeutic relationship, whereas conditions related to IET tend to spread outside the therapy context, also affecting other areas of the professional's life (Pearlman & Saakvitne, 1995). Also, countertransference is conceptualised as a professional's reaction towards a client centred on the professional's own psychological needs and conflicts, whereas effects associated with IET can occur in anyone indirectly exposed to trauma (Figley, 1995). Furthermore, unlike STS and VT, but similar to CF, countertransference can relate to clients who have not experienced trauma and may not include the development of PTSD-symptoms or shifts in a professional's belief system (Berzoff & Kita, 2010; Sabin-Farrell & Turpin, 2003).

There is limited empirical evidence comparing countertransference and CF, VT, or STS. One study investigated the relationship between countertransference and STS in mental health professionals who had experienced a traumatic event included in Criterion A of the DSM PTSD diagnostic criteria (Taylor, 2021). Countertransference was conceptualised as having two categories of reactions exhibited by professionals including type 1 (i.e., avoidant and disengaged), and type 2 (i.e., overidentification and enmeshment). The researchers reported STS to be significantly positively correlated with both types of countertransference. Type 1 appeared to be more strongly related to STS with a medium effect size, compared to type 2 which corresponded with a relatively small effect size. The results offered some support for the argument that STS and countertransference are related but distinct constructs. However, limitations in the reliability of the countertransference measures in the study pose questions about the validity of the results.

2.2.4.2. Burnout

Burnout is conceptualised as the result of chronic exposure to work-related stress leading to gradual disengagement with occupational duties (Maslach, 2001). It is divided into three components including, emotional exhaustion, depersonalisation (i.e., negative views and feelings about the people a person works with), and decreased feelings of personal accomplishment (Maslach & Jackson, 1981). Many studies focused on the prevalence of burnout in professionals who are repeatedly exposed to physical and psychological stressors through their occupation (Wilkinson et al., 2017), and has been linked to adverse physical (e.g., type 2 diabetes and respiratory problems) and psychological (insomnia and depressive symptoms) outcomes, and high levels of staff absenteeism (Salvagioni et al., 2017).

Burnout has been differentiated from concepts associated with the effects of IET (Rauvola et al., 2019). Unlike, STS and VT, which are reactions to IET characterised by PTSD-like symptoms and distortions in professionals' world view, burnout is the result of chronic work-related stress leading to exhaustion, depersonalisation and decreasing professional achievement (Figley, 2002; Jenkins & Baird, 2002). Some have argued burnout to be comparable with CF as both conditions are considered to occur outside of working with survivors of trauma (Pirelli et al., 2020), although others conceptualised CF only in the context of IET (Figley, 2002). Some evidence suggests burnout is distinct or different from CF, VF and STS. For example, a longitudinal study with US and Polish health and social care workers reported that high levels of burnout (at time point 1) predicted STS after a six-month period (i.e., time point 2), but high levels of STS (at time point 1) did not predict the development of burnout at time point 2 (Shoji et al., 2015). Similarly, other studies found burnout to predict PTSD-symptoms in healthcare professionals directly exposed (Jacobowitz et al., 2015) and indirectly exposed to trauma (Orrù et al., 2021). Nevertheless, as burnout was found to predict STS, this questions the conceptualisation of STS as a condition which develops quickly without warning.

For some, CF comprises both burnout, defined as being "associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively" (Stamm, 2010, p. 13), and STS (Arn et al., 2006; Cavanagh et al., 2020; Meadors et al., 2010). However, the association between burnout and STS may be dependent on how these constructs are measured and theoretically conceptualised. Cieslak et al. (2014) performed a meta-analysis of studies examining the prevalence of STS and burnout in groups of helping professionals reported a positive relationship between these two variables and a large effect size

suggesting a significant overlap between these concepts. A higher overlap between STS and burnout was found when assessed as sub-components of CF with a shared variance of 55%, compared to when measured as separate to CF (sharing 34% variance), suggesting that these constructs are related, however, distinct. Therefore, the theoretical conceptualisation and measurement of CF as bi-dimensional comprising of STS and burnout is questionable, and these constructs (i.e., STS and burnout) may be measured more reliably when using separate instruments.

Some previous studies report that burnout and phenomena relating to post-IET distress are distinct but associated and could be experienced simultaneously (Ruiz-Fernández et al., 2020), although some studies have found these concepts (e.g., STS, VT and burnout) to be highly convergent suggesting they may be measuring the same phenomenon (Devilly et al., 2009). Therefore, the distinction between STS, CF, VT, and burnout remains unclear.

2.2.5. Summary of Conceptual and Definitional Issues

Until the publication of DSM-5 (APA, 2013), many did not consider IET (experienced through learning about traumatic events via one's occupation) to be a type of exposure which qualified for the diagnosis of PTSD. Nevertheless, PTSD symptoms and other adverse consequences were recorded in trauma workers. This led to the development of various terms to describe these emotional, cognitive, and behavioural reactions, including STS, CF and VT. As the criteria for PTSD in the DSM-5 now includes "experiencing repeated or extreme exposure to aversive details of the traumatic event" (APA, 2013, p. 271), some have argued that terms previously used to describe distress associated with IET are redundant (Horesh, 2016). Some, however, have argued that the DSM-5 criteria for PTSD do not accurately describe how trauma is transferred between survivor and the

professional and neglect the importance of the empathic bond between them (Figley, 2002). Indeed, the professional's level of empathy is positively associated with PTSD symptoms after IET (Hunt et al., 2019). While the impact of empathy on professionals following IET warrants further exploration, existing research on PTSD development following direct trauma highlights limitations in this perspective. Studies have identified pre-trauma factors, such as personality traits and coping styles, as significant predictors of PTSD onset (DiGangi et al., 2013). Although the expression of PTSD may vary across populations, the core diagnostic criteria remain consistent. Therefore, the distress experienced by professionals after IET, even if influenced by empathy for survivors, might represent a pre-existing vulnerability to develop PTSD rather than a distinct diagnostic entity.

There is considerable confusion regarding the concepts which describe conditions related to IET. For example, VT, CF, and STS are sometimes seen as unique constructs, and other times as overlapping or synonymous (Sorenson et al., 2017). There is confusion around the concepts of CF and STS which have been described either as synonymous terms which can be used interchangeably (Figley & Ludick, 2017), unique (Najjar et al., 2009) or CF as an outcome of STS (Stamm, 2010). VT has clearer differentiating characteristics. For example, it focuses mainly on the cognitive shifts that develop overtime in helping professionals, whereas STS focuses on PTSD symptoms developed in reaction to IET which can occur after just one exposure (Rauvola et al., 2019).

Overall, several issues remain unresolved in the literature regarding constructs which aim to capture people's emotional, cognitive, and behavioural responses to IET, and with some evidence suggesting a high overlap between measures that are used to assess these constructs (Rauvola et al., 2019). Future

studies could further investigate the overlap between PTSD, STS, VT, CF, and burnout and offer clearer insights about: (a) the construct and discriminant validity of these phenomena, (b) their predictors, and (c) methods that could prevent their development or alleviate them (Ledoux, 2015).

2.2.6. Term Used in the Thesis

Considering the evidence presented so far, the use of the terms STS, CF, and VT adds to the ongoing conceptual murkiness which exists in the literature (Coetzee & Laschinger, 2018; Ledoux, 2015). In this thesis, the author's aims, which are presented in more detail in the following chapters, were not to clarify concepts related to IET, but to investigate risk factors which may protect or make professionals more vulnerable to experiencing adverse reactions in response to IET. Therefore, the umbrella term 'post-IET distress' is used to denote (short and longer-term) reactions in consequence of IET in the following chapters. An exception to this convention will be made when reporting specific findings from prior research. In such instances, the original terminology used by the authors will be retained to accurately represent the specific constructs under investigation. For instance, in studies where rates of STS, operationalised as PTSD-like symptoms related to IET and measured via the Secondary Traumatic Stress Scale (Bride et al., 2004) or the STS subscale of the ProQOL (Stam, 2010), were examined, the term "STS" will be used. This terminological precision is intended to reflect the operationalisation of constructs by the original researchers.

2.3. Prevalence of Distress Associated with Indirect Exposure to Trauma

The reported prevalence of post-IET distress varies from study to study. Existing evidence stems from studies based on different professional populations (Elwood et al., 2011) and due to conceptual and methodological differences between studies, it is difficult to estimate the rates of post-IET distress in the

general population or in certain professional groups (Hayes, 2013; Molnar et al., 2017). However, despite these methodological limitations, the evidence does highlight that some professionals are at risk of experiencing significant adverse reactions to IET (Sinclair et al., 2017). The following section offers a collection of literature reporting rates of symptoms associated with IET in different professional populations (e.g., mental health professionals, nurses), whilst highlighting the implications and limitations of these investigations.

2.3.1. Mental Health Professionals

Between 48 to 98% of mental health services-users have experienced at least one primary traumatic event (Cusack et al., 2006). As a result, MHPs are at high risk of being repeatedly exposed to graphic and detailed descriptions of trauma through learning about their clients' experiences (Killian, 2008). This is seen as an occupational hazard of working with traumatised populations (Bride, 2007; Deighton et al., 2007). Studies have investigated post-IET distress in different groups of MHPs (e.g., therapists, counsellors, psychologists) using various concepts such as VT, CF, and STS. For example, a study investigating VT in 339 psychotherapists during the COVID-19 pandemic assessed the affective and cognitive impact of working with survivors of trauma (Aafjes-van Doorn et al., 2020). Results reported high levels of VT in 15% of therapists, and moderate levels in 63%. It could be argued that these therapists, working in extraordinary times like a pandemic, might be experiencing higher levels of VT than in other time periods, although these findings are comparable to reports of VT in therapists in studies before the pandemic began (Michalopoulos & Aparicio, 2012). Other researchers have specifically examined rates of PTSD symptoms related to IET (i.e., STS) in specific MHP groups. For example, Johansen et al. (2019) measured levels of STS and job-burnout in 383 Norwegian substance abuse therapists. High

levels of STS were reported by 22% of participants with flashbacks, intrusions, and sleep disturbances as the most experienced symptoms. However, 75% of participants did also report that they had been or felt threatened by their clients, therefore, the recorded PTSD symptoms could have been linked to direct exposure to trauma at work as well as IET.

Some researchers have measured STS as a component part CF. Sodeke-Gregson et al. (2013) investigated levels of CF and CS in 253 therapists working within the UK National Health Service. Seventy percent of therapists were found to be at high risk of STS, and a higher burnout score was associated with greater levels of STS. These rates are significantly higher than those found in other studies, for example in psychotherapists in Canada (Laverdière et al., 2019a), and therapists in the US (Craig & Sprang, 2010). As these studies used different samples of MHPs in various mental health organisations, factors associated with adverse reactions to IET, such as varying levels of exposure to client trauma material, supervision, and workload (Singh et al., 2020), may have differed in these samples resulting in diverse rates of STS. Furthermore, a direct comparison of CF rates across studies utilising the ProQOL (as employed in the aforementioned research) is hindered by the heterogeneity in measure administration.

Additionally, post-IET distress has been investigated in different groups of MHPs. A US study investigated rates of CF in a sample of 1,121 psychologists, psychiatrics, social workers, family therapists, and counsellors (Sprang et al., 2007). More than 13% of the sample reached the cut-off score for CF with higher rates in certified psychiatrists compared to licensed psychologists and social workers, suggesting that particular MHPs may be more at risk of developing CF. The results from this study are partly supported by findings in other studies. For

instance, Rossi et al. (2012) similarly reported elevated rates of CF among psychiatrists relative to psychologists, therapists, and health support workers. Conversely, the identification of heightened CF levels in social workers, in contrast to Sprang et al.'s findings, suggests that factors beyond professional role may influence vulnerability to the effects of indirect trauma exposure.

To address the paucity of comparative research on STS prevalence between MHPs and other helping professions, Cieslak et al. (2013) examined STS levels among 224 MHPs. The findings were subsequently contrasted with those of previous studies involving other helping professions. MHPs were found to report similar levels (19%) to emergency workers (Argentero & Setti, 2011), social workers (Bride, 2007), and substance misuse counsellors (Bride et al., 2009), suggesting helping professionals from different occupations may be equally at risk of experiencing STS. However, other studies have found different rates of STS across groups of professionals (e.g., paramedics, doctors, nurses, social workers, and psychotherapists) (Okoli et al., 2020; Ondrejková & Halamová, 2022). Inconsistencies in the reported rates of STS suggest that other factors may play a role in the onset of this condition, such as frequency of IET, characteristics of the professional.

In summary, MHPs are at risk of developing post-IET distress due to their engagement with client trauma as part of the therapy process (Sui & Padmanabhanunni, 2016), influenced by factors such as the development of empathic bonds with clients (Hunt et al., 2019) and using certain forms of emotion regulation to manage their own reactions to IET (Măirean, 2016). Research in this area has employed various conceptualisations and measurement tools, such as VT, CF, and STS, making comparisons challenging. Researchers have examined post-IET distress in diverse MHP populations, including therapists, counsellors,

and psychologists. Findings indicate varying prevalence rates, with some studies reporting high levels of VT, CF, or STS. Factors such as the nature of the traumatic material, workload, and organisational support may influence these rates. While some research suggests that MHPs across different professions experience similar levels of post-IET distress, other studies report disparities. However, inconsistencies in findings highlight the need for further research to elucidate the factors contributing to these differences. The available evidence underscores the importance of addressing post-IET distress among MHPs.

2.3.2. Nurses

Nurses work in demanding environments characterised by high and intense workloads, staff shortages, poor managerial support (Nolte et al., 2017), and exposure to indirect trauma and patients' pain and suffering (Isobel & Thomas, 2022). These factors have been linked with the development of post-IET distress (Jahner et al., 2019; Sinclair et al., 2017). Similar to research in other professional populations, different conceptualisations (e.g., VT, STS, or CF) and measures have been used in studies reporting rates of reactions to IET in nurses (Arnold, 2020) resulting in confusion around the incidence of post-IET distress in this population. Some researchers have sought to resolve this ambiguity. For instance, Xie et al. (2020) conducted a meta-analysis aimed at synthesising results from previous studies which assessed rates of CF symptoms in nurses around the world. The review selected 79 studies (62 in Asia, 11 in America, three in Europe, and three in Australia) including a total of 28,509 nurses from different departments (e.g., oncology, paediatric, emergency, psychiatric, geriatric, operating, general surgery, etc.). The authors reported a mean score for CF, a combined score of pooled means of STS (25.24) and burnout (26.64), suggested a moderate rate (Stamm, 2010) across the included studies. Compared to a

previous meta-analysis by Zhang et al. (2018a), this study reported higher levels of CF in nurses. These opposing findings could be a result of the inclusion of different populations in each meta-analysis, and/or the influence of variables related to context, such as work-setting, culture, workload, and participant characteristics. Interestingly, Xie and colleagues (2020) found levels of CF increased over the years across the included studies which could reflect the impact of an increasingly older global population leading to more demands on healthcare services and increased work-related stress for professionals including nurses (Dijxhoorn et al., 2021; Lunenfeld & Stratton, 2013). Additionally, differences in rates across groups of nurses with different specialisms (Xie et al., 2020) suggest that type of profession may not solely influence the development of post-IET distress in nurses after IET and that other occupational factors (e.g., lack of support at work, high levels of IET) may be responsible (Jonsson & Halabi, 2006). Nevertheless, conclusions made from the existing studies should be made with caution, as they commonly used cross-sectional designs and relied heavily on self-report measures such as the STSS (Bride et al., 2004).

Overall, studies suggest that nurses are at high risk of experiencing adverse effects associated with IET (Cavanagh et al., 2020). The risk may be exacerbated by repeated exposure to trauma through learning about patients' traumatic experiences and the extremely demanding working conditions nurses withstand (Berger et al., 2015). Also, post-IET distress in nurses has been reported to adversely affect patient safety (Day & Anderson, 2011) and associated with higher incidents of accidents and poor-quality care (Slatten et al., 2011). In light of this evidence, further research is needed to explore barriers and facilitators of distress related to caring for trauma survivors to both protect helping professionals and those they care for.

2.3.3. First Responders

First responders (FRs) are directly (e.g., rescuing people from a burning building) and indirectly exposed to trauma (e.g., listening to statements from witnesses or survivors) (Meckes et al., 2021), therefore distinguishing effects associated solely with IET in these professionals can be difficult. Nonetheless, investigating the rates of reactions associated with IET elucidates the impact of IET on FRs and how particular features of their occupations (e.g., repeated indirect exposure to trauma testimonies, empathic engagement with survivors) may uniquely influence the development of PTSD symptoms and other problems (Kleim & Westphal, 2011). Generally, the rate of reactions to IET in FRs is considered low (Shakespeare-Finch, 2011). For example, Greinacher et al. (2019) conducted a systematic review of studies investigating rates of post-IET distress in police officers, firefighters, search and rescue personnel, and emergency or paramedic team-members. In 31 studies, the general prevalence rate of reactions to IET ranged between 4-13%, suggesting the rate of adverse effects from IET in FCs to be small. Investigations of rates of post-IET distress in specific FRs such as police officers (POs) have found mixed results (Foley et al., 2022). For example, in a study including 101 Child Abuse Investigation POs, 35% of the sample met the cut-off score for PTSD associated with IET (Hurrell et al., 2018), however, in a longitudinal study which tracked the rate of PTSD symptoms in 747 POs working in different departments over three years using the STSS, levels of PTSD symptoms were reported to be low in the sample and remained consistent throughout the three-year period (Craun et al., 2014).

Overall, the literature suggests that FRs are generally at low risk of experiencing adverse effects associated with IET. Some authors have suggested that as FRs are repeatedly exposed to traumatic events they become inoculated

against developing adverse reactions to trauma which could explain the low rates reported in FR populations (Reinhard & Maercker, 2004). Though, studies have suggested that FRs (i.e., ambulance workers, firefighters, and POs) are at high risk of developing PTSD with ambulance personnel being most at risk (Berger et al., 2015), implying that first responders are not immune to developing PTSD symptoms after exposure to trauma. Future studies could investigate the relationship between potential predictor variables (e.g., dosage and type of trauma exposure, etc.) and PTSD symptoms using longitudinal designs to see if repeated exposure can induce an inoculating effect against trauma and measure rates of PTSD symptoms linked specifically to IET. Also, research has suggested that FRs may be reluctant in disclosing experiencing psychological distress, therefore in studies using self-report measures, PTSD symptoms may go under-reported and not reflect true rates in participants (Walker, 1997). Researchers could work with FRs to overcome this barrier by using other methods (e.g., qualitative) to explore further reactions to IET in FRs.

2.3.4. Social Workers

Social Workers provide vital support to clients from various populations (children, people with a disability, or the elderly) and are likely to be indirectly exposed to trauma through learning about clients' past and present traumatic experiences (Armes et al., 2020). Lee et al. (2018) measured PTSD symptoms and assessed IET with a single item (i.e., "what percentage of your clients meet the criteria for PTSD?") in 539 clinical social workers in the US. Over 10% of the sample met the criteria for PTSD, 44% endorsed intrusion symptoms, 22% reported avoidance symptoms and 17% reported symptoms of hypervigilance. IET (after controlling for age, gender, professional experience, and hours worked) was significantly positively associated with STS suggesting that indeed IET is related to

PTSD symptoms in SWs. The rate of STS in this study is lower compared to results in other investigations with SWs (Bride, 2007; Choi, 2011; Cuartero & Campos-Vidal, 2019; Quinn et al., 2019). The differences in STS rates reported in SWs could be reflecting the effects of other variables (e.g., variables related to context or severity of exposure). For example, Choi and colleagues (2011) assessed a sample of social workers who specialised in family and sexual assault and thus might have been more likely to experience IET resulting in higher levels of STS. These findings suggest that some SWs may be more at risk of adverse reactions to IET. Overall, SWs are at risk of developing mental health symptoms due to indirect IET through their clients' experiences. Research suggests a positive association between IET and symptoms of PTSD in SWs. However, findings on the prevalence and severity of these symptoms vary considerably across studies (Diaconescu, 2015) suggesting other factors, than IET, may influence the development of post-IET distress.

2.3.5. Child Welfare and Protection Professionals

Child Welfare and Protection Professionals (CWPPs) are commonly indirectly exposed to trauma through witnessing or learning about children's adverse experiences (Dombo & Whiting-Blome, 2016), and working with illtreated children has been reported as a risk factor for occupational stress and decreased psychological wellbeing (Wooten et al., 2011). A systematic review by Molnar et al. (2020) aimed to identify the prevalence of adverse effects associated with IET in CWPPs and selected 39 articles, 15 of which investigated incidence rates. As the use of different instruments made calculating the overall incidence of reactions to IET in CWPPs unfeasible the authors reported a summary of results by grouping together studies which used the same measure. In studies using the STSS, a range of 68-92% of respondents reported at least mild symptoms of PTSD

symptoms associated with client trauma. In one study which examined rates of STS in CWPPs who investigated child pornography, 35% of participants reported moderate to high levels of STS (Perez et al., 2010). The studies using the ProQOL subscale for STS reported either low levels (Rochelle & Buonanno, 2018), low to moderate levels (Baugerud et al., 2018) or high levels (Rothenberg et al., 2008) of STS in CWPPs. One study in the UK reported 16% of males and 22% of females in a sample of child abuse investigators scored above the clinical cut-off point on the ProQOL subscale for STS (Tehrani, 2016). The contradicting rates of STS reported in these studies using the ProQOL may have been a result of different variables (e.g., work setting, workload, access to supervision, etc.) influencing the develops of reactions to IET in CWPPs (Sprang et al., 2021).

Overall, it is difficult to get a sense of the incidence of post-IET distress in CWPPs, because the available studies used various conceptualisations and measures. Nevertheless, studies do report that CWPPs are at risk of experiencing post-IET distress, and in some cases are highly predisposed due to factors such as working with children who have experienced sexual abuse or other types of trauma (Molnar et al., 2020).

2.3.6. Legal Counsels

Legal professionals including lawyers, solicitors, attorneys, barristers, jury members and judges are often indirectly exposed to trauma (e.g., witness statements, photographs, video footage) and this may lead to adverse psychological effects (James, 2020). Iversen and Robertson (2021) conducted a systematic review including 10 studies which examined rates and predictors of reactions to IET in lawyers, solicitors, attorneys, and judges. Sixty-three to 87% of those in the studies had at least one symptom associated with IET and 9-30% met the DSM-5 criteria for a diagnosis of PTSD. Additionally, some studies have

reported that legal professionals are at a higher risk of experiencing adverse reactions to IET compared to those in other professions such as social workers and MHPs (Levin & Greisberg, 2003; Maguire and Byrne, 2017), administrators (Levin et al., 2011), and prison and hospital workers (Lustig et al., 2008). The higher reported rates could be a result of legal professionals not having access to protective resources such as supervision and trauma training, unlike people in other professions (e.g., MHPs) (Iversen & Robertson, 2021). However, in most of the included studies, type of exposure was not recorded or controlled for, therefore, reported symptoms may have not been associated with work related IET, but direct exposure to trauma or IET out of the workplace. Nevertheless, a scoping review of literature reporting rates of secondary trauma in lawyers reported that levels of PTSD symptoms were positively associated with work-related IET (Léonard et al., 2020), suggesting IET is associated with psychological distress in some legal professionals (i.e., lawyers), also found in a study with judges (O'Sullivan et al., 2022).

To conclude, the legal profession presents a unique context for IET, as professionals are not only exposed to different types of traumatic material and less equipped with protective resources to buffer the impact of IET compared to other professionals such as MHPs, with potentially serious consequences for legal counsels' mental health. Further research that explores the impact of IET in different mediums and the influence of protective resources is essential to develop effective interventions and support mechanisms for legal professionals facing the challenges of IET.

2.3.7. Civilians

There is limited research investigating rates of reactions to IET in the general public (GP) compared to professional populations (Shen, 2020). Exposure

to extensive media coverage of traumatic events has been linked to viewers experiencing psychological distress including PTSD symptoms (Pfefferbaum et al., 2014). While the DSM-5 excludes media exposure from PTSD diagnoses (Aparicio et al., 2013), research on the general public's reaction to media-based trauma uses terms like PTSD-like symptoms, VT, and STS. Bridgland et al. (2021) measured post-traumatic stress symptoms and direct (e.g., contracted COVID-19) and indirect (e.g., media-coverage) exposure to COVID-19 in a sample of 1,040 participants from five different countries. The study reported that over 13% of participants reached the clinical cut off score for a diagnosis of PTSD and a significant correlation between exposure to media (e.g., national, and international news, social media) containing COVID-19 information and PTSD symptoms. This association between media coverage of a traumatic event (i.e., COVID-19 pandemic) and PTSD symptoms has been replicated in other studies in the pandemic (Li et al., 2020), and studies outside the pandemic e.g., terrorist attacks (Ahern et al., 2004; Houston, 2009), although some have found contradicting results (He et al., 2018).

Overall, the literature focuses on professionals who are known to be exposed to secondary trauma through their work (e.g., therapists), as these people may be at a high risk due to repeated exposures (Figley, 1995), and evidence of symptoms associated with IET in non-professionals is limited. However, a world-wide occurrence like the COVID-19 pandemic draws attention to effects of IET (e.g., reported of infections, hospital admission and deaths by media) in the GP and further research may help in the identification and prevention of adverse consequences due to learning about the traumatic experiences of others in the wider population.

2.3.8. Summary of Prevalence of Distress Associated with Indirect Exposure to Trauma

The rates of post-IET distress have been measured in different professional groups and lay people using various terms. Researchers have operationalised these terms in different ways (e.g., as synonymous, or separate concepts) and used diverse instruments to measure symptoms associated with these concepts. This makes synthesising and comparing results from different studies challenging. Nevertheless, the existing evidence supports professionals (and perhaps to a lesser extent lay people) can experience adverse reactions associated with IET and some report severe symptoms, that meet the diagnostic criteria for PTSD (Ogińska-Bulik et al., 2021; Roberts et al., 2021).

Currently, researchers have predominantly used cross-sectional designs, precluding thus any definitive conclusions about a causal relationship between IET and subsequent distress. Future studies need to employ prospective and longitudinal designs, to examine predictors of IET and track the development of symptoms (e.g., PTSD symptoms) over time. Additionally, researchers need to agree on terms used to describe reactions to IET so these effects can be reliably identified and measured, with valid and sensitive instruments, in different populations and so that findings from separate studies can be compared and synthesised.

2.4. Consequences of Post-IET Distress

Post-IET distress has been linked to several personal, interpersonal, and organisational adverse consequences (Ratrout & Hamdan-Mansour, 2020), which have been seldom investigated (Bock et al., 2020). The following section discusses a collection of available studies which have identified consequences of the emotional impact of IET in different professional groups.

2.4.1. Personal Consequences

Exposure to second-hand trauma has been linked to a number of negative reactions such as PTSD symptoms including avoidance, hypervigilance, and intrusions (Figley, 1995) and cognitive distortions about self, others and the world (Pearlman & Saakvitne, 1995). These symptoms associated with the emotional impact of IET can result in professionals experiencing negative consequences which affect their psychological and physical wellbeing and quality of life. Bock et al. (2020) tested the effects of STS on levels of depression and anxiety in 320 nurses employed in Germany. Participants answered whether they had been indirectly exposed to trauma at work and if they were currently experiencing intrusions regarding this event and completed measures of depression and anxiety. Over 91% of them had experienced work-related IET and 25% were experiencing continuous rumination or flashbacks. Nurses experiencing STS had greater anxiety and depression scores compared to those who had not experienced IET or those who had IET but not STS. These results suggest that depression and anxiety may be a consequence of STS, and not of IET alone. Still, as the study only recorded one symptom cluster of STS (i.e., intrusions) it is not known whether other symptoms such as hypervigilance and avoidance are associated with depression and anxiety in this study.

Nevertheless, other symptoms related to STS have also been associated with anxiety and depression. Živanović and Vukčević Marković (2020) investigated potential relationships between STS and depression and anxiety symptoms in 270 people working with refugees (El-Shaarawi & Razsa, 2019). Findings reported that negative alterations in cognition, mood, and reactivity (NACMR; a cluster of PTSD/STS symptomatology) had a large direct effect on anxiety and depression symptoms, and intrusions had a direct effect on anxiety symptoms only. STS

avoidance symptomatology was found to have no significant effect on depression or anxiety symptoms. Furthermore, effects of STS on worker's quality of life (i.e., satisfaction in relationships, leisure, security, family, living situation, housing, money, and employment) were fully mediated by the presence of depressive symptoms, suggesting STS had an indirect impact on quality of life by influencing the development of depressive symptoms. Depression is argued to be a consequence of a person's core beliefs about themselves, others and the world being disrupted by experiencing a traumatic event (Janoff-Bulman, 1992) as a person's thoughts about themselves and the world become increasingly negative (i.e., PTSD symptomatology) leading to the production and maintenance of depressive symptoms (Teasdale, 1983). However, the temporal relationship and aetiological link between PTSD and depression after trauma is yet to be adequately explored in empirical research (Petereit-Haack et al., 2020).

Direct and indirect exposure to trauma and related PTSD symptoms are associated with substance misuse and other addictive behaviours (Donnelly & Siebert, 2009; Levin et al., 2021). Duffy et al. (2015) reported that among nurses those with STS were more likely to use alcohol. It is possible that alcohol may be used to cope with work-related stress and that support is needed for nurses in adopting more adaptive coping strategies. However, as the authors did not measure IET, it cannot be assumed that symptoms of STS, associated with increased alcohol consumption, were a result of work related IET. Still, other researchers have reported similar findings in other groups of helping professionals (e.g., Bonumwezi et al., 2022).

To explore links between type of exposure, type of trauma and various addiction types, Levin et al. (2021) investigated associations between type of traumatic event (e.g., physical harm, weapon attack, combat, sexual assault),

mode of exposure (i.e., direct, or indirect) and different types of addiction, including substance abuse, excessive gambling, extreme pornographic viewing, and compulsive sexual behaviour, in 4025 Jewish participants living in Israel. The authors reported positive associations between indirect exposure (to all types of trauma) and risk of addiction. The incidence of addictive behaviours was almost twice as high in people who had been indirectly exposed to sexual assault, compared to non-exposed people. Plus, those who had experienced sexual assault directly and indirectly were nearly four times more likely to report addictive behaviours. These findings suggest that people indirectly exposed to trauma may be at risk of developing addictive behaviours, particularly when learning about others' experiences of sexual assault. Additionally, people who have been directly and indirectly exposed to trauma may be more at risk of developing addictive behaviours, suggesting the need for further support, for those exposed to indirect trauma and with a personal history of trauma. Even though these findings do not prove that addictive behaviours are a consequence of the emotional impact of IET, they suggest a strong association between exposure (direct and indirect) to trauma and addiction, they do suggest people who experience IET are more likely to exhibit addictive behaviours.

Although PTSD after direct trauma exposure has been linked to negative physical health consequences, including cardiovascular and musculoskeletal disorders and adverse alterations in the stress response (Ryder et al., 2018), little is known about the physical and health consequences of post-IET distress (Lee et al., 2018). One study involving 539 clinical social workers tested the relationship between IET and STS symptoms and perceived physical health (Lee et al., 2018). Results from a mediation analysis indicated no direct effect of IET on social workers' perceptions of general health, but an indirect effect did occur via STS

symptoms, whilst controlling for age, gender, professional experience, and hours worked. These results suggest that the emotional impact of IET (i.e., STS) influences perceived general health (i.e., current health, vulnerability to illness, and future health), but IET alone does not. Therefore, further investigations into factors which make professionals vulnerable to experiencing STS symptoms is warranted as these people may be more likely to experience adverse consequences such as poorer perceived general health. The physical consequences of post-IET distress in professionals has also been investigated using qualitative methods. Iranian midwives reported experiencing different health problems when affected by STS including skin problems, hair loss, weight loss and insomnia (Hajiesmaello et al., 2022). By using qualitative methods, this study provides insight into possible physical and health consequences of post-IET distress an area lacking investigation.

2.4.2. Interpersonal Consequences

PTSD symptoms related to IET have been linked to interpersonal problems in professionals (Collins & Long, 2003). For example, symptoms of avoidance such as distancing oneself from clients and emotional numbing manifest in personal relationships where a professional withdraws from family and friends (Monson et al., 2010). However, there is limited research investigating interpersonal consequences of effects of IET (Ariapooran & Raziani, 2019) compared to people exposed directly to trauma (Taft et al., 2011). Robinson-Keilig (2014) measured levels of STS symptoms and interpersonal problems in 320 licensed MHPs in the US. MHPs with high levels of STS symptoms reported lower satisfaction and intimacy in romantic relationships, decreased sexual interest and lower use of constructive communication and greater use of demand-withdrawal communication patterns (e.g., one partner wants to initiate conversation and the

other seeks to avoid or stop this discussion) whilst other factors (gender, professional years of experience, and number of trauma cases in workload) were found to have little effect on the relationship between STS and interpersonal issues. In particular, higher levels of intrusions were linked to demand-withdrawal and avoidance communication patterns. Therefore, it could be suggested that STS symptoms adversely affect how MHPs experience romantic relationships and communicate with their loved ones. Indeed, in another study with Iranian nurses, nurses who were experiencing severe levels of STS were more likely to report lower marital intimacy and sexual satisfaction compared to nurses with lower/no STS after controlling for demographic variables (Ariapooran & Raziani, 2019). Still, as the participants in this study had certain characteristics (e.g., married, working as a nurse, living in Iran) which may have influenced the results obtained, the findings may not be generalisable to helping professionals of different sexualities, marital status, occupation, and country of residence.

Experiencing repeated IET has been argued to disrupt clinicians' cognitive schemas or beliefs and assumptions concerning fundamental psychological needs including safety, trust, esteem, power, and intimacy (McCann & Pearlman, 1992). Therefore, as symptoms of VT manifest (e.g., disruptions in schemas associated with psychological needs) these may affect how a professional operates in relationships outside of work (Pearlman, 2003). Women working with survivors of rape (Clemans, 2004) reported they had become over-protective parents, as they had become aware of how dangerous the world is through their work. For example, several women felt either uncomfortable, unable to enjoy or uninterested in sex with their romantic partners, with one participant saying "sometimes after having a very emotional day, being faced with such abusive situations, and then going home and being with my boyfriend and making love to him and a couple of

times really shutting down, feeling really freaked out […]," (Clemans, 2004, p. 154). These qualitative findings give a snapshot of how working with trauma survivors can affect professionals' beliefs about others and the world and the subsequent impact on their relationships at home. Similar results have been found in contemporary phenomenological studies with female trauma-workers who support sexual abuse survivors (Padmanabhaunni & Gqomfa, 2022). Still, as these studies included only female participants, the results may not reflect how VT may change personal relationships of professionals of different genders. Nevertheless, the reported findings suggest that post-IET may lead to negative consequences for professionals on interpersonal relationships, suggesting that experiences at work seep into their personal lives.

2.4.3. Organisational Consequences

Helping professionals face risk of occupational stress due to numerous factors including time pressures and high workload (Lukan et al., 2022). Included among these risk factors is IET, as distress related to IET has been linked to several negative organisational consequences including reduced quality of care, increased staff absenteeism, sick leave, and desire to leave the profession (Mealer & Jones, 2013; Rainville, 2015). Ratrout and Hamdan-Mansour (2020) measured rates, predictors, and perceived consequences of STS in 202 nurses. Over half of the participants had high or severe levels of STS symptoms which was associated with absenteeism and sick leave. These findings are similar to those reported in other studies (e.g., Chisolm, 2022) and could be a result of nurses wanting to avoid work/patients that remind them of work-related IET (Mâirean et al., 2014) or simply due to exhaustion from coping with STS (Lee et al., 2022). Interestingly, Ratrout and Hamdan-Mansour (2020) did not find significant associations between STS and nurses' perceived quality of care or

desire to leave the profession as found in previous studies (e.g., Duffy et al., 2015; Labrague & de Los Santos, 2021). A professional's capacity to provide care for clients has been argued to be adversely affected by the emotional impact of IET as the professional's ability to empathise, sympathise and engage with clients reduces (Mathieu, 2012), as they increasingly avoid or fear working with the client (Lombardo & Eyre, 2011). Consequently, as a professional's ability to provide care for patients decreases, clinical errors increase, and patients' satisfaction of care and trust for the clinician dwindles (Stoewen, 2020).

2.4.4. Summary of Consequences of Post-IET Distress

Post-IET distress may be deleterious on professionals' mental and physical wellbeing and interpersonal relationships. Additionally, symptoms associated with IET may affect how a professional operates at work affecting the quality of care they offer their clients and increasing the likelihood of absence from work or leaving the profession altogether. Future studies could further investigate consequences of distress post-IET to illuminate the true 'cost of caring' for trauma survivors and build on evidence to suggest the need for organisations to implement interventions to protect professionals working in occupations which inherently include IET.

2.5. Factors Associated with Post-IET Distress

Previous studies have reported that some but not all professionals who are indirectly exposed to trauma experience significant psychological distress. These findings suggest that variables other than secondary trauma may influence the development of distress post-IET. These factors maybe predispose professionals to distress or mediate the relationship between IET and distress. Knowing these factors, could help the early identification of at-risk professionals and also support the development if interventions which enhance protective factors (Offord &

Kraemer, 2000). This section critically discusses studies which examined risk factors of post-IET distress.

2.5.1. Individual Differences

2.5.1.1. Age and Gender

Associations between demographic characteristics such as age and gender and the onset of adverse reactions to IET (e.g., STS, CF) have been examined in several studies yielding inconsistent findings. For example, in a sample of 321 nurses in Saudi Arabia, age was found to be a non-significant factor in the development of CF but gender (i.e., being male) was associated with STS (Alharbi et al., 2020). On the other hand, Salloum and colleagues (2015) found that older age predicted lower levels of STS in 108 child welfare workers, and no significant differences in STS between men and women. Yet, in a US study, female gender was associated with the onset of STS in 107 social workers (Quinn et al., 2019). These findings represent an unclear picture of the influence (if any) of age and gender on STS. These findings differ in relation to evidence from studies with people exposed directly to traumatic events, with females being twice as likely to develop PTSD after exposure (McLean et al., 2011). Based on this, it could be suggested that factors, other than gender (e.g., personality characteristics, organisation factors), are more influential in the development of distress associated with work-related secondary trauma, compared to PTSD resulting from direct exposure.

To make sense of the previously conflicting findings of risk factors of post-IET distress, Hensel et al. (2015) conducted a meta-analysis of 38 studies including in professionals who work therapeutically with trauma survivors. Results found a small significant association between age and STS, with older people likely to experience higher distress (potentially due to having a longer career in

trauma work and therefore higher occurrence of trauma exposure), and gender to have no influence on STS. Additionally, in a following meta-analysis by Zhang et al. (2018b) examining risk factors associated with CF in nurses working in China, non-significant relationships between demographic characteristics (e.g., age and gender) and CF were found, closely mirroring the results reported by Hensel and colleagues (2015). Nevertheless, in a systematic review of papers investigating risk factors of post-IET distress in child protection workers, several of the included studies reported that females were more likely to experience higher levels of STS (Sprang et al., 2011) implying the influence of gender in the development of post-IET.

Overall, although the evidence base is limited due to methodological and conceptual limitations and a scarce number of review studies synthesising results from multiple studies examining risk factors associated post-IET distress, several studies have suggested demographics to play an insignificant role in the development of post-IET. Therefore, the role other factors such as personality characteristics and organisational factors should be explored (Elwood et al., 2011; Hensel et al., 2015).

2.5.1.2. Empathy

There is lack of consensus regarding the conceptualisation of empathy. Some authors regard this phenomenon as a cognitive ability where one takes the perspective of another and understands their experiences and emotions (Amodio & Frith, 2016), whilst others view empathy as an affective response to witnessing the emotions of another (Cuff et al., 2016; Rizzolatti et al., 2009). More current conceptualisations describe empathy as multifaceted, comprising of both cognitive and affective mechanisms which are distinct but interact (Shamay-Tsoory, 2011). In helping professions, empathy is regarded as a valuable core skill in both health

and social care (Decety & Fotopoulou, 2015; Hasgul & Serpen, 2014), as it is considered important for a professional to perceive and apprehend a service-user's feelings, thoughts, and experiences to assess their needs and deliver personalised care (Moudatsou et al., 2020). Empathic communication between client and clinician in healthcare settings has been associated with increased positive client treatment outcomes (Reiss, 2010) and greater client satisfaction and treatment adherence (Hojat et al., 2010; Ogle et al., 2013).

Although professional empathy is regarded as vital for effective patient care, it has been proposed that professionals with a high empathic ability are more likely to experience adverse reactions to IET when working with traumatised clients (Figley, 2013), as empathic engagement allows for the absorption of traumatic material from client to clinician, thus making one vulnerable to conditions such as STS (Figley, 1993). However, the influence of empathy on the development of adverse reactions to IET is unclear. For example, in some studies empathy was associated with an increased risk for STS (Hunt et al., 2019; Leinweber & Rowe, 2010; MacRitchie & Leibowitz, 2010; Moreno-Jiménez et al., 2022; Ogińska-Bulik et al., 2022), whereas in others with a reduced risk (Richardson et al., 2016; Wagaman et al., 2015). Some studies report both positive and negative effects of empathy, for example empathy associated with STS and posttraumatic growth (Lai et al., 2021). Finally, some reported no significant relationship at all (Bridger et al., 2020; Crumpei & Dafinoiu, 2012; Rayner et al., 2020; Turgoose et al., 2017).

The conceptualisation and measurement of empathy could be partly responsible for these conflicting results. Particular dimensions of empathy (e.g., affective vs. cognitive empathy) may relate differently to STS and burnout (Laverdière et al., 2019b; Wagaman et al., 2015). Therefore, to develop a

complete understanding of the role that empathy plays in the development of post-IET distress, studies need to include a multidimensional assessment of empathy, examining individually its components. Additionally, other factors that may be highly intercorrelated with empathy (e.g., emotion regulation) could be mediating the role between empathy and post-IET distress thus need to be further examined (Mottaghi et al., 2020; Patrick, 2021).

2.5.1.3. Emotion Regulation

Professionals who work with survivors of trauma may experience strong emotional states which they may try to control and/or suppress (Tschan et al., 2005). This behaviour is defined as emotion regulation (ER), a process where a person consciously and/or unconsciously modulates their emotional responses in order to decrease the intensity of affective states and to adapt suitably to environmental demands (Rottenberg & Gross, 2003). Two forms of ER have been identified: (a) cognitive reappraisal (CR), defined as cognitively re-evaluating the event that has triggered the emotional reaction to create new meaning and change the associated emotional impact, and (b) expressive suppression (ES), which refers to actively seeking to reduce the expression of visible emotions in order to reduce the intensity of the affective experience (Lazarus & Alfert, 1964). ER is argued to be involved in empathic engagement as one manages one's own emotional reactions when observing the affective state of another (Wagaman et al., 2015).

Interestingly, physiological responses to stimuli may differ depending on what type of ER one uses. A study observing biological changes in people using different ER strategies when watching a film anticipated to elicit disgust, reported that people in the ES group had higher sympathetic nervous system (SNS) activation, compared to people asked to use CR or those in a control group (no ER

strategy assigned) (Gross, 1998). As the SNS is responsible for the fight or flight

response (i.e., the stress response) (McEwen, 1998a), these results suggest that

the use of ES may result in a person feeling more stressed compared to when

using CR. Furthermore, fMRI studies looking at activation in various parts of the

brain during the habitual or instructed use of emotion regulation strategies

reported that participants who used ES had higher activation in the amygdala, part

of the brain associated with activation of the stress response (LeDoux, 2000), than

those who used CR (Goldin et al., 2008; Vanderhasselt et al., 2013). The process

of trying to suppress expressions of emotion is thus stress-inducing in itself and

exacerbates activation of the stress response and amygdala (Goldin et al., 2008).

Over activation of the SNS can lead to allostatic load, that is, attrition of the body

and brain leading to physical and psychological impairments (Berens et al., 2017),

and hyperactivation of the amygdala, found to be a factor associated to PTSD

(Andrewes & Jenkins, 2019).

The influence of ER in the development of PTSD after direct exposure to

trauma has been established in the literature (McLean & Foa, 2017), with studies

reporting ES to be associated with higher levels of PTSD symptoms (Khan et al.,

2021), and CR linked to lower levels (Boden et al., 2013). ER may thus play a role

in the development of psychological distress after trauma, although research

investigating the association between ER strategies and adverse reactions post-

IET is limited compared to direct exposure. Singh and Hassard (2021) investigated

associations between types of ER, emotional labour, demographic variables, and

STS in 99 MHPs. The researchers reported that over 50% of MHPs were

experiencing high levels of STS, 35% reported moderate levels, and 13% were

experiencing low levels. Neither ES nor CR were significantly associated with

STS, suggesting that ER methods are not linked to post-IET distress. As this study

involved a small sample therefore, the association between ER and STS may not have been identified due to a lack of power. Indeed, other studies have reported negative associations between CR and STS (Măirean, 2016), and overall ability to regulate one's emotions (tested in a measure of empathy) has been linked to lower levels of STS (Wagaman et al., 2015). Still, it is hard to make sense of these findings as the relevant studies have used various measures of emotion regulation and reactions to IET. Overall, future studies need to further investigate the influence of ER when exposed to indirect trauma as types of emotion regulation could be protective when exposed to secondary trauma at work.

2.5.2. Personality and Coping

2.5.2.1. Coping

Coping has been defined as cognitive and behavioural adjustments that result from how a person manages internal and external stressors (Folkman & Moskowitz, 2004). When faced with a stressor people use different coping mechanisms which govern how a person behaves to reduce or tolerate stress induced by stimuli (Algorani & Gupta, 2022). Generally, coping mechanisms are either proactive (i.e., aiming to cope with future stressors) or reactive (i.e., reaction to the present stressor). These styles of coping are adaptive in different circumstances. For example, people who use proactive mechanisms cope well under stress in stable environments, whereas those who use reactive methods are more likely to deal effectively with unpredictable events (Coppens et al., 2010). Coping can be divided into four categories: 1) problem-focused (e.g., actively engaging with a stressor, planning, problem solving and suppressing competing stressors); 2) emotion-focused, (e.g., dealing with the emotions triggered by the stressors) [e.g., acceptance, humour]); 3) meaning-focused, e.g., trying to make knew meaning out of the experience; and 4) social, such as seeking emotional and

practical support from others (Folkman & Moskowitz, 2004). Some coping

mechanisms are suggested to be more adaptive than others, for example,

problem-focused coping and positive-reframing (an emotion-focused tactic) have

been associated with better adjustment to stressors and less psychological

distress post-exposure, whereas other coping strategies such as avoidance,

rumination, self-blame, and venting have been linked to higher distress (Ding et

al., 2015; Ong et al., 2016).

Research has linked coping styles with the onset of PTSD symptoms after

exposure to trauma (Badour et al., 2012) and some authors suggested how a

person copes when exposed to trauma is more influential on the development of

PTSD symptoms than the traumatic event itself (Mikulincer & Florian, 1996).

Therefore, professionals may be affected in different ways when exposed to IET at

work depending on how they cope with experiencing such events. Bourke and

Craun (2014) investigated how different styles of coping predicted the severity of

STS symptoms in child-exploitation personnel in the US (N = 677) and UK (N =

288). US participants were more likely to report higher rates of STS than in the

UK, and denial and increased tobacco and alcohol use in the past year were

associated with higher levels of STS in both US and UK workers. A greater use of

social support and formal supervision was associated with lower STS in

participants from the US. These findings are interesting as they suggest some

coping mechanisms may be universally harmful (e.g., denial and increased

substance use) and other strategies as protective in particular circumstances (e.g.,

differences in social support systems and supervision), as well as other influential

variables (e.g., working environment). Similar findings were reported in a study

with professionals working with refugees, reporting proactive coping strategies

(e.g., social support, positive-reframing, planning) to be protective against STS,

and avoidance coping (e.g., cognitive and behavioural disengagement and substance use) to be maladaptive (Maša Vukčević & Marko 2022). Thus, coping strategies associated with cognitive engagement (e.g., planning, problem solving) might be protective against stress post-IET. Therefore, some coping-mechanisms (e.g., tasks associated with cognitive engagement) may be more likely to protect professionals who experience work-related IET, and tools which manipulate cognitive activity may promote effective coping and protect professionals' wellbeing when at work (Everall & Paulson, 2004). Additionally, the availability and use of social support and supervision may help professionals cope better in the context of trauma-work.

2.5.2.2. Rumination Tendency

Rumination is commonly understood as repetitive and passive thinking which focuses one's attention on existing depressive symptoms and potential triggers and consequences of these symptoms (Nolen-Hoeksema, 1991). This definition suggests that rumination is a reaction to experiencing depressed mood. In more recent literature, rumination is now viewed as a transdiagnostic characteristic which can support the maintenance of various mental health problems. For example, in people with PTSD, those who ruminate are argued to repeatedly think about the traumatic event and its consequences (Moulds et al., 2020). Furthermore, rumination has been reported to be a predictor of psychological distress (e.g., PTSD, depression, and anxiety; Mazzer et al., 2019; Moulds et al., 2020), suggesting this type of thinking may be a precursor in the development of mental health problems and not solely a reaction to experiencing symptoms of psychological distress. By investigating rumination as a trait characteristic rather than a reaction to depression allows researchers to explore

the influence of rumination on the development of psychological distress (e.g., PTSD symptoms after exposure to trauma).

Rumination tendency has been explored as a factor of PTSD symptoms prospectively. In a four-year longitudinal study, Spinhoven et al. (2015) examined whether habitual rumination before exposure to trauma predicted the development of PTSD in 2,981 healthy participants. At follow-up 359 participants reported experiencing a traumatic event and 14% of this group had developed PTSD. Rumination tendency and gender (being female) were found to directly predict PTSD. These results suggest people who inherently ruminate are more likely to experience PSTD after exposure to trauma. Additionally, results found that people with a higher tendency to ruminate were more likely to perceive the traumatic experience as having a greater impact on their lives and influencing the onset of PTDS further, suggesting rumination has an indirect as well as direct effect on the onset of PTSD symptoms after exposure.

Similar findings have been reported in studies exploring the role of rumination tendency in the development of PTSD symptoms after IET. Bąk and Ogińska-Bulik (2022) measured rates of STS in 682 police officers who directly worked with survivors of trauma in Poland. Rumination was measured using the Event Related Rumination Inventory (Cann et al., 2011) which measures intrusive rumination (i.e., involuntary thinking about clients' traumas) and deliberate rumination (i.e., voluntarily thinking about clients' traumatic experiences). Results found that over 86% of participants had low levels of STS and 14% were experiencing high levels. Intrusive ruminations about clients' experiences were found to be the strongest predictor of STS explaining 45% of variance. Additionally, intrusive rumination and deliberate rumination were both found to predict STS symptoms. These findings are like those in additional studies with

other helping professional groups (McKinnon et al., 2022; O'Mahony et al., 2018), although these studies focused mainly on direct exposure to trauma. Overall, the role of rumination tendency in the development of PTSD symptoms has been repeatedly reported in those who have experienced direct exposure to trauma. More investigation into the role of rumination in the context of IET is needed, to define whether this trait is linked to higher levels of distress in those exposed.

2.5.3. Characteristics of IET

Features of traumatic events, characteristics of survivors (e.g., age, gender), and types of exposure to traumatic material (e.g., presence of audio and visual stimuli) may influence the development of adverse reactions. This section includes studies examining these factors in the development of post-IET distress, as identifying if some types of trauma, certain survivors' characteristics, and/or if different forms of exposure are linked to higher rates of distress may help in recognising situations where a professional may be particularly at risk of experiencing adverse reactions to IET.

2.5.3.1. Types of Traumatic Events

Studies based on people directly exposed to trauma report that some types of traumatic experiences (e.g., sexual, physical assault and robbery) are associated with a higher risk of PTSD (Frans et al., 2005). Kessler et al. (2017) reviewed associations between type of traumatic events (including experiences of direct and indirect exposure) and PTSD in 68,894 World Health Organisation mental health surveys from 24 countries. The review found that events related to interpersonal violence had the highest risk of PTSD, and traumatic events with the highest PTSD burden were sudden death of loved one, rape, other types of sexual assault, physical abuse by an intimate partner, and kidnapping. These findings suggest that some types of traumas are more likely to result in PTSD and have a

higher burden in trauma-exposed populations. However, a comparison of PTSD rates between different types of exposure (direct vs. indirect) was not conducted, therefore it is unclear if different types of trauma experienced vicariously by participants were as likely to result in the onset of PTSD symptoms compared to direct experiences. Additionally, as most of the traumatic experiences (apart from refugee workers in warzones) reported did not occur through participants' occupations, using the results of this study to suggest helping professionals who work with survivors, who have particular traumatic experiences, are at higher risk of experiencing PTSD is speculative.

Some studies have examined associations between STS and type of client trauma in helping professionals. In a systematic review of studies investigating risk factors of STS in MHPs (Hensel et al., 2015), professionals were reported to be more likely to experience STS if they had a personal history of trauma, especially when a professional had personal experiences of trauma similar to their clients, for instance, therapists with a history of domestic or sexual abuse working with sexual abuse survivors were at higher risk of experiencing STS (Jenkins & Baird, 2002), and child-welfare workers with a history of child abuse were more likely to experience STS when working with children compared to colleagues who had previously experienced terrorist attacks (Nelson-Gardell & Harris, 2003). These findings demonstrate the influence of type of trauma in the development of PTSD symptoms related to IET in professionals with a history of trauma similar to that of their clients. These findings give some insight into how clients' traumatic experiences can be more or less distressing for those supporting them. On the other hand, type of client trauma, such as developmental (e.g., physical or sexual abuse in childhood) or episodic trauma (e.g., one-off events such as a car

accident, rape or combat) has not been found to predict the likelihood of STS (Quinn et al., 2019).

An experimental study utilising the trauma film paradigm method measured participants' immediate (i.e., emotion, state valence, arousal, immobility anxiety, disgust, embarrassment and involvement and attention in the film, and physical arousal including HR) and delayed responses (i.e., frequency of intrusions associated with the trauma film in a one-week follow up after initial participation) after watching 12 different aversive films (Arnaudova & Hagenaars, 2017). Each film included one of four themes (i.e., physical contact, sexual, contact, traffic, or food) and were designed to invoke either neutral, positive, or negative affect in participants. Results found aversive films in each theme category were linked to the highest number of intrusions reported in the follow-up period and no differences in number of intrusions associated with neutral vs. positive films were identified. Participants reported that all aversive films elicited similar levels of emotion and valence and were associated with the highest levels of negative emotions (e.g., disgust, distress, and embarrassment) directly after viewing compared to positive or neutral films. Interestingly, the highest number of intrusions reported were related to the negative food film compared to the negative sexual-contact or traffic film but did not differ to the negative physical film. Also, there was a non-significant difference in intrusions found between the negative physical, sexual or traffic films. As the negative food film resulted in the highest reported levels of disgust, it could be suggested that disgust is linked to intrusions at follow-up although this relationship needs to be further explored. Generally, these findings suggest that the theme of a negative film in a trauma paradigm study may not matter when aiming to induce emotional reactions in participants directly after viewing a film. Additionally, these findings propose that watching

negative films associated with food are more likely to result in the viewers experiencing intrusions seven days after, than if they had watched a negative video containing content of physical or sexual contact or traffic. An explanation for these outcomes could be that as participants will more likely come into contact with stimuli linked to the negative food video in their day-to-day life in the follow-up period, they may be more likely to experience intrusions associated with food, compared to those of sexual, physical or traffic content. Overall, this study supports the claim that people can experience PTSD symptoms (i.e., intrusions) after IET (e.g., watching an aversive film), are more likely to experience intrusions related to a film which elicits negative emotions (compared to neural or positive), and that potentially the type of adverse material included in the exposure does not influence the development of intrusions at follow-up.

In future studies, the influence of type of trauma in IET in the development of adverse reactions in helping professionals could be explored potentially using qualitative methods to elucidate findings in quantitative studies. By identifying if some types of traumas are more likely to put professionals at risk of developing post-IET distress, services could be made aware that these workers may need extra support (e.g., further supervision, training, psychoeducation, counselling).

2.5.3.2. Audio-Visual Stimuli

Helping professionals who work in various occupations may experience IET through different avenues, for example, accounts of trauma spoken directly to a therapist by a survivor, transcribers listening to people's traumatic experiences through audio recordings, or legal professionals reading written accounts of trauma in a crime investigation. In various types of exposures, a person witnesses different kinds of stimuli, for example, if a survivor is directly talking to a professional face to face, not only does the professional learn about the traumatic

event, but also witnesses visual and audio stimuli such as the survivor's emotional expressions, body language and vocal tone. On the other hand, if a professional encounters a written account of a traumatic event, never meeting the survivor in person, they will not experience the same stimuli as those working directly with survivors.

Previous studies have found significant rates of PTSD symptoms associated with clients' trauma in professionals who work face to face with survivors, e.g., MHPs (Sodeke-Greson et al., 2013), social workers (Lee et al., 2018), nurses (Zhang et al., 2018a), who experience both audio and visual stimuli when learning about their client's traumatic experiences. Exposure to traumatic material (e.g., pictures, statements, or other materials) may be as equally distressing (Cornille & Meyers, 1999), but research exploring the impact of these more removed forms of IET is scarce. A qualitative study explored experiences of STS in transcribers who were exposed to traumatic events through audio recordings (Kiyimba & O'Reilly, 2016). The participants reported that they had experienced distress and feelings of helplessness related to accounts of trauma they had listened to and transcribed suggesting that people who are exposed to audio-stimuli exclusively when vicariously exposed to trauma may also experience adverse effects, although studies using experimental designs could explore this association further.

The impact of different types of exposure to IET has also been explored quantitatively. Butler et al. (2017) investigated the impact of trauma-related content on student social workers during training, including relationships between different types of exposure to trauma (e.g., fieldwork with survivors of trauma vs. learning about traumatic experiences through coursework) and rates of STS. Working in the field with trauma survivors and doing field work that focused on trauma were

both factors associated with PTSD symptoms. Higher stress experienced in fieldwork was significantly associated with PTSD symptoms and training-retraumatisation (i.e., reactivation of thoughts and feelings of personal experiences of trauma), and stress related to coursework was not associated with either outcome, although, students reported significantly higher levels of stress and training-retraumatisation related to coursework than fieldwork. STS was predicted by training-retraumatisation, fieldwork stress, and low levels of self-care effort. These findings imply that exposure to trauma in fieldwork or coursework can have the same impact on reactivation of student's past personal experiences of trauma, although only fieldwork stress was associated with trauma symptoms. Therefore, it is possible that stress experienced in field work compared to coursework is different, and, as trauma symptoms were significantly predicted by field-work stress (and not coursework stress), that having face to face contact with trauma survivors is more likely to influence the development of PTSD symptoms in students. Overall, these findings imply that helping professionals in training may experience PTSD symptoms associated with IET as a result of working directly with trauma survivors but not through exposure to trauma in coursework, although students with a history of trauma may experience training-retraumatisation through different types of exposure in training. Nevertheless, as the study did not detail the types of trauma-content included in students' coursework, what type of stimuli (e.g., videos, pictures, testimonies) the students were exposed to cannot be deduced. More research is needed to elucidate whether different types of stimuli present in experiences of vicarious exposure to trauma put professionals more or less at risk of PTSD, and if similar relationships are found within different occupations.

2.5.3.3. Characteristics of Survivors

The potential role of characteristics of trauma survivors has yet to be sufficiently explored (VanDeusen & Way, 2006). For example, in the qualitative arm of a mixed-methods study, care-providers generally perceived that working with clients who were seen as particularly vulnerable (e.g., homelessness, learning disabilities, unemployment, lack of basic resources), were a child or adolescent, or had complex trauma histories exacerbated symptoms of CF (de Figueiredo et al., 2014). These findings suggest professionals may experience heightened distress when working with clients perceived as particularly vulnerable. Additionally, qualitative work (Caringi et al., 2015) has explored facilitators associated with STS in school staff (teachers, paraprofessionals, counsellors, social workers and administrators) including themes around student characteristics. The schools which participated reported having large numbers of traumatised children. Reported themes highlighted staff's associations between 'feeling successful', student characteristics and higher levels of STS and work-related stress, with one teacher describing difficulty feeling successful "if a kid's hungry or worried about going home or whatever they're not going to pay attention anyways so I'm just standing up there being a white sound to them," (Caringi et al., 2015, p. 251). Nonetheless, staff also reported working with students perceived as "more troubled, willing to work, and resilient" (Caringi et al., 2015, p. 251), made teachers themselves feel successful in their role and protected against STS and other work-related stress. These findings suggest that a combination of student characteristics and feeling successful in one's occupation could buffer the effects of IET, although being aware of a child's suffering and experience of traumatic experiences can make working with children distressing. This study provided some insight into how staff working in an educational setting may be positively or

negatively affected by particular characteristics of their pupils. Generally, associations between trauma survivors' characteristics and the development of adverse reactions to IET in helping professionals have been inadequately investigated. Therefore, future investigations could explore if working with some clients may have a greater impact on trauma workers.

2.5.4. Controllability, Predictability and Preparedness

In earlier studies, unpredictable and uncontrollable stressors have been reported to put people at higher risk of PTSD, and that preparedness for the occurrence of trauma and ones' psychological reactions during and after exposure are protective. Although, these associations have been less explored in contexts where professionals are indirectly exposed to trauma, findings from the PTSD literature suggest that these factors may also influence the development of post-IET distress. The following section discusses a sample of studies which have explored connections between controllability, predictability, and preparedness and post-traumatic stress after direct and indirect exposure to trauma.

2.5.4.1. Controllability

Control is defined as a multidimensional phenomenon (Skinner, 1996). Researchers have explored one-dimension, perceived control (PC), particularly in relation to traumatic events and negative emotional states predominantly connected to psychological distress (Gallagher et al., 2014). Theoretically, a lack of perceived control is recognised as a psychological risk factor in the development of anxiety disorders (e.g., PTSD) (Barlow, 2000). Though there are several definitions of perceived control in the literature, PC can be "broadly defined as perceptions of control over the nature of situational factors and events" (Gallagher et al., 2014, p. 574), exhibited when a person believes in their ability to secure desired outcomes (Skinner, 1995), and is an independent construct in

relation to other definitions of control (Weems & Silverman, 2006). PC as a trait is thought to develop through early life experiences and becomes relatively stable in adulthood having a moderating influence over anxiety; for instance, PC is associated with greater use of adaptive emotion regulation strategies (e.g., cognitive reappraisal) and lower anxiety, whereas low PC is linked to advanced use of maladaptive emotion regulation (e.g., emotion suppression) and higher anxiety (Zhao et al., 2021). Additionally, experimental studies manipulating levels of PC when faced with a stressor reported better coping (e.g., higher distress tolerance, less anxiety, and lower catastrophic thoughts) in participants in high-PC conditions compared to low-PC conditions (Litt, 1988; Sanderson et al., 1989). Therefore, evidence from previous research suggests that higher levels of PC may be protective when one is faced with stressors.

Researchers focusing on the effects of direct exposure to trauma reported higher perceived control to be associated with lower PTSD symptoms (Gallagher et al., 2014), suggesting PC to be protective against the impact of direct trauma exposure. On the other hand, research examining the association between PC and adverse reactions to IET in professionals is limited compared to people directly exposed to trauma and usually defines PC in the context of work (i.e., work-related PC). Some studies have suggested that higher levels of perceived control may safeguard professionals against possible adverse effects of IET. For example, Kulkarni et al. (2013) found that domestic-violence workers with a low sense of control over their work were at higher risk of experiencing STS than those with high sense of control. These findings suggest that a professionals' sense of control at work may buffer the onset of STS after IET. As this study measured sense of control in the context of work, it cannot be inferred if PC is an individual trait which influences the development of STS after IET. Regehr et al. (2004)

examined predictors, including individual factors (e.g., perceived power and control), of post-traumatic stress, depression, and post-traumatic growth in 175 child welfare workers. Individual factors, high levels of disturbances in relationships and a sense of being out of control had a significant direct association with PTSD and depressive symptoms. These findings suggest that several factors contribute to the experience of distress in professionals who work with trauma survivors, and a greater sense of control as a protective factor.

Some investigations have tested associations between locus of control (LC) and rates of adverse effects of IET. LC is defined as a person's sense of control over their own fortune (Ng et al., 2006) and people are argued to either have an internal (i.e., one believes they are in control of desired outcomes, and usually confident in controlling external environments) or external (i.e., one has a lack of belief in their control of obtaining desired outcomes and views external influencers or luck as having control over outcomes) LC (Rotter, 1966). Malkina-Pykh (2017) tested correlations between internal and external LC and rates of STS and burnout in 87 psychologists working in Russia. LC was measured generally and in specific areas including relationships with family, interpersonal relationships, work, failure, achievements, and health/illness. The results found that STS was significantly positively associated with some sub-components of LC (i.e., family and health/illness). These results suggest that general LC may not predict STS in psychologists, but a lack of perceived control in family relationships and issues regarding health may forecast STS, therefore it could be suggested that stressors outside of work (e.g., health concerns, or problems with family members) and a professionals perceived control over these external stressors may increase their risk of developing STS. Braun et al. (2022) conducted a study examining the relationship between STS and LC, differentiating between external and internal

LC. Results indicated a positive association between external LC and STS, suggesting that individuals with a predominantly external LC may be at increased risk for developing STS. Conversely, an internal LC was found to exert a protective effect against STS. Notably, helplessness emerged as a significant mediator in both these relationships, highlighting its role in the pathway between LC and STS. In light of these findings, it could be recommended that organisations which employ workers to care for survivors of trauma, and exposed to IET, should develop training which enhances a professional's internal locus of control and mitigate feelings of helplessness in order to protect these workers from STS.

Overall, previous evidence suggests that a sense of control may influence the development of adverse reactions in those directly and indirectly exposed to trauma with most research outputs reporting that a higher (internal) sense of control as a protective factor. Still further research needs to explore the possibly protective role of perceived control in professionals who work with survivors of trauma to identify whether fostering PC in workers can be harnessed as a tool to buffer effects of IET.

2.5.4.2. Predictability

Closely linked to controllability, is predictability, as a person is likely to feel more equipped to control an event if they can predict them (Nickels et al., 1992). Unpredictable events are defined as occurrences which have an equal chance of happening regardless of events preceding them (Foa et al., 1992), and the predictability of traumatic events has been cited as a factor which influences the development of PTSD. Explanations for the role of predictability in PTSD have come from animal experiments as authors argue behavioural disturbances in animals, triggered by experimental neurosis conditions, mirror symptoms of PTSD (e.g., abrupt bursts of agitated behaviour, passiveness, and withdrawal) (Mineka &

Hendersen, 1985). Studies by Seligman (1968) and Weiss (1970) demonstrated heightened physiological and behavioural reactivity to unpredictable stressors (compared to predictable stressors) in rats, as evidenced by elevated fear responses, increased cortisol levels, and weight loss. These findings underscore the potential causal link between unpredictability and adverse outcomes. However, the limitations inherent in animal models, particularly the inability to assess subjective experiences such as intrusive thoughts, flashbacks, and nightmares, preclude definitive conclusions regarding the relationship between trauma predictability and the development of PTSD core symptoms.

In human studies, conflicting results on whether unpredictable aversive events are more anxiety inducing than predictable events have been reported (Grillon et al., 2004). Doerfler et al. (2005) measured the rates of PTSD symptoms in 52 patients three to six months after experiencing a heart attack, and examined the predicting role of perceived predictability, controllability, and danger. The study found no significant relationship between perceived predictability of HR and rates of PTSD symptoms, opposing arguments that the predictability of a traumatic event influences the onset of PTSD (Foa et al., 1992). Therefore, more research based on human samples is needed to understand the relationship between predictability and onset of PTSD symptoms. This research could include exploring the possible association between predictability and post-traumatic stress after exposure in workers who are indirectly exposed to trauma through their work.

2.5.4.3. Psychological Preparedness for Trauma

Psychological preparedness (PP) for traumatic events is defined as a "psychological state of awareness, anticipation and readiness; and the capacity to manage one's own psychological reaction in a threatening situation" (Said, 2020, p. 1). PP has been linked to how a person perceives the predictability and

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controllability of threatening events and could be related to one having prior knowledge of what the event might involve, preceding expectations of the event occurring, and previous exposure to similar events (Başoğlu et al., 1997). Furthermore, studies have reported that PP may be a protective factor against the development of distress during and after exposure to trauma (Johnson & Thompson, 2008). For example, a sequence of studies exploring factors associated with PTSD in torture survivors consistently found PP to be a protective factor (Başoğlu et al., 1994; 1996; 1997). Additionally, interventions designed to increase preparedness for natural disasters have been found to buffer the development of PTSD and depression post-exposure, partially explained by social cohesion (i.e., perceived ability to work together and sense of belonging in a group) (Welton-Mitchell et al., 2018). Findings from these studies suggest that PP could be a protective factor in the development of distress experienced during and after exposure to trauma and can be developed through carefully planned interventions.

As it has been reported that professionals who work with trauma survivors may experience similar psychological distress to those they work with, the protective role of PP in such professionals has been explored. Said et al. (2020) investigated rates of PP for disasters among 88 nurses internationally (e.g., in China, Indonesia, USA, Malta, Australia, Pakistan) and examined associations between PP and self-esteem, trait anxiety, self-efficacy and dispositional optimism. PP was measured using the Psychological Preparedness for Disaster Threat Scale (Zulch et al., 2012) which measures one's knowledge and management of the external environment, and anticipation, awareness and management of one's psychological reactions to environmental threats (McLennan et al., 2020). Also, rates of PTSD symptoms and level of preparedness training (i.e., general disaster

training, psychological preparedness, stress management, and disaster mental health preparedness) were measured. The results suggested that those who had training in either psychological preparedness or disaster mental health preparedness reported higher levels of PP than those who had stress management or general disaster training. A strong positive correlation was reported between PP and general self-efficacy and moderated associations between PP and dispositional optimism and self-esteem. In addition, PP was found to be negatively associated with trait anxiety and PTSD symptoms. Therefore, nurses who reported higher levels of PP were less likely to experience PTSD symptoms, have lower trait anxiety, and be more likely to report high levels of self-efficacy, self-esteem, and dispositional optimism. In regression analysis, 53% of variance in PP was predicted by level of self-efficacy and self-esteem. Therefore, a higher ability to cope in demanding situations and sense of personal worth and value may contribute to levels of PP in nurses and act as buffers against distress after exposure to trauma. This study did not investigate whether PP training enhanced levels of self-efficacy, self-esteem and dispositional optimism which were found to predict lower levels of post-traumatic stress and anxiety, although these traits were found to be significantly associated with greater levels of PP in participants. Therefore, future studies could explore further the potential role of PP in buffering the impact of IET in professionals exposed to trauma through their work.

Overall, preparedness for traumatic events and ones' psychological reactions to such experiences may be protective during and post exposure. However, associations between preparedness and distress post-exposure in professionals, who work with survivors and experience IET, needs to be further explored. This research could elucidate whether PP could be harnessed to prevent

the development of distress in workers after exposure to trauma (Kranke et al.,

2022) as reported in people who have directly experienced trauma.

2.5.5. Trauma and Stress Antecedents

2.5.5.1. Physiological and Behavioural Responses to Stressors

Stress is experienced when a demand is placed on the body, whether that

be a physical threat in the environment (e.g., being chased by a dangerous anima)

or situations more commonly faced in the modern world (e.g., meeting a work

deadline) (Selye, 1976). The body detects and responds to stressors in order to

survive and maintain homeostasis (Chrousos, 2009). Stimulation of the stress

response results in a number of physiological changes (e.g., increased HR,

increased respiration, inhibition of digestion and growth and repair) and

behavioural adjustments (e.g., increased alertness, arousal and focus) and is

usually adaptive, time-limited and improves a person's chance of survival

(Sapolsky, 2002). Distinct stages of the adaptive response to stress are described

by the General Adaptation Syndrome model (Selye, 1950) which includes three

stages: 1) alarm phase, e.g., preparing to fight or flight, 2) resistance phase, e.g.,

fighting, fleeing or huddling together; increases in body temperature, breathing

rate, blood pressure, and HR; secretion of stress hormones (e.g., cortisol) and 3)

exhaustion, that is, when recovery does not follow resistance leading to depletion

of bodily resources.

The physiological and behavioural changes during stress are adaptive in

the short term, however, chronic activation of the stress response, which can occur

via repeated exposure to stressors, an inability to adapt to persistent stressors,

failure to shut-off stress responses (e.g., secretion of cortisol), or inadequate

responses to stress, leads to allostatic load i.e., when the demands of a stressor

out-weigh a person's ability to cope (McEwen, 2008; McEwen & Stellar, 1993).

Allostatic load has been linked to aversive physical conditions, including cancer (Abercrombie et al., 2004), diabetes (Steptoe et al., 2014) and heart disease (Gillespie et al., 2019), greater psychological distress, mental conditions (e.g., mood disorders, PSTD), and reduced quality of life (Guidi et al., 2021; Juster et al., 2011; Piolanti et al., 2019; Thayer et al., 2017). Therefore, stress, experienced as a chronic state which exceeds a person's ability to cope, may act as an antecedent risk factor in the development of physical and psychological issues.

Traumatic events are stressors which place significant demands on a person (Bonanno et al., 2011) and dysregulation of the stress response resulting from trauma can lead to the onset of PTSD (Olff et al., 2005). Still, not all people who experience trauma, go on to develop PTSD (Aldwin & Yancura, 2004). A person's ability to cope may be affected by confounding prior stressful experiences (e.g., stress prior to exposure, or previous experiences of trauma) or how a person perceives stress (e.g., how stressful a traumatic event is subjectively appraised). These antecedent factors may reduce a person's physical and psychological resources in dealing with stress induced by a traumatic event leading to allostatic load and increase one's risk of PTSD (McEwen, 2003b). The following section reviews several studies which have examined how stress prior to exposure and perceived stress are associated with adverse reactions to traumatic experiences. These investigations can help in identifying factors which put professionals at risk of post-IET distress when working with trauma survivors.

2.5.5.2. Stress Prior to Exposure

The role of stress symptoms prior to exposure in the onset of adverse reactions to IET has been explored mostly through retrospective studies, with some reporting that stress related to demands other than IET may contribute to the development of post-IET distress. Stress related to financial strain (Mangoulia

et al. (2015), work-related factors (e.g., having too many patients, excessive amounts of paperwork, feeling overwhelmed) (Brady et al., 2017; Cieslak et al., 2013), and work-family conflict (Bourke & Craun, 2014) has been related to higher levels of post-IET distress in helping professionals. Some studies have focused on the association between post-IET distress and different work-related stressors including ratio of trauma cases to non-trauma cases in in caseload. For example, Devilly et al. (2009) tested associations between work-related stress (WRS) and STS, VT, and burnout in 152 MHPs and found having lower numbers of trauma patients on a professional's caseload was linked to higher levels of WRS (significantly associated with STS, VT and burnout). A possible explanation for these findings could be that professionals with fewer trauma cases may have been trainees with less experience and training compared to more practiced therapists (Way et al., 2004), or professionals working with more trauma clients were more resilient to WRS due to other factors (e.g., adaptive coping skills), nevertheless, the association between WRS and number of trauma clients in a practitioner's caseload could be further explored.

Overall, the current evidence-base suggests a possible link between stress prior to exposure, associated with other stressors than IET (i.e., work-related, financial, etc.), and higher levels of post-IET distress in some helping professionals. Indeed, studies have found that WRS is linked to higher allostatic load (Bellingrath et al., 2009; Sun et al., 2007) argued to put people at risk of PTSD post-exposure (McEwen, 2003). Nevertheless, the connection between stress prior to exposure and post-IET distress needs to be further explored prospectively, as most studies examining risk factors of PTSD and STS have used cross-sectional designs (DiGangi et al., 2013; Foley et al., 2022; Sutton et al., 2022). Such studies could also explore how facing other stressors pre-exposure

may influence how a person reacts to IET and the development of subsequent distress.

2.5.5.3. Personal History of Trauma

Previous history of trauma exposure is a risk factor of PTSD (Breslau et al., 1999). In a prospective study, Gould et al. (2021) examined the influence of historical experiences of post-traumatic stress and severity of immediate reactions to trauma on the development of PTSD after exposure to a new traumatic event. Participants were recruited from accident and emergency wards and had experienced a traumatic event included in the DSM-5 Criteria A for PTSD (APA, 2013) within the last 24 hours. After initial assessment, participants completed a follow-up including three time points, i.e., one-month, three months, and six months after exposure, which measured PTSD symptoms related to the new traumatic event. The study reported that approximately 35% of participants met the criteria for PTSD at the one-month follow up, which decreased to 26% at three months, and slightly reduced again at six months to 25%. Previous experiences of child abuse, historical post-traumatic stress, and immediate stress reaction to trauma were tested as predictors of PTSD at each follow-up time point. The analyses revealed that history of PTS and immediate stress reaction to trauma significantly predicted PTSD scores over time, although history of child-abuse was not found to be a significant factor. Furthermore, history of post-traumatic stress was reported to be a predictor of immediate stress response to the new traumatic event. These findings suggest that a history of exposure to trauma and post-traumatic stress may increase severity of immediate stress reactions to a new traumatic experience, and these factors combined predict the onset of PTSD (up to six months) after exposure. Certainly, other studies have also found connections

between previous experiences of trauma, immediate stress reactions and onset of PTSD (Cougle et al., 2009).

Researchers have examined associations of previous experiences of trauma on the development of post-IET distress in professionals and reported significant results. Hensel et al. (2015) conducted a meta-analysis of 17 risk factors of STS in professionals who worked therapeutically with trauma survivors (e.g., demographics, work characteristics, social support). Therapists' personal history of trauma was found to have a small significant positive correlation with STS. These findings suggest that a professionals' history of trauma may well be a risk factor in the development of STS which is supported by findings from other investigations (Leung et al., 2022b; Sabin-Farrell & Turpin, 2003). Hargrave et al. (2006) explored differences in PTSD symptoms and STS in 64 volunteer crisis workers with either 'resolved' or 'unresolved' previous experiences of trauma. For each experience of trauma, participants were asked to indicate if they felt each experience was resolved, partially resolved or unresolved (i.e., "integrate their past experience in a positive way" [Hargrave et al., 2006, p. 41]). All participants reported they had experienced at least one traumatic event with the witnessing of a dead body or body parts as the most common experience. No significant differences in PTSD scores were found in relation to when traumatic events occurred (e.g., childhood or adulthood), if exposure was direct or indirect, or if personal trauma was resolved, partially resolved or unresolved. Yet, when partially resolved and unresolved scores were combined (creating a new variable, "non-resolved"), non-resolved personal trauma was significantly correlated with higher scores of intrusions and overall PTSD. Also, participants with resolved experiences of trauma reported significantly lower levels of STS than those with unresolved traumas. Therefore, it could be suggested that professionals with

personal histories of trauma who work with trauma survivors, are more likely to experience STS if personal traumas are not perceived as resolved.

The effect of personal history of trauma on the development of post-IET distress has been explained theoretically, e.g., the Conservation of Resources Theory (CRT) (Hobfoll, 1989). In CRT, people are argued to use different finite resources (e.g., energy, cognition attention, time) to complete tasks and breaks must be taken to replenish resources and avoid stress (Kim et al., 2017). Exposure to many stressors can lead to resource exhaustion which may put people at risk of experiencing negative reactions to stressors (e.g., PTSD symptoms after trauma) (Hobfoll et al., 2012). A personal history of trauma is argued to deplete one's resources in handling future stressors (e.g., IET; Ben-Porat & Itzhaky, 2015) and could lead to a person developing post-traumatic stress (Leung et al., 2022b), with some authors suggesting that in particular contexts numerous dosages of traumatic experiences will lead to the development of PTSD irrespective of other risk factors (Neuner et al., 2004). Still, some reports have found no association between a professional's personal history of trauma and risk of experiencing post-IET distress (Way et al., 2004), and even past experience of trauma is linked to helping professionals using more adaptive coping mechanisms when working with trauma survivors (Follette et al., 1994). Therefore, more research is needed to investigate the link between personal experiences of trauma and post-IET distress in MHPs, and possibly the effect of resolved vs. unresolved personal trauma, and how trauma workers' experiences of personal trauma are resolved.

2.5.5.4. Perceived Stress

Transactional theories argue that stress is not solely a result of environmental demands or a person's perceived ability to cope, but a result of a bi-

directional transaction between both. According to the transactional theory of stress and coping (Lazarus & Folkman, 1984), stress is experienced when demands of stressors are perceived to outweigh one's ability to cope. The perception of a stressor is established through two cognitive interactional processes: 1) primary appraisal, where one determines if the stressor is relevant to oneself and assigns meaning to the stressor (e.g., benign, challenge, threat, harmful); and 2) secondary appraisal, where a person assesses if they are able to cope with the stressor (e.g., self-efficacy, coping strategies, time) (Dewe & Cooper, 2007). When a situation is evaluated as stressful, a person employs coping mechanisms which aim to either directly manage the stressor (i.e., problem-focused coping) or handle the emotions which arise from the stress-inducing situation (i.e., emotion-focused coping) (Lazarus & Folkman, 1984). Once coping mechanisms have been employed, the stressor is reappraised, and if the situation is still deemed as stressful, further coping mechanisms will used. Failure to adapt to stressful situations and continual use of coping mechanisms is argued to lead to psychological distress and physical instabilities (Edwards, 1992). Therefore, stressful reactions to situations are not exclusively determined by the event itself, but also by a person's emotional responses, mediated through cognitive appraisals (e.g., the traumatic event is appraised as extremely threatening). Therefore, in order to evaluate risk factors of adverse reactions to potentially stressful situations (e.g., post-IET distress), a person's appraisal of stressors and perceived ability to cope should be considered.

Perceived stress (PS) is defined as how a person views the predictability and controllability of life-events, the overall stressfulness of their life, and their ability to cope with this stress (Cohen et al., 1983; Phillips, 2013). Previous investigations have identified high PS as a risk factor of PTSD (Bruno et al., 2022;

Zhang et al., 2021), STS and burnout (Marzetti et al., 2020). Kader et al. (2021) investigated relationships between PS, PTSD symptoms and socio-demographic variables (e.g., age, sex, marital status, occupation) in 124 intensive care unit staff in Qatar during the COVID-19 pandemic. Overall, almost 75% of staff perceived working in ICU as moderately to highly stressful, with participants aged between 20-34 years old (vs. 35-64 years old), female, single, working as a nurse (vs. a doctor), and having a history of MH problems more likely to report higher levels of PS. Although, only age and having secondary stressors (e.g., financial stress) were found to be significantly associated with higher rates of PS. These findings suggest that younger professionals, possibly less experienced, and those who are facing other stressors outside of work are more likely to perceive working as more stressful. Regarding scores of PTSD, over 17% of participants scored above the cut-off point (i.e., 28) for a probable diagnosis of PTSD on the PTSD Diagnostic Scale for DSM-5 (Foa et al., 2016). Staff with moderate to high PS were more likely than those with low PS to have probable PTSD, and staff with high levels of PS, compared to those with moderate levels, were also more likely to have PTSD. These findings suggest that moderate to high levels of PS, related to one's working environment, are associated with a higher likelihood of staff having probable PTSD. As this study measured PS of working in a particular context (i.e., in intensive care units during the COVID-19 pandemic), the results may not be generalisable to helping professionals working with trauma survivors in different settings and occupations. Still, other studies have consistently found significant correlations between high levels of PS and post-IET distress in nurses before the pandemic (Amin et al., 2015) and in other professionals such as social workers, psychologists, health-care workers and educators (Köverová & Ráczová, 2017; Levkovich & Ricon, 2020).

Other researchers have investigated factors mediating the relationship between PS and PTSD in professionals exposed to trauma at work. Lee et al. (2014) found that frequency of traumatic events had a direct and indirect effect, via PS, on the development of PTSD symptoms in 552 firefighters in Korea, but the impact of these factors was weakened by a participant's level of resilience (defined as the ability to endure challenges, seek social support, and adjust to changes). Additionally, mediating factors in the association between PS and psychological distress in professionals indirectly exposed to trauma have been reported such as social support (Moosavian Khorasani et al., 2019), and mental toughness (Burnett et al., 2020). As mental toughness and personality factors have been previously linked to perceived stress (Garbarino et al., 2014; Ward et al., 2018), and PS has been linked to post-IET distress (Orrù et al., 2021), combining these findings with those from the study by Burnett and colleagues (2020), it is plausible to suggest that individual differences (e.g., mental toughness) and resilience factors (e.g., social support) may mediate the relationship between PS and STS.

Overall, the available evidence suggests that a high level of PS is significantly linked to the development of post-traumatic stress after direct and indirect exposure to trauma, and that the influence of PS may be mediated through individual and external factors. The literature investigating PS as a risk factor of post-IET distress in helping professionals is limited, mostly includes nurses, and has predominantly been carried out in the COVID-19 pandemic, which challenges the generalisability of results from these studies to different helping professionals and time periods. Also, as the evidence base is predominantly made up of studies using cross-sectional designs it cannot be assume that PS causes the onset of post-traumatic stress and there is a need for prospective studies. Future investigations could explore how perceived stress may influence the development

of post-IET distress in the aftermath if exposure to elucidate, and also found role of other factors including individual differences (Gucciardi et al., 2009).

2.5.6. Support

Two types of social support have been identified in the literature, 1) formal, such as therapy, supervision; and 2) informal, for example, support from family/friends/the community, peer supervision) (Sarason et al., 1996). This subsection will review a collection of studies exploring the role of such support in buffering distress associated with exposure to trauma.

2.5.6.1. Social Support

Social support is argued to have an influential role in the development of negative reactions to adverse experiences, for example, high levels of perceived social support after direct exposure to trauma has been associated with less PTSD symptoms post-exposure, although other factors may mediate this association (Alipour & Ahmadi, 2020). In a meta-analysis of 75 longitudinal studies, Wang et al. (2021) investigated the relationship between PTSD and SS with social support defined as "actual or available social resources in times of need and groups involved perceived as positively supportive" (Wang et al., 2021, p. 2). Results found a reciprocal relationship between the two variables as higher levels of social support predicted lower levels of PTSD (irrespective of age or sample type), and higher rates of post-traumatic stress symptoms predicted lower levels of social support. These findings suggest that social support may indeed buffer the onset of adverse reactions to a traumatic event, which is supported by findings from a previous meta-analysis (Wright et al., 2013), and that sources of social support could be used as preventive methods to stop the development of distress after exposure to trauma. Also, the findings suggest that PTSD symptoms may compromise sources of social support, indeed previous studies have found high

levels of interpersonal problems (King et al., 2006) and burnout in family members of people with PTSD (Lambert et al., 2012) which may explain the negative impact of PTSD on social support, and avoidant behaviour (a trait of PTSD) may make a person with PTSD withdraw from social support. Therefore, sources of social support (e.g., family members, employers, etc.) need to be assisted in offering support to people who have experienced trauma and at risk of PTSD.

Similarly, in professionals who work with survivors of trauma, social support is associated with better post-IET outcomes (Hensel et al., 2015), as it helps coping by stimulating a professional's social resources, personal resources and creates additional coping strategies (Schaefer & Moos, 1992) which strengthens a person's capacity to cope with traumatic experiences (Lerias & Byrne, 2003). Indeed, previous studies have found social support to decrease work-related distress, burnout and buffer the onset of post-IET distress in trauma workers (Killian, 2008; Michalopoulos & Aparicio, 2012; Setti et al., 2016), and a lack of perceived social support has been linked to higher levels of STS (Lev et al., 2022). Nonetheless, some studies have reported no significant relationship between social support and STS, although did find social support to moderate a significant positive relationship between work-related stress and STS (Barr, 2017). Generally, a considerable amount of evidence suggests that interpersonal relationships may have a direct and/or indirect effect on buffering the impact of IET in professionals with IET, indicating that these social bonds should be nurtured to protect trauma workers wellbeing. Also, comparable to findings in the PTSD literature, social support and post-IET distress may have a reciprocal relationship as indirect exposure to trauma has been linked to problems in professionals' interpersonal relationships (Robinson-Keilig, 2010). Authors have advocated professionals to commit time and energy to maintain connections with others as these relationships

offer sources of coping (Aguilera & Messick, 1974) and enable workers "to have fun, to enjoy themselves alone and in the company of others, to laugh, and to renew their faith in the goodness of most humans" (Cerney, 1995, p. 141). Considering the evidence which suggests social support to be a protective mechanism in buffering post-IET distress (Whittenbury et al., under review), but also a factor that can be negatively affected by IET, resulting in a professional losing this coping resource, professionals must be made aware of the potentially negative effects of IET on relationships and how social support can be utilised as a protective strategy.

2.5.6.2. Organisational Support

The role of organisational support (e.g., supervision, peer/colleague support, perceived organisational support, workplace culture) in buffering the effects of IET in professionals has been empirically investigated (Sutton et al., 2022). In qualitative explorations, peer support was seen by professionals as a crucial coping mechanism against STS and often deemed as playing a more important role than social support outside of work (e.g., from friends and family), and that the informal nature of peer support allowed them to alleviate stress in quick spontaneous moments at work with colleagues, although negative interactions (e.g., colleagues can amplify a clinician's concerns leader to rumination) were seen to increase stress and vulnerability to post-IET distress (Caringi et al., 2017; Norrman Harling et al., 2020; Posselt et al., 2020).

Conversely, quantitative studies have reported mixed findings. Some found no significant relationship between peer support and post-IET distress, where others reported peer support predicted lower levels of STS (Herrema et al., 2020). Caringi et al. (2017) investigated licensed social workers' usage, behaviour and attitudes towards peer support and found that peer support was commonly used

by professionals (84%) to offset work-related stress, and participants believed this support resource should be offered in more formal structures within their organisation. The study also reported that professionals with lower rates of perceived peer support were more likely to be younger, female, have less tenure in their role, and be more likely to be considering leaving the profession. These results suggest that peer support is protective against adverse effects of IET and is deemed by professionals as an important shielding resource which could be harnessed formally by organisations. Also, organisational support may not be perceived to be accessible for some professionals, and future investigations should explore the barriers to support experienced by these professionals.

Additionally, studies have explored the role of supervision in buffering the effects of IET. In quantitative reports, researchers assess supervision either by time allocated and/or effectiveness (Sutton et al., 2022). Studies have reported non-significant relationships between time allocated to supervision and rates of post-IET distress (Cosden et al., 2016). Also, conflicting results have been reported on the effect of perceived quality of supervision on adverse reactions to IET with some studies reporting significant negative correlations between quality of supervisory relationships and post-IET distress (Williams et al., 2012), and others reporting no significant relationship between the two (Furlonger & Taylor, 2012; Posselt et al., 2020). Still, in qualitative investigations, professionals viewed supervision as important in addressing symptoms associated with IET (Hunter et al., 2011) and that supervision was more effective if the supervisor worked in the same occupation as the supervisee as they could understand specific terminology and share experiences of IET and post-IET distress (Bourassa, 2012). Overall, due to conflicting evidence, the role of supervision in protecting professionals against post-IET distress needs to be further explored for this factor to be utilised

by organisations to buffer the impact of IET in their employees, but also help professionals manage experiences of distress.

Some studies have investigated correlations between perceived organisation support (i.e., the extent to which a worker feels their employer values their work and wellbeing) and post-IET distress, although findings are inconclusive (Sodeke-Gregson et al., 2013). In qualitative studies, opportunities for professional development, job sharing, and work improvement teams were identified by participants as strategies to protect professionals against STS (Caringi et al., 2017; Posselt et al., 2020). Additionally, having a range of work duties such as clinical practice, research, supervision, and teaching was identified to buffer negative effects of IET (Harrison & Westwood, 2009). As high caseloads that are trauma heavy have been associated with higher rates of PTSD symptoms associated with IET (Hensel et al., 2015; Leclerc et al., 2020), diversifying professionals' work responsibilities and reducing their time spent directly with trauma survivors could protect professionals from post-IET distress. Several empirical studies have found no significant association between perceived organisational support and adverse reactions to IET (Cieslak et al., 2013; Sodeke-Gregson et al., 2013), whilst other investigations have reported some aspects of organisational support to be protective factors (Bell et al., 2019; Choi et al., 2011). The disparity between findings from qualitative and quantitative investigations may suggest that organisational factors are not being assessed appropriately by quantitative measures, or that findings of perceived beneficial organisational support found in qualitative studies are actually a result of other factors (e.g., individual differences). Overall, the evidence for organisational support to be a protective factor against post-IET needs further exploring, although qualitative investigations report promising benefits of this type of support for trauma-workers.

2.5.7. Summary of Factors Associated with Post-IET Distress

A range of factors associated with psychological distress after indirect exposure to trauma have been extensively researched in the literature, although more studies have investigated reactions to direct and not indirect exposure. A number of protective and risk factors have been suggested, including individual differences and personality characteristics. Furthermore, other variables such as characteristics of IET and perceptions of controllability, predictability, and preparedness for IET, situational factors, and sources of support have been suggested to affect rates of distress after exposure to trauma. By identifying factors which protect or put professionals at risk of post-IET distress, those who are at risk of experiencing these adverse effects can be recognised and protected. Additionally, knowledge about factors that could buffer post-IET distress can inform the development of preventive strategies and interventions utilised by individual professionals and their respective organisations. For example, organisations could offer systematically effective forms of social support, ensure appropriate caseloads, which are not too heavy or with a large ration of trauma cases, and offer training in PP, as well as educate at-risk employees about how to independently buffer possible effects of IET (e.g., making changes in coping strategies, staying differentiated when empathy engaged with a client). More research is needed to identify risk factors associated with post-IET distress as previous investigations contain methodological limitations and have sometimes reported conflicting results, plus future investigations could identify new factors which may influence the onset of distress.

2.6. Manipulating Cognitive Activity to Buffer Against Adverse Reactions to Trauma

There is extensive evidence that IET can lead to the development of PTSD symptoms in those exposed (e.g., helping professionals supporting trauma survivors [Ogińska-Bulik et al. 2021; Xu et al., 2024]). Currently, the effectiveness of interventions for treating PTSD symptoms related to IET is unclear with significant heterogeneity across studies (Patole et al., 2024). Nevertheless, several remedial and preventative interventions have been tested for reducing PTSD in those exposed to direct trauma and found promising results. These interventions may also be helpful in reducing or preventing PTSD symptoms helping professionals who experience IET.

Specifically, experimental studies have illuminated the potential of Cognitive Inference Tasks (CITs) in preventing the development of intrusions (a core symptom of PTSD) resulting from both direct (e.g., car crash) and indirect (e.g., video of traumatic scenes) trauma exposure. As CITs are simple and cheap to implement, these tasks may offer an effective intervention to prevent the onset of PTSD symptoms in professionals who experience IET.

This section includes a collection of studies reporting the effectiveness of these methods whilst also discussing the limitations to the evidence base.

2.6.1. Remedial Interventions

Researchers examining the effects of direct exposure to trauma have reported an association between high prefrontal-cortex (PFC) activity and lower levels of PTSD (Bolsinger et al., 2018), thus researchers began to test the use of interventions which activate the PFC and associated functions (e.g., working memory) to treat and prevent PTSD. For example, a study using non-invasive brain stimulation (NIBS) targeting the PFC found participants who had 12-sessions

of NIBS reported significantly lower PTSD symptoms than those in the control condition (i.e., sham stimulation) (Osuch et al., 2009) suggesting increasing PFC activity can reduce PTSD symptoms. Additionally, animal-studies reported promising results when using NIBS to reduce PTSD-like behaviours, lower amygdala activity, stimulate fear-extinction and reverse neural-circulatory abnormalities in rats (Reznikov et al., 2018), although these trends have not been found in human studies (Isserles et al., 2013).

Other studies have examined the effects of medication which enhances PFC activity. For example, previous research has found excessive levels of norepinephrine (NE), driven by high levels of stress, activate low affinity alpha-1 adrenoceptors which decrease firing of PFC neurons, whereas moderate levels of NE, (triggered by moderate stress levels) can enhance activity in the PFC by stimulating higher affinity alpha-2A receptors (Arnsten, 2000). Studies investigating the use of medication which either acts as an alpha-1 receptor antagonist (prazosin) or alpha-2A receptor agonist (guanfacine) have found some promising results for decreasing PTSD symptoms and PFC dysfunction but need to be further explored (Ketenci et al., 2020; Paiva et al., 2021).

Overall, the use of innovative methods of treatment for PTSD such as NIBS or medication have shown some promising results, although may not offer methods of prevention (i.e., interventions which stop the development of PTSD after exposure to trauma), and preventative interventions need to be further tested (Skeffington et al., 2013). Furthermore, research into adverse reactions (e.g., PTSD symptoms) to IET is nascent and there is a lack of preventative interventions for post-IET distress, therefore effort is needed to develop and test such methods of prevention (Sprang et al., 2019) in order to protect people who are indirectly exposed to trauma (e.g., helping professionals). The development of

such interventions could be informed by using evidence from the larger body of PTSD literature, such as using tasks which stimulate the PFC, as IET is now recognised as a qualifying type of traumatic event by the DSM-5 criteria for PTSD (APA, 2013).

2.6.2. Preventative Methods

A small group of studies have tested methods to prevent the development of PTSD symptoms (i.e., intrusions) which aim to preoccupy the PFC directly after trauma exposure (Iyadurai et al., 2019). These interventions focus on preventing intrusions, as these symptoms are a core feature of PTSD (Brewin, 2015), are associated with the acute phase of PTSD onset (Bryant et al., 2015), can lead to clinical impairment, even without a complete clinical diagnosis of PTSD (Zlotnick et al., 2003), and intrusion-related distress has been found to predict subsequent PTSD (Michael et al., 2005). Therefore, preventing intrusions may be effective in stopping the onset of full-scale PTSD, although research examining the effectiveness of preventative interventions is scarce compared to studies testing treatments for PTSD (Bisson et al., 2021).

Cognitive inference tasks have been tested as a method of buffering the onset of intrusions by engaging the PFC after exposure to trauma. CITs work to disrupt working memory (WM) after a traumatic event or upon retrieval of stored information about the event from long-term memory (Visser et al., 2018). As WM is viewed to have limited capacity and intrusions of traumatic events include mental imagery (requiring WM), CITs compete against visual imagery from a traumatic event for WM capacity, and stop the development of intrusive memories (Baddeley & Abrade, 2000; Baddeley, 2003). For example, Kanstrup et al. (2021) tested the effectiveness of playing Tetris, a game associated with visuospatial WM (Lau-Zhu et al., 2017), in reducing the development of intrusions after exposure to trauma in

a randomised control trial. The study included 41 patients who had experienced a traumatic event included in the DSM-5 Criterion A for PTSD (APA, 2013) resulting in emergency admittance in the past 72 hours. Participants were randomised into either the intervention group (play app version of Tetris on smartphone for a total of 20 minutes) or control group (listen to a radio show). In the intervention group, before playing Tetris, participants were asked to write the worst parts of the traumatic experience on a piece of paper which stayed in front of them for the entire intervention. After participants completed either the intervention or control condition, they were asked to complete a diary keeping a record of intrusions experienced in the first and fifth week after initial participation. In thirty-nine participants who completed the one-week follow up, participants in the intervention group reported fewer intrusions than those in the control which was maintained at the five-week follow-up. Also, participants in the intervention group had lower distress scores related to intrusions at all three-follow-up time-points (i.e., one-week, three-months and six-months), as well as lower scores of avoidance (i.e., PTSD symptom cluster). Overall, the results suggest Tetris could be an effective preventative intervention in reducing the development of intrusions and intrusion-related distress after exposure to trauma which is supported by findings from a previous study in the UK (Iyadurai et al., 2018), and that these effects may be long-lasting. Though, as the study included a small sample size, these results must be interpreted with caution. More research into the use of CITS like Tetris to stop the development of PTSD symptoms is warranted as this type of intervention is cost-effective and easily implemented (Kanstrup et al., 2021). Also, future studies could explore how CITs may impact peritraumatic reactions to traumatic experiences to explore whether these tasks play a role in buffer the impact of trauma immediately after exposure.

Additionally, the use of CITs to buffer the onset of intrusions after indirect exposure to trauma has been tested in prospective studies using the trauma film paradigm (TFP) (Holmes et al., 2010). The TFP has been repeatedly proven to induce intrusive memories in participants which subside generally after one-week (Holmes et al., 2004), offering an ethical experimental method to induce temporary symptoms in participants and a model of PTSD. In such studies, participants are usually randomised into one of two groups, either the experimental group, where they watch a trauma video whilst completing a concurrent CIT, or the control group where they are only instructed to watch the trauma video. Participants are then asked to complete a diary recording intrusive memories of the trauma video experienced in the following week. Introducing a concurrent task when watching a trauma video has led to significantly less intrusions at follow-up (Brewin & Saunders, 2001). Asselbergs et al. (2023) conducted a systematic review and meta-analysis of studies which have tested the effectiveness of different cognitive tasks in preventing intrusions using the trauma paradigm. Of the studies included, 42 included CITs including visual-interference tasks (VsITs), such as tapping specific sequences on a keyboard, and verbal-interference tasks (VbITs), such as counting backwards in threes out loud. Through meta-analysis, the overall effect of VsITs was tested and reported that these tasks resulted in significantly less intrusions compared to control groups, whereas VbITs were found to have no significant effect of intrusion frequency compared to controls.

These findings suggest that the rates of intrusions induced by watching trauma films can be mediated by CITs and that VsITs may be more effective than VbITs. As intrusions are predominantly visual, VsITs may be more effective as they obstruct visual memory storage and therefore are more effective in stopping visual intrusions from developing. Nonetheless, some studies using VsITs have found no

significant difference between experimental and control groups (Hagenaars et al., 2017), and others have reported beneficial effects of VbITs (Krans et al., 2009).

Therefore, the modality of CITs needs to be further explored to identify tasks which are more effective in buffering the development of intrusions. Additionally, the modality of a CIT does not seem to influence the buffering effect on intrusion development if the task preoccupies the WM (Engelhard et al., 2011), and thus using other CITs such as mental arithmetic could be tested. Furthermore, the use of CITs could be extended to populations who are indirectly exposed to trauma and at risk of post-IET distress (e.g., intrusions and intrusion-related distress) such as helping professionals who work with trauma survivors. Currently, in the UK, professionals working in 'high risk' occupations where they are likely to be exposed to traumatic events are recommended to receive task-focused skills-based training to train in coping with stressful events at work (National Institute of Health and Care Excellence, 2022) aiming to mitigate psychological distress in these professionals. Therefore, if CITs are found to buffer the effects of IET in helping professionals exposed to secondary trauma, these methods could be included in occupational training to arm professionals with a protective to maintain their own wellbeing at work.

2.7. Chapter Summary

This chapter presents a comprehensive overview of the extant literature on IET. Post-IET distress, characterised by the emergence of PTSD symptoms and other adverse reactions following exposure to another's traumatic experiences, has been a focal point of investigation. While conceptual frameworks have been proposed to elucidate these reactions, the literature exhibits inconsistencies regarding the interchangeability of these terms and their overall necessity given the inclusion of IET in the DSM-5. Nonetheless, the potential for developing

adverse symptoms and negative consequences remains a significant concern for professionals exposed to secondary trauma.

A variety of demographic, psychological, and situational factors associated with post-IET distress have been examined. Although these studies have offered insights into variables influencing distress development, the findings are often contradictory and certain factors remain understudied, resulting in an ambiguous overall picture. Researchers have recently initiated investigations into innovative methods aimed at mitigating or preventing PTSD symptoms in individuals with direct or indirect trauma exposure. However, further investigation is required to evaluate the efficacy of these approaches within the context of helping professionals working with trauma survivors. Collectively, these research gaps underscore the need for continued exploration of the impact of IET on helping professionals, factors influencing vulnerability or resilience, and the potential for early intervention strategies to prevent distress onset in the workforce.

Chapter Three: Thesis Rationale, Project Aims and Methodological Approach

3.1. Thesis Rationale

Throughout Chapter Two, a selection of the available literature concerning indirect exposure to trauma (IET) in helping professionals, including conceptualisations, prevalence rates, and risk and protective factors, was reviewed. Of the people exposed indirectly to trauma, a fraction will go on to develop post-IET distress (Bride, 2007; Kindermann et al., 2020; Roden-Foreman et al., 2017). Due to the rising need for health and social care services (owing to aging populations, and increase in multimorbidity [Chambers et al., 2017; WHO, 2016a; 2016b]), maintaining the wellbeing of the clinical workforce is not only personally important for professionals but also has a significant impact on the cost of healthcare and the quality-of-care patients receive (Kreitzer et al., 2017). Therefore, there is a need to protect professionals at risk of experiencing adverse reactions to IET and subsequent consequences (e.g., addiction, depression) as these helping professionals are central to the delivery of care for service-users (Carrieri et al., 2018).

Some professionals, such as mental health professionals (MHPs), fire-responders (FRs) and social workers (SWs), are repeatedly exposed to second-hand trauma, putting these personnel at risk of post-IET distress (Greinacher et al., 2019; Wagaman et al., 2029). At present, interventions consist of generic self-care strategies, and none directly aim to prevent or relieve symptoms associated with IET (e.g., intrusions) (Sprang et al., 2019). Despite the lack of specific methods to protect professionals against post-IET distress, certain aspects of clinical work (e.g., perspective-taking, emotion regulation) could be protective, and the use of cognitive interference tasks (CITs) could mitigate the development of intrusions after IET as found in studies with non-professional populations (James

et al., 2016). In spite of these findings, to date little is known about the use of CITs in protecting people from experiencing short term and longer-term distress after learning about other's traumatic experiences and have yet to be tested with trauma workers such as MHPs.

It is vital to identify predisposing factors which increase susceptibility to post-IET distress to protect professionals who are at risk, yet only a limited number of factors have been considered (Hensel et al., 2015; Rauvola et al., 2019). Investigations have reported particular personal characteristics (e.g., personal history of trauma, empathy-ability, coping style), and work-related factors (e.g., caseload, ratio of trauma clients in caseload) to influence the development of post-IET distress (Ondrejková & Halamová, 2022; Turgoose & Maddox, 2017; Xie et al., 2021). Still, conflicting findings regarding the influence of such factors have been reported and further research is needed to clarify central risk and protective factors to mitigate the development and severity of psychological distress after IET (Cavanagh et al., 2020). Furthermore, other potentially important variables have not yet been examined adequately or at all including the influence of characteristics of IET such as type of exposure (listening to a survivor, reading a testimony) (Ivicic & Motta, 2017), and situational factors (e.g., acute stress before exposure). By identifying significant factors, professionals at high risk of experiencing adverse reactions to IET can be identified and supported, protective factors can be utilised, and interventions can be individualised (Danet, 2021).

Moreover, to date, there is limited research which has explored qualitatively the opinions of different helping professionals (e.g., FRs, MHPs, SWs) on what factors make some incidents of IET particularly upsetting and contribute to the development of post-IET distress (Ondrejková & Halamová, 2022). Also, little is known about how workers could become better psychologically prepared for

experiences of IET at work. By exploring these lines of investigation qualitatively, researchers can illuminate perceptions from professionals from different roles and provide rich accounts of how post-IET distress and related factors are experienced and interpreted by these participants (Sofaer, 1999). This research may provide new understandings of how factors influence post-IET distress in different contexts, possibly explaining the conflicting results reported in empirical studies, and how various groups of professionals prepare and cope for the impact of IET.

Thus, the present thesis set out to address some research gaps in the available literature by using qualitative and quantitative methods to investigate the use of CITs as a buffer and the influence of type of exposure, prior-exposure stress and several psychological characteristics in the development of adverse reactions to IET. Additionally, the project investigated how professionals perceive effective coping and ways of psychologically preparing for IET. Overall, the results from this project will help bridge a gap in the existing knowledge and help inform policies for protecting the mental health of professionals whose jobs involve routinely witnessing trauma (e.g., police officers, paramedics, fire-fighters); listening to trauma narratives (e.g., practitioner psychologists, police officers, social workers), or to those who learn about trauma through reading (e.g., detectives, students of social work or psychology).

3.2. Thesis Aims

The overall aim of this thesis was to explore protective and risk factors which may influence the development of distress related to IET in helping professionals and investigate interventions which may prepare professionals for and buffer the impact of IET.

The first aim of this thesis project was to explore perceptions of a mixed group of helping professionals (i.e., mental health practitioners, social workers,

first-responders, police, probation officers and child-protection workers) on what makes some instances of IET particularly distressing, and what is perceived as effective coping and how professionals can psychologically prepare for IET (Chapter Four). This was completed using semi-structured interviews where participants were asked questions related to the research aims, and these perceptions were then analysed using a hybrid form of thematic analysis to identify patterns of meaning that came up repeatedly in the interviews.

Following on from the qualitative investigation, the author aimed to examine the impact of viewing a survivors' distress when learning about their experiences of trauma, perceived by participants (in the qualitative study) as causing heightened personal distress. Hence, the second aim in this thesis was to test the effect of type of exposure on the rate of subjective distress directly following IET and frequency of intrusions at one-week follow-up (Chapter Five). This was achieved by exposing participants to indirect trauma either by watching (group one) or reading (group two) a survivor's account of a traumatic experience and recording levels of subjective stress and emotions directly after IET, and frequency of intrusions in a one-week follow-up. The relationships between type of exposure (i.e., video or transcript), peritraumatic subjective distress and frequency of intrusions were tested using MANCOVA and a series of ANCOVAs.

Participants in the qualitative study viewed dealing with stressors external to IET to negatively influence how they were able to cope with IET when working with their clients. Thus, the third aim of this project was to examine the influence of experiencing an acute stressor prior to IET on subjective stress and emotions directly after IET and development of intrusions post-IET (Chapter Five). This was completed by examining the differences between scores of subjective stress, emotions, and intrusions post-IET (i.e., after watching or reading about an

experience of trauma) following an acute stressor or relaxation exercise. The relationships between exposure to an acute stressor prior to IET and intrusions at follow-up were examined using MANCOVA and ANCOVAs.

As in both the qualitative study and first experimental investigation, participants reported experiencing higher subjective stress and negative emotions immediately post IET (Chapter Five), and personal distress (e.g., repetitive thought about clients' stories) and longer-term consequences (e.g., changes in perceptions of personal safety and benevolence of the world) (Chapter Four), the author set out to explore a simple yet effective technique in buffering the impact of IET. Hence, the fourth aim of this thesis was to examine the effect of using a CIT when exposed to IET in the development of subjective stress and negative emotion directly post-exposure and intrusions post-exposure in a one-week follow up (Chapter Six). This was achieved by comparing subjective stress and negative emotion directly after IET and average frequency of intrusions reported by two groups of participants. Participants in group one were instructed to complete a CIT (associated with working memory) whilst watching a trauma video (i.e., IET), and those in group two were asked to watch to the video without a concurrent task. The effects of using the CIT to reduce post-IET distress immediately after exposure and average frequency of intrusions at follow-up were analysed using ANCOVAS.

Also, to account for the lack of comparisons between helping professional and non-helping professional groups in reactions to IET, the fifth aim was to explore differences in subjective stress, negative emotion and intrusions at follow-up post-IET between MHPs and non-MHPs (Chapter Six). Participants from both populations were recruited to enable comparisons. The relationships between

participant status (i.e., MHP or non-MHP) and outcome measures were tested using a series of ANCOVAs.

Finally, the author sought to explore the influence of factors, viewed by participants in the qualitative study (e.g., empathy) and those identified in previous research (e.g., emotion regulation [Măirean, 2016]), on the development of post-IET distress. Thus, the final aim of this project was to empirically examine associations between predisposing factors and i) peritraumatic subjective distress, and ii) frequency of intrusions after IET in a 1-week follow-up whilst accounting for experimental manipulations (i.e., cognitive task or control group) and participant status (MHPs or non-MHP) (Chapters Six). This was done by using questionnaires at baseline to measure participant characteristics including psychological factors (e.g., empathy, rumination tendency, emotion regulation) and other key variables (e.g., previous history of trauma). The relationships between predisposing factors, subjective distress and number of intrusions were analysed using hierarchical multiple regressions.

3.3. Methodological Approach

This section provides an overview of the epistemological foundations underpinning the quantitative, qualitative approaches employed in this project to address the thesis aims. Detailed methodological and analytical procedures are elaborated in the respective empirical chapters.

3.3.1. Positivism and Quantitative Approach

Positivism is associated with the hypothetico-deductive model of science which is a circular process comprising of: 1) developing theories built from the existing literature, 2) designing a study to test hypotheses, 3) testing hypotheses using a built experiment, and 4) applying findings from the study to inform theory and add to the literature (Park et al., 2020). A central goal in positivist research is

to explain causal relationships and generate explanatory associations between independent variables and outcomes (Ponterotto, 2005). Additionally, positivists postulate knowledge is acquired objectively, and without the influence of values of researchers and participants influencing this process (Hansen, 2010). Thus, aligned with quantitative research methods (Breakwell et al., 2012). Quantitative methods are concerned with empirical data and large sample sizes to examine causal and explanatory relationships and generalisable findings (Park et al., 2020).

3.3.1.1. Experiments

Experimental and quasi-experimental designs are used by positivist researchers to control and manipulate variables within controlled settings in order to examine cause-effect relationships and explanatory associations (Park et al., 2020). On this basis, in Study Two and Three, experimental designs were used to examine the effects of different independent variables (e.g., participant status [MHP vs. non-MHPs]; exposure to IET; exposure to different forms of traumatic material) on outcomes (measures of post-IET distress). This enabled the testing of specific research questions that could be supported or rejected on the basis of the findings.

3.3.1.2. Questionnaires

Questionnaires are common in quantitative studies in the IET literature (Greinacher et al., 2019; Hensel et al., 2015; Sutton et al., 2022). Questionnaires allow researchers to collect a large amount of data (Birnbaum, 2004) which can be adapted to answer various research questions. For this reason, in Study Two and Three a batch of questionnaires were utilised to measure different psychological variables to assess their influence in the development of distress post-IET. An additional strength of questionnaires is that they allow for reliability testing. In studies two and three, previously validated questionnaires from psychological

research were employed and appropriate sample sizes were utilised to further establish reliability. Furthermore, reliability analyses were conducted to assess the internal consistency of the questionnaires.

3.3.3. Social Constructivism and Qualitative Approach

Social constructionism offers a pluralistic epistemology, positing multiple, socially constructed realities that are generated through intersubjective processes, language, and consciousness (Carson et al., 2001; Lincoln & Guba, 1985). Qualitative inquiry is suited to explore these complex and context-dependent realities (Price & Martin, 2018). By generating rich, contextualised data (Queirós, 2017), qualitative methods afford researchers the opportunity to delve into individuals' subjective understandings of their worlds (Smith, 2015).

3.2.3.1. Semi-Structured Interviews

Semi-structured interviews are a qualitative method utilised by researchers to better understand participants' subjective perceptions of phenomena rather than generalised understandings (McGrath et al., 2019). Using a semi-structured format allows researchers to keep interviews with participants focused on topics of interest (Adeoye-Olatunde & Olenik, 2021). Given the methodological flexibility and depth afforded by this approach, semi-structured interviews were utilised to investigate the perspectives of a diverse group of helping professionals regarding the influences contributing to particularly distressing instances of IET in Study One. Using qualitative methods, the author aimed to complement existing quantitative findings and illuminate previously unexplored dimensions of the phenomenon.

3.3.4. Critical Realism

Adopting a strict positivist or social constructivist stance can present methodological challenges for researchers due to the inherent limitations of each

paradigm. Positivism, for instance, has been subject to critique within the social sciences (Howitt, 2016) and may constrain investigators' capacity to delve deeply into participants' subjective experiences (Toomela, 2010) or to contextualise quantitative results (Trafimow, 2014). Conversely, the subjective nature of social constructivist approaches can impede the rigorous testing of hypotheses and the establishment of generalisable findings (Breakwell et al., 2012). Thus, solely adopting a positivist or constructivist approach in this thesis was deemed to be unfavourable for a comprehensive investigation of post-IET distress in helping professionals.

Instead, to address the research objectives, a flexible methodological approach was adopted. Critical realism adopts a position in between the two aforementioned epistemological approaches, combining ontological realism and epistemological relativism (Willis, 2023). From a critical realist stance, researchers assume that there is an independent reality however this reality cannot be accessed directly but from an individual's perspective and therefore will contain some biases (Banister, 2011). Accordingly, a critical realist epistemology was adopted for this thesis. This approach enabled a reconciliation of the positivist emphasis on objectivity and reliability with the interpretivist recognition of the fallibility of knowledge claims that are not directly observable.

Initially, under a critical realist lens, qualitative methods (i.e., in-depth interviews) were used to carry out inductive exploration to help generate hypotheses about the potential causal mechanisms linking risk and protective factors to the development of post-IET distress.

Using findings from the prior qualitative study and other research, and through a critical realist lens, two experiments were conducted in which artificial environments were created to allow for casual mechanisms (e.g., prior-exposure

stress, empathy) linked to post-IET distress to be isolated and tested. Findings from the quantitative research helped determine the significance of the relationships between risk factors and post-IET distress. Still, the researcher interpreted the findings with careful consideration of their applicability to the complexities of the real world, a domain characterised by the interplay of latent mechanisms and structural influences as highlighted in the qualitative findings.

3.4. Chapter Summary

In this chapter, the rationale and aims of the present thesis project were provided. Then, the epistemological underpinnings and characteristics of the quantitative, qualitative and mixed-method paradigms of this project were discussed. In Chapter Four, a qualitative investigation and the first of three empirical studies is presented including a summary of background literature, research aims and objectives, methods, results and discussion of findings including strengths and limitations.

Chapter Four: Study One - Listening to Other People's Traumatic Experiences: What Makes it Hard and What Could Protect Professionals from Developing Related Distress? A Qualitative Investigation

4.1. Summary of Background

For people who have experienced trauma, talking about these experiences to a listener can be therapeutic and is a common way to cope with distress associated with this experience (Caplan et al., 2005). However, some studies have reported that listening to trauma may have an adverse impact on the listener (Ludick & Figley, 2017; Steel et al., 2015), especially in helping professionals working in various occupations (e.g., healthcare, mental healthcare, social work, criminal justice system) who repeatedly listen to service-users' accounts of traumatic experiences (Michelson & Kluger, 2023). For example, Beckerman and Wozniak (2018) used focus groups to collect experiences of secondary traumatic stress (STS) in 11 female counsellors working within a shelter for survivors of domestic violence. Participants spoke about how listening to repeated accounts of abuse had made them feel hypervigilant, personally unsafe and threatened by their client's abusers. Counsellors also described experiencing nightmares, poor sleep, feeling unsafe in their own home, apathy, problems in personal relationships (e.g., questioning the intentions of loved ones), and a shift in their worldview (e.g., seeing the world as a more violent place). These findings suggest counsellors can experience a range of adverse effects when indirectly exposed to trauma including symptoms associated with post-traumatic stress disorder (PTSD), such as hypervigilance, nightmares, and negative alterations in cognition and mood. Other qualitative studies looking at the impact of indirect exposure to trauma (IET) in professionals have found similar results such as negative changes in worldview (Bell, 2003; Benatar, 2000), intrusions (e.g., nightmares) (Beck, 2020), problems in

personal relationships (Ben-Porat & Itzhaky, 2009; Clemans, 2004), and hypervigilance (Pistorius et al., 2008).

Empirical studies have reported significant rates of negative symptoms associated with exposure to trauma through listening to traumatic accounts similar to those found in qualitative investigations. Michelson and Kluger (2023) conducted a meta-analysis of 49 studies testing associations between listening to accounts of traumatic events and STS. The authors used STS as an umbrella term for the distress/stress experienced by listeners and included studies which reported measures of STS, vicarious traumatisation (VT), burnout, or 'other' (e.g., Symptom Checklist 90 – Revised). The results indicated a significant association between listening to trauma and STS. However, this correlation was largely heterogeneous across studies, suggesting that listening to trauma does not always result in negative effects, and that other factors may moderate the impact of listening to trauma.

As previous studies have highlighted IET can result in negative effects in helping professionals, researchers have explored potential protective and risk factors. Available qualitative studies primarily focus on professionals' experiences of post-IET distress, however, some have reported perceived facilitators and barriers to working with survivors of trauma. For example, in a study interviewing clinicians working with survivors of the 9/11 terrorist attacks, participants reported that the culminative impact of repeatedly listening to service-users' stories and being able to relate to a survivor increased their experience of STS (Pulido, 2012). The clinicians also highlighted methods perceived to be protective including debriefings, supervision, personal therapy, and flexibility in work schedule. Additionally, in a study with school teachers, participants viewed having a personal history of trauma and a heavy workload to increase their vulnerability to STS

(Caringi et al., 2015). Therefore, these studies suggest several risk (e.g., repeated exposure, personal history if trauma) and protective (e.g., supervision, personal therapy) factors, although both contain small homogenous samples and the results may not be transferable to other professional populations. Additionally, numerous empirical investigations have examined protective and risk factors of post-IET distress in helping professionals. These studies have reported individual differences (e.g., gender, personal history of trauma) and situational factors (e.g., caseload, trauma to non-trauma ratio in caseload) may protect or put people more at risk of post-IET distress, although many report contradicting findings and small effect sizes (Branson, 2019; Hensel et al., 2015), resulting in the influence of these factors being largely unexplained.

Due to inconsistent findings in quantitative studies, it is unclear how factors (e.g., individual or situational) influence post-IET distress in helping professionals (Cavanagh et al., 2020), and qualitative investigations could be used to explore and understand reasons for these contradictions (Busetto et al., 2020). For example, empathy has been reported as both a risk and a protective factor of post-IET distress (Hunt et al., 2019; Wagaman et al., 2015). Explorative investigation could uncover the reasons for these discrepancies by asking helping professionals their views on how/if empathy plays a role in post-IET distress. As empathy is seen as a core therapeutic skill (Kahriman et al., 2016) and a facilitator of positive patient outcomes (Norcross & Lambert, 2019), and with studies reporting post-IET distress to be linked to reduce quality and efficiency of helping professionals' work (Huggard & Unit, 2013), exploring connections between post-IET distress and empathy is warranted. Furthermore, by exploring facilitators and barriers of post-IET distress across diverse helping occupations (e.g., police officers, prison workers), how these influences are perceived, experienced and in some cases

implemented (e.g., supervision, workload) can be understood and compared across different professions and best practices to buffer the effects of IET can be shared.

Furthermore, facilitators which may help professionals prepare for IET have been relatively unexplored. However, in people directly exposed to trauma, preparing for traumatic events has been reported as protective against PTSD (e.g., in military personnel deployed in combat [Deahl et al., 2008; Iversen et al., 2008]), and paramedics exposed to trauma in emergency care situations (Streb et al., 2014]). Also, psychological preparedness (PP; i.e., a state of anticipation, awareness and readiness for trauma and understanding of one's psychological responses to such events [Zulch et al., 2012]), has been reported as protective against PTSD in survivors of torture (Başoğlu et al., 1997) and lower rates of stress and depression in Australian householders prepared for natural disasters (Every et al., 2019). Plus, PP has been linked to more logical thinking, better problem solving, and increased use of adaptive coping strategies (Zulch, 2011). As psychological preparedness can be increased through training (Said et al., 2022; Zingela et al., 2022), PP could be targeted in programmes training professionals who are likely to experience IET and at risk of post-IET distress. As PP has been understudied in helping professionals who are indirectly exposed to trauma, explorative investigations could collect professionals' perceptions and experiences of how they prepare psychologically for IET.

4.1.1. The Present Study

The present study was a qualitative investigation aimed to explore some of the inconsistencies and gaps in the literature of facilitators and barriers to the development of post-IET distress as discussed above. The author focused on professionals who regularly experienced IET at work and aimed to explore three

key research questions: a) When is it harder to listen to other people's trauma accounts (i.e., risk factors of post-IET distress)?, (b) What does effective coping (i.e., adapting to the negative impact of listening to trauma) involve and what could hinder or promote it (i.e., risk and protective factors of coping with IET)?, and (c) What could psychologically prepare a person before they listen to a trauma account (i.e., protective factors which prevent post-IET distress)? As the purpose of this study was not to scrutinise concepts of emotional reactions to IET, an umbrella term, 'post-IET distress', was used to describe these adverse responses.

4.2. Methods

4.2.1. Research Team

The researcher (KW) was a doctoral student and completed this study as part of a Ph.D. thesis. KW had prior experience of conducting qualitative interviews and was trained in research methodology to a master's degree level. Data collection was conducted by KW and three MSc psychology students. KW had extensively read previous research exploring adverse reactions to IET in helping professionals and possible barriers and facilitators to the development of post-IET distress. This knowledge base was used to design the study and research questions and interpret the findings. A researcher's positionality (i.e., "the position that the researcher has chosen to adopt within a given research study" [Savin-Baden & Major, 2023, p. 71]) can influence their research methods, findings, and interpretations. To counter the impact of prior-held views obtained from the literature as well as her own personal background (Holmes et al., 2020; Malterud, 2001), KW maintained actively self-aware and practiced reflexivity throughout the research process, especially when conducting interviews where the participant was viewed as the expert in the topics discussed.

4.2.2. Epistemological Stance

A critical realist stance was adopted and lead the method and analysis used within this study (Smith, 2015). Critical realism combines two axioms, positivism and social constructivism, proposing that there is one true reality, however, that this reality can only be accessed through the perceptions of people and therefore will contain some biases (Bhaskar, 2016). Additionally, as the researcher aimed to use qualitative methods to uncover participant perceived explanations of facilitators and barriers to post-IET a critical realist epistemological stance was appropriate (Danermark et al., 2022; Fryer, 2022). As a critical realist position demands that research should be replicable and findings should be intersubjectively testable (Cook and Campbell, 1979), the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007) was used to systematically report the methods, results and discussion of this qualitative study. This checklist was used as it is suitable for qualitative studies which conduct semi-structured interviews to collect data and to support transparency (Treharne & Riggs, 2015) in this research.

To endorse trustworthiness of the research findings, Guba's (1981) criteria of credibility, transferability, dependability, and confirmability was used. To support credibility, the methods and analysis used were chosen through the consideration of those utilised in previous investigations (Yin, 1994) and the inclusion of a wide sample of participants from different occupations (Van Maanen, 1979). Information about the participants (whilst respecting their anonymity) and a detailed description of the study design and implementation have been included in this report to establish transferability and dependability (Shenton, 2004). Finally, to ensure confirmability that the findings were built on the perceptions of the participants and not the researchers' biases, the choices made by the researchers

regarding research questions, study design and analysis have been recorded in detail (Shenton, 2004) including the use of hybrid Thematic Analysis, where the researcher switched between data-driven and theory-driven analytical methods.

4.2.3. Participants

To fulfil the research aims in exploring factors associated with reactions to post-IET distress professionals who experience IET within their work were targeted in recruitment. To be included in the study, participants had to be: a) over the age of 18, b) fluent in English, c) work as a psychological practitioner, therapist, prison officer, child-protection officer, first responder (e.g., fire-fighter, police officer) or social worker for at least six months, d) have access to a computer and enough privacy for the interview, and (e) have experienced IET as part of their job through listening to people who have faced one or more traumatic events. There were no exclusion criteria, however, participants were advised in the participant information sheet (PIS) not to take part if they were currently experiencing psychological distress due to direct or indirect exposure to trauma as they could find the interview stressful.

A range of participants were included in this study to perform triangulation between the viewpoints and opinions of professionals in different occupations who all experience IET. Triangulation was used to support credibility (i.e., how congruent the findings are with the reality being investigated [Merriam & Tisdell, 2015]) within the study and develop a rich picture of the attitudes and beliefs of professionals based on data collected from a range of people. Also, participants were recruited from several different organisations to reduce the effect of a certain biases in the themes developed from the data and provide a well-balanced picture of the phenomenon under investigation (Cohen et al., 2002). This supported the development of better and more established views of reality (i.e., exposure to and

resulting emotional distress after IET) based on a wide range of observations from several contexts (e.g., helping professionals working in different occupations).

4.2.3.1. Sample Size

The researcher aimed to collect a sample size of 20-40 participants. Although the targeted population shared commonalties (e.g., exposed to IET as part of their occupation), the sample in this study was heterogenous as participants were from different professions and organisations, thus members of different organisational cultures. The culture of an organisation can be defined as "the right way in which things are done or problems should be understood in the organisation" (Sun, 2008, p. 137), and research has demonstrated that this culture creates a shared mentality among individuals who are members of this group (Sinclair, 1993). As this study explored phenomena associated with a participant's occupation (e.g., listening to client's trauma stories), the organisation which an individual is part of could greatly affect their views and opinions. Therefore, the targeted population was treated as heterogeneous and called for a large sample size to allow, through analysis, not only the development of themes within cultures, but also meta-themes across these differing organisational cultures (Guest et al., 2006; Hagaman & Wutich, 2017). Additionally, a sample size of 20-40 people was deemed to allow research questions to be explored thoroughly and was feasible using the resources and time available for the project (Braun & Clarke, 2021; O'Reilly & Parker, 2013), but did not exceed 50 individuals to prevent the process of analysis becoming too complex (Ritchie et al., 2013).

4.2.3.2. Sampling Method

A purposive sampling technique was employed as the researcher sought to investigate the perceptions of people who are exposed to indirect trauma as part of their occupation (Ritchie et al., 2003).

4.2.3.3. Recruitment Techniques

The recruitment of participants was conducted in several ways including: a) information about the study advertised on a digital poster (see Appendix A) posted on the researcher's professional social media accounts, b) the researcher contacted their professional networks on professional social media accounts with information about the study, and c) gatekeepers of organisations were contacted by email with information about the study and the recruitment poster which could be circulated around colleagues working in their organisations. Participants were self-selecting in response to advertisement about the study. If a professional was interested in participating, they were asked to contact the research team by an email address provided on the advertisement material. The participant was then sent the PIS and given time to ask the researcher any questions about the study. If the participant chose to take part, they were offered an online interview.

4.2.4. Ethical Considerations

This study was granted ethical approval by the Health, Psychology and Social Care Ethical Committee and Manchester Metropolitan University (MMU) (Ethos ID number: 32301) (see Appendix B). The researcher was guided by the Code of Human Research Ethics by the British Psychology Society (Oates et al., 2021) and the MMU Distress Protocol for Qualitative Research (Haigh & Witham, 2015). Ethical considerations are discussed extensively in the PIS (see Appendix C). Consent was video-recorded following a consent form (see Appendix D) and stored securely in a MMU Secure OneDrive folder. This folder, which also contained personal information including participants' names contact information and participants' chosen pseudonyms (used in the transcription process to replace real names), was only accessible by members of the research team and was destroyed after the study was published. Interviews were recorded separately to

consent, and stored in a separate folder on the MMU OneDrive and deleted after the interview had been transcribed. The process of transcription involved anonymising the data and removing all identifiable information. This anonymised data was stored within a secure folder on the MMU OneDrive and will be deleted 10 years after the project finished (i.e., January 2033). When an interview had finished participants were given a debrief sheet (see Appendix E) which included a reminder about their right to withdraw and contact information for the researcher, their supervisor, the MMU Faculty Ethics Committee and services where they could seek psychological support if needed.

4.2.5. Data Collection

One-to-one semi-structured interviews were used for data collection. Interviews were conducted by four members of the research team (one doctoral student and three MSc students) using Microsoft Teams and lasted approximately 30-60 minutes. Hosting interviews online meant professionals from various geographical locations could participate. Interviews were scheduled at least one week in advance to allow the participant time to read the consent form and ask the research team any questions about the study. At the beginning of an interview, the participant gave verbal consent to participating which was video recorded using the Microsoft Teams recording function.

An interview schedule (see Appendix F) was designed to answer the research questions and resolve gaps within the literature. The researcher held some control over the direction of the interview by asking open-ended questions (e.g., *would you like to tell me a little bit more about times you were affected by stories of your clients or the people you worked with?'* and '*in your opinion, is there anything that could psychologically protect and prepare those who work with trauma survivors?).* The development of interview questions was informed through

reviewing prior literature on the facilitators and barriers to the development of distress after indirect and direct exposure to trauma. Probes (e.g., could you explain that further? Why do you think that is?) were used to elicit more information from the participants to fulfil the research agenda (Hammersley & Atkinson, 2019). The interview schedule was used flexibly allowing questions to be phrased and sequenced differently to suit the participant and flow of the interview (e.g., if a participant began discussing a subject which did not answer the current question on the schedule but did meet a research aim, the interviewer changed the sequence of the schedule) (Smith & Elger, 2010; Turner III, 2010). Due to the epistemological position of this study, the participant and researcher engaged in a fluid dialogue where both were viewed as active participants in the interview data collection process (Clarke & Braun, 2013; Pawson & Tilley, 1997). The interviewee was deemed as the expert due to their lived experience of the social phenomena under investigation (McCabe & Holmes, 2009).

4.2.6. Data Analysis

The data was analysed using hybrid thematic analysis (Fereday & Muir-Cochrane, 2006) applying both inductive (data-driven) and deductive (theory-driven) reasoning, where the former produced a set of prior-codes which were developed with a consideration of the research aims and interview questions. The latter was analysed using posteriori codes based on findings from the previous literature (Proudfoot, 2023) investigating barriers and facilitators of psychological distress after IET and/or direct exposure to trauma. When no new codes where either generated or could be applied, these codes were grouped into themes which described patterns in the data, and sub-themes were developed to focus on specific elements of an overarching theme (Braun & Clarke, 2006). The software package NVivo (Luminvero, 2023) was used to assist in the process of coding.

The researcher led the analytical process and coded the entire dataset. To counter-balance individual influences on coding (Barker & Pistrand, 2005), the principal supervisor coded a sub-set of the data, and the researcher and supervisor met on three occasions to compare codes and discuss possible themes. When these themes were finally agreed on using a consensus approach (Hill et al., 1997) by the researcher and principal supervisor, they were shared with the wider supervision team to assess their aptness of reflecting the data accurately.

4.2.7. Reflexivity

A qualitative researchers' own subjectivity is intertwined with the research process. By engaging in reflexivity, the researcher can explore how themselves as a subjective being impacts the research process including personal, interpersonal, methodological and contextual issues (Olmos-Vega et al., 2023). In this project, my own (the researcher) subjectivity was not seen as detrimental to the research, but an asset to co-constructively develop findings from the data, aligned with contemporary views of subjectivity in qualitative research (Koopman et al., 2020). To foster reflexivity in this study, I explored how my own subjectivity impacted the research process exploring personal, interpersonal, methodological and contextual domains.

Personally, I was drawn to this project as I have experienced traumatic events which I believe to have made me a more resilient and empathic person overall, but with some chinks in my armour including sporadic depressive episodes and (sometimes) a jaded view of the world. I was curious to explore how professionals' cope with IET and see if their experiences resonated with my own. I was also fascinated by the ways in which professionals, working in occupations where IET is common, cope. These personal experiences motivated me in wanting

to give these professionals a voice and also identify what may help and/or hinder this coping.

The research process was influenced by relationships surrounding it including those between myself (aka the researcher) and supervision team. The supervision team included a clinical psychologist and cognitive-behavioural therapist, who had experiences of working with trauma survivors and had seen the effects of this type of work in their colleagues and themselves. This unique knowledge fed into the development of the research questions and data analysis where the researcher and supervision team worked together to discuss the meaning of the data collected and the development of themes. A power dynamic was present in this work (England, 1994), as I, in some cases, let the supervisors lead in research question development and analysis, as I viewed the supervisors as having superior knowledge from their practical and research experience, although I felt able to question and make recommendations in these meetings. This dynamic affected the development of the themes within the findings. This is particularly accurate when developing the final umbrella theme "The Prepared Mindset" which stemmed from work done previously by one of the supervisors who had explored a concept termed "psychological preparedness" in torture survivors.

The researcher's and supervisors' intertwined epistemological stances guided the methodological decisions of this research project. One supervisor brought a strong positivist background, primarily publishing quantitative research, while the other was more experienced in qualitative methodologies. As a student, my previous work was limited and mainly qualitative, though I held a balanced perspective, recognising both positivist and social constructivist theories of reality. Through discussion, we agreed our approach reflected the principles of critical realism. This approach allowed us to identify both causal mechanisms and

underlying structures and causes of phenomena. Using a critical realist lens in our analytical process, we aimed to identify commonalities across the dataset and develop an understanding of professionals' subjective experiences of IET and supporting individuals who have experienced trauma at an individual level.

This project was carried out within the COVID-19 pandemic. Data collection was completed during 2020 and 2021. This context influenced the research process as participants and researchers shared an experience which was stressful and abnormal for all. Also, government restrictions within this time meant alterations to ways of working. For example, professionals faced disruptions in their client work as most of this became virtual. This exacerbated barriers in clinical work, such as clients not having access to technical equipment, or not being able to contact a client to arrange appointments. Also, this meant that professionals were doing a lot of work within their homes which meant this space, once a place of rest and separate to work, was now a working environment. Therefore, the COVID-19 pandemic impacted professionals' way of working and may have affected how they responded to interview questions around ways of coping with trauma work.

As a researcher, I found transcribing and analysing the interviews to be slightly overwhelming at times. Repeatedly playing the interview recordings, and reading the transcripts meant the stories spoken by the professionals were almost engrained in my mind. Doing this in the context of lockdown where I was working and resting at home and unable to move locations due to restrictions meant it was difficult to psychologically and physically separate myself from this work in times of rest. I spoke about this with my colleagues and supervisors and found their perspectives helpful in coping. I also looked after myself physically and socially including eating well, exercising, sleeping and staying in contact with my family. I

do feel completing this study in the lockdown did help with my focus as I felt truly immersed in the interviews and data analysis. Also, seeing the pressures on NHS and teaching staff within lockdown drove my motivation to make the study as good as I could. By "good", I mean for the finished product to effectively represent the professionals' views of their work and hopefully produce a paper which may be helpful for professionals facing the same experiences.

4.3. Findings

Participants included 22 mental health (MH) professionals (five clinical psychologists, two trainee clinical psychologists, four assistant psychologists, four counsellors, six therapists, and one MH nurse), six police officers, three paramedics (one final year trainee, and two fully qualified), three social workers, one prison officer and one child exploitation specialist. No other demographic information was collected to protect participants' anonymity. The analytic process resulted in the development of 17 sub-themes that were then grouped into four umbrella themes (see Table 1).

Table 1

Umbrella Themes and Related Sub-themes

Umbrella Theme	Subordinate Themes
New Awareness of Danger and Malice	Challenged assumptions of safety and justice
	Trauma too severe or dark
	Processing
	Relatedness
Lack of Control and Narrowing of Window of Tolerance	Struggle to control and contain
	Survivors' overt expressions of distress

Empathy: A Double-edged Sword	IET triggers own traumas
	Stress and difficulty self-regulating
	Emotional immersion
	Maintaining boundaries
The Prepared Mindset	Prior training
	Readiness and expectedness
	Commitment to professional ethos
	Self-awareness and acceptance of limitations
	Scission between professional and personal life
	Self-compassion
	Knowing it's not over when it's over

4.3.1. Theme One: New Awareness of Danger and Malice

Experiences of IET, which sabotaged one's pre-existing beliefs about safety and benevolence of themselves, others, and the world, were perceived by many professionals to have a significant impact on their psychological wellbeing. Some participants believed that the disruption of these established beliefs was more likely to occur if a traumatic event/s was appraised as particularly severe or dark, and amplified if a professional could relate to the client and envision themselves or a loved one in the shoes of the survivor. Furthermore, traumatic experiences which conflicted with a professional's understanding of people and the world (e.g., adverse circumstances people endure with day in day out) were viewed as particularly hard to cognitively process. The umbrella theme of a 'New Awareness of Danger and Malice' was created to represent the challenges some events of IET

impose on a professional's beliefs about themselves, others and the world. This superordinate theme connected related subthemes which involved perceptions of a new awareness of danger and malice, yet also represented a unique element of the superordinate theme. These subthemes include 1) *challenged assumptions of safety and justice, 2) exceptionally dark or severe trauma, 3) processing* and *4) relatedness.*

4.3.1.1. Challenged Assumptions of Safety and Justice

Several professionals perceived clients' experiences, which seriously challenged their own assumptions regarding the safety and benevolence of themselves, people, and the world, as having a higher emotional and psychological impact on themselves. By working with survivors of trauma, professionals observed that they are repeatedly exposed to occurrences of extreme adversity, threat, and injustice, and develop an awareness of the magnitude and frequency of adverse events, which may lead a professional to question the security of themselves and others and benevolence of the world. One of the participants, Jack, a MH professional, described this concept as follows:

> […] negative after negative after negative can be quite, it's difficult as practitioners to kind of hold it, but it's also difficult in a just a human level because you become more aware of all the things that can happen that could go wrong in life really. (Jack, Clinical Psychologist)

The perception of repeated exposure to other people's experiences of trauma resulting in an increased awareness of malevolence in the world was reiterated by Anna, a Police Officer, who explained that this new awareness can create a sense of being overwhelmed and reaching a personal limit of how much trauma one can consume.

I think you just become overwhelmed by the horror of what you've listened
to and the knowledge that this stuff goes on and um your concerns for that
child, like in the future and how they impact them. […] And I just think
there's only, there's only so much that the human brain can cope with
before we just have a bit of a moment, and you just need to get it out.
(Anna, Police Officer).

Additionally, some participants considered working with clients who are
seen as extremely vulnerable (e.g., children and elderly people) to be more
distressing than working with other people, as these groups are usually attributed
characteristics of innocence and are thought to be 'harmless' and undeserving of
adversity. An extract from the interview with Jessica, a Child Exploitation
Specialist, reflects this:

I think for me what makes it harder is how vulnerable these young people
are. We know that any young person can be exploited no matter what you
know their socioeconomic background however there are predominant
young people at risk and those people are young people who have been in
the care system, erm young people who are LGBTQ, young people who
have got mental health struggles, so for me it would be hearing how
vulnerable they are and how a perpetrator can exploit that vulnerability.
(Jessica, Child Exploitation Specialist)

Overall, learning about traumatic experiences of survivors that contradicted
a professional's view of safety, the benevolence of the world and learning how
people perceived as vulnerable can be victimised was viewed by participants to
make listening to traumatic accounts more challenging.

4.3.1.2. Trauma to Severe or Dark

Participants reported that when working with survivors of trauma, the severity and chronicity of their lived experiences can have a particularly detrimental effect on a professional's psychological wellbeing. Frequently, professionals considered experiences of interpersonal trauma (e.g., abuse, rape, domestic violence, physical assault, etc.) as exceptionally hard hitting and roused stronger emotional reactions within themselves.

> I think from my own experience, and people I supervised, it is the degree of sadism. You know, the more the sadistic someone's abuser has been the more it gets to you because it is just so difficult to hear. You do have moments where your, there have certainly been people I have worked with over the years and you think I don't know how you are still alive, I don't know how you have managed to keep your mind alive through all of this. (Sophie, Psychotherapist)

Additionally, some participants expressed that particularly severe traumatic experiences (e.g., rape, interpersonal violence) were preserved in their memory, and that the impact of exposure to these types of experience may not be apparent to a professional at the time. Monday, a MH professional, described this in the following extract:

> But like people that stick out in my head that have been, have had more trau- traumatic history. So I used to work in the inpatient CAMHS unit and, um, a young girl who had been raped by her older brother. Um, and family didn't believe it and that's something that I have like, I probably didn't realise at the time how much it was affecting me, […]. (Monday, Clinical Psychologist)

Therefore, some participants in this study explained that particular accounts of trauma (e.g., rape) were viewed as more severe or dark and had more of an adverse impact on themselves.

4.3.1.3. Processing

Learning about other people's experiences of adversity were viewed by some participants as harder for a professional to process and having a greater emotional impact. The challenge of processing certain experiences was linked to a professional's almost disbelief that some people endure such adverse circumstances. These perceptions are highlighted by Charlie, a student paramedic:

> Uh, but actually some of the saddest things is where you've, you've come out to a vulnerable person. And, and they're, um, they're, you know, living within conditions that you wouldn't imagine within the United Kingdom, or certainly within the twenty first century. […] Um, I think they're sort of more, they have more of an emotional impact on me […], it makes it much more difficult to process. (Charlie, Student Paramedic)

MH professionals noted that the inability to process a client's traumatic experiences can lead to repetitive thoughts about the client's story and an inability to write down an account of the client's disclosures.

> I couldn't get this story out of my mind. Erm, and I remember I actually couldn't write my notes after the session. I needed to, I couldn't process it in my mind, I needed to erm… I thought there is no point writing notes at the moment because it is all a bit of a blur. I waited and waited until the next day and I think I sort of wrote bullet points over the course of initially out of the session, and then really sort of did a deeper note taking later erm and then it was still sort of playing on my mind.

(Eleanor, Counsellor)

MH professionals described a need to process the trauma in order to participate in meaningful therapeutic work with their clients, and that experiences of trauma which were unable to process made their work more difficult.

> […] what the person's talking about gets to you more or and also kind of thinking you know if you're still working on assessment, you're still kind of sieving through things and thinking "right what am I going to do now then?". And if that's more complex, then sometimes it just makes it harder to, to kind of work your way through it. (Tomato, Clinical Psychologist)

Participants viewed traumatic accounts that were particularly distressing as harder to process. These accounts of trauma were explained to lead a professional to ruminate about the experience and feel unable to move forward in their work with the client.

4.3.1.4. Relatedness

Professionals viewed being able to relate to survivors and their experiences more distressing. Some perceived having more similarities with a client (e.g., characteristics, background, life experiences) to increase the emotional and psychological impact experienced when learning about the clients' experience, for example:

> […] I think characteristics of that person makes you more or less vulnerable. So, say if it was a female and they're the same age as me, then that would make me more susceptible to feeling upset about that situation rather than if it was somebody that was sixteen and male. I wouldn't relate to them as much. (Juliet, Social Worker)

Sharing similar characteristics with a client was perceived to lead to a disruption in a professional's assumptions about the safety of themselves and people they identify with, as expressed by Gareth in the following exert:

I think because that was my first suicide job I ever went to I found that really hard the lad was the same age as me so for someone my age to be in that situation I couldn't imagine myself ever being in that situation I've never even contemplated suicide ending my life anything like that and it was really hard hearing that story because I was looking at him thinking you know you're the same age as me born roughly at the same time erm what must you have gone through in your life for you to end up in this situation.

(Gareth, Police Officer)

Overall, listening to traumatic experiences of a person which a professional could relate to was explained by participants as being more challenging as these experiences sabotaged their beliefs about personal safety.

4.3.2. Theme Two: Lack of Control and Narrowing of Window of Tolerance

Different professionals viewed events of IET which most affected their emotional and psychological state were instances when they felt a sense of being unable to control the situation, and/or their thoughts and emotions elicited by the trauma. Specifically, some participants reported that working with clients whose trauma mirrored their own personal experiences or when clients expressed extreme distress, was emotionally more challenging and elicited a sense of being lost or disoriented. Additionally, some participants perceived having to cope with multiple stressors (e.g., high caseload, issues in personal life, accumulated stress) reduced their capacity to work with survivors of trauma as their personal resources (e.g., energy, time, empathy, etc.) became increasingly limited. A lack of control of the situation and their own and clients' emotions and/or a limited capacity to listen

to trauma due to reducing resources, was perceived to evoke feelings of helplessness, defencelessness, and vulnerability. These findings are represented by the meta-theme 'Lack of Control and Narrowing of Window of Tolerance', and several subthemes: *Struggle to control and contain; Survivors' overt expressions of distress; IET triggers own traumas; Stress and difficulty self-regulating.*

4.3.2.1. The Struggle to Control and Contain

Professionals from diverse occupations viewed a sense of control over the situation, the distress of a client, and one's own emotional reactions, kept a professional and their client safe when working with trauma. A traumatic account which triggered a professional to experience unregulated emotions and thoughts, was perceived to result in a sense of loss of control and raise a feeling of helplessness, believed to have a detrimental impact on a professional's quality of work with clients. The importance of perceived control was mentioned by Tilly, a police officer:

> […] you might go into a situation where someone's died, the family are all there and everyone's absolutely hysterical, […] I need to be the person who keeps it at one level and brings everyone else down otherwise it'd just be carnage erm so it's knowing that if I don't cope with it well then the situation is not going to be dealt with and not going to be controlled because that's my job really to sort of control situations. (Tilly, Police Officer)

Mrs Smith, a social worker, spoke about the significance of managing one's own reactions to be able to provide a safe place for a client to explore their experiences, especially when working through trauma, which can be a frightening experience:

> I think maybe when someone sharing trauma, especially maybe for the first time, it can feel really unsafe and shaky, and for the clinician being a bit of a

stable place and being able to kind of hold their emotion and their experience, but also to kind of, um, ground it a little bit and be some, be safe, be secure, be stable, be predictable, um helps. (Mrs Smith, Social Worker)

Some participants spoke about the drive to not only regulate their own emotional reactions to IET, but also those of the survivor, as described by Amanda:

Yeah, erm it's sort of that self-regulation of me because I need to be there to regulate myself and regulate the client and not let the client spiral out of control of their emotions. Erm, I try and make sure they are grounded because it would be no good if I couldn't ground myself to help them. (Amanda, Counsellor)

Therefore, feeling in control of one's emotions, those of the client and the situation was viewed by a range of participants to facilitate their work when listening to trauma.

4.3.2.2. Survivors' Overt Expressions of Distress

Some participants found working with highly distressed clients to be more challenging as they are attuned to the survivor's pain, which can be emotionally draining. Similarly, a survivor's overt expression of numbness when discussing an experience of trauma can be troubling for a professional, as participants viewed these types of disclosures to be so painful for their client that they emotionally detach to cope with the experience, or that these kinds of experiences have become the norm for the client. Clients' overt expressions of distress were perceived to have an elevated emotional impact on a professional, demonstrated by Jack, a Clinical Psychologist, in the following extract:

[…] we did a reliving of that event and it is the most harrowing horrendous story I have ever heard in my life and I, along with him, we both just cried

our eyes out while he told me this story […] it broke my heart. (Jack, Clinical Psychologist)

In some cases, the emotional distress of service users was perceived to induce feelings of being overwhelmed and immobilised:

[…] you might go into a situation where someone's died, the family are all there, and everyone's absolutely hysterical especially with suicides like that's one of the most horrendous situations to walk in to and everybody is hysterical and crying. […] you can forget and just sort of stand there and become panicked and that's happened to me before. (Tilly, Police Officer)

Some professionals said that clients who were almost indifferent when recounting their experiences of trauma stun the professional. These expressions of numbness were perceived to be due to the severity of the pain experienced by the client, and sometimes harder for the professional to witness compared to overt expressions of distress.

[…]Um, I think it affects me more. […] if they're not showing any emotion, […] like in a way of like I've got really good at seeing people who are very distressed, but it's almost like those that aren't distressed that I'm a bit more like, 'oh gosh, like what? Like you can't even show how, how hard it was? […] (Monday, Clinical Psychologist)

Jessica, a child-exploitation specialist, added that when working with a client who is almost numb to their experiences can be a sign that the trauma has just become a part of normal life for their client, which can be emotionally distressing and elicit a feeling of inertia for a professional:

I couldn't tell what the emotion was, there wasn't any clear crying or, you know, nothing like that. It was just super, almost like numb intensity. […] Clients I see who have been abused multiple times by different people in

their life, that has become their normal and that's how people treat them.

[…] that's devastating and how do you move forward from that? (Jessica, Child Exploitation Specialist)

Therefore, a client's overt expression of distress was viewed to affect a professional more, especially if a service-user was seen as emotionally disconnected from their experience as this, for the professional, emphasised the severity of their experience.

4.3.2.3. IET Triggers Own Traumas

Indirect exposure to trauma can stimulate a professional's own memories and emotions regarding a personal experience of trauma, which can lead to feelings of inertia and an inability to control one's thoughts and feelings while working with a client. Tilly, described her previous experiences of trauma being triggered by exposure to other people's experiences similar to her own and becoming consumed by the resurgence of these memories:

> I suppose cause it can like trigger things […] that I'm going through myself or erm just makes me feel slightly more connected to the person though when I go home it's harder to step away from it because like you can get consumed by it […] I just think it like I said it triggers things for you it triggers what I went through in the past and it can just like things you've boxed off in your head and not really thought about in a while it can resurface things so erm just that and relating to victims and stuff and you know it yeah it just resurfaces stuff for you doesn't it for you which is obviously going to be more traumatic you can't really shut that out […] (Tilly, Police Officer)

Also, some professionals perceived personal experiences of trauma which had not been processed, when triggered in a session with a client, lead to a feeling of being inactive whilst with their client, as highlighted by Lucy:

And I was working with someone that had had similar experiences to me and I think I hadn't quite processed everything that had gone on, myself. So, I think within the session, it was just, I just didn't have any defences up, […]. I was, I was not kind of active in the room, I was quite passive. (Lucy, Clinical Psychologist)

Nevertheless, personal experiences were not always viewed as unhelpful, since some participants believed this shared understanding could be used to empathise and work with clients, if a professional had processed and come to terms with their own experiences:

[…]so basically, when I was younger, I was sexually abused. […]. So, if they're talking about something that's happened to me or in my family and we've already built resilience because it's happened to me or someone I know, I can share that story with them and I think that really does help that family. Because it makes them feel like yeah, we do understand. (Tia, Social Worker)

The personal history of trauma of a professional was thus viewed as a facilitator of professional distress when working with trauma for helping professionals but also sometimes useful. Specifically, participants reported that unprocessed trauma could lead to reactivation of traumatic memories, which could in turn lead to feelings of distress and difficulty being present in a session with a client. Conversely, participants who felt that they had sufficiently processed their own trauma reported that they were able to use their experiences as a tool for understanding and empathising with their clients.

4.3.2.4 Stress and Difficulty in Self-regulating

Some participants identified various facilitators of personal distress when working with trauma survivors. Stress experienced due to conflicts or stressors in their personal lives, or work pressures were deemed to decrease a professional's capacity to listen to traumatic experiences faced by their clients. This was expressed by Anna who described a reduced ability to emotionally regulate herself at work when experiencing conflicts at home:

> […] if you're having difficulties in your emotional relationships in your personal life, it becomes more difficult because it's just harder to emotionally regulate yourself. The more emotionally calm you are going to work the easier is to regulate yourself in response to emotional stimulus you're getting from the children. (Anna, Police Officer)

Additionally, several participants viewed repeated IET, via a trauma-heavy caseload or attending several traumatic incidents, as well as dealing with multiple organisational pressures, to reduce their capacity to work with trauma survivors and negatively affect their mental health:

> […] I know there's like loads of issues with staffing numbers as so many people are off work with stress and that's probably a mixture of the workload and the expectation in erm like your work management also massively goes on top of that pressure and you also have to deal with really horrendous traumatic situations in a week […] (Tilly, Police Officer)

Moreover, participants viewed personal resources (e.g., energy, emotional capacity) to be limited and spent when working with survivors. Some participants used metaphors (e.g., "filling the bucket/cup up") to describe the build-up of pressure experienced due to the nature of working with trauma and overstretched

work environments, and if this pressure is not released in some way, leads a professional to suffer, for example:

> […] I think it is like compassion fatigue. Becoming overwhelmed with how much you've been put on you to deal with erm and trying to deal with it and not having the right resources or feeling able to cope at that time. The way I see it is that you have this cup and you are continually filling this cup up and you don't have a way of emptying the cup, like no drain so the cup flows over and coping mechanisms don't work. (Francesca, Assistant Psychologist)

The development of distress was therefore conceptualised as a transactional process, whereby exposure to trauma and work-related pressures depleted the individual's resources and led to feelings of being overwhelmed and unable to cope.

4.3.3. Theme Three: Empathy: A Double-edged Sword

Empathy and compassion were repeatedly referenced by participants. They regarded these traits as being vital when working with survivors of trauma. MH professionals were most likely to use the term 'empathy' when describing their ability to take the perspective of a client. For some, empathy was about perspective-taking, even though some questioned whether it is ever possible to achieve it:

> We are working with humans. There has to be that ability to empathise and to try and see the world from their perspective. Obviously, you're never going to be able to do that, 'cause you can't see inside another person's mind, you know. You can't fully feel what they're feeling… Your interpretation of what they're feeling is based on your own experiences and how you might react to a situation. (Lucy, Trainee Clinical Psychologist)

For others, it is about being immersed into the clients' world and feelings, "we try and get into the world of the other person, and we start to feel what they feel or felt" (Amanda, Counsellor).

Empathy was viewed as a 'double-edged sword', as represented by the meta-theme, and viewed as vital in working with survivors of trauma but could also lead to a professional becoming immersed in a client's experience leading to adverse consequences for both them and the client. A way of navigating this was to maintain boundaries which differentiate oneself from the client. These findings are represented in two subthemes: *emotional immersion* and *maintaining boundaries*.

4.3.3.1. Emotional Immersion

Although empathy was seen as vital when working with survivors, this was viewed as dependent on how a professional utilised empathy. For example, if a professional regarded empathy as being immersed in a client's experience and emotions, this could be detrimental to both professional and client, for example:

I think if you step into somebody's shoes you are, it's a dangerous sort of territory. If you are stepping into somebody's shoes constantly and if you think that is what empathy is, then you are going to cross the boundary and it could be very detrimental to counsellor and to client. (Eleanor, Counsellor)

Kelly, a CBT therapist and trainer, suggested that empathy can be taught and learned as a skill that allows therapists to connect with clients' experiences without becoming overwhelmed by them as demonstrated below:

[…] So, empathy's really important but when we teach about empathy, […] one of the things you hear is kind of the ditch example: don't jump in the ditch with the client because then you're not empathising, you're in there with them. And I think if you're doing what I described before you're kind of

going beyond that and you're getting in there with the person, you're not sort of saying that's their experiences, this is my experience. (Kelly, Counsellor)

4.3.3.2. Maintaining Boundaries

Some professionals spoke about the importance of maintaining boundaries when being empathically attuned with a client to work effectively. Amanda gave an example of this when discussing working therapeutically with clients:

Erm, well I suppose for me that's about the boundaries. What's theirs, what's mine? It's a bit of that, you can see that they are metaphorically swimming in their trauma and it's about not jumping in with them and trying to save them whilst drowning in it. It's about throwing them a rope to pull them out, but you are not going to do any good if you drown in that sea with them. (Amanda, Counsellor)

Participants viewed that when working with survivors they need to maintain a balance between creating personal protective barriers and building an empathic bond with the client. While it was seen as important to set boundaries to protect oneself when experiencing IET, it is also essential to connect with the client on an emotional level in order to understand their experience:

Yeah, no, definitely. Most definitely. And I think if you don't have, if it doesn't get to you, I mean you have to build some sort of barrier, you have to. Because otherwise you bring every child home with you and of course you'll go insane. And I've done it, you know? It's having that, it's a fine line, it's a fine line of yes emotionally distancing yourself, but of course you've got to have some emotion because you've got to have understanding. (Mr Bloggs, Social Worker)

Yet, Jessica explained that sometimes professionals may experience the urge to over-step self-protecting boundaries with some clients, which can make them overly emotionally involved and have a lasting impact after work has finished:

It is very hard to be with a young person when they are visibly upset crying …because then… for me, an instant reaction is to give that young person a hug and obviously there are professional boundaries there…I find, in that moment, it is very difficult. But it probably affects me more after. I find it very hard to switch off and say 'right, the laptops shut at 5pm' because if we are being honest, we absolutely care and love these kids … so we do have to set those boundaries in place. (Jessica, Child Exploitation Specialist)

Professionals therefore conceptualised empathy as an essential component of their work, but one that required careful boundary setting in order to protect themselves from the potential negative impact of listening to trauma.

4.3.4. Theme Four: Prepared Mindset

Developing a prepared mindset for the experience of IET was viewed by participants to be achieved through several means. Effective realistic prior training and having a sense of readiness and expectedness of the impact of IET was perceived as protective. Also, individual dispositions such as a professional's commitment to their profession, self-awareness and self-compassion were deemed to prepare one for working with trauma. Furthermore, an awareness that IET can have delayed effects on a professional and being able to have separate lives, one as a professional who works with trauma and the other as a person with a life outside, was perceived by many as shielding from the impact of learning about traumatic experiences. The theme 'Prepared Mindset' was divided into multiple subthemes which represent diverse ways participants perceived they

prepare for the impact of working with trauma, the subthemes include: *Prior Training; Readiness and expectedness; Commitment to professional ethos; Self-awareness and acceptance of limitations; Scission between professional and personal life; Self-Compassion; and Knowing it's not over when it's over.*

4.3.4.1. Prior Training

Prior training was deemed by participants from all professions as a buffer against the emotional and psychological strain experienced when working with traumatised populations. Professional's deemed knowledge of how trauma affects people who are directly (e.g., clients, patients, etc.) and indirectly (e.g., helping professionals) exposed to adverse experiences, allowed them to make sense of a client's experiences and resulting behaviour, thoughts, and feelings, and understand their own reactions. Jessica spoke about how trauma-informed training can make a professional more compassionate towards their clients and ultimately redefine how they practice:

Being trauma informed. Learning about trauma. What trauma is. How trauma affects the person they are going to be working with. Erm, and how working with the young person is going to affect you, because it will in some way. Erm, more so than others and understanding the actual psychology behind that and your reactions erm, is really helpful. […] (Jessica, Child Exploitation Specialist)

James highlighted the significance of understanding how learning about other people's trauma can have a personal impact on oneself, and that professionals may overlook the potential impact of IET on themselves:

[…] I think having understanding of how trauma can affect you vicariously so I think there's like this it's really strange but I don't know why but for some reason so I feel like professionally we kind of forget that the people in

therapy also experience trauma like a universal thing right so I think giving

people education on vicarious trauma about how it can impact practice and

how they can decompress so whatever it is like playing video games

listening to music whatever we do promoting that is a really helpful thing to

do (James, Clinical Psychologist)

Also, police officers, suggested that more 'realistic' training could be

offered, as the disparity between training and the job in real-life makes new

officers unprepared and vulnerable to the effects of IET, as emphasised by Tilly:

I think there should be more emphasis in training for police officers on how

stressful jobs can be, like you see a lot of people now coming out of

POLICE DIVISION which is where you get trained in the classroom and

being thrown out on the street and in the first week they'll experience like

really awful things. […] because being a police officer is not one of those

things where you can be eased into the job you know […] they don't give

you a real understanding of how these things can affect you. I think there

needs to be more emphasis on that in training […]. (Tilly, Police Officer)

Therefore, participants viewed trauma-informed training including how

being exposed to trauma in the job was needed to prepare and protect

professionals.

4.3.4.2. Readiness and Expectedness

Professionals regarded having an expectation of experiencing IET can

buffer the potential impact of learning about such experiences when working with

clients, as viewed by Jason:

EMDR works for lots of different mental health conditions, but it's really

synonymous with trauma. You're almost expecting when you got a referral

through, like, well, OK, somethings something's coming something big is

coming. So, when you then you can mentally prepare yourself to be ready for the trauma. That tends to support me and help me. (Jason, Psychotherapist)

Some professionals used methods to prepare themselves psychologically and logistically to protect themselves against the possible adverse effects of IET:

[…] If I know if I've got a difficult interview coming or trying to keep my day as calm as possible in the lead up to it. I'll be as organised. I think organisation as well helps your resilience. Cause if you know what you've got to go in and do and can get it done as quickly as possible without dilly-dallying around and adding to their trauma, then it's a lot easier. So, I'd say self-regulation, organisation, and just being clear about what it is you need to do when you're having an interaction with someone who's got quite a lot of trauma. (Anna, Police Officer)

However, some participants did acknowledge that a professional cannot always be readied as some indirect exposures are unpredictable, and sources of support post-exposure should also be available:

[…] if you try to train people to deal with trauma, you can make, I think you probably better before - you would probably be better focusing on coping mechanisms or, um, resilience rather than trying to get them to deal with whatever it is because no matter how realistic the training is, it's never going to be the same as some person in sobs of tears, because whatever's happened just hap – it -I think it's quite hard to train someone to deal with […] (Tim, Police Officer)

Being ready for IET was seen as protective when working with survivors, with some professionals sharing methods of how they prepared for such events. However, the extent to which a professional can be truly prepared was questioned

by some, as the actual experience of trauma cannot be fully replicated in training or preparation.

4.3.4.3. Commitment to Professional Ethos

Holding a strong commitment to professional ethos and working to amend the wrongdoing clients had experienced, was viewed by participants to enable one to withstand the emotional and psychological impact of IET. This feeling of commitment was underpinned by beliefs in the purpose of their work and an obligation to achieve the best possible outcomes for clients:

> Put your feelings aside in order to be a police officer you've got to put your police head on and think right this is a crime scene now you know think of forensics and evidence think of you know not letting people near the scene near the body and you know you've got people around you crying and screaming kicking off and people outside who want to know what's going on being nosey. (Tilly, Police Officer)

In some circumstances, participants reported that this sense of occupational responsibility can backfire when a client's expectations are greater than the realistic possible consequences of a specialist's work, and this disparity can cause a professional to feel immense pressure and experience distress:

> Um, I think you feel a huge amount of responsibility to try and get a positive outcome for said child, which for the children is quite simplistic, put the bad person in prison, um, however, you know, quite soon, […]. But knowing that actually, because of evidential limitations, you may not. So, you're making this child sort of spill their guts in terms of what's happened to them, but you might not be giving them the positive outcome they want at the end. And I think that can be quite distressing that responsibility on you. (Anna, Police Officer)

Thus, a sense of duty to one's profession and the desire to achieve the best possible outcome for the survivor was conceptualised by some participants as a way to manage the emotional distress experienced when learning about others' traumatic experiences. However, this sense of duty could also become distressing in itself, as professionals may feel unable to meet the needs of their clients.

4.3.4.4. Self-awareness and Acceptance of Limitations

A key attribute deemed by participants to protect a professional when exposed to indirect trauma was self-awareness, as an understanding of how one's own experiences of trauma as well as learning about other's traumatic experiences influences the way one feels, thinks, and behaves.

> Erm, it's about awareness of our past and it always amazes me that some counsellors, therapists, psychologists, psychiatrists come to this kind of work without having their own therapy. […] Trauma is on a real continuum. I think we have all had it in our lives and it is about understanding what has happened to us and what impact it has on us. I think that can be really harmful to ourselves as clinician and also to our clients as well. (Amanda, Psychotherapeutic Counsellor)

Additionally, an adaptable practitioner (when faced with IET) was viewed as someone who knew the limits of their role and ability, as this protected a professional from 'helper's syndrome', in other words, compromising their own wellbeing and needs in order to help the client, and being comfortable with the reality that they cannot control everything.

> But real trauma like murders and serious sexual abuse, that's serious stuff that you have to block out but it's not easy, I don't think it's easy. But you can't take it all on can you, and you can't fix the world, that's my kind or sort of way that I look at it. You know, I do my best I possibly can but

unfortunately, I can't fix what's happened to that child, but I can investigate

it to the best of my ability. I think it's just having that kind of rounded

approach isn't it? (Sally, Police Officer)

Hence, participants viewed self-awareness and having an acceptance of

one's limitations as a helping professional to reduce the impact of IET.

4.3.4.5. Scission Between Professional and Personal Life

Many participants described the importance of having scission between

their professional and personal lives. Without this separation, participants

explained that their work could be all-consuming:

[…] I do try and keep work and home quite separate. I kind of walk into

work and leave home at home, and then leave work and leave work at

work. I think because if not, if you don't have something like that, it can just

eat you up and take over your life. (Francesca, Assistant Psychologist)

Some professionals described consciously separating work and home:

[…] I used to come home every day and you know I'd offload this stuff to my

husband and now I don't I don't rarely but I just section it off once I get in

the car and yet I might come home and complain about the usual things I'm

tired or whatever […]. (Ashely, Prison Officer)

Therefore, separation between home and work life was seen as needed to

cope with the impact of learning about others' traumatic experiences. Without this

separation, participants viewed that work could feel invasive in one's own life and

sometimes be all consuming.

4.3.4.6. Self-compassion

Having self-compassion and embracing oneself as a human being that feels

pain, distress and sadness was deemed as a protective factor by participants. A

compassionate response to self was considered as a mechanism to maintain

perceived resiliency when faced with IET and distressing situations with clients, and to actively seek ways to maintain their own wellbeing:

Now and again, I have been known to well up because it has hit me hard erm and I think, I'm only human, you know, I will state that in the session that I am feeling quite overwhelmed. […] Erm, like I was saying, putting boundaries in place, positive self-talk, being kind, erm, that sort of thing. I think practicing self-compassion is something that erm for myself I have had to try and really uphold because it helps me to be more resilient. (Eleanor, Counsellor)

Jason emphasised the importance for professionals to see themselves as humans and not impermeable to the impact of their work:

[…] I think if you were in the position of saying, 'well, I'm a therapist and I'm trained and I am blah blah blah blah blah' and that sort of nonsense, I don't think that's particularly helpful, but I think there's something important acknowledging 'look, I mean, […] you are still human. You are going to be affected by these and that helps not beat yourself up into saying I'm bad therapist. (Jason, Psychotherapist)

Therefore, a compassionate response to oneself when learning about others' experiences of trauma was viewed to aid a professional when working with survivors, helping to manage the emotional impact of this work and the pressure felt to support their clients.

4.3.4.7. Knowing it's Not Over When it's Over

Many participants acknowledged the importance of continual self-care to remain adaptive and well when working with trauma. They identified several approaches including self-care, peer-support, supervision, and help-seeking as methods to assist professionals in recovering from adverse psychological and

physical symptoms which develop as a result of IET. Looking after oneself was seen as vital to operating as an effective helping professional and possess a good quality of life, however, participants did acknowledge that one's own wellbeing can be neglected when working in an occupation where the focus is on helping others.

> Erm I think just really looking after myself and it really sounds cliché but it's the whole like mind, body and soul thing so I can't sit in that role and say you know it's really important to have structure you know what about meditation what about this? If you're not doing that yourself so if I was coming home and drinking every day, staying up at all hours, eating junk food, and not going to supervision, and generally not living like what I'm asking clients to live by, it's hypocritical the fact that I would be physically and mentally unwell. (Susan, Therapist)

Some participants spoke about the importance of speaking to others who understood the job and the impact working with trauma as a professional. Ashley described this in her interview, as well as the desire of not wanting to burden people outside of work with the adversities she learnt about at work:

> […] I don't want to share that with everybody because people don't understand the same whereas at work erm the guys at work are going through the same stuff. I don't wanna shock people all the time you know and I don't want to burden anybody else […]. I definitely use the guys at work and those that are actually in the same field because we have the same experience. (Ashley, Prison Officer)

Furthermore, several participants viewed supervision as a safe space to process one's own reactions to IET, supporting a professional to explore their own beliefs and feelings about learnt trauma and become more self-aware.

What makes you less vulnerable is good supervision. So, if you've got

somewhere you can debrief, where you can speak about what's happening,

what's processing, why you feel a particular way towards this case when

perhaps you didn't feel the same way towards another case and you can

kind of know what your values are and your own belief systems and have

that self-awareness and reflexivity […]. (James, Clinical Psychologist)

Generally, many participants spoke about needing methods to look after

themselves (e.g., selfcare, speaking up) and process what they learn when

working with trauma (e.g., supervision, peer support) to continue working as

helping professionals and remain physically and mentally well.

4.3.5. Summary of Findings

Through data analysis, several themes and subthemes were developed and

these provided findings that addressed each research question. The first umbrella

theme 'New Awareness of Danger and Malice' and incorporated subthemes

'Challenged Assumptions of Safety and Justice'; 'Trauma to Severe or Dark';

'Processing', and 'Relatedness' represented different factors which professionals

perceived to make listening to trauma more difficult, linking to research question

one. Additionally, the umbrella theme 'Lack of Control and Narrowing of Window of

Tolerance' and related subthemes (i.e., Struggle to Control and Contain; Survivors'

Overt Expressions of Distress; IET Triggers Own Traumas; Stress and Difficulty

Self-regulating) portrayed different variables participants believed to make

listening to trauma harder, and hinder a professionals' ability to cope with IET.

These findings linked to research questions one and two exploring risk factors of

post-IET distress and barriers to coping. The final umbrella theme 'The Prepared

Mindset' and included subthemes (i.e., Prior Training; Readiness and

Expectedness; Commitment to Professional Ethos; Self-awareness and

Acceptance of Limitations; Scission Between Professional and Personal Life; Self-compassion; Knowing it's Not Over When it's Over) relate to protective factors which professionals viewed to prevent and prepare them for listening to their clients' trauma stories. These findings connect with research question two, which explored factors promoting coping, and research question three, which focused on how professionals can prepare for IET in their practice.

4.4. Discussion

Through this qualitative investigation three broad research questions were explored: a) When is it harder to listen to other people's trauma accounts? (b) What does effective coping involve and what could hinder or promote it? and (c) What could psychologically prepare a person before they listen to a trauma account? Through analysis of the data, several themes were developed which highlighted participant perceived explanations for the negative impact of listening to trauma, and how professionals can prepare and adapt effectively.

Firstly, in relation to the first research question, the findings suggest that repeated indirect exposure to others' traumatic experiences can challenge a professional's beliefs about their own safety and the benevolence of the world. Participants perceived the magnitude of these conflictions resulted from a combination of frequency of exposure, severity of the trauma, characteristics of the survivor, and how much a professional could relate to the survivor. These findings can be explained by the constructivist self-development theory (CSDT; McCann & Pearlman, 1990). CSDT argues that people develop an understanding of the world and sense of self through experiences which are interpreted through cognitive schemas (Mahoney, 1981), and that core cognitive schemas manifest from principal psychological needs (e.g., safety, trust, power, esteem, intimacy) (McCann & Pearlman, 1990). Traumatic experiences which conflict with one's

cognitive schemas disrupt these core beliefs leading to changes in perceptions of the self and the world. As participants viewed listening to trauma to conflict with their beliefs about their own safety and adversely change how they perceived the world, it could be argued that, through exposure to accounts of trauma, professionals experienced disruptions in their cognitive schemas of self and the world (Pearlman & Saakvitne, 2010).

Additionally, CSDT suggests that the way one reacts to a traumatic event is influenced by one's principal psychological needs, personal history (e.g., previous traumatic events), and social cultural variables (Saakvitne et al., 2010). Participants in this study viewed accounts from clients who they shared commonalities with as more distressing, therefore working with people who had experienced trauma that a professional could relate to conflicted with the professional's own sense of safety further than with working with people they could not relate to. Also, when learning about trauma events that were seen as particularly severe, this perceived severity could be explained to be a result of the event highly contradicting with a professional's assumptions about the benevolence of people and the world. Additionally, these findings could be explained by a professional's salient psychological needs, therefore, participants may have viewed some traumatic experiences as more severe as they conflicted with their beliefs regarding core psychological needs (e.g., interpersonal violence seen as severe as the professional has a high need for trust and safety). As people are argued to have different hierarchies of psychological needs (e.g., intimacy maybe more important than independence) (McCann & Pearlman, 1990), future research could explore possible links between IET, psychological needs and psychological distress post-exposure. By identifying one's key psychological

needs, professionals may be able to understand why in some circumstances it is harder for them personally to listen to trauma and make sense of their reactions.

The impact of trauma exposure on core beliefs is also emphasised in Janoff-Bulman's (1992) theory of Shattered Assumptions, which argues that people have unconscious fundamental beliefs that the world is a benevolent and predictable place, and one is competent and has worth. These assumptions are needed for a person to adapt appropriately, as they provide a person with self-esteem, meaning and a sense of invulnerability. When trauma is experienced, these assumptions are violated, and the person starts viewing the world as a more hostile place and becomes aware of their own vulnerability which leads to anxiety and other psycho-physiological symptoms such as those associated with PTSD (e.g., avoidance, hypervigilance) (Edmondson et al., 2011). This experience of a new awareness of trauma in the world and shifting beliefs of the benevolence of the world was reported in the present study. Therefore, through frequent IET, professionals become aware of the commonality of trauma in the world, the atrocities people are capable of and can experience, and that they themselves could be a victim of such events, leading to feelings of vulnerability and psychological distress (Janoff-Bulman, 1999).

Disruptions in pre-existing beliefs about the world due to IET has also been reported in a previous qualitative study with female psychologists working with sexual assault survivors (Padmanabhanunni & Gqomfa, 2022). In this study, psychologists became more aware of their own personal vulnerability to sexual assault, with some beginning to believe that being raped was almost to be expected as a woman. Participants developed distrust for men and began taking precautions for themselves and their close female family members when around men and experienced an increased awareness of malevolence in the world with

some admitting they had lost hope in the goodness of people. These findings reflect those in the present study as participants perceived negative changes in beliefs to be a result of exposure to trauma at work. Interestingly, participants in the study by Padmanabhanunni and Gqomfa (2022) spoke about alterations in beliefs (e.g., reduced trust for men, increased feeling of vulnerability to sexual assault) specifically linked to the type of trauma they were exposed to at work (i.e., experiences of survivors of sexual assault) suggesting specific changes can occur in professionals' beliefs tailored to the type of trauma one is exposed to, as well as more general alterations (e.g., viewing the world as a more violent place) as found in the current study.

Although, distress associated with shattered assumptions due to IET has been reported in qualitative studies in professionals working in various occupations (e.g., nursing [Arnold, 2020]) and humanitarian workers [McCormack & Lowe, 2022]), the potential role of alterations in beliefs in post-IET distress has not yet been adequately empirically investigated or studied over time. Therefore, how IET impacts beliefs over time, and comparisons of professionals starting work with different fundamental beliefs is yet to be fully understood. In a prospective study with trainee police officers, more positive beliefs about the benevolence of the world and higher self-worth at baseline correlated with less PTSD symptoms after two years of active duty including critical incidence exposure, suggesting more positive assumptions before exposure are protective against PTSD (Yuan et al., 2011). Still, this study did not examine the association between assumptions and exposure to trauma, and therefore the impact of trauma exposure on the valence of beliefs about self and the world cannot be concluded. As participants in the present, as in other qualitative investigations, suggested that trauma exposure was a cause for changes in their beliefs about self and the world, this frequency of

trauma exposure may have influenced the association between beliefs at baseline and PTSD after two years of active duty. Also, this study did not focus on IET, and the results may not be entirely applicable to professionals who only experience second-hand trauma. Furthermore, other investigations have reported having a more negative or cynical outlook of the world and people as protective when experiencing direct trauma (Başoğlu et al., 1996), contradicting findings in the study by Yuan et al., (2011). Therefore, more research is needed to explore the role of assumptions in the development of psychological distress after IET. As qualitative research suggests changes in beliefs are directly due to experiences of IET at work, quantitative investigations could test this hypothesis. Implications from these findings could support developing appropriate psychological support for professionals who experience post-IET distress which focus on rebuilding assumptions and alleviating associated trauma symptoms (Janoff-Bulman, 1999).

With respect to the second research question, participants spoke about facilitators of personal distress when working with trauma survivors. For example, a sense of struggling to control and contain one's emotions and those of the client and a perceived narrowing window of tolerance when exposed to second hand trauma was reported by professionals to increase the likelihood of experiencing psychological distress. Window of tolerance (WoT) is a concept first proposed by Siegel (1999) that refers to the range of emotional arousal within which a person can function effectively. When a person's arousal is within their WoT, they can think clearly, make rational decisions, and cope with stress. However, when a person's arousal is outside their WoT, they may experience emotional dysregulation. Participants identified factors (e.g., witnessing clients' overt expressions of distress, IET which triggers own historical experiences of trauma) to narrow their WoT for listening to trauma and lead to difficulty in regulating their

own emotions and thoughts and inability to perform their professional duty. A person's WoT is argued to have a lower and upper boundary. An emotional experience which falls outside of a person's window of tolerance leads to emotional and autonomic dysregulation (Siegel, 1999). In states of hypoarousal, a person can feel numb, helpless, unable to think; in hyperarousal, one may experience hypervigilance, intrusions, and racing thoughts, and when both extremes are present (i.e., hypoarousal and hyperarousal) a person may freeze and become mute (Ogden et al., 2006). Interestingly, participants did report experiences like these different proposed states, such as feeling panicked and frozen when dealing with a tragic event, or passive and defenceless in a session with a survivor disclosing an experience of trauma.

Participants practicing in different occupations explained that exceeding their WoT hampered their ability to provide a safe space for their clients when working through their experiences. In psychotherapy and counselling, being able to provide a holding and containing space for clients to explore their experiences and express emotion (Finlay, 2016), is important in the therapy process, therefore, when considering the findings in the present study, exceeding one's WoT could be suggested as unhelpful in therapeutic and possibly other helping work. Participants also expressed a desire to manage not only their own emotions but those of the client and also to have a sense of control over the situation. It could be argued that these actions were motivated by professionals' desire to remain within their WoT as if they fell outside of this window, they would not be able to perform their professional duty or cope well with IET, as suggest by the model of WoT. Although, there is a lack of research exploring the influence of professionals' WoT coping with IET, previous research has identified links between adaptive emotion-regulations strategies and lower post-IET distress (Benuto et al., 2022;

Singh & Hassard, 2021), suggesting effective self-regulating mechanisms are protective and this maybe the result of utilising strategies that maintain one within a WoT. Further research could experimentally explore helping professionals' breadth of tolerance for IET, the factors that either help professionals stay within this WoT, and whether training in identifying one's own WoT and learning regulating methods might help protect professionals from the impact of IET.

Empathy was conceptualised differently by participants, and some conceptualisations were implicated in the development of post-IET distress. Some understood empathy as perspective taking, where the professional tries to gain some level of understanding of the client's experiences and emotions but also recognises that these experiences are not their own and that they will not be able to fully understand or experience what the client has or is going through. On the other hand, some viewed an empathic connection as being completely immersed in a survivor's world where they the professional begin to experience the emotions of the client. Participants viewed the latter definition as being particularly unsafe in the context of IET, as it blurs the boundaries between the clients' and professionals' emotional states and experiences, resulting in the professional experiencing considerable emotional distress and unable to support their client. Interestingly, in the empirical literature, results of the influence of empathy have been conflicting with some reporting empathic ability to either increase (Lai et al., 2021), reduce (Wagaman et al., 2015) or have no role (Crumpei & Dafinoiu, 2012) in the development of post-IET distress. These inconsistencies could be due to the multiple definitions and conceptualisations of empathy in the literature (Hall & Schwartz, 2019). The qualitative findings of the present study highlighted issues of multiple definitions of empathy. This may explain the observed inconsistencies in empirical studies, as it is possible that how a professional conceptualises and uses

empathy, rather than their overall empathic ability, contributes to their risk of post-IET distress. As empathy is viewed as a core skill in helping professions (Fisher & Ashkanasy, 2000), further investigation into the conceptualisation and use of empathy could provide meaningful ways of how empathy is taught in training aiming for professionals to use empathy in a safe way that protects themselves and their clients when working with trauma.

In reference to the third research question, developing a prepared mindset for working with IET was viewed by participants as being established through different methods and a barrier to post-IET distress. Having prior training, a sense of readiness and expectedness for IET and associated reactions, and a commitment to professional duty was viewed by professionals to support them in understanding their client's and their own reactions to trauma, perceived to buffer the development of post-IET distress. Interestingly, a lack of preparedness for the impact of IET has been reported in other qualitative studies as a facilitator in the development of distress in criminal justice professionals viewing video evidence of violent crime (Birze et al., 2023), and forensic mental health clinicians working with killers (Harris et al., 2015). On the other hand, a sense of expectedness and feeling that one's work is meaningful has been reported as protective against post-IET distress (Denk-Florea et al., 2020). Therefore, as the current study and previous investigations have reported similar findings, a 'prepared mindset' may be a barrier to professionals experiencing distress from IET. Still, this research base lacks investigations on preparedness in helping professionals exposed to IET and offers modest insight into what it means to be prepared for IET. Nevertheless, being mentally prepared, termed PP, has been reported as protective against developing trauma symptoms after direct exposure (Başoğlu et al., 1996; 1997), with PP consisting of prior knowledge, training and readiness for trauma, and a

mindset which is committed to a cause and less beliefs about the safety of oneself and the benevolence of others and the world (i.e., less positive basic assumptions). Some of these components were perceived by participants to prepare professionals to cope with IET (e.g., training, expectedness, and readiness), who also viewed certain dispositions (e.g., self-awareness, an acceptance of one's limits, scission between personal and professional life and self-compassion) developed a prepared mindset for working with trauma. The associations between components related to a prepared mindset and lower levels of post-IET distress could be explored further in prospective studies as it is unknown whether preparedness is a cause or result of adapting to the impact of indirect exposure to trauma. Furthermore, variations in training across different professions which lead to some professional groups having a more "prepared" mindset could be explored.

Additionally, participants connected preparedness to also having an awareness that the impact of IET may be delayed or gradual and that it is important for a professional to have certain self-care techniques that are personally effective to combat these later effects of IET. Participants identified different practices, mostly related to social support (e.g., peer-support, supervision and personal therapy) as most effective. These findings suggest that developing adaptability to the impact of IET is developed through work before (e.g., training, expectedness), during (self-awareness, acceptance of limits) and after (self-care) IET. Additionally, as this study focused on negative impact of IET, the findings mostly contained participant perceptions of adverse consequences to IET. Therefore, future investigation could explore possible positive changes in professionals who experience IET at work as this area is currently understudied

(Kalaitzaki et al., 2022). This research could identify factors which promote positive outcomes of IET to improve professionals' wellbeing.

This study was not without limitations. Firstly, participants were recruited due to their experience of listening to trauma accounts, although they may have also experienced direct trauma at work, especially those working as first-responders. Therefore, their perceptions of factors making IET more distressing could have been associated with direct experiences of trauma and less applicable to listening to trauma. Also, as this study sought to collect perceptions from a range of helping professionals, resulting in a heterogeneous sample, this may have limited the ability to develop meaningful cross-case themes, and resulted in the findings being removed from real-life settings (Robinson, 2014). Yet, this study did find strong thematic patterns across the sample, suggesting these themes are more likely to represent more generalisable perceptions (Robinson, 2014), and a large sample was used to offset the potential limitations of using a heterogeneous rather than homogenous sample (Trotter II, 2012). Also, the sample did not include too many participants which could have prevented in-depth analysis, required in qualitative research (Sandelowski, 2001). Still, as this study used qualitative methods, overall generalisations cannot be made from the findings, although did allow for an in-depth investigation into already known and novel facilitators and barriers perceived to contribute to post-IET distress after listening to trauma.

4.5. Chapter Summary

In conclusion, the findings suggest that listening to trauma stories can be harder when the person who listens begins to experience alterations in their assumptions about themselves and the world, is pushed outside of their WoT, and conceptualises empathy as being immersed in another's experiences and emotions. Protective factors that help professionals cope with the impact of IET

are preparedness (e.g., knowledge, expectedness for IET, and professional commitment), self-awareness, self-compassion and participating in self-care methods personally effective in supporting a professional to cope. These findings will be further discussed including implications for future research, policy, and practice alongside the outcomes from the quantitative studies included in this thesis in the general discussion section.

In the following chapter, a study is presented in which the author set out to investigate the influence of factors on post-IET distress which were perceived by helping professionals in this qualitative study as influencing heightened personal distress. Specifically, the impact of acute stress, which participants in the qualitative study perceived as affecting their ability to cope with IET, was examined. The impact of acute stress on coping with IET is less well explored compared to research examining the influence of chronic stress (e.g., occupational stress, burnout). The findings in this investigation may offer valuable insights into the potential impact of acute stress on the manifestation of distress following IET.

Furthermore, within the qualitative study, participants perceived client characteristics as influential factors in the degree to which they were affected by listening to narratives of traumatic experiences. Therefore, the differential impact of exposure to various forms of trauma-related material was investigated, an area that remains relatively underexplored within the existing literature. Understanding this may clarify the differing impacts of various forms of IET (e.g., direct client interaction versus reading trauma testimonies). Additionally, variables like empathy, considered by professionals to influence responses to IET, were measured and controlled for in the subsequent study. Hence, the author, using an experimental design, tested the impact of viewing a survivor's distress when learning about their experiences of trauma, and experiencing a stressor prior to

exposure on how one responds to IET including short-term and longer-term

reactions.

Chapter Five: Study Two - The Effect of Audio-visual Information and Situational Stress on Psychological Responses to Indirect Exposure to Trauma

5.1. Summary of Background

Traumatic experiences are common (Kessler et al., 2017) and associated with negative mental and physical health outcomes (Hogg et al., 2023; Stubbs & Szoeke, 2022) which places a high burden on health and social care services (Magruder et al., 2017). Due to global events such as the COVID-19 pandemic (Leung et al., 2022a) and armed conflicts leading to mass migration of refugees (commonly with high levels of trauma including war, violence and exploitation) into neighbouring countries (Uphoff et al., 2020), helping professionals are increasingly in demand and more frequently supporting people who have experienced chronic and complex trauma. Currently, services are over-whelmed and underprepared (Lloyd et al., 2023), and staff are at risk of experiencing significant distress resulting from their work (Roberts et al., 2021).

Specifically, helping professionals who work with survivors of trauma and/or work with traumatic material can experience psychological distress including post-traumatic stress (PTS) symptoms (e.g., intrusions, avoidance, hypervigilance) and significant changes in their world view (May & Wisco, 2016; Vandeusen, 2016). These professionals may be at particular risk of experiencing distress after indirect exposure to trauma (IET) due to repeated exposure (Lee et al., 2021; Makadia et al., 2017). Post-IET distress has been linked to helping professionals (HPs) experiencing negative personal (e.g., problems in romantic relationships [Robinson-Keilig, 2014]) and professional (e.g., decreased work ability [Bock et al., 2020]) consequences. To protect professionals who experience IET at work, prior research has aimed to identify factors linked to post-IET distress. Reviews of this

literature have proposed certain factors including a personal history of trauma and empathy to be associated with post-IET distress (Greinacher et al., 2019; Hensel et al., 2015). Still, authors have also reported high variability between studies, a high reliance on cross-sectional designs, and proposed the need for more research into factors beyond individual characteristics (Iversen & Robertson, 2021).

Professionals working in traumatised populations are exposed to IET through different mediums for example by listening to a survivor recount their experiences (e.g., a therapist listening to a client), or reading traumatic material (e.g., crime investigators reviewing evidence). In the former, professionals not only learn factual information about the event/s but are also exposed to emotion-laden audio and visual stimuli concerning the survivors' response to trauma (e.g., facial expressions, vocalised emotional distress). These additional stimuli may promote post-IET distress in professionals as they may be more affected by viewing the distress of another compared to those who learn about trauma in contexts without these audio and visual cues (Dutton & Rubinstein, 1995; MacRitchie & Leibowitz, 2010). There is currently a lack of research investigating whether IET is more likely to result in adverse reactions when exposure involves witnessing audio-visual stimuli compared to solely learning about the traumatic event.

Acute stress, that is a short-term response to a temporary or immediate stressor (Chu et al. 2024), has been linked to increased cognitive load (CL), defined as the "amount of mental effort required to process and store information in working memory (WM)" (Sweller, 1988, p. 261), in HPs (Vella et al., 2021). As HPs already experience high CL completing their work (Croskerry & Sinclair, 2001), they are prone to experiencing cognitive overload (i.e., when WM capacity is exceeded) which impacts professionals' performance and wellbeing (Asgari et

al., 2024). Other factors contributing to cognitive overload in professionals include emotional and physiological stress (Chajut & Algom, 2003). Additionally, acute stress has been found to reduce advantageous decision-making and likelihood to consider different options when problem solving, and in some cases, increases risk taking (Wemm & Wulfert, 2017). Therefore, experiencing acute stress and emotional distress when working in a caring occupation may lead to reduced ability of decision-making in clinical work, cognitive overload, and lower professional wellbeing. Studies are yet to explore the impact of acute stress on the development of emotional distress in people when exposed indirectly to trauma. As IET is reported to be a risk of emotional distress in HPs, the addition of acute stress may increase the likelihood of professionals experiencing cognitive overload which may impact their ability to perform professional duties.

Furthermore, most research investigating factors associated with post-IET distress use cross sectional designs making it challenging to isolate vulnerability factors pre-exposure. Additionally, previous studies have not assessed whether participants have experienced IET, but rather, associated conditions such as Secondary Traumatic Stress (STS), and therefore it cannot be established whether outcomes (e.g., PTS symptoms) are a result of IET or other variables. The identification of predictors of post-IET distress would enable the development of preventative interventions tailored to enhance protective factors and mitigate risks, thereby safeguarding professionals susceptible to post-IET distress. In studies focusing on people directly exposed to trauma, pre-trauma risk factors associated with the development of Post-traumatic Stress Disorder (PTSD) have been reported (DiGangi et al., 2013). For example, pre-trauma stress (Delahanty et al., 2005; Steudte-Schmiedgen et al., 2015), rumination tendency (Spinhoven et al., 2015; Wild et al., 2016), trait anxiety (McNally et al., 2011; Weems et al., 2007),

and previous experience of trauma (Ozer et al., 2003) have been associated with poorer mental health post-exposure, including an increased risk of PTSD. To our knowledge, researchers have yet to examine the association between these factors and psychological distress post-IET prospectively.

5.1.1. The Present Study

This study investigates how pre-trauma stress and audio-visual stimuli influence immediate (subjective distress after IET including acute stress and negative emotion) and longer-term (intrusive imagery one week later) outcomes. The Montreal Imaging Stress Task (MIST; Pruessner et al., 2008), a higher-order cognitive task with social-evaluative stress, was selected to induce acute stress responses. This task was selected due to its capacity to induce high cognitive load, mirroring the demands frequently encountered by professionals in challenging work environments (Croskerry & Sinclair, 2001). Furthermore, it aimed to heighten the perception of acute stress through the incorporation of social evaluative threat, thereby reflecting the influence of the work-social environment on professionals' daily experience of stress (Smith et al., 2012).

The outcome measures were chosen to build on findings in previous research. For example, higher negative emotion immediately after exposure to trauma has been linked to a greater frequency of intrusions within participants in experimental conditions using trauma paradigms (Clark et al., 2015), and in people exposed directly to traumatic events (Briere et al., 2017). In this study, we sought to explore if the type of trauma material and pre-exposure stress increased the development of negative emotions post-exposure to enhance understanding of factors associated with peritraumatic negative emotions related to IET. Although in previous studies (e.g., Holmes et al., 2004; Krans & Bons, 2012) short-term reactions to traumata have been termed as 'moods', in this study these short-term

reactions to experimental stimuli are termed 'emotions' to be in parallel with definitional differences of emotions and moods outlined in the literature (Lochner, 2016). Several key distinctions have been observed between emotions and moods (Beedie et al., 2005). Firstly, in terms of temporal dynamics, emotions typically exhibit a transient nature, whereas moods are characterised by a more protracted duration. Secondly, with respect to affective magnitude, emotions are generally experienced with greater intensity compared to moods, which are lower in potency but more enduring. Finally, concerning temporal instantiation, emotions arise with relative immediacy, while moods develop and dissipate more gradually over time.

In previous experimental studies, exposure to repeated threatening tasks has been linked to higher levels of stress (Bertilsson et al., 2019). Still, this is yet to be explored within a trauma paradigm. Therefore, subjective stress in response to two sequential acute stressors, the MIST and the IET, was measured to explore whether experiencing repeated stressors (i.e., MIST and IET) was linked to higher subjective stress and negative emotions compared to experiencing IET alone. Additionally, as perceived stress has been associated with higher PTSD symptoms (Bruno et al., 2024), the association between exposure to the MIST and IET, compared to IET alone, on intrusions at follow-up was examined.

Furthermore, intrusions related to the trauma story presented in the experiment were recorded within a one-week follow up. The rationale for this decision was twofold: first, intrusions constitute a core symptom criterion of PTSD (APA, 2013), and secondly, prior research has demonstrated that the presence of intrusive symptoms within the initial eight days following a traumatic event is predictive of subsequent PTSD development (Creamer et al., 2004). In this experiment, the influence of type of trauma material and pre-exposure acute stress

on the frequency of intrusions in a seven-day follow-up was tested to explore if these factors enhanced risk of intrusions post-exposure.

In addition, the study will control for baseline empathy, rumination tendency, trait anxiety and previous history of trauma when examining the influence of prior-exposure acute stress and audio-visual stimuli in the development of post-IET distress. The results will help bridge a gap in the existing knowledge and inform policies for protecting the mental health of professionals whose jobs involve routinely listen to trauma narratives (e.g., practitioner psychologists, police officers, social workers), or those who learn about trauma through reading (e.g., judges, detectives, mental health professionals, students of social work or psychology.).

5.1.2. Hypotheses

Participants who complete a psychosocial stress task prior to the IET will report higher subjective distress directly after IET and more intrusive re-experiencing at one-week follow-up, compared to participants who complete a relaxation task prior to IET, whilst accounting for rumination tendency, trait anxiety, empathy, and previous trauma experience.

Participants who watch a trauma video, compared to those who read a transcript of the trauma account, will experience higher subjective distress directly after IET and higher intrusive re-experiencing at one-week follow-up, whilst accounting for rumination tendency, trait anxiety, empathy, and previous trauma experience.

5.2. Method

5.2.1. Research Design

A 2 x 2 factorial experimental design was used to test two independent variables (i.e., type of indirect exposure to trauma story and stress task vs relaxation task before exposure) at two levels. This design was used to randomise

participants into one of four conditions in which they either watched a relaxation video or completed a task to increase acute stress, and then watched a trauma video or read a trauma transcript. Hence, the two independent variables (stress level pre-exposure and type of trauma exposure) were manipulated to examine the effect of these variables, at different levels, on the outcome variables (i.e., subject stress and emotions directly after IET and the development of intrusions at a one-week follow up). The four conditions will be referred to as relax+video (i.e., condition including the relax task and trauma video), relax+transcript (i.e., condition including the relax task and trauma transcript) stress+video (i.e., condition including the stress task and trauma video), and stress+transcript (condition including the stress task and trauma transcript). The study was conducted online using Qualtrics (Qualtrics, Provo, UT) to examine the effects of the independent variables (IV) on subjective stress and the development of intrusions after IET and whilst accounting for factors using well-established psychometric measures.

5.2.2. Participants

The sample consisted of 83 participants. The mean sample age was 30.89(10.28) years, 62.7% of participants were female (N= 52), 90.4% (N=75) were of White ethnicity, and 79.5% (N=66) had studied at university level. Other demographic information and mean scores of variables included in the baseline questionnaire (e.g., empathy, rumination tendency) for the whole sample are shown in Table 2.

Table 2

Descriptive Characteristics of Participants

Characteristic	Condition 1 (*N* = 21)	Condition 2 (*N* = 22)	Condition 3 (*N* = 19)	Condition 4 (*N* = 21)	All (*N* = 83)
	N(%)	*N(%)*	*N(%)*	*N(%)*	*N(%)*
Gender					
Female	16(76.1)	15(68.1)	11(57.8)	10(47.6)	52(62.6)
Male	5(23.8)	7(31.8)	8(42.1)	11(52.3)	31(37.3)
Ethnicity					
White	19(90.5)	20(90.9)	15(79)	21(100)	75(90.4)
Mixed	2(9.52)	0(0)	3(15.8)	0(0)	5(6.02)
Asian	0(0)	1(4.6)	1(5.3)	0(0)	2(2.4)
Black	0(0)	1(4.6)	0(0)	0(0)	1(1.2)
Education					
Primary	0(0)	0(0)	0(0)	1(100)	1(1.2)
GCSE's or equivalent	1(4.8)	0(0)	1(5.3)	0	2(2.4)

	6(28.6)	3(13.6)	3(15.8)	1	13(15.7)
A level's or equivalent					
Undergraduate	17(81)	13(59.1)	6(31.6)	10	36(43.4)
Postgraduate	7(33.3)	5(22.7)	8(42.1)	7	27(32.5)
Doctoral	1(4.8)	0(0)	2(10.5)	0(0)	3(3.6)
Other	0(0)	0(0)	0(0)	1(5.3)	1(1.2)
No. different trauma experiences	5(23.8)	4(18.2)	5(26.3)	4(19.1)	18(21.7)
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
Age	28.57(8.30)	29.86(8.80)	32.68(8.83)	32.67(14.14)	30.89(10.28)
Empathy					
Total	91.67(7.43)	89.50(8.18)	93.37(7.31)	89.62(8.89)	90.96(8.01)
Cognitive	36.96(3.22)	36.55(2.72)	37.42(3.31)	37.00(3.18)	36.96(3.06)
Affective	54.71(5.24)	52.95(5.81)	55.95(5.24)	52.62(6.66)	54.00(5.83)
Rumination	90.24(17.53)	84.05(27.57)	84.26(18.83)	81.19(17.05)	84.94(19.73)
Trait anxiety	38.76(11.32)	38.09(13.35)	36.63(10.15)	35.10(7.06)	37.17(10.66)
PTSD	8.90(1.64)	9.27(2.51)	9.42(2.24)	8.95(1.80)	9.13(2.05)

Note. Condition 1 = relax and video, condition 2 = relax and transcript, condition 3 = stress and video, condition 4 = stress and transcrip

5.2.2.1. Sample Size

A prior power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to determine the minimum sample size required in this study. Few studies have examined the impact of psychosocial stress and medium of IET on subjective stress, emotions and intrusion development, so it is difficult to specify the magnitude of the phenomena, therefore a medium effect size was assumed. Results indicated that a sample of 60 participants would be needed to achieve 80% power for detecting a medium effect size with an alpha level of $\alpha = .05$ (Herzog et al., 2022). Thus, the obtained sample of $N = 83$ was adequate to test the interaction effect of time (measured at three points) as a within-subjects factor and condition (four groups) as a between-subjects factor on subjective stress.

5.2.2.2. Inclusion Criteria

Participants met the inclusion criteria if they were over the age of 18 years old, spoke fluent English and had access to a smart device or computer and the internet.

5.2.2.3. Exclusion Criteria

In this study, participants experienced IET by either reading or watching a survivor's account of experiencing sexual abuse in childhood. The content of the trauma story may have triggered painful memories and related emotional distress in individuals who had experienced sexual trauma (directly or indirectly). Also, the distressing content of the trauma may have triggered higher levels distress in people experiencing or with previous experience of PTSD and/or severe depression compared to others. Furthermore, small rises in arousal due to the stress task could have potentially triggered anxiety in those with past or present panic attacks. Therefore, to protect participants' wellbeing, several exclusion criterions were applied including: a) past experience of sexual trauma, whether

exposure was direct (personally experienced) or indirect (experienced by a person who is/was close to the participant); b) current or previous PTSD; c) past or current panic attacks; d) current severe depression, and e) are self-harming or suicidal. Additionally, participants were informed through the participant information sheet (PIS) (see Appendix G) that if they believed reading a transcript or watching a video of an account of childhood sexual trauma may upset them, they may consider not participating.

Furthermore, an objective in this study was to manipulate the presence of audio and visual cues (non-verbal communication) when a participant was exposed indirectly to a traumatic event (i.e., someone's experience of childhood sexual trauma). This objective aimed to examine whether participants who watch a video (thus exposed to audio and visual cues such as body language, facial expressions, crying, tone of voice) in addition to learning about the content of the trauma story, experience higher levels of subjective stress compared to participants who only read a transcript of the same account of trauma. Therefore, participants were also excluded if they had severe visual impairment that was not corrected (e.g., contact lenses, glasses), as including participants who were unable to see the visual cues within the trauma video may have had a confounding effect on the results obtained.

5.2.2.4. Recruitment

Recruitment was conducted using social media and the Manchester Metropolitan University participation pool. An advertisement (see Appendix F) was created which included basic information about the study and the researcher's contact information. This advertisement was posted on professional profiles on LinkedIn, Twitter, and Facebook, acquaintances and professional contacts of the researcher and the research team. The researcher also shared information about

the study with professional contacts using her professional LinkedIn profile. If a person was interested in participating, they were asked to contact the researcher by the email given on the advertisement material. After a participant contacted the researcher, they were sent the PIS (see Appendix G) and asked if they had any questions. Then, a time was organised for the participant and researcher to meet on Microsoft Teams to complete screening and phase one of the study.

5.2.3. Procedure

After a participant contacted the researcher, they received the PIS by email and were given time to ask any questions, then a time and date was decided to meet online using Microsoft Teams (a link to a Teams meeting was sent by the researcher before the date of participation). Once the participant and researcher were live on Teams, the researcher posted an anonymous link to a Qualtrics survey on the chat function on the Microsoft Teams call. The participant opened this link and was presented with the PIS and consent form (see Appendix I). After giving consent, the participant completed the screening questionnaire which measured trauma exposure, PTSD symptoms, depression, and measures devised for the screening process in this study (e.g., animal cruelty exposure, current or previous panic attacks, uncorrected severe visual impairment, and experience of indirect exposure to sexual violence experienced by a close friend or family). If a person met the exclusion criteria during the screening process, their participation was automatically ended, and they were presented with the debrief sheet (see Appendix J) which explained why participation had ended and thanked them for their time. Participants who did not meet the exclusion criteria completed the remainder of the survey which contained questionnaires measuring empathy, trait anxiety, and rumination tendency.

Once a participant had finished the batch of self-report measures, they were shown the following instruction, "*please let the researcher know you have finished answering the questions*". At this point, participants were automatically randomised into one of four conditions (condition one = relax and video, condition two = relax and transcript, condition three = stress and video, or condition four = stress and transcript) through an action created in the Qualtrics survey and asked to rate their current stress level. Then, the participant shared their screen with the researcher using the function on Microsoft Teams. If a participant had been randomised to a group containing the stress task (i.e., conditions three and four), they clicked on a link presented in the Qualtrics survey which redirected to the MIST which opened automatically in full-screen view hosted by Pavlovia (https://pavlovia.org/). The first slide gave instructions for the MIST and the participant was given the opportunity to ask questions before pressing the space button on their keyboard or smart devise to begin. As a participant answered each arithmetic question, the researcher gave verbal cues of performance (e.g., "your performance is now below average, keep trying to get more correct answers") approximately every 20 seconds. The task lasted two minutes and once finished, the participant was asked to close the window containing the MIST and back to the window displaying the Qualtrics survey. If a participant had been randomised into a condition with the relax task (i.e., condition one or two) they were presented (via an embedded YouTube video in the survey) with a five-minute video-clip of a series of scenes from nature. The participant was asked to watch the video in full screen mode.

After completing either the MIST or relaxation video, participants indicated their perceived level of stress in the present moment and how much they felt different emotions (e.g., happiness, horror, anger, depression, or fear) using the

Emotion Questionnaire (EmotionQ) (see section 5.2.4.3.3.2.). Next, the participant either watched a video (condition one and three) or read a transcript (condition two and four) of an adult retelling their experience of being sexually assaulted as a child (no graphic details were provided). After completing this task, the participant was asked to complete the subjective stress measure and emotion questions again. At the end of the experiment, participants were shown one of two debrief sheets. For participants who had completed the MIST, the debrief sheet explained the purpose of the MIST (i.e., to induce stress), and was not an assessment of arithmetic performance (see Appendix K). Participants who had completed the relaxation task were shown the same debrief sheet, but without the information about the MIST (see Appendix L). The participant was thanked and reminded that the researcher would contact them in seven-days' time by email with a link to the follow-up survey where they were asked to record frequency of intrusive thoughts over the past seven days. Participants did not meet the researcher to complete this second stage completing this in their own time on the seventh day after initial participation, although after finishing the follow-up were given a debrief sheet (see Appendix M) which included contact information for the researcher, their supervisor, the MMU Faculty Ethics Committee and services which offer psychological support. For a visual representation of the study procedure, please see Figure 1.

Figure 1

Outline of Study Procedure

Screening/ Baseline Measures	Break One	Reactions to MIST or Relaxer	Break Two	Reactions to Trauma Story	Follow-up
1. Demographics 2. BTQ 3. PTSD-8 4. PHQ-9 5. Panic attacks 6. Sexual trauma exposure 7. Visual Impairment 8. ECQ 9. STAI Y-2 10. RTSQ 11. SSR	Randomisation Complete either the MIST or watch a relaxing video	1. EmotionQ 2. SSR	Exposure to trauma story either through reading transcript or watching video	1. EmotionQ 2. SSR	1. Diary of Intrusions seven days post-experiment

Note. BTQ = Brief Trauma Questionnaire; PHQ-9 = Patient Health Questionnaire – 9; ECQ = Empathy Components Questionnaire; STAI Y-2 = State and Trait Anxiety Inventory Form 2; RTSQ = Rumination Thought Style Questionnaire; SSR = Subjective Stress Response; EmotionQ = Emotion Questionnaire.

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5.2.4. Materials

5.2.4.1 Video and Transcript Stimuli

5.2.4.1.1. Trauma Video

A seven-minute film (1in6, 2023) of an adult retelling their experience of being sexually assaulted at the age of 13 years old was used as the trauma video stimuli (hyperlink to video:

https://www.youtube.com/watch?v=HO1tQdZQ_Jk&t=114s). Previous studies have found using this type of trauma analogue (film) results in the development of symptoms (e.g., intrusions, physiological arousal) comparable to those experienced by people exposed to actual trauma (Bourne et al., 2013; James et al., 2016), however, these experimentally induced symptoms are short lived (Bailey et al., 2011) allowing an ethical investigation of reactions to trauma, without inducing long-term adverse effects for participants. The use of a trauma analogue allowed the researcher to investigate the relationships between pre-exposure acute stress, and type of trauma stimuli (video or transcript) on subjective stress after exposure and the development of intrusions after exposure at follow-up.

5.2.4.1.2. Trauma Transcript

A transcript of the trauma video (1in6, 2023) was downloaded directly from YouTube and integrated into the Qualtrics survey.

5.2.4.2. Stress and Relaxation Procedure

5.2.4.2.1. Stress Induction

The MIST (Dedovic et al., 2005) is a computerised mental arithmetic task designed to induce psychological distress in participants. The task was adapted to be used in an online study were the researcher and participant meet via an online platform. The first component of the MIST is a slide of task instructions (see Figure 2). The two-minute task involves a participant answering several arithmetic

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questions in a limited time period. Each time a participant answers correctly, the

time given to answer a question is reduced. A participant was informed if they had

responded correctly after answering each question through text pop-ups (e.g.,

'correct', 'incorrect' or 'timed out'). Also, a performance bar (PB) at the top of the

screen indicated the performance of the candidate compared to their peers. The

PB consists of three areas: green (average performance), amber (below average

performance), and red (very poor performance). A green arrow is used to indicate

a participant's performance and moves down to the amber and red zone

dependent on the frequency of incorrect answers. A red arrow which is fixed on the

performance bar in the green zone, indicates 'average' performance of

completers, to signify peers' performance (see Figure 3).

When completing the MIST, verbal cues are given by the researcher such

as "please try to get more correct responses" and "please try and respond faster"

through the assessment to increase pressure experienced by the respondent to

answer questions correctly and perform as well as peers. Previous research has

repeatedly found the MIST to induce acute psychosocial stress in healthy subjects

(Geva & Defrin, 2018; Zschucke et al., 2015).

Figure 2

Screenshot of the Instructions for the adapted MIST

Figure 3

Screenshot of the MIST

Note. Participants were instructed to use keys 0-9 on their computer or smart devise to answer the questions.

5.2.4.2.2. Relaxation Video-clip

A clip was extracted from a YouTube video (Meditation Relax Music, 2017), and embedded into the Qualtrics survey, which consisted of nature scenes without sound. The video was used to provide a control condition to compare measures of subjective stress and emotions of participants in conditions one (relax+video) and two (relax+transcript), compared to participants in condition three (stress+video) and four (stress+transcript).

5.2.4.3. Questionnaires, Psychometric Measures and Scales

Several measures were utilised to: a) examine the effects of acute stress (pre-exposure) and type of medium of IET on the level of subjective stress and change in emotions experienced after IET and the development of intrusions at one-week follow-up; b) measure baseline variables controlled for in analysis (empathy, rumination, trait anxiety, history of trauma); c) conduct a screening process; and d) collect demographic information of the recruited participants (e.g. age, gender, ethnicity).

5.2.4.3.1. Screening

5.2.4.3.2. Trauma Exposure

Previous trauma exposure was measured using the Brief Trauma Questionnaire (BTQ; Schnurr et al., 1999) (see Appendix N) a self-report measure comprised of 10 questions which originated from the Brief Trauma Interview (Schnurr et al., 1995) and offers a comprehensive assessment of Criterion A of the PTSD diagnostic criteria in the DSM-5 (APA, 2013) which presents different types of trauma which qualify for a diagnosis of PTSD. The BTQ measures a number of traumatic events such as natural disaster (e.g., "Have you ever been in a major

natural or technological disaster, such as a fire, tornado, hurricane, flood, earthquake, or chemical spill?"), serious car accident, or a life-threatening illness (e.g., Have you ever had a life-threatening illness such as cancer, a heart attack, leukaemia, AIDS, multiple sclerosis, etc.?"). The BTQ can be used to determine whether the applicant has experienced a traumatic event if a participant answers 'yes' to life threat or serious injury for items 1-3 and 5-7; life threat for item 4; serious injury for item 8, or 'has this ever happened to you?' for events 9 and 10. Studies have reported high inter-rater reliability for the presence of Criterion A1 trauma exposure according to the DSM-5 (average $K = 0.70$ [range 0.74–1.00]) for all events except life-threatening illness which was reported as good ($K = 0.60$) (Koenen et al., 2009). Also, criterion validity has been established with expected associations found between trauma measured by the BTQ and severity of PTSD symptoms (Lancaster et al., 2009). The BTQ was used as a screening tool, and to collect baseline data for previous trauma experiences to be controlled for as a covariate.

5.2.4.3.3. Post-traumatic Stress Disorder

Symptoms of PTSD were measured using the PTSD-8 (Hansen et al., 2010) (see Appendix O) scale which is based on the Harvard Trauma Questionnaire Part IV (HTQ; Mollica et al., 1992). The HTQ is made up of 3 subscales which correspond with the three main PTSD symptom groups, hypervigilance, avoidance and intrusion, of the DSM-5 diagnostic criteria for PTSD. These three subscales have been found to have high reliability, hypervigilance ($α = 0.72$), avoidance ($α = 0.77$) and intrusion ($α = 0.78$), as well as for the measure as a whole ($α = 0.87$) (Hansen et al., 2010). The PTSD-8 items are derived from the first 16 items of the HTQ including four intrusive (e.g., "recurrent thoughts or memories of the event"), two avoidance (e.g., "avoiding

activities that remind you of the event") and two hypervigilance (e.g., feeling jumpy, easily startled") items. Each item is rated by a participant using a four-point Likert scale between 1 (*not at all*) and 4 (*most of the time*) indicating how much the symptom has bothered the person since the traumatic experience. A score of 3 or higher for at least one symptom from each subscale indicates the presence of PTSD. The PTSD-8 scale was found to have satisfactory internal consistency in the present study (α = .84) and in previous research (α = 0.84) (Andersen et al., 2018). This scale overcomes limitations possessed by previous measures of PTSD, for example, the PTSD-8 measures all three clusters of symptoms of the DSM-5 diagnostic criteria for PTSD unlike other scales including the Trauma Screening Questionnaire (TSQ; Brewin et al., 2002), and the Startle, Physiological Arousal, Anger, and Numbness scale (Meltzer-Brody et al., 1999). Also, the PTSD-8 uses a Likert scale to assess severity of PTSD symptoms unlike other scales including the TSQ or Disaster-Related Psychological Screening Test (Huang-Chih Chou et al., 2003). The PTSD-8 has been used across a wide-range of different traumatised populations and works effectively in trauma samples with varying levels of PTSD symptoms (Hansen et al., 2010). This measure was used as a screening tool and to gather baseline data to account for PTSD symptoms as a covariate in inferential tests in the present study.

5.2.4.3.4. Depressive Symptoms

The Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002) (see Appendix P) offers a short 9-item self-report measure to assess depression. The measure includes nine items which match the DSM-5 diagnostic criterion for major depression such as "little interest or pleasure in doing things" and "feeling down, depressed, or hopeless". Participants are instructed to indicate how much each item has bothered them over the last two weeks by using a 4-point Likert scale

between 0 (*not at all*) and 3 (*nearly every day*). There has been some speculation on how depression is scored by the PHQ-9, as some choose to use an algorithm which requires a total of five symptoms rated at least two or more (more than half the days), and if suicidal ideation is reported at any level this is counted towards one of the five symptoms, and one of these five symptoms must be loss of interest in pleasure or depressed mood. Whereas others have simply used a summed-item score totalling up the responses for each item which can range from 0 to 27, with a score of 10 indicating signs of major depression and scores of 20 or more indicating severe depression (Kroenke & Spitzer, 2002). A meta-analysis, which compared studies using either the algorithmic method or the summed-item score technique, concluded that using a summed-item score approach had a better diagnostic performance when screening for major depression compared to the algorithm which lacked sensitivity possibly due to people becoming confused by the rating scale categories (e.g., several days, more than half the days), although further investigation is needed (Manea et al., 2015). The PHQ-9 has been found to have high internal consistency ($\alpha = 0.88$) in previous research (Kroenke et al., 2001) and satisfactory internal consistency in the current study ($\alpha = .77$).

5.2.4.3.5. Panic Attacks

A single item was created for this study to screen participants who had experienced a panic attack/s. Participants answered, 'have you ever had a panic attack?' by selecting 'yes' or 'no'.

5.2.4.3.6. Indirect Exposure to Sexual Trauma

A question was devised to assess if participants had been indirectly exposed to sexual trauma and therefore meeting the exclusion criteria. Participants were asked to answer, 'yes' or 'no', to the question 'have you been

exposed to sexual trauma indirectly (i.e., did it happen to a person who is/was close to you)?'.

5.2.4.3.7. Severe Visual Impairment

An item was developed to evaluate if a participant had severe visual impairment that was not corrected (e.g., contact lenses, glasses, etc.). The candidate was asked to answer, 'yes' or 'no', to the question, 'do you have severe visual impairment that is not corrected (e.g., glasses, contact lenses, etc.)?'.

5.2.4.3.2. Covariates

5.2.4.3.2.1. Empathy

Participant scores of empathy (cognitive and affective empathy combined) was measured using the Empathy Components Questionnaire (ECQ; Batchelder et al., 2017) (see Appendix Q) a measure which assesses five components of empathy including cognitive ability, the capacity to adopt another person's point of view, cognitive drive, the motivated interest to take the perspective of another, affective ability, the capability of recognising and sharing the emotions of another, affective drive, the motivation to recognise and share another's emotional experiences, and affective reactivity, the actual demonstration of appropriately responding and reacting to another's emotions (Batchelder et al., 2017). The ECQ consists of 27 items (e.g., "I am usually successful in judging if someone says one thing but means another", and "When someone seems upset, I am usually uninterested and unaffected by their emotions"), which assess each component and participants rate how much they agree with each statement by using a four-point Likert scale between 1 (*strongly disagree*) and 4 (*strongly agree*). The components can be totalled for a score of cognitive empathy (summing cognitive ability and drive) (α = .57); affective empathy (affective reactivity, affective ability, and affective drive) (α = .83); or a totalling of all scores for each item can be used

to generate a cumulative overall empathy score (score range from 27-108) (α = .84). The authors reported the measure to have good internal consistency (α = 0.70 - 0.81) (Batchelder et al., 2017). The ECQ offers a contemporary measure of empathy which is in line with current theories which argue empathy as being a multi-dimensional construct (e.g., affective, and cognitive components) (Gillespie et al., 2014; Keysers & Gazzola, 2014).

5.2.4.3.2.2. Trait Anxiety

Trait anxiety was measured using the 20-item State and Trait Anxiety Inventory Form Y-2 (STAI; Spielberger et al., 1983). The STAI Form Y-2 examines trait anxiety by asking participants to indicate how much an item (e.g., 'I feel like a failure') describes how they generally feel using a four-point Likert scale between 1 (*almost never*) and 4 (*almost always*). The subscale has a score range of 20 to 80, with a higher score indicating a higher level of anxiety. A score between 20 and 37 is classes as "no, or low anxiety", 38 and 44 indicates "moderate anxiety", and 45 and 80 signifies "high anxiety". The STAI Form Y-2 was found to have excellent internal consistency (α = .93), as in previous research (α = .93) (Santangelo et al., 2016).

5.2.4.3.2.3. Rumination Tendency

Rumination tendency was assessed using the Rumination Thought Style questionnaire (RTSQ; Brinker & Dozois, 2009) a 20-item self-report (α = .88) measure which assesses a person's general tendency to ruminate. Participants are asked to rate from 0 (*not at all*) to 7 (*very well*), how well each item describes themselves (e.g., "I find that my mind often goes over things again and again" and "I can't stop thinking about some things"). Scores range from 20 to 140, with a higher score indicating a greater tendency to ruminate. The RTSQ was found to have good internal consistency in the present study (α = .88) and has previously

been reported to have excellent internal reliability (α = 0.92) in and high test-retest reliability (r = 0.80, p < .001) (Brinker & Dozois, 2009). Previous research has suggested that rumination may not be a reaction to depressed mood, but as a reaction to a negative event before depressive symptoms develop (Ito et al., 2003). However, popular measures of rumination (e.g., Response Style Questionnaire [Butler & Nolen-Hoeksema, 1994]) assess depressive rumination and focus heavily on depressive symptoms not allowing for an assessment of rumination in the absence of depression. Therefore, the RTSQ was developed to provide a measure of dispositional rumination tendency to allow for a broader investigation into how rumination affects mood, thought and behaviour with or without the presence of depression (Brinker & Dozois, 2009).

5.2.4.3.3. Outcome Measures

5.2.4.3.3.1. Subjective Stress

A single-item measure, the Subjective Stress Response (SSR), was created for use in this study to record a participant's subjective stress level. The measure consisted of one item (i.e., 'Please, indicate your stress level at this moment') using a 7-point Likert scale between 0 (*feeling sleepy)* and 6 (*extremely stressed*). This measure was created in response to findings in previous studies which found an association between higher levels of stress after exposure and more reported intrusions after exposure to a trauma analogue (Clark & Mackay, 2015; James et al., 2016). Also, the SSR was used to measure differences in subjective stress in participants who had completed the MIST (stress condition) compared to those who watched a nature video (relax condition) to assess if the MIST had created the desired effect (induced acute stress) allowing hypothesis one to be tested.

5.2.4.3.3.2. Emotion

The EmotionQ was created for this study devised from previous studies which have investigated the development of intrusions after exposure using a trauma-film paradigm (Holmes et al., 2004; Krans et al., 2010). This measure recorded how much a participant felt several different emotions at present (e.g., happiness, horror, anger, depressed and anxiety) indicated using a Likert scale between 0 (*not at all*) and 100 (*extremely*).

5.2.4.3.4. Follow-up Outcome Measure

5.2.4.3.4.1. Diary of Intrusions

The Diary of Intrusions-A (see Appendix R) (modified from Arnaudova & Hagenaars, 2017) was completed at a seven-day follow-up by participants to record the number of intrusions they had experienced related to the trauma story in the initial experiment.

5.2.4.3.5. Other Materials

5.2.4.3.5.1. Demographic Questionnaire

A questionnaire was devised which contained items collecting participants demographic information including age, gender, ethnicity, education, employment status, and previous mental health problems.

5.2.5. Ethical Considerations

This study was granted ethical approval by the Faculty of Health, Psychology and Social Care Ethics Committee at Manchester Metropolitan University on 30th of April 2021, EthOS Reference Number: 32815 (see Appendix S). The British Psychology Society Code of Human Research Ethics (Oates, 2021) was followed within this research project.

This project contained two main ethical considerations which required careful attention and management to protect the wellbeing of potential participants.

Firstly, a possible risk to participants was the trauma video/transcript used to initiate mild distress and short-term intrusive re-experiencing. Previous research using trauma analogues to assess the association between factors and the development of intrusions and stress after IET have reported that non-clinical samples of participants experience short-lived and manageable psychological and physical reactions and do not experience lasting effects (Holmes & Bourne, 2008; Rattel et al., 2019). However, to protect the wellbeing of people who may be adversely affected by participating, a thorough exclusion criteria was developed (see section 5.2.2.3.). Potential participants were informed of the exclusion criteria by the PIS and their ability to participate was assessed through a screening process at the beginning of the experiment. If a participant was excluded through the screening process, they were given a debrief sheet which contained several contact details of psychological support services.

Also, although the MIST may trigger mild anxiety or disappointment at one's own arithmetic ability, studies using the MIST to induce an acute stress response in participants have found these reactions (psychological and physical) are relatively mild and have not led to any concerns for the wellbeing of participants (Edebol Carlman et al., 2022; Han et al., 2017; Nagano-Saito et al., 2013). Even so, participants were informed partially about the stress induced by the MIST through the PIS. Additionally, the debrief sheet, given at the end of phase one, explained the purpose of the MIST to participants, (i.e., to induce a mild stress reaction in participants and not to assess arithmetic performance) and that performance in this task did not reflect real-world (arithmetic) abilities.

5.2.6. Data Analysis Strategy

The analytical strategy comprised of three stages. First, the study employed a mixed 3 x 4 analysis of covariance (ANCOVA) to examine subjective stress

scores. This design considered time, measured at three points (i.e., at baseline, after stress or relaxation task, and after IET) as a within-subjects factor and condition (four groups) as a between-subjects factor. Additionally, the analysis controlled for potential confounding variables such as empathy, prior trauma, rumination tendency, and trait anxiety. Then Bonferroni multiple comparisons tests were used to compare mean subjective stress scores between conditions, between different time points in each condition, and between conditions at each time point.

Secondly, a mixed multivariate analysis of covariance (MANCOVA) was utilised to test differences in several emotions across two time points in four conditions using a 2 x 4 factorial design. Univariate tests were then used to test difference in individual emotions between time points across conditions. To correct for multiple comparisons within the MANCOVA, the Bonferroni correction alpha value (i.e., .05) was divided by six (i.e., the number of tests run) to control for type one errors. Pairwise comparison tests were used to compare anxiety rates across conditions at each time points, and within conditions across two time points. Also, Bonferroni multiple comparisons were used to compare differences in anxiety scores, between two time points in each condition. Pairwise comparisons tests were also used to detect for significant mean differences between groups, and for significant differences in mean anger scores between time 1 (before IET) and time 2 (after IET) in each condition. Finally, a one-way ANCOVA was performed to test the effect of group membership on average frequency of intrusions in a day during a seven-day follow-up whilst accounting for rumination tendency, empathy, previous trauma and trait anxiety.

5.2.6.1. Data Cleaning

Data cleaning procedures were conducted before interferential analyses. No data-entry errors were discovered. Univariate outliers were found, and these were plausible values. Missing values on the ECQ were found and missing at random [$\chi^2(26) = 10.35$, $p = .997$] comprising of no more than 1.2% of data. Also, missing values on the STAI Y-2, were found to be missing at random [$\chi^2(38) = 39.28$, $p = .412$] comprising of 1.2% of the data. In the EmotionQ at time 1, data was missing completely at random [$\chi^2(14) = 19.28$, $p = .154$] comprising of 3.6% of data, and at time 2 missing completely at random [$\chi^2(24) = 13.83$, $p = .950$] comprising of 3.6%. All missing values were replaced using Expectation-Maximisation techniques (Tabachnick et al., 2013). Univariate outliers were found for the measures of empathy, trait anxiety and emotions by calculating Z-scores and observing values greater than less than -3.29 or greater than 3.29 (Tabachnick et al., 2013) and were Winsorized (Tukey & McLaughlin, 1963). No multivariate outliers were identified.

5.3. Results

5.3.1. Subjective Stress Between Conditions Across Time

A mixed 3 x 4 ANCOVA was performed to compare scores of subjective stress (SS) between four conditions across three time points whilst accounting for the effects of participants' baseline measures of empathy, rumination tendency, trait anxiety and previous experience of trauma. The within-groups factor was time; time 1 (prior to relaxation or stress task), time 2 (prior to watching a video or reading a transcript of an account of trauma) and time 3 (after trauma video/transcript). The between-groups factor was experimental condition; relax+video, relax+transcript, stress+video, and stress+transcript. The means and standard deviations are presented in Table 3.

Table 3

Descriptive Statistics of Subjective Stress Scores at Three Time Points within Four Conditions

	Conditions				
	relax+video (n = 21)	relax+transcript (n = 22)	stress+video (n = 19)	stress+transcript (n = 21)	Overall (n = 83)
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*
Time 1	2.90(.77)	2.64(1.00)	3.05(.78)	2.86(.96)	2.86(.87)
Time 2	2.38(.67)	1.91(.75)	3.95(1.13)	4.24(1.30)	3.08(1.40)
Time 3	3.71(.85)	3.45(1.01)	3.79(.86)	3.71(1.10)	3.66(.95)

The assumptions of homogeneity of covariances [$F(18, 21503.19) = 1.86$, Box's M= 36.00, $p = .015$], and sphericity [$X^2(2) = 3.62$, $p = .164$] were met. Also, the assumption of homogeneity of variance was satisfied at all three time points (all ps > .050). The analysis revealed a significant effect for condition x time [$F(6, 150) = 13.42$, $p = .001$, $\eta^2_p = .35$] (see Figure 4) on subjective stress. There was also a significant main effect for condition on subjective stress, [$F(3, 75) = 11.07$, $p = 0.001$, $\eta^2_p = .31$], but no significant main effect of time [$F(2, 150)= .53$, $p = .588$, $n^2_p = .01$].

Figure 4

Mean Scores of Subjective Stress Across Three Time Points of Four Conditions
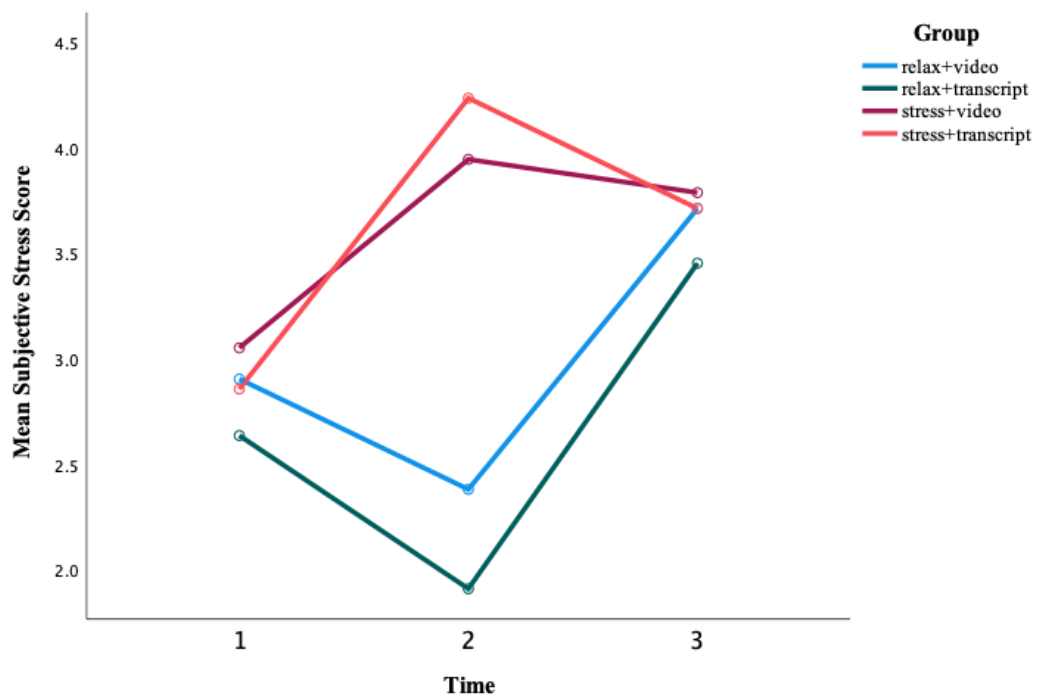
Bonferroni tests of multiple comparisons were used to compare subjective stress between groups (see Table 4). The tests showed a significant difference in subjective stress between the relax+video and stress+video ($p = .025$, CI = [-1.22, -.05]); relax+video condition and stress+transcript condition ($p = .006$, CI = [-1.22, -.05]); relax+transcript condition and stress+video condition ($p < .001$, CI = [-1.50, -

.36]), and relax+transcript condition and stress+transcript condition ($p < .001$, CI = [-1.57, -.46]).

Therefore, between conditions, participants in the stress+video group reported greater stress compared to participants in the relax+transcript and relax+video conditions. Also, participants in the stress+transcript condition reported greater stress than those in either the relax+video and relax+transcript conditions.

We used Bonferroni tests of multiple comparisons to compare subjective stress across time within each condition (see Table 5). In the relax+video condition, subjective stress scores significantly increased between time points 1 and 3 ($p < .001$, CI = [-1.36, -.31], d = .998) and 2 and 3 ($p < .001$, CI = [-1.97, -.697], d = 1.737), but showed a non-significant difference between time points 1 and 2 (p = .107). In the relax+transcript condition, subjective stress scores significantly decreased between time points 1 and 2 (p = .004, CI = [.21, 1.31], d = .83), and increased between 1 and 3 ($p < .001$, CI = [-1.35, -.32], d = .81) and 2 and 3 ($p < .001$, CI = [-2.21, -.97], d = 1.71). In the stress+video condition, scores of stress increased with a mean difference in subjective stress between time points 1 and 2 ($p < .001$, CI = [-1.52, -.33], d = .83), and 1 and 3 (p = .005, CI = [-1.29, -.19], d = .90). A non-significant difference between time points 2 and 3 (p = 1.00) was found. Finally, in the stress+transcript condition, subjective stress scores were significantly higher between time points 1 and 2 ($p < .001$, CI = [-1.93, -.79], d = 1.21) and 1 and 3 ($p < .001$, CI = [-1.34, -.29], d = .82), but not between time points 2 and 3 (p = .114).

Further, we used Bonferroni tests of multiple comparisons to compare subjective stress between conditions at each time point. The results showed a non-significant difference in subjective stress scores between conditions at time

point 1 (all *p*s < .086) and 3 (all *p*s = 1.00). However, subjective stress scores significantly differed between conditions at time point 2 (i.e., after completing the relax or stress task and before watching/reading the trauma account). In detail, a significant mean difference in subjective stress was found between the relax+video and stress+video conditions ($p < .001$, CI = [-2.24, -.80], *d* = 1.69), the relax+video and stress+transcript conditions ($p < .001$, CI [-2.76, -1.17], *d* = 1.80), the relax+transcript and stress+video conditions ($p < .001$, CI = [-2.88, -1.27], *d* = 2.13), and the relax+transcript and stress+transcript conditions ($p <. .001$, CI [-3.21, -1.66], *d* = 2.20). Therefore, the results suggest that the MIST (i.e., stress task) effectively induced subjective stress in participants, as they reported significantly higher levels of stress after completing the MIST compared to those who completed the relaxation task, and that the experimental stress task had the desired effect of elevating participant stress levels before exposing them to indirect trauma.

To summarise, we found that the interaction between time and condition on subjective stress scores was significant. Following the relaxation intervention, participants who subsequently engaged with the trauma material reported elevated stress levels compared to both pre-intervention and post-relaxation baselines. Also, participants in a condition including the relax task and trauma transcript reported being less stressed after the relaxation task. Participants assigned to the condition incorporating the stress task exhibited significant elevations in self-reported subjective stress levels. These elevations were observed both pre- and post-stressor task completion, as well as persisting upon exposure to the traumatic video. However, these participants did not report a significant increase after the stress task and either reading or watching the trauma story, therefore suggesting

participants in a condition containing the stress task did not become significantly more stressed when completing the trauma task.

Table 4

Test of Significance of Mean Difference of Subjective Stress Scores Between Four Conditions.

Condition	Condition	MD	SEM	95%CI
relax+video				
	relax+transcript	.29	.21	(-.27, .86)
	stress+video	-.63*	.21	(-1.22, -.05)
	stress+transcript	-.72*	.21	(-1.29, -.15)
relax+transcript				
	relax_video	-.29	.21	(-.86, .27)
	stress+video	-.92***	.21	(-1.50, -.36)
	stress+transcript	-1.01***	.21	(-1.57, -.46)
stress+video				
	relax+video	.63*	.21	(.52, 1.22)
	relax+transcript	.92***	.21	(.35, 1.50)
	stress+transcript	-.09	.22	(-.68, .50)
stress+transcript				
	relax+video	.72*	.21	(.15, 1.29)
	relax+transcript	.94***	.21	(.46, 1.57)
	stress+video	.09	.22	(-.50, .68)

Note. MD = Mean Difference; SEM = Standard Error of the Mean; CI = Confidence Interval.

p < .05, ***p* < .001

Table 5

Test of Significance of Mean difference of Subjective Stress Scores Between

Three Time Points in Four Conditions

Condition	Time		MD	SEM	95%CI
relax+video					
	1	2	.50	.23	(-.07, 1.06)
	1	3	-.84***	.22	(-1.36, -.31)
	2	3	-1.33***	.26	(-1.97, -.70)
relax+transcript					
	1	2	.76**	.23	(.21, 1.31)
	1	3	-.83***	.21	(-1.35, -.32)
	2	3	-1.59***	.25	(-2.21, -.97)
stress+video					
	1	2	-.92***	.24	(-1.52, -.33)
	1	3	-.74**	.23	(-1.29, -.19)
	2	3	.18	.27	(-.48, .85)
stress+transcript					
	1	2	-1.36***	.23	(-1.93, -.79)
	1	3	-.82***	.22	(-1.34, -.29)
	2	3	.55	.26	(-.09, 1.18)

Note. **p < .010 ***p < .001.

5.3.2. Emotions Between Conditions Across Time

A mixed MANCOVA was conducted to examine differences in emotions (i.e.,

anxiety, anger, happiness, horror, and depressed) across two time points (i.e.,

before and after watching/reading a traumatic account) between four conditions,

whilst accounting for covariates (empathy, trait anxiety, rumination tendency and experience of previous trauma). Descriptive statistics are shown in Table 6 (for table of minimum and maximum scores please see Appendix ??).

Table 6

Descriptive Statistics of Scores of Emotions Across Two Time Points in Four Conditions

Conditions

	relax+video (n = 21)		relax+transcript (n = 22)		stress+video (n = 19)		stress+transcript (n = 21)		Overall (n = 83)
	M(SD)	Min-Max	M(SD)	Min-Max	M(SD)	Min-Max	M(SD)	Min-Max	M(SD)
Happiness (0-100)									
Time 1	76.71(20.52)	30-100	75.55(17.92)	34-95	63.42(30.43)	0-100	65.57(25.34)	16-100	70.54(24.07)
Time 2	45.67(25.04)	5-95	44.95(24.87)	0-79	39.16(23.1)	5-71	50.48(28.58)	0-90	45.20(25.37)
Anxiety (0-100)									
Time 1	16.52(24.25)	0-86	11.09(18.72)	0-62	31.21(28.23)	0-100	31.90(28.70)	0-95	22.34(26.33)
Time 2	27.95(24.66)	0-83	27.18(26.54)	0-70	29.26(24.55)	0-70	26.05(20.66)	0-76	27.57(23.8)
Horror (0-100)									
Time 1	.00(.00)	0-0	.05(.21)	0-1	4.89(9.15)	0-26	2.76(6.71)	0-26	1.83(5.78)
Time 2	33.86(27.13)	0-75	25.05(24.20)	0-85	29.79(26.35)	0-82	21(20.04)	0-60	27.34(24.57)

Depressed (0-100)								
Time 1	2.43(5.12)	0-20	1.64(3.26)	0-11	5.47(9.26)	0-23	4.29(7.94)	0-23	3.39(6.75)
Time 2	18.05(14.82)	0-42	11.50(14.71)	0-46	18.11(23.2)	0-75	15.95(21.24)	0-75	15.80(18.56)
Anger (0-100)								
Time 1	1.38(3.64)	0-13	1.36(3.19)	0-12	5.63(13.196)	0-46	9.38(15.09)	0-46	4.37(10.52)
Time 2	48.67(29.39)	0-100	28.82(28.81)	0-100	28.37(26.60)	0-80	35.00(29.57)	0-100	35.30(29.33)

Note. Minimum and maximum scores reflect participant scores, not the full range of the emotion scale.

When performing the MANCOVA, the homogeneity of covariances assumption was met [$F(110, 9144.08) = 2.64$, Box's M= 386.21, $p < .001$]. A significant effect was found for time x condition on emotion [$F(15, 196.40) = 2.62$, $p = .001$, $\eta^2_p = .16$] indicating a significant effect on scores of at least one emotion. Additionally, the main effect for condition was found to be significant [$F(15, 196.40) = 1.72$, $p = .048$, $\eta^2_p = .11$], although the main effect for time was non-significant ($p = .733$).

Then, we used univariate tests to compare the means of each individual EmotionQ item (anxiety, anger, happiness, horror, and depressed), across each condition (relax+video, relax+transcript, stress+video, and stress+transcript), at time 1 (prior to reading or watching trauma video) and time 2 (after trauma video/transcript). To correct for multiple comparisons within the MANCOVA, the Bonferroni correction alpha value (i.e., .05) was divided by 6 (i.e., the number of tests run) to control for type one errors, reducing the risk of false positives which can be more likely to occur when performing multiple tests.

5.3.2.1. Anxiety

The interaction effect for time x condition was found to be significant [$F(3, 75) = 9.05$, $p = <.001$, $\eta^2_p = .27$] (see Figure 5). Pairwise comparison tests were conducted to test significant mean differences in anxiety between groups at individual time points, and within groups across two time points. At time 1, anxiety scores were significantly different between the relax+video condition and stress+video condition ($p = .048$, CI = [-35.41, -.09], $d = .56$), relax+video condition and stress+transcript condition ($p = .006$, CI = [-39.56, -4.71], $d = .58$), relax+transcript condition and stress+video condition ($p = .014$, CI = [-38.19, -2.90], $d = .84$), and relax+transcript condition and stress+transcript condition ($p < .001$, CI = [-41.89, -7.97], $d = .86$) (see Table 7).

Therefore, participants in a condition which contained the MIST (i.e., stress task) reported significantly higher levels of anxiety at time 1 (i.e., after the MIST and before watching/reading the trauma account), compared to participants who had completed a relax task before exposure. At time 2 (i.e., after watching or reading the trauma account), no significant differences in anxiety scores between conditions were found (ps = 1.000), suggesting that all participants experienced similar levels of anxiety after either reading or watching the trauma account regardless of the level of anxiety rated before exposure.

Also, Bonferroni multiple comparisons were used to compare differences in anxiety scores, between two time points in each condition. The results indicated that anxiety scores significantly differed between time point 1 (before watching/reading the trauma account) and time point 2 (after watching/reading the trauma account) in two conditions: 1) relax+video (p = .002, CI = [-19.86, -3.00], d = .47), and 2) relax+transcript (p < .001, CI = [-24.33, -7.86], d = .70). However, scores did not significantly change between time point 1 and 2, in the stress+video condition (p = .436) or in the stress+transcript condition (p = .070).

Figure 5

Mean Anxiety Scores in Each Condition Before and After IET

5.3.2.2. Anger

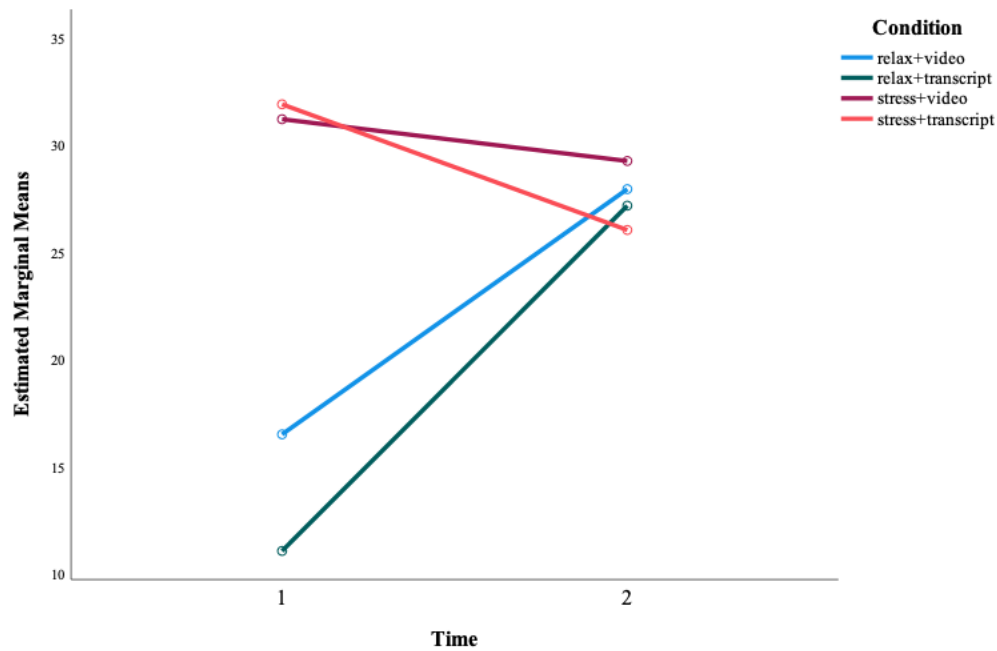The interaction effect of time x condition was found to be significant [$F(3, 75)$, = 3.26, p = .026, η^2_p = .12 (see Figure 6) on anger scores. However, after correcting for multiple comparisons within the MANCOVA, the interaction effect between time and group was non-significant after the correction was made ($p < 0.008$).

As the interaction effect for time x condition was found to be significant on anger scores before correcting for multiple comparisons, pairwise comparison tests were used to detect for significant mean differences between groups. A significant mean difference in anger scores was found between the relax+video condition and stress+ transcript condition (p = .019, CI = [-17.09, -1.03], d = .73), and the relax+transcript condition and stress+transcript condition (p = .013, CI = [-16.96, -1.33], d = .74). No other significant difference in anger scores between conditions was found at time point 1 (all ps > .521). At time point 2, differences in anger scores were found to be non-significant across all conditions (all ps > .111).

Additionally, pairwise tests were used to detect for significant differences in mean anger scores between time 1 and time 2 in each condition and found to be

significant in all conditions, i.e., relax+video (p < .001 , CI = [-61.37, -35.04], d = 2.23), relax+transcript (p < .001, CI = [-41.42, -15.78], d = 1.34), stress+video (p = .004, CI = [-34.74, -7.05], d = 1.08), and stress+transcript (p < .001, CI = [38.33, 12.01], d = 1.09).

Therefore, at time-point one, participants in the relax-video and relax+transcript conditions experienced significantly lower levels of anger compared to those in the stress+transcript condition. These findings suggest participants in both relax conditions experienced similar levels of anger, as did those in a condition with the MIST. Also, participants in either condition including the relax task did not experience significantly different levels of anger compared to those in the stress-video condition. At time-point two, non-significant differences in anger between all conditions were found suggesting all participants experienced similar levels of anger post-trauma exposure. Furthermore, all groups showed a significant rise in anger between timepoint one and two. This suggests that exposure to the trauma testimony, in both video and written formats, led to increased anger in all participants.

Figure 6

Mean Anger Scores in Each Condition Before and After IET
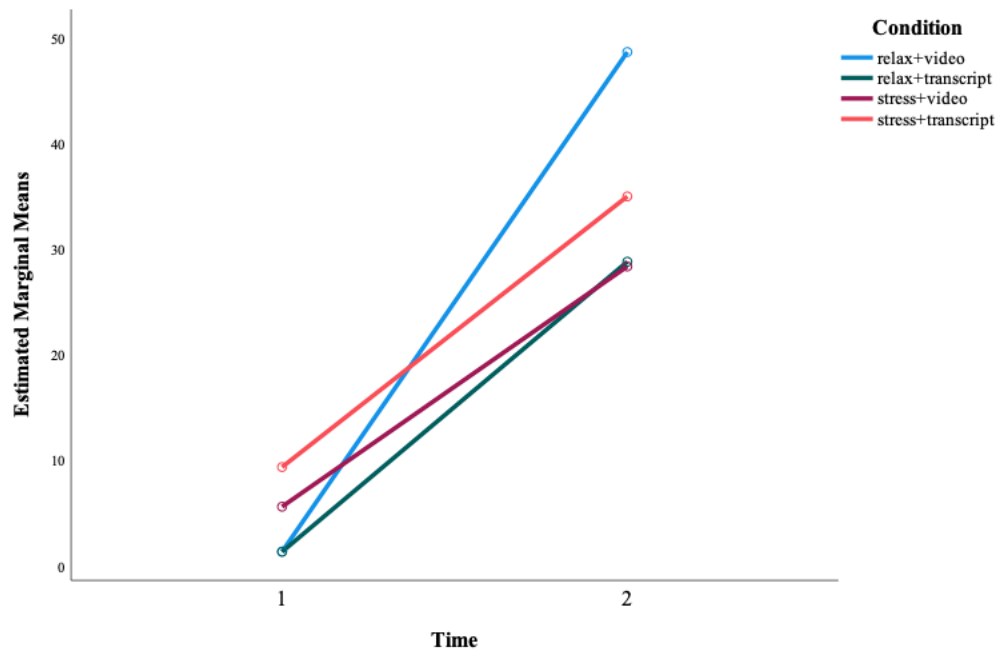
5.3.2.3. Happiness, Horror, and Depressed

The interaction effect for time x condition on scores of happiness [$F(3, 75)$ = 2.60, p = .058, η^2_p = .09], horror [$F(3, 75)$ = 1.39, p = .251, h^2_p = .05] and depressed [$F(3, 75)$, = .322, p = .81, η^2_p = .01] was found to be non-significant.

In summary, the interaction effect of time x condition on scores of happiness, horror, depressed was non-significant, but found to be significant on scores of anxiety. In post-hoc analysis, we found scores of anxiety significantly changed between two time points in two conditions where participants completed a relaxation task before either watching a video or reading a transcript of a trauma story. A non-significant change in anxiety scores was found in conditions where participants completed the stress task before watching or reading the trauma account. Therefore, participants who completed a relaxation task before being indirectly exposed to trauma experienced a significant increase in anxiety before and after watching/reading the trauma story, compared to those who completed a stress task before being exposed. Additionally, although the interaction effect for time x condition was found to be non-significant on scores of anger after correcting for multiple comparisons, large effect sizes were found in the pairwise

comparisons tests. At time 1, rates of anger were found to be significantly different between the relax+video condition and stress+transcript condition, and the relax+transcript condition and stress+transcript condition, although at time 2, difference in mean scores of anger were found to be non-significant between conditions. In summary, post-trauma anger levels were similar across all participants, regardless of participating in the MIST or relax condition before exposure or the presentation format of the trauma testimony.

Table 7

Test of Significant Mean Difference of Anxiety Scores at Time 1 Between

Conditions

Condition	Condition	MD	SEM	95%CI
relax+video				
	relax+transcript	2.80	6.32	-14.32, 19.91
	stress+video	-17.75*	6.52	-35.41, -.09
	stress+transcript	-22.14**	6.43	-39.56, -4.71
relax+transcript				
	relax+video	-2.80	6.32	-19.91, 14.32
	stress+video	20.55*	6.51	-38.19, -2.90
	stress+transcript	-24.93***	6.26	-41.89, -7.97
stress+video				
	relax+video	17.75*	6.52	.09, 35.41
	relax+transcript	20.55**	6.51	2.90, 38.19
	stress+transcript	-4.39	6.58	-22.21, 13.43
stress+transcript				
	relax+video	22.14**	6.43	4.71, 39.56
	relax+transcript	24.93***	6.26	7.97, 41.89
	stress+transcript	4.39	6.58	-13.43, 22.21

Note. *$p < .050$, **$p < .010$, ***$p < .001$

5.3.3. Frequency of Intrusions Between Conditions in a Seven-day Follow-up

A one-way ANCOVA was performed to test the effect of group membership on average frequency of intrusions in a day in the seven-day follow-up whilst accounting for rumination tendency, empathy, previous trauma and trait anxiety. Descriptive statistics are represented in Table 8.

Participants in the stress+video condition reported the highest number of intrusions across the four conditions in the seven-day follow-up, whilst the stress+transcript condition reported on average the fewest number of intrusions. Some people reported being very distressed, reporting high numbers of intrusions, as depicted in Figure 7. A one-way ANCOVA was conducted and indicated no significant difference in total frequency of intrusions across the four conditions ($p > 0.05$).

Table 8

Total Frequency of Intrusions in Four Conditions

	relax+video (*n* = 21)	relax+transcript (*n* = 22)	stress+video (*n* = 19)	stress+transcript (*n* = 21)	Overall (*n* = 83)
			Conditions		
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*
No. of Intrusions	3.43(5.15)	2.36(4.57)	5.79(10.28)	1.76(2.34)	3.27(6.22)

Figure 7

Boxplot Depicting Total Frequency of Intrusions Recorded in Each Condition
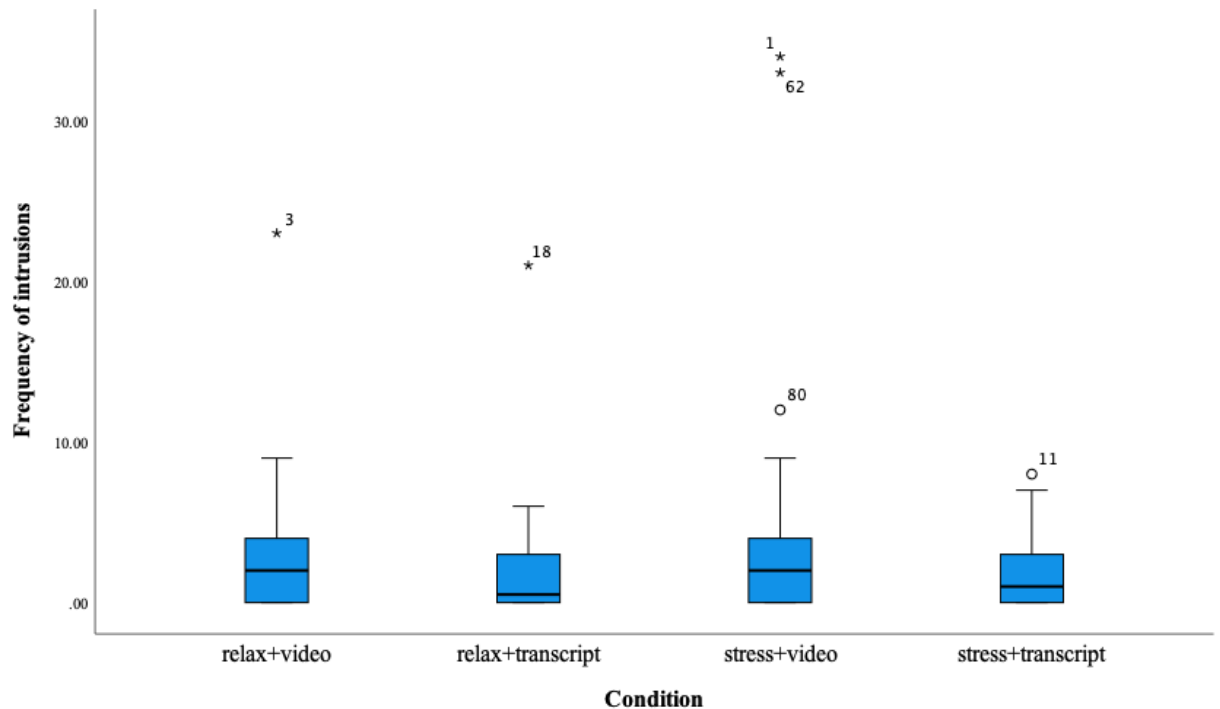
5.4. Discussion

5.4.1. Summary of Findings

The current study examined the influence of pre-trauma stress and IET medium type in the development of immediate subjective distress after IET and intrusions at follow-up whilst controlling for previous experience of trauma, empathy, trait anxiety and rumination tendency. Specifically, in response to a psychosocial stressor, participants were found to be significantly more stressed compared to those in a relaxation condition, however, did not differ in stress scores after IET, which immediately followed the stress or relaxation exercise, regardless of whether IET content was viewed as video or text. Additionally, in conditions including the psychosocial stressor participants' stress scores did not significantly change between completing the stress task and post-IET. On the other hand, participants in the relax conditions reported significantly higher stress scores post-IET compared to before exposure.

In addition, before IET, participants in a stress condition reported significantly higher anxiety scores compared to those in a relax condition, however, no difference was found between conditions post-IET suggesting all participants experienced a similar level of anxiety after reading or watching the trauma story, regardless of the level of anxiety experienced before exposure and the type of medium IET presented. Furthermore, a non-significant difference in anxiety was reported by participants in the two stress conditions between completing the stress task and post-IET implying participants' experience of anxiety remained consistent irrespective of IET being presented in video of text format. The same pattern was also found in scores of anger, where participants in a stress condition reported significantly higher anger scores after the stress task compared to those in a relax condition, however no difference in anger scores between all conditions was found post-IET. Analysis of other emotional states revealed a trend towards decreased happiness and increased feelings of horror or depression among participants. However, this effect did not reach statistical significance, indicating a lack of conclusive evidence for a group-level difference in emotions across the two time points. Finally, a non-significant difference in frequency of intrusions in the seven-day follow up was found between all conditions, therefore suggesting development of intrusions was not influenced by pre-exposure stress or IET being presented as a video or text.

5.4.2. Pre-trauma Stress and Distress After Indirect Exposure to Trauma

Working as a helping professional is highly taxing on WM as multiple tasks such as self-regulation (Broadway et al., 2010), mentalising (Stiller & Dunbar, 2007), multi-tasking (Gruszka & Nęcka, 2017) and reasoning (Chuderski & Necka, 2012) require mental effort to complete. Professionals are at a heightened risk of cognitive overload, as requirements of the job repeatedly exceed one's WM

capacity. Cognitive overload is linked to an increase in clinical practice errors having adverse effects on client care (Collins, 2020). Acute stress has been positively associated with cognitive load in professionals (Vella et al., 2021), and can heighten emotional distress which also adds to CL. Additionally, acute stress and high CL can impact a professional's empathic ability (Hiraoka & Nomura, 2017; Nitschke & Bartz, 2023) which may impede the attainment of positive patient outcomes (Elliot et al., 2018). Therefore, the impact of acute stress prior to IET could have negative implications on the quality of care provided. In this study we found that participants who reported higher perceived stress before IET, did not experience significantly higher stress post-exposure compared to people who completed a relax task pre-exposure and reported lower levels of stress pre-exposure. This finding suggests that individuals encountering IET within their professional setting may experience stress irrespective of their pre-trauma acute stress state. This has potential implications for clinical performance of such professionals, as exposure to IET may contribute to elevated stress and cognitive load leading to subsequent performance impairments. Further research is warranted to explore the specific relationship between IET and cognitive load, and how this dynamic might influence professional practice.

Additionally, previous research has reported higher rates of stress to predict greater psychological distress post-IET including the development of PTSD symptoms (Butler et al., 2017; Orrù et al., 2021; Vagni et al., 2020). These findings contradict those in the present study which found a non-significant difference in subjective stress, anxiety, and anger immediately after exposure, and intrusions related to IET in a one-week follow-up in people who were experimentally stressed before exposure compared to those who were relaxed. These findings emerged despite the author successfully inducing a state of heightened stress and anxiety

in participants in a stress condition prior to exposure. Yet, it is difficult to compare the results to previous evidence, as preceding studies have used cross-sectional designs measuring predictor and outcome at a single time point limiting the ability to derive a cause-effect relationship. Also, pre-exposure stress has been measured differently across studies. For example, Vagni et al. (2020) developed a questionnaire recording several stress factors (e.g., organisational, physical, emotional), whilst Orrù et al. (2021) measured perceived stress as the degree to which external demands exceed a person's ability to cope (Cohen et al., 1983). In the present study, participants rated how stressed they felt in the present moment in response to an acute stressor. Therefore, concluding whether stress pre-exposure is a risk factor of post-IET distress is difficult as studies have defined and measured stress differently. One explanation for the conflicting findings could be that the present study measured acute stress responses in the present moment, whereas previous studies have recorded stress over time (e.g., in the past month), therefore measuring chronic rather than acute stress. Chronic stress stimulates repeated or continuous activation of the stress response leading to allostatic load (AL; McEwen, 1998a) associated with the development of psychological distress (Tomba & Offidani, 2012). The association between AL and psychological distress post-IET is yet to be explored, however, in people directly exposed to trauma, high AL has been repeatedly associated with PTSD symptoms post-exposure (Carbone et al., 2022; Thayer et al., 2017). Therefore, there could be a potential distinction between chronic stress and acute stress in predicting post-IET distress. Although acute stress immediately preceding the exposure might not exert the same influence, chronic stress could be a significant factor, although this needs to be studied further potentially using longitudinal designs to identify cause-effect relationships.

An alternative explanation for the discrepancy between the findings in the current and those of prior research pertains to the methodological approaches employed. Past investigations have primarily relied on cross-sectional designs, measuring variables within naturalistic settings. This inherent characteristic exposes them to a multitude of confounding variables that may influence both the measurement and the level of distress associated with IET. In contrast an experimental design, as implemented in the present study, exerts control over these confounding variables, aiming to isolate the causal effect of the independent variable. Results in the current study suggest that stricter control over extraneous factors may potentially attenuate the observed effects. This underscores the significance of employing diverse research designs when investigating a phenomenon, as such a multifaceted approach fosters a more comprehensive understanding of the underlying mechanisms.

In the current investigation, participants faced with the psychosocial stressor before IET did not report significant changes in stress and anxiety between facing the psychosocial stressor and following exposure to the trauma stimulus suggesting they experienced an equal amount of stress in each condition. Also, there was no significant difference in scores of subjective stress, anxiety, or anger after IET between participants who had completed the MIST or relaxation task prior to exposure, suggesting all participants experienced the same level of distress after learning about the trauma regardless of how much stress, anxiety or anger they felt beforehand. Currently, there is a scarcity of research exploring links between pre-trauma stress and development of distress specifically related to IET. Still, our findings contradict those in the wider research reporting that people already stressed respond with increased intensity to a new stressor (Padival et al., 2013); and also evidence in the PTSD literature of pre-trauma stress to be a

predictor of PTSD post-exposure (Engelhard et al., 2003). In the present study, participants may have appraised each stimulus to be equally stressful resulting in experiencing a consistent level of stress across conditions. The transactional model of stress and coping (Lazarus & Folkman, 1984) describes psychological stress to be an interaction between a person and their appraisal of the environment. Stress is experienced when a person views a stimulus as challenging or threatening, and that they do not have the resources to cope with the stressor. Consequently, participants' appraisals of the psychosocial stressor and the IET, along with their perceived ability to cope with each stimulus, may have been equivalent.

Equally, our findings also conflict with those from other experimental studies examining stress responses to repeated exposure to psycho-social stressors which found responses to decrease between exposures (Höhne et al., 2014), otherwise known as habituation (Thompson & Spencer, 1966). In the present study, participants may not have been able to habituate as they were not repeatedly confronted by a homotypic stressor (Grissom & Bhatnagar, 2009), although there is some evidence for habituation to repeated heterotypic stressors as well (Herman et al., 2016). On the other hand, the interval between the psychosocial stressor and IET was short (i.e., approx. two mins) which may not have allowed time for habituation to occur, with previous studies suggesting that longer intervals support greater habituation (Uribe-Bahamonde et al., 2019). Therefore, participants could have experienced both stimuli (psychosocial stress and IET) as equally stressful and due to the small interval between conditions did not have time to habituate between one stressor and the next. To explore this notion, research could use experimental designs to examine the impact of changing lengths of intervals between a psychosocial stressor and IET to explore

whether a person can habituate between being confronted with an acute stressor and subsequential IET. Additionally, a within-subjects design which controlled for order effects could be used where participants experience every condition controlling for individual differences and observed outcomes could be more confidently attributed to the independent variables. This research could support the development of optimal ways of working in helping professions which care for traumatised populations in informing the needed intervals between episodes of IET or breaks between acute stressors and IET which allow a professional to habituate and protect their wellbeing. Additionally, this research could inform training for helping professionals which aims to inoculate trainees against adverse stress reactions to experiencing episodes of IET and other stressors at work. As, in cross-sectional studies, repeated exposure to acute stressors has been link with an increased likelihood of developing PTSD symptoms associated IET (Morrison & Joy, 2016), such interventions would protect professionals from AL and subsequent psychological and physically adverse reactions.

5.4.3. Audio-visual Stimuli and Distress After Indirect Exposure to Trauma

The present study did not reveal a statistically significant difference in self-reported distress scores between participants who viewed a video testimony of a traumatic event and those who read a transcript of the same testimony. This null effect was observed for both immediate post-exposure ratings of stress and negative emotions, as well as for trauma-related intrusions assessed at follow-up. These findings are surprising as previous literature has suggested being able to see another's expressions of emotion leads to the observer experiencing a similar emotional state (Preston & De Waal, 2002) leading one to feel the emotions of the other person (De Vignemont & Singer, 2006) otherwise known as empathy. Facial expressions and prosody of language used by a speaker facilitates one's ability to

empathise, understanding and sharing another's' emotional state (Regenbogen et al., 2012). Therefore, based on our understanding of empathy, it could be assumed that witnessing a trauma survivor recount their experience in person would elicit a more pronounced empathic response in listeners, including experiencing similar distress as the survivor, relative to exposure to a transcript of the same account. Furthermore, the development of post-IET distress and related negative consequences (e.g., depression, anxiety and poor physical health) in professionals has been argued to result from a combination of IET and experience of empathy (Rauvola et al., 2019). Therefore, empathy could be a key factor in the development of distress when exposed to second-hand trauma. Additionally, empathy has been reported as a risk factor for PTSD symptoms related to IET (MacRitchie & Leibowitz, 2010; Mottaghi et al., 2020) suggesting that indeed a greater empathic ability is more likely to lead to adverse reactions to IET.

It could be that people are able to empathise without seeing the emotions of another but in response to emotional stimuli (Blair, 2005), and therefore may have similar reactions to learning about another's distress when the emotional person is present or absent. There is limited research comparing reactions to ~~second-hand trauma~~ IET when exposed through different channels (e.g., in-person or written reports) and available studies have reported mixed results. Levin et al. (2011) compared scores of STS (i.e., PTSD symptoms related to IET) and other outcomes in attorneys and legal administrative support staff working with trauma-exposed clients. The researchers found that attorneys exhibited significantly higher scores of STS, depression, burnout, and functional impairment compared to support staff. These findings were attributed to the extended working hours and more frequent direct contact with trauma-exposed clients experienced by attorneys. A potential explanation for the observed distress among attorneys could

be heightened empathic resonance. Frequent exposure to traumatised clients might lead to increased empathic responding, which, in turn, could contribute to the development of STS in these legal professionals. These results differ from the present study which found a non-significant difference in distress between people who watched a person talk about an experience of trauma (seeing the survivor's emotional expressions and hearing their tone of voice), compared to those who read a transcript of this account. On the other hand, experimental studies have found that participants can experience peritraumatic stress and anxiety and intrusive visual images at follow-up after watching or listening to analogue trauma (Krans et al., 2010; van Schie et al., 2019). Schweizer et al. (2018) reported stimuli presented through virtual reality or an audio script to result in similar levels of peritraumatic anxiety, stress and helplessness and similar levels of intrusions and other PTSD symptoms at one-week follow up (Schweizer et al., 2018). These findings suggest different types of IET can lead to similar levels of distress post-exposure in the presence or absence of visual stimuli as reported in the present study.

Still, more research is needed to investigate post-IET distress resulting from different types of exposure to second-hand trauma (e.g., written material) to identify if different mediums put people at risk of adverse reactions to IET. This research could contribute to a deeper understanding of the mechanisms by which exposure to indirect trauma leads to psychological distress. Specifically, it would be valuable to explore how individuals interact with trauma material, including the role of empathic response versus other potential contributing factors (e.g., pre-trauma stress, coping strategies). One such factor may a person's mood before they are exposed, as previous research has found people with low mood experience greater empathic distress when observing another's pain (Cao et al.,

2017). Future studies could explore how our own mood state before IET may influence the experience of empathy in reaction to witnessing another's distress and the development of post-IET related distress.

5.4.5. Strengths and Limitations

The following section will discuss several strengths and limitations of the current study. Previously, research has focused on personal characteristics (e.g., gender, personal history of trauma) and work-related factors (e.g., workload) as influencers in the development of psychological distress related to IET (Hensel et al., 2015; Iversen & Robertson, 2021; Ormiston et al., 2022) predominantly using cross-sectional designs therefore limiting causal explanations (Rauvola et al., 2019). While the focus on static personal features such as gender may allow for people potentially more vulnerable to post-IET to be identified, it does not allow for the opportunity for factors to be manipulated by targeted interventions aiming to reduce potential distress. A strength of the present study is that we are the first to examine the effect of pre-trauma acute stress and medium of IET in the development of subjective distress (including peritraumatic acute stress and several emotions, and development of intrusions at a one-week follow up) using an experimental design. Furthermore, we employed a two-by-two factorial design which allowed us to test for complex relationships between our two independent variables (i.e., pre-trauma acute stress and IET medium), as well as any main effects of each factor on our outcome variables.

Exploring these independent factors has given insight into the effect of experiencing acute psychosocial stress before IET, and learning about another's traumatic experience through difference means on associated distress post-exposure. Implications of these findings for future research include examining the potential differences in pre-trauma acute stress versus chronic stress, and

acquiring a better understanding of how a viewer responds empathically to different types of traumatic material which may lead to a heightened risk of post-IET distress. Deeper exploration of these factors will inform the development interventions which buffer the impact of factors like pre-trauma stress and viewing trauma material on people exposed to second-hand trauma (e.g., helping professionals working with traumatised populations).

Another strength of the study was the effective use of the MIST in generating an acute stress response in participants which was represented by the significant increase in subjective stress scores of participants in a condition containing the MIST and that these participants also showed significantly higher stress levels compared to participants who completed the relax condition. The successful use of the MIST including repeated measurement of stress (before and after completing the MIST) and comparison with a control group strengthened internal validity as we could assume the change in the outcome variable (i.e., subjective stress) was a result of the MIST and not related to other factors (e.g., participating in an experiment, high stress level at baseline).

Furthermore, the author controlled for several covariates (i.e., empathy, rumination tendency, trait anxiety and previous history of trauma) which have been reported in the previous literature to influence post-IET distress and therefore leading to a more accurate representation of the relationship between the independent factors and outcome variables. By controlling for these covariates, the author also reduced the likelihood of type 1 errors by rejecting the true null hypothesis as covariates create differences between groups rather than the independent variables, and type 2 errors, by failing to reject a false null hypothesis as covariates mask the difference between groups.

Limitations of the present study should also be noted. Firstly, it could be argued that the video used of the trauma survivor narrating their experience may have not had the same impact as if the survivor was sat in front of the participant. This limitation could have resulted in participants in a condition with the video to experience lower levels of peritraumatic distress and intrusions at follow-up than if the survivor was with them face to face. This limits our ability to apply the findings in our study to professionals who work directly with survivors and may experience post-IET distress. While the use of a pre-recorded video narration presented limitations, the survivor's first-hand account nonetheless contributes to the ecological validity of the study. Furthermore, the adoption of a trauma paradigm facilitates the exploration of reactions to trauma exposure within a research setting whilst adhering to ethical standards and protecting participants wellbeing (Holmes et al., 2004). Nevertheless, future researchers may wish to use more life-like exposures to survivors recounting experiences of trauma either by using simulated survivors or, if still using video footage, to deliver recordings in more immersive ways (e.g., virtual reality).

Secondly, this experimental study was hosted online, therefore, we were limited in our ability to control the environment which the participant was in and mitigate any distractions (e.g., task irrelevant sounds) and extraneous variables making it challenging isolating the true effect of the independent variables on outcomes (e.g., subjective stress, anxiety, happiness). Additionally, as the researcher was not in the room with a participant it was hard to ensure that online participants were paying attention throughout the experiment especially when watching the trauma story. If a participant found watching the trauma story distressing, they may have used avoidance tactics (e.g., looking away) which may have impacted the level of distress they experienced by watching the video. Also,

in face-to-face interactions, the inherent social cues and desire to support a speaker recounting a distressing experience may heighten participant attention. Consequently, utilising a pre-recorded trauma disclosure (as in the study) might not have elicited the same degree of focused engagement as one would observe in a live, interpersonal context and therefore impact participants' scores on post-exposure outcomes.

Thirdly, there may have been issues with the sensitivity of the diary of intrusions measure. Participants were asked seven-days after completing the experiment to retrospectively record how many intrusions they had experienced each day in the last seven days. Therefore, the number of intrusions reported may have not been accurately reported. Future research could ask participants to report intrusions every day in the follow-up although this may increase participant burden, or could have a shorter follow up period for example in some studies participants have been asked to report intrusions experienced the day after the experiment (Schweizer et al., 2018) which may result in a more accurate report of intrusions.

Fourthly, there are potential limitations in using a self-created one-item self-report measure to assess subjective stress. This measure may have been vulnerable to interpretation bias as what some participants may have perceived as very stressful, others may have perceived as moderately leading to inconsistencies in responses across individuals. Furthermore, the potential for semantic overlap among the provided descriptors (e.g., "feeling sleepy" potentially conflated with "concentration" or "tiredness") may have introduced response bias. While the explicit instruction "please indicate your stress level at this moment" aimed to direct participants' focus, the interpretation of the descriptors could have inadvertently influenced their self-reported stress levels. Still, the implementation

of a single-item measure across experimental conditions facilitated an efficient assessment of immediate subjective acute stress, thereby mitigating participant fatigue that might be associated with more lengthy measurement instruments. Nevertheless, utilising a multi-item measure with established psychometric properties, as employed in prior research, would have likely enhanced the reliability and construct validity of the stress assessment within the present study.

Finally, there is a drawback in the recording of emotions experienced by participants during the experiment. Participants were asked to rate the level of several emotions at two time points (time 1 [after the relax/stress condition and reading or watching the trauma story], and time 2 [after reading or watching the trauma story]). Therefore, as baseline measures of these outcomes were not recorded before the first condition (i.e., stress or relax) we cannot assess the impact of condition one on the scores of emotions, and therefore whether the effect of condition one on emotions influenced the scores of emotions after this condition and condition two (i.e., reading or watching the trauma story). Also, we cannot account for individual differences in emotions at baseline and therefore detangle whether levels of emotions at time 1 were due to the condition or pre-existing differences.

5.5. Chapter Summary

To the author's knowledge this is the first experimental study to examine the interaction effect of pre-trauma acute stress and medium of IET in the development of peritraumatic distress and intrusions in a one-week follow up. Using a factorial design, this study addresses a gap in the literature concerning if pre-trauma acute stress and different types of traumatic material influence the risk of developing post-IET distress. The findings indicate that experiencing acute stress before IET does not lead to increased post-IET distress, but that people

who are either stressed or relaxed before exposure are likely to experience similar levels of distress post-exposure. Further, the results suggest that reading traumatic material compared to watching a trauma survivor recount their experience can be as equally distressing therefore suggesting professionals who experience IET through other means than direct contact with survivors maybe just as at risk of developing post-IET distress than professionals who work directly with survivors. Further research is warranted to explore the impact of experiencing acute stress versus chronic stress (including repeated acute stressors) on the development of post-IET distress and the mechanisms (e.g., empathy) by which exposure to indirect trauma leads to psychological distress.

To build upon the findings in this study and the preceding qualitative exploration, in the next chapter, a second experimental study is presented in which the author set out to examine the potential of a simple technique in buffering the impact of IET. Additionally, in this next study, comparisons on post-IET outcomes were made between MHPs and non-MHPs to examine whether professionals are less at risk to post-IET distress than those without experience of working in mental health. Finally, the author explored the influence of additional factors (e.g., empathy, emotion regulation) reported to influence the development of post-IET distress.

Chapter Six: Study Three - Differences in Distress Related to Indirect Exposure to Trauma Between Mental Health Professionals and Non-Mental Health Professionals and the Impact of a Cognitive Task

6.1. Summary of Background

Indirect exposure to trauma (IET) can lead to negative consequences such as post-traumatic stress disorder (PTSD) symptoms (Iversen & Robertson, 2021; Schiro et al., 2023). Mental health professionals (MHPs) are likely to be repeatedly exposed to IET through learning about the experiences of their clients (Leung et al., 2022b) with a high rate of people seeking mental health support having experienced trauma or violence (Mauritz et al., 2013). Thus, MHPs are at risk of experiencing adverse reactions to IET. Consequences of exposure to IET can lead to MHPs experiencing problems in their work such as an increase in clinical errors and therapeutic impasses between themselves and their clients (Bride et al., 2007), leading to reductions in positive patient outcomes (Bercier & Maynard, 2015).

Novel interventions have been tested to prevent the onset of psychological distress in people who have experienced direct trauma. These studies have aimed to reduce the development of intrusions, commonly experienced after trauma and a principal symptom of PTSD causing significant distress (American Psychiatric Association [APA], 2013; Iyadurai et al., 2018) and associated with the onset of long-term post-traumatic stress (Solberg et al., 2016). Previous research has found a visuospatial task (i.e., Tetris) to be effective in reducing the development of intrusions in patients when the intervention was administered within 72 hours of exposure (Iyadurai et al., 2018; Kanstrup et al., 2021). Additionally, experimental studies have found that introducing a concurrent visuospatial (Logan & O'Kearney, 2012) or verbal task (Krans et al., 2009) when viewing trauma analogue is linked

to fewer intrusions at follow-up compared to controls. Authors have argued that introducing a concurrent cognitive task (i.e., cognitive interference task [CIT]), when exposed to a trauma analogue, interferes with working memory (WM) during memory consolidation resulting in a reduced likelihood of intrusions (Badawi et al., 2020). However, there have also been reports of some CITs (namely verbal) either having no effect or even increasing intrusions at follow-up (Bourne et al., 2010; Nixon et al., 2007). Participants in these previous studies have been comprised of the general public or clinical populations. Therefore, the potential of implementing a simple cognitive task as a tool to reduce the likelihood of intrusions in MHPs is yet to be explored. Furthermore, as MHPs are repeatedly experience IET within their occupation, they may respond differently to IET in experimental studies compared to non-MHPs as they are desensitised to the possible distress-inducing impact of learning about others' traumatic experiences as found in previous studies with helping professionals (Masson & Moodley, 2020; Mistry et al., 2022). Additionally, most studies have included a task (e.g., Tetris, a complex tapping sequence on a keyboard, shaping modelling clay into geometric shapes) which may not be realistically used in clinical practice as they would likely hinder the practitioner's ability to deliver care, due to excessive cognitive demand, or the client's capacity to engage effectively in the therapeutic interaction.

Alongside the exploration of tools which could buffer the impact of IET, researchers have reported factors which may influence the onset of post-IET distress in MHPs. Previous studies have reported components of empathy and emotion regulation to predict lower levels of secondary traumatic stress (STS), that is PTSD symptoms related to IET, in helping professionals (Wagaman et al., 2015). Additionally, previous experiences of trauma (Leung et al., 2022b) and a greater rumination tendency have been linked to higher levels of PTSD symptoms

in professionals exposed to IET(Ogińska-Bulik et al., 2023). Studies have predominantly focused on outcomes associated with IET in specific occupational groups, and not compared reactions between a certain group of professionals (e.g., MHPs) and others. Identifying potential differences between these groups in reactions to IET could give insight into how MHPs experience IET and possible traits which may influence these experiences (Velasco et al., 2023). Furthermore, when exploring the effectiveness of tools to offset the development of distress after IET in MHPs (compared to non-MHPs), these trait characteristics need to be accounted for as they may affect the development of distress post-exposure.

6.1.1. The Present Study

The present study investigates how completing a concurrent CIT and participant status (i.e., MHP vs non-MHP), when viewing a trauma analogue, influences negative emotion immediately after exposure, and intrusions at a one-week follow-up whilst accounting for trait characteristics previously reported to influence the development of post-IET distress.

6.1.2. Hypotheses

Participants in the cognitive-task condition will experience lower negative emotion directly after exposure and report less intrusions in the one-week compared to those in the non-task condition.

Participants who are MHPs will experience lower negative emotion directly after exposure and report less intrusions in the one-week follow up compared to non-MHPs.

6.2. Methods

6.2.1. Research Design

A 2 x 2 between-groups design was used to examine the interaction effect and main effects of condition (cognitive-task group vs. non-task group) and

participant status (MHP vs. non-MHP) on negative emotion immediately after IET and the development of intrusions at the one-week follow-up. MHPs and non-MHPs were randomised into either the cognitive-task group or non-task group using the automatic randomiser function in Qualtrics. This function was set so conditions were presented evenly. In the non-task group, participants were exposed indirectly to trauma by watching a video of a survivor describing a traumatic experience (i.e., being mugged and stabbed by a gang of youths when walking home). People in the cognitive task group were exposed to the same trauma story video but also asked to count how many times the survivor said the word street (i.e., the cognitive task) whilst watching the video. Therefore, two independent variables (i.e., condition and participant status) were investigated to examine the effect of condition and participant status on outcome variables (i.e., peritraumatic negative emotion, and development of trauma-related intrusions at the one-week follow-up) post-exposure. The experiment was presented as an online survey via Qualtrics (Qualtrics, Provo, UT), which included a set of psychometric measures to assess trait characteristics, a trauma video, and a follow-up survey.

6.2.2. Participants

The sample consisted of 142 participants, 83.8% (N = 119) were female, the mean age was 33.44 (11.89) years old, 58.5% (N = 83) were MHPs, and 50.7% (N = 72) had a postgraduate degree. Further demographic information and trait characteristics are shown in Table 9.

Table 9

Descriptive Statistics of Baseline Variables in MHPs and non-MHPS in Two Conditions

	Mental Health Professionals			Non-Mental Health Professionals			All
	Cognitive-Task Group (*N* = 39)	Non-task Group (*N* = 44)	Total (*N* = 83)	Cognitive-Task Group (*N* = 30)	Non-task Group (*N* = 29)	Total (*N* = 59)	Overall Total (*N* = 142)
	N(%)	*N(%)*	*N(%)*	*N(%)*	*N(%)*	*N(%)*	*N(%)*
Gender							
Female	36(43.4)	37(44.6)	73(88.0)	23(39.0)	23(39.0)	46(78.0)	119(83.8)
Male	3(3.6)	7(8.4)	10(12)	7(11.9)	6(10)	13(22.0)	23(16.2)
Education							
Secondary	0(.0)	0(.0)	0(.0)	1(1.7)	0(.0)	1(1.7)	1(1.7)
A level's or equivalent	1(1.2)	3(3.6)	4(4.8)	5(8.5)	6(10.2)	11(18.6)	15(10.6)
Undergraduate degree	7(8.4)	7(8.4)	14(16.9)	9(15.3)	12(20.3)	21(35.6)	35(24.6)
Postgraduate degree	28(33.7)	26(31.3)	54(61.5)	10(16.9)	8(13.6)	18(30.5)	72(50.7)
Doctoral programme	3(3.6)	8(9.6)	11(13.3)	5(8.5)	3(5.1)	8(13.6)	19(13.4)
Employed (yes)	36(43.4)	41(49.4)	77(92.8)	22(37.3)	24(40.7)	46(78.0)	123(86.6)
Marital status							
Single	8(9.6)	10(12.0)	18(21.7)	6(10.2)	6(10.2)	12(20.3)	30(21.1)

	Mental Health Professionals			Non-Mental Health Professionals			All
	Cognitive-Task Group (N = 39)	Non-task Group (N = 44)	Total (N = 83)	Cognitive-Task Group (N = 30)	Non-task Group (N = 29)	Total (N = 59)	Overall Total (N = 142)
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
In a relationship	17(20.5)	20(24.1)	37(44.6)	13(22.0)	15(25.4)	28(47.5)	65(45.8)
Married or domestic partnership	14(16.9)	12(14.5)	26(31.3)	9(15.3)	6(10.2)	15(25.4)	41(28.9)
Divorced	0(.0)	1(1.2)	0(.0)	1(1.7)	1(1.7)	2(3.4)	2(1.4)
Separated	0(.0)	0(.0)	1(1.2	1(1.7)	1(1.7)	2(3.4)	3(2.1)
Widowed	0(.0)	0(.0)	1(1.2)	0(.0)	0(.0)	0(.0)	1(.7)
Past mental health issues (yes)	21(25.3)	21(25.3)	42(50.6)	12(20.3)	13(22.0)	25(42.4)	67(47.2)
Family history of mental health issues	22(26.5)	26(31.3)	48(33.8)*	12(20.3)	10(16.9)	22(37.3)	70(49.3)
Previous history of trauma (yes)	20(24.1)	25(30.1)	45(54.2)	16(27.1)	12(20.3)	28(47.5)	73(51.4)
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
Age	31.69(8.78)	37.02(12.67)	34.52(11.28)	34.13(14.72)	29.66(9.82)	31.93(12.65)	33.44(11.89)
Empathy							

	Mental Health Professionals			Non-Mental Health Professionals			All
	Cognitive-Task Group (N = 39)	Non-task Group (N = 44)	Total (N = 83)	Cognitive-Task Group (N = 30)	Non-task Group (N = 29)	Total (N = 59)	Overall Total (N = 142)
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
Total	92.05(5.54)	92.95(7.94)	90.05(6.87)*	88.57(9.66)	89.34(7.80)	88.95(8.73)	90.76(7.82)
Cognitive	36.38(2.73)	37.11(3.29)	36.77(3.04)**	34.53(4.51)	35.59(3.38)	35.05(3.99)	36.06(3.56)
Affective	55.67(3.93)	54.93(5.44)	55.28(4.78)	54.03(5.69)	53.76(5.33)	53.90(5.47)	54.70(5.10)
Rumination	77.36(28.60)	73.66(25.20)	75.40(26.75)***	92.63(19.49)	92.07(25.22)	92.36(22.30)	82.44(26.28)
ER-CR	4.95(1.10)	4.94(1.12)	4.95(1.10)**	4.20(1.11)	4.66(1.35)	4.43(1.25)	4.73(1.19)
ER-ES	3.13(1.12)	2.69(1.23)	2.90(1.19)***	3.33(1.38)	3.89(1.41)	3.61(1.41)	3.19(1.33)
PTSD	1.70(.69)	1.70(.59)	1.70(.64)	1.73(.62)	1.82(.51)	1.77(.56)	1.73(.61)

Note. ER = Emotion Regulation; CR = Cognitive Reappraisal; ES = Emotion Suppression; PTSD = Post-Traumatic Stress Disorder. *p < .050, **p < .010, ***p < .001.

6.2.2.1. Sample Size

A prior power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to determine the minimum sample size required in this study. Previous studies using a cognitive task have reported medium-sized between groups differences in frequency of intrusions at follow-up (Badawi et al., 2020; Holmes et al., 2010), therefore a medium effect size was used in the calculation. Results indicated that a minimum sample of 74 participants would be needed to achieve 80% power for detecting a medium effect size at a significance criterion of α = .05. This sample size was increased to N = 87 to allow for a 20% attrition rate. Thus, the obtained sample (N = 142) was adequate to test meaningful comparisons between groups (cognitive-task groups vs. non-task group; MHPs vs. non-MHPs) on scores of negative emotion and intrusions.

6.2.2.2. Inclusion Criteria

Participants were included if they were: 1) over the age of 18 years old; 2) had worked as a mental health professional for at least one year (e.g., psychologist, counsellor, therapist, mental health nurse, psychiatrist), or were a non-mental health professional; and 3) were a native English speaker. Only native English speakers were included due to findings in studies which indicate that WM is central to the processing of a second language (Link et al., 2014). In this study, the intervention tested aimed to manipulate WM activation via a cognitive task when exposed to indirect trauma to stop the development of intrusions subsequently, thus, including participants whose first language was not English may have had a confounding effect on the development of intrusions (i.e., the dependent variable) at follow up.

6.2.2.3. Exclusion Criteria

Participants were excluded if they had a history of experiencing physical assault and/or robbery which had led to past or present severe emotional distress. Also, participants were excluded if they were currently experiencing mental health problems. These exclusion criteria aimed to protect the wellbeing of participants and prevent a potentially confounding effect on the intrusions elicited by the video used in the experiment as it could trigger memories of previous personal trauma-related events (Ehlers et al., 2004). Participants were informed through the participant information sheet (PIS) (see Appendix T) about the nature of the trauma story included within the study (i.e., a person's experience of being physically assaulted and robbed), and the inclusion and exclusion criteria. Participants were asked not to participate if they met one or more of the exclusion criterions (as participation may have been distressing) and/or if they would feel uncomfortable answering questionnaires.

6.2.2.4. Recruitment

Participants self-selected to participate after engaging with study recruitment material. Firstly, two recruitment posters (see Appendix U and V) detailing the aims of the research, the inclusion and exclusion criteria and the Qualtrics link, were used to advertise the study through professional social media profiles (e.g., Twitter and LinkedIn), and shared with the principal researcher's professional contacts. One poster aimed to specifically recruit MHPs whilst the other recruited anyone over the age of 18 years old. Additionally, to bolster the recruitment of MHPs, a letter was devised and sent by email with the recruitment poster to MHPs (e.g., assistant psychologists, clinical psychologists, therapists, etc.) who acted as gatekeepers and advertised the study to their colleagues within their organisation (e.g., charities and private practices). The letter gave information

about the aims of the study, inclusion and exclusion criteria, and what participating in the experiment would involve. Participants were offered to meet the principal investigator (PI) to ask any questions about the study before participating via a video-conference call on Microsoft Teams. After speaking to the PI, the link to the survey was shared and the participant completed the study independently.

6.2.3. Procedure

Participants accessed the online study through a Qualtrics hyperlink. When participant clicked on the hyperlink, they were presented with the PIS (see Appendix T) and asked to provide informed consent. After completing the consent form (see Appendix W), participants created a unique identification code used to protect participant's anonymity, match participants' data at different stages of the study (i.e., initial experiment and seven day follow up period), and in case of consent withdrawal (within the two-week cooling off period after initial participation). Also, participants gave an email address which would receive the follow-up material.

After giving informed consent, participants began the experiment, first completing a portfolio of questionnaires which included a demographics form and measures examining individual characteristics including professional status, empathy, previous history of trauma, PTSD, rumination tendency, and emotion regulation. This batch of questionnaires and measures took approximately 20 minutes to complete.

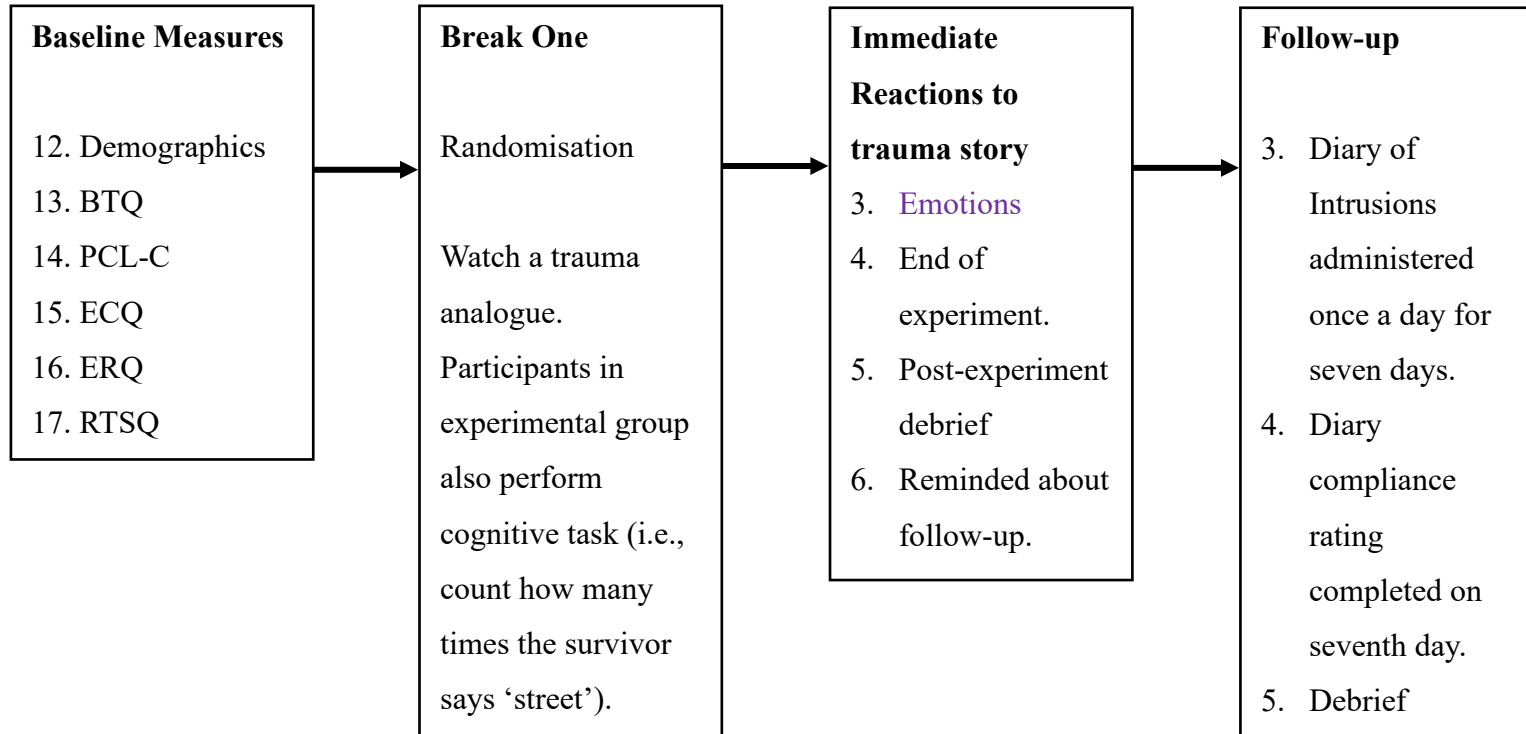Then, participants were sequentially randomised automatically via Qualtrics into either the cognitive-task group or non-task group. Participants in the non-task group were instructed to watch a videorecording of a person talking about a traumatic experience and to watch the recording in full screen. Participants in the cognitive-task group were instructed to do the same, but also asked to count how

many times the person in the video said the word 'street' (i.e., the cognitive task) without using external aids (e.g., counting using fingers). Immediately after the video, participants were instructed to complete a response form which asked them to rate their present experience of a series of emotions and how well they were able to concentrate on the video. Additionally, participants in the cognitive-task group were asked to report how many times the survivor in the trauma video said the word street. After this, participants were directed to the post-experiment debrief sheet (see Appendix X) and reminded of the follow-up period.

For the next seven days, a daily email containing a hyperlink to a follow-up survey was automatically sent to participants by Qualtrics. The follow-up survey contained the Daily Diary of Intrusions where participants recorded the frequency of intrusions, they had experienced that day which were associated with the trauma story in the initial experiment. Recordings were made at four time points in the day (morning, afternoon, evening, and night). After completing the seven-day follow-up, participants were given a debrief sheet (see Appendix Y). See Figure 8 for the full protocol and timeline of data collection.

Figure 8

Outline of Study Procedure

Baseline Measures	Break One	Immediate Reactions to trauma story	Follow-up
12. Demographics 13. BTQ 14. PCL-C 15. ECQ 16. ERQ 17. RTSQ	Randomisation Watch a trauma analogue. Participants in experimental group also perform cognitive task (i.e., count how many times the survivor says 'street').	3. Emotions 4. End of experiment. 5. Post-experiment debrief 6. Reminded about follow-up.	3. Diary of Intrusions administered once a day for seven days. 4. Diary compliance rating completed on seventh day. 5. Debrief

Note. BTQ = Brief Trauma Questionnaire; PCL-C = Post-Traumatic Stress Disorder Checklist; ECQ = Empathy Components Questionnaire;

ERQ = Emotion Regulation Questionnaire; RTSQ = Rumination Thought Style Questionnaire.

6.2.4. Materials

6.2.4.1. Video Stimuli and Intervention

6.2.4.1.1. Trauma Video

The trauma film paradigm (TFP) has been used to study factors that influence the onset of PTSD-symptoms and emotional responses after exposure to a trauma stimulus (Arnaudova & Hagenaars, 2017). Previous TFP studies have found that trauma analogue stimuli with themes of physical violence led to participants experiencing intrusions within a one-week follow up (Arnaudova & Hagenaars, 2017), and can be used to investigate the onset of PTSD symptoms (e.g., intrusions) after exposure in adherence to research ethics principles (Shaefer et al., 2010). Considering these previous findings, the use of a trauma analogue to study the effects of IET on mental health professionals was used in the current study.

For this study a 17-minute video-clip was created to mirror a disclosure of a traumatic experience by a client. The account was given by a 20-year-old male actor who portrays a person who has PTSD and is describing a traumatic experience, in which he was assaulted, battered, stabbed, and robbed by a gang. The actor was given specific instructions about enacting emotional reactions in line with the scenario that was being described. The acting was based on a scenario written by a researcher who had extensive experience in the assessment and treatment of trauma-survivors. The actor was also provided with information about the symptoms of PTSD. The video can be accessed using this link: https://mmutube.mmu.ac.uk/media/t/1_lgut6yq4.

6.2.4.1.2. Cognitive Task

In the cognitive task group, people were asked to complete a WM task that required the manipulation and retention of a small amount of information whilst

watching the trauma video. This task instructed participants to count the number of times the actor in the video-clip said the word 'street'. The participant was asked to remember the frequency of this spoken word without using any aid such as pen and paper or use of fingers. The CIT was chosen with a consideration of real-world practice with trauma survivors. The rationale for selecting this specific task centred on its anticipated minimal interference with participants' focus on the trauma narrative. It was judged sufficiently non-disruptive to allow for comprehension of the account's details and accurate perception of the survivor's emotional expressions. Consequently, it is viewed that the practical application of this task would not impede professionals' ability to be fully present with their clients, facilitating attentive listening and understanding of their experiences. This CIT was considered less intrusive than those employed in prior research (e.g., Logan & O'Kearney, 2012), which included concurrent tapping sequences or verbalisation of feelings during trauma video exposure. The selection of the WM task was carefully considered to allow the participant to fully engage with the trauma account.

6.2.4.2. Questionnaires, Psychometrics Measures and Scales

Several measures were used to: a) examine the effects of using a cognitive task to reduce negative emotion experience immediately post-exposure and the development of intrusions at one-week follow-up; b) record participant status (i.e., MHP or non-MHP); c) measure trait characteristics to be controlled for in analysis (e.g., empathy, rumination, emotion regulation, PTSD); and d) collect demographic information of the recruited participants (e.g. age, gender, ethnicity).

6.2.4.2.1. Trait Characteristics and Covariates

6.2.4.2.1.1. Empathy Components Questionnaire

The Empathy Components Questionnaire (ECQ; Batchelder et al., 2017) (see Appendix Q) is a 27-item self-report measure which assesses both, affective (e.g., I am good at responding to other people's feelings") and cognitive empathy ("I am usually successful in judging if someone says one thing but means another") through five subscales (i.e. cognitive ability, cognitive, drive, affective ability, affective drive, and affective reactivity). The candidate answers using a 4-point Likert scale between 1 (*strongly disagree*) and 4 (*strongly agree*) and this scale is reversed for negatively worded items. To calculate overall empathic ability ($\alpha = .84$), scoring of terms from all five subscales are added with a higher score indicating a greater ability for empathy (score range from 27-108). To acquire a score for affective empathy ($\alpha = .78$), the scores from the affective drive, affective ability and affective drives subscales are totalled. To obtain a score of cognitive empathy ($\alpha = .68$), ratings on the cognitive ability and cognitive drive subscales are summed. The authors reported that the measure had good internal consistency reporting a Cronbach alpha's coefficient of .70-.81 (Batchelder et al., 2017).

6.2.4.2.1.2. Ruminative Thought Style Questionnaire

The Ruminative Thought Style Questionnaire (RTSQ; Brinker & Dozois, 2009) is a 20-item measure which records dispositional ruminative thinking without considering a participant's mood. Items are rated by a 7-point Likert scale between 1 (*not at all*) and 7 (*very well*) and a score of general tendency to ruminate is calculated by summing up ratings for each item, with a range of 20 to 140, with higher scores indicating a greater tendency to ruminate. The measure was found

to have excellent reliability in the present study (α = .92), as found in previous research (α = .94) (Tanner et al., 2013).

6.2.4.2.1.3. The Emotion Regulation Questionnaire

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) (see Appendix Z) is a 10-item measure to assess an individual's tendency to use either cognitive reappraisals (CR) (e.g. "When I want to feel less negative emotion *(such as sadness or anger),* I change what I'm thinking about") or expressive suppression (ES) to regulate their emotions (e.g. "I keep my emotions to myself"). The two subcategories of the ERQ have been found to have good internal reliability in the present study (suppression factor [α = .80] and reappraisal factor [α = .88]). Participants indicate how much they agree each item reflects how they experience emotions (e.g., "when I am feeling positive emotions") and how one expresses these emotions (e.g., "I am careful not to express them") using a 7-point Likert scale from 1 (*strongly agree*) to 7 (*strongly agree*). Subscale scores are calculated by totalling the scores indicated for each item, with a higher score indicating a greater use of the emotion regulation strategy.

6.2.4.2.1.4. The Post-traumatic Stress Disorders Checklist – Civilians

The Post-traumatic Stress Disorders Checklist – Civilians (PCL-C; Weathers et al., 1994) (see Appendix AA) is a 17-item measure which assesses PTSD symptomatology in the past month, associated with previous stressful life experiences and not a specific traumatic event, using a 5-point Likert scale from 1 (*not at all*) to 5 (*extremely*). Each item corresponds with a cluster of symptoms associated with PTSD, according to the fifth edition of the Diagnostic and Statistical Manual (DSM-5) (APA, 2013), specifically hyperarousal (items 1-5; e.g., "Feeling jumpy or easily startled?"), avoidance (items 6-12; e.g., "Avoiding activities or situations because they reminded you of a stressful experience from

the past?"), and reexperiencing (items 13-17; e.g., "Suddenly acting or feeling as if a stressful experience were happening again [as if you were reliving it]?"). An overall score is calculated by summing weighted frequencies for each item, with a greater score indicating higher levels of PTSD symptomatology (range 17-85). Studies assessing the psychometric properties of the PCL-C have reported excellent internal consistency (α = .94), including the present study (α = .92), and good test-retest reliability (r = .82) (Blevins et al., 2015).

6.2.4.2.1.5. The Brief Trauma Questionnaire

The Brief Trauma Questionnaire (BTQ; Schnurr et al., 1999) (see Appendix N) is a measure of lifetime exposure to 15 types of traumatic events providing a full assessment of Criterion A of the DSM-5 criteria for PTSD (APA, 2013). The measure contains 10 questions (answered as "yes" or "no") derived from the Brief Trauma Interview (Schnurr et al., 1995) and assesses exposure to a potentially life-threatening event (criterion A1; e.g., "Have you ever been in a serious car accident, or a serious accident at work or somewhere else?"). The authors suggest answers of "yes" should be scored as positive indicating the participant has directly or indirectly experienced an event classed as traumatic by Criterion A of the DSM criteria for PTSD. A strong inter-rater reliability of the BTQ was reported by the authors of above α = .70 (range = .74-1.00).

6.2.4.2.2. Outcome Measures

6.2.4.2.2.1. Negative Emotion

The emotion questionnaire was created for this study to assess how the trauma story video used to expose participants to indirect trauma made participants feel directly after. The response form asked participants to indicate to what degree they felt sadness, anxious, uncomfortable, confusion, upset, concerned, control, anger, helplessness, disgust and frozen using a 4-point Likert

scale from 1 (*not at all*) to 4 (*extremely*). A higher score for each emotion indicated a higher intensity of the emotion experienced by participants. For an overall score of negative emotion, scores for each emotion where totalled and divided by eleven. The control item was reverse scored.

6.2.4.2.2.2. The Diary of Intrusions

The Diary of Intrusions-B (see Appendix BB) (modified from Arnaudova & Hagenaars, 2017) records the number of intrusive thoughts experienced daily by a participant, in the week following the experiment. The average amount of intrusions was calculated by summing up the total number of intrusions reported throughout the week and divided by seven. The original measure underwent modifications to facilitate online survey administration. Also, the adapted version omitted a question pertaining to the specific content of intrusive thoughts. Instead, it focused solely on the frequency, vividness, and emotional distress associated with these experiences.

6.2.4.2.2.3. Diary Compliance

The Diary Compliance single-item measure (Arnaudova & Hagenaars, 2017) rates the ability of the participant to complete the Diary of Intrusions on a scale of 0 (*not at all*) to 10 (*very much*).

6.2.5. Ethical Considerations

This study was granted ethical approval by the Faculty of Health, Psychology and Social Care Ethics Committee at Manchester Metropolitan University (EthOS Reference Number: 24159) (see Appendix CC). The British Psychological Society (BPS) Code of Human Research Ethics (BPS, 2019) was followed throughout this research project. The study adhered to General Data Protection Regulation and the Data Protection Act (2018), in accordance with good research practice.

In this study, the trauma video watched by participants was intended to induce mild short-lived discomfort and some intrusions. Previous studies have used films containing comparable content such as real-life traffic accidents (Holmes et al., 2004), and sexual and physical abuse (Buck et al., 2009) and reported that participants did not experience prolonged distress or intrusions after completing the experiment (Holmes et al., 2008). Also, the video used in the present study does not directly expose participants to a trauma (e.g., scenes from real-life accidents or traumatic events), but indirectly through the narrative account of a survivor. Therefore, the video used in this study does not differ from watching a news report or TV programme. Nonetheless, strategies were utilised to mitigate any untoward distress experienced by participants, such as excluding candidates who had been physically assaulted or robbed and experienced subsequent severe emotional distress, and informing participants through the recruitment material and PIS of the nature of the trauma video. Furthermore, participants were reminded through the PIS and consent form that they had the right to withdraw at any time whilst viewing the trauma video without explanation. Lastly, participants were provided with debrief sheets at the end of the experiment (phase one) (see Appendix DD) and follow-up period (phase two) (see Appendix EE) which contained contact information for mental health services which could offer support for participants.

Additionally, as participants were asked to disclose sensitive information (e.g., demographic information, psychological and personality characteristics), the PIS informed candidates about these questionnaires, allowing potential participants to refuse taking part in the study if they felt uncomfortable disclosing such information. Also, the PIS informed participants that all information was treated confidentially and anonymised.

6.2.6 Data Analysis Strategy

The analytical strategy comprised of three stages. Firstly, the author performed a series of two-way analysis of variances (ANOVAs) to test the interaction effect of participant status (MHP vs. non-MHPs) and condition (task group vs. non-task group) on trait characteristics (i.e., empathy, cognitive empathy, affective empathy, cognitive reappraisal, emotion suppression, rumination tendency, and PTSD) to explore potential differences between groups. To analyse associations between participant status, condition, and trait characteristics that were categorical variables (previous mental health issues [no, yes], previous experience of trauma [no, yes], family history of mental illness [no, yes]), a series of three-way log-linear analyses were conducted. Secondly, to explore the influence of trait characteristics on outcome variables (negative emotion and intrusions) whilst controlling for condition and participant status, two hierarchical multiple regressions were performed. To investigate the interaction effect of participant status and condition on negative emotion and intrusions, two separate analysis of covariance (ANCOVAs) were conducted. Trait characteristics previously identified as significant predictors of these outcomes (e.g., cognitive empathy, affective empathy, PTSD, emotion suppression and family history of mental illness) were included as covariates in the model for negative emotion.

6.2.6.1. Data Cleaning

Data cleaning procedures were conducted before analysis. No data-entry errors were identified. Missing values on the PCL-CL were found and missing at random [$\chi^2(30) = 34.98$, $p = .234$] comprising of no more the 1.2% of the data. Also, missing values on the ECQ were found and to be missing not at random [$\chi^2(52) = 100.56$, $p < .001$], two participants were deleted. Finally, missing values on the BTQ (a categorical variable) were found resulting in a further three

participants being removed. All missing values were replaced using Expectation-Maximisation techniques (Tabachnick et al., 2013). Univariate outliers were found for the measures of PTSD, empathy and emotions by calculating Z-scores and observing values greater than less than -3.29 or greater than 3.29 (Tabachnick et al., 2013) and were Winsorised (Tukey & McLaughlin, 1963). These were plausible values on the scales. No multivariate outliers were found.

6.3. Results

6.3.1. Differences in Trait Characteristics Between Conditions and Mental Health Professionals and Non-Mental Health Professionals

When testing the interaction effect of condition (cognitive-task group/non-task group) and participant status (mental health professional/non-mental health professional) on mean scores of continuous trait characteristics, homogeneity of variance was met for all tests ($p > .050$), except for overall empathy ($p = .049$) and cognitive empathy ($p = .032$). As the F-test is robust to variance in homogeneity in groups with equal sample sizes (Tabachnick & Fidell, 2013), the F-test was interpreted for the main effect of condition on overall empathy and cognitive empathy. However, to account for the unequal samples of MHPs vs non-MHPs, t-tests were performed to test significant differences in overall empathy and cognitive empathy between these two groups. Descriptive statistics and tests of significance are presented in Table 9.

The interaction effect of condition and participant status was non-significant for affective empathy, rumination tendency, PTSD, emotion regulations strategies (cognitive reappraisal and emotion suppression) and all demographic variables ($p > .050$). The main effect of participant status was found to be significant for cognitive reappraisal [$F(1,138) = 6.83$, $p = .010$, $\eta_p^2 = .05$], with MHPs scoring higher on these variables than non-MHPs. Additionally, the main effect of

participant status was found to be significant on scores of rumination tendency [$F(1,138) = 15.45$, $p < .001$, $\eta_p{}^2 = .10$], and emotion suppression [$F(1,138) = 10.42$, $p = .002$, $\eta_p{}^2 = .07$], with non-MHPs reporting higher scores of both variables compared to MHPs. Contrarily, the main effect of condition on all trait characteristics was found to be non-significant ($p > .050$). When testing for differences between MHPs vs. non-MHPs in overall empathy, a significant difference was found with MHPs scoring higher [$t(105.89) = 2.27$, $p = .025$, $d = .40$]. Similarly, when testing for differences in cognitive empathy, MHPs were found to have significantly higher levels compared to non-MHPs [$t(103.28) = 2.78$, $p = .006$, $d = .50$].

6.3.1.1. Loglinear Analysis Exploring Relationships between Participant Status, Condition, and Categorical Trait Variables

A three-way loglinear analysis was performed to explore associations between participant status, condition, and family history of mental illness. The likelihood of this model was ($\chi^2(0) = 0$, $p = 1.000$) indicating a saturated model. There was a significant two-way effect between participant status and family history of mental illness (Partial $\chi^2(1) = 5.88$, $p = .015$) with MHPs being more likely to have a family history of mental illness. Additionally, the relationships between participant status, condition and previous history of mental illness were tested. The likelihood of this model was ($\chi^2(0) = 0$, $p = 1.000$). The analysis revealed the removal of the main, two-way, and three-way effects did not significantly affect the model. There was a one-way effect of participant status which signified that a different amount of data was collected for each level of the variable (Partial $\chi^2(1) = 4.08$, $p = .043$). Finally, associations between participant status, condition and previous trauma history were investigated. The likelihood of this model was ($\chi^2(0) = 0$, $p = 1.000$). The analysis indicated an absence of

statistically significant interactions between all three variables or any combination of two variables.

6.3.2 Influence of Trait Characteristics on Negative Emotion

The author conducted a hierarchical multiple regression to test the effect of trait variables on negative emotion (see Table 10). To mitigate potential multicollinearity, the analysis solely employed subscales of empathy (cognitive and affective) rather than the overall empathy score. The first block of the regression model included participant status and condition which resulted in a significant model (p = .024) accounting for 3.9% of the variance in negative emotion, with participant status as the only significant predictor (p = .011). All trait characteristics were entered into the second block which was a significant improvement over model one accounting for 27% of variance in negative emotion scores (see Appendix DD). Cognitive empathy (p = .043), affective empathy (p < .001), PTSD (p = .018), emotion suppression (p = .046) and family history of mental illness (p = .049) were the only significant predictors of negative emotion, whereas participant status became a non-significant predictor when the variables were added. The final regression model was statistically significant and explained approximately 27% of the variance in negative emotion [Adj. R^2 = .27, F (11, 130) = 5.70, p < .001].

Table 10

Hierarchical Regression Results with Condition, Participant Status, Empathy, Rumination Tendency, Emotion Regulation, and Family History of Mental Illness as Predictors of Negative Emotion

Predictor	B	$SE\ B$	β	95% CI for B	R^2	Adj. R^2	ΔR^2	F	p
Step 1					.05	.04	.05	3.84	.024
Participant Status	-.26	.10	-.21	-.46, -.06					.011
Condition	-.10	.10	-.08	-.30, .10					.338
Step 2					.33	.27	.27	5.84	< .001
Participant Status	-.08	.10	-.06	-.27, .13					.463
Condition	-.05	.09	-.04	-.23, .13					.602
Family History of Mental Illness	-.20	.10	-.16	-.39, -.00					.049
Past Mental Illness	-.14	.10	-.12	-.33, .05					.146
Previous trauma	-.05	.09	-.04	-.23, .13					.586
PTSD	.21	.09	.21	.04, .38					.018
Rumination Tendency	.00	.00	.17	.00, .01					.060
Cognitive Empathy	-.04	.02	-.21	-.07, -.00					.043
Affective Empathy	.04	.01	.36	.02, .07					< .001

ER – Cognitive Reappraisal	.02	.04	.03	-.07, .01		.677
ER – Emotion Suppression	.08	.04	.17	.00, .16		.046

Note. ER = emotion regulation; *B* = unstandardised beta; *SE B* = standard error of *B*; β = standardised beta; 95% CI for *B* = 95% confidence intervals for *B*; R^2 = R-squared; Adj. R^2 = Adjusted R-squared; ΔR^2 = R-squared change; *F* = *f* value. Mental health professionals (0 = mental health professional; 1 = not a mental health professional), condition (0 = cognitive task; 1 = no cognitive task), family history of mental illness (0 = no family history of mental illness; 1 = family history of mental illness), past mental illness (0 = no past mental illness; 1 = past mental illness), and previous trauma (0 = no previous trauma; 1 = previous trauma) were dummy coded.

6.3.3. Influence of Trait Characteristics on Intrusions

The author also explored the effect of trait characteristics on the variance of intrusions reported at follow up. In the first block of the regression, participant status and condition were included which resulted in a non-significant model ($p = .916$). In the second block we added all trait characteristics which also resulted in a non-significant model ($p = .907$).

6.3.4. Interaction Effect of Condition and Participant Status on Negative Emotion

A two-way ANCOVA was performed to explore the interaction effect of participant status and condition on scores of negative emotion post exposure. Covariates including PTSD, cognitive empathy, affective empathy, emotion suppression, and family history of mental illness were accounted for as they were found to be significant predictors of negative emotion. The means and standard deviations are presented in Table 11. The homogeneity of variance assumption was met [$F(3,138) = .89$, $p = .481$]. The interaction effect of condition and participant status was non-significant [$F(1,133) = .22$, $p = .643$, $\eta_p^2 = .002$]. The main effects of participant status ($p = .163$), and of condition ($p = .682$) were also found to be non-significant.

6.3.5. Interaction Effect of Condition and Participant Status on Intrusions

To test the interaction effect of condition and participant status on intrusions we performed a two-way ANOVA. For means and standard deviations, see Table 11. The homogeneity of variance assumption was met [$F(3, 138) = .29$, $p = .830$]. The interaction effect of condition and participant status was non-significant [$F(1, 138) = .03$, $p = .875$, $\eta_p^2 = .00$]. Also, the main effects of condition ($p = .481$) and participant status ($p = .691$) were not statistically significant.

Table 11

Descriptive Statistics of Negative Emotion at One Time Point within Four Groups

	Mental Health Professionals			Non-Mental Health Professionals			
	Cognitive-task Group (*N* = 39)	Non-task Group (*N* = 44)	Total (*N* = 83)	Cognitive-task Group (*N* = 30)	Non-task Group (*N* = 29)	Total (*N* = 59)	Overall (*N* = 142)
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*
Negative Emotion	2.35(.59)	2.16(.63)	2.25(.61)	2.50(.60)	2.53(.55)	2.51(.57)	2.36(.61)

Table 12

Descriptive Statistics of Average Frequency of Intrusions within Four Groups

	Mental Health Professionals			Non-Mental Health professionals			
	Cognitive-task Group (*N* = 39)	Non-task Group (*N* = 44)	Total (*N* = 83)	Cognitive-task Group (*N* = 30)	Non-task Group (*N* = 29)	Total (*N* = 59)	Overall (*N* = 142)
	M(SD)	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*	*M(SD)*
Intrusions	.57(.99)	.57(.93)	.57(.95)	.66(1.30)	.62(.74)	.64(1.06)	.60(.99)

6.3.6. Summary of Results

In summary, MHPs reported higher levels of total empathy, cognitive empathy and cognitive reappraisal coping compared to non-MHPs and were more likely to have a family history of mental illness, and lower proclivities for rumination and emotion suppression coping compared to non-MHPs. In the hierarchical regression, the final model explained approximately 27% of the variation in negative emotion scores with significant predictors including cognitive empathy, affective empathy, PTSD, emotion suppression and family history of mental illness. When exploring predictors of intrusions at follow-up using the same model sequence, results found suggest the variables explored did not explain a significant portion of the variance in intrusions at follow-up. The interaction effect between condition and participant status (whilst accounting for significant predictors of negative emotion), as well as the main effect of the respective variables was found to be non-significant on participants' negative emotion immediately after exposure. The interaction or main effects of participant status and condition were also found to be non-significant on average frequency of intrusions. These findings suggest trait characteristics (i.e., cognitive empathy, affective empathy, emotion suppression, PTSD, and family history of trauma) are more influential in the rate of negative emotion post-IET compared to the effect of performing a concurrent task or being a mental health professional. On the other hand, the results suggest that neither the included trait characteristics, the cognitive task, nor participant status were significant predictors of intrusions reported in the one-week follow up which were associated with the trauma video.

6.4. Discussion

6.4.1. Summary of Findings

In this investigation we examined the efficacy of a cognitive task in modulating the development of negative affect following exposure to a trauma analogue and the frequency of intrusions during a one-week follow-up. Additionally, we explored potential group differences in these responses between MHPs and non-MHPs. In this analysis, we controlled for the influence of trait characteristics known to impact reactions to IET.

When testing for differences in trait characteristics between groups, we found MHPs reported a higher likelihood of a family history of mental illness, higher levels of overall empathy and cognitive empathy, and be more likely to use cognitive reappraisal to regulate emotions than non-MHPs. Conversely, MHPs were less inclined to ruminate and use expressive suppression, another form of ER. We then explored whether trait characteristics explained a statistically significant proportion of variance in the outcome variables (negative emotion and intrusions) above and beyond participant status (i.e., being a MHP or non-MHP) or using a cognitive task after IET. We found cognitive empathy, affective empathy, expressive suppression, PTSD, and family history of mental illness to be significant predictors of negative emotion in the final model. However, none of the variables tested (condition, participant status, trait characteristics) were found to be significant predictors of intrusions at follow-up.

Analyses revealed no significant interaction effect of condition and participant status on negative emotion when accounting for significant predictors (cognitive and affective empathy, PTSD, expressive suppression, and family history of mental illness) of the outcome variable. Additionally, neither condition nor participant status independently influenced negative emotion. These null findings

extended to intrusions, with no significant interaction or main effects observed for either condition or participant status. Collectively, these results suggest that the employed cognitive task and its interaction with participant status did not exert a measurable impact on reported negative emotion or intrusive thoughts.

6.4.2. Negative Emotion and Intrusions at Follow-Up Between Experimental and Control Group

In the present study, during IET, a concurrent cognitive task was introduced to buffer the development of negative emotion immediately after exposure and intrusions in a one-week follow-up. This experiment was based on findings in previous studies. For example, Stuart et al. (2006) explored the effect of introducing a concurrent cognitive task part way through a trauma video on the development of intrusions in a sample of non-clinical participants. The authors found that intrusions were significantly less common in parts of the film when the task had been performed. Also, they found introducing the concurrent task to have no significant effect on distress associated with the film reported by participants immediately viewing. Krans et al. (2009) compared the effects of using either a verbal enhancement task (e.g., verbalising feelings during film), or verbal interference task (e.g., counting backwards in threes from 958 during viewing) compared to no task when watching a trauma story. A non-significant main effect of condition was found on emotion (e.g., happiness, anxiety, horror, depression, and anger) immediately after watching the trauma film. When comparing frequency of intrusions, a non-significant difference was found between the verbal enhancement group and control. However, participants in the verbal interference condition reported fewer intrusions than in the control condition, and when compared to the verbal enhancement task (when controlling for demand

characteristics by only including participants who were not aware of the aim of the study).

To an extent, the findings in these previous studies are like those in the present study, as introducing a cognitive task when watching a trauma film was not linked to lower levels of distress or negative emotion immediately post-exposure. These findings could be explained as the aim of the task was to compete for WM resources and does not impact the emotional valence of the trauma story viewed (Stuart et al., 2006). On the other hand, in both earlier studies, introducing a concurrent cognitive task was found to disrupt the development of intrusions associated with the trauma story at follow up (not found in the present study). Differences in findings could be that the task used in the present study did not effectively demand WM resources leading to the desired interference with processing of the trauma story and encoding of perceptual information. For example, in the study by Krans et al. (2009), participants were asked to count backwards in threes continually with no breaks throughout the video, whereas participants in the present study counted how many times the survivor in the story said the word 'street' which was nine times across a 17-minute video meaning there would have been frequent periods were the participant just listened to the survivor's story. Therefore, by using a different task, which employed a participant's WM more frequently, may have led to a lower frequency of intrusions compared to the non-task group.

As cognitive tasks may be a simple yet effective method to prevent intrusions associated with IET, further research is warranted. However, in the context of clinical practice, MHPs must attend to several demands when learning about a client's trauma. A cognitive task used to mitigate intrusions needs to be effective but also allow the user to simultaneously maintain attentiveness to their

client and not distract the client. Future studies could aim to test the effect of other tasks with professionals. Furthermore, cognitive tasks could be conducted after IET, as in preceding studies with people who have experienced trauma directly. For example, completing tasks such as Tetris and word-games shortly after exposure to a trauma has been associated with reduced intrusions post-IET (Holmes et al., 2010; James et al., 2015), and after direct trauma exposure (Iyadurai et al., 2018). These methods have yet to be tested with professionals who experience IET but may offer a low cost and flexible intervention for professionals at risk of PTSD associated with IET (Iyadurai et al., 2018).

6.4.3. Impact of Professional Status and Trait Characteristics on Negative Emotion and Intrusions at Follow-Up

In the current investigation, we found participant status to have a non-significant effect on outcome variables (negative emotion and intrusions) as no significant differences were found between MHPs and non-MHPs. However, we found certain trait characteristics to explain the variance in negative emotion post-IET above and beyond whether a participant performed a concurrent task whilst watching the trauma analogue, or whether they were a MHP or non-MHP. Cognitive empathy and a family history of mental illness were significant predictors of lower negative emotion immediately after watching the trauma story. Conversely, PTSD, affective empathy, and expressive suppression emerged as significant positive predictors of negative emotion. These findings suggest that when exploring factors associated with post-IET distress, individual trait characteristics may be more important than participant status as an MHP or non-MHP. Still, as MHPs were found to be higher in cognitive empathy, and less likely to use expressive suppression as a coping strategy, it might be that through experiences in their profession (e.g., repeated IET, training, learning and utilising

different psychological models) they inherently develop protective ways of coping and are less reliant on factors which may be unhelpful in dealing with the impact of IET. Thus, future researchers could explore the development of ways of coping with IET in MHPs overtime, an area of investigation yet to be comprehensively studied.

Also, practical strategies could be employed in practice to help professionals use empathy and emotion regulation methods to best cope with the impact of IET. Given the finding that cognitive empathy predicted lower negative emotion following IET, while affective empathy predicted more negative emotion, targeted training in the nuanced application of empathy may prove beneficial. Specifically, emphasising the use of cognitive empathy, defined as understanding a client's perspective, while mitigating the experience of vicariously felt emotions (affective empathy), could serve as a protective factor. Additionally, the observed association between emotion suppression and elevated negative emotion post-exposure highlights the importance of educating professionals on diverse emotion regulation strategies, such as expressive suppression, cognitive reappraisal, and avoidance, and their potential consequences for emotional well-being. Training initiatives could highlight the differential impact of these strategies on managing personal emotional responses in the context of trauma-work.

Furthermore, we found that MHPs were more likely to report a family history of mental illness, similar to findings in a previous study which found MHPs to be more likely to have had a parent who was hospitalised due to mental illness compared to other professionals (e.g., physiotherapists, nurses, musicians) (Elliot & Guy, 1993). Still, the connection between this trait and experiencing less negative emotion after hearing about another's traumatic experience needs to be further explored.

On the other hand, participant status nor any of the trait characteristics examined were found to be significant predictors of frequency of intrusions associated with the trauma story. This contradicts the existing evidence-base, as indeed factors such as rumination tendency (Samson et al., 2022), expressive suppression (Singh & Hassard, 2021) and a previous history of trauma (Leung et al., 2022ba) have been associated PTSD symptoms related to IET in helping professionals, whilst cognitive empathy (Wagaman et al., 2015) and cognitive reappraisal (Măirean, 2016) have been reported as protective. These contradictions could be due to the differences in research design. In this study, reactions to a trauma story were tested using an experimental design utilising a trauma paradigm (a recording of someone discussing an experience of trauma). Therefore, the influence of factors which predict the development of intrusions when learning about other's trauma in real-world settings (e.g., a therapist working with a survivor of domestic abuse) may be diminished. Experimental settings, where participants view trauma narratives, may not replicate the long-term, sustained emotional engagement characteristic of real-world interactions with trauma survivors.

6.4.4. Strengths and Limitations

This section will discuss several strengths and limitations of the present study. Earlier experimental studies examining the impact of IET have used samples of non-MHPs (James et al., 2016) and not compared outcomes between MHPs and non-MHPs after exposure to trauma analogue. Therefore, differences between professionals and non-MHPs were yet to be explored. In the current investigation, a mixed sample of MHPs and non-MHPs was recruited to allow for comparisons between groups on trait characteristics (e.g., empathy, rumination tendency, emotion regulation predispositions) and outcome measures (i.e.,

peritraumatic negative emotion, and intrusions at follow-up associated with the trauma analogue). By recruiting both MHPs and non-MHPs, we were able to compare these groups and examine if they respond differently to IET, and explored differences in characteristics which have been previously reported to influence how people respond to IET.

Additionally, the use of an automatic randomiser to place participants into the cognitive-task group or non-task group aimed to ensure fair allocation of participants to different groups by eliminating researcher subjectivity in the process increasing the internal validity of the study and reducing selection biases. Using an automatic randomiser minimised the chance of the researcher allocating participants to groups based on preconceived biases. Furthermore, this study was the first to explore the effectiveness of a simple cognitive task to disrupt the development of negative emotion immediately post-exposure and intrusions at follow-up in mental health professionals. As previous research has reported that performing a task whilst watching a trauma analogue is associated with lower distress in participants post-exposure (e.g., Krans et al., 2009), further exploration resulting in the possible identification of a simple cognitive task to reduce distress in MHPs would offer a practical and cost-effective preventative intervention to protect MHPs when exposed to secondary trauma.

It is also important to acknowledge the limitations of the present study. Firstly, it could be argued that the use of an actor as a trauma survivor in the video used in the experiment may have influenced the difference in distress found between MHPs and non-MHPs. MHPs, by virtue of their experience working with trauma survivors, may be more accustomed to distinguishing between general distress associated with real-life trauma and the portrayal of distress by an actor, and therefore were less affected than non-MHPs. Future studies including MHPs

and other professionals who work with trauma survivors should aim to use accounts of trauma from real-life survivors to increase the ecological validity in the study.

Secondly, as this experimental study was hosted online, we cannot know for certain whether participants in the experimental condition did complete the cognitive task (i.e., counting how many time the survivor said the word street), and therefore the impact of performing a cognitive task whilst exposed to indirect trauma may have not been truly represented in the results. Still, as a participant was asked to count 'inside their mind' even when using a laboratory setting the researcher may still not be able to verify if the task is completed. In the present study we asked participants to record the frequency of the word street immediately after watching the video aiming to overcome this limitation. Furthermore, the chosen cognitive task may not have provided the desired effect. Some previous studies have reported the rate of intrusions post-exposure to be comparable between a verbal-task condition and no-task control condition when using a concurrent verbal task; whilst many have found completing a concurrent visual-spatial task to result in less intrusions compared to no-task control (Bourne et al., 2010; Logan & O'Kearney, 2012). Therefore, a cognitive task with higher attentional demands may have been more effective in buffering post-IET distress.

Despite the recognised need for interventions that minimise participant distraction, the present study aimed to evaluate a task that would be both efficacious and minimally disruptive to engagement with the trauma narrative. This focus aligns with the practical considerations of real-world clinical application, where the intervention should allow MHPs to fulfil their clinical duties while mitigating the risk distress linked to secondary trauma. Future research could explore the use of other cognitive tasks to offset the development of distress post-

IET. For example, tasks that draw upon working memory, a cognitive faculty frequently engaged in professional practice, may be leveraged to mitigate the impact of IET when working with clients. For instance, standardised protocols or assessments routinely administered by professionals upon a client's disclosure of traumatic experiences could serve this purpose. Conversely, the efficacy of post-exposure CITs, such as Tetris, which has demonstrated promise in reducing the risk of psychological distress in individuals directly exposed to trauma (Iyadurai et al., 2018), warrants empirical investigation in this context. Implementing the CIT following exposure would minimise potential distraction during client interaction.

Finally, there is a limitation in how negative emotion was recorded within the experiment. As participants' negative emotion was not assessed before IET, it cannot be assumed that participants' rate of negative emotion was directly related to IET, or that they experienced a change in emotion pre and post exposure. Subsequent research employing experimental methodologies to examine the impact of IET could address this limitation by researchers measuring negative emotion before and after exposure.

6.5. Chapter Summary

The present study employed a randomised experimental design to investigate the interactive effects of a concurrent cognitive task and participant status (MHPs vs. non-MHPs) on the development of negative emotion and intrusions following IET. Furthermore, the study examined the influence of pre-existing trait characteristics, known to be associated with post-IET distress, on negative emotion and intrusions post-exposure. The findings indicate that performing a concurrent verbal task whilst watching a trauma story or participant status did not influence the experience of negative emotion directly after exposure or the development of intrusions associated with the trauma analogue in a one-

week follow up. However, our results do suggest that specific characteristics may influence negative emotion experienced directly after secondary trauma including cognitive and affective empathy, expressive suppression, PTSD, and family history of mental illness. Overall, further investigation is warranted to explore the potential of different cognitive tasks to prevent the onset of distress when exposed to indirect trauma, particularly in MHPs who are likely to experience work-related IET and at risk of associated distress. Additionally, future research is warranted to explore the possible influence of these characteristics on the development of post-IET distress in MHPs using experimental and longitudinal research designs.

Chapter Seven: General Discussion

7.1. Chapter Introduction

In this chapter the author presents a culmination of this thesis, presenting a discussion of the key findings and their contribution to the secondary trauma literature. This chapter begins by revisiting the main aims and objectives of the research project. Subsequently, a concise summary of the findings from each empirical study included within the thesis is presented. Following this, a critical analysis of these findings in respect to their theoretical and applied contributions is offered, including the implications for our understanding of knowledge within this specific field. Then, a theoretical framework is presented which combines findings from this programme of study and previous research illustrating how IET, moderated by extra-personal and intrapersonal factors, contributes to post-IET distress. Finally, a discussion of strengths and limitations will be provided, concluding with recommendations for future research efforts.

7.2. Summary of Thesis and Main Findings

This section briefly summarises the key aims and findings presented in the preceding studies in the thesis. The background chapter of this thesis reviewed the previous evidence exploring factors which may influence the onset of adverse reactions to indirect exposure to trauma (IET) and possible mechanisms to manipulate the development of subsequent intrusions after exposure. The available evidence-base contains gaps in understanding of factors influencing reactions to IET, with researchers reporting contradictory findings and some variables left unexplored (e.g., prior exposure stress, IET medium). Also, the previous literature offers limited insight into potential strategies for professionals to prepare for the adverse effects of secondary trauma. Furthermore, researchers have yet to investigate the efficacy of previously identified methods in mitigating

both immediate and long-term aversive reactions to IET within the context of exposure to others' traumatic narratives. Additionally, previous investigations are predominantly cross-sectional or have conducted qualitative investigations with small homogenous samples of participants from a single helping profession. To begin, a qualitative study was undertaken to explore the perceptions of a wide range of helping professionals who work with trauma survivors on what influences some experiences of IET to particularly distressing and what can protect professionals in these events. Then, two experimental studies were developed to examine the influence of factors yet to be explored in the development of post-IET distress and test the effect of using a cognitive task to manipulate the development of intrusions after IET.

In Study One, the author aimed to explore influences which make some experiences of IET particularly distressing and what factors may protect and prepare professionals for such events. Through this study, the author intended to reconcile inconsistencies in previous quantitative research on post-IET distress and to investigate the potential role of preparing for IET, an understudied area in the literature. A large sample of professionals from a variety of occupations who work with trauma survivors was recruited to collect a diverse range of perceptions. The author's primary aim was to gather rich qualitative data from helping professionals. This data would allow for an in-depth exploration of the factors that either protect or place these professionals at risk of distress when encountering IET . Furthermore, the study sought to examine the contextual aspects and underlying mechanisms associated with the factors (e.g., empathy, social support) previously identified in quantitative research. In the results, professionals perceived a host of factors to influence the development of post-IET distress such as experiences which challenge professionals' own beliefs, and the extent

professionals feel prepared and are equipped with effective coping strategies. Notably, the impact of certain factors appeared to be paradoxical. For example, empathy, a crucial quality for effectively supporting survivors of trauma, was also identified as a potential risk factor for emotional strain in some professionals due to their deep engagement with the survivor's experiences. From these findings, it was concluded that previous studies have not sufficiently considered factors identified in this investigation and their possible influential role in the development of post-IET distress.

In Study Two, the author went on to investigate factors yet to be examined in the development of distress post-IET using an experimental design. As previous cross-sectional studies had reported post-IET distress in both professionals who work directly with trauma survivors or only view traumatic materials, reactions to these difference types of exposure were explored. Additionally, in earlier studies, perceived stress has been linked to higher levels of psychological distress associated with IET. Participants in the first study of this thesis echoed these findings, highlighting the challenges of stress heightening the risk of post-IET distress. Consequently, this study investigated the potential influence of an acute psychosocial stressor experienced prior to IET on the subsequent development of stress, emotions, and intrusions at follow-up. Results found that experiencing a psychosocial stressor pre-exposure did not lead to higher levels of subjective stress or emotions post-exposure, or intrusions at follow-up. Additionally, non-significant differences in stress, emotions or intrusions were found between participants who learnt about another's traumatic experience through watching a video of the person speaking compared to those who read a transcript of this video. It was concluded that professionals who experience IET through traumatic material rather than witnessing the pain of the survivor directly may be similarly at

risk of adverse reactions to IET, and more research examining the impact of acute stressors on post-IET is warranted.

Finally, in response to the lack of preventative methods identified to buffer the impact of IET, in Study Three the author explored the use of a simple cognitive task to offset the development of intrusions found previously to be effective in experimental studies with non-helping professional samples. A mixed sample of mental health professionals (MHPs) and non-MHPs was recruited to make comparisons between these two groups. Furthermore, the author measured a set of trait characteristics formerly reported to influence the onset of post-IET distress to account for the potential influence of these factors when exploring the effect of the cognitive task. The results showed a non-significant difference in negative emotion between MHPs and non-MHPs, and no effect of whether participants performed the cognitive task whilst watching a trauma video on negative emotion immediately after IET or in the average frequency of intrusions at follow-up. However, certain trait characteristics were found to predict negative emotion post-IET including components of empathy (cognitive and affective), PTSD, expression suppression (type of emotion regulation) and having a family history of mental illness. Based on our findings, we posit that trait characteristics, rather than participant status (MHP/non-MHP) or competing a cognitive task employed immediately following IET, emerge as more significant immediate predictors of an individual's reaction to IET, at least in the initial stages of distress development following IET.

7.3. Theoretical Contributions of the Thesis to Knowledge

In Chapter Three, several research aims were presented which the author set out to explore through this thesis. In this section, a discussion of the key

findings in respect of these aims, alongside the contribution these findings offer to the secondary trauma literature, is presented.

7.3.1. Empathy, a Double-edged Sword?

The findings from this thesis challenge pre-existing ideas that empathy is a universally adaptive concept aligned with enhanced well-being (Morelli et al., 2015; Winter et al., 2022). This thesis aimed to explore the influence of empathy in the experience of IET and associated adverse reactions using mixed methods. Within the revised theory of STS, empathy occupies a central position as it is posited that a professional's empathetic response to secondary trauma increases their risk of personal distress, and that without empathy, STS cannot develop (Ludick & Figley, 2017). However, empathy is seen as a crucial skill in helping professionals leading to higher positive patient outcomes and treatment adherence (Airagnes et al., 2014) and an effective client-clinician therapeutic relationship (Nienhuis et al., 2018). Therefore, empathy is paradoxical in nature, as it possesses the potential to be both a protective and a detrimental force (Salston & Figley, 2003). Researchers have previously explored the connection between empathy and STS and reported mixed results. For example, Turgoose et al. (2017) found that dispositional empathy was not associated with STS in police officers working with survivors of rape, reflecting findings in another study (Rayner et al., 2020) with social workers and psychologists. In that study, empathy was found to be a non-significant predictor of STS, however, it was found to be a moderator of a positive relationship between trauma caseload and STS. On the contrary, a study of nurses found that empathy was related to higher levels of STS (Ratrout & Hamdan-Mansour, 2020). The conflicting findings in the empathy literature could be related to the divergent conceptualisations of the construct used in studies. Although some have proposed a unitary framework for empathy (e.g., Bridger et

al., 2020; Mottaghi et al., 2020; Ratrout & Hamdan-Mansour, 2019), others have adopted a multifactorial approach, positing distinct cognitive and affective components (e.g., Juczyński et al., 2022; Losung et al., 2021). Duarte et al. (2016) reported that empathic concern and personal distress (described as affective empathy components) were significant predictors of STS explaining 8% of variance, but found no significant relationship between cognitive empathy and STS. These findings are like those in a study with a sample of cancer healthcare professionals which found a positive significant correlation between affective empathy components and STS (Hunt et al., 2019).

In the present thesis, different types of empathy were found to be related to how professionals respond to IET. In Study One, a range of helping professionals viewed empathy to be vital when working with trauma survivors and differences in how empathy was defined were apparent with some professionals viewing an empathic connection as perspective taking, whilst others believed a true connection was when they are immersed in the client's world and feelings. These definitions resonate with cognitive (e.g., perspective taking) and affective (e.g., emotional immersion) components of empathy (Decety & Jackson, 2004; Singer & Lamm, 2009). The chance of empathy being a vehicle for personal distress was viewed to depend on how empathy was utilised, with actions of stepping into the shoes of a client being dangerous for a professional as the client's and professional's experience become merged. Furthermore, in Study Three, affective empathy emerged as a significant positive predictor of negative emotion following exposure, whereas cognitive empathy demonstrated a negative predictive association. These findings are consistent with those in previous studies (e.g., Duarte et al., 2016; Hunt et al., 2019; Wagaman et al., 2015), suggesting that affective empathy may lead to more adverse reactions in response to IET,

whereas cognitive empathy may support coping. Therefore, despite literature highlighting the integral need for helping professionals to be empathic when working with trauma survivors (Elliot et al., 2018; Mlotek, 2013), this thesis highlights the need for careful training and use of empathy by professionals to allow them to connect with their clients whilst protecting themselves and maintaining a psychological and emotional boundary. Nevertheless, affective empathy is argued to be an automatic response to viewing another in distress (Szuster & Jarymowicz, 2020), and evidence in the current thesis found high levels of both cognitive and affective empathy in MHPs and non-MHPs alike. Therefore, how the empathiser deals with empathic reactions to trauma survivors needs to be investigated further. Future research should move beyond a binary distinction between cognitive and affective empathy and examine empathic reactions as a process combining both affective and cognitive components and understanding how these are regulated. For example, professionals experiencing emotions triggered by affective empathy may subsequently employ the cognitive component to adopt the perspective of the survivor while maintaining self-other differentiation (Hunt et al., 2019). Furthermore, some authors have argued that a professional experiences personal distress when they identify with the emotions of another (Decety & Lamm, 2009). Potentially, over-identification with the client might lead to stronger emotional reactions in the professional which are harder to regulate leading to greater personal distress (Grynberg & Konrath, 2020). Examining the intricate relationships between empathy, client identification, and emotion regulation within the context of IET may offer an avenue for elucidating the mechanisms through which empathic connection with clients may precipitate psychological distress among helping professionals.

Moreover, if cognitive empathy is indeed more protective for professionals when empathising with their clients, the potential costs of this need to be explored. Previous research has found that people are naturally inclined to avoid cognitive work (Hosking et al., 2016; Kool et al., 2010) and in the context of empathy likely to avoid using it if they feel the costs will outweigh the benefits, especially when empathising for a long duration, even when tasked to help the person in distress. However, a higher sense of empathy efficacy leads to a higher likelihood for one to empathise (Cameron et al., 2019; Scheffer et al., 2022). Therefore, the potential of using cognitive empathic strategies may be influenced by the perceived cognitive cost and one's perceived empathic efficacy. In the present thesis, professionals spoke of regulating empathy by setting boundaries between themselves and their clients viewing this strategy as protective against post-IET distress. This may have been a tactic to use empathy in a cost-effective way which allows the professional to connect with their client's experience but not feel that they are over-using personal resources. Building on existing research, this thesis identifies a critical gap in our understanding of how professionals can cultivate protective yet sustainable forms of empathy.

7.3.2. You Can't Change the Event, but You Can Manage Your Beliefs

This thesis advocates for a reconceptualisation of strategies to alleviate the negative consequences of IET by focusing on modifiable professional beliefs and behaviours. In this thesis, the author proposes that reorientating methods to mitigate adverse reactions to IET to target professionals' beliefs and behaviours which are within their control. As IET is inherent in occupations which support trauma survivors (Molnar et al., 2017), efforts have been made to identify variables which moderate the relationship between exposure and personal distress (e.g., PTSD symptoms) (Hensel et al., 2015; Xu et al., 2024). The evidence to date

presents an unclear picture due to conflicting findings and a lack of exploration of how these variables interact with the event of IET to result in adverse reactions. In the present thesis, the importance of one's beliefs about the event and oneself and individual characteristics (e.g., empathy, emotion regulation) were highlighted to be influential in the development of distress. In Study One, participants reported events of exposure which challenged their assumptions of personal safety and benevolence in the world to be most distressing, and that feeling prepared including having prior trauma-informed training, an expectation of exposure to IET and possible personal reactions, and a commitment to professional ethos to be protective. These findings demonstrate how the event of IET can interact with a person's beliefs of the event, their ability to cope, and what their role is when exposed. In Study Three, significant predictors of negative emotion included empathy and emotional regulation (ER), again showing how one interacts with an event of IET to influence personal distress. Furthermore, in Study Two it was found that experiencing a psychosocial stressor before exposure, or changing the type of IET from a video of a survivor discussing their experiences to a transcript of this recording was not associated with differences in experiences of subjective stress, negative emotion, or intrusions post-IET. These findings highlight that external variables may be less important in determining reactions to IET compared to intrinsic ones.

As IET is central when working with trauma survivors or traumatic material, it is important to focus on factors which we can change to buffer personal distress. This approach can be demonstrated using the A-B-C model (Dryden & Branch, 2008) which describes how one's beliefs can influence distress experienced after an adverse event. In therapeutic work using this model, the event (A) is seen as unmalleable, and thoughts and beliefs (B) are changed from irrational to rational to

counter the unwanted emotional or behavioural reactions (C) associated with the event (Davis & Turner, 2020). This thesis suggests that working with professionals to modify beliefs associated with IET and their perceived competency of dealing with exposure may support effective adaption to IET that equates to reduced personal distress. Indeed, higher levels of negative beliefs about self and the world after trauma exposure have been linked to higher levels of PTSD symptoms related to IET and having a greater level of IET self-efficacy to offset distress (Cieslak et al., 2013), suggesting cognitive processes mediate the impact of IET. Additionally, research could explore the impact of beliefs linked to a professional's role in trauma work including the use of empathy. For example, professionals in Study One perceived different beliefs around empathy to influence a professional's distress. Potentially moving away from beliefs that an empathic connection is 'being immersed in a person's experience' to a new understanding that empathy is 'used to gain insight into another's experience from their perspective' could be protective for professionals who experience IET.

The role of appraisal and resulting coping has been explained in theories of stress reactions in the wider literature. Folkman and Lazarus (1984) proposed that appraisals of an aversive event play a key role in how those exposed respond, which in some instances leads to maladaptive coping (e.g., avoidance) and prevents the generation of adaptive appraisals (Ehlers & Clark, 2000). Interestingly, in the IET literature, the association between appraisal and resulting negative and positive effects has been related to empathic engagement, as through empathic engagement in trauma work leads to changes in cognitive schemas of a helping professional (Juczyński et al., 2022). Additionally, short-term and long-term reactions to IET have been associated with some positive outcomes such as vicarious post traumatic growth mediated by perceived client growth

(Cohen & Cohen, 2013). Advances in research could investigate the potential protective effects of interventions designed to modify professionals' beliefs about IET, their ability to cope and perceptions of their clients. By facilitating adaptive cognitive reframing through psychoeducation and training, and utilising cognitive (rather than affective) components of empathy it may be possible to mitigate the development of personal distress in response to IET.

Previously, researchers have reported that how a person evaluates (appraises) an event influences the utilisation of certain ER strategies (e.g., problem-focused, emotion focused) and emotion experienced (Schmidt et al., 2010). In Study Three, expressive suppression was linked to higher negative emotion post-IET, suggesting a focus on suppressing emotions could lead to further distress post-IET. In previous studies, using expressive suppression has predominantly been cited as a predictor of higher levels of PTSD symptoms (Seligowski et al., 2015) and higher rates of stress (Roos et al., 2018) supporting results in Study Two. However, there is some evidence, that expressive suppression is sometimes adaptive in buffering strain experienced by work-related demands (Shraub et al., 2011) and is more successful at regulating emotion than cognitive reappraisal in the moment of exposure to a stressor (Yuan et al., 2015). The employment of experimental designs to investigate the differential utilisation of ER strategies among helping professionals who experience IET and the potentially mediating/moderating role of type of empathy, could advance our understanding of commonly employed ER mechanisms in response to such stressors. Longitudinal research could illuminate the short and long-term consequences of various ER strategies on psychological distress outcomes following IET. Moreover, exploring the interplay between event appraisal, emotion regulation, and emotional reactions

to IET could provide valuable insights into the mechanisms underlying the development of post-IET distress.

Furthermore, exploring how professionals perceive their level of control within the context of trauma-work may influence how they respond to IET. In Study One, professionals reported a sense of losing control and being unable to manage one's own emotions and those of the client to increase distress when faced with IET. Therefore, the way professionals respond to IET and their endorsement of specific emotion regulation strategies may be contingent upon perceived control within the workplace (PCW). Although research has indicated a correlation between low PCW and elevated risk of STS (Kulkarni et al., 2013), empirical evidence exploring this relationship remains limited. Conversely, the broader literature consistently demonstrates a positive association between heightened perceived control and the utilisation of adaptive emotion regulation strategies, concurrently reducing anxiety levels (Zhao et al., 2021). These findings suggest a potentially reciprocal interplay between perceived control, emotion regulation, and personal distress. Consequently, professionals exhibiting lower perceived control, possibly attributable to limited control over work-related demands, may be predisposed to employing maladaptive coping mechanisms, such as expressive suppression, which could exacerbate distress and further erode perceived control, thereby creating a cyclical pattern. Therefore, by targeting professionals' beliefs about their control, this cycle could potentially be disrupted offering an innovative way of preventing personal distress in professionals exposed to secondary trauma.

7.3.3. Demands on Self-Regulation

Based on the findings of this thesis, it is argued that a comprehensive understanding of emotion regulation in response to indirect trauma exposure

necessitates a holistic approach that considers the interplay of individual differences, environmental stressors, and the depletion of internal resources. The current evidence base on risk factors of post-IET distress has focused on generally unchanging individual characteristics (e.g., coping style, empathy, ER) (Singh et al., 2020). This approach often examines these factors in isolation, neglecting how dynamic environmental influences might interact with and potentially modify behaviours associated with these intrinsic characteristics (e.g., coping style, empathy, ER) in the context of IET. This method does not acknowledge the complex environment and multitude of stressors faced by helping professionals when supporting trauma survivors (e.g., workload, interpersonal conflicts) (Rushforth et al., 2023) which may moderate professionals' coping in the face of secondary trauma. This thesis aimed to explore how additional stressors influence personal reactions to IET. Although from our findings we cannot fully determine whether stressors do enhance risk of post-IET distress, the author found that the combination of IET and other stressors leads to consistent levels of stress and may impede professionals' mental health wellbeing in the long-term. For example, in Study One, participants perceived having multiple job demands (e.g., repeated exposure to trauma, interpersonal conflicts) to result in personal resources becoming increasingly limited reducing their ability to provide support for trauma survivors and be more prone to post-IET distress. In Study Two, participants exposed to a psychosocial stressor exhibited persistently elevated subjective stress levels following the experimental stressor and post-IET, compared to baseline scores. In the same study, participants who experienced a relaxation task before IET, reported similar levels of subjective stress compared to participants in the psychosocial stressor group after IET. These findings suggest that IET is a stress-inducing event, and that people who face other stressors

before IET may experience a consistently elevated level of stress. In summary, this thesis posits that professionals have finite resources which are consumed in trauma work and influence one to experience consistent stress. If these resources are not replenished, a professional becomes more at risk of experiencing personal distress. Indeed, in a single study with hospital social workers, professionals already depleted by their work were found to react with greater intensity to future IET (Badger et al., 2008) demonstrating the association of a reduced availability of personal resources resulting in a lower ability to regulate oneself in response to IET.

To explain this interaction between demands and resources in the context of trauma work, the Job-Demands and Resources Model (JDRM; Demerouti et al., 2001) can be utilised. The JDRM argues that employee wellbeing results from an imbalance between positive and negative job characteristics (Bauer et al., 2014). In the context of IET, this thesis proposes that trauma work demands a professional to not only deal with general strains faced by professionals in high intensity occupations but adds a layer of additional complex demands inherent in trauma work. These complex demands are linked to the sharing of trauma between client and practitioner. Examples of these specific demands presented in the thesis include learning about traumatic experiences of others can evoke personal connections, can trigger strong emotional responses, and may disrupt a professional's self-perception and worldview. Furthermore, the crucial role of the professional as an empathic source of support places significant cognitive and affective demands on them. Consequently, the intricate nature of these demands within trauma work necessitates the utilisation of additional internal resources by a professional to ensure their continued effectiveness in trauma work.

The link between these risk factors and post-IET distress could be that they require self-control, a central and limited resource, to be managed as they demand impulse control (Baumeister et al., 1994). Self-control requires resources that run on "mental fuel" (Inzlicht & Friese, 2019, p.371) and when this inner resource is used, this leads to ego-depletion that leaves further efforts of self-control under resourced and one less able to self-regulate (Baumeister, 2014). Therefore, as professionals are engaged in repeated self-regulation in response to stressors in trauma work, they use up internal resources leading to a lower stock of resources to cope with future stressors. In this thesis, it was apparent that stressors (IET and other work demands) are experienced as stressful and regulation was perceived as crucial to coping with the multitude of stressors placed on a professional in trauma work.

As in the previous research (e.g., Owens-King, 2019), in Study One, self-care was found to be a vital means to maintain one's wellbeing in trauma work, however the role of self-care has yet to be sufficiently explored including how participating in self-care activities offsets the impact of secondary trauma. One explanation could be that through self-care practice, a professional is able to replenish resources in order to continue in their work. This is obtained through different routes including psychological, physical, interpersonal modalities. In this thesis, it became apparent that professionals who engage in cognitive-orientated coping and regulation were less likely to experience adverse effects which could result from these processes being less resource-costly, compared to emotionally driven strategies (e.g., affective empathy, expressive suppression), and offer professionals a way to develop new perspectives of trauma which help replenish personal resources used in exposure to secondary trauma. Additionally, professionals spoke of physical exercise and social support (peers, supervision,

personal therapy) as methods to replenish after trauma work. This thesis contends that self-care practices equip professionals with the ability to re-regulate and re-position themselves in relation to the traumatic narratives they encounter. These practices encompass a spectrum of strategies. Some professionals may utilise detachment strategies (Samson et al., 2022; Whittenbury et al., 2025), such as engaging in physical activities or compartmentalising their work experiences. Alternatively, professionals may seek to process their emotional and psychological reactions through consultation with colleagues, supervisors or personal therapy. Regardless of the specific approach, the ability to disengage from the immediate emotional impact of trauma and reframe their perspective allows professionals to replenish depleted resources used during IET. This, in turn, fosters renewed emotional regulation, enabling them to continue providing effective support to their clients. Overall, this thesis sheds light on the complex interactions between practitioner, secondary trauma and other job-stressors and how self-care practice is vital in sustaining professional effectiveness in trauma work whilst protecting personal wellbeing.

7.3.4. The Context Influences Individual Risk Factors

The findings from this thesis suggest distress experienced in response to trauma is influenced by a collection of factors found within trauma work including IET, client and professional characteristics, and organisational factors. To date, the research on factors associated with post-IET distress has presented an unclear picture due to inconsistent findings (Iversen & Robertson, 2021; Xu et al., 2024). Researchers have commonly used cross-sectional designs limiting the ability of determining cause-effect relationships. This thesis contributed to the existing evidence by using an innovative experimental design. This design facilitated the direct assessment of the independent variable, IET, on designated

outcome variables (subjective stress, emotions, and intrusions). In Study Two and Three a trauma analogue was employed to experimentally expose participants to IET to reflect how professionals experience IET in their work (e.g., listening to a trauma survivor speak about their experiences). In Study Two, participants experienced increases in subjective stress, anxiety, and anger between pre and post exposure, and reported experiencing intrusions related to the trauma analogue. Furthermore, this experiment allowed the author to investigate the potential moderating effect of a pre-exposure psychosocial stressor and type of trauma medium (video versus transcript) on post-exposure outcomes which resulted in non-significant differences in outcome variables (post-IET). These findings suggest the experience of IET alone does indeed have an emotional and psychological impact as reported in previous cross-sectional studies (e.g., Makadia et al., 2017) . However, in Study Three, certain trait characteristics (i.e., empathy, emotion regulation) were found to predict negative emotion immediately after IET, however did not predict the average frequency of intrusions at follow-up. This latter finding conflicts with previous research which report positive associations of particular trait characteristics including affective empathy (Wagaman et al., 2015), and expressive suppression (type of emotion regulation) (Singh & Hassard, 2021) with PTSD symptoms related to IET (including intrusions). Additionally, in Study Three, a previous history of trauma did not predict negative emotion immediately post-exposure or intrusions at follow-up, which conflicts with previous findings (Leung et al., 2022b), although did find PTSD to predict negative emotions after exposure.

Through examining the impact of IET and trait variables through an experimental design and comparing our findings to studies conducted in real-life settings, it appears that in a more controlled setting such as an experiment the

impact of IET and associated risk factors is reduced. Therefore, in this thesis the author posits that distress experienced due to IET may develop through a combination of factors found within trauma work including IET, client and professional characteristics, and organisational factors. This relates to a seminal concept of secondary trauma, the Ecological Framework of Trauma (EFT; Dutton & Rubinstein, 1995). The EFT postulates the occurrence of STS to depend on four elements: exposure to secondary trauma; coping strategies employed to cope with IET; post-traumatic reactions, and personal factors including trait characteristics and work-place factors. Previously, studies have focused on individual factors without an acknowledgement of the potential interplay of factors across these four domains in contributing to the development of post-IET distress (Xu et al., 2024) which may have influenced the presence of conflicting findings within the evidence base. Indeed, previous research has found an array of organisational factors including peer support, supervision, organisational culture and balanced and diverse caseloads to influence the impact of post-IET in MHPs (Sutton et al., 2022). Future studies could explore the relationships between different influences (individual, organisational, IET characteristics) to explore the nature of IET-distress holistically. Therefore, the findings within this thesis provide greater insight into the complex nature of the development of post-IET distress beyond the existing literature.

7.3.5. Traumatic Material May Be Enough to Elicit Distress

From the finding in this thesis, the presence and possible adverse impact of secondary trauma is underestimated in some professional populations resulting in these professionals being underprepared and at risk of psychological distress (Ludick & Figley, 2017). In particular, distress experienced by those who do not meet trauma survivors but learn about events through materials and research

activity (Berger, 2021). For professionals who work with trauma survivors in person, they not only learn about the traumatic event but are also exposed to other stimuli including a survivor's facial expressions and tone of voice. This exposure may evoke a more intense empathic response (De Waele et al., 2020; Enticott et al., 2008) compared to individuals encountering secondary trauma through other mediums. Therefore, in this thesis the author set out to examine differences in stress, emotions, and intrusions related to IET based on two different trauma presentations (watching a video of a trauma survivor narrating their experiences versus reading a transcript of this video) and found a non-significant difference in the outcome variables between conditions. These findings suggest that learning about others' traumatic experiences, whether through in-person accounts or written material, may equally influence similar levels of distress in those exposed.

There is little in the available evidence base to which one can compare the findings of the current thesis to, as researchers have under-explored reactions to IET presented in different mediums. In one ethnographic study, researchers reported the impact of viewing materials related to suicide including suicide notes, media accounts, pathology, and forensic reports and images, and eye-witness testimonies (Fincham et al., 2008). The researchers described experiencing a preoccupation with suicide, and when in the outside world, identifying possible suicide locations. They also spoke of having sleep disturbances, dreams and intrusive thoughts of suicide. The impact of the research process led the researchers to implement an informal debriefing procedure to offset the negative impact of viewing trauma materials. Although this study reports experiences of a small group of people in a specific context, and acute reactions to IET, it highlights the possible negative impact of viewing traumatic material.

More recent research has recently examined differences in subjective stress and emotional reactions to different types of skeletal evidence, to experimentally investigate the impact of viewing evidence in a mock-juror setting (Fawcett et al., in preparation). The study found that all types of material (3D computer model, 3D printed model, and autopsy photographs) of skeletal evidence provoked stress responses and emotional reactions in participants with stress reactions similar across the three modalities and heightened emotional reactions in the 3D printed model and photograph conditions, compared to the 3D computer-based model. Additionally, Fawcett et al. (under review) observed stress and emotional responses in relation to reading about the case, and being presented with the evidence. Participants' emotional responses were found to be significantly more intense after being presented with the skeletal evidence as opposed to reading about the case (i.e., a summary of the murder and other information). Stress levels were also significantly higher after viewing evidence compared to reading about the case, in all conditions apart from the computer model. This research demonstrates that viewing traumatic material may induce different rates of emotional and stress responses, with some modalities causing heightened reactions. These findings conflict with those in Study Three, where reading about a traumatic event was found to be equally as distressing than when exposed watching a video of a survivor talking about their experience. A potential explanation for the divergent findings between Study Two and that of Fawcett et al. (under review) could be due to methodological differences. Fawcett et al.'s use of authentic assault-related evidence may have been more distressing than when reading a summary of the murder resulting in heightened emotional and stress responses in participants. As participants in Study Three either watched a video or read a transcript of an account of trauma, these mediums may have not had the

potential to elicit different stress and emotional responses. Also, importantly, the study by Fawcett et al. sheds light on the impact of IET in jurors, a population which previously has been understudied. In this thesis, we are one of few to examine reactions to different types of IET medium in a controlled setting. Through synthesising evidence in Study Two and the broader literature, it is argued that viewing traumatic material may cause reactions similar to those reported in previous studies with participants who work with trauma survivors directly, particularly in the immediate aftermath of exposure although these reactions may be augmented by the type of material provided.

7.4. Clinical Implications

7.4.1. Impact of Reactions to IET and Importance of Self-Care

The findings of this thesis suggest that learning about trauma either through being told directly about the experience by the trauma survivor, or reading an account of the traumatic event without the survivor present can lead to similar levels of distress in those exposed. These findings can inform clinical efforts to protect professionals from experiencing personal and professional negative outcomes related to exposure to secondary trauma when working in helping professions. Practitioners should be aware of the short-term and long-term impact of IET, and how these reactions can be managed (Rushforth et al., 2023). Currently, the IET literature has focused on conditions associated with IET such as STS and compassion fatigue, but fewer efforts have been made to offer practitioners practical methods of protecting oneself from adverse reactions (Harker et al., 2016), and also the opportunity to learn about the possible short-term and long-term impact of coping with IET whilst working in demanding job roles. The lack of available preventative interventions for helping professionals maybe due to the confusion in conceptualisation of post-IET distress, conflicting

findings of associated risk and protective factors (Sprang et al., 2019), and limitations in research design and methods in studies examining the efficacy of preventative interventions (Kim et al., 2022). In addition to these conceptual and methodological challenges, the broader context of underfunded and overstretched health and social care systems may have contributed to the limited focus on prevention within this workforce. Resource constraints have likely diverted attention and funding away from proactive strategies to protect helping professionals' wellbeing, prioritising instead responses to the immediate demands of service delivery (Bodenheimer & Sinsky, 2014).

Additionally, the literature focuses on a deficit-based approach proposing how professionals may be at risk of experiencing adverse reactions to IET. Instead, in this thesis it is proposed that helping professionals should be supported in building up factors which support effective adaption to secondary trauma (Voss Horrell et al., 2011; Whittenbury et al.,2025). Through educating professionals on the short-term and long-term impact of IET and the potential cost of these experiences on oneself (Newell & MacNeil, 2010), as they demand a high level of self-regulation, a rationale can be provided to professionals to actively build upon individual self-care practices which replenish internal resources.

Currently, generic recommendations of self-care practice are given to practitioners (Kim et al., 2022), without strong and persuasive reasoning. Additionally, recommendations of specific types of self-care (e.g., mindfulness [Marconi et al., 2019], meditation [Pettus et al., 2022]) have been made, without an acknowledgement of self-care being a personally driven practice. In future work to protect professionals who experience secondary trauma, an exploration of self-care practices which work for the individual is needed, and an appreciation for the

need of a holistic model of self-care containing physical, emotional, and psychological components.

The responsibility of self-care practice has predominantly fallen on the individual practitioner (Kim et al., 2022) without the consideration of how factors within an organisation may be presenting additional stressors (e.g., lack of organisational support, structure, high case-loads) heightening professionals' risk of post-IET distress (Sprang et al., 2019). Therefore, self-care practice should be seen as a joint effort between organisations and individuals. Organisations should support professionals in protecting professionals' wellbeing through providing psychoeducation on the impact of IET, importance and development of self-care practices and offering opportunities for professionals to seek social support from colleagues and supervisors (Branson, 2019; Kim et al., 2022; Newell & MacNeil, 2010). Additionally, identified organisational risk factors of distress related to IET should be addressed as they may potentially act as confounders to protective factors in the workplace (Benuto et al., 2019).

7.4.2. Developing Personal Strengths to Mitigate the Impact of IET

While fostering the development of a comprehensive self-care repertoire to mitigate the impact of IET and other occupational stressors is essential, the investigation of core personality traits inherent to trauma work is equally crucial. Specifically, it is recommended that types of empathy and emotion regulation should not only be identified as either protective or risk factors in research but this knowledge should be shared with practitioners so they can choose to utilise these traits, central in working with trauma survivors, in ways that support effective working but also protect the professional from personal distress. Empathy has been presented as a paradox reported as central to effective therapeutic work (Elliott et al., 2018) but also as a risk factor of STS (Ratrout & Hamdan-Mansour,
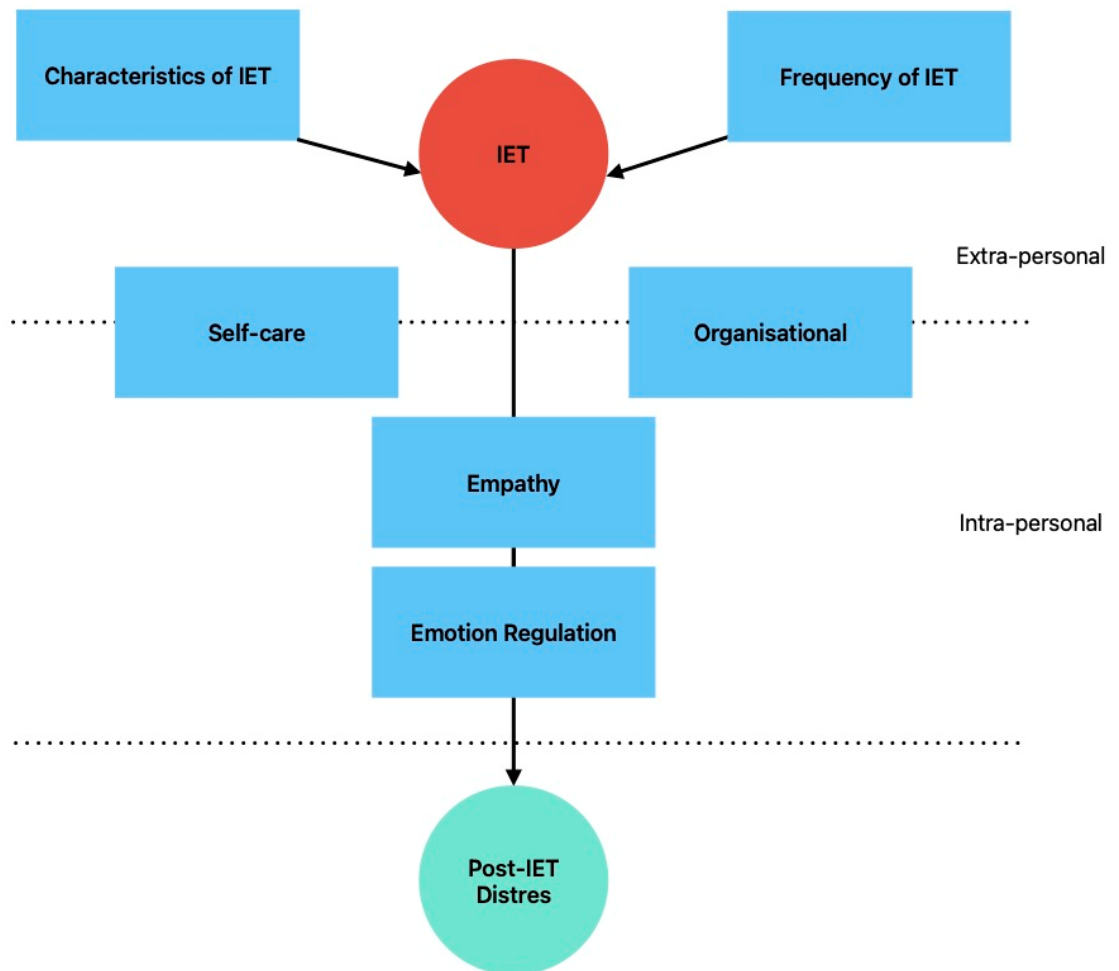
2020). The integration of empathy education into professional training should encompass the multifaceted nature of empathy. This includes acknowledging its potential for both automatic, innate responses to others' emotions and the interplay of cognitive and affective components. Additionally, the curriculum should explore the complex relationship between empathy and personal distress, equipping professionals to manage their emotional responses while fostering empathic connections with clients.

Equipping helping professionals with emotional regulation knowledge and skills is crucial for their well-being and effectiveness in trauma work. These individuals navigate emotionally charged situations regularly, and the ability to manage their own emotions is paramount. Learning adaptive coping mechanisms empowers them to maintain composure while providing support. Through this, professionals should also be made aware of the internal resource cost associated with emotional regulation and differences between regulation which focuses on emotions and cognition. Just as professionals help others, they require strategies to manage their own emotional investment and prevent a dwindling of internal resources which in turn makes them less able to self-regulate and more at risk of post-IET distress.

7.5. Conceptual Framework for Understanding Distress in Indirect Exposure to Trauma

This thesis introduces a framework (see Figure 9) combining findings from this programme of study and previous research, illustrating how IET, moderated by extra-personal and intrapersonal factors, contributes to post-IET distress. This framework represents an initial theoretical conceptualisation and needs further development and refinement through empirical research.

Figure 9

As illustrated in Figure 9, the experience of distress related to IET is a complex process influenced by a range of moderating factors. These factors operate as an intermediary layer, shaping the relationship between exposure and subsequent distress. The factors have been categorised into two primary domains: extra-personal (external) and intrapersonal (internal).

The framework begins with the IET event, acknowledging its multifaceted characteristics, such as features of the IET and frequency of exposure which can influence the development of distress. For instance, a professional who consistently encounters IET, particularly in contexts involving highly severe trauma and survivors perceived as exceptionally vulnerable, may be at more risk of

experiencing post-IET distress. Thus, the specific attributes of the IET event are key in establishing the initial conditions that predispose an individual to post-IET distress.

Following from the IET event are organisational factors which sit within both the extra-personal and intra-personal domains. Some organisational elements are inherent to a professional's work environment (extra-personal), such as workload, time constraints, and a lack of support from management. When these external demands are elevated or support is insufficient, they can deplete an individual's coping resources and thereby increase vulnerability to IET-related distress. Conversely organisational factors within the intra-personal domain encompass a professional's internal characteristics and psychological resources which are related to their professional role. These include having meaning and purpose derived from one's role, and psychological preparedness for IET. Additionally, self-care spans both extra-personal and intra-personal domains. This dual categorisation reflects the diverse nature of self-care practices, which can be either internally focused, such as mindfulness, or externally oriented, such as physical exercise or engaging with social support networks.

This framework transitions from external, extra-personal factors to focus on intra-personal factors, specifically empathy and emotion regulation which are inherently internal to the professional. The way a professional empathetically engages with IET, for instance, through adopting the perspective of a trauma survivor's experience (cognitive empathy) or experientially feeling the survivor's emotions (affective empathy), significantly influences their subsequent emotional response. This emotional response, in turn, modulates the likelihood of experiencing post-IET distress.

These emotional reactions, arising from learning about and empathetically engaging with others' traumatic experiences, are subsequently managed through different methods of emotion regulation. Such strategies include expressive suppression, where emotional expressions are inhibited, or cognitive reappraisal, which involves reinterpreting the situation to alter its emotional impact. The adaptiveness of these emotion regulation strategies varies, with more adaptive approaches (e.g., higher use of cognitive reappraisal and lower expressive suppression) diminishing the likelihood of experiencing further distress, including that associated with IET.

Furthermore, both organisational factors and self-care practices play a role in determining the availability and efficacy of a professional's internal and external resources. These resources are needed for intrapersonal functions such as enabling professionals to empathetically process IET without becoming emotionally overwhelmed and facilitating the effective regulation of their emotional reactions through adaptive strategies.

In conclusion, this thesis presents a preliminary framework that elucidates the intricate pathways through which IET can lead to distress. By integrating the multifaceted characteristics of IET with a broad range of moderating factors, this framework offers an initial understanding of post-IET distress. While this conceptualisation requires further empirical validation and refinement, it provides a starting point for future research examining the psychological impact of IET on helping professionals.

7.6. Strengths and Limitations of the Thesis

This thesis has further strengths and limitations outside those discussed in the empirical studies. Firstly, the lack of a clear definition of empathy (Eklund & Meranius, 2021) and significant overlap between definitions of empathy with

sympathy and compassion (Decety, 2009) provided a challenge in choosing a measure of empathy appropriate for this thesis. Self-report measures of empathy are argued to be the most comprehensive to date, yet it is still uncertain whether empathy should be measured as a unidimensional or multidimensional construct (Neumann et al., 2015). Considering evidence that measures which assess empathy as a unidimensional construct tend to be bias towards affective components (Neumann et al., 2015), and reported differences in associations of cognitive and affective components of empathy with post-IET distress (e.g., Wagaman et al., 2015), the author chose to use the Empathy Components Questionnaire (ECQ; Batchelder et al., 2017) to explore associations between components of empathy and post-IET distress a strength of the quantitative studies in this thesis. The ECQ is argued to be more in-line with current theories of empathy (i.e., a construct containing affective and cognitive components), and a pragmatic tool suitable for use with non-clinical populations (Batchelder et al., 2017). Nevertheless, the reliance on a self-report measure of empathy in this study raises concerns about potential bias due to social desirability (Eisenberg et al., 1997). As being empathic is seen as a socially desirable trait in society and particularly within helping professions (Sassenrath, 2020), participants in this thesis may have over-estimated their rate of empathy. Additionally, the homogeneity of empathy scores in both empirical studies of this thesis, with participants reporting high levels of empathy, may have limited the ability to statistically detect the predictive value of empathy components on post-IET distress.

Additionally, in both experimental studies within this thesis, variables were measured solely using self-report measures which may have introduced potential limitations in the validity and reliability of data collected. For example, participants

responses may have been impacted by report biases as baseline measures demand participants report information retrospectively and may not be entirely infallible. Also, participants may have interpreted questions or statements on self-report measures differently to how the researcher intended. This may have led to a variability in responses. To counter these limitations, in future research, observation and physiological measures could be implemented to provide a more comprehensive understanding of participants reactions to IET. For example, to measure stress at different timepoints in study two (experiment one), physiological measures such as heart rate and galvanic skin response could be recorded to measure changes in the autonomic nervous system as an indirect measure of bodily stress responses.

In this thesis, the author adopted a critical realist epistemological stance, acknowledging the inherent subjectivity in knowledge construction (Fletcher, 2017; Lawani, 2021). Critical realism posits that an underlying reality exists independent of our interpretations, but that we can only access this reality through subjective interpretation. Therefore, the research design prioritised strategies to strengthen the credibility (trustworthiness in qualitative terms) and dependability (internal consistency) of the findings. In Study One, Guba's (1981) trustworthiness criteria were employed to systematically strengthen the credibility, dependability, confirmability, and transferability of the qualitative data. Studies Two and Three addressed reliability through rigorous psychometric evaluation, focusing on the internal consistency of self-reported measures. These combined methods demonstrate a critical awareness of potential limitations inherent in the chosen methodologies, fostering confidence in the findings and allowing for well-grounded speculation on factors associated with post-IET distress.

Finally, acknowledging the limitations of existing research on post-IET distress, in this thesis the author sought to incorporate a multifaceted approach by examining a range of psychological variables known to influence responses to IET (e.g., emotion regulation, empathy components, rumination) and assess factors yet to be examined (e.g., pre-exposure psychosocial stress, and trauma medium). However, the inherent complexity of post-IET distress suggests the potential influence of additional variables such as attachment style (Kindermann et al., 2020) and self-compassion (Neff et al., 2020). To address this limitation and inform the quantitative investigations (Studies Two and Three), a large-scale qualitative study (Study One) was conducted. This aligns with recent calls for in-depth qualitative exploration to illuminate the intricate factors and mechanisms underlying secondary trauma distress (Xu et al., 2024). Therefore, the mix-method approach employed in this thesis allowed for a multifaceted exploration of factors which influence the development of post-IET distress.

7.7. Recommendations for Future Research

The findings related to the research questions in this thesis have produced possible areas of further investigation. The included empirical studies have showcased the use of experimental designs to investigate factors associated with post-IET distress. This includes the influence of pre-exposure stress on acute (subjective stress and emotions) and longer term (intrusions) responses. In using an experimental design, the author was able to measure reactions of acute stress and negative emotions across the course of the experiment, however, this research was limited to one psychosocial stressor and one event of IET, preventing the examination of the impact of experiencing multiple stressors (pre-exposure) on reactions to IET. Professionals in trauma work routinely encounter a confluence of demanding stressors and IET (Moreno-Jiménez et al., 2020).

Examining the combined effects of these experiences within an experimental framework would facilitate a deeper understanding of the resulting stress response, including acute reactions, and how such responses potentially modulate reactivity to IET. This approach would offer a more ecologically valid representation of the professional environment and enable the exploration of how the cumulative burden of stressors and IETs impacts stress, negative affect, and other pertinent outcomes over time (e.g., PTSD symptoms). By extending upon the findings from the studies in this thesis, along with the broader literature, this research would have the potential to substantiate the proposition that self-regulation becomes increasingly challenging in the face of accumulating stressors (Prem et al., 2016) and how potentially this could translate to an elevated risk for post-IET distress (Badger et al., 2008). Additionally, incorporating the measurement of emotion regulation strategies employed over the course of the experiment would offer valuable insights into whether individuals gravitate towards specific coping mechanisms when confronted with an escalating number of stressors and IET. As some emotion regulation strategies (expressive suppression) have been reported to be ineffective (Troy et al., 2019) and potentially increase levels of stress (Caramanica et al., 2023), the identification and potential of manipulation of regulation habits is warranted.

Although this thesis provided an important contribution in preparation for IET and the use of a cognitive task to mitigate the impact of IET, more investigations are needed to understand how professionals can effectively prepare and methods which may buffer the impact of IET. Building upon the evidence of cognitive tasks preventing PTSD symptoms (Asselbergs et al., 2023), future research efforts should prioritise the investigation of diverse cognitive tasks implemented at varying temporal intervals (e.g., pre-exposure, during exposure,

and post-exposure). Such research holds the potential to unveil a spectrum of effective preventative interventions that can be readily employed by professionals in the face of secondary traumatic experiences.

Additionally, findings in this thesis shed light on the importance of professionals feeling prepared for IET including having prior training, a readiness and expectedness of IET, and possible adverse effects and a commitment to professional role. Previous studies have found that a lack of preparedness leading to personal distress in professionals exposed to secondary trauma (Birze et al., 2023; Harris et al., 2015). The protective potential of psychological preparedness (PP) for trauma has been established in research with individuals directly exposed to traumatic events (Başoğlu et al., 2007). PP is typically conceptualized as encompassing prior knowledge, training, a resolute mindset aligned with the cause they serve, and a potentially tempered worldview (i.e., less benevolent beliefs about oneself and the world) (Başoğlu et al., 1997). Future research could explore what characterises a 'prepared mindset' in the context of secondary trauma, and how this may be influenced by training and prior knowledge of the possible effects of IET, and if a prepared mindset leads to effective adjustment to IET.

7.8. Thesis Conclusion

The aim of this thesis was to explore factors which buffer or facilitate the development of distress in response to IET. The author began by employing an exploratory qualitative research methodology to elucidate the factors that contribute to the difficulty of listening to narratives of traumatic experiences from the perspective of a range of helping professionals who work with trauma survivors. Then, the author moved on to examining factors previously under-studied in the context of IET using an experimental design, previously under-utilised in investigations of factors associated with post-IET distress. By using a

flexible mixed-methods approach, this thesis has provided considerable empirical examination of the influence of factors which contribute to the development of acute and longer-term responses to secondary trauma. In addition, current gaps in the existing literature have been addressed, including conflicting evidence of the impact of empathy in the development of personal distress, and how different types of traumatic material and pre-exposure stressors may influence reactions to IET. Therefore, through this thesis, the author has brought further understanding to the complex interactions between IET, characteristics of the person exposed and other influencing factors, and developed implications for future research in the field.

The main conclusions in this thesis are that secondary trauma and related distress is a complex multifaceted phenomenon. To comprehensively understand reactions of helping professionals engaged in trauma work, a multifactorial approach is necessary including a consideration of the characteristics of the professional themself, the specific characteristics of the encountered IET, the presence of additional stressors, and the cumulative burden of stressors and IET. Currently, researchers have selected factors without clear theoretical reasoning (Xu et al., 2024). This thesis proposes a framework that incorporates factors spanning the professional, the IET, additional stressors, including those associated with the organisational context (e.g., burden of caseload, organisational culture, lack of supervision), and the cumulative burden of stressors and IET. This multifactorial framework has the potential to yield a more holistic and theoretically grounded understanding of the mechanisms underlying the development of post-IET distress.

References

1in6. (January, 2023). *Sexually Assaulted By Teacher | Male Sexual Assault*
[Video]. YouTube. https://www.youtube.com/watch?v=HO1tQdZQ_Jk

Aafjes-van Doorn, K., Békés, V., Prout, T. A., & Hoffman, L. (2020).
Psychotherapists' vicarious traumatization during the COVID-19 pandemic.
Psychological Trauma. Theory, Research, Practice, and Policy, *12*(S1),
S148. http://doi.org/10.1037/tra0000868

Abercrombie, H. C., Giese-Davis, J., Sephton, S., Epel, E. S., Turner-Cobb, J. M.,
& Spiegel, D. (2004). Flattened cortisol rhythms in metastatic breast cancer
patients. *Psychoneuroendocrinology*, *29*(8), 1082-1092.
https://doi.org/10.1016/j.psyneuen.2003.11.003

Adams, R. E., Boscarino, J. A., & Figley, C. R. (2006). Compassion fatigue and
psychological distress among social workers: A validation study. *American
Journal of Orthopsychiatry*, *76*(1), 103-108. https://doi.org/10.1037/0002-
9432.76.1.103

Adeoye-Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods:
Semi-structured interviews. *Journal of the American College of Clinical
Pharmacy*, *4*(10), 1358-1367. https://doi.org/10.1002/jac5.1441

Aguilera, D. C., & Messick, J. M. (1974). Crisis intervention: Theory and
methodology. *AJN, American Journal of Nursing, 74*(12), 2267.

Ahern, J., Galea, S., Resnick, H., & Vlahov, D. (2004). Television images and
probable posttraumatic stress disorder after September 11: The role of
background characteristics, event exposures, and perievent panic. *The
Journal of Nervous and Mental Disease*, *192*(3), 217-226.
https://doi.org/10.1097/01.nmd.0000116465.99830.ca

Airagnes, G., Consoli, S. M., De Morlhon, O., Galliot, A. M., Lemogne, C., & Jaury, P. (2014). Appropriate training based on Balint groups can improve the empathic abilities of medical students: a preliminary study. *Journal of Psychosomatic research*, *76*(5), 426-429. https://doi.org/10.1016/j.jpsychores.2014.03.005

Aldwin, C. M., & Yancura, L. A. (2004). Coping and health: A comparison of the stress and trauma literatures. In P. P. Schnurr & B. L. Green (Eds.), *Trauma and health: Physical health consequences of exposure to extreme stress* (pp. 99–125). American Psychological Association. https://doi.org/10.1037/10723-005

Algorani, E. B., & Gupta, V. (2022). Coping mechanisms. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK559031/

Alharbi, J., Jackson, D., & Usher, K. (2020). Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. *Nursing & health sciences*, *22*(1), 20-27. https://doi.org/10.1111/nhs.12650

Alipour, F., & Ahmadi, S. (2020). Social support and posttraumatic stress disorder (PTSD) in earthquake survivors: A systematic review. *Social Work in Mental Health*, *18*(5), 501-514. https://doi.org/10.1080/15332985.2020.1795045

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.).

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.).

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.).

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.).

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

American Psychological Association. (2018). Countertransference. In *APA dictionary of psychology*. Retrieved March 28, 2022, from https://dictionary.apa.org/countertransference

Amin, A. A., Vankar, J. R., Nimbalkar, S. M., & Phatak, A. G. (2015). Perceived stress and professional quality of life in neonatal intensive care unit nurses in Gujarat, India. *The Indian Journal of Pediatrics*, 82, 1001-1005. https://doi.org/10.1007/s12098-015-1794-3

Andersen, T. E., Hansen, M., Ravn, S. L., Seehuus, R., Nielsen, M., & Vaegter, H. B. (2018). Validation of the PTSD-8 scale in chronic pain patients. *Pain Medicine*, *19*(7), 1365-1372. https://doi.org/10.1093/pm/pnx166

Andrewes, D. G., & Jenkins, L. M. (2019). The role of the amygdala and the ventromedial prefrontal cortex in emotional regulation: implications for post-traumatic stress disorder. *Neuropsychology Review*, *29*(2), 220-243. https://doi.org/10.1007/s11065-019-09398-4

Anne Dombo, E., & Whiting Blome, W. (2016). Vicarious trauma in child welfare workers: A study of organizational responses. *Journal of Public Child Welfare*, *10*(5), 505-523. https://doi.org/10.1080/15548732.2016.1206506

Aparicio, E., Michalopoulos, L. M., & Unick, G. J. (2013) An examination of the psychometric properties of the vicarious trauma scale in a sample of licensed social workers. *Health & Social Work*, *38*(4), 199-206. https://doi.org/10.1093/hsw/hlt017

Argentero, P., & Setti, I. (2011). Engagement and vicarious traumatization in rescue workers. *International Archives of Occupational and Environmental Health*, *84*(1), 67-75. https://doi.org/10.1007/s00420-010-0601-8

Ariapooran, S., & Raziani, S. (2019). Sexual satisfaction, marital intimacy, and depression in married Iranian nurses with and without symptoms of secondary traumatic stress. *Psychological Reports*, *122*(3), 809-825. https://doi.org/10.1177/0033294118776927

Armes, S. E., Lee, J. J., Bride, B. E., & Seponski, D. M. (2020) Secondary trauma and impairment in clinical social workers. *Child Abuse & Neglect*, *110*, 104540. https://doi.org/10.1016/j.chiabu.2020.104540

Arnaudova, I., & Hagenaars, M. A. (2017). Lights… action: Comparison of trauma films for use in the trauma film paradigm. *Behaviour Research and Therapy*, *93*, 67-77. https://doi.org/10.1016/j.brat.2017.02.007

Arnedo, C. O., & Casellas-Grau, A. (2016). Vicarious or secondary post-traumatic growth: How are positive changes transmitted to significant others after experiencing a traumatic event. *Comprehensive Guide to Post-traumatic Stress Disorders*, 1767-1782.

Arnold, T. C. (2020). An evolutionary concept analysis of secondary traumatic stress in nurses. *In Nursing Forum, 55*(2), 149 – 156. https://doi.org/10.1111/nuf.12409

Arnsten, A. F. (2000). Stress impairs prefrontal cortical function in rats and monkeys: role of dopamine D1 and norepinephrine α-1 receptor mechanisms. *Progress in Brain Research*, *126*, 183-192. https://doi.org/10.1016/S0079-6123(00)26014-7

Asgari, E., Kaur, J., Nuredini, G., Balloch, J., Taylor, A. M., Sebire, N., Robinson, R., Peters, C., Sridharan, S., & Pimenta, D. (2024). Impact of Electronic

Health Record Use on Cognitive Load and Burnout Among Clinicians: Narrative Review. *JMIR Medical Informatics*, *12*, e55499. https://doi.org/10.2196/55499

Asselbergs, J., van Bentum, J., Riper, H., Cuijpers, P., Holmes, E., & Sijbrandij, M. (2023). A systematic review and meta-analysis of the effect of cognitive interventions to prevent intrusive memories using the trauma film paradigm. *Journal of Psychiatric Research*, *159*, 116-129. https://doi.org/10.1016/j.jpsychires.2023.01.028

Badawi, A., Berle, D., Rogers, K., & Steel, Z. (2020). Do cognitive tasks reduce intrusive-memory frequency after exposure to analogue trauma? An experimental replication. *Clinical Psychological Science*, *8*(3), 569-583. https://doi.org/10.1177/2167702620906148

Baddeley, A. (2003). Working memory: looking back and looking forward. *Nature Reviews Neuroscience*, *4*(10), 829-839. https://doi.org/10.1038/nrn1201

Baddeley, A. D., & Andrade, J. (2000). Working memory and the vividness of imagery. *Journal of Experimental Psychology: General*, *129*(1), 126.

Badger, K., Royse, D., & Craig, C. (2008). Hospital social workers and indirect trauma exposure: an exploratory study of contributing factors. *Health & Social Work*, *33*(1), 63-71. https://doi.org/10.1093/hsw/33.1.63

Badour, C. L., Blonigen, D. M., Boden, M. T., Feldner, M. T., & Bonn-Miller, M. O. (2012). A longitudinal test of the bi-directional relations between avoidance coping and PTSD severity during and after PTSD treatment. *Behaviour research and therapy*, *50*(10), 610-616. https://doi.org/10.1016/j.brat.2012.06.006

Bailey, J. E., Dawson, G. R., Dourish, C. T., & Nutt, D. J. (2011). Validating the inhalation of 7.5% CO2 in healthy volunteers as a human experimental

medicine: a model of generalized anxiety disorder (GAD). *Journal of Psychopharmacology*, *25*(9), 1192-1198. https://doi.org/10.1177/0269881111408455

Bąk, G., & Ogińska-Bulik, N. (2022). Predictors of Secondary Traumatic Stress Symptoms in Police Officers Exposed to Secondary Trauma. *Internal Security, 1*, 205-223. http://dx.doi.org/10.5604/01.3001.0016.0390

Bandura, A., Lipsher, D. H., & Miller, P. E. (1960). Psychotherapists approach-avoidance reactions to patients' expressions of hostility. *Journal of Consulting Psychology*, *24*(1), 1. https://doi.org/10.1037/h0043403

Banister, P. (2011). *Qualitative methods in psychology: a research guide* (2nd ed.). McGraw-Hill/Open University Press.

Barker, C., & Pistrang, N. (2005). Quality criteria under methodological pluralism: Implications for conducting and evaluating research. *American Journal of Community Psychology*, *35*(3), 201-212. https://doi.org/10.1007/s10464-005-3398-y

Barlow, D. H. (2000). Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *American Psychologist*, *55*(11), 1247. https://doi.org/10.1037/0003-066X.55.11.1247

Barr, P. (2017). Compassion fatigue and compassion satisfaction in neonatal intensive care unit nurses: Relationships with work stress and perceived social support. *Traumatology*, *23*(2), 214. https://doi.org/10.1037/trm0000115

Başoğlu, M., Mineka, S., Paker, M., Aker, T., Livanou, M., & Gök, Ş. (1997). Psychological preparedness for trauma as a protective factor in survivors of torture. *Psychological Medicine*, *27*(6), 1421-1433. https://doi.org/10.1017/S0033291797005679

Başoğlu, M., Paker, M., Özmen, E., Taşdemir, Ö., & Şahin, D. (1994). Factors
related to long-term traumatic stress responses in survivors of torture in
Turkey. *Jama*, *272*(5), 357-363.
https://doi.org/10.1001/jama.1994.03520050037027

Başoğlu, M., Paker, M., Özmen, E., Taşdemir, Ö., Şahin, D., Ceyhanli, A., Incesu,
C., & Sarimurat, N. (1996). Appraisal of self, social environment, and state
authority as a possible mediator of posttraumatic stress disorder in tortured
political activists. *Journal of Abnormal Psychology*, *105*(2), 232.
https://doi.org/10.1037/0021-843X.105.2.232

Başoğlu, M., Paker, M., Paker, O., Ozmen, E., Marks, I., Incesu, C., Sahin, D., &
Sarimurat, N. (1994). Psychological effects of torture: a comparison of
tortured with nontortured political activists in Turkey. *American Journal of
Psychiatry*, *151*(1), 76-81.

Başoğlu, M., Şalcioğlu, E., & Livanou, M. (2007). A randomized controlled study of
single-session behavioural treatment of earthquake-related post-traumatic
stress disorder using an earthquake simulator. *Psychological Medicine*,
37(2), 203-213. https://doi.org/10.1017/S0033291706009123

Batchelder, L., Brosnan, M., & Ashwin, C. (2017). The development and validation
of the empathy components questionnaire (ECQ). *PloS One*, *12*(1),
e0169185. https://doi.org/10.1371/journal.pone.0169185

Bauer, G. F., Hämmig, O., Schaufeli, W. B., & Taris, T. W. (2014). A critical review
of the job demands-resources model: Implications for improving work and
health. In G. F. Beuer., & O. Hammig (Eds.), *Bridging occupational,
organizational and public health: A transdisciplinary approach* (pp. 43-68).
Springer.

Baugerud, G. A., Vangbæk, S., & Melinder, A. (2018). Secondary traumatic stress,

   burnout and compassion satisfaction among Norwegian child protection

   workers: Protective and risk factors. *British Journal of Social Work*, *48*(1),

   215-235. https://doi.org/10.1093/bjsw/bcx002

Baumeister, R. F. (2014). Self-regulation, ego depletion, and

   inhibition. *Neuropsychologia*, *65*, 313-319.

   https://doi.org/10.1016/j.neuropsychologia.2014.08.012

Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994*). Losing control: How and

   why people fail to self-regulate*. Academic Press.

Beck, C. T. (2020). Secondary traumatic stress in maternal-newborn nurses:

   secondary qualitative analysis. *Journal of the American Psychiatric Nurses

   Association*, *26*(1), 55-64. https://doi.org/10.1177/1078390319886358

Beckerman, N., & Wozniak, D. F. (2018) Domestic violence counselors and

   secondary traumatic stress (STS): A brief qualitative report and strategies

   for support. *Social Work in Mental Health*, *16*(4), 470-490.

   https://doi.org/10.1080/15332985.2018.1425795

Beedie, C., Terry, P., & Lane, A. (2005). Distinctions between emotion and

   mood. *Cognition and emotion*, *19*(6), 847-878.

   https://doi.org/10.1080/02699930541000057

Bell, H. (2003). Strengths and secondary trauma in family violence work. *Social

   Work*, *48*(4), 513-522. https://doi.org/10.1093/sw/48.4.513

Bell, S., Hopkin, G., & Forrester, A. (2019). Exposure to traumatic events and the

   experience of burnout, compassion fatigue and compassion satisfaction

   among prison mental health staff: An exploratory survey. *Issues in Mental

   Health Nursing*, *40*(4), 304-309.

   https://doi.org/10.1080/01612840.2018.1534911

Bellingrath, S., Weigl, T., & Kudielka, B. M. (2009). Chronic work stress and

  exhaustion is associated with higher allostastic load in female school

  teachers: Original research report. *Stress*, *12*(1), 37-48.

  https://doi.org/10.1080/10253890802042041

Ben-Porat, A., & Itzhaky, H. (2009). Implications of treating family violence for the

  therapist: Secondary traumatization, vicarious traumatization, and growth.

  Journal of Family Violence, *24*(7), 507-515. https://doi.org/10.1007/s10896-

  009-9249-0

Ben-Porat, A., & Itzhaky, H. (2015). Burnout among trauma social workers: The

  contribution of personal and environmental resources. *Journal of Social*

  Work, *15*(6), 606-620. https://doi.org/10.1177/1468017314552158

Ben-Zur, H., Gil, S., & Shamshins, Y. (2012). The relationship between exposure to

  terror through the media, coping strategies and resources, and distress and

  secondary traumatization. *International Journal of Stress Management*,

  19(2), 132. https://doi.org/10.1037/a0027864

Benatar, M. (2000). A qualitative study of the effect of a history of childhood sexual

  abuse on therapists who treat survivors of sexual abuse. *Journal of Trauma*

  & Dissociation, *1*(3), 9-28. https://doi.org/10.1300/J229v01n03_02

Bennett, S. A., Beck, J. G., & Clapp, J. D. (2009). Understanding the relationship

  between posttraumatic stress disorder and trauma cognitions: The impact

  of thought control strategies. *Behaviour Research and Therapy*, *47*(12),

  1018-1023. https://doi.org/10.1016/j.brat.2009.07.015

Benuto, L. T., Singer, J., Gonzalez, F., Newlands, R., & Hooft, S. (2019).

  Supporting those who provide support: Work-related resources and

  secondary traumatic stress among victim advocates. *Safety and Health at*

  Work, *10*(3), 336-340. https://doi.org/10.1016/j.brat.2009.07.015

Benuto, L. T., Yang, Y., Ahrendt, A., & Cummings, C. (2021). The secondary traumatic stress scale: confirmatory factor analyses with a national sample of victim advocates. *Journal of Interpersonal Violence*, *36*(5-6), 2572-2591. https://doi.org/10.1177/0886260518759657

Benuto, L. T., Yang, Y., Bennett, N., & Lancaster, C. (2022). Distress Tolerance and Emotion Regulation as Potential Mediators Between Secondary Traumatic Stress and Maladaptive Coping.' *Journal of Interpersonal Violence*, *37*(13-14), NP11557-NP11581. https://doi.org/10.1177/0886260520967136

Bercier, M. L., & Maynard, B. R. (2015). Interventions for secondary traumatic stress with mental health workers: A systematic review. *Research on Social Work Practice*, *25*(1), 81-89. https://doi.org/10.1177/1049731513517142

Berens, A. E., Jensen, S. K., & Nelson, C. A. (2017). Biological embedding of childhood adversity: from physiological mechanisms to clinical implications. *BMC Medicine*, *15*(1), 1-12. https://doi.org/10.1186/s12916-017-0895-4

Berger, J., Polivka, B., Smoot, E. A., & Owens, H. (2015). Compassion fatigue in pediatric nurses. *Journal of pediatric nursing*, *30*(6), e11-e17.

Berger, R. (2021). Studying trauma: Indirect effects on researchers and self—And strategies for addressing them. *European Journal of Trauma & Dissociation*, *5*(1). https://doi.org/10.1016/j.ejtd.2020.100149

Bertilsson, J., Niehorster, D. C., Fredriksson, P. J., Dahl, M., Granér, S., Fredriksson, O., ... & Nyström, M. (2019). Stress levels escalate when repeatedly performing tasks involving threats. *Frontiers in psychology*, *10*, 1562. https://doi.org/10.3389/fpsyg.2019.01562

Berzoff, J., & Kita, E. (2010). Compassion fatigue and countertransference: Two different concepts. *Clinical Social Work Journal*, *38*(3), 341-349. https://doi.org/10.1016/j.pedn.2015.02.005

Bhaskar, R. (2016). *Enlightened common sense: The philosophy of critical realism.*
Routledge.

Birnbaum, M. H. (2004). Human research and data collection via the
Internet. *Annual Review of Psychology, 55*(1), 803-832.
https://doi.org/10.1146/annurev.psych.55.090902.141601

Birze, A., Regehr, K., & Regehr, C. (2023). Workplace Trauma in a Digital Age:
The Impact of Video Evidence of Violent Crime on Criminal Justice
Professionals. *Journal of Interpersonal Violence*, *38*(1-2), NP1654-NP1689.
https://doi.org/10.1177/08862605221090571

Bisson, J. I., Wright, L. A., Jones, K. A., Lewis, C., Phelps, A. J., Sijbrandij, M.,
Varker, T., & Roberts, N. P. (2021). Preventing the onset of post traumatic
stress disorder. *Clinical Psychology Review*, *86*, 102004.
https://doi.org/10.1016/j.cpr.2021.102004

Blair, R. J. R. (2005). Responding to the emotions of others: Dissociating forms of
empathy through the study of typical and psychiatric populations.
Consciousness and Cognition, *14*(4), 698-718.
https://doi.org/10.1016/j.concog.2005.06.004

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015).
The posttraumatic stress disorder checklist for DSM-5 (PCL-5):
Development and initial psychometric evaluation. *Journal of Traumatic
Stress*, *28*(6), 489-498. https://doi.org/10.1002/jts.22059

Bock, C., Heitland, I., Zimmermann, T., Winter, L., & Kahl, K. G. (2020). Secondary
traumatic stress, mental state, and work ability in nurses—Results of a
psychological risk assessment at a university hospital. *Frontiers in
Psychiatry*, *11*, 298. https://doi.org/10.3389/fpsyt.2020.00298

Boden, M. T., Westermann, S., McRae, K., Kuo, J., Alvarez, J., Kulkarni, M. R., & Bonn-Miller, M. (2013). Emotion regulation and posttraumatic stress disorder: A prospective investigation. *Journal of Social and Clinical Psychology*, *32*(3), 296-314. https://doi.org/10.1521/jscp.2013.32.3.296

Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: care of the patient requires care of the provider. *The Annals of Family Medicine*, *12*(6), 573-576. https://doi.org/10.1370/afm.1713

Bolsinger, J., Seifritz, E., Kleim, B., & Manoliu, A. (2018). Neuroimaging correlates of resilience to traumatic events—a comprehensive review. *Frontiers in Psychiatry*, *9*, 693. https://doi.org/10.3389/fpsyt.2018.00693

Bonanno, G. A., Pat-Horenczyk, R., & Noll, J. (2011). Coping flexibility and trauma: the perceived ability to cope with trauma (PACT) scale. *Psychological Trauma: Theory, Research, Practice, and Policy*, *3*(2), 117. https://doi.org/10.1037/a0020921

Bonumwezi, J. L., Tramutola, D., Lawrence, J., Kobezak, H. M., & Lowe, S. R. (2022). Posttraumatic stress disorder symptoms, work-related trauma exposure, and substance use in first responders. *Drug and Alcohol Dependence*, *237*, 109439. https://doi.org/10.1016/j.drugalcdep.2022.109439

Bourassa, D. (2012). Examining self-protection measures guarding adult protective services social workers against compassion fatigue. *Journal of Interpersonal Violence*, *27*(9), 1699-1715. https://doi.org/10.1177/0886260511430388

Bourke, M. L., & Craun, S. W. (2014). Coping with secondary traumatic stress: Differences between UK and US child exploitation personnel.

Traumatology: An International Journal, 20(1), 57.

https://doi.org/10.1037/h0099381

Bourne, C., Frasquilho, F., Roth, A. D., & Holmes, E. A. (2010). Is it mere

distraction? Peri-traumatic verbal tasks can increase analogue flashbacks

but reduce voluntary memory performance. *Journal of Behavior Therapy*

and Experimental Psychiatry, 41(3), 316-324.

https://doi.org/10.1016/j.jbtep.2010.03.001

Bourne, C., Mackay, C., & Holmes, E. A. (2013). The neural basis of flashback

formation: the impact of viewing trauma. *Psychological Medicine*, 43(7),

1521-1532. https://doi.org/10.1017/S0033291712002358

Brady, P. Q. (2017). Crimes against caring: Exploring the risk of secondary

traumatic stress, burnout, and compassion satisfaction among child

exploitation investigators. *Journal of Police and Criminal Psychology*, 32,

305-318.

Branson, D. C. (2019). Vicarious trauma, themes in research, and terminology: A

review of literature. *Traumatology*, 25(1), 2. https://doi.org/10.1007/s11896-

016-9223-8

Braun, M., Naor, L., Hasson-Ohayon, I., & Goldzweig, G. (2022). Oncologists'

locus of control, compassion fatigue, compassion satisfaction, and the

mediating role of helplessness. *Current Oncology*, 29(3), 1634-1644.

https://doi.org/10.3390/curroncol29030137

Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative*

Research in Psychology, 3(2), 77-101.

https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data

saturation as a useful concept for thematic analysis and sample-size

rationales. *Qualitative Research in Sport, Exercise and Health*, *13*(2), 201-216. https://doi.org/10.1080/2159676X.2019.1704846

Breakwell, G. M. (Ed.). (2012). *Social work: the social psychological approach*. Springer Science & Business Media.

Breakwell, G. M., Smith, J. A., & Wright, D. B. (2012). *Research Methods in Psychology*. Sage Publications.

Breslau, N., Chilcoat, H. D., Kessler, R. C., & Davis, G. C. (1999). Previous exposure to trauma and PTSD effects of subsequent trauma: results from the Detroit Area Survey of Trauma. *American Journal of Psychiatry*, *156*(6), 902-907. https://doi.org/10.1176/ajp.156.6.902

Brewin, C. R. (2015). Re-experiencing traumatic events in PTSD: New avenues in research on intrusive memories and flashbacks. *European Journal of Psychotraumatology*, *6*(1), 27180. https://doi.org/10.3402/ejpt.v6.27180@zept20.2015.6.issue-s4

Brewin, C. R., & Saunders, J. (2001). The effect of dissociation at encoding on intrusive memories for a stressful film. *British Journal of Medical Psychology. 74*(4)*,* 467- 472. https://doi.org/10.1348/000711201161118

Brewin, C. R., Rose, S., Andrews, B., Green, J., Tata, P., McEvedy, C., Turner, S., & Foa, E. B. (2002). *Trauma Screening Questionnaire (TSQ)* [Database record]. APA PsycTests. https://doi.org/10.1037/t04710-000

Briere, J., Dias, C. P., Semple, R. J., Scott, C., Bigras, N., & Godbout, N. (2017). Acute stress symptoms in seriously injured patients: Precipitating versus cumulative trauma and the contribution of peritraumatic distress. *Journal of traumatic stress*, *30*(4), 381-388. https://doi.org/10.1002/jts.22200

Bride, B. E. (2007). Prevalence of secondary traumatic stress among social workers. *Social Work*, *52*(1), 63-70. https://doi.org/10.1093/sw/52.1.63

Bride, B. E., Jones, J. L., & MacMaster, S. A. (2007). Correlates of secondary traumatic stress in child protective service workers. *Journal of Evidence-Based Social Work*, *4*(3/4), 69-80. https://doi.org/10.1300/j394v04n03_05

Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and validation of the secondary traumatic stress scale. *Research on Social Work Practice*, *14*(1), 27-35. https://doi.org/10.1177/1049731503254106

Bride, B. E., Smith Hatcher, S., Humble, M. N. (2009). Trauma training, trauma practices, and secondary traumatic stress among substance abuse counselors. *Traumatology*, *15*(2), 96-105. https://doi.org/10.1177/1534765609336362

Bridger, K. M., Binder, J. F., & Kellezi, B. (2020). Secondary traumatic stress in foster carers: Risk factors and implications for intervention. *Journal of Child and Family Studies*, *29*(2), 482-492. https://doi.org/10.1007/s10826-019-01668-2

Bridgland, V. M., Moeck, E. K., Green, D. M., Swain, T. L., Nayda, D. M., Matson, L. A., Hutchison, N. P., & Takarangi, M. K. (2021). Why the COVID-19 pandemic is a traumatic stressor. *PloS One*, *16*(1), e0240146. https://doi.org/10.1371/journal.pone.0240146

Brinker, J. K., & Dozois, D. J. (2009). Ruminative thought style and depressed mood. *Journal of Clinical Psychology*, *65*(1), 1-19. https://doi.org/10.1002/jclp.20542

Broadway, J. M., Redick, T. S., & Engle, R. W. (2010). Working Memory Capacity: Self-Control is (in) the Goal. In Y. T. R. Hassin, & K. N. Ochsner (Eds.), *Self Control in Society, Mind, Brain* (pp. 163–173). Oxford University Press.

Bruno, F., Vozzo, F., Arcuri, D., Maressa, R., La Cava, E., Malvaso, A., Lau, C., & Chiesi, F. (2022). The longitudinal association between Perceived Stress,

PTSD Symptoms, and Post-Traumatic Growth during the COVID-19

Pandemic: the role of coping strategies and psychological inflexibility.

Current Psychology, *43*(15), 1-16. https://doi.org/10.1007/s12144-022-03502-3

Bruno, F., Vozzo, F., Arcuri, D., Maressa, R., La Cava, E., Malvaso, A., Lau, C., & Chiesi, F. (2024). The longitudinal association between Perceived Stress, PTSD Symptoms, and Post-Traumatic Growth during the COVID-19 Pandemic: the role of coping strategies and psychological inflexibility. *Current Psychology*, *43*(15), 13871-13886. https://doi.org/10.1007/s12144-022-03502-3

Bryant, R. A., Nickerson, A., Creamer, M., O'Donnell, M., Forbes, D., Galatzer-Levy, I., McFarlane, A. C., & Silove, D. (2015) Trajectory of post-traumatic stress following traumatic injury: 6-year follow-up. *The British Journal of Psychiatry*, *206*(5), 417-423. https://doi.org/10.1192/bjp.bp.114.145516

Buck, N., Kindt, M., & van den Hout, M. (2009). The effects of conceptual processing versus suppression on analogue PTSD symptoms after a distressing film. *Behavioural and Cognitive Psychotherapy*, *37*(2), 195-206. https://doi.org/10.1017/S1352465808005080

Burnett, M. E., Sheard, I., & St Clair-Thompson, H. (2020). 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*, *21*(4), 383-400. https://doi.org/10.1080/15614263.2019.1617144

Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice, 2,* 1-10. https://doi.org/10.1186/s42466-020-00059-z

Butler, L. D., & Nolen-Hoeksema, S. (1994). Gender differences in responses to
    depressed mood in a college sample. *Sex Roles*, *30*(5), 331-346.
    https://doi.org/10.1007/BF01420597

Butler, L. D., Carello, J., & Maguin, E. (2017). Trauma, stress, and self-care in
    clinical training: Predictors of burnout, decline in health status, secondary
    traumatic stress symptoms, and compassion satisfaction. *Psychological
    Trauma: Theory, Research, Practice, and Policy*, *9*(4), 416. 0
    http://dx.doi.org/10.1037/tra0000187

Cameron, C. D., Hutcherson, C. A., Ferguson, A. M., Scheffer, J. A., Hadjiandreou,
    E., & Inzlicht, M. (2019). Empathy is hard work: People choose to avoid
    empathy because of its cognitive costs. *Journal of Experimental
    Psychology: General*, *148*(6), 962. https://doi.org/10.1037/xge0000595

Cann, A., Calhoun, L. G., Tedeschi, R. G., Triplett, K. N., Vishnevsky, T., &
    Lindstrom, C. M. (2011). Assessing posttraumatic cognitive processes: The
    event related rumination inventory. *Anxiety, Stress, & Coping*, *24*(2), 137-
    156. https://doi.org/10.1080/10615806.2010.529901

Cao, Y., Dingle, G., Chan, G. C., & Cunnington, R. (2017). Low mood leads to
    increased empathic distress at seeing others' pain. *Frontiers in Psychology*,
    8, 304715. Z https://doi.org/10.3389/fpsyg.2017.02024

Caplan, S. E., Haslett, B. J., & Burleson, B. R. (2005). Telling it like it is: The
    adaptive function of narratives in coping with loss in later life. *Health
    Communication*, *17*(3), 233-251.
    https://doi.org/10.1207/s15327027hc1703_2

Caramanica, R., Williams, Z., & Rice, S. (2023). Expressive suppression as an
    emotion regulation technique and its potential impact on perceived stress.

Management Science Letters, 13(1), 1-10.

https://doi.org/10.5267/j.msl.2022.11.002

Carbone, J. T., Dell, N. A., Issa, M., & Watkins, M. A. (2022). Associations between allostatic load and posttraumatic stress disorder: A scoping review. Health & Social Work, 47(2), 132-142. https://doi.org/10.1093/hsw/hlac001

Caringi, J. C., Hardiman, E. R., Weldon, P., Fletcher, S., Devlin, M., & Stanick, C. (2017). Secondary traumatic stress and licensed clinical social workers. Traumatology, 23(2), 186. https://doi.org/10.1037/trm0000061

Caringi, J. C., Stanick, C., Trautman, A., Crosby, L., Devlin, M., & Adams, S. (2015). Secondary traumatic stress in public school teachers: Contributing and mitigating factors. Advances in School Mental Health Promotion, 8(4), 244-256. https://doi.org/10.1080/1754730X.2015.1080123

Carrieri, D., Briscoe, S., Jackson, M., Mattick, K., Papoutsi, C., Pearson, M., & Wong, G. (2018). 'Care Under Pressure': a realist review of interventions to tackle doctors' mental ill-health and its impacts on the clinical workforce and patient care. BMJ Open, 8(2), e021273. https://doi.org/10.1136/bmjopen-2017-021273

Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). Qualitative Marketing Research. Sage.

Cavanagh, N., Cockett, G., Heinrich, C., Doig, L., Fiest, K., Guichon, J. R., Page, S., Mitchell, I., Doig, C. J. (2020). Compassion fatigue in healthcare providers: A systematic review and meta-analysis. Nursing Ethics, 27(3), 639-665. https://doi.org/10.1177/0969733019889400

Cerney, M. S. (1995). Treating the "heroic treaters." In C. R. Figley (Ed.), Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized (pp. 131–149). Brunner/Mazel.

Chajut, E., & Algom, D. (2003). Selective attention improves under stress: implications for theories of social cognition. *Journal of Personality and Social Psychology*, *85*(2), 231. https://doi.org/10.1037/0022-3514.85.2.231

Chambers. C., Frampton, C., & Barclay M. (2017). Presenteeism in the New Zealand senior medical workforce-a mixed-methods analysis. *Journal of the New Zealand Medical Association*, *130*(1449), 10–21. https://nzmj.org.nz/media/pages/journal/vol-130-no-1449/1e42e601e1-1696469896/vol-130-no-1449.pdf#page=10

Chisolm, J. E. (2022). *Secondary Traumatic Stress and Its Role in Absenteeism within Pediatric Nursing* (Publication No. 29061442) [Doctoral Dissertation, Northcentral University]. ProQuest Dissertations & Theses Global.

Cho, H., & Lee, D. G. (2023). Effects of affective and cognitive empathy on compassion fatigue: Mediated moderation effects of emotion regulation capability. *Personality and Individual Differences*, *211*, 112264. https://doi.org/10.1016/j.paid.2023.112264

Choi, G. Y. (2011). Organizational impacts on the secondary traumatic stress of social workers assisting family violence or sexual assault survivors. *Administration in Social Work*, *35*(3), 225-242. https://doi.org/10.1080/03643107.2011.575333

Chrousos, G. P. (2009). Stress and disorders of the stress system. *Nature Reviews Endocrinology*, *5*(7), 374-381. https://doi.org/10.1038/nrendo.2009.106

Chu, B., Marwaha, K., Sanvictores, T., Awosika, A. O., & Ayers, D. (2024). Physiology, stress reaction. In *StatPearls* (Internet). StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK541120/

Chuderski, A., & Necka, E. (2012). The contribution of working memory to fluid

    reasoning: Capacity, control, or both? *Journal of Experimental Psychology:*

    Learning, Memory, and Cognition, *38*(6), 1689.

    https://doi.org/10.1037/a0028465

Cieslak, R., Anderson, V., Bock, J., Moore, B. A., Peterson, A. L., & Benight, C. C.

    (2013). Secondary traumatic stress among mental health providers working

    with the military: Prevalence and its work-and exposure-related correlates.

    The Journal of Nervous and Mental Disease, *201*(11), 917.

    https://doi.org/10.1097/NMD.0000000000000034

Cieslak, R., Shoji, K., Douglas, A., Melville, E., Luszczynska, A., & Benight, C. C.

    (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.

Cieslak, R., Shoji, K., Luszczynska, A., Taylor, S., Rogala, A., & Benight, C. C.

    (2013). Secondary trauma self-efficacy: concept and its measurement.

    Psychological Assessment, *25*(3), 917. https://doi.org/10.1037/a0032687

Clark, I. A., & Mackay, C. E. (2015). Mental imagery and post-traumatic stress

    disorder: a neuroimaging and experimental psychopathology approach to

    intrusive memories of trauma. *Frontiers in Psychiatry*, *6*, 104.

    https://doi.org/10.3389/fpsyt.2015.00104

Clark, I. A., Mackay, C. E., & Holmes, E. A. (2015). Low emotional response to

    traumatic footage is associated with an absence of analogue flashbacks: An

    individual participant data meta-analysis of 16 trauma film paradigm

    experiments. *Cognition and Emotion*, *29*(4), 702-713.

    https://doi.org/10.1080/02699931.2014.926861

Clarke, V., & Braun, V. (2013). *Successful qualitative research: A practical guide for beginners*. Sage Publications.

Clemans, S. E. (2004). Life changing: The experience of rape-crisis work. *Affilia, 19*(2), 146-159. https://doi.org/10.1177/088610990326275

Coetzee, S. K., & Laschinger, H. K. (2018). Toward a comprehensive, theoretical model of compassion fatigue: A n integrative literature review. *Nursing & Health Sciences, 20*(1), 4-15. https://doi.org/10.1111/nhs.12387

Cohen, K., & Collens, P. (2013). The impact of trauma work on trauma workers: A metasynthesis on vicarious trauma and vicarious posttraumatic growth. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(6), 570.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396. https://doi.org/10.2307/2136404

Collins, R. (2020). Clinician cognitive overload and its implications for nurse leaders. *Nurse Leader, 18*(1), 44-47. https://doi.org/10.1016/j.mnl.2019.11.007

Collins, S., & Long, A. (2003). Working with the psychological effects of trauma: consequences for mental health-care workers–a literature review. *Journal of Psychiatric and Mental Health Nursing, 10*(4), 417-424. https://doi.org/10.1046/j.1365-2850.2003.00620.x

Cook, T. D., Campbell, D. T., & Day, A. (1979). *Quasi-experimentation: Design & analysis issues for field settings*. Houghton Mifflin.

Coppens, C. M., de Boer, S. F., & Koolhaas, J. M. (2010). Coping styles and behavioural flexibility: towards underlying mechanisms. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1560), 4021-4028. https://doi.org/10.1098/rstb.2010.0217

Cornille, T. A., & Meyers, T. W. (1999). Secondary traumatic stress among child protective service workers: Prevalence, severity and predictive factors. *Traumatology*, *5*(1), 15-31. https://doi.org/10.1177/153476569900500105

Cosden, M., Sanford, A., Koch, L. M., & Lepore, C. E. (2016). Vicarious trauma and vicarious posttraumatic growth among substance abuse treatment providers. *Substance Abuse*, *37*(4), 619-624. https://doi.org/10.1080/08897077.2016.1181695

Cougle, J. R., Resnick, H., & Kilpatrick, D. G. (2009). Does prior exposure to interpersonal violence increase risk of PTSD following subsequent exposure? *Behaviour Research and Therapy*, *47*(12), 1012-1017. https://doi.org/10.1016/j.brat.2009.07.014

Craig, C. D., & Sprang, G. (2010). Compassion satisfaction, compassion fatigue, and burnout in a national sample of trauma treatment therapists. *Anxiety, Stress, & Coping*, *23*(3), 319-339. https://doi.org/10.1080/10615800903085818

Craun, S. W., Bourke, M. L., Bierie, D. M., & Williams, K. S. (2014). A longitudinal examination of secondary traumatic stress among law enforcement. *Victims & Offenders*, *9*(3), 299-316. https://doi.org/10.1080/15564886.2013.848828

Creamer, M., O'Donnell, M. L., & Pattison, P. (2004). The relationship between acute stress disorder and posttraumatic stress disorder in severely injured trauma survivors. *Behaviour research and therapy*, *42*(3), 315-328. https://doi.org/10.1016/S0005-7967(03)00141-4

Croskerry, P., & Sinclair, D. (2001). Emergency medicine: a practice prone to error? *Canadian Journal of Emergency Medicine*, *3*(4), 271-276. https://doi.org/10.1017/S1481803500005765

Crumpei, I., & Dafinoiu, I. (2012) The relation of clinical empathy to secondary traumatic stress. *Procedia-Social and Behavioral Sciences*, *33*, 438-442. https://doi.org/10.1016/j.sbspro.2012.01.159

Cuartero, M. E., & Campos-Vidal, J. F. (2019). Self-care behaviours and their relationship with satisfaction and compassion fatigue levels among social workers. *Social Work in Health Care*, *58*(3), 274-290. https://doi.org/10.1080/00981389.2018.1558164

Cuff, B. M., Brown, S. J., Taylor, L., & Howat, D. J. (2016). Empathy: A review of the concept. *Emotion Review*, *8*(2), 144-153. https://doi.org/10.1177/1754073914558466

Cusack, K. J., Grubaugh, A. L., Knapp, R. G., & Frueh, B. C. (2006). Unrecognized trauma and PTSD among public mental health consumers with chronic and severe mental illness. *Community Mental Health Journal*, *42*(5), 487-500. https://doi.org/10.1007/s10597-006-9049-4

Danermark, B., Ekstrom, M., & Jakobsen, L. (2001). *Explaining Society: An Introduction to Critical Realism in the Social Sciences*. Routledge.

Danet, A. D. (2021). Psychological impact of COVID-19 pandemic in Western frontline healthcare professionals. A systematic review. *Medicina Clínica (English Edition)*, *156*(9), 449-458. https://doi.org/10.1016/j.medcle.2020.11.003

Davis, H., & Turner, M. J. (2020). The use of rational emotive behavior therapy (REBT) to increase the self-determined motivation and psychological well-

being of triathletes. *Sport, Exercise, and Performance Psychology*, *9*(4),
489. https://doi.org/10.1037/spy0000191

Day, J. R., & Anderson, R. A. (2011). Compassion fatigue: An application of the
concept to informal caregivers of family members with dementia. *Nursing
Research and Practice*, (1), 408024. https://doi.org/10.1155/2011/408024

de Figueiredo, S., Yetwin, A., Sherer, S., Radzik, M., & Iverson, E. (2014). A cross-
disciplinary comparison of perceptions of compassion fatigue and
satisfaction among service providers of highly traumatized children and
adolescents. *Traumatology*, *20*(4), 286. https://doi.org/10.1037/h0099833

De Vignemont, F., & Singer, T. (2006). The empathic brain: how, when and why?
Trends in Cognitive Sciences, *10*(10), 435-441.
https://doi.org/10.1016/j.tics.2006.08.008

De Waele, A., Schoofs, L., & Claeys, A. S. (2020). The power of empathy: The
dual impacts of an emotional voice in organizational crisis communication.
Journal of Applied Communication Research, *48*(3), 350-371.
https://doi.org/10.1080/00909882.2020.1750669

Deahl, M., Srinivasan, M., Jones, N., Thomas, J., Neblett, C., & Jolly, A. (2000).
Preventing psychological trauma in soldiers: The role of operational stress
training and psychological debriefing. *British Journal of Medical Psychology*,
73(1), 77-85. https://doi.org/10.1348/000711200160318

Decety, J., & Fotopoulou, A. (2015). Why empathy has a beneficial impact on
others in medicine: unifying theories. *Frontiers in Behavioral Neuroscience*,
8, 457. https://doi.org/10.3389/fnbeh.2014.00457

Decety, J., & Jackson, P. L. (2004). The functional architecture of human
empathy. *Behavioral and Cognitive Neuroscience Reviews*, *3*(2), 71-100.
https://doi.org/10.1177/1534582304267187

Decety, J., & Lamm, C. (2009). Empathy versus personal distress: Recent

   evidence from social neuroscience. In J. Decety & W. Ickes (Eds.), *The*

   social neuroscience of empathy (pp. 199–213). Boston

   Review. https://doi.org/10.7551/mitpress/9780262012973.003.0016

Dedovic, K., Renwick, R., Mahani, N. K., Engert, V., Lupien, S. J., & Pruessner, J.

   C. (2005). The Montreal Imaging Stress Task: using functional imaging to

   investigate the effects of perceiving and processing psychosocial stress in

   the human brain. *Journal of Psychiatry and Neuroscience*, *30*(5), 319-325.

Deighton, R. M., Gurris, N., & Traue, H. (2007). Factors affecting burnout and

   compassion fatigue in psychotherapists treating torture survivors: is the

   therapist's attitude to working through trauma relevant? *Journal of*

   Traumatic Stress, *20*(1), 63-75. https://doi.org/10.1002/jts.20180

Delahanty, D. L., Nugent, N. R., Christopher, N. C., & Walsh, M. (2005). Initial

   urinary epinephrine and cortisol levels predict acute PTSD symptoms in

   child trauma victims. *Psychoneuroendocrinology*, *30*(2), 121-128.

   https://doi.org/10.1016/j.psyneuen.2004.06.004

DelTosta, J. E., Ellis, M. V., & McNamara, M. L. (2019). Trainee vicarious

   traumatization: Examining supervisory working alliance and trainee

   empathy. *Training and Education in Professional Psychology*, *13*(4), 300.

   https://doi.org/10.1037/tep0000232

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufel, W. B. (2001). The job

   demands-resources model of burnout. *Journal of Applied Psychology,*

   86(3), 499-512.

Denk-Florea, C.-B., Gancz, B., Gomoiu, A., Ingram, M., Moreton, R., & Pollick, F.

   (2020). Understanding and supporting law enforcement professionals

working with distressing material: Findings from a qualitative study. *PloS One*, *15*(11), e0242808. https://doi.org/10.1371/journal.pone.0242808

Devilly, G. J., Wright, R., & Varker, T. (2009). Vicarious trauma, secondary traumatic stress or simply burnout? Effect of trauma therapy on mental health professionals. *Australian & New Zealand Journal of Psychiatry*, *43*(4), 373-385. https://doi.org/10.1080/00048670902721079

Dewe, P., & Cooper, G. L. (2007). Coping research and measurement in the context of work related stress. In G. P. Hodgkinson & J. K. Ford (Eds.), *International Review of Industrial and Organizational Psychology 2007* (pp. 141–191). John Wiley & Sons Ltd. https://doi.org/10.1002/9780470753378.ch4

Diaconescu, M. (2015). Burnout, secondary trauma and compassion fatigue in social work. *Revista de Asistenţă Socială*, (3), 57-63.

DiGangi, J. A., Gomez, D., Mendoza, L., Jason, L. A., Keys, C. B., & Koenen, K. C. (2013). Pretrauma risk factors for posttraumatic stress disorder: A systematic review of the literature. *Clinical Psychology Review*, *33*(6), 728-744. https://doi.org/10.1016/j.cpr.2013.05.002

Dijxhoorn, A.-F. Q., Brom, L., van der Linden, Y. M., Leget, C., & Raijmakers, N. J. (2021). Healthcare professionals' work-related stress in palliative care: a cross-sectional survey. *Journal of Pain and Symptom Management*, *62*(3), e38-e45. https://doi.org/10.1016/j.jpainsymman.2021.04.004

Ding, Y., Yang, Y., Yang, X., Zhang, T., Qiu, X., He, X., Wang, W., Wang, L., & Hong, S. (2015). The mediating role of coping style in the relationship between psychological capital and burnout among Chinese nurses. *PloS One*, *10*(4), e0122128. https://doi.org/10.1371/journal.pone.0122128

Doerfler, L. A., Paraskos, J. A., & Piniarski, L. (2005). Relationship of quality of life and perceived control with posttraumatic stress disorder symptoms 3 to 6 months after myocardial infarction. *Journal of Cardiopulmonary Rehabilitation and Prevention*, *25*(3), 166-172.

Donnelly, E., & Siebert, D. (2009). Occupational risk factors in the emergency medical services. *Prehospital and Disaster Medicine*, *24*(5), 422-429.

Dryden, W., & Branch, R. (2008). *The fundamentals of rational-emotive behaviour therapy*. John Wiley & Sons. https://doi.org/10.1017/S1049023X00007251

Duarte, J., Pinto-Gouveia, J., & Cruz, B. (2016). Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: A cross-sectional study. *International journal of nursing studies*, *60*, 1-11. https://doi.org/10.1016/j.ijnurstu.2016.02.015

Duffy, E., Avalos, G., & Dowling, M. (2015) Secondary traumatic stress among emergency nurses: a cross-sectional study. *International emergency nursing*, *23*(2), 53-58. https://doi.org/10.1016/j.ienj.2014.05.001

Dutton, M. A., & Rubinstein, F. L. (1995). Working with people with PTSD: Research implications. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 82–100). Brunner/Mazel.

Edebol Carlman, H. M., Rode, J., König, J., Repsilber, D., Hutchinson, A. N., Thunberg, P., Persson, J., Kiselev, A., Pruessner, J. C., & Brummer, R. J. (2022). Probiotic mixture containing lactobacillus helveticus, Bifidobacterium longum and Lactiplantibacillus plantarum affects brain responses to an arithmetic stress task in healthy subjects: a randomised clinical trial and proof-of-concept study. *Nutrients, 14*(7), 1329. https://doi.org/10.3390/nu14071329

Edmondson, D., Chaudoir, S. R., Mills, M. A., Park, C. L., Holub, J., & Bartkowiak,

    J. M. (2011). From shattered assumptions to weakened worldviews: Trauma

    symptoms signal anxiety buffer disruption. *Journal of Loss and Trauma*,

    16(4) pp. 358-385. https://doi.org/10.1080/15325024.2011.572030

Edwards, C. P., & Miller, M. K. (2019). An assessment of judges' self-reported

    experiences of secondary traumatic stress. *Juvenile and Family Court*

    Journal, *70*(2), 7-29. https://doi.org/10.1111/jfcj.12134

Edwards, J. R. (1992). A cybernetic theory of stress, coping, and well-being in

    organizations. *Academy of Management Review*, *17*(2), 238-274.

    https://doi.org/10.5465/amr.1992.4279536

Ehlers, A., & Clark, D. (2000). A cognitive model of posttraumatic stress disorder.

    Behaviour Research and Therapy, *38*(4), 319-345.

    https://doi.org/10.1016/S0005-7967(99)00123-0

Ehlers, A., Hackmann, A., & Michael, T. (2004). Intrusive re-experiencing in post-

    traumatic stress disorder: Phenomenology, theory, and therapy. *Memory*,

    12(4), 403-415. https://doi.org/10.1080/09658210444000025

Eisenberg, N., Fabes, R. A., & Losoya, S. (1997). Emotional responding:

    Regulation, social correlates, and socialization. In P. Salovey & D. J. Sluyter

    (Eds.), *Emotional development and emotional intelligence: Educational*

    implications (pp. 129–167). Basic Books.

Eklund, J. H., & Meranius, M. S. (2021). Toward a consensus on the nature of

    empathy: A review of reviews. *Patient Education and Counseling*, *104*(2),

    300-307. https://doi.org/10.1016/j.pec.2020.08.022

El-Shaarawi, N., & Razsa, M. (2019). Movements upon movements: Refugee and

    activist struggles to open the Balkan route to Europe. *History and*

    Anthropology, *30*(1), 91-112.

Elliott, D. M., & Guy, J. D. (1993). Mental health professionals versus non-mental-health professionals: Childhood trauma and adult functioning. *Professional Psychology: Research and Practice*, *24*(1), 83.

Elliott, R., Bohart, A. C., Watson, J. C., & Murphy, D. (2018). Therapist empathy and client outcome: An updated meta-analysis. *Psychotherapy*, *55*(4), 399. https://doi.org/10.1037/pst0000175

Ellis, C., & Knight, K. E. (2021). Advancing a model of secondary trauma: Consequences for victim service providers. *Journal of Interpersonal Violence*, *36*(7-8), 3557-3583. https://doi.org/10.1177/0886260518775161

Elwood, L. S., Mott, J., Lohr, J. M., & Galovski, T. E. (2011). Secondary trauma symptoms in clinicians: A critical review of the construct, specificity, and implications for trauma-focused treatment. *Clinical Psychology Review*, *31*(1), 25-36. https://doi.org/10.1016/j.cpr.2010.09.004

Engelhard, I. M., van den Hout, M. A., & Kindt, M. (2003). The relationship between neuroticism, pre-traumatic stress, and post-traumatic stress: A prospective study. *Personality and Individual Differences*, *35*(2), 381-388. https://doi.org/10.1016/S0191-8869(02)00200-3

Engelhard, I. M., van den Hout, M. A., & Smeets, M. A. (2011). Taxing working memory reduces vividness and emotional intensity of images about the Queen's Day tragedy. *Journal of Behavior Therapy and Experimental Psychiatry*, *42*(1), 32-37. https://doi.org/10.1016/j.jbtep.2010.09.004

England, K. V. (1994). Getting personal: Reflexivity, positionality, and feminist research. *The professional geographer*, *46*(1), 80-89. https://doi.org/10.1111/j.0033-0124.1994.00080.x

Enticott, P. G., Johnston, P. J., Herring, S. E., Hoy, K. E., & Fitzgerald, P. B. (2008). Mirror neuron activation is associated with facial emotion processing.

Neuropsychologia, *46*(11), 2851-2854.

https://doi.org/10.1016/j.neuropsychologia.2008.04.022

Everall, R. D., & Paulson, B. L. (2004). Burnout and Secondary Traumatic Stress: Impact on Ethical Behaviour. *Canadian Journal of Counselling*, *38*(1), 25-35.

Every, D., McLennan, J., Reynolds, A., & Trigg, J. (2019). Australian householders' psychological preparedness for potential natural hazard threats: An exploration of contributing factors. *International Journal of Disaster Risk Reduction*, *38*, 101203. https://doi.org/10.1016/j.ijdrr.2019.101203

Fallahi, C. R., & Lesik, S. A. (2009). The effects of vicarious exposure to the recent massacre at Virginia Tech. *Psychological Trauma: Theory, Research, Practice, and Policy*, *1*(3), 220. https://doi.org/10.1037/a0015052

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191. https://doi.org/10.3758/BF03193146

Fauth, J. (2006). Toward more (and better) countertransference research. *Psychotherapy: Theory, Research, Practice, Training*, *43*(1), 16. https://doi.org/10.1037/0033-3204.43.1.16

Fawcett, H., Barnes, A., Brooks, M., Glynn, J., Errickson, D., Carew, R., & Livanou, M. (in preparation). The impact of 3D printed human skeletal remains in court upon juror comprehension, decision making, trauma, and stress.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, *5*(1), 80-92. https://doi.org/10.1177/160940690600500107

Figley, C. R. (1983) *Traumatic stress and the role of the family and social support system.* In *Trauma and its wake* (pp. 39-54). Routledge.

Figley, C. R. (1993). Compassion stress and the family therapist. *Family Therapy News*, 1-8.

Figley, C. R. (1995). Compassion fatigue: Toward a new understanding of the costs of caring. In B. H. Stamm (Ed.), *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (pp. 3–28). The Sidran Press.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of Clinical Psychology*, *58*(11), 1433-1441. https://doi.org/10.1002/jclp.10090

Figley, C. R. (2013). *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized.* Routledge. https://doi.org/10.4324/9780203777381

Figley, C. R., & Ludick, M. (2017). Secondary traumatization and compassion fatigue. In S. N. Gold (Ed.), *APA handbook of trauma psychology: Foundations in knowledge* (pp. 573–593). American Psychological Association. https://doi.org/10.1037/0000019-029

Fincham, B., Scourfield, J., & Langer, S. (2008). The impact of working with disturbing secondary data: Reading suicide files in a coroner's office. *Qualitative Health Research*, *18*(6), 853-862. https://doi.org/10.1177/1049732307308945

Finklestein, M., Stein, E., Greene, T., Bronstein, I., & Solomon, Z. (2015). Posttraumatic stress disorder and vicarious trauma in mental health professionals. *Health and Social Work, 40*(2), e25-e31. https://doi.org/10.1093/hsw/hlv026

Finlay, L. (2016). *Relational Integrative Psychotherapy: Engaging Process and Theory in Practice Wiley*. John Wiley & Sons Ltd. http://doi.org/10.1002/9781119141518

Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. *Journal of Organizational Behavior, 21*(2), 123-129. https://doi.org/10.1002/(SICI)1099-1379(200003)21:2<123::AID-JOB33>3.0.CO;2-8

Fletcher, A. J. (2017). Applying critical realism in qualitative research: methodology meets method. *International Journal of Social Research Methodology*, *20*(2), 181-194. https://doi.org/10.1080/13645579.2016.1144401

Foa, E. B., McLean, C. P., Zang, Y., Zhong, J., Powers, M. B., Kauffman, B. Y., Rauch, S., Porter, K., & Knowles, K. (2016). Psychometric properties of the Posttraumatic Diagnostic Scale for DSM–5 (PDS–5). *Psychological Assessment*, *28*(10), 1166. http://doi.org/10.1037/pas0000258

Foa, E. B., Zinbarg, R., & Rothbaum, B. O. (1992). Uncontrollability and unpredictability in post-traumatic stress disorder: an animal model. *Psychological Bulletin*, *112*(2), 218. http://doi.org/10.1037/0033-2909.112.2.218

Foley, J., Hassett, A., & Williams, E. (2022). '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).' *The Police Journal*, *95*(1), 224-252. https://doi.org/10.1177/0032258X21990412

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*, 745-774. https://doi.org/10.1146/annurev.psych.55.090902.141456

Follette, V. M., Polusny, M. M., & Milbeck, K. (1994). Mental health and law enforcement professionals: Trauma history, psychological symptoms, and impact of providing services to child sexual abuse survivors. *Professional Psychology: Research and Practice*, *25*(3), 275.

Frans, Ö., Rimmö, P. A., Åberg, L., & Fredrikson, M. (2005). Trauma exposure and post-traumatic stress disorder in the general population. *Acta Psychiatrica Scandinavica*, *111*(4), 291-290. https://doi.org/10.1111/j.1600-0447.2004.00463.x

Freud, S. and Ferenczi, S. (1993) *The Correspondence of Sigmund Freud and Sándor Ferenczi: 1920-1933.* Harvard University Press.

Fryer, T. (2022). A critical realist approach to thematic analysis: producing causal explanations. *Journal of Critical Realism*, *21*(4), 365-384. https://doi.org/10.1080/14767430.2022.2076776

Furlonger, B., & Taylor, W. (2013). Supervision and the management of vicarious traumatisation among Australian telephone and online counsellors. *Journal of Psychologists and Counsellors in Schools*, *23*(1), 82-94. https://doi.org/10.1017/jgc.2013.3

Gallagher, M. W., Bentley, K. H., & Barlow, D. H. (2014). Perceived control and vulnerability to anxiety disorders: A meta-analytic review. *Cognitive Therapy and Research*, *38,* 571-584. https://doi.org/10.1007/s10608-014-9624-x

Garbarino, S., Chiorri, C., & Magnavita, N. (2014). Personality traits of the Five-Factor Model are associated with work-related stress in special force police officers. *International Archives of Occupational and Environmental Health*, *87*, 295-306. https://doi.org/10.1007/s00420-013-0861-1

Geoffrion, S., Lamothe, J., Morizot, J., & Giguère, C. É. (2019). Construct validity of the professional quality of life (ProQoL) scale in a sample of child

protection workers. *Journal of Traumatic Stress*, *32*(4), 566-576.

https://doi.org/10.1002/jts.22410

Geva, N., & Defrin, R. (2018). Opposite effects of stress on pain modulation

depend on the magnitude of individual stress response. *The Journal of*

Pain, *19*(4), 360-371. https://doi.org/10.1016/j.jpain.2017.11.011

Gil, S., & Weinberg, M. (2015). Secondary trauma among social workers treating

trauma clients: The role of coping strategies and internal resources.

International Social Work, *58*(4), 551-561.

https://doi.org/10.1177/0020872814564705

Gillespie, S. L., Anderson, C. M., Zhao, S., Tan, Y., Kline, D., Brock, G., Odei, J.,

O'Brien, E., Sims, M., Lazarus, S. A., Hood, D. B., Williams, P. W., &

Joseph, J. J. (2019). Allostatic load in the association of depressive

symptoms with incident coronary heart disease: The Jackson Heart Study.

Psychoneuroendocrinology, *109,* 104369.

https://doi.org/10.1016/j.psyneuen.2019.06.020

Gillespie, S. M., McCleery, J. P., & Oberman, L. M. (2014). Spontaneous versus

deliberate vicarious representations: different routes to empathy in

psychopathy and autism. *Brain*, *137*(4), e272-e272.

https://doi.org/10.1093/brain/awt364

Goldin, P. R., McRae, K., Ramel, W., & Gross, J. J. (2008). The neural bases of

emotion regulation: reappraisal and suppression of negative emotion.

Biological Psychiatry, *63*(6), 577-586.

https://doi.org/10.1016/j.biopsych.2007.05.031

Gould, F., Harvey, P. D., Hodgins, G., Jones, M. T., Michopoulos, V., Maples-Keller,

J., Rothbaum, B. O., Rothbaum, A. O., Ressler, K. J., & Nemeroff, C. B.,

(2021). Prior trauma-related experiences predict the development of

posttraumatic stress disorder after a new traumatic event. *Depression and Anxiety, 38*(1), 40-47. https://doi.org/10.1002/da.23084

Greinacher, A., Derezza-Greeven, C., Herzog, W., & Nikendei, C. (2019). Secondary traumatization in first responders: a systematic review. *European Journal of Psychotraumatology, 10*(1), 1562840. https://doi.org/10.1080/20008198.2018.1562840

Grillon, C., Baas, J. P., Lissek, S., Smith, K., & Milstein, J. (2004). Anxious responses to predictable and unpredictable aversive events. *Behavioral Neuroscience, 118*(5), 916. https://doi.org/10.1037/0735-7044.118.5.916

Grissom, N., & Bhatnagar, S. (2009). Habituation to repeated stress: get used to it. *Neurobiology of Learning and Memory, 92*(2), 215-224. https://doi.org/10.1016/j.nlm.2008.07.001

Gross, J. J. (1998). Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*(1), 224. https://doi.org/10.1037//0022-3514.74.1.224

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348. https://doi.org/10.1037/0022-3514.85.2.348

Gruszka, A., & Nęcka, E. (2017). Limitations of working memory capacity: The cognitive and social consequences. *European Management Journal, 35*(6), 776-784. https://doi.org/10.1016/j.emj.2017.07.001

Grynberg, D., & Konrath, S. (2020). The closer you feel, the more you care: Positive associations between closeness, pain intensity rating, empathic

concern and personal distress to someone in pain. *Acta Psychologica*, *210*,
103175. https://doi.org/10.1016/j.actpsy.2020.103175

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic
inquiries. *Ectj*, *29*(2), 75-91. https://doi.org/10.1007/BF02766777

Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2009). Evaluation of a mental
toughness training program for youth-aged Australian footballers: I. A
quantitative analysis. *Journal of Applied Sport Psychology*, *21*(3), 307-323.
https://doi.org/10.1080/10413200903026066

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An
experiment with data saturation and variability. *Field Methods*, *18*(1), 59-82.
https://doi.org/10.1177/1525822X05279903

Guidi, J., Lucente, M., Sonino, N., & Fava, G. A. (2021). Allostatic load and its
impact on health: a systematic review. *Psychotherapy and Psychosomatics*,
90(1), 11-27. https://doi.org/10.1159/000510696

Hagaman, A. K., & Wutich, A. (2017). How many interviews are enough to identify
metathemes in multisited and cross-cultural research? Another perspective
on Guest, Bunce, and Johnson's (2006) landmark study. *Field Methods*,
29(1), 23-41. https://doi.org/10.1177/1525822X16640447

Hagenaars, M. A., Holmes, E. A., Klaassen, F., & Elzinga, B. (2017). Tetris and
Word games lead to fewer intrusive memories when applied several days
after analogue trauma. *European Journal of Psychotraumatology*, *8*(sup1),
1386959. https://doi.org/10.1080/20008198.2017.1386959

Haigh, C., & Witham, G. (2013). Distress protocol for qualitative data
collection. *Archives of Psychiatric Nursing*, *23*(5), 343-350.

Hajiesmaello, M., Hajian, S., Riazi, H., Majd, H. A., & Yavarian, R. (2022).
Secondary traumatic stress in iranian midwives: stimuli factors, outcomes

and risk management. *BMC Psychiatry*, *22*(1), 1-13.

https://doi.org/10.1186/s12888-022-03707-7

Hall, B. J., Xiong, Y. X., Yip, P. S., Lao, C. K., Shi, W., Sou, E. K., Chang, K.,

Wang, L., & Lam, A. I. F. (2019). The association between disaster

exposure and media use on post-traumatic stress disorder following

Typhoon Hato in Macao, China. *European Journal of Psychotraumatology*,

10(1), 1558709. https://doi.org/10.1080/20008198.2018.1558709

Hall, J. A., & Schwartz, R. (2019). Empathy present and future. *The Journal of*

Social Psychology, *159*(3), 225-243.

https://doi.org/10.1080/00224545.2018.1477442

Hammersley, M., & Atkinson, P. (2019) *Ethnography: principles in practice.* (4th

ed.). Routledge. https://doi.org/10.4324/9781315146027

Han, L., Zhang, Q., Chen, X., Zhan, Q., Yang, T., & Zhao, Z. (2017). Detecting

work-related stress with a wearable device. *Computers in Industry*, *90*, 42-

49. https://doi.org/10.1016/j.compind.2017.05.004

Hansen, L. (2010). Ontologies, epistemologies, methodologies. In L. J. Shepard

(Ed), *Gender matters in global politics* (pp. 43-53). Routledge.

Hansen, M., Andersen, T. E., Armour, C., Elklit, A., Palic, S., & Mackrill, T. (2010).

PTSD-8: a short PTSD inventory. *Clinical Practice and Epidemiology in*

Mental Health, 6, 101. https://doi.org/10.2174/1745017901006010101

Hargrave, P. A., Scott, K. M., & McDowall, J. (2006). To resolve or not to resolve:

Past trauma and secondary traumatic stress in volunteer crisis workers.

Journal of Trauma Practice, *5*(2), 37-55.

https://doi.org/10.1300/J189v05n02_03

Harker, R., Pidgeon, A. M., Klaassen, F., & King, S. (2016). Exploring resilience

and mindfulness as preventative factors for psychological distress burnout

and secondary traumatic stress among human service professionals. *Work (Reading, Mass.)*, *54*(3), 631-637. https://doi.org/10.3233/WOR-162311

Harris, D. M., Happell, B., & Manias, E. (2015). Working with people who have killed: The experience and attitudes of forensic mental health clinicians working with forensic patients. *International Journal of Mental Health Nursing*, *24*(2), 130-138. https://doi.org/10.1111/inm.12113

Harrison, R. L., & Westwood, M. J. (2009). Preventing vicarious traumatization of mental health therapists: Identifying protective practices. *Psychotherapy: Theory, Research, Practice, Training*, *46*(2), 203. https://doi.org/10.1037/a0016081

Hasgul, E., & Serpen, A. S. (2014). Empathy's importance in social work practices. In G. T. Papanikos (Ed.), *An Anthology of Social Themes* (pp. 3-12). Athens Institute for Education and Research.

Hayes, M. W. (2013). The challenge of burnout: An ethical perspective. *Annals of Psychotherapy & Integrative Health*, *16*(2), 20-25.

He, L., Lai, K., Lin, Z., & Ma, Z. (2018). Media exposure and general trust as predictors of post-traumatic stress disorder: ten years after the 5.12 Wenchuan earthquake in China. *International Journal of Environmental Research and Public Health*, *15*(11), 2386. https://doi.org/10.3390/ijerph15112386

Hemsworth, D., Baregheh, A., Aoun, S., & Kazanjian, A. (2018). A critical enquiry into the psychometric properties of the professional quality of life scale (ProQol-5) instrument. *Applied Nursing Research*, *39*, 81-88. https://doi.org/10.1016/j.apnr.2017.09.006

Hensel, J. M., Ruiz, C., Finney, C., & Dewa, C. S. (2015). Meta-analysis of risk factors for secondary traumatic stress in therapeutic work with trauma

victims. *Journal of Traumatic Stress*, *28*(2), 83-91.

https://doi.org/10.1002/jts.21998

Herman, J. P., McKlveen, J. M., Ghosal, S., Kopp, B., Wulsin, A., Makinson, R.,

Sheimann, J., & Myers, B. (2016). Regulation of the hypothalamic-pituitary-

adrenocortical stress response. *Comprehensive Physiology*, *6*(2), 603.

https:doi.org/10.1002/cphy.c150015

Herrema, J., Wiechart, P., Peklo, A., Gustman, S., & Dood, F. (2020). The Impact

of Organizational Support on Secondary Traumatic Stress and Evaluation of

a CISM Peer Support Program. *Crisis, Stress, and Human Resilience: An

International Journal*, *2*(1), 29-37.

Herzog, P., Barth, C., Rief, W., Brakemeier, E. L., & Kube, T. (2022). How

expectations shape the formation of intrusive memories: An experimental

study using the trauma film paradigm. *Cognitive Therapy and

Research*, *46*(4), 809-826. https://doi.org/10.1007/s10608-022-10290-4

Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A guide to conducting

consensual qualitative research. *The Counseling Psychologist*, *25*(4), 517-

572. https://doi.org/10.1177/0011000097254001

Hiraoka, D., & Nomura, M. (2017). Would situational stress be harmful for anyone?

The influence of situational factors and trait empathy on women's response

to infant crying. *Infant Behavior and Development*, *48*, 147-156.

https://doi.org/10.1016/j.infbeh.2017.04.005

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing

stress. *American Psychologist*, *44*(3), 513. https://doi.org/10.1037//0003-

066x.44.3.513

Hobfoll, S. E., Vinokur, A. D., Pierce, P. F., & Lewandowski-Romps, L. (2012). The

combined stress of family life, work, and war in Air Force men and women:

A test of conservation of resources theory. *International Journal of Stress Management*, *19*(3), 217. https://doi.org/10.1037/a0029247

Hogg, B., Gardoki-Souto, I., Valiente-Gómez, A., Rosa, A. R., Fortea, L., Radua, J., Benedikt, L. A., & Moreno-Alcázar, A. (2023). Psychological trauma as a transdiagnostic risk factor for mental disorder: an umbrella meta-analysis. *European Archives of Psychiatry and Clinical Neuroscience*, *273*(2), 397-410. https://doi.org/10.1007/s00406-022-01495-5

Höhne, N., Poidinger, M., Merz, F., Pfister, H., Brückl, T., Zimmermann, P., Manfred, U., Holsboer, F., & Ising, M. (2014). Increased HPA axis response to psychosocial stress in remitted depression: the influence of coping style. *Biological Psychology*, *103*, 267-275. https://doi.org/10.1016/j.biopsycho.2014.09.008

Hojat, M., Louis, D. Z., Maxwell, K., Markham, F., Wender, R., & Gonnella, J. S. (2010). Patient perceptions of physician empathy, satisfaction with physician, interpersonal trust, and compliance. *International Journal of Medical Education*, *1*, 83. https://doi.org/10.5116/ijme.4d00.b701

Holman, E. A., Garfin, D. R., Lubens, P., & Silver, R. C. (2020). Media exposure to collective trauma, mental health, and functioning: does it matter what you see?. *Clinical Psychological Science*, *8*(1), 111-124. https://doi.org/10.1177/2167702619858300

Holmes, A. G. D. (2020). Researcher Positionality--A Consideration of Its Influence and Place in Qualitative Research--A New Researcher Guide. *Shanlax International Journal of Education*, *8*(4), 1-10. https://doi.org/10.34293/education.v8i4.3232

Holmes, E. A., & Bourne, C. (2008). Inducing and modulating intrusive emotional

memories: A review of the trauma film paradigm. *Acta psychologica*, *127*(3),

553-566. https://doi.org/10.1016/j.actpsy.2007.11.002

Holmes, E. A., Brewin, C. R., & Hennessy, R. G. (2004). Trauma films, information

processing, and intrusive memory development. *Journal of Experimental

Psychology: General*, *133*(1), 3. https://doi.org/10.1037/0096-3445.133.1.3

Holmes, E. A., James, E. L., Kilford, E. J., & Deeprose, C. (2010). Key steps in

developing a cognitive vaccine against traumatic flashbacks: Visuospatial

Tetris versus verbal Pub Quiz. *PloS One*, *5*(11), e13706. https://doi.org/

10.1371/journal.pone.0013706

Horesh, D. (2016). The reconstruction of criterion A in DSM-5: Is it a true

incorporation of secondary traumatization into the PTSD diagnosis?.

Journal of Loss and Trauma, *21*(5), 345-349.

https://doi.org/10.1080/15325024.2015.1072016

Hosking, J. G., Cocker, P. J., & Winstanley, C. A. (2016). Prefrontal cortical

inactivations decrease willingness to expend cognitive effort on a rodent

cost/benefit decision-making task. *Cerebral Cortex*, *26*(4), 1529-1538.

https://doi.org/10.1093/cercor/bhu321

Hotchkiss, J. T., & Wong, M. Y. C. (2022). Factorial Structure of the ProQOL—

Systematic Meta-analysis and Integration of 27 International Factor

Analysis Studies. *Trends in Psychology*, 1-32.

https://doi.org/10.1007/s43076-022-00184-5

Houston, J. B. (2009). Media coverage of terrorism: A meta-analytic assessment of

media use and posttraumatic stress. *Journalism & Mass Communication

Quarterly*, *86*(4), 844-861. https://doi.org/10.1177/107769900908600408

Howard, J., Lorenzo-Luaces, L., Lind, C., Lakhan, P., & Rutter, L. A. (2024). Is a Criterion A trauma necessary to elicit posttraumatic stress symptoms?. *Journal of Psychiatric Research*, *170*, 58-64. https://doi.org/10.1016/j.jpsychires.2023.12.008

Howitt, D. (2016). *Introduction to qualitative research methods in psychology* (3rd ed). Pearson Education.

Huang-Chih Chou, F., Tung-Ping Su, T., Ou-Yang, W.-C., Chien, I.-C., Lu, M.-K., & Chou, P. (2003). Establishment of a disaster-related psychological screening test. *Australian & New Zealand Journal of Psychiatry*, *37*(1), 97-103. http://doi.org/10.1046/j.1440-1614.2003.01087.x

Huggard, P., & Unit, G. (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*, 2013-2011. http://trauma.massey.ac.nz/issues/2013-1/AJDTS_2013-1_Nimmo.pdf

Hunt, P., Denieffe, S., & Gooney, M. (2019). Running on empathy: Relationship of empathy to compassion satisfaction and compassion fatigue in cancer healthcare professionals. *European Journal of Cancer Care*, *28*(5), e13124. https://doi.org/10.1111/ecc.13124

Hunter, A. L., Minnis, H., & Wilson, P. (2011). Altered stress responses in children exposed to early adversity: a systematic review of salivary cortisol studies. *Stress*, *14*(6), 614-626. https://doi.org/10.3109/10253890.2011.577848

Hurrell, A. K., Draycott, S., & Andrews, L. (2018). Secondary traumatic stress in police officers investigating childhood sexual abuse. *Policing: An International Journal*, *41*(5), 636-650. https://doi.org/10.1108/PIJPSM-08-2016-0131

Inzlicht, M., & Friese, M. (2019). The past, present, and future of ego depletion. *Social Psychology*, *50*(5-6). https://doi.org/10.1027/1864-9335/a000398

Isobel, S., & Thomas, M. (2022). Vicarious trauma and nursing: An integrative review. *International Journal of Mental Health Nursing*, *31*(2), 247-259. https://doi.org/10.1111/inm.12953

Isserles, M., Shalev, A. Y., Roth, Y., Peri, T., Kutz, I., Zlotnick, E., & Zangen, A. (2013). Effectiveness of deep transcranial magnetic stimulation combined with a brief exposure procedure in post-traumatic stress disorder–a pilot study. *Brain stimulation*, *6*(3), 377-383. https://doi.org/10.1016/j.brs.2012.07.008

Ito, T., Tomita, T., Hasui, C., Otsuka, A., Katayama, Y., Kawamura, Y., Muraoka, M., Masako, M., Sakamoto, S., Agari, I., & Kitamrua, T. (2003). The link between response styles and major depression and anxiety disorders after child-loss. *Comprehensive Psychiatry*, *44*(5), 396-403. https://doi.org/10.1016/S0010-440X(03)00109-3

Iversen, A. C., Fear, N. T., Ehlers, A., Hughes, J. H., Hull, L., Earnshaw, M., Greenberg, N., Rona, R., Wessely, S., & Hotopf, M. (2008). Risk factors for post-traumatic stress disorder among UK Armed Forces personnel. *Psychological Medicine*, *38*(4), 511-522. https://doi.org/10.1017/S0033291708002778

Iversen, S., & Robertson, N. (2021). Prevalence and predictors of secondary trauma in the legal profession: a systematic review. *Psychiatry, Psychology and Law*, *28*(6), 802-822. https://doi.org/10.1080/13218719.2020.1855270

Ivicic, R., & Motta, R. (2017). Variables associated with secondary traumatic stress among mental health professionals. *Traumatology, 23*(2). https://doi.org/10.1037/trm0000065

Iyadurai, L., Blackwell, S. E., Meiser-Stedman, R., Watson, P. C., Bonsall, M. B., Geddes, J. R., Nobre, A. C., & Holmes, E. A. (2018). Preventing intrusive memories after trauma via a brief intervention involving Tetris computer game play in the emergency department: a proof-of-concept randomized controlled trial. *Molecular Psychiatry*, *23*(3), 674-682. https://doi.org/10.1038/mp.2017.23

Iyadurai, L., Visser, R. M., Lau-Zhu, A., Porcheret, K., Horsch, A., Holmes, E. A., & James, E. L. (2019). Intrusive memories of trauma: a target for research bridging cognitive science and its clinical application. *Clinical Psychology Review*, *69*, 67-82. https://doi.org/10.1016/j.cpr.2018.08.005

Jacobowitz, W., Moran, C., Best, C., & Mensah, L. (2015). Post-traumatic stress, trauma-informed care, and compassion fatigue in psychiatric hospital staff: A correlational study. *Issues in Mental Health Nursing*, *36*(11), 890-899. https://doi.org/10.3109/01612840.2015.1055020

Jahner, S., Penz, K., & Stewart, N. J. (2019). Psychological impact of traumatic events in rural nursing practice: An Integrative review. *Online Journal of Rural Nursing and Health Care*, 105-135. https://doi.org/10.14574/ojrnhc.v19i1.544

James, C. (2020). Towards trauma-informed legal practice: A review. *Psychiatry, Psychology and Law*, *27*(2), 275-299. https://doi.org/10.1080/13218719.2020.1719377

James, E. L., Bonsall, M. B., Hoppitt, L., Tunbridge, E. M., Geddes, J. R., Milton, A. L., & Holmes, E. A. (2015). Computer game play reduces intrusive

memories of experimental trauma via reconsolidation-update mechanisms. *Psychological Science*, *26*(8), 1201-1215. https://doi.org/10.1177/0956797615583071

James, E. L., Lau-Zhu, A., Clark, I. A., Visser, R. M., Hagenaars, M. A., & Holmes, E. A. (2016). The trauma film paradigm as an experimental psychopathology model of psychological trauma: Intrusive memories and beyond. *Clinical Psychology Review*, *47*, 106-142. https://doi.org/10.1016/j.cpr.2016.04.010

Janoff-Bulman, R. (1992) *Shattered assumptions: Towards a new psychology of trauma.* Free Press.

Janoff-Bulman, R. (1999). Rebuilding shattered assumptions after traumatic life events: Coping processes and outcomes. In C.R. Snyder (Ed.), *Coping: The psychology of what works* (pp. 305-323). Oxford University Press.

Jenkins, S. R., & Baird, S. (2002). Secondary traumatic stress and vicarious trauma: A validational study. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *15*(5), 423-432. https://doi.org/10.1023/A:1020193526843

Johansen, A. B., Kristiansen, E., Bjelland, I., & Tavakoli, S. (2019). Secondary traumatic stress in Norwegian SUD-therapists: Symptoms and related factors. *Nordic Studies on Alcohol and Drugs*, *36*(6), 522-531. https://doi.org/10.1177/1455072519847014

Johnson, H., & Thompson, A. (2008). The development and maintenance of post-traumatic stress disorder (PTSD) in civilian adult survivors of war trauma and torture: A review.' *Clinical Psychology Review*, *28*(1), 36-47. https://doi.org/10.1016/j.cpr.2007.01.017

Joinson, C. (1992). Coping with compassion fatigue. *Nursing*, *22*(4), *116*, 118-119, 120.

Jonsson, A., & Halabi, J. (2006). Work related post-traumatic stress as described by Jordanian emergency nurses. *Accident and Emergency Nursing*, *14*(2), 89-96. https://doi.org/10.1016/j.aaen.2006.02.001

Juczyński, Z., Ogińska-Bulik, N., & Binnebesel, J. (2022). Empathy and cognitive processing as factors determining the consequences of secondary exposure to trauma among Roman Catholic clergymen. *Journal of Religion and Health*, *61*(2), 1226-1241. https://doi.org/10.1007/s10943-021-01443-y

Juster, R.-P., Marin, M.-F., Sindi, S., Nair, N. V., Ng, Y. K., Pruessner, J. C., & Lupien, S. J. (2011). Allostatic load associations to acute, 3-year and 6-year prospective depressive symptoms in healthy older adults. *Physiology & Behavior*, *104*(2), 360-364. https://doi.org/10.1016/j.physbeh.2011.02.027

Kader, N., Elhusein, B., Chandrappa, N. S. K., Nashwan, A. J., Chandra, P., Khan, A. W., & Alabdulla, M. (2021). Perceived stress and post-traumatic stress disorder symptoms among intensive care unit staff caring for severely ill coronavirus disease 2019 patients during the pandemic: a national study. *Annals of General Psychiatry*, *20*(1), 1-8. https://doi.org/10.1186/s12991-021-00262-1

Kahriman, I., Nural, N., Arslan, U., Topbas, M., Can, G., & Kasim, S. (2016). The effect of empathy training on the empathic skills of nurses. *Iranian Red Crescent Medical Journal*, *18*(6), e24847. https://doi.org/10.5812/ircmj.24847

Kalaitzaki, A., Tamiolaki, A., & Tsouvelas, G. (2022). From secondary traumatic stress to vicarious posttraumatic growth amid COVID-19 lockdown in Greece: The role of health care workers' coping strategies. *Psychological*

Trauma: Theory, Research, Practice, and Policy, *14*(2), 273-280. https://doi.org/10.22365/jpsysch.2021.001

Kanno, H., & Giddings, M. M. (2017). Hidden trauma victims: Understanding and preventing traumatic stress in mental health professionals. *Social Work in Mental Health*, *15*(3), 331-353. https://doi.org/10.1080/15332985.2016.1220442

Kanstrup, M., Singh, L., Göransson, K. E., Widoff, J., Taylor, R. S., Gamble, B., Iyadurai, L., Moulds, M. L., & Holmes, E. A. (2021). Reducing intrusive memories after trauma via a brief cognitive task intervention in the hospital emergency department: an exploratory pilot randomised controlled trial. *Translational Psychiatry*, *11*(1), 1-15. https://doi.org/10.1038/s41398-020-01124-6

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., Degenhardt, L., de Girolamo, G., Dinolova, R. V., Ferry, F., Florescu, S., Gureje, O., Haro, J-M., Huang, Y., Karam, E. G., Kawakami, N., Lee, S., Lepine, J-P., Levinson, D., …Ferry, F. (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology*, *8*(sup5), 1353383. https://doi.org/10.1080/20009198.2017.1353383

Ketenci, S., Acet, N. G., Sarıdoğan, G. E., Aydın, B., Cabadak, H., & Gören, M. Z. (2020). The neurochemical effects of prazosin treatment on fear circuitry in a rat traumatic stress model. *Clinical Psychopharmacology and Neuroscience*, *18*(2), 219. https://doi.org/10.9758/cpn.2020.18.2.219

Keysers, C., & Gazzola, V. (2014). Dissociating the ability and propensity for empathy. *Trends in Cognitive Sciences*, *18*(4), 163-166. https://doi.org/10.1016/j.tics.2013.12.011

Khan, A., Maguen, S., Straus, L., Nelyan, T., Gross, J., & Cohen, B. (2021).

Expressive suppression and cognitive reappraisal in veterans with PTSD:

results from the mind your heart study. *Journal of Affective Disorders*, *283*,

278-284. https://doi.org/10.1016/j.jad.2021.02.015

Killian, K. D. (2008). Helping till it hurts? A multimethod study of compassion

fatigue, burnout, and self-care in clinicians working with trauma survivors.

Traumatology, *14*(2), 32-44. https://doi.org/10.1177/1534765608319083

Kim, J., Chesworth, B., Franchino-Olsen, H., & Macy, R. J. (2022). A Scoping

Review of Vicarious Trauma Interventions for Service Providers Working

With People Who Have Experienced Traumatic Events. *Trauma, Violence &*

Abuse, *23*(5), 1437-1460. https://doi.org/10.1177/1524838021991310

Kim, S., Park, Y., & Niu, Q. (2017). Micro-break activities at work to recover from

daily work demands. *Journal of Organizational Behavior*, *38*(1), 28-44.

https://doi.org/10.1002/job.2109

Kindermann, D., Sanzenbacher, M., Nagy, E., Greinacher, A., Cranz, A., Nikendei,

A., Friederich, H-C., & Nikendei, C. (2020). Prevalence and risk factors of

secondary traumatic stress in emergency call-takers and dispatchers–a

cross-sectional study. *European Journal of Psychotraumatology*, *11*(1),

1799478. https://doi.org/10.1080/20008198.2020.1799478

King, D. W., Taft, C., King, L. A., Hammond, C., & Stone, E. R. (2006).

Directionality of the association between social support and Posttraumatic

Stress Disorder: A longitudinal investigation. *Journal of Applied Social*

Psychology, *36*(12), 2980-2992.https://doi.org/10.1111/j.0021-

9029.2006.00138.x

Kiyimba, N., & O'Reilly, M. (2016). An exploration of the possibility for secondary

traumatic stress among transcriptionists: A grounded theory approach.

Qualitative Research in Psychology, *13*(1), 92-108. https://doi.org/10.1080/14780887.2015.1106630

Kleim, B., & Westphal, M. (2011). Mental health in first responders: A review and recommendation for prevention and intervention strategies. *Traumatology*, *17*(4), 17-24. https://doi.org/10.1177/1534765611429079

Koenen, K. C., De Vivo, I., Rich-Edwards, J., Smoller, J. W., Wright, R. J., & Purcell, S. M. (2009). Protocol for investigating genetic determinants of posttraumatic stress disorder in women from the Nurses' Health Study II. *BMC psychiatry*, *9*(1), 1-20. https://doi.org/10.1186/1471-244X-9-29

Kool, W., McGuire, J. T., Rosen, Z. B., & Botvinick, M. M. (2010). Decision making and the avoidance of cognitive demand. *Journal of Experimental Psychology: General*, *139*(4), 665. https://doi.org/10.1037/a0020198

Koopman, W. J., Watling, C. J., & LaDonna, K. A. (2020). Autoethnography as a strategy for engaging in reflexivity. *Global Qualitative Nursing Research*, *7*. https://doi.org/10.1177/233339362097050

Köverová, M. and Ráczová, B. (2017) *Burnout, stress and compassion fatigue among helping professionals.* In C. Pracana., & M. Wang (Eds.), *INPACT: International psychological applications conference and trends: Book of Proceedings* (pp. 58-62).

Kranke, D., Mudoh, Y., Weiss, E. L., Hovsepian, S., Gin, J., Dobalian, A., & Der-Martirosian, C. (2022). 'Emotional preparedness': A nuanced approach to disaster readiness among social workers. *Social Work Education*, *41*(5), 860-873. https://doi.org/10.1080/02615479.2021.1900099

Krans, J., & Bos, M. W. (2012). To think or not to think about trauma? An experimental investigation into unconscious thought and intrusion

development. *Journal of Experimental Psychopathology*, *3*(2), 310-321. https://doi.org/10.5127/jep.020011

Krans, J., Näring, G., & Becker, E. S. (2009). Count out your intrusions: Effects of verbal encoding on intrusive memories. *Memory*, *17*(8), 809-815. https://doi.org/10.1080/09658210903130780

Krans, J., Näring, G., Holmes, E. A., & Becker, E. S. (2010). "I see what you're saying": Intrusive images from listening to a traumatic verbal report. *Journal of Anxiety Disorders*, *24*(1), 134-140. https://doi.org/10.1016/j.janxdis.2009.09.009

Kreitzer, M. J., & Klatt, M. (2017). Educational innovations to foster resilience in the health professions. *Medical Teacher*, *39*(2), 153-159. https://doi.org/10.1080/0142159X.2016.1248917

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: a new depression diagnostic and severity measure. *Psychiatric Annals, 32*(9), 509-515. https://doi.org/10.3928/0048-5713-20020901-06

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal medicine*, *16*(9), 606-613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Kulkarni, S., Bell, H., Hartman, J. L., & Herman-Smith, R. L. (2013). Exploring individual and organizational factors contributing to compassion satisfaction, secondary traumatic stress, and burnout in domestic violence service providers. *Journal of the Society for Social Work and Research*, *4*(2), 114-130. https://doi.org/10.5243/jsswr.2013.8

Labrague, L. J., & de Los Santos, J. A. A. (2021). Resilience as a mediator between compassion fatigue, nurses' work outcomes, and quality of care

during the COVID-19 pandemic. *Applied Nursing Research*, *61*, 151476. https://doi.org/10.1016/j.apnr.2021.151476

Lai, L., Ren, Z., Yan, Y., Niu, G., Zhao, C., Luo, M., & Zhang, L. (2021). The double-edged-sword effect of empathy: The secondary traumatic stress and vicarious posttraumatic growth of psychological hotline counselors during the outbreak of COVID-19. *Acta Psychologica Sinica*, *53*(9), 992. https://doi.org/10.3724/SP.J.1041.2021.00992

Lambert, J. E., Engh, R., Hasbun, A., & Holzer, J. (2012). Impact of posttraumatic stress disorder on the relationship quality and psychological distress of intimate partners: a meta-analytic review. *Journal of Family Psychology*, *26*(5), 729. https://doi.org/10.1037/a0029341

Lancaster, S. L., Melka, S. E., & Rodriguez, B. F. (2009). An examination of the differential effects of the experience of DSM-IV defined traumatic events and life stressors. *Journal of Anxiety Disorders*, *23*(5), 711-717. https://doi.org/10.1016/j.janxdis.2009.02.010

Lau-Zhu, A., Holmes, E. A., Butterfield, S., & Holmes, J. (2017). Selective association between Tetris game play and visuospatial working memory: A preliminary investigation. *Applied Cognitive Psychology*, *31*(4), 438-445. https://doi.org/10.1002/acp.3339

Laverdière, O., Kealy, D., Ogrodniczuk, J. S., Chamberland, S., & Descôteaux, J. (2019). Psychotherapists' professional quality of life. *Traumatology*, *25*(3), 208. https://doi.org/10.1037/trm0000177

Laverdière, O., Ogrodniczuk, J. S., & Kealy, D. (2019). Clinicians' Empathy and Professional Quality of Life. *The Journal of Nervous and Mental Disease*, *207*(2), 49-52. https://doi.org/10.1097/NMD.0000000000000927

Lawani, A. (2021). Critical realism: what you should know and how to apply it. *Qualitative Research Journal*, *21*(3), 320-333. https://doi.org/10.1108/QRJ-08-2020-0101

Lazarus, R. S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering cognitive appraisal. *The Journal of Abnormal and Social Psychology*, *69*(2), 195. https://doi.org/10.1037/h0044635

Lazarus, R., & Folkman, S. (1984). Stress, appraisal, and coping. Springer Publishing Company.

Leaning, J., & Guha-Sapir, D. (2013). Natural disasters, armed conflict, and public health. *New England Journal of Medicine*, *369*(19), 1836-1842. https://doi.org/10.1056/NEJMra1109877

Leclerc, M.-E., Wemmers, J.-A., & Brunet, A. (2020). The unseen cost of justice: Post-traumatic stress symptoms in Canadian lawyers. *Psychology, Crime & Law*, *26*(1), 1-21.https://doi.org/10.1080/1068316X.2019.1611830

LeDoux, J. E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience, 23*(1), 155-184. https://doi.org/10.1146/annurev.neuro.23.1.155

Ledoux, K. (2015). Understanding compassion fatigue: understanding compassion. *Journal of Advanced Nursing*, *71*(9), 2041-2050. https://doi.org/10.1111/jan.12686

Lee, C. Y., Furnham, A., & Merritt, C. (2017). Effect of directness of exposure and trauma type on Mental Health Literacy of PTSD. *Journal of Mental Health*, *26*(3), 257-263. https://doi.org/10.1080/09638237.2016.1276531

Lee, J. H., Lee, D., Kim, J., Jeon, K., & Sim, M. (2017). Duty-related trauma exposure and posttraumatic stress symptoms in professional Firefighters.

Journal of Traumatic Stress, *30*(2), 133-141.

https://doi.org/10.1002/jts.22180

Lee, J. J., Gottfried, R., & Bride, B. E. (2018). Exposure to client trauma, secondary traumatic stress, and the health of clinical social workers: A mediation analysis. *Clinical Social Work Journal*, *46*(3), 228-235. https://doi.org/10.1007/s10615-017-0638-1

Lee, J. S., Ahn, Y. S., Jeong, K. S., Chae, J. H., & Choi, K. S. (2014). Resilience buffers the impact of traumatic events on the development of PTSD symptoms in firefighters. *Journal of Affective Disorders*, *162*, 128-133. https://doi.org/10.1016/j.jad.2014.02.031

Lee, L. J., Wehrlen, L., Ding, Y., & Ross, A. (2022). Professional quality of life, sleep disturbance and health among nurses: A mediation analysis. *Nursing Open*, *9*(6), 2771-2780. https://doi.org/10.1002/nop2.978

Lee, Y., Kim, S. M., Han, D. H., Yoo, S.-K., & Kim, H. (2021). Effects of Indirect Experience of Client Violence on Social Workers' Posttraumatic Stress Disorder. *Psychiatry Investigation*, *18*(11), 1100. https://doi.org/10.30773/pi.2021.0205

Leinweber, J., & Rowe, H. J. (2010). The costs of 'being with the woman': secondary traumatic stress in midwifery. *Midwifery*, *26*(1), 76-87. https://doi.org/10.1016/j.midw.2008.04.003

Léonard, M. J., Saumier, D., & Brunet, A. (2020). When the lawyer becomes traumatized: A scoping review. *Sage Open*, *10*(3), 2158244020957032. https://doi.org/10.1177/2158244020957032

Lerias, D., & Byrne, M. K. (2003). Vicarious traumatization: symptoms and predictors. Stress and Health, 19(3), 129-138. https://doi.orf/10.1002/smi.969

Leung, C. M., Ho, M. K., Bharwani, A. A., Cogo-Moreira, H., Wang, Y., Chow, M. S., Xiaoyan, F., Galea, S., Leung, G., & Ni, M. Y. (2022). Mental disorders following COVID-19 and other epidemics: a systematic review and meta-analysis. *Translational Psychiatry*, *12*(1), 205. https://doi.org/10.1038/s41398-022-01946-6

Leung, T., Schmidt, F., & Mushquash, C. (2022). A personal history of trauma and experience of secondary traumatic stress, vicarious trauma, and burnout in mental health workers: A systematic literature review. *Psychological Trauma: Theory, Research, Practice, and Policy*, *15*(Suppl 2), s213-s221. https://dio.org/10.1037/tra0001277

Lev, S., Zychlinski, E., & Kagan, M. (2022). Secondary Traumatic Stress Among Social Workers: The Contribution of Resilience, Social Support, and Exposure to Violence and Ethical Conflicts. *Journal of the Society for Social Work and Research*, *13*(1), 47-65. https://doi.org/10.1086/714015

Levin, A. P., & Greisberg, S. (2003). Vicarious trauma in attorneys. *Pace Law Review*, *24*, 245.

Levin, A. P., Albert, L., Besser, A., Smith, D., Zelenski, A., Rosenkranz, S., & Neria, Y. (2011). Secondary traumatic stress in attorneys and their administrative support staff working with trauma-exposed clients. *The Journal of Nervous and Mental Disease*, *199*(12), 946-955. https://doi.org/10.1097/NMD.0b013e3182392c26

Levin, Y., Bar-Or, R. L., Forer, R., Vaserman, M., Kor, A., & Lev-Ran, S. (2021). The association between type of trauma, level of exposure and addiction. *Addictive Behaviors*, *118*, 106889. https://doi.org/10.1016/j.addbeh.2021.106889

Levkovich, I., & Ricon, T. (2020). Understanding compassion fatigue, optimism and

emotional distress among Israeli school counsellors. *Asia Pacific Journal of*

Counselling and Psychotherapy, *11*(2), 159-180.

https://doi.org/10.1080/21507686.2020.1799829

Li, X., Li, S., Xiang, M., Fang, Y., Qian, K., Xu, J., Li, J., Zhang, Z., & Wang, B.

(2020). The prevalence and risk factors of PTSD symptoms among medical

assistance workers during the COVID-19 pandemic. *Journal of*

Psychosomatic Research, *139*, 110270.

https://doi.org/10.1016/j.jpsychores.2020.110270

Linck, J. A., Osthus, P., Koeth, J. T., & Bunting, M. F. (2014). Working memory and

second language comprehension and production: A meta-analysis.

Psychonomic Bulletin & Review, *21*, 861-883.

https://doi.org/10.3758/s13423-013-0565-2

Linck, J. A., Osthus, P., Koeth, J. T., & Bunting, M. F. (2014). Working memory and

second language comprehension and production: A meta-

analysis. *Psychonomic Bulletin & Review*, *21*, 861-883.

https://doi.org/10.3758/s13423-013-0565-2

Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic inquiry*. Sage.

Litt, M. D. (1988). Self-efficacy and perceived control: cognitive mediators of pain

tolerance. *Journal of Personality and Social Psychology*, *54*(1), 149.

https://dio.org/10.1037//0022-3514.54.1.149

Lloyd, A., Wattis, L., Devanney, C., & Bell, V. (2023). Refugee and asylum seeker

communities and access to mental health support: a local case study.

Journal of Immigrant and Minority Health, *25*(1), 176-180.

https://doi.org/10.1007/s10903-022-01367-z

Lochner, K. (2016). Affect, Mood, and Emotions. In: *Successful Emotions.*

> Springer, Wiesbaden. https://doi.org/10.1007/978-3-658-12231-7_3

Logan, S., & O'Kearney, R. (2012). Individual differences in emotionality and peri-

> traumatic processing. *Journal of Behavior Therapy and Experimental*

> *Psychiatry*, *43*(2), 815-822. https://doi.org/10.1016/j.jbtep.2011.12.003

Lombardo, B., & Eyre, C. (2011). Compassion fatigue: A nurse's primer. *The*

> *Online Journal of Issues in Nursing*, *16*(1), 3.

> https://doi.og/10.3912/OJIN.Vol16No01Man03

Losung, R. K., De Paoli, T., Kebbell, M., & Bond, A. (2021). The role of empathy in

> professional quality of life: A study on Australian police officers working in

> sexual assault and child abuse investigation. *Journal of Police and Criminal*

> *Psychology*, *36*, 616-626. https://doi.org/10.1007/s11896-021-09468-5

Ludick, M., & Figley, C. R. (2017). Toward a mechanism for secondary trauma

> induction and reduction: Reimagining a theory of secondary traumatic

> stress. *Traumatology*, *23*(1), 112. https://dio.org/10.1037/trm0000096

Lumivero. (2023). NVivo qualitative data analysis software (Version 12) [Software].

> Available from https://lumivero.com/products/nvivo/

Lunenfeld, B., & Stratton, P. (2013). The clinical consequences of an ageing world

> and preventive strategies. *Best Practice & Research Clinical Obstetrics &*

> *Gynaecology*, *27*(5), 643-659.

> https://doi.org/10.1016/j.bpobgyn.2013.02.005

Lustig, S. L., Delucchi, K., Tennakoon, L., Kaul, B., Marks, D. L., & Slavin, D.

> (2008). Burnout and stress among United States immigration

> judges. *Annual Reviews*, *12*, 14.

MacRitchie, V., & Leibowitz, S. (2010). Secondary traumatic stress, level of

> exposure, empathy and social support in trauma workers. *South African*

Journal of Psychology, *40*(2), 149-158.

https://doi.org/10.1177/008124631004000204

Magruder, K. M., McLaughlin, K. A., & Elmore Borbon, D. L. (2017). Trauma is a

public health issue. *European Journal of Psychotraumatology*, *8*(1),

1375338. https://dio.org/10.1080/20008198.2017.1375338

Maguire, G. and Byrne, M. K. (2017). The law is not as blind as it seems: Relative

rates of vicarious trauma among lawyers and mental health professionals.

Psychiatry, Psychology and Law, *24*(2), 233-243.

https://dio.org/10.1080/13218719.2016.1220037

Mahoney, M. J. (1981). Psychotherapy and human change process. In J. H.

Harvey & M. M. Parks (Eds.), *Psychotherapy research and behavior*

change (pp. 73–122). American Psychological Association.

Măirean, C. (2016). Emotion regulation strategies, secondary traumatic stress, and

compassion satisfaction in healthcare providers. *The Journal of*

Psychology, *150*(8), 961-975.

https://doi.org/10.1080/00223980.2016.1225659

Mâirean, C., Cimpoesu, D., & Turliuc, M. N. (2014). The associations between

vicarious trauma dysfunctional beliefs and traumatic stress among hospital

personnel. *Annals of AII Cuza University. Psychology Series*, *23*(1), 5.

Makadia, R., Sabin-Farrell, R., & Turpin, G. (2017). Indirect exposure to client

trauma and the impact on trainee clinical psychologists: Secondary

traumatic stress or vicarious traumatization? *Clinical Psychology &*

Psychotherapy, *24*(5), 1059-1068. https://doi.org/10.1002/cpp.2068

Malkina-Pykh, I. G. (2017). Associations of burnout, secondary traumatic stress

and individual differences among correctional psychologists. *Journal of*

Forensic Science and Research, *1*(1), 018-034.

https://dio.org/10.29328/journal.jfsr.1001003

Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines.

The Lancet, *358*(9280), 483-488. https://doi.org/10.1016/S0140-

6736(01)05627-6

Manea, L., Gilbody, S., & McMillan, D. (2015). A diagnostic meta-analysis of the

Patient Health Questionnaire-9 (PHQ-9) algorithm scoring method as a

screen for depression. *General Hospital Psychiatry*, *37*(1), 67-75.

https://doi.org/10.1016/j.genhosppsych.2014.09.009

Mangoulia, P., Koukia, E., Alevizopoulos, G., Fildissis, G., & Katostaras, T. (2015).

Prevalence of secondary traumatic stress among psychiatric nurses in

Greece. *Archives of Psychiatric Nursing*, *29*(5), 333-338.

https://doi.org/10.1016/j.apnu.2015.06.001

Manning, E. (2005). Wrestling with vulnerability: Countertransference disclosure

and the training therapist. *Psychotherapy Bulletin*, *40*(3), 5-11.

https://dio.org/10.2147/PRBM.S369294

Marconi, A.; Balzola, M.A.; Gatto, R.; Soresini, A.; Mabilia, D.; Poletti, S.

Compassion-oriented mindfulness-based program and health professionals:

A single-centered pilot study on burnout. *European Journal of Mental Health*

14(2), 280-295.

Marzetti, F., Vagheggini, G., Conversano, C., Miccoli, M., Gemignani, A., Ciacchini,

R., Panait, E. and Orru, G. (2020) 'Secondary traumatic stress and burnout

in healthcare workers during COVID-19 outbreak. MedRxiv, *09*(13),

20186692. https://doi.org/10.1101/2020.09.13.20186692

Maša Vukčević, M., & Marko, Ž. (2022). Coping with Secondary Traumatic Stress.

    International Journal of Enivornmental Research and Public Health, 19(19),

    12881. https://dio.org/10.3390/ijerph191912881

Maslach, C. (2001). What have we learned about burnout and health?. *Psychology*

    & Health, *16*(5), 607-611. https://doi.org/10.1080/08870440108405530

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout.

    Journal of Organizational Behavior, *2*(2), 99-113.

    https://doi.org/10.1002/job.4030020205

Masson, F., & Moodley, J. (2020). Secondary traumatic stress: The experiences of

    social workers in the South African Police Service. *Practice*, *32*(3), 169-189.

    https://doi.org/10.1080/09503153.2019.1615043

Mathieu, F. (2012). *The compassion fatigue workbook: Creative tools for*

    transforming compassion fatigue and vicarious traumatization. Routledge.

    https://doi.org/10.4324/9780203803349

Mauritz, M. W., Goossens, P. J., Draijer, N., & Van Achterberg, T. (2013).

    Prevalence of interpersonal trauma exposure and trauma-related disorders

    in severe mental illness. *European Journal of Psychotraumatology*, *4*(1),

    19985. https://doi.org/10.3402/ejpt.vi0.19985

Maxie-Moreman, A. D., & Tynes, B. M. (2022). Exposure to online racial

    discrimination and traumatic events online in Black adolescents and

    emerging adults. *Journal of Research on Adolescence*, *32*(1), 254-269.

    https://doi.org/10.1111/jora.12732

May, C. L., & Wisco, B. E. (2016). Defining trauma: How level of exposure and

    proximity affect risk for posttraumatic stress disorder. *Psychological*

    Trauma: Theory, Research, Practice, and Policy, *8*(2), 233.

    https://dio.org/10.1037/tra0000077

Mazzer, K., Boersma, K., & Linton, S. J. (2019). A longitudinal view of rumination, poor sleep and psychological distress in adolescents. *Journal of Affective Disorders*, *245*, 686-696. https://doi.org/10.1016/j.jad.2018.11.053

McCabe, J. L., & Holmes, D. (2009). Reflexivity, critical qualitative research and emancipation: A Foucauldian perspective. *Journal of Advanced Nursing*, *65*(7), 1518-1526. https://doi.org/10.1111/j.1365-2648.2009.04978.x

McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Trauma Stress, 3,* 131–149. https://doi.org/10.1007/BF00975140

McCann, I. L., & Pearlman, L. A. (1992). Constructivist self-development theory: A theoretical framework for assessing and treating traumatized college students. *Journal of American College Health*, *40*(4), 189-196. https://dio.org/10.1080/07448481.1992.9936281

McCormack, L., & Lowe, B. (2022). Making meaning of irreconcilable destruction of innocence: National humanitarian professionals exposed to cybercrime child sexual exploitation in the Philippines. *Child Abuse & Neglect*, *131*, 105770. https://doi.org/10.1016/j.chiabu.2022.105770

McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*, *338*(3), 171-179. https://doi.org/10.31887/DCNS.2006.8.4/bmcewen

McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. *Annals of the New York academy of sciences*, *840*(1), 33-44. https://doi.org/10.1111/j.1749-6632.1998.tb09546.x

McEwen, B. S. (2003). Mood disorders and allostatic load. *Biological Psychiatry*, *54*(3), 200-207. https://doi.org/10.1016/S0006-3223(03)00177-X

McEwen, B. S. (2008). Central effects of stress hormones in health and disease: Understanding the protective and damaging effects of stress and stress mediators. *European Journal of Pharmacology*, *583*(2-3), 174-185. https://doi.org/10.1016/j.ejphar.2007.11.071

McEwen, B. S., & Stellar, E. (1993). Stress and the individual: Mechanisms leading to disease. *Archives of Internal Medicine*, *153*(18), 2093-2101.

McGrath, C., Palmgren, P. J., & Liljedahl, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical Teacher*, *41*(9), 1002-10. https://doi.org/10.1080/0142159X.2018.1497149

McKinnon, A., Lorenz, H., Salkovskis, P., & Wild, J. (2022). Abstract thinking as a risk factor for the development of posttraumatic stress disorder symptoms in student paramedics. *Journal of Traumatic Stress*, *35*(2), 375-385. https://doi.org/10.1002/jts.22749

McLean, C. P., & Foa, E. B. (2017). Emotions and emotion regulation in posttraumatic stress disorder. *Current Opinion in Psychology*, *14*, 72-77. https://doi.org/10.1016/j.copsyc.2016.10.006

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research*, *45*(8), 1027-1035. https://doi.org/10.1016/j.jpsychires.2011.03.006

McLennan, J., Marques, M. D., & Every, D. (2020). Conceptualising and measuring psychological preparedness for disaster: The Psychological Preparedness for Disaster Threat Scale. *Natural Hazards*, *101,* 297-307. https://doi.org/10.1007/s11069-020-03866-4

McNally, R. J., Hatch, J. P., Cedillos, E. M., Luethcke, C. A., Baker, M. T., Peterson, A. L., & Litz, B. T. (2011). Does the repressor coping style predict

lower posttraumatic stress symptoms? *Military Medicine*, *176*(7), 752-756. https://doi.org/10.7205/milmed-d-10-00429

McNeillie, N., & Rose, J. (2021). Vicarious trauma in therapists: A meta-ethnographic review. *Behavioural and Cognitive Psychotherapy*, *49*(4), 426-440. https://dio.org/10.1017/S1352465820000776

Meadors, P., Lamson, A., Swanson, M., White, M., & Sira, N. (2010). Secondary traumatization in pediatric healthcare providers: Compassion fatigue, burnout, and secondary traumatic stress. *OMEGA-Journal of Death and Dying*, *60*(2), 103-128. https://doi.org/10.2190/OM.60.2.a

Mealer, M., & Jones, J. (2013). Posttraumatic stress disorder in the nursing population: a concept analysis. *Nursing Forum*, *48*(4), 279-288. https://dio.org/10.1111/nuf.12045

Meckes, S. J., McDonald, M. A., & Lancaster, C. L. (2021). Association between physical activity and mental health among first responders with different service roles. *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*(1), 66. https://dio.org/10.1037/tra0000971

Meditation Relax Music. (2017). *Relaxing Celtic Music for Stress Relief. Calming Music. Nature Music Therapy*. Retrieved 2nd October 2021 from https://www.youtube.com/watch?v=Ju86mknumYM

Mehus, C. J., & Becher, E. H. (2016). Secondary traumatic stress, burnout, and compassion satisfaction in a sample of spoken-language interpreters. *Traumatology*, *22*(4), 249. https://dio.org/10.1037/trm0000023

Meltzer-Brody, S., Churchill, E., & Davidson, J. R. (1999). Derivation of the SPAN, a brief diagnostic screening test for post-traumatic stress disorder. *Psychiatry Research*, *88*(1), 63-70. https://doi.org/10.1016/S0165-1781(99)00070-0

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.

Michael, T., Ehlers, A., Halligan, S. L., & Clark, D. (2005). Unwanted memories of assault: what intrusion characteristics are associated with PTSD? *Behaviour Research and Therapy*, *43*(5), 613-628. https://doi.org/10.1016/j.brat.2004.04.006

Michalopoulos, L. M., & Aparicio, E. (2012). Vicarious trauma in social workers: The role of trauma history, social support, and years of experience. *Journal of Aggression, Maltreatment & Trauma*, *21*(6), 646-664. https://doi.org/10.1080/10926771.2012.689422

Michelson, T., & Kluger, A. (2023). Can listening hurt you? A meta-analysis of the effects of exposure to trauma on listener's stress. *International Journal of Listening*, *37*(1), 1-11. https://doi.org/10.1080/10904018.2021.1927734

Middleton, J., Harris, L. M., Matera Bassett, D., & Nicotera, N. (2022). "Your soul feels a little bruised": Forensic interviewers' experiences of vicarious trauma. *Traumatology*, *28*(1), 74. https://doi.org/10.1037/trm0000297

Mikulincer, M., & Florian, V. (1996). Coping and adaptation to trauma and loss. In M. Zeidner., & N. S. Endler (Eds.), *Handbook of coping: Theory, research, and applications* (pp. 554-572). John & Wiley Sons.

Miller, M. K., Flores, D. M., & Pitcher, B. J. (2010). Using constructivist self-development theory to understand judges' reactions to a courthouse shooting: An exploratory study. *Psychiatry, Psychology and Law*, *17*(1), 121-138. https://doi.org/10.1080/13218710902930309

Mineka, S., & Hendersen, R. W. (1985). Controllability and predictability in acquired motivation. *Annual Review of Psychology*, *36*(1), 495-529.

Mistry, D., Gozna, L., & Cassidy, T. (2022). Psychological and the physical health impacts of forensic workplace trauma. *Journal of Forensic Practice*, *24*(1), 18-33. https://doi.org/10.1108/JFP-05-2021-0027

Mlotek, A. (2013). *The contribution of therapist empathy to client engagement and outcome in emotion-focused therapy for complex trauma* [Master's dissertation, University of Windsor]. Electronic Theses and Dissertations. https://scholar.uwindsor.ca/etd/4921

Mollica, R. F., Caspi-Yavin, Y., Bollini, P., Truong, T., Tor, S., & Lavelle, J. (1992). The Harvard Trauma Questionnaire: Validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *The Journal of Nervous and Mental Disease*, *180*(2), 111-116.

Molnar, B. E., Meeker, S. A., Manners, K., Tieszen, L., Kalergis, K., Fine, J. E., Hallinan, S., Wolfe, J. D., & Wells, M. K. (2020). Vicarious traumatization among child welfare and child protection professionals: A systematic review. *Child Abuse & Neglect*, *110*, 104679. https://doi.org/10.1016/j.chiabu.2020.104679

Molnar, B. E., Sprang, G., Killian, K. D., Gottfried, R., Emery, V., & Bride, B. E. (2017). Advancing science and practice for vicarious traumatization/secondary traumatic stress: A research agenda. *Traumatology*, *23*(2), 129. https://doi.org/10.1037/trm0000122

Monson, C. M., Fredman, S. J., & Dekel, R. (2010). Posttraumatic stress disorder in an interpersonal context. In J. G. Beck (Ed.), *Interpersonal processes in the anxiety disorders: Implications for understanding psychopathology and treatment* (pp. 179-208). American Psychological Association. http://www.jstor.org/stable/j.ctv1chs9fb

Moosavian Khorasani, S. H., Vagharseyyein, S. A., Zarei, B., & Shafiee, F. (2019). Association of perceived social support with secondary traumatic stress and perceived stress in nurses. *Scientific Journal of Nursing, Midwifery and Paramedical Faculty*, *5*(2), 68-80.

Mordeno, I. G., Go, G. P., & Yangson-Serondo, A. (2017). Examining the dimensional structure models of secondary traumatic stress based on DSM-5 symptoms. *Asian Journal of Psychiatry*, *25*, 154-160. https://doi.org/10.1016/j.ajp.2016.10.024

Morelli, S. A., Lieberman, M. D., & Zaki, J. (2015). The emerging study of positive empathy. *Social and Personality Psychology Compass*, *9*(2), 57-68. https://doi.org/10.1111/spc3.12157

Moreno-Jiménez, J. E., Blanco-Donoso, L. M., Rodríguez-Carvajal, R., Chico-Fernández, M., Montejo, J. C., & Garrosa, E. (2020). The Moderator Role of Passion for Work in the Association between Work Stressors and Secondary Traumatic Stress: A Cross-Level Diary Study among Health Professionals of Intensive Care Units. *Applied Psychology. Health and Well-being*, *12*(3), 907-933. https://doi.org/10.1111/aphw.12215

Moreno-Jiménez, J. E., Demerouti, E., Blanco-Donoso, L. M., Chico-Fernández, M., Iglesias-Bouzas, M. I., & Garrosa, E. (2022). Passionate healthcare workers in demanding intensive care units: its relationship with daily exhaustion, secondary traumatic stress, empathy, and self-compassion. *Current Psychology*, 1-16. https://doi.org/10.1007/s12144-022-03986-z

Morrison, L. E., & Joy, J. P. (2016). Secondary traumatic stress in the emergency department. *Journal of Advanced Nursing*, *72*(11), 2894-2906. https://dio.org/10.1111/jan.13030

Mottaghi, S., Poursheikhali, H., & Shameli, L. (2020). Empathy, compassion fatigue, guilt and secondary traumatic stress in nurses. *Nursing Ethics, 27*(2), 494-504. https://doi.org/10.1177/0969733019851548

Moudatsou, M., Stavropoulou, A., Philalithis, A., & Koukouli, S. (2020). The role of empathy in health and social care professionals. *Healthcare (Basel), 8*(1), 26. https://doi.org/10.3390/healthcare8010026

Moulds, M. L., Bisby, M. A., Wild, J., & Bryant, R. A. (2020). Rumination in posttraumatic stress disorder: A systematic review. *Clinical Psychology Review, 82*, 101910. https://doi.org/10.1016/j.cpr.2020.101910

Munroe, J. F. (1990). *Therapist traumatization from exposure to clients with combat-related posttraumatic stress disorder: Implications for administration and supervision* (Publication No. 9119344) [Northeastern University] ProQuest Dissertations & Theses.

Muomah, R. C., Ndukuba, A. C., Odinka, P. C., Amadi, K. U., Nduanya, C. U., Odinka, J. I., & Iyidobi, T. C. (2021). Indirect exposure to trauma: Does resilience explain the link between optimism and secondary traumatic stress among in-patient carers?. *Journal of Psychology in Africa, 31*(3), 267-271. https://doi.org/10.1080/14330237.2021.1927351

Nagano-Saito, A., Dagher, A., Booij, L., Gravel, P., Welfeld, K., Casey, K. F., Layton, M., & Benkelfat, C. (2013). Stress-induced dopamine release in human medial prefrontal cortex—18F-Fallypride/PET study in healthy volunteers. *Synapse, 67*(12), 821-830. https://doi.org/10.1002/syn.21700

Najjar, N., Davis, L. W., Beck-Coon, K., & Carney Doebbeling, C. (2009) Compassion fatigue: A review of the research to date and relevance to cancer-care providers. *Journal of Health Psychology, 14*(2), 267-277. https://doi.org/10.1177/1359105308100211

National Institute for Health and Care Excellence. (2022). *Wellbeing at work.* NICE
    guideline. [NICE Guideline No. 212].
    https://www.nice.org.uk/guidance/ng212/chapter/Recommendations

Neff, K. D., Knox, M. C., Long, P., & Gregory, K. (2020). Caring for others without
    losing yourself: An adaptation of the Mindful Self-Compassion Program for
    Healthcare Communities. *Journal of Clinical Psychology*, *76*(9), 1543-1562.
    https://doi.org/10.1002/jclp.23007

Nelson-Gardell, D., & Harris, D. (2003). Childhood abuse history, secondary
    traumatic stress, and child welfare workers. *Child Welfare*, 5-26.
    https://www.jstor.org/stable/45390105

Neumann, D. L., Chan, R. C., Boyle, G. J., Wang, Y., & Westbury, H. R. (2015).
    Measures of empathy: Self-report, behavioral, and neuroscientific
    approaches. *Measures of Personality and Social Psychological Constructs*,
    257-289. https://doi.org/10.1016/B978-0-12-386915-9.00010-3

Neuner, F., Schauer, M., Karunakara, U., Klaschik, C., Robert, C., & Elbert, T.
    (2004). Psychological trauma and evidence for enhanced vulnerability for
    posttraumatic stress disorder through previous trauma among West Nile
    refugees. *BMC Psychiatry*, *4*(1), 1-7. https://doi.org/10.1186/1471-244X-4-
    34

Newell, J. M., & MacNeil, G. A. (2010). Professional burnout, vicarious trauma,
    secondary traumatic stress, and compassion fatigue. *Best Practices in
    Mental Health*, *6*(2), 57-68.

Ng, T. W., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: a meta-
    analysis. *Journal of Organizational Behavior: The International Journal of
    Industrial, Occupational and Organizational Psychology and Behavior*,
    27(8), 1057-1087. https://doi.org/10.1002/job.416

Nickels, J. B., Cramer, K. M., & Gural, D. M. (1992). Toward unconfounding

prediction and control: Predictionless control made possible. *Canadian

Journal of Behavioral Science, 24*, 156-170.

Nienhuis, J. B., Owen, J., Valentine, J. C., Winkeljohn Black, S., Halford, T. C.,

Parazak, S. E., Budge, S., & Hilsenroth, M. (2018). Therapeutic alliance,

empathy, and genuineness in individual adult psychotherapy: A meta-

analytic review. *Psychotherapy Research*, *28*(4), 593-605.

https://doi.org/10.1080/10503307.2016.1204023

Nimmo, A., & 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.

https://trauma.massey.ac.nz/issues/2013-1/AJDTS_2013-1_Nimmo.pdf

Nitschke, J. P., & Bartz, J. A. (2023). The association between acute stress &

empathy: A systematic literature review. *Neuroscience & Biobehavioral

Reviews*, *144*, 105003. https://doi.org/10.1016/j.neubiorev.2022.105003

Nixon, R. D., Nehmy, T., & Seymour, M. (2007). The effect of cognitive load and

hyperarousal on negative intrusive memories. *Behaviour Research and

Therapy*, *45*(11), 2652-2663. https://doi.org/10.1016/j.brat.2007.06.010

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the

duration of depressive episodes. *Journal of Abnormal Psychology*, *100*(4),

569. https://doi.org/10.1037//0021-843x.100.4.569

Nolte, A. G., Downing, C., Temane, A., & Hastings-Tolsma, M. (2017). Compassion

fatigue in nurses: A metasynthesis. *Journal of Clinical Nursing*, *26*(23-24),

4364-4378. https://doi.org/10.1111/jocn.13766

Norcross, J. C., & Lambert, M. J. (2019). *Psychotherapy relationships that work:

Volume 1: Evidence-based therapist contributions.* Oxford University Press.

Norrman Harling, M., Högman, E., & Schad, E. (2020). Breaking the taboo: Eight Swedish clinical psychologists' experiences of compassion fatigue. *International Journal of Qualitative Studies on Health and Well-being*, *15*(1), 1785610. https://doi.org/10.1080/17482631.2020.1785610

O'Mahony, S., Ziadni, M., Hoerger, M., Levine, S., Baron, A., & Gerhart, J. (2018. Compassion fatigue among palliative care clinicians: findings on personality factors and years of service. *American Journal of Hospice and Palliative Medicine®*, *35*(2), 343-347. https://doi.org/10.1177/1049909117701695

O'Reilly, M., & Parker, N. (2013). 'Unsatisfactory Saturation': a critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*, *13*(2), 190-197. https://doi.org/10.1177/1468794112446106

O'Sullivan, K., Hunter, J., Kemp, R. I., & Vines, P. (2022). Judicial work and traumatic stress: Vilification, threats, and secondary trauma on the bench. *Psychology, Public Policy, and Law*, *28*(4), 532-545. https://doi.org/10.1037/law0000363

Oates, J., Carpenter, D., Fisher, M., Goodson, S., Hannah, B., Kwiatkowski, R., Prutton, K., Reeves, D., et al. (2021) *BPS Code of Human Research Ethics*. [Online] [Accessed on Friday 9th June] https://explore.bps.org.uk/content/report-guideline/bpsrep.2021.inf180

Offord, D. R., & Kraemer, H. C. (2000). Risk factors and prevention. *Evidence-Based Mental Health*, *3*(3), 70-71. https://doi.org/10.1136/ebmh.3.3.70

Ogden, P., Minton, K., & Pain, C. (2006). *Trauma and the body: A sensorimotor approach to psychotherapy.* Norton & Company.

Ogińska-Bulik, N., Bąk, G., & Michalska, P. (2023). Secondary traumatic stress among police officers–the relationship with personality and ruminations.

Current Issues in Personality Psychology, *11*(4), 259.

https://doi.org/10.5114/cipp2021.112335

Ogińska-Bulik, N., Gurowiec, P. J., Michalska, P., & Kędra, E. (2021). Prevalence

and predictors of secondary traumatic stress symptoms in health care

professionals working with trauma victims: A cross-sectional study. *PLoS*

One, *16*(2), e0247596. https://doi.org/10.1371/journal.pone.0247596

Ogińska-Bulik, N., Juczyński, Z., Michalska, P. (2022). The mediating role of

cognitive trauma processing in the relationship between empathy and

secondary traumatic stress symptoms among female professionals working

with victims of violence. *Journal of Interpersonal Violence*, *37*(3-4), NP1197-

NP1225. https://doi.org/10.1177/0886260520976211

Ogle, J., Bushnell, J. A., & Caputi, P. (2013). Empathy is related to clinical

competence in medical care. *Medical Education*, *47*(8), 824-831.

https://doi.org/10.111/medu.12232

Okoli, C. T., Seng, S., Otachi, J. K., Higgins, J. T., Lawrence, J., Lykins, A., &

Bryant, E. (2020). A cross-sectional examination of factors associated with

compassion satisfaction and compassion fatigue across healthcare workers

in an academic medical centre. *International Journal of Mental Health*

Nursing, *29*(3), 476-487. https://doi.org/10.1111/inm.12628

Olff, M., Langeland, W., & Gersons, B. P. (2005). The psychobiology of PTSD:

coping with trauma. *Psychoneuroendocrinology*, *30*(10), 974-982.

http://doi.org/10.1016/j.psychneuen.2005.04.009

Olmos-Vega, F. M., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2023). A practical

guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical*

teacher, *45*(3), 241-251. https://doi.org/10.1080/0142159X.2022.2057287

Ondrejková, N., & Halamová, J. (2022). Prevalence of compassion fatigue among helping professions and relationship to compassion for others, self-compassion and self-criticism. *Health & Social Care in the Community*, *30*(5), 1680-1694.https://doi.org/10.1111/hsc.13741

Ong, H. C., Ibrahim, N., & Wahab, S. (2016). Psychological distress, perceived stigma, and coping among caregivers of patients with schizophrenia. *Psychology Research and Behavior Management*, 9, 211. http://doi.org/10.2147/PRBM.S112129

Oral, R., Jennissen, C., Wojciak, A. S., Segal, R., Wibbenmeyer, L., Nielsen, A., Wibbenmeyer, L., Segal, R., Wojciak, A. S., Jennissen, C., & Peek-Asa, C. (2020). Nationwide efforts for trauma-informed care implementation and workforce development in healthcare and related fields: a systematic review. *The Turkish Journal of Pediatrics*, *62*(6), 906-920. http://doi.org/10.24953/turkjped.2020.06.002

Ormiston, H. E., Nygaard, M. A., & Apgar, S. (2022). A systematic review of secondary traumatic stress and compassion fatigue in teachers. *School Mental Health*, *14*(4), 802-817. http://doi.org/10.1007/s12310-022-09525-2

Orrù, G., Marzetti, F., Conversano, C., Vagheggini, G., Miccoli, M., Ciacchini, R., Panait, E., & Gemignani, A. (2021). Secondary traumatic stress and burnout in healthcare workers during COVID-19 outbreak. *International Journal of Environmental Research and Public Health*, *18*(1), 337. http://doi.org/10.3390/ijerph18010337

Osuch, E. A., Benson, B. E., Luckenbaugh, D. A., Geraci, M., Post, R. M., & McCann, U. (2009). Repetitive TMS combined with exposure therapy for PTSD: a preliminary study. *Journal of Anxiety Disorders*, *23*(1), 54-59. http://doi.org/10.1016/j.janxdis.2008.03.015

Owens-King, A. P. (2019). Secondary traumatic stress and self-care inextricably

    linked. *Journal of Human Behavior in the Social Environment*, *29*(1), 37-47.

    https://doi.org/10.1080/10911359.2018.1472703

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of

    posttraumatic stress disorder and symptoms in adults: a meta-analysis.

    Psychological Bulletin, *129*(1), 52. http://doi.org/10.1037/0033-

    2909.129.1.52

Padival, M., Quinette, D., & Rosenkranz, J. A. (2013). Effects of repeated stress

    on excitatory drive of basal amygdala neurons in vivo.

    Neuropsychopharmacology, *38*(9), 1748-1762.

    http://doi.org/10.1038/npp.2013.74

Padmanabhanunni, A., & Gqomfa, N. (2022). "The Ugliness of It Seeps into Me":

    Experiences of Vicarious Trauma among Female Psychologists Treating

    Survivors of Sexual Assault. *International Journal of Environmental*

    Research and Public Health, *19*(7), 3925.

    http://doi.org/10.3390/ijerph19073925

Pai, A., Suris, A. M., & North, C. S. (2017). Posttraumatic stress disorder in the

    DSM-5: Controversy, change, and conceptual considerations. *Behavioral*

    Sciences, *7*(1), 7. https://doi.org/10.3390/bs7010007

Paiva, H. S., Zotarelli Filho, I. J., & da Silva Cais, C. F. (2021). Using prazosin to

    treat posttraumatic stress disorder and associations: a systematic

    review. *Psychiatry Investigation*, *18*(5), 365.

    http://doi.org/10.30773/pi.2020.0411

Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of

    research. *Academic Medicine*, *95*(5), 690-694.

    http://doi.org/10.1097/ACM.00000000000093

Patrick, J. M. (2021) *Emotional Separation, Compassion Fatigue, and Compassion Satisfaction Among Human Resource Professionals in the United States* (Publication No. 28410633) [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations & Theses.

Pawson, R., & Tilley, N. (1997). An introduction to scientific realist evaluation. In E. Chelimsky., & W. R. Shadish (Eds.), *Evaluation for the 21st century: A handbook* (pp. 405-418). Sage Publications. http://doi.org/10.4135/9781483348896

Pearlman, L. A. (2003) *Trauma and attachment belief scale (TABS).* Western Psychological Services.

Pearlman, L. A., & Saakvitne, K. W. (1995) *Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors.* WW Norton & Co.

Pellegrini, S., Moore, P., & Murphy, M. (2022). Secondary Trauma and Related Concepts in Psychologists: A Systematic Review. *Journal of Aggression, Maltreatment & Trauma*, *31*(3), 370-391. http://doi.orf/10.1080/10926771.2021.2019156

Perez, L. M., Jones, J., Englert, D. R., & Sachau, D. (2010). Secondary traumatic stress and burnout among law enforcement investigators exposed to disturbing media images. *Journal of Police and Criminal Psychology*, *25*(2), 113-124. https://doi.org/10.1007/s11896-010-9066-7

Petereit-Haack, G., Bolm-Audorff, U., Romero Starke, K., & Seidler, A. (2020) Occupational risk for post-traumatic stress disorder and trauma-related depression: a systematic review with meta-analysis. *International Journal of Environmental Research and Public Health*, *17*(24), 9369. http://doi.org/10.3390/ijerph17249369

Pettus, M., Netter, B., Perlmutter, L., Perlmutter, J.C., & Hosler, A.S., (2023). The effects of mantra-based AMI Meditation on burnout, secondary traumatic stress, and compassion satisfaction levels in healthcare providers. *Lifestyle Medicine*, *4*(1), e72. https://doi.org/10.1002/lim2.72

Pfefferbaum, B., Newman, E., Nelson, S. D., Nitiéma, P., Pfefferbaum, R. L., & Rahman, A. (2014). Disaster media coverage and psychological outcomes: descriptive findings in the extant research. *Current Psychiatry Reports*, *16*(9), 1-7. http://doi.org/10.1007/s11920-014-0464-x

Phillips, A. C. (2013) 'Perceived Stress.' In M. D. Gellman., & J. R. Turner (Eds.), *Encyclopedia of Behavioral Medicine* (pp. 1453-1454). Springer. https://doi.org/10.1007/978-1-4419-1005-9_479

Pinchevski, A. (2016). Screen trauma: Visual media and post-traumatic stress disorder. *Theory, Culture & Society*, *33*(4), 51-75. https://doi.org/10.1177/0263276415619220

Piolanti, A., Gostoli, S., Gervasi, J., Sonino, N., & Guidi, J. (2019). A trial integrating different methods to assess psychosocial problems in primary care. *Psychotherapy and Psychosomatics*, *88*(1), 30-36. https://doi.org/10.1159/000496477

Pirelli, G., Formon, D. L., & Maloney, K. (2020). Preventing vicarious trauma (VT), compassion fatigue (CF), and burnout (BO) in forensic mental health: Forensic psychology as exemplar. *Professional Psychology: Research and Practice*, *51*(5), 454. http://doi.org/10.1037/pro0000293

Pistorius, K. D., Feinauer, L. L., Harper, J. M., Stahmann, R. F., & Miller, R. B. (2008). Working with sexually abused children. *The American Journal of Family Therapy*, *36*(3), 181-195. http://doi.org/10.1080/01926180701291204

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, *52*(2), 126. http://doi.org/10.1037/0022-0167.52.2.126

Posselt, M., Baker, A., Deans, C., & Procter, N. (2020). Fostering mental health and well-being among workers who support refugees and asylum seekers in the Australian context. *Health & Social Care in the Community*, *28*(5), 1658-1670. https://doi.org/10.1111/hsc.12991

Prem, R., Kubicek, B., Diestel, S., & Korunka, C. (2016). Regulatory job stressors and their within-person relationships with ego depletion: The roles of state anxiety, self-control effort, and job autonomy. *Journal of Vocational Behavior*, *92*, 22-32. https://doi.org/10.1016/j.jvb.2015.11.004

Preston, S. D., & De Waal, F. B. (2002). Empathy: Its ultimate and proximate bases. *Behavioral and Brain Sciences*, *25*(1), 1-20. http://doi.org/10.1017/s0140525x02000018

Price, L., & Martin, L. (2018). Introduction to the special issue: applied critical realism in the social sciences. *Journal of Critical Realism*, *17*(2), 89-96. http://doi.org/10.1080/14767430.2018.1468148

Proudfoot, K. (2023). Inductive/Deductive hybrid thematic analysis in mixed methods research. *Journal of Mixed Methods Research*, *17*(3), 308-326. https://doi.org/10.1177/15586898221126816

Pulido, M. L. (2012). The ripple effect: Lessons learned about secondary traumatic stress among clinicians responding to the September 11th terrorist attacks. *Clinical Social Work Journal*, *40*, 307-315. https://doi.org/10.1007/s10615-012-0384-3

Pyevich, C. M., Newman, E., & Daleiden, E. (2003). The relationship among cognitive schemas, job-related traumatic exposure, and posttraumatic

stress disorder in journalists. *Journal of Traumatic Stress, 16*(4), 325-328. http://doi.org/10.1023/A:1024405716529

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, 3(9), 369-387. http://doi.org/10.5281/zenodo.887089

Quinn, A., Ji, P., & Nackerud, L. (2019). Predictors of secondary traumatic stress among social workers: Supervision, income, and caseload size. *Journal of Social Work*, *19*(4), 504-528. https://doi.org/10.1177/1468017318762450

Rainville, C. (2015). Understanding secondary trauma: A guide for lawyers working with child victims. *Child Law Practice*, *34*, 129.

Ratrout, H. F., & Hamdan-Mansour, A. M. (2020). Secondary traumatic stress among emergency nurses: prevalence, predictors, and consequences. *International Journal of Nursing Practice*, *26*(1), e12767. http://doi.org/10.1111/ijn.12767

Rattel, J. A., Grünberger, L. M., Reichenberger, J., Liedlgruber, M., Miedl, S. F., Blechert, J., & Wilhelm, F. H. (2019). Frequency of intrusions and appraisal of related distress after analogue trauma: A comparative ecological momentary assessment methods study. *Cognitive Therapy and Research*, *43*, 174-184. https://doi.org/10.1007/s10608-018-9941-6

Rauvola, R. S., Vega, D. M., & Lavigne, K. N. (2019). Compassion fatigue, secondary traumatic stress, and vicarious traumatization: A qualitative review and research agenda. *Occupational Health Science*, *3*(3), 297-336. https://doi.org/10.1007/s41542-019-00045-1

Rayner, S., Davis, C., Moore, M., & Cadet, T. (2020). Secondary traumatic stress and related factors in Australian social workers and psychologists. *Health & Social Work*, *45*(2), 122-130. http://doi.org/10.1093/hsw/hlaa001

Reeves, E. (2015). A synthesis of the literature on trauma-informed care. *Issues in mental health nursing*, *36*(9), 698-709. http://doi.org/10.3109/01612840.2015.105319

Regehr, C., Hemsworth, D., Leslie, B., Howe, P., & Chau, S. (2004). Predictors of post-traumatic distress in child welfare workers: A linear structural equation model. *Children and Youth Services Review*, *26*(4), 331-346. https://doi.org/10.1016/j.childyouth.2004.02.003

Regenbogen, C., Schneider, D. A., Finkelmeyer, A., Kohn, N., Derntl, B., Kellermann, T., Gur, R. E., Schneider, F., & Habel, U. (2012). The differential contribution of facial expressions, prosody, and speech content to empathy. *Cognition & Emotion*, *26*(6), 995-1014. http://doi.org/10.1080/02699931.2011.631296

Reinhard, F., & Maercker, A. (2004). Sekundäre Traumatisierung, Posttraumatische Belastungsstörung, Burnout und Soziale Unterstützung bei medizinischem Rettungspersonal. *Zeitschrift für medizinische Psychologie*, *13*(1), 29-36.

Reiss, H. (2010). Empathy in medicine: a neurological perspective. *Journal of American Medicine Association*, *304*(14), 1604-1605. http://doi.org/10.1001/jama.2010.1455

Reznikov, R., Bambico, F. R., Diwan, M., Raymond, R. J., Nashed, M. G., Nobrega, J. N., & Hamani, C. (2018). Prefrontal cortex deep brain stimulation improves fear and anxiety-like behavior and reduces basolateral amygdala activity in a preclinical model of posttraumatic stress disorder. *Neuropsychopharmacology*, *43*(5), 1099-1106. http://doi.org/10.1038/npp.2017.207

Richardson, D. A., Jaber, S., Chan, S., Jesse, M. T., Kaur, H., & Sangha, R. (2016). Self-compassion and empathy: impact on burnout and secondary traumatic stress in medical training. *Open Journal of Epidemiology*, *6*(03), 167. http://doi.org/10.4236/ojepi.2016.63017

Ritchie, J., Lewis, J., & Elam, G. (2003). *Qualitative research methods*. Sage Publications Ltd.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013) *Qualitative research practice: A guide for social science students and researchers.* Sage Publications Ltd.

Rizzolatti, G., Fabbri-Destro, M., & Cattaneo, L. (2009). Mirror neurons and their clinical relevance. *Nature Clinical Practice Neurology*, *5*(1), 24-34. http://doi.org/10.1038/ncpneuro0990

Roberts, F., Teague, B., Lee, J., & Rushworth, I. (2021). The Prevalence of Burnout and Secondary Traumatic Stress in Professionals and Volunteers Working With Forcibly Displaced People: A Systematic Review and Two Meta-Analyses. *Journal of Traumatic Stress*, *34*(4), 773-785. http://doi.org/10.1002/jts.22659

Robinson-Keilig, R. A. (2014) Secondary traumatic stress and disruptions to interpersonal functioning among mental health therapists. *Journal of Interpersonal Violence*, *29*(8), 1477-1496. http://doi.org/10.1177/0886260513507135

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*(1), 25-41. https://doi.org/10.1080/14780887.2013.801543

Rochelle, S., & Buonanno, L. (2018). Charting the attitudes of county child

      protection staff in a post-crisis environment. *Children and Youth Services*

      Review, *86,* 166-175. https://doi.org/10.1016/j.childyouth.2018.01.032

Roden-Foreman, J. W., Bennett, M. M., Rainey, E. E., Garrett, J. S., Powers, M.

      B., & Warren, A. M. (2017). Secondary traumatic stress in emergency

      medicine clinicians. *Cognitive Behaviour Therapy*, *46*(6), 522-532.

      http://doi.org/10.1080/16506073.2017.1315612

Roos, L. G., Levens, S. M., & Bennett, J. M. (2018). Stressful life events,

      relationship stressors, and cortisol reactivity: The moderating role of

      suppression. *Psychoneuroendocrinology*, *89*, 69-77.

      http://doi.org/10.1016/j.psyneuen.2017.12.026

Rossberg, J. I., Karterud, S., Pedersen, G., & Friis, S. (2010). Psychiatric

      symptoms and countertransference feelings: An empirical investigation.

      Psychiatry Research, *178*(1), 191-195.

      https://doi.org/10.1016/j.psychres.2009.09.019

Rossi, A., Cetrano, G., Pertile, R., Rabbi, L., Donisi, V., Grigoletti, L., Curtolo, C.,

      Tansella, M., Thornicroft, G., & Amaddeo, F. (2012). Burnout, compassion

      fatigue, and compassion satisfaction among staff in community-based

      mental health services. *Psychiatry Research*, *200*(2-3), 933-938.

      https://doi.org/10.1016/j.psychres.2012.07.029

Rothenberg, M., Fisher, K., Elias, A., Helton, S., Williams, S., Pena, S., & Gregory,

      A. (2008). Quality of life and compassion satisfaction/fatigue and burnout in

      child welfare workers: A study of the child welfare workers in community

      based care organizations in central Florida. *Social Work & Christianity*,

      36(1), 36-54.

Rottenberg, J., & Gross, J. J. (2003). When emotion goes wrong: Realizing the promise of affective science. *Clinical Psychology, Science and Practice, 10*(2), 227-232. https://doi.org/10.1093/clipsy.bpg012

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, *80*(1), 1. http://doi.org/10.1037/h0092976

Ruiz-Fernández, M. D., Ramos-Pichardo, J. D., Ibáñez-Masero, O., Cabrera-Troya, J., Carmona-Rega, M. I., & Ortega-Galán, Á. M. (2020). Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *Journal of Clinical Nursing*, *29*(21-22), 4321-4330. https://doi.org/10.1111/jocn.15469

Rushforth, A., Durk, M., Rothwell-Blake, G. A., Kirkman, A., Ng, F., & Kotera, Y. (2023). Self-compassion interventions to target secondary traumatic stress in healthcare workers: A systematic review. *International Journal of Environmental Research and Public Health*, *20*(12), 6109. http://doi.org/10.3390/ijerph20126109

Ryder, A. L., Azcarate, P. M., & Cohen, B. E. (2018). PTSD and physical health. *Current Psychiatry Reports*, *20*(12), 1-8. https://doi.org/10.1007/s11920-018-0977-9

Saakvitne, K. W., Tennen, H., & Affleck, G. (2010). Exploring thriving in the context of clinical trauma theory: Constructivist self development theory. *Journal of Social Issues*, *54*(2), 279-299. https://doi.org/10.1111/j.1540-4560.1998.tb01219.x

Sabin-Farrell, R., & Turpin, G. (2003). Vicarious traumatization: implications for the

mental health of health workers?. *Clinical Psychology Review*, *23*(3), 449-

480. https://doi.org/10.1016/S0272-7358(03)00030-8

Said, N. B., Molassiotis, A., & Chiang, V. C. (2020). Psychological preparedness

for disasters among nurses with disaster field experience: An international

online survey. *International Journal of Disaster Risk Reduction*, *46,* 101533.

https://doi.org/10.1016/j.ijdrr.2020.101533

Said, N. B., Molassiotis, A., & Chiang, V. C. (2022). Psychological first aid training

in disaster preparedness for nurses working with emergencies and traumas.

International Nursing Review, 69(4), 548-558.

http://doi.org/10.111/inr.12749

Salloum, A., Kondrat, D. C., Johnco, C., & Olson, K. R. (2015). The role of self-

care on compassion satisfaction, burnout and secondary trauma among

child welfare workers. *Children and Youth Services Review*, *49,* 54-61.

https://doi.org/10.1016/j.childyouth.2014.12.023

Salston, M., & Figley, C. R. (2003). Secondary traumatic stress effects of working

with survivors of criminal victimization. *Journal of Traumatic Stress*, *16*(2),

167-174. https://doi.org/10.1023/A:1022899207206

Salvagioni, D. A. J., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., &

de Andrade, S. M. (2017). Physical, psychological and occupational

consequences of job burnout: A systematic review of prospective studies.

PloS One, *12*(10), e0185781. http://doi.org/10.1371/journal.pone.0185791

Samson, T., Bachner, Y. G., & Freud, T. (2022). Thought Patterns Mediate the

Development of Secondary Traumatic Stress in Social Workers. *Australian*

Social Work, *75*(4), 483-494.

https://doi.org/10.1080/0312407X.2021.1871927

Samson, T., Iecovich, E., & Shvartzman, P. (2016). Psychometric characteristics of the Hebrew version of the Professional Quality-of-Life Scale. *Journal of Pain and Symptom Management*, *52*(4), 575-581. https://doi.org/10.1016/j.jpainsymman.2016.03.019

Sandelowski, M. (2001). Real qualitative researchers do not count: The use of numbers in qualitative research. *Research in Nursing & Health*, *24*(3), 230-240. http://doi.org/10.1002/nur.1025

Sanderson, W. C., Rapee, R. M., & Barlow, D. H. (1989). The influence of an illusion of control on panic attacks induced via inhalation of 5.5% carbon dioxide-enriched air. *Archives of General Psychiatry*, *46*(2), 157-162. http://doi.org/10.1001/archpsyc.1989.01810020059010

Santangelo, G., Sacco, R., Siciliano, M., Bisecco, A., Muzzo, G., Docimo, R., De Stefano, M., Bonavita, S., Lavorgna, L., Tedeschi, L., Trojano, L., & Gallo, A. (2016). Anxiety in multiple sclerosis: psychometric properties of the State-Trait Anxiety Inventory. *Acta Neurologica Scandinavica*, *134*(6), 458-466. http://doi.org/10.1111/ane.12564

Santiago, P. N., Ursano, R. J., Gray, C. L., Pynoos, R. S., Spiegel, D., Lewis-Fernandez, R., Friedman, M. J., & Fullerton, C. S. (2013). A systematic review of PTSD prevalence and trajectories in DSM-5 defined trauma exposed populations: intentional and non-intentional traumatic events. *PloS One*, *8*(4), e59236. https://doi.org/10.1371/journal.pone.0059236

Sapolsky, R. M. (2002). Endocrinology of the stress-response. In J. B., S. M. Breedlove., D. Crews., & M. M., McCarthy (Eds.), *Behavioral Endocrinology* (2nd ed., pp. 409-450). MIT Press.

Sarason, I. G., Sarason, B. R., Brock, D. M., & Pierce, G. R. (1996). Social support: Current status, current issues. In C. D. Spielberger., & I. G.

Sarason (Eds.), *Stress and Emotion: Anxiety, Anger, and Curiosity* (pp. 3-27). Taylor & Francis.

Sassenrath, C. (2020). "Let me show you how nice I am": Impression management as bias in empathic responses. *Social Psychological and Personality Science*, *11*(6), 752-760. https://doi.org/10.1177/1948550619884566

Savin-Baden, M., & Major, C. H. (2023). *Qualitative research: The essential guide to theory and practice.* Taylor & Francis.

Schaefer, A., Nils, F., Sanchez, X., & Philippot, P. (2010). Assessing the effectiveness of a large database of emotion-eliciting films: A new tool for emotion researchers. *Cognition and Emotion*, *24*(7), 1153-1172. http://doi.org/10.1080/02699930903274322

Schaefer, J. A. and Moos, R. H. (1992). Life crises and personal growth. In B. N. Carpenter (Ed.), Personal coping: Theory, Research and Application (pp. 149-170). Bloomsbury Publishing.

Scheffer, J. A., Cameron, C. D., & Inzlicht, M. (2022). Caring is costly: People avoid the cognitive work of compassion. *Journal of Experimental Psychology: General*, *151*(1), 172. http://doi.org/10.1037/xge00010173

Schiro, S., Elwood, L. S., Streed, T., & Kivisto, A. J. (2023). Occupational exposure to traumatic evidence and posttraumatic stress symptoms in forensic science professionals: Prevalence and patterns. *Journal of Forensic Sciences*, *68*(4), 1259-1267. https://doi.org/10.1111/1556-4029.15292

Schmidt, S., Tinti, C., Levine, L. J., & Testa, S. (2010). Appraisals, emotions and emotion regulation: An integrative approach. *Motivation and Emotion*, *34*, 63-72. https://doi.org/10.1007/s11031-010-9155-z

Schnurr, P., Vielhauer, M., & Weathers, F. (1995). *Brief Trauma Interview.* Unpublished interview.

Schnurr, P., Vielhauer, M., Weathers, F., & Findler, M. (1999). *The Brief Trauma Questionnaire (BTQ)* [Measurement instrument]. Available from http://www.ptsd.va.gov

Schraub, E. M., Stegmaier, R., & Sonntag, K. (2011). The effect of change on adaptive performance: Does expressive suppression moderate the indirect effect of strain?. *Journal of Change Management*, *11*(1), 21-44. http://dpo.org/10.1080/14697017.2010.514002

Schweizer, T., Renner, F., Sun, D., Kleim, B., Holmes, E. A., & Tuschen-Caffier, B. (2018). Psychophysiological reactivity, coping behaviour and intrusive memories upon multisensory Virtual Reality and Script-Driven Imagery analogue trauma: A randomised controlled crossover study. *Journal of Anxiety Disorders*, *59*, 42-52. http://doi.org/10.1016/j.janxdis.2018.08.005

Seligman, M. E. (1968). Chronic fear produced by unpredictable electric shock. *Journal of Comparative and Physiological Psychology*, *66*(2), 402. http://doi.org/10.1037/h0026355

Seligowski, A. V., Lee, D. J., Bardeen, J. R., & Orcutt, H. K. (2015). Emotion regulation and posttraumatic stress symptoms: A meta-analysis. *Cognitive Behaviour Therapy*, *44*(2), 87-102. https://doi.org/10.1080/16506073.2014.980753

Selye, H. (1950). Stress and the general adaptation syndrome. *British Medical Journal*, *1*(4667), 1383.

Selye, H. (1976) *Stress without distress.* Springer.

Setti, I., Lourel, M., & Argentero, P. (2016). The role of affective commitment and perceived social support in protecting emergency workers against burnout and vicarious traumatization. *Traumatology*, *22*(4), 261. http://doi.org/10.1037/trm0000072

Shakespeare-Finch, J. (2011). Primary and secondary trauma in emergency

personnel. *Traumatology*, *17*(4), 1.

https://doi.org/10.1177/1534765611431834

Shamay-Tsoory, S. G. (2011). The neural bases for empathy. *The Neuroscientist*,

17(1), 18-24. https://doi.org/10.1177/1073858410379268

Shamoon, Z. A., Lappan, S., & Blow, A. J. (2017). Managing anxiety: A therapist

common factor. *Contemporary Family Therapy*, *39*, 43-53.

https://doi.org/10.1007/s10591-016-9399-1

Sheen, K., Spiby, H., & Slade, P. (2015). Exposure to traumatic perinatal

experiences and posttraumatic stress symptoms in midwives: prevalence

and association with burnout. *International Journal of Nursing Studies*,

52(2), 578-587. https://doi.org/10.1016/j.ijnurstu.2014.11.006

Shen, Q. (2020) *Research on "Mediated" Vicarious Traumatization in Major

Epidemics.* Atlantis Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative

research projects. *Education for Information*, *22*(2), 63-75.

http://doi.org/10.3233/EFI-2004-22201

Shepherd, M., & Hodgkinson, P. E. (1990). The hidden victims of disaster: Helper

stress. *Stress Medicine*, *6*(1), 29-35.

https://doi.org/10.1002/smi.2460060107

Shoji, K., Lesnierowska, M., Smoktunowicz, E., Bock, J., Luszczynska, A.,

Benight, C. C., & Cieslak, R. (2015). What comes first, job burnout or

secondary traumatic stress? Findings from two longitudinal studies from the

US and Poland. *PloS One*, *10*(8), e0136730.

http://doi.org/10.1371/journal.pone.0136730

Siegel, D. (1999). *The developing mind: How relationships and the brain interact to shape who we are.* Guildford Press.

Sinclair, A. (1993). Approaches to organisational culture and ethics. *Journal of Business Ethics*, *12*, 63-73. https://doi.org/10.1007/BF01845788

Sinclair, S., Raffin-Bouchal, S., Venturato, L., Mijovic-Kondejewski, J., & Smith-MacDonald, L. (2017). Compassion fatigue: A meta-narrative review of the healthcare literature. *International Journal of Nursing Studies*, *69,* 9-24. https://doi.org/10.1016/j.ijnurstu.2017.01.003

Singer, T., & Lamm, C. (2009). The social neuroscience of empathy. *Annals of the New York Academy of Sciences*, *1156*(1), 81-96. https://doi.org/10.1111/j.1749-6632.2009.04418.x

Singh, J., & Hassard, J. (2021). Emotional labour, emotional regulation strategies, and secondary traumatic stress: a cross-sectional study of allied mental health professionals in the UK. *The Social Science Journal*, 1-15. https://doi.org/10.1080/03623319.2021.1979825

Singh, J., Karanika-Murray, M., Baguley, T., & Hudson, J. (2020). A systematic review of job demands and resources associated with compassion fatigue in mental health professionals. *International Journal of Environmental Research and Public Health*, *17*(19), 6987. https://doi.org/10.3390/ijerph17196987

Skeffington, P. M., Rees, C. S., & Kane, R. (2013). The primary prevention of PTSD: a systematic review. *Journal of Trauma & Dissociation*, *14*(4), 404-422. http://doi.org.10.1080/15299732.2012.753653

Skinner, E. A. (1995) *Perceived control, motivation, & coping* (Vol. 8). Sage publications.

Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality and Social Psychology, 71*(3), 549. http://doi.org/10.1037//0022-3514.71.3.549

Slatten, L. A., David Carson, K., & Carson, P. P. (2011). Compassion fatigue and burnout: What managers should know. *The Health Care Manager*, *30*(4), 326–333. http://doi.org/10.1097/HCM.0b013e31823511f7

Smith, T. W., Birmingham, W., & Uchino, B. N. (2012). Evaluative threat and ambulatory blood pressure: cardiovascular effects of social stress in daily experience. *Health Psychology*, *31*(6), 763. https://doi.org/10.1037/a0026947

Smith, C., & Elger, T. (2014). Critical realism and interviewing subjects. In P. K. Edwards., J. O'Mahoney, S. Vincent (Eds.) *Studying organizations using critical realism: A practical guide* (pp.109-131). Oxford Academic. https://doi.org/10.1093/acprof:oso/9780199665525.001.0001

Smith, J. A. (2015). *Qualitative psychology: A practical guide to research methods* (3rd ed). Sage.

Sodeke-Gregson, E. A., Holttum, S., & 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), 21869. http://doi.org/10.3402/ejpt.v4i0.21869

Sofaer, S. (1999). Qualitative methods: what are they and why use them?. *Health Services Research*, *34*(5 pt.2), 1101.

Solberg, Ø., Birkeland, M., Blix, I., Hansen, M., & Heir, T. (2016). Towards an exposure-dependent model of post-traumatic stress: longitudinal course of post-traumatic stress symptomatology and functional impairment after the 2011 Oslo bombing. *Psychological Medicine*, *46*(15), 3241-3254. http://doi.org/10.1017/S0033291716001860

Sorenson, C., Bolick, B., Wright, K., & Hamilton, R. (2017). An evolutionary

concept analysis of compassion fatigue. *Journal of Nursing Scholarship*,

49(5), 557-563. http://doi.org/10.1111/jnu.12312

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A.

(1983). *Manual for the State-Trait Anxiety Inventory (STAI).* Consulting

Psychologists Press.

Spinhoven, P., Penninx, B. W., Krempeniou, A., van Hemert, A. M., & Elzinga, B.

(2015). Trait rumination predicts onset of Post-Traumatic Stress Disorder

through trauma-related cognitive appraisals: A 4-year longitudinal study.

Behaviour Research and Therapy, *71,* 101-109.

https://doi.org/10.1016/j.brat.2015.06.004

Sprang, G., Clark, J. J., & Whitt-Woosley, A. (2007). Compassion fatigue,

compassion satisfaction, and burnout: Factors impacting a professional's

quality of life. *Journal of Loss and Trauma*, *12*(3), 259-280.

https://doi.org/10.1080/15325020701238093

Sprang, G., Craig, C., & Clark, J. (2011). Secondary traumatic stress and burnout

in child welfare workers. *Child Welfare*, *90*(6), 149-168.

Sprang, G., Ford, J., Kerig, P., & Bride, B. (2019). Defining secondary traumatic

stress and developing targeted assessments and interventions: Lessons

learned from research and leading experts. *Traumatology*, *25*(2), 72.

http://doi.org/10.1037/trm0000180

Sprang, G., Lei, F., & Bush, H. (2021). Can organizational efforts lead to less

secondary traumatic stress? A longitudinal investigation of

change. *American Journal of Orthopsychiatry*, *91*(4), 443.

http://doi.org.10.1037/ort0000546

Stamm, B., 2010. *The concise manual for the professional quality of life scale*.

Pocatello.

Steel, C., Macdonald, J., Schröder, T., & Mellor-Clark, J. (2015). Exhausted but not

cynical: burnout in therapists working within Improving Access to

Psychological Therapy Services. *Journal of Mental Health*, *24*(1), 33-37.

http://doi.org/10.3109/09638237.2014.971145

Stefana, A. (2015). The origins of the notion of countertransference.

Psychoanalytic Review, *102*(4), 437-460.

https://doi.org/10.1521/prev.2015.102.4.437

Stein, M. B., Chen, C.-Y., Ursano, R. J., Cai, T., Gelernter, J., Heeringa, S. G.,

Jain, S., Jensen, K. P., Maihofer, A. X., Mitchell, C., Nievergelt, C. M., Nock,

M. K., Neale, B. N., Polimanti, R., Ripke, S., Xiaoying, S., Thomas, M. L.,

Wang, Q., Ware, E. B., Borja, S., Kessler, R. C., & Smoller, J. W. (2016).

Genome-wide association studies of posttraumatic stress disorder in 2

cohorts of US Army soldiers. *JAMA Psychiatry*, *73*(7), 695-704.

http://doi.org/10.1001/jamapsychiatry.2016.0350

Steptoe, A., Hackett, R. A., Lazzarino, A. I., Bostock, S., La Marca, R., Carvalho, L.

A., & Hamer, M. (2014). Disruption of multisystem responses to stress in

type 2 diabetes: investigating the dynamics of allostatic load. *Proceedings

of the National Academy of Sciences*, *111*(44), 15693-15698.

https://doi.org/10.1073/pnas.1410401111

Steudte-Schmiedgen, S., Stalder, T., Schönfeld, S., Wittchen, H.-U., Trautmann,

S., Alexander, N., Miller., R., & Kirschbaum, C. (2015). Hair cortisol

concentrations and cortisol stress reactivity predict PTSD symptom

increase after trauma exposure during military deployment.

Psychoneuroendocrinology, *59*, 123-133.
https://doi.org/10.1016/j.psyneuen.2015.05.007

Stiller, J., & Dunbar, R. I. (2007). Perspective-taking and memory capacity predict social network size. *Social Networks*, *29*(1), 93-104. https://doi.org/10.1016/j.socnet.2006.04.001

Stoewen, D. L. (2020). Moving from compassion fatigue to compassion resilience Part 4: Signs and consequences of compassion fatigue. *The Canadian Veterinary Journal*, *61*(11), 1207.

Streb, M., Häller, P., & Michael, T. (2014). PTSD in paramedics: resilience and sense of coherence. *Behavioural and Cognitive Psychotherapy*, 42(4) pp. 452-463. http://doi.org/10.1017/S1352465813000337

Stuart, A. D., Holmes, E. A., & Brewin, C. R. (2006). The influence of a visuospatial grounding task on intrusive images of a traumatic film. *Behaviour Research and Therapy*, *44*(4), 611-619. https://doi.org/10.1016/j.brat.2005.04.004

Stubbs, A., & Szoeke, C. (2022). The effect of intimate partner violence on the physical health and health-related behaviors of women: A systematic review of the literature. *Trauma, Violence, & Abuse*, *23*(4), 1157-1172. https://doi.org/10.1177/1524838020985541

Sui, X. C., & Padmanabhanunni, A. (2016). Vicarious trauma: The psychological impact of working with survivors of trauma for South African psychologists. *Journal of Psychology in Africa*, *26*(2), 127-133. https://doi.org/10.1080/14330237.2016.1163894

Sun, J., Wang, S., Zhang, J.-Q., & Li, W. (2007). Assessing the cumulative effects of stress: The association between job stress and allostatic load in a large sample of Chinese employees. *Work & Stress*, *21*(4), 333-347. https://doi.org/10.1080/02678370701742748

Sun, S. (2008). Organizational culture and its themes. *International Journal of Business and Management*, *3*(12), 137-141. https://doi.org/10.5539/ijbm.v3n12p137

Sutton, L., Rowe, S., Hammerton, G., & Billings, J., 2022. The contribution of organisational factors to vicarious trauma in mental health professionals: A systematic review and narrative synthesis. *European Journal of Psychotraumatology*, *13*(1), 2022278. https://doi.org/10.1080/20008198.2021.2022278

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257-285. https://doi.org/10.1016/0364-0213(88)90023-7

Szogi, E. G., & Sullivan, K. A. (2018). Malingered posttraumatic stress disorder (PTSD) and the effect of direct versus indirect trauma exposure on symptom profiles and detectability. *Psychological Injury and Law*, *11*(4), 351-361. https://doi.org/10.1007/s12207-018-9315-0

Szuster, A., & Jarymowicz, M. (2020). Human empathy of automatic vs. reflective origin: Diverse attributes and regulative consequences. *New Ideas in Psychology*, *56*, 100748. https://doi.org/10.1016/j.newideapsych.2019.100748

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). *Using multivariate statistics* (Vol. 6). Pearson.

Taft, C. T., Watkins, L. E., Stafford, J., Street, A. E., & Monson, C. M. (2011). Posttraumatic stress disorder and intimate relationship problems: a meta-analysis. *Journal of Consulting and Clinical Psychology*, *79*(1), 22. https://doi.org/10.1037/a0022196

Tanner, A. K., Hasking, P., & Martin, G. (2014). Effects of rumination and optimism on the relationship between psychological distress and non-suicidal self-injury. *Prevention Science*, *15*, 860-868. https://doi.org/10.3389/fpubh.2023.1308186

Taylor, L. S. (2021). *Secondary Traumatic Stress and Countertransference in Survivor Therapists: The Role of Empathy and Differentiation of Self* (Publication No. 28256186) [Doctoral dissertation, University of Missouri-Kansas City]. ProQuest Dissertations & Theses Global.

Teasdale, J. D. (1983). Negative thinking in depression: Cause, effect, or reciprocal relationship?. *Advances in Behaviour Research and Therapy*, *5*(1), 3-25. https://doi.org/10.1016/0146-6402(83)90013-9

Tehrani, N. (2016). Extraversion, neuroticism and secondary trauma in Internet child abuse investigators. *Occupational Medicine*, *66*(5), 403-407. https://doi.org/10.1093/occmed/kqw004

Thayer, Z., Barbosa-Leiker, C., McDonell, M., Nelson, L., Buchwald, D., & Manson, S. (2017). Early life trauma, post-traumatic stress disorder, and allostatic load in a sample of American Indian adults. *American Journal of Human Biology*, *29*(3), e22943. https://doi.org/10.1002/ajhb.22943

Thompson, R. F., & Spencer, W. A. (1966). Habituation: a model phenomenon for the study of neuronal substrates of behavior. *Psychological Review*, *73*(1), 16. https://doi.org/10.1037/h0022681

Tomba, E., & Offidani, E. (2012). A clinimetric evaluation of allostatic overload in the general population. *Psychotherapy and Psychosomatics*, *81*(6), 378-379. https://doi.org/10.1159/000337200

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus

groups. *International Journal for Quality in Health Care*, *19*(6), 349-357. https://doi.org/10.1093/intqhc/mzm042

Toomela, A. (2010). Quantitative methods in psychology: Inevitable and useless. *Frontiers in psychology*, *1*, 29. https://doi.org/10.3389/fpsyg.2010.00029

Trafimow, D. (2014). Considering quantitative and qualitative issues together. *Qualitative Research in Psychology*, *11*(1), 15-24. https://doi.org/10.1080/14780887.2012.743202

Treharne, G. J., & Riggs, D. W. (2015). Ensuring quality in qualitative research. *Qualitative Research in Clinical and Health Psychology*, pp. 57-73. https://doi.org/10.1007/978-1-137-29105-9_5

Trotter II, R. T. (2012). Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives. *Preventive Medicine*, *55*(5), 398-400. https://doi.org/10.1016/j.ypmed.2012.07.003

Troy, A. S., Saquib, S., Thal, J., & Ciuk, D. J. (2019). The regulation of negative and positive affect in response to daily stressors. *Emotion*, *19*(5), 751. https://doi.org/10.1037/emo0000486

Tschan, F., Rochat, S., & Zapf, D. (2005). It's not only clients: Studying emotion work with clients and co-workers with an event-sampling approach. *Journal of Occupational and Organizational Psychology*, *78*(2), 195-220. https://doi.org/10.1348/096317905X39666

Tukey, J. W., & McLaughlin, D. H. (1963). Less vulnerable confidence and significance procedures for location based on a single sample: Trimming/Winsorization 1. *Sankhyā: The Indian Journal of Statistics, Series A*, 331-352.

Turgoose, D., Glover, N., Barker, C., & Maddox, L. (2017). Empathy, compassion

fatigue, and burnout in police officers working with rape victims.

Traumatology, *23*(2), 205. https://doi.org/10.1037/trm0000118

Turliuc, M. N., Măirean, C., & Turliuc, M. D. (2015). Rumination and suppression

as mediators of the relationship between dysfunctional beliefs and traumatic

stress. *International Journal of Stress Management*, *22*(3), 306.

https://doi.org/10.1037/a0039272

Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice

investigators. *The Qualitative Report*, *15*(3), 754- 760.

https://doi.org/10.46743/2160-3715/2010.1178

Uphoff, E., Robertson, L., Cabieses, B., Villalón, F. J., Purgato, M., Churchill, R., &

Barbui, C. (2020). An overview of systematic reviews on mental health

promotion, prevention, and treatment of common mental disorders for

refugees, asylum seekers, and internally displaced persons. *Cochrane

Database of Systematic Reviews*, *9*(9).

http://doi.org/10.1002/14651858.CD013458.pub

Uribe-Bahamonde, Y. E., Becerra, S. A., Ponce, F. P., & Vogel, E. H. (2019). A

quantitative account of the behavioral characteristics of habituation: The

sometimes opponent processes model of stimulus processing. *Frontiers in

Psychology*, *10*, 434267. https://doi.org/10.3389/fpsyg.2019.00504

Vagni, M., Maiorano, T., Giostra, V., & Pajardi, D. (2020). Coping With COVID-19:

Emergency Stress, Secondary Trauma and Self-Efficacy in Healthcare and

Emergency Workers in Italy. *Frontiers in Psychology*, *11*, 566912.

https://doi.org/10.3389/fpsyg.2020.566912

Van Maanen, J. (1979). Qualitative methodology. *Administrative Science Quarterly

Ithaca, NY*, *24*(4), 519-671.

van Schie, K., van Veen, S. C., & Hagenaars, M. A. (2019). The effects of dual-tasks on intrusive memories following analogue trauma. *Behaviour Research and Therapy*, *120*, 103448. https://doi.org/10.1016/j.brat.2019.103448

Vanderhasselt, M. A., Baeken, C., Van Schuerbeek, P., Luypaert, R., & De Raedt, R. (2013). Inter-individual differences in the habitual use of cognitive reappraisal and expressive suppression are associated with variations in prefrontal cognitive control for emotional information: an event related fMRI study. *Biological Psychology*, *92*(3), 433-439. https://doi.org/10.1016/j.biopsycho.2012.03.005

Vandeusen, K. (2016). Secondary Traumatic Stress: The Impact of Exposure to Indirect Trauma on Helping Professionals and Students in Training. *Bonfring International Journal of Industrial Engineering and Management Science*, *6*(3), 88-92. https://doi.org/10.9756/BIJIEMS.8125

VanDeusen, K. M., & Way, I. (2006). Vicarious trauma: An exploratory study of the impact of providing sexual abuse treatment on clinicians' trust and intimacy. *Journal of Child Sexual Abuse*, *15*(1), 69-85. https://doi.org/10.1300/J070v15n01_04

Velasco, J., Sanmartín, F. J., Gálvez-Lara, M., Cuadrado, F., & Moriana, J. A. (2023). Psychological effects of professional exposure to trauma and human suffering: systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *24*(3), 1656-1676. https://doi.org/10.1177/15248380221074314

Vella, K. M., Hall, A. K., van Merrienboer, J. J., Hopman, W. M., & Szulewski, A. (2021). An exploratory investigation of the measurement of cognitive load on shift: application of cognitive load theory in emergency medicine. *AEM Education and Training*, *5*(4), e10634. https://doi.org/10.1002/aet2.10634

Visser, R. M., Lau-Zhu, A., Henson, R. N., & Holmes, E. A. (2018). Multiple
memory systems, multiple time points: how science can inform treatment to
control the expression of unwanted emotional memories. *Philosophical
Transactions of the Royal Society B: Biological Sciences*, *373*(1742),
20170209. https://doi.org/10.1098/rstb.2017.0209

Voss Horrell, S. C., Holohan, D. R., Didion, L. M., & Vance, G. T. (2011). Treating
traumatized OEF/OIF veterans: How does trauma treament affect the
clinician?. *Professional Psychology: Research and Practice*, *42*(3), 283-
283. https://doi.org/1037/a0022297

Vrklevski, L. P., & Franklin, J. (2008). Vicarious trauma: The impact on solicitors of
exposure to traumatic material. *Traumatology*, *14*(1), 106-118.
https://doi.org/10.1177/1534765607309961

Wagaman, M. A., Geiger, J. M., Shockley, C., & Segal, E. A. (2015). The role of
empathy in burnout, compassion satisfaction, and secondary traumatic
stress among social workers. *Social Work*, *60*(3), 201-209.
https://doi.org/10.1093/sw/swv014

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.
https://doi.org/10.1080/10439463.1997.9964761

Wang, Y., Chung, M. C., Wang, N., Yu, X., & Kenardy, J. (2021). Social support
and posttraumatic stress disorder: A meta-analysis of longitudinal studies.
Clinical Psychology Review, *85*, 101998.
https://doi.org/10.1016/j.cpr.2021.101998

Ward, F., St Clair-Thompson, H., & Postlethwaite, A. (2018). Mental toughness and perceived stress in police and fire officers. *Policing: An International Journal*, *41*(6). https://doi.org/10.1108/PIJPSM-01-2017-0013

Watts, J., & Robertson, N. (2015). Selecting a measure for assessing secondary trauma in nurses. *Nurse Researcher*, 23(2), 30-35. https://doi.org/10.7748/nr.23.2.30.s7

Way, I., VanDeusen, K. M., Martin, G., Applegate, B., & Jandle, D. (2004). Vicarious trauma: A comparison of clinicians who treat survivors of sexual abuse and sexual offenders. *Journal of Interpersonal Violence*, *19*(1), 49-71. https://doi.org/10.1177/0886260503259050

Weathers, F. W., Litz, B., Herman, D., Juska, J., & Keane, T. (1994). PTSD checklist—civilian version. National Center for PTSD, Behavioural Science Division.

Weems, C. F., & Silverman, W. K. (2006). An integrative model of control: Implications for understanding emotion regulation and dysregulation in childhood anxiety. *Journal of Affective Disorders*, *91*(2-3), 113-124. https://doi.org/10.1016/j.jad.2006.01.009

Weems, C. F., Pina, A. A., Costa, N. M., Watts, S. E., Taylor, L. K., & Cannon, M. F. (2007). Predisaster trait anxiety and negative affect predict posttraumatic stress in youths after hurricane Katrina. *Journal of Consulting and Clinical Psychology*, *75*(1), 154. https://doi.org/10.1037/0022-006X.75.1.154

Weiss, J. M. (1970). Somatic effects of predictable and unpredictable shock. *Psychosomatic Medicine*, *32*(4), 397-408. https://doi.org/10.1097/00006842-197007000-00008

Welton-Mitchell, C., James, L. E., Khanal, S. N., & James, A. S. (2018). An integrated approach to mental health and disaster preparedness: a cluster

comparison with earthquake affected communities in Nepal. *BMC Psychiatry, 18*(1), 1-14. https://doi.org/10.1186/s12888-018-1863-z

Wemm, S. E., & Wulfert, E. (2017). Effects of acute stress on decision making. *Applied Psychophysiology and Biofeedback*, *42*, 1-12. https://doi.org/10.1007/s10484-016-9347-8

White, D. (2006). The hidden costs of caring: What managers need to know. *The Health Care Manager*, *25*(4), 341-347. https://doi.org/10.1097/00126450-200610000-00010

Whittenbury, K., Clark, S., Brooks, M., Murphy, T., Turner, M. J., Fawcett, H. (2025). A scoping review of strengths-based assets and resources for helping professionals exposed to secondary trauma. Manuscript submitted for publication.

Wild, J., Smith, K., Thompson, E., Béar, F., Lommen, M., & Ehlers, A. (2016). A prospective study of pre-trauma risk factors for post-traumatic stress disorder and depression. *Psychological Medicine*, *46*(12), 2571-2582. https://doi.org/10.1017/S0033291716000532

Wilkinson, H., Whittington, R., Perry, L., & Eames, C. (2017). Examining the relationship between burnout and empathy in healthcare professionals: A systematic review. *Burnout Research*, *6*, 18-29. https://doi.org/10.1016/j.burn.2017.06.003

Williams, A. M., Helm, H. M., & Clemens, E. V. (2012). The Effect of Childhood Trauma, Personal Wellness, Supervisory Working Alliance, and Organizational Factors on Vicarious Traumatization. *Journal of Mental Health Counseling*, *34*(2), 113-153. http://doi.org/10.17744/mehc.34.2.j3l62k872325h583

Willis, M. E. (2023). Critical realism and qualitative research in psychology. *Qualitative Research in Psychology*, *20*(2), 265-288. https://doi.org/10.1080/14780887.2022.2157782

Winter, R., Leanage, N., Roberts, N., Norman, R. I., & Howick, J. (2022). Experiences of empathy training in healthcare: a systematic review of qualitative studies. *Patient Education and Counseling*, *105*(10), 3017-3037. https://doi.org/10.1016/j.pec.2022.06.015

Wooten, N. R., Kim, H., & Fakunmoju, S. B. (2011). Occupational stress in social work practice. In J. Langan., & C, Cooper (Eds.), *Handbook of Stress in the Occupations* (pp. 71-90). Edward Elgar Publishing Ltd.

World Health Organisation (WHO). (2016). *Health workforce—data and statistics.* http://www.who.int/hrh/statistics/en/

World Health Organisation (WHO). (2016). *National health workforce accounts: a handbook.* http://www.who.int/hrh/documents/brief_nhwfa_handbook/en

World Health Organization. (2020). *Novel Coronavirus (2019-nCoV): situation report, 11.* https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Wright, B. K., Kelsall, H. L., Sim, M. R., Clarke, D. M., & Creamer, M. C. (2013). Support mechanisms and vulnerabilities in relation to PTSD in veterans of the Gulf War, Iraq War, and Afghanistan deployments: a systematic review. *Journal of Traumatic Stress*, *26*(3), 310-318. https://doi.org/10.1002/jts.21809

Xie, W., Wang, J., Okoli, C. T., He, H., Feng, F., Zhuang, L., Tang, P., Zeng, L., & Jin, M. (2020). Prevalence and factors of compassion fatigue among Chinese psychiatric nurses: a cross-sectional study. *Medicine*, *99*(29), e21083. https://doi.org/10.1097/MD.0000000000021083

Xu, Z., Zhao, B., Zhang, Z., Wang, X., Jiang, Y., Zhang, M., & Li, P. (2024).
Prevalence and associated factors of secondary traumatic stress in
emergency nurses: a systematic review and meta-analysis. *European
Journal of Psychotraumatology*, *15*(1), 2321761.
https://doi.org/10.1080/20008066.2024.2321761

Yazdani, A., Zadeh, Z. F., & Shafi, K. (2016). Potentially traumatic events as
predictors of vicarious trauma in adolescents. *Pakistan Journal of
Psychological Research*, 31(2), 531-548.

Yin, R. (1994). Case Study Research, Design and Methods (2nd ed.). Sage.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A
practitioner's guide.* Guilford Press.

Yuan, C., Wang, Z., Inslicht, S. S., McCaslin, S. E., Metzler, T. J., Henn-Haase, C.,
Apfel, B. A., Tong, H., Neylan, T. C., Fang, Y., & Marmar C. R. (2011).
Protective factors for posttraumatic stress disorder symptoms in a
prospective study of police officers. *Psychiatry Research*, *188*(1), 45-50.
https://doi.org/10.1016/j.psychres.2010.10.034

Yuan, J., Long, Q., Ding, N., Lou, Y., Liu, Y., & Yang, J. (2015). Suppression
dampens unpleasant emotion faster than reappraisal: Neural dynamics in a
Chinese sample. *Science China Life Sciences*, *58*, 480-491.
https://doi.org/10.1007/s11427-014-4739-6

Yue, J., Zang, X., Le, Y., & An, Y. (2020). Anxiety, depression and PTSD among
children and their parent during 2019 novel coronavirus disease (COVID-
19) outbreak in China. *Current Psychology*, *41,* pp. 1-8.
https://doi.org/10.1007/s12144-020-01191-4

Zaccari, A. M. (2017). *Vicarious trauma coping and self-care practices among trauma therapists* [Doctoral dissertation, Walden University]. Walden Dissertations and Doctoral Studies Collection.

Zhang, Y. Y., Han, W. L., Qin, W., Yin, H. X., Zhang, C. F., Kong, C., & Wang, Y. L. (2018). Extent of compassion satisfaction, compassion fatigue and burnout in nursing: A meta-analysis. *Journal of Nursing Management*, *26*(7), 810-819. https://doi.org/10.1111/jonm.12589

Zhang, Y. Y., Zhang, C., Han, X. R., Li, W., & Wang, Y. I. (2018). Determinants of compassion satisfaction, compassion fatigue and burn out in nursing: A correlative meta-analysis. *Medicine*, 97(26), e11086. https://doi.org/10.1097/MD.0000000000011086

Zhang, Y., Cui, C., Wang, L., Yu, X., Wang, Y., & Wang, X. (2021). The mediating role of hope in the relationship between perceived stress and post-traumatic stress disorder among Chinese patients with oral cancer: A cross-sectional study. *Cancer Management and Research*, *13,* 393-401. http://doi.org/10.2147/CMAR.S281886

Zhao, T., Fu, Z., Lian, X., Ye, L., & Huang, W. (2021). Exploring emotion regulation and perceived control as antecedents of anxiety and its consequences during Covid-19 full remote learning. *Frontiers in Psychology*, *12*, 675910. https://doi.org/10.3389/fpsyg.2021.675910

Zingela, Z., van Wyk, S., Bronkhorst, A., & Groves, C. (2022). Developing a healthcare worker psychological preparedness support programme for the COVID-19 outbreak. *South African Journal of Psychiatry*, *28*, 1665. https://doi.org/10.4102/sajpsychiatry.v28i0.1665

Živanović, M., & Vukčević Marković, M. (2020). Latent structure of secondary traumatic stress, its precursors, and effects on people working with

refugees. *Plos One*, *15*(10), e0241545.

https://doi.org/10.1371/journal.pone.0241545

Zlotnick, C., Johnson, D. M., Yen, S., Battle, C. L., Sanislow, C. A., Skodol, A. E.,

Grilo, C. M., McGlashan, T. H., Gunderson, J. G., Bender, D. S., Zanarini,

M. C., & Shea, M, T. (2003). Clinical features and impairment in women with

borderline personality disorder (BPD) with posttraumatic stress disorder

(PTSD), BPD without PTSD, and other personality disorders with PTSD.

The Journal of Nervous and Mental Disease, *191*(11), 706-713.

https://doi.org/10.1097/01.nmd.0000095122.29476.ff

Zschucke, E., Renneberg, B., Dimeo, F., Wüstenberg, T., & Ströhle, A. (2015). The

stress-buffering effect of acute exercise: Evidence for HPA axis negative

feedback. *Psychoneuroendocrinology*, *51*, 414-425.

https://doi.org/10.1016/j.psyneuen.2014.10.019

Zulch, H. (2011). *Psychological preparedness for natural disasters in the context of

climate change.*

https://www.preventionweb.net/files/66345_f357zulchpsychologicalprepared

nessf.pdf

Zulch, H.R., Morrissey, S.A., Reser, J.P., & Creed, P.A. (2012). Psychological

Preparedness for Natural Disasters. In *Proceedings of the First

International Conference on Urban Sustainability and Resilience, London,

UK* (pp. 5-6).

Appendices

Appendix A – Study One Recruitment Poster

Appendix B – Study One Ethics Approval

Manchester Metropolitan University

Date: 28/03/2021

Project Title: Listening to Other People's Traumatic Experiences
PsychREC Ref No.: 32301

Subject: Letter of Approval of research study

Dear Sophie Jaber,

I am writing to you as the Principal investigator of the project titled "Listening to Other People's Traumatic Experiences" on behalf of the Department of Psychology Research Ethics Committee (PsychREC) to inform you about the outcome of the review of your ethics application.

Document Type	File Name	Date	Version
Information Sheet	Debrief Sheet	01/03/2021	1
Consent Form	Consent Form (submitted)	10/03/2021	1.1
Information Sheet	Participant Information Sheet (submitted)	10/03/2021	1.1
Project Protocol	Group Protocol submitted	10/03/2021	1.0
Recruitment Media	Recruitment Poster	10/03/2021	1.1
Additional Documentation	Interview schedule v.3	11/03/2021	3
Recruitment Media	Gatekeeper Email submitted	11/03/2021	1

I am glad to let you know that PsychREC has granted you favourable opinion for the project to commence (PsychREC Ref No.: 32301 32301).

Please note that the opinion is provided on the grounds that you will comply with all regulations outlined in the application. Any changes to the documentation or study procedures outlined in your application will require the submission of an amendment and approval by PsychREC.

If you have any further questions, feel free to contact me.

Yours Sincerely,

Dr Nora Andriopoulou

For help with this application, please first contact your Faculty Research Officer. Their details can be found here

Appendix C – Study One Participant Information Sheet

Participant Information Sheet
Why is it hard to listen to other people's traumatic experiences
and what could make it easier?

1. Invitation to research

We would like to invite you to take part in this research project, which is conducted by Dr Maria Livanou (Principal Investigator) and her research team (Ms Kate Whittenbury, Ms Sophie Jaber, Ms Adrienne Dean and Ms Miriam Scully) at the Department of Psychology of Manchester Metropolitan University. Our study aims at exploring what makes it hard to listen to other people's traumatic experiences, what could increase resilience and what could increase psychological preparedness for listening to a trauma survivor talk about their experiences.

2. Why have I been invited?

Our study focuses explicitly on the opinions and experiences of professionals who listen to trauma survivors talk about their traumatic events. In particular, you have been invited because you: (a) are aged 18 years or over, (b) are fluent in English, (c) currently work as a first responder (e.g., police, fire-fighter, ambulance) or a psychologist practitioner, mental health worker, social worker with at least 6 months experience, (d) you often listen to other people talk about their traumatic experiences, because of your job, and (d) have access to a computer and enough privacy to conduct an online interview.

3. Do I have to take part?

It is up to you to decide. Participation is completely voluntary. If you are interested in participating, we will first describe the study in detail to you and go through this information sheet with you. You will be able to keep this information sheet to think more about participating. Also, if you wish to ask any more questions about the study before deciding whether you will participate or not, you can contact directly the researchers via email (contact Ms Sophie Jaber, email: sophie.jaber@stu.mmu.ac.uk). When we 'meet' (online) for the interview, we will then ask for your consent, to be able to show that you agreed to take part. If you engage with the interview but then you change your mind about participating, you are free to withdraw at any point during the interview, without giving a reason.

If you decide to withdraw your data from the study after the interview, you will be able to do so <u>within 2 weeks after participating</u>, by contacting Ms Sophie Jaber via email (<u>sophie.jaber@stu.mmu.ac.uk</u>). After that 2 week period, we will start the transcription and analyses of the data and you will no longer be able to withdraw your data.

4. What will I be asked to do?

If you wish to participate in the study, please contact Sophie Jaber via email, <u>sophie.jaber@stu.mmu.ac.uk</u> to arrange an appointment for an online interview (lasting approximately 30 minutes) with one of the members of our research team. The online interview will be conducted via MS Teams or Skype. Ahead of the interview, we will send you via email a link, which you will use to access the video call. In the interview, we will ask you a series of questions, exploring your opinions about what makes it more or less difficult to work with trauma survivors who are talking about their traumatic experiences. We will also ask your opinion about what could make the listener more emotionally resilient and about what could possibly prepare psychologically a person who needs to work with trauma survivors. In the interview, you will not be obliged to answer any questions that make you uncomfortable or any questions you don't wish to answer. The data we collect from the interviews, will be analysed and your words and opinions may be quoted anonymously in research outputs (including dissertations, scientific papers, conference presentation).

Interviews will be audio-recorded and then transcribed and anonymised (i.e., we will remove all identifying information from them). The audio-recordings of the interviews will then be deleted. Other personal data (e.g., the audio-recording of you consenting to participate in our study) will be stored in a secure OneDrive folder of Manchester Metropolitan University; it will be only kept until the anonymised results of the study are accepted for publication in a scientific journal. After that, all personal data will be deleted.

5. Are there any risks if I participate?

Some aspects of the interview are likely to make you think of the traumatic experiences of people you have worked with in the past. To minimise the chance of upsetting you, we advise you not to take part in the study if you are currently

experiencing emotional distress in relation to direct or indirect exposure to trauma events. Also, as the interviews will revolve around traumatic events, to protect others that may be in the same space with you or living with you, we ask you to schedule the interview at a time and place where you cannot be overheard by others.

6. Are there any advantages if I participate?

There are no direct advantages or rewards for participating in this study. However, your participation will contribute invaluably to furthering our knowledge about the effects of indirect exposure to trauma and about factors and practices that could protect the psychological wellbeing of professionals who work with trauma survivors.

7. What will happen with the data I provide?

When you agree to participate in this research, we will collect from you personally-identifiable information. The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant. The University is registered with the Information Commissioner's Office (ICO), and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy. We collect personal data as part of this research (such as name, telephone numbers or age). As a public authority acting in the public interest we rely upon the 'public task' lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained.

We will not share your personal data collected in this form with any third parties. If your data is shared this will be under the terms of a Research Collaboration Agreement which defines use, and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you

have given your explicit written consent to be identified in the research. The University never sells personal data to third parties.

We will only retain your personal data for as long as is necessary to achieve the research purpose. All data will be treated confidentially and any quotes used will be anonymised. In the interviews, you will be asked to choose a pseudonym (fake name) which we will use to protect your identity. The data you provide will be stored in secure online University folders and will be accessed by the project team (i.e., the Principal Investigator and her research collaborators). Besides them, access will be granted also to authorised representatives from the University to permit study-related monitoring, audits and inspections. All anonymised data will be kept for only 10 years and then will be deleted.
For further information about use of your personal data and your data protection rights please see the University's Data Protection Pages (https://www2.mmu.ac.uk/data-protection/).

8. Information about the Online Interview
Our meeting will take place via Teams or Skype, which operates as a processor for any personal data exchanged. In common with other 'free' web services, it is your responsibility to review the privacy policy and terms and conditions of Teams or Skype. You are under no obligation to accept them. Note, however, that the acceptance of the terms and conditions of Teams or Skype forms a contract between you and the company, independent of Manchester Metropolitan University. Because you will be transacting with your personal information, please familiarise yourself with Teams's or Skype's Privacy Policy and only proceed with arranging an interview if you are comfortable with the information that Teams or Skype captures and what the company can do with it.

The Teams or Skype account that the researcher will use for the interview, will be only used for this research project and will be deleted at the end of the research. The audio recording of our interview will be stored on the researchers' MMU OneDrive and not on the servers of Teams or Skype.

You are under no obligation to agree to the use of Teams/Skype. Please speak to the researcher if you would like to discuss alternatives to using Teams/Skype.

9. What will happen to the results of the research study?

A research report based on the results of this study will be submitted for publication to a scientific journal and / or presented at scientific conferences. Any quotes used in that report will be anonymised and you will not be personally identified from the information you provide. The results of this study will also form part of the MSc and Doctoral Dissertations of the members of the research team.

10. Who has reviewed this research project?

This study has been reviewed and approved academic peers and by the Faculty of Health and Social Care Research Ethics Committee at Manchester Metropolitan University.

11. Who do I contact if I have concerns about this study or I wish to complain?

If you have any concerns regarding this study, you can contact the principal investigator and research supervisor of this project, Dr Maria Livanou (m.livanou@mmu.ac.uk, tel: 0161 2475463, Address: Maria Livanou, Department of Psychology, Manchester Metropolitan University, 53 Bonsall Street, Manchester, M15 6GX).

You can also contact the Faculty Head of Ethics at Manchester Metropolitan University, Prof Khatidja Chantler (K.Chantler@mmu.ac.uk, Address: Brooks Building, Manchester Metropolitan University, 53 Bonsall Street, Manchester, M15 6GX).

If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see: https://ico.org.uk/global/contact-us/

THANK YOU FOR CONSIDERING PARTICIPATING IN THIS PROJECT

Appendix D – Study One Consent Form

CONSENT FORM

<u>Research Study Title:</u>
Why is it hard to listen to other people's traumatic experiences
and what could make it easier?

	Please tick your chosen answer	YES	NO
1.	I confirm that I have read the participant information sheet (version 1.1, date 10/03/21) for the above study.	☐	☐
2.	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐	☐
3.	I understand that my participation is voluntary and that I am free to withdraw at any time during the interview without giving any reason.	☐	☐
4.	I understand that if I wish to withdraw my data from the study *after* the interview, I will be able to do that only within the 2 weeks after the interview.	☐	☐
5.	I agree to participate in the project to the extent of the activities described to me in the above Participant Information Sheet.	☐	☐
6.	I agree to my participation being audio recorded for analysis. No audio clips will be published.	☐	☐
7.	I agree to my participation being video recorded for analysis. No video clips will be published.	☐	☐
8.	I am happy to use Microsoft Teams or Skype to conduct the interview.	☐	☐
9.	I understand and agree that my words may be quoted anonymously in research outputs.	☐	☐
10.	I understand that any information I give will be anonymised and treated confidentially unless it is thought that there is a risk of harm to myself or others, in which case the researcher will break confidentiality and share this information with her research supervisor and possibly others.	☐	☐
11	I wish to be informed of the outcomes of this research. I can be contacted at: _____	☐	☐
12	I give permission for the researchers named in the Participant Information Sheet to contact me in the future about this research or other research opportunities.	☐	☐

Appendix E – Study One Debrief Sheet

Debrief Sheet
Listening to Other People's Traumatic Experiences

Thank you very much for taking part in our study research. The data you contributed will help us complete our research project which is exploring opinions and experiences of professionals who listen to trauma survivors talk about their traumatic events.

What happens now?

A transcript of our interview will be typed up in the weeks following our meeting. In the two weeks following interview, you may still choose to withdraw from the study if you no longer wish your data to be used. If this is the case, please contact Sophie Jaber via email (sophie.jaber@stu.mmu.ac.uk). After this two-week period, the transcript will be analysed and collated together with other interview transcripts and we will be unable to extract and delete your individual data.

If you would like to receive a one-page summary of the results of our study, we would be happy to send this to you upon the study's completion (i.e., in October 2021). Please let us know if you do require this summary so we can make a note of your email and ensure that we send it to you.

What if I need to speak with someone following interview?

I hope you found the interview to be a positive and interesting experience. If, however, the experience has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact you GP for advice. You can also see advice and support from one of the services listed below:

Samaritans	Mind
Website: https://www.samaritans.org	Website: https://www.mind.org.uk
Phone Number: 116123	Phone Number: 0300 123 3393
ASSIST Trauma Care	CALM
Website:	Website:
http://assisttraumacare.org.uk/	https://www.thecalmzone.net/help/get-help/
Phone Number: 01788 551919	Phone Number: 0800 585858

Finally, if you have any further questions, or want an update on the research, please feel free to contact a member of our Research Team using the details provided:

Research Team:

Kate Whittenbury (email: kate.whittenbury@stu.mmu.ac.uk)

Sophie Jaber (email: sophie.jaber@stu.mmu.ac.uk)

Adrienne Dean (email: adrienne.e.dean@stu.mmu.ac.uk)

Miriam Scully (email: miriam.scully@stu.mmu.ac.uk)

Thank you again for taking part. Your input was invaluable.

Appendix F – Study One Interview Schedule

Listening to Other People's Trauma: Ideas / Suggestions to help the development of Protocols and the Interview Guide

*(Note: Use a term such as **client, patient or trauma survivor** to describe a person your professional would work with. Choose appropriately by considering who your participant is and their occupation)*

Part 1

1. Would you like to tell me a little bit more about times you were affected by stories of your clients or the people you worked with?
   (description/characteristics of stories, emotional reaction of participant, short and long term effects)

2. In your opinion, what factors when you are working with a client/patient make it more difficult to listen to trauma stories?

3. Why do some accounts of trauma affect you more than others?
(What causes this difference? Something about you. Something about the client)

4. Are there other things going on in your life that could make you more affected by listening to a trauma story? *(Mood, or level of stress, events in personal life, physical or/and mental health)*
   a. If yes, and you feel comfortable doing so, could you give an example of a time when this happened?

5. How could the content of a client/patient's story play a role? (Why/how?
   a. Does non-verbal communication such as facial expressions, body language, pitch and tone of the client's voice influence this?
   b. Do you think that imagination plays a role?

6. How does the client/patient's story affect you if you can relate to their experience?
   (why do you think that is? Different than listening to a story without relevance to self?)

Part 2

1. When you listen to a trauma story, to what extent do you feel the emotions of the client/patient and share their thoughts?

2. What do you think about emotionally distancing yourself when listening to a trauma survivor?
   a. Is it easy to do so?
   b. In some case is it harder? Why do you think that is?
   c. Do you think it is important to distance yourself emotionally? Why?

3. What is your opinion of stepping into the shoes of a survivor as a professional?
   (advantages/disadvantages)

4. In your opinion, what role does sympathy play when listening to a trauma story?

5. In your opinion, what role does compassion play in listening to a trauma story?

Part 3

1. When you were able to cope well when listening to a trauma story, what made you resilient?

2. When you were not able to cope so well when listening to a survivor's trauma narrative, what made you less resilient?

3. In your opinion, what are the characteristics of a resilient (*participant's occupation*) when listening to people's trauma stories?

4. If a clinician who usually copes well starts to struggle emotionally when listening to trauma stories, what do you think is happening here?
   a. Could you explain your answer/s?
   b. What changes?

4. In your opinion, what is the best way to cope with the effects of listening to trauma?

   a. What is helpful?

   b. What is unhelpful when trying to manage feeling triggered by listening to a trauma story?

5. In your opinion, is there anything that could psychologically protect and prepare those who work with trauma survivors? *(Mindset, knowledge, prior experience, particular training)*

6. Is there anything else which you think is relevant which you think contributes to being affected by a trauma story?

Thank you for your time.

Appendix G – Study Two Participant Information Sheet

Participant Information Sheet

'The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)'

My name is Kate Whittenbury and I am a PhD student at the Department of Psychology, Manchester Metropolitan University. For my doctoral dissertation, I am conducting research that aims to examine the extent to which audio-visual information and stress can influence the emotional impact of learning about another person's traumatic experience. The results of this study will allow us to understand better what makes indirect trauma exposure more stressful or traumatic and will help us develop new (or improve existing) interventions and practices, to protect professionals who are working routinely with survivors of trauma.

Why have I been approached?

You have been approached because you are an adult (over the age of 18) and fluent in English.

What will I be asked to do if I take part?

You will be asked to participate in an online study that has 2 phases:

- **Phase 1** (duration approximately 40 minutes), involves you completing some questionnaires, engaging in a brief task (you will be asked either to watch a brief film about nature, or do a brief cognitive task) and finally learning about the traumatic experience of an adult survivor of sexual trauma (either through watching them narrate their experience in a film or through reading their narration in a document). The questionnaires include questions about yourself, such as your age, gender, ethnicity, education, your feelings (including feelings of depression or anxiety and stress, your personality and behaviour, your past experiences of trauma, etc.). We would like to inform you that this personal information is being collected You will be connected with the researcher when completing phase 1 via Microsoft Teams or Skype*, to allow the researcher to answer any

questions you may have about the study and guide you through the experiment.

- **Phase 2** (duration of participation approximately 5 minutes) is also online and will take place one week later **. We will contact you via email and ask you to answer a few more questions and complete one final questionnaire, relating to the trauma experience you learnt about in phase 1.

*Microsoft Teams is the preferred method of communication between yourself and the researcher, however, it is understood that not all participants may have access to Teams and would prefer to use Skype. However, we must inform you that Skype does not use end-to-end encryption by default and that participants and the researcher must activate the 'Private Conversation' feature. The researcher can guide the participant on how to activate this feature, once connected on Skype.

**To be able to contact you for phase 2, we will ask you for your email address after you consent to participating in the study. We will use it to send you the follow up material for phase 2. Your address will be stored securely and deleted completely no longer than 3 months after the study finishes.

Do I have to take part?

No. It is completely up to you to decide whether you take part. After reading this Participant Information Sheet, you will go through a digital Consent Form and have the opportunity to show you agreed to take part. If you decide to participate you will be directed to the online survey, consisting of several questionnaires, the brief task and the trauma story. Whilst completing the questionnaires, you will be free to take breaks. During participation, you will be able to skip any questionnaire items that you do not feel comfortable answering. Also, if after participating you change your mind and you wish to withdraw from the study, you will be free to withdraw your data within 2 weeks after your participation and no later, provided that you contact me via email (Ms Kate Whittenbury, kate.whittenbury@stu.mmu.ac.uk) and cite your unique personal code (you can see below how to create your personal code).

Participation in this study will be possible until the end of August 2022.

Will my data be identifiable?

No. The information you provide will be anonymised, entered and stored securely in password-protected computers belonging to Manchester Metropolitan University. Only our small research team will have access to it and this consists of my supervisor (Dr Maria Livanou, m.livanou@mmu.ac.uk), the study's co-investigator (Dr Maribel Cordero, m.cordero@mmu.ac.uk), 2 post-graduate psychology students (Ms Monica Hughes and Ms Victoria Marks) and me. Anonymised data from this study will be available on the e-space Research Repository for Manchester Metropolitan University after the end of the project. All your personal data will be treated confidentially and kept separately from any identifying information about you. Completely anonymised quantitative data will be available on the e-space Research Repository for Manchester Metropolitan University after the end of the project.

What will happen to the results?

The results of this study will further our knowledge about the effects of indirect trauma exposure. The findings will inform 3 post-graduate dissertations. In addition, they will be summarised and submitted for publication in an academic or professional journal, and / or presented in scientific conferences and professional meetings.

Who is funding this research?

Manchester Metropolitan University is supporting this study.

Are there any risks?

To minimize the chance of triggering unpleasant memories or feelings or upsetting anyone, please note that we will exclude you from the study if you meet any of the criteria listed below, i.e., if you

(a) have past experience of sexual trauma, whether your trauma exposure was direct (i.e., personal experience) or indirect (i.e., it happened to a person who is/was close to you),

(b) have post-traumatic stress disorder (PTSD),

(c) difficulties with severe depression,

(d) panic attacks,

(e) are self-harming or feeling suicidal.

In addition, we advise you not to participate in the study if you think that learning about another person's sexual trauma experience is likely to upset you too much. Also, if you have severe visual impairment which is not corrected we advise you not to participate within this study.

Are there any benefits to taking part?

Unfortunately, there is no material gain from participating in this study. However, if you are part of the MMU Psychology Participation Pool you will receive points for participating within this study. Furthermore, you may find participating interesting and feel good about making a significant contribution to the existing knowledge about processes that lead to psychological traumatisation.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Health and Social Care Research Ethics Committee at Manchester Metropolitan University.

What if I would like to remove my data from the study?

If you decide to pull your data out of our study, you will be able to do this during and up to two weeks following your participation in phase 2 (or 3 weeks after phase 1) and no later, because once we start performing statistical analyses, it will no longer be possible to withdraw any participant's data. In order to withdraw your data from our database which is anonymised, you need to contact Kate Whittenbury (kate.whittenbury@stu.mmu.ac.uk) and give her your *unique personal code*.

Please create an anonymous *unique personal code* now by filling in the boxes in the table below:

Table 1: Creating your unique, anonymous personal code:

	Please insert the <u>day</u> of the month on which you were born (e.g., 04 or 12) in the box below	Please insert the <u>last two</u> letters of your <u>home</u> town (e.g. ON or ER) in the box below	Please insert the <u>last two</u> digits of your telephone number (e.g., 02, or 98) in the box below
Your unique, anonymous personal code is:			

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact me, Kate Whittenbury (kate.whittenbury@stu.mmu.ac.uk, Department of Psychology, Brooks Building, Manchester Metropolitan University, 53 Bonsall Street, M15 6GX).

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study you can contact my research supervisor, Dr Maria Livanou (m.livanou@mmu.ac.uk, tel: 0161 2475463, Department of Psychology, Brooks Building, Manchester Metropolitan University, 53 Bonsall Street, M15 6GX).

If you want to discuss this study with someone independent, you may also contact:

Professor Khadija Chandler

Tel: +44 (0)161 247 1316│Email: k.chantler@mmu.ac.uk

Faculty of Health, Psychology & Social Care │Manchester Metropolitan University │Manchester │M15 6GX

Data Protection and Transparency

Manchester Metropolitan University is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. Manchester Metropolitan University will keep identifiable information about you [for 10 years after the study has finished].

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study we will keep the information about you that we have already obtained (but will destroy the research data). To safeguard your rights, we will use the minimum personally-identifiable information possible.

You can find out more about how we use your information by contacting ethics@mmu.ac.uk.
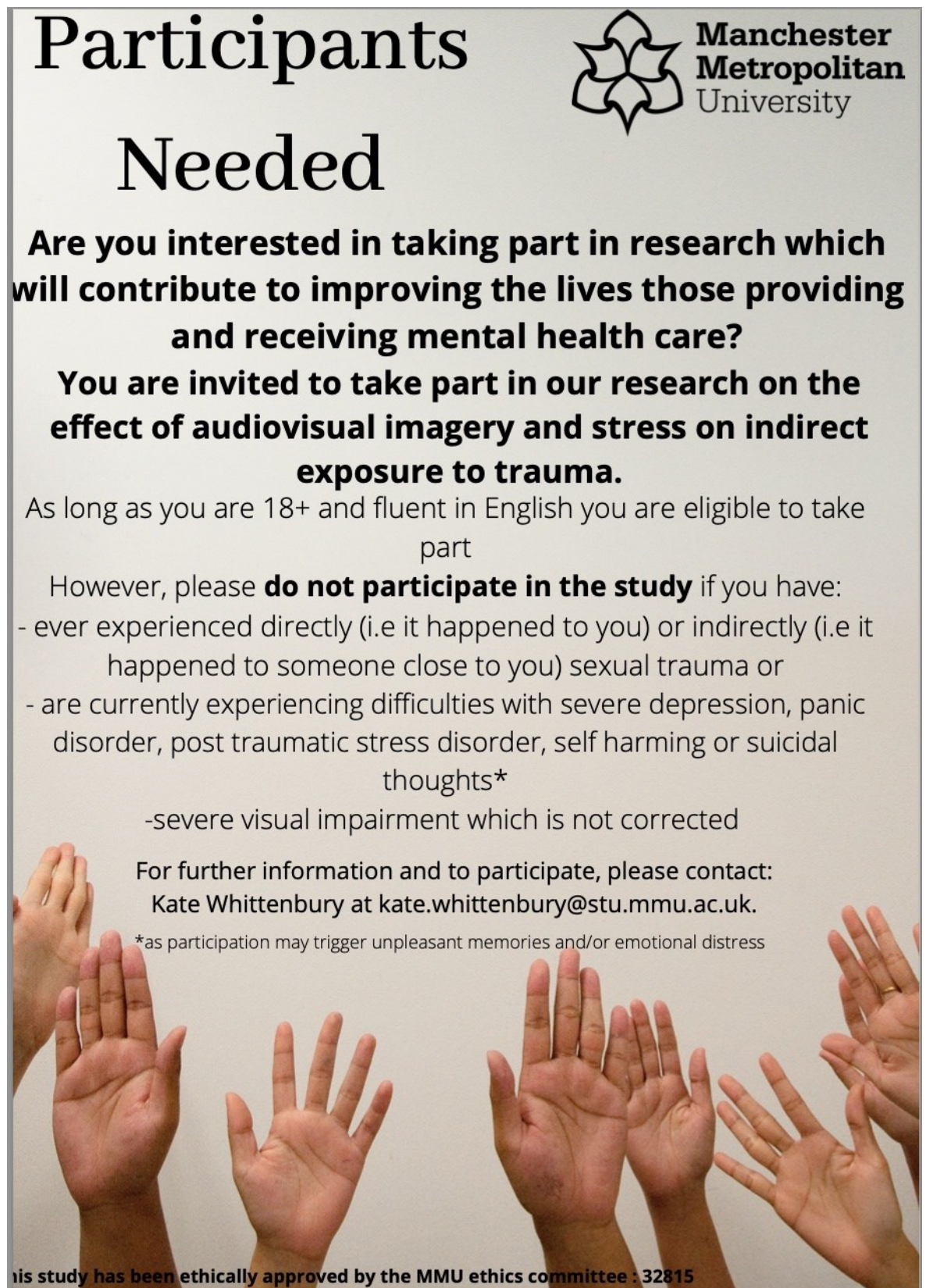
As a university we use personally-identifiable information to conduct research and our legal basis for processing personal data is a 'public task'. As a publicly-funded organisation, we have to ensure that it is in the public interest when we use personally-identifiable information from people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use your data in the ways needed to conduct and analyse the research study. Research should serve the public interest, which means that we have to demonstrate that our research serves the interests of society as a whole. We do this by following the UK Policy Framework for Health and Social Care Research.

If you wish to raise a complaint on how we have handled your personal data, you can contact our Data Protection Officer who will investigate the matter. If you are not satisfied with our response or believe we are processing your personal data in a way that is not lawful you can complain to the Information Commissioner's Office (ICO).

Our Data Protection Officer is Christopher Woolley (contact C.Woolley@mmu.ac.uk or legal@mmu.ac.uk).

Thank you for taking the time to read this information sheet.

This study has received ethical approval from Manchester Metropolitan University's Research
Ethics Committee (Ref: 32815)

Appendix I – Study Two Consent Form

Consent Form

Study Title: "The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)"

You have just read the Participant Information Sheet for the above study. If you have more questions about it please contact me (email: kate.whittenbury@stu.mmu.ac.uk). If you are clear about the study and wish to participate in it, please read carefully the statements below and indicate whether you consent to participate by clicking the relevant button below.

1. I confirm that I have read the Participant Information Sheet (Version 1, Date: 08/03/21) and fully understand what is expected of me within this study.
2. I confirm that I have had the opportunity to ask any questions and to have them answered.
3. I understand that my participation is voluntary and that I am free to refuse to participate in this study.
4. I understand that I can withdraw my data from this study, up to two weeks after completing phase 1 and 2 (3 weeks after phase 1), without providing any reason for my decision to withdraw.
5. I understand that in order for my data to be withdrawn, I will need to contact Ms Kate Whittenbury (email: kate.whittenbury@stu.mmu.ac.uk) via email within two weeks after I complete the survey and cite the unique personal code that I have created as part of my participation.
6. I understand that if I do not provide a valid unique personal code, the researcher will not be able to trace my responses and remove them and they will still be included in the analysis and write up of the study.
7. I understand that the study has two phases and I agree to be contacted via email in one week's time, in order to complete the second phase of the study.
8. I understand that the information from my responses will be pooled with other participants' responses and may be published.
9. I consent to the data generated as part of this research to be used in reports, conferences, published papers, book chapters and training events.
10. I understand that the information I give will be anonymised, kept in a secure and password protected MMU-secure drive and it will be treated confidentially.
11. I consent to Manchester Metropolitan University keeping my anonymised data for 10 years after the study has finished.

Appendix J – Study Two Debrief-A

Debrief Sheet
'The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)'

Thank you very much for your interest in our study. Your responses to our survey indicated that you meet one of the exclusion criteria for the study, i.e.,

- past experience of sexual trauma, whether trauma exposure was direct (i.e., personal experience) or indirect (i.e., it happened to a person who is/was close to you),
- difficulties with post-traumatic stress disorder,
- severe depression,
- panic attacks,
- thoughts about suicide or self-harming

Unfortunately, given that this is a small study, we have had to apply very restrictive inclusion/exclusion criteria to simplify the procedure and reduce variability.

What happens now?
The information you already provided will be deleted and will not be included in our analyses. However, if you have an interest in the study or the topic and you wish to learn more about it, please feel free to contact via email one of our research team, Ms Kate Whittenbury (kate.whittenbury@stu.mmu.ac.uk).

What if I need to speak with someone following participation?
If you wish to discuss this study, you can talk with Ms Kate Whittenbury (kate.whittenbury@stu.mmu.ac.uk) or the principal investigator Dr Maria Livanou (m.livanou@mmu.ac.uk).

However, if this experience has brought up difficult feelings, or made you upset, or if you are currently experiencing difficulties with depression, post-traumatic stress, self-harm, suicidal thoughts or panic attacks, please contact your doctor or General Practitioner to seek support and advice as soon as possible. You can also make use of the services listed below:

- Your GP or doctor
- The Samaritans, tel. 116 123
- No Panic, tel. 0300 772 9844
- Mind, tel. 0300 123 3393
- Victim support, tel. 0808 168 9111

Finally, thank you again for your interest in our study.

Appendix K – Study Two Debrief-B

Debrief Sheet
'The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)'

Thank you very much for taking part in Phase 1 of this study but **participation in not over yet**! We will contact you again in one week's time for Phase 2. You participation in Phase 2 will take only 5-10 minutes of your time but is extremely important for our study.

What we could not tell you earlier but would like you to know now...
The maths task we asked you to complete, aimed at inducing deliberately a mild stress response in you. Your performance in this task has no reflection on your real-world abilities and no data was collected from that task. This task was included to examine your response to indirect trauma while under stress. We could not disclose this part of the study to you until now, because we did not wanted you to be mentally prepared for the oncoming stress. The stress induced by the task is usually very mild and similar to the stress induced during normal daily activities. However, if by any chance the task caused you any adverse effects, we apologise and urge you to seek help (see below) if these effects persist.

What happens now?
In a week's time, we will send you an email with a link directing you to the second part of this online survey (phase 2) which is much shorter and should not take longer than 5-10 minutes. In that survey we will ask you some questions that will help us understand your reaction to the indirect trauma exposure.

What if I would like to remove my data from the study?
The information you provided is anonymised. However, if for some reason you wish to withdraw your data from the study, you can do so within the next 3 weeks (after completing phase 1) and no later. In order to withdraw from the study, you need to contact me via email (kate.whittenbury@stu.mmu.ac.uk) within the next two weeks and to give me your unique personal code. Then I will withdraw your data from the study.

What if I need to speak with someone following participation?
I hope you found participating in the first phase of this study a positive and interesting experience. If you have any further questions, or want an update on the research, please feel free to contact me (kate.whittenbury@stu.mmu.ac.uk).
If, however, the experience has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact one of the services listed below:

- *Your GP or doctor*
- *The Samaritans*   *tel. 116 123*
- *Mind*   *tel. 0300 123 3393*
- *Manchester eTherapy Service*   *tel. 0161 226 3871*
- *ASSIST*   *tel.* 01788 560800
- *Survivors Manchester*   tel. 0808 800 5005

Finally, thank you again for taking part in Phase 1. We will be in touch with you for the final Phase 2.

Appendix L – Study Two Debrief-C

Debrief Sheet
'The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)'

Thank you very much for taking part in Phase 1 of this study but **participation in not over yet**! We will contact you again in one week's time for Phase 2. You participation in Phase 2 will take only 5-10 minutes of your time but is extremely important for our study.

What happens now?
In a week's time, we will send you an email with a link directing you to the second part of this online survey (phase 2) which is much shorter and should not take longer than 5-10 minutes. In that survey we will ask you some questions that will help us understand your reaction to the indirect trauma exposure.

What if I would like to remove my data from the study?
The information you provided is anonymised. However, if for some reason you wish to withdraw your data from the study, you can do so within the next 3 weeks (after completing phase 1) and no later. In order to withdraw from the study, you need to contact me via email (kate.whittenbury@stu.mmu.ac.uk) within the next two weeks and to give me your unique personal code. Then I will withdraw your data from the study.

What if I need to speak with someone following participation?
I hope you found participating in this study a positive and interesting experience. If you have any further questions, or want an update on the research, please feel free to contact me (kate.whittenbury@stu.mmu.ac.uk)

If, however, the experience has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact one of the services listed below:

- *Your GP or doctor*
- *The Samaritans*   *tel. 116 123*
- *Mind*   *tel. 0300 123 3393*
- *Manchester eTherapy Service*   *tel. 0161 226 3871*
- *ASSIST*   *tel. 01788 560800*
- Survivors Manchester   tel. 0808 800 5005

Finally, thank you again for taking part in Phase 1. We will be in touch with you for the final Phase 2.

Appendix M – Study Two Debrief-D

Debrief Sheet
'The effect of audio-visual information and situational stress on psychological responses to indirect exposure to trauma (IET)'

Thank you very much for taking part in our study. The information you provided will help us understand better what makes indirect trauma exposure more stressful or traumatic, and will help us develop new (or improve existing) interventions and practices, to protect professionals who are working routinely with survivors of trauma.

What happens now?
We will continue collecting data for this study until August 2022, but concurrently we will be processing and analysing the collected anonymised data. If you would like me to send you a one-page summary of the results after the study is completed and the data is analysed, please make a note of my email (kate.whittenbury@stu.mmu.ac.uk) and feel free to contact me in October 2022, by which time all data analyses for this study will be completed.

What if I would like to remove my data from the study?
If you wish to withdraw your data from the study, you can do so within the next 2 weeks and no later (because after that point, we will start processing and analysing the data-set containing your data). In order to withdraw from the study, you will need to contact me via email (kate.whittenbury@stu.mmu.ac.uk) within the next two weeks and give me your unique personal code. Then I will withdraw your data from the study.

What if I need to speak with someone following participation?
I hope you found participating in this study a positive and interesting experience. If you have any further questions, or want an update on the research, please feel free to contact me (kate.whittenbury@stu.mmu.ac.uk).

If, however, the experience has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact one of the services listed below:

- *Your GP or doctor*
- *The Samaritans*   *tel. 116 123*
- *Mind*   *tel. 0300 123 3393*
- *Manchester eTherapy Service*   *tel. 0161 226 3871*
- *ASSIST*   *tel. 01788 560800*
- *Survivors Manchester*   *tel. 0808 800 5005*

Finally, thank you very much for participating in our study.

Appendix N – Brief Trauma Questionnaire (BTQ- Schnurr et al., 1999)

Brief Trauma Questionnaire

The following questions ask about events that may be extraordinarily stressful or disturbing for almost everyone. Please circle "Yes" or "No" to report what has happened to you.

If you answer "Yes" for an event, please answer any additional questions that are listed on the right side of the page to report: (1) whether you thought your life was in danger or you might be seriously injured; and (2) whether you were seriously injured.

If you answer "No" for an event, go on to the next event.

Event	Has this ever happened to you?	If the event happened, did you think your life was in danger or you might be seriously injured?	If the event happened, were you seriously injured?
1. Have you ever served in a war zone, or have you ever served in a noncombat job that exposed you to war-related casualties (for example, as a medic or on graves registration duty?)	No Yes	No Yes	No Yes
2. Have you ever been in a serious car accident, or a serious accident at work or somewhere else?	No Yes	No Yes	No Yes
3. Have you ever been in a major natural or technological disaster, such as a fire, tornado, hurricane, flood, earthquake, or chemical spill?	No Yes	No Yes	No Yes
4. Have you ever had a life-threatening illness such as cancer, a heart attack, leukemia, AIDS, multiple sclerosis, etc.?	No Yes	No Yes	*N/A*
5. Before age 18, were you ever physically punished or beaten by a parent, caretaker, or teacher so that: you were very frightened; or you thought you would be injured; or you received bruises, cuts, welts, lumps or other injuries?	No Yes	No Yes	No Yes
6. Not including any punishments or beatings you already reported in Question 5, have you ever been attacked, beaten, or mugged by anyone, including friends, family members or strangers?	No Yes	No Yes	No Yes
7. Has anyone ever made or pressured you into having some type of unwanted sexual contact? Note: By sexual contact we mean any contact between someone else and your private parts or between you and some else's private parts	No Yes	No Yes	No Yes
8. Have you ever been in any other situation in which you were seriously injured, or have you ever been in any other situation in which you feared you might be seriously injured or killed?	No Yes	*N/A*	No Yes
9. Has a close family member or friend died violently, for example, in a serious car crash, mugging, or attack?	No Yes	*N/A*	No Yes
10. Have you ever witnessed a situation in which someone was seriously injured or killed, or have you ever witnessed a situation in which you feared someone would be seriously injured or killed? Note: Do not answer "yes" for any event you already reported in Questions 1-9	No Yes	*N/A*	*N/A*

Appendix O – PTSD-8 (Hansen et al., 2010)

The following are symptoms that people sometimes have after experiencing, witnessing or being confronted with a traumatic event. Please read each one carefully and mark your *answer with an X* according to how much the symptoms have bothered you *since the trauma* (One X per question).

	Not at all	Rarely	Some-times	Most of the time
Recurrent thoughts or memories of the event.				
Feeling as though the event is happening again.				
Recurrent nightmares about the event.				
Sudden emotional or physical reactions when reminded of the event.				
Avoiding activities that remind you of the event.				
Avoiding thoughts or feelings associated with the event.				
Feeling jumpy, easily startled.				
Feeling on guard.				

Appendix P – Patient Health Questionnaire – 9 (PHQ-9; Kroenke & Spitzer 2002)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things				
Feeling down, depressed or hopeless				
Trouble falling asleep too much				
Feeling tired or having little energy				
Poor appetite or overeating				
Feeling bad about yourself – or that you are a failure or have let yourself or your family down				
Trouble concentrating on things, such as reading the newspaper or watching television				
Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that				

you have been moving around a lot more than usual.				
Thoughts that you would be better off dead or of hurting yourself in some way.				

Appendix Q – Empathy Components Questionnaire (ECQ; Batchelder et al., 2017)

Please read the following statements and rate about how much you agree or disagree with each one.

Please tick one choice per option	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
I am usually successful in judging if someone says one thing but means another.				
When someone seems upset I am usually uninterested and unaffected by their emotions				
I am not very good at predicting what other people do.				
My friends often tell me intimate things about themselves as I am very helpful.				
I am good at responding to other people's feelings.				
I am not interested in protecting others, even if I know they are being lied to.				

I am not very good at helping others deal with their feelings.				
Others' emotions do not motivate my mood.				
I have a desire to help other people.				
When talking with others, I am not very interested in what they might be thinking.				
I feel pit for people I see being bullied.				
I strive to see how it would feel to be ibn someone else's situation before criticising them.				
I avoid getting emotionally involved with a friend's problems.				
I do well at noticing when one of my friend's is uncomfortable.				
I like to know what happens to others.				
I am uninterested in putting myself in another's shoes if I am				

upset with them.				
When I do things, I like to take others' feelings into account.				
I am not always interested in sharing others' happiness.				
I like trying to understand what might be going through my friends' minds.				
I am poor at sharing emotions with others.				
When someone is crying, I tend to become very upset myself.				
I don't intuitively tune into how others feel.				
I avoid thinking how my friends will respond before I do something.				
I am not very good at noticing if someone is hiding their emotions.				
During a conversation, I am not very good at figuring out what others might want to talk about.				

I am not good at sensing whether or not I am interrupting a conversation.				
I take an interest in looking at both sides to every argument.				

Appendix R – Study Two Diary of Intrusions-A

Diary of intrusions

Please use the diary below to indicate how many times **over the last week** you had an 'intrusion' relating to Manassah's trauma experience that you learnt about (either through watching a video or reading a transcript) when you participated in the first phase of this study.

Intrusions are involuntary memories, thoughts or images that 'pop up' in your mind, without being triggered by a reminder. So, intrusions do not describe the moments when you intentionally think about the trauma. Please complete the diary entry for each day to the best of your ability.

Please complete the diary entry for each day to the best of your ability.

	Maximum Number of Intrusions (per day) Please indicate how many intrusions you had a this point in time (e.g. 1,2, etc.)	At its worst, how much distress was caused by an intrusion? Rate from 0 (not at all) to 100 (extremely)	At its worst, how vivid was an intrusion? Rate from 0 (not at all vivid) to 100 (extremely vivid)
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Day 6			
Day 7			

Appendix S – Study Two Ethics Approval

Manchester Metropolitan University

11/05/2021
Project Title: Listening to Trauma (Audiovisual and stress)

EthOS Reference Number: 32815

Ethical Opinion

Dear Kate Whittenbury,

The above application was reviewed by the Health, Psychology and Social Care Research Ethics and Governance Committee and, on the 11/05/2021, was given a favourable ethical opinion. The approval is in place until 30/09/2022 .

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Recruitment Media	Recruitment Poster v2.0	30/03/2021	2
Additional Documentation	DEMOGRAPHICS FORM REVISED	31/03/2021	2
Consent Form	CONSENT FORM v2.0	31/03/2021	2
Information Sheet	PARTICIPANT INFORMATION SHEET v2.0	31/03/2021	2
Additional Documentation	DEBRIEF SHEET 1a	31/03/2021	2
Additional Documentation	DEBRIEF SHEET 0	31/03/2021	2
Additional Documentation	DEBRIEF SHEET 1b	31/03/2021	2
Additional Documentation	DEBRIEF SHEET 2	31/03/2021	2
Additional Documentation	Novel questions - LTS (audio-visual and stress)	01/04/2021	2
Project Protocol	ML Protocol LTS Stress & Audiovisual Cues v2.1 submitted	30/04/2021	2.1
Additional Documentation	Reply to reviewers comment of section B7	30/04/2021	1

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

We wish you every success with your project.

HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee

For help with this application, please first contact your Faculty Research Officer. Their details can be found here

Page 1 of 1

Appendix T – Study Three Participant Information Sheet

Participant Information Sheet
Impact of Listening to a Trauma Story

Invitation to Research
My name is Kate Whittenbury, and I am a PhD student at Manchester Metropolitan University, Manchester, United Kingdom working with Grace Tanner, a MSc Student from Manchester Metropolitan University. We are currently conducting a study focusing on the effects that listening to traumatic experiences may have on a person's psychological wellbeing.

Why have I been invited?
You have been approached because you are over the age of 18 years old, and English is your first language.

You should <u>not</u> participate in the study if you…
- have ever been assaulted or robbed and experienced emotional distress because of it and are currently experiencing mental health problems. This is to ensure that you won't be at risk of feeling distressed as a result of participation to the study.

Do I have to take part?
No. It's completely up to you to decide whether or not you take part. Participation is completely voluntary. This sheet will provide you with information on the study, its aims and important ethical aspects, such as how your anonymity
and the confidentiality of your data will be protected. If you agree to take part in the study, we will ask you to sign a consent form.

What will I be asked to do?
The study will examine the psychological effects of listening to a person's trauma story and the factors that may relate to the listener's emotional response. If you agree to participate in this study, you will be asked to take part in an experiment (step 1) and then briefly monitor some thoughts daily, during the week after the experiment (step 2).

Participation in the experiment (step 1) will take no longer than 50 minutes. You will complete a number of questionnaires providing basic information about yourself (e.g., your age, gender, etc.), your personality and various psychological characteristics. Then you will watch a videorecording of a person talking about a traumatic experience.

Participation in step 2, will take about 1 minute per day for one week. It involves daily recording thoughts or memories you may have about the video-recorded trauma story in a Daily Diary link that we will send you every day (around the same time that you completed the original experiment). To be able to send you the Daily Diary, we will ask you to provide us with your email address after signing the Consent Form. On the final day of this one-week period, along with the Daily Diary, we will also send you two questionnaires to complete, one assessing the impact the video-recorded story has

had on you and another assessing how much you were able to comply with the Daily Diary. Completing step 2 will take no longer than 5 minutes.

Are there any risks?
There are no risks anticipated with participating in this study. However, if you experience any distress during any stage of your participation in this study, you will be able to take a break or stop taking part in the study altogether. If you continue to experience distress following participation, you are encouraged to contact the researcher (you can find her address at the bottom of this sheet). At the end of the data collection session, you will also be provided the contacts of both UK-based and international organisations offering psychological support

Are there any advantages to taking part?
There are no direct benefits in taking part in the study, although we hope that you may find participation interesting and enjoyable. The data collected as part of the study will also contribute to improving our understanding of the links between individual characteristics and reactions to trauma.

What will happen with the data I provide?
When you agree to participate in this research, we will collect from you personally-identifiable information.

The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant.

The University is registered with the Information Commissioner's Office (ICO), and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy.

We collect personal data as part of this research (such as name, telephone numbers or age). As a public authority acting in the public interest we rely upon the 'public task' lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained.

We will not share your personal data collected in this form with any third parties. If your data is shared this will be under the terms of a Research Collaboration Agreement which defines use and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you have given your explicit written consent to be identified in the research. **The University never sells personal data to third parties.**

We will only retain your personal data for as long as is necessary to achieve the research purpose.

The information you provide will be completely anonymous. All the information we collect will be anonymised, entered and stored securely in password protected MMU computers, and only I and my co-investigators / research collaborators in this study will have access to it. Anonymised data will be kept for 10 years after the end of the study, and then this too will be destroyed.
For further information about use of your personal data and your data protection rights please see the University's Data Protection Pages (https://www2.mmu.ac.uk/data-protection/).

What will happen to the results?
The results will be summarised and may be presented in scientific conferences and professional meetings or submitted for publication in an academic or professional journal.

Who has reviewed the project?
This study has been reviewed and approved by the Faculty of Health and Social Care Research Ethics Committee at Manchester Metropolitan University.

What if I would like to remove my data from the study?
If you decide to pull your data out of my study, you will be able to do this in the next 2 weeks. In order to withdraw your data from my database which is anonymised, you will need to contact me and give me your ***unique personal code***.
Please create an anonymous ***unique personal code*** now by filling in the boxes in the table below:
Table 1: Creating your unique, anonymous personal code:

	Please insert the day of the month on which you were born (e.g., 04 or 12) in the box below	Please insert the last two letters of your home postcode (e.g. AD or SU) in the box below	Please insert the last two digits of your home telephone number (e.g., 02, or 98) in the box below
Your unique, anonymous personal code is:			

What will happen to my email address once the study has been completed?
As email addresses will be collected digitally by Qualtrics, they will be stored securely on the principal investigator's password protected computer until the follow up period had ended. Once, the follow-up period is finished, participants' email addresses will be deleted permanently, and so will email addresses of participants who decide to withdraw from the study early (e.g. within the follow up period), or withdraw their data from the study within the two week period given after the first experiment has been conducted.

Who do I contact if I have concerns about this study or I wish to complain?

If you have any questions about the study, please contact Kate (the main researcher):
Kate Whittenbury, Department of Psychology, Brooks Building, Manchester Metropolitan University, 53 Bonsall Street, M15 6GX. Email: kate.whittenbury@stu.mmu.ac.uk

If you wish to make a complaint, raise concerns about any aspect of this study or simply prefer to contact my supervisor, please use the information below:
Dr Maria Livanou
Email: m.livanou@mmu.ac.uk
Department of Psychology | Manchester Metropolitan University | Manchester ｜ M15 6GX

If you wish to speak to someone independent of this project, please contact:
Dr Claire Fox
Email: FOHE-ethics@mmu.ac.uk
Faculty of Health and Education ｜ Manchester Metropolitan University | Manchester ｜ M15 6GX

If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see: https://ico.org.uk/global/contact-us/

Thank you for taking the time to read this information sheet.

Appendix U – Study Three Recruitment Poster for Mental Health

Professionals

Appendix V – Study Three Recruitment Poster for General Public

Appendix W – Study Three Consent Form

Consent Form
Study Title: The Impact of Listening to a Trauma Story

We are asking if you would like to take part in a research project which will examine the psychological effect of listening to a trauma story.

You have already read the **Participant Information Sheet** but before you consent to participating in the study, please contact the Principal Investigator, Kate Whittenbury (email: kate.whittenbury@stu.mmu.ac.uk), if you have any additional questions.

1. I confirm that I have read the Participant Information Sheet (Version 3.0, Date: 24/01/2022) and fully understand what is expected of me within this study.

2. I confirm that I have had the opportunity to ask any questions and to have them answered.

3. I understand that my participation is voluntary and that I am free to withdraw up until 4 weeks after participation without giving any reason. I also understand that refusing to participate will affect in no way any relationship I may have with the principal investigator or any of the researchers who are co-investigators in this study.

4. I understand that in order for my data to be withdrawn, I will need to contact the Principal Investigator via email within 2 weeks of signing this form, with the inclusion of the unique personal code I have created on the Participant Information Sheet.

5. I understand that failure to provide my unique personal code will not allow the researcher to trace my responses and remove them and they will still be included in the analysis and write up of the project.

6. I understand that the information from my responses will be pooled with other participants' responses and may be published.

7. I consent to the data generated as part of this research to be used in reports, conferences and training events.

8. I understand that my email address is required by the researcher exclusively to send follow up material within the next 7 days after completing this experiment.

9. I consent to being contacted via email and receiving from the researchers the Daily Diary link every day for one week after the end of my participation to the step 1 experiment

10. I understand that any information I give will remain strictly confidential and anonymous.

11. I consent to Manchester Metropolitan University keeping written anonymised data for 10 years after the study has finished.

12. I consent to take part in the above study.

Appendix X – Study Three Debrief Sheet-A

Post-Experiment Sheet
'The Impact of Listening to a Trauma Story'

Thank you very much for watching this video-recorded story and completing the measures.

What happens now?
Your participation is not yet completed. You will now be sent a daily link for the next 7 days which will lead to a DAILY DIARY OF INTRUSIVE THOUGHTS, which I would like you to use to record any intrusive thoughts you have about the video-recorded story you listened to today. The entry will take less than 2 minutes to complete and will be sent to you at 8pm each evening by email. By 'intrusive thoughts' I mean memories, images or thoughts about the stories that pop into your mind during the course of this coming week. On the last day of the 7-day follow up period, you will also be asked to complete two more questionnaires: the "Diary of Compliance" (a single item questionnaire) and the "Impact of Events Scale" (15-item questionnaire), which will take no longer than 5 minutes to complete. The diary entries, once completed each day, will be automatically sent to me through a secure and confidential programme, Qualtrics.
After completing the final diary entry and questionnaires, you will be granted access to the debrief form, in which we will give you some additional details about the experiment.

What if I have any more questions or need to speak with someone during this week?
If you have any further questions, please feel free to contact me using the details provided: Kate Whittenbury, kate.whittenbury@stu.mmu.ac.uk .

In case participation in this experiment has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact one of the services listed below:

- *Your GP or doctor*
- *The Samaritans tel. 116 123*
- *Mind tel. 0300 123 3393*
- *Manchester eTherapy Service tel. 0161 226 3871*

Finally, thank you again for coming to MMU and agreeing to take part in this experiment. Your input was invaluable. We will be in touch again in a week's time!

Appendix Y – Study Three Debrief Sheet-B

Debrief Sheet
The Impact of Listening to a Trauma Story

Thank you very much for taking part in my research. The data you contributed will help me complete my study, which examines the impact of listening to traumatic experiences and factors possibly associated with emotional resilience.
What we could not tell you earlier but would like you to know now...
To ensure that your reactions to the stories would be as close as possible to those experienced by people who listen to true survivors of trauma, we did not reveal to you that the person depicted on the video-recording that you watched was an actor; the story he narrated was completely fictional, conceived only for the purpose of this study.
What happens now?
Soon, I will start analysing the data from all participants. In case for some reason you wish to withdraw your data from the study, you can do so within the following 2 weeks, but no later.
What if I would like to remove my data from the study?
In order to withdraw your data from my database which is anonymised you need to contact me via email (kate.whittenbury@stu.mmu.ac.uk) within two weeks and to give me your unique personal code. Then I will withdraw your data from the study.
What if I need to speak with someone following participation?
I hope you found participating in this study a positive and interesting experience. If you have any further questions, or want an update on the research, please feel free to contact me (kate.whittenbury@stu.mmu.ac.uk).
If, however, the experience has brought up difficult feelings, or left you feeling distressed, I would encourage you to contact one of the services listed below:

- *Your GP or doctor*
- *The Samaritans*   *tel. 116 123*
- *Mind*   *tel. 0300 123 3393*
- *Manchester eTherapy Service*   *tel. 0161 226 3871*

If you would like a lay summary of the results, I would be happy to send this to you upon the study's completion. Please contact me (kate.whittenbury@stu.mmu.ac.uk) to let me know, at the end of the study, 1st November 2022, if you do require this summary so I can make a note and ensure that I send it to you.
Finally, thank you again for taking part, your input was invaluable.

Appendix Z – Emotion Regulation Questionnaire (ERQ; John & Gross, 2004)

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.							
I keep my emotions to myself.							
When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.							
When I am feeling positive emotions, I am careful not to express them.							
When I'm faced with a stressful situation, I							

make myself think about it in a way that helps me stay calm.						
I control my emotions by not expressing them.						
When I want to feel more positive emotion, I change the way I'm thinking about the situation.						
I control my emotions by changing the way I think about the situation I'm in.						
When I am feeling negative emotions, I make sure not to express them.						
When I want to feel less negative emotion, I change the way I'm thinking about the situation.						

PCL-C

<u>INSTRUCTIONS</u>: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem <u>in the past month</u>.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
2.	Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3.	Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4.	Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
6.	Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *having feelings* related to it?	1	2	3	4	5
7.	Avoiding *activities* or *situations* because *they reminded you* of a stressful experience from the past?	1	2	3	4	5
8.	Trouble *remembering important parts* of a stressful experience from the past?	1	2	3	4	5
9.	*Loss of interest* in activities that you used to enjoy?	1	2	3	4	5
10.	Feeling *distant* or *cut off* from other people?	1	2	3	4	5
11.	Feeling *emotionally numb* or being unable to have loving feelings for those close to you?	1	2	3	4	5
12.	Feeling as if your *future* will somehow be *cut short*?	1	2	3	4	5
13.	Trouble *falling* or *staying asleep*?	1	2	3	4	5
14.	Feeling *irritable* or having *angry outbursts*?	1	2	3	4	5
15.	Having *difficulty concentrating*?	1	2	3	4	5
16.	Being "*super-alert*" or watchful or on guard?	1	2	3	4	5
17.	Feeling *jumpy* or easily startled?	1	2	3	4	5

PCL-C for DSM-IV (11/1/94)   Weathers, Litz, Huska, & Keane   National Center for PTSD - Behavioral Science Division

Appendix BB – Study Three Diary of Intrusions-B-Morning Subsection

Daily Diary Entry: Morning

Indicate the total number of intrusions in each time period (column 1) and rate the emotional discomfort that intrusions may trigger in you (column 2) and how vivid the intrusion was (column 3) by giving a number from 0-100.

If you have an intrusion, but cannot access this diary, please try to note this down and then complete the diary entry when the link is sent by email.

If you have no intrusions, please record zero.

	Total number of intrusions Please indicate how many intrusions you had a this point in time (e.g. 1,2, etc.)	Did the intrusion cause emotional distress? Rate from 0 (not at all) to 100 (extremely)	How vivid was the intrusion? Rate from 0 (not at all vivid) to 100 (extremely vivid)
Morning			
Morning			
Morning			
Morning			
Morning			
Morning			
Morning			
Morning			
Morning			

Appendix CC – Study Three Ethical Approval

Manchester Metropolitan University

31/07/2020
Project Title: The Impact of Vicarious Trauma

EthOS Reference Number: 24159

Ethical Opinion

Dear Kate Whittenbury,

The above application was reviewed by the Health, Psychology and Social Care Research Ethics and Governance Committee and, on the 31/07/2020, was given a favourable ethical opinion. The approval is in place until 01/10/2022 .

Conditions of favourable ethical opinion
** Minor edit to PIS: Section Why have I been invited? "you are fluent in English and ~~English~~ aged at least 18."

Application Documents

Document Type	File Name	Date	Version
Additional Documentation	full SCENARIO TRAUMA	16/06/2019	1
Consent Form	Consent Form Study v.2	09/06/2020	2
Information Sheet	Debrief Sheet Study v.2	09/06/2020	2
Information Sheet	Post-experiment information sheet study v.2	09/06/2020	2
Project Protocol	Listening to Trauma Stories -Protocol-v.2.2 signed	29/06/2020	2.2
Recruitment Media	recruitment poster	23/07/2020	1.1
Information Sheet	Participant Information Sheet Study v2.3 final	26/07/2020	2.3

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

We wish you every success with your project.

HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee

For help with this application, please first contact your Faculty Research Officer. Their details can be found here

Appendix DD - Diagram of significant predictors of negative emotion

Cognitive empathy → -.21 → Negative emotion

Affective empathy → .36 → Negative emotion

Family history of mental health → -1.6 → Negative emotion

PTSD → .21 → Negative emotion

Emotion suppression → .17 → Negative emotion

Adj.^{R2} = 27%