



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

Research Commons

<http://researchcommons.waikato.ac.nz/>

## Research Commons at the University of Waikato

### Copyright Statement:

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

The thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of the thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from the thesis.

**Vicarious Traumatization in the Workplace: A Meta-Analysis on the  
Impact of Social Support**

A thesis

submitted in partial fulfilment

of the requirements for the degree

of

**Master of Applied Psychology (Organisational)**

at

**The University of Waikato**

by

**MELISSA WHITTON**



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

2018

## **Abstract**

Healthy employees have been linked with decreased absenteeism, lower turnover, less accidents in the workplace, higher employee engagement and commitment, and greater employee resilience. However, there are many occupational hazards which can compromise the health of employees, leading to negative consequences for organisations and service users. Helping professionals are often exposed to indirect trauma through working with traumatised individuals. This puts them at risk of developing Vicarious Traumatization, which can result in disruptions to schemas, depletion, symptoms of hyperarousal, avoidance, negative changes to cognition and mood, poor concentration, flashbacks and dreams, and intrusive thoughts or memories associated to the trauma of another. A professional will react differently in response to Vicarious Traumatic Exposure due to intrinsic features of the individual and multiple characteristics of the work being done. Therefore, whether Vicarious Traumatization occurs depends on an interplay between both internal and external influences. The present study examined the impact of social support on the outcome of Vicarious Traumatization by running a meta-analysis on 21 studies which analysed this relationship. Results showed that the overall effect size suggested a significant, yet small negative relationship between social support and the negative outcomes of Vicarious Traumatic Exposure. However, due to the I-squared value being so large, the significance of this relationship is questionable. Therefore, further analysis needs to occur to examine where this dispersion is occurring, either through moderator or subgroup analysis.

*I would like to dedicate my thesis to my beloved Nannan and Gar, whose example will forever inspire me. I am forever grateful for your unwavering support, constant encouragement, and sacrifices made to help me get to where I am today. I wish I could still share in such successes with you both.*

## Acknowledgements

The writing and completion of this research would not have been possible without the support I have received from multiple individuals in my life.

Firstly, I would like to thank my two supervisors, Dr Maree Roche and Dr Anna Sutton, for their guidance, encouragement, endless feedback, and patience over the past year. I have been very lucky to have had two supervisors who cared about my work and responded to my questions so promptly. There have been multiple ups and downs of this process, and you have both been able to help mitigate the stress and keep me on track.

To my loving partner Brad, thank you for always believing in me and for encouraging me to do my best in all that I do. The confidence you have in me is so warming. I have been continually amazed by your willingness to proof read countless pages of work. I am so grateful for the times where you have been able to pull me away from my laptop and keep me level headed and pragmatic through your time, attention and wise words.

Lastly, thank you to my family and friends for providing me with laughter in times of stress, and words of encouragement in times of self-doubt. You have all allowed me to stay focussed and sane, during this time of great learning, even in times where I have had to learn the hard way. Completing this work would have been all the more difficult were it not for the support and friendship provided by you all.

## Table of Contents

Vicarious Traumatization in the Workplace: A Meta-Analysis .....	i
Abstract .....	ii
Acknowledgements .....	iv
Table of Contents .....	v
Chapter One: Literature Review .....	1
Introduction .....	1
Clarification of Terms .....	2
Vicarious Traumatization.....	2
Secondary traumatic stress.....	3
Compassion fatigue.....	4
Burnout.....	5
Overall.....	7
Positive outcomes of secondary trauma.....	7
Vicarious posttraumatic growth (VPTG).....	8
Compassion satisfaction.....	8
Vicarious resilience.....	8
The Significance of the Study to Organisational Psychology.....	9
Costs of Vicarious Traumatization.....	11

Social Support as a Coping Strategy .....	11
Social support in general. ....	14
Social support in the workplace. ....	14
Social support outside of the workplace. ....	16
Social support and Positive Psychological Outcomes .....	16
Conclusion .....	17
Purpose of the Study .....	18
Chapter Two: Method .....	19
Research Question and Hypothesis .....	19
Overview of Review .....	20
Fixed vs. Random-effects model.....	20
Conducting and Documenting the Search and Selection Process.....	20
Initial Review Inclusion and Exclusion Criteria. ....	21
Secondary Review Inclusion and Exclusion Criteria.....	23
Reference checking review stage.....	24
Search Strategy for Identification of Relevant Studies .....	25
Selection of papers. ....	25
PsycINFO.....	25
Web of science. ....	25
ProQuest social sciences. ....	26
Research commons.....	26

Reference checking stage.....	27
Meta-analysis reference checking stage.....	27
Results of Search.....	27
Statistical Analysis.....	29
Statistical analysis of effect sizes.....	29
Test of homogeneity.....	29
Publication bias.....	30
Chapter Three: Results.....	31
Meta-Analysis Results.....	31
First Analysis: Without beta coefficients.....	37
Second Analysis: With beta coefficients.....	38
Test for Heterogeneity.....	40
Publication Bias.....	41
Conclusion.....	43
Chapter Four: Discussion.....	44
Summary of the study.....	44
Overview of Findings.....	45
Moderators.....	46
Mediators.....	47
Lack of information.....	48
Subgroups.....	49

Methodology.....	49
Practical Implications.....	50
Strengths.....	51
Limitations .....	52
The number of studies.....	52
Small sample size.....	52
Different measures of social support.....	52
Positive psychological consequences of VTE.....	52
Burnout as an outcome of VTE.....	53
High I-squared value.....	53
Future Research.....	54
Conclusion .....	55
References.....	56

## Table of Figures

<i>Figure 1. Compassion Fatigue Resilience Model</i> .....	17
<i>Figure 2. Research Model</i> .....	19
<i>Figure 3. Review process flow chart</i> .....	28
<i>Table 1 Studies Included in the Meta-Analysis</i> .....	32
<i>Figure 4. Forest plot for the first analysis</i> .....	38
<i>Figure 5. Forest plot for the second analysis</i> . ....	39
<i>Figure 6. Heterogeneity testing for random effects model</i> .....	41
<i>Figure 7. Effect size data for fixed and random effects models</i> .....	41
<i>Figure 8. Funnel plot for the first analysis</i> .....	42
<i>Figure 9. Funnel plot for the second analysis</i> .....	43

## **Chapter One: Literature Review**

### **Introduction**

The well-being of employees is imperative to the development and health of an organization (Walsh-Lyle, 2016). It has become indisputable that healthy workers are productive workers (Coats & Max, 2005; Cooper & Bevan, 2014). Healthy employees have been linked to decreased absenteeism, lower turnover, fewer accidents in the workplace, higher employee engagement and commitment, and greater employee resilience (Cooper & Bevan, 2014). However, there are many occupational hazards which can compromise the health of employees, leading to negative consequences for organisations and service users (Walsh-Lyle, 2016). Helping professionals are often exposed to suffering, vulnerable clients, and secondary trauma, amongst other factors. This exposure can compromise the health and well-being of employees, which in turn can jeopardize the quality of service helping professionals provide.

The term vicarious traumatic exposure is used to refer to indirect exposure to trauma, for example, exposure to direct trauma survivors and/or the details of a traumatic event, rather than exposure to a traumatic event itself (Manning-Jones, 2016). Vicarious traumatic exposure is often seen as part-in-parcel with working in a helping profession (Rhineberger-Dunn, Mack, & Baker, 2016) and is often viewed as an inevitable occupational hazard (Bober & Regehr, 2006; Hesse, 2002; Pearlman & Saakvitne, 1995; Stamm, 1999). This exposure can result in negative outcomes such as vicarious trauma (VT), compassion fatigue (CF), or secondary traumatic stress (STS) and burnout (BO) (Giovannoni, McCoy, Mays, & Watson, 2015; Bell, Kulkarni, & Dalton, 2003). Such outcomes can lead to negative work

outcomes, such as turnover, absenteeism, a lack of engagement; decreased quality of care, and higher caseloads for other staff members (Middleton & Potter, 2015; NSPCC, 2013). The present study examined the impact of social support on the negative psychological outcomes of CF, VT, STS, and BO from vicarious traumatic exposure.

### **Clarification of Terms**

The negative psychological outcomes of vicarious trauma are referred to in the literature using many labels. These include compassion fatigue (CF), secondary traumatic stress (STS), vicarious traumatization (VT) and burnout (BO). At present, there are no agreed-upon definitions, tools, or measurements to differentiate the four concepts, leading to inconsistencies in literature (Najjar, Davis, Beck-Coon, & Carney Doebbeling, 2009) and VT, STS, and CF are often being used interchangeably (Sodeke-Gregson, Holttum, & Billings, 2013). While some researchers see CF as a broad concept which incorporates STS, VT, and burnout (Adams, Boscarino, & Figley, 2006), others argue that CF is made up of just STS and burnout (Stamm, 2002, 2009), with many believing CF is an overarching concept (Sodeke-Gregson et al., 2013). The definitions and underlying principles of each concept, while similar, reflect the belief that each concept is related but different to the others.

**Vicarious Traumatization.** Vicarious traumatization is grounded in constructivist self-development theory which suggests that individuals construct their realities through the development of cognitive schemas. These schemas include; personal beliefs about themselves, others, and the world around them which help them interpret events and make sense of experiences (McCann &

Pearlman, 1990). Additional information is either assimilated into existing schemas or, if it does not fit, it is challenged (McCann & Pearlman, 1990).

The core of VT is focused on the negative effects of empathetically engaging with the traumatic material of clients at work (Baird & Kracen, 2006). Merriam-Webster (2010) defines empathy as “the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another”. Empathetic engagement is seen as a quintessential part of working within a helping profession (Figley & Nelson, 1989; Herman, 1997; Abraham-Cook, 2012), therefore it can be viewed as an occupational hazard within the helping professions.

VT results in changes to an individual’s fundamental cognitive schema or beliefs about oneself, others, and the world. These disruptions to schema occur in five areas representing a psychological need. These areas are; safety, trust, esteem, intimacy, and control (Turgoose & Maddox, 2017; McCann & Pearlman, 1990).

**Secondary traumatic stress.** STS is defined as the negative behavioural and emotional consequences of vicarious traumatic exposure (Figley, 1995). While VT refers to cognitive changes, the symptoms of STS mirror those of Posttraumatic Stress Disorder (PTSD). Such symptoms include; symptoms of hyperarousal, avoidance, negative changes to cognition and mood, poor concentration, flashbacks and dreams, and intrusive thoughts or memories associated to the trauma of another (Bride, 2004; American Psychiatric Association, 2013).

As of 2013, the diagnostic criteria for PTSD was changed to include “repeated or extreme exposure to details of the traumatic events” (American Psychiatric Association, 2013, p. 271). This has led to the suggestion that STS

could be regarded as a subtype of PTSD (Manning-Jones, 2016). What differentiates STS from PTSD is the location of the stressor (Temitope, 2015). If a person experiences a primary trauma, this can lead to PTSD, however, if a person experiences secondary trauma (i.e. are exposed to the trauma of another), this can lead to STS (Canfield, 2005; Figley, 1995; Shoji, Jock, Cieslak, Zukowska, Luszczynska, & Benight, 2014). If an individual's symptoms satisfy the full diagnostic criteria of PTSD, they can be considered to have Secondary Traumatic Stress Disorder (Figley, 1995).

The differences between VT and STS have become somewhat more unclear, as the latest PTSD diagnostic (American Psychiatric Association, 2013) includes alterations to cognition as a symptom, thus also focussing on an inner experience.

Manning-Jones (2016) posit that vicarious trauma and secondary traumatic stress are on a path to further convergence, where vicarious traumatisation may be conceptualised as a symptom of STS. However, they both originated as separate concepts, and each has their own body of literature. Compassion fatigue is different to this, as it is seen to be a combination of the already existing concepts; burnout and secondary trauma.

**Compassion fatigue.** Much like VT, compassion fatigue is largely focussed on the toll on workers who empathetically engage with traumatised clients (Turgoose & Maddox, 2017). Therefore, CF is only used in literature where the population is in a helping profession (Elwood, Mott, Lohr, & Galovski., 2011). CF presents itself as a decreased ability and/or interest for being empathetic towards clients (Figley, 1995). Figley (1995; 2002) describes it as being a natural consequence of knowing about a traumatizing event experienced

by a client you are working with. However, CF is seen to be an outcome from working with significant numbers of traumatised clients using a strong empathetic orientation (Figley, 1995). Therefore, this is different to VT and STS which can occur after exposure from one client.

Some researchers have advocated for using the term compassion fatigue over other terms, as they see it as less clinical in nature, and thus less derogatory (Figley, 2002).

**Burnout.** Burnout (BO) is “a state of physical, emotional, and mental exhaustion caused by long-term involvement in emotionally demanding situations” (Pines & Aronson, 1998, p. 9). As opposed to VT, STS, and CF which stems from interactions with another, burnout is a result of environmental and organisational stressors (Turgoose & Maddox, 2017). Therefore, unlike VT, STS, and CF, burnout is not a phenomenon limited to those who work with traumatised clients (Sodeke-Gregson et al., 2013).

Burnout is a concept found in almost all occupational fields, however it has been extensively linked to the population of “helping professionals” (Lambert, Hogan, Barton-Bellessa, & Jiang, 2012; Garner, Knight, & Simpson, 2007; Cordes & Dougherty, 1993). When it was first introduced by Freudenberger in the 1970’s, it was largely depicted as only being a problem within the helping professions, such as social work (Newell, Nelson-Gardell, & MacNeil, 2016). This depiction has largely been tied to the large caseloads and high-stress work helping professionals were doing in the 1960’s and 1970’s (Cordes & Dougherty, 1993).

Job burnout refers to an extreme reaction to work stress. Theories of burnout often differ regarding whether it is a uni or multi-dimensional concept.

The general view today is that of Maslach and Jackson (1986), whereby job burnout is said to have three distinct dimensions; emotional exhaustion, depersonalization, and feelings of being ineffective at work (Maslach & Leiter, 1997; Schaufeli & Peeters, 2000). Job stress is often a feeling of anxiety and frustration, while job burnout often looks at the prolonged results of job strains, including job stress (Maslach & Jackson, 1981). The reduced quality of work often experienced as an outcome of burnout may lead to increased work demands on other employees. This can lead to burnout spreading to further employees, known as a looping cycle (Maslach, Schaufeli, & Leiter, 2001). Job stress has been linked to increased levels of correctional staff burnout (Garner et al., 2007; Maslach & Leiter, 1997).

While working with traumatised populations could act as an occupational stressor, leading to burnout, it has also been posited that workers who are already depleted and weakened by workplace stress are likely to react with greater intensity to trauma exposure (Badger, Royse, and Craig, 2008; Regehr, Hemsworth, Leslie, Howe, and Chau, 2004). Therefore, burnout could act as a moderator to STS or VT or could occur hand-in-hand, such as theorized in the CF model.

**Summary.** Some commonalities between VT, CF, and STS are that they all may be experienced by those working in helping professions, they are a result of exposure to suffering, and they can result in long-term negative consequences, including one's ability to perform one's role and maintain relationships with service users (Nimmo & Huggard, 2013). However, VT and CF are focused on the impact of workers empathetically engaging with clients, while STS is focused on the secondary exposure.

Although there are subtle differences between these concepts, researchers have long used these terms interchangeably, making the existing literature difficult to interpret and understand (Najjar et al., 2009). In fact, some researchers, including Craig and Sprang (2010), posit that there is no definitive data which suggests these concepts differ at all, therefore making it unwarranted to distinguish the most appropriate term to use for the phenomenon.

**Overall.** While some researchers state that there is a marked difference between the concepts, there is little evidence to support this, and therefore for the remainder of this review, I will refer to the negative outcome of VTE as vicarious traumatization (VT).

### **Positive outcomes of secondary trauma**

Research regarding the wellbeing of helping professionals, particularly therapists, has largely focussed on the negative outcomes of working with traumatised clients, however investigations into the adverse effects of secondary trauma have found that not everyone who is exposed to trauma ends up traumatised, fatigued or burnt out. Instead, some people have been found to cope well (Brady, Guy, Poelstra, & Brokaw, 1999) or even report positive outcomes because of secondary exposure to trauma (Eidelson et al., 2003; Steed & Downing, 1998). Such positive outcomes are known as vicarious posttraumatic growth, compassion satisfaction, and vicarious resilience (Manning-Jones, de Terte, & Stephens, 2015; Turgoose & Maddox, 2017; Arnold, Calhoun, Tedeschi, & Cann, 2005). This section will touch on the background of such positive outcomes, though the thesis itself is solely focussed on negative outcomes, however, it is important to understand the context surrounding the outcomes of VTE.

**Vicarious posttraumatic growth (VPTG).** Posttraumatic growth refers to the positive cognitive, emotional, interpersonal, and spiritual consequences that a person may experience following a traumatic event (Tedeschi & Calhoun, 2004; Manning-Jones et al., 2015). Vicarious posttraumatic growth (VPTG) refers to the development of positive cognitive, emotional, spiritual, and relational changes following vicarious traumatic exposure (Arnold, et al., 2005; Manning-Jones, et al., 2015). Vicarious traumatic exposure can alter an individual's schemas or thoughts about themselves, others, and the world (Calhoun & Tedeschi, 1998, 2001; Tedeschi & Calhoun, 2004). For new schemas to develop, the traumatic event must be cognitively processed. In order for VPTG to occur, the contemplation taken place must become purposeful (Calhoun & Tedeschi, 1998).

**Compassion satisfaction.** While VPTG is rooted in the cognitive, spiritual, emotional, and relational changes that occur after VTE, compassion satisfaction (CS) refers to a more general positive emotional state (Stamm, 2005). Larsen and Stamm (2008) define CS as the “sense of fulfilment or pleasure that therapists derive from doing their work well” (p. 282). The concept of CS is made up of three elements: (1) the level of satisfaction derived from the job; (2) how well a person feels they are doing their job; and (3) the level of positive social support a person has access to (Stamm, 2002; Sodeke-Gregson, et al., 2013).

**Vicarious resilience.** The term vicarious resilience (VR) is often used in the literature regarding positive outcomes of vicarious trauma. Much like compassion satisfaction, this term is more general, referring to the ability to overcome a negative experience and return to former levels of functioning (Clay, Knibbs, & Joseph, 2009; Scales, Benson, Leffert, & Blyth, 2000). This return to

former levels of functioning is what differentiates VR from VPTG. VPTG specifically relates to a growth, which is different to that of former functioning.

The focus on positive outcomes of trauma is a relatively new area in research, with the first research into such phenomenon being by Calhoun and Tedeschi in 1998, therefore this meta-analysis will be focused on the negative outcomes of vicarious trauma, as there would be too few studies looking at the positive outcomes.

### **The Significance of the Study to Organisational Psychology**

For an organisation and its workers to thrive, it needs to create a healthy workplace. For this to happen, organisations and their leaders need to understand the risks posed to their employees because of the work they are doing. They also need to ensure evidence-based prevention and intervention programs are available for staff so that they have the resources, education and tools to stay healthy in a workplace where exposure to secondary trauma is an occupational hazard. Failure to do so may lead to negative psychological outcomes for staff, such as vicarious traumatization and burnout, which will inevitably have a significant, and likely negative impact on the organisation and services provided (Bell et al., 2003; McCann & Pearlman, 1990; Newell and MacNeil, 2010; Pearlman & Saakvitne, 1995; Knight, 2013). According to Munroe et al., (1995), “organizations have an ethical mandate of duty to train wherein workers are taught about the potential negative effects of the work and how to cope”. Therefore, examining the impact VTE has on staff and implementing coping resources for employees should be a key role of any organisation where staff may be routinely exposed to trauma.

Vicarious traumatization can lead to high turnover rates (Bell, Kulkarni, and Dalton, 2003; Middleton and Potter, 2015). High turnover rates within an organisation can prove expensive, as time and money are spent seeking replacements. Such high turnover rates can lead to inexperienced new staff being put into high stress and high-pressure positions, which can increase the likelihood of VT (Horwath & Tilbury, 2009).

If VT continues to go unaddressed, it can lead to a corrosion of morale, increased absenteeism and tardiness, a corrosion of team cohesion, collaboration, and communication (Newell and MacNeil, 2010; Knight, 2013; Stamm, 1997; Northeastern University's Institute on Urban Health Research and Practice, 2013).

Vicarious traumatic exposure can also negatively impact upon staff's ability to do their jobs effectively (Newell and MacNeil, 2010; Knight, 2013). Decreased ability to make decisions can occur because of increased stress levels, as well as heightened depressive symptoms. Motivation and performance on the job can decline, which can lead to mistakes in judgement, a poor response time, and most importantly for helping professionals, an inability to connect and empathise with clients, which is a much-needed trait needed for delivering high-quality services to traumatised clients (Figley, 1995). The increased stress can cause fatigue, irritability, and negative attitudes towards colleagues, work, and clients (Stebnicki, 2012).

The decrease in job quality can place greater pressure on other members of staff, leading to increased caseloads, which can put staff at further risk of experiencing VT (NSPCC, 2013).

Vicarious traumatic exposure is an occupational challenge for helping professionals working with traumatised clients. A vicarious trauma-informed

organisation recognises this occupational challenge as being inherently a part of the work being done, and proactively addresses this through policies, procedures, practices, and programs (Northeastern University's Institute on Urban Health Research and Practice, 2013).

### **Costs of Vicarious Traumatization**

Working with traumatized clients or hearing about traumatic events at work is inherently stressful (Coffey, Dugdill, & Tattersall, 2004; Lloyd, King, & Chenoweth, 2002). Research shows that mental health clinicians, helping professionals, and trauma workers report a variety of symptoms associated with secondary traumatic stress. These include; experiencing bad dreams, sleep disturbances, somatic reactions, and feelings of depression (Severson & Pettus-Davis, 2013). Professionals affected by secondary trauma have been found to be at a higher risk of making poor professional decisions (Bride, Radey, & Figley, 2007; Pearlman & Saakvitne, 1995; Stamm, 1997), and that it can lead to workers making their clients feel more isolated and detached (Dutton & Rubinstein, 1995; Neumann and Gamble, 1995).

It is apparent that the VT not only negatively impacts upon the individual, but also the organisation, other employees, and the service users for the organisation. Despite the widespread reach of VT, there are many employees exposed to trauma on a regular basis who do not develop negative psychological consequences. This suggests that there are coping strategies being used by such individuals which help them manage this exposure.

### **Social Support as a Coping Strategy**

Social support has been identified as one of the most helpful and commonly used coping strategies for stresses at work (Iliffe & Steed, 2000;

Pearlman & Mac Ian, 1995; Stapleton, 2017). Although most of the literature about VT, BO, STS, and CF focuses on workers from helping professions, not all helping professionals or trauma workers end up with these negative symptoms. Therefore, there must be some coping strategies which help boost resiliency and well-being in these employees or help mitigate the negative effects of vicarious traumatic exposure (Ivicic & Motta, 2016; Stamm, 2005). It is also possible that coping strategies can work in a two-fold manner; by protecting against the symptoms of STS and facilitating VPTG (Manning-Jones et al., 2016).

Moos and Schaefer (1993) posit that individuals who engage in coping strategies attain better outcomes following exposure to trauma. An investigation into the potentially protective role of social support against the development of negative psychological consequences of VTE has been inconclusive.

Social support is a complex concept which has been defined and measured in several ways throughout the literature (Williams, Barclay & Schmied, 2004). Traditionally, social support is divided into two key areas; emotional social support and instrumental social support. While emotional social support may be characterised by sympathetic listening and caring, instrumental social support refers to the physical support given through physical assistance or advice (Fenlason & Beehr, 1994).

There are many theories regarding how social support helps with lowering negative outcomes to trauma. Lambert, Althiemer, and Hogan (2010) suggest that there are three reasons why social support may be linked with burnout. These are; direct, buffering, and reducing stressors (Dignam, Barrera, & West, 1986). Etzion (1984) posited that social support can add “need-fulfilling elements into one’s life” (p. 616), which can directly reduce burnout. The moderating viewpoint

suggests that social support helps workers deal with excessive work demands and consequently reducing the chance of burnout (Cordes & Dougherty, 1993; House, 1981; Davis-Sacks et al., 1985; Weiss, Marmar, Metzler, & Ronfeldt, 1995).

Alternatively, research suggests that staff lacking social support are more vulnerable to the work demands linked with burnout. Therefore, social support may act as a buffer to protect correctional staff from harmful work environment forces (Neveu, 2007). Several studies have also found social support to be a protective factor against secondary trauma (Arvay, 2001; Pearlman & Mac Ian, 1995; VanDeusen & Way, 2006; Way, Van Deusen, Martin, Applegate, & Jandle, 2004; Michalopoulos & Aparicio, 2012).

Duffy et al (2015) posit that a supportive social network enables staff to have a platform to talk about stressful experiences with colleagues, which can help them manage stress and cope with the strong emotions experienced after secondary traumatic exposure. Tedeschi and Calhoun (1996) posit that social support can be helpful when coping with emotional distress by helping find meaning in traumatic life events. Schaefer and Moos, (1992) postulate that social support aids coping by enhancing social resources and enhancing personal resources, such as character strengths. Alternatively, a lack of social support can act a form of resource depletion, which can lead to stress and possibly burnout (Neveu, 2007). However, the type of social support one receives needs to be positive, rather than negative for reduced stress to occur (Southwick, Vythilingam, & Charney, 2005). Therefore, some researchers have proposed that the content of communication for social support may be a better and more specific measure for the impact social support has on stress in the workplace (Fenlason & Beehr, 1994). For example, workers may talk about positive aspects of work,

which can often act in a therapeutic manner, or they may talk about negative aspects of work, which is known to trigger cathartic emotional release, and thus also act in a therapeutic manner. Workers may also talk about unrelated work content, which can be used as a form of escapism from negative work-related stressors (Fenlason & Beehr, 1994). The content of communication involved in social support from person-to-person may cause variance between results, as different people may react differently to each form of communication. Further research is clearly needed to examine the effectiveness of social support as a coping mechanism for secondary trauma. The current study aims to contribute towards the literature by examining the uncertainty that exists surrounding the impact of social support on vicarious trauma.

**Social support in general.** Ozer et al. (2003) found that lower levels of perceived social support following traumatic exposure was related to higher rates and levels of PTSD. Eriksson, Vande Kemp, Gorsuch, Hoke, and Foy (2001) found that social support acted as a buffer against negative outcomes of trauma exposure. A study on trauma workers found that higher perceived social support was related to lower levels of STS (Mac Ritchie & Leibowitz, 2010) while Badger et al. (2008) found perceived social support to correlate negatively with STS and Ortlepp and Friedman (2002) found that perceptions of emotional and instrumental support following secondary trauma were correlated with lower levels of STS.

**Social support in the workplace.** Social support in the workplace can help create a positive work environment, where co-workers are there to lend a hand with work and be there in an emotionally supportive manner (Ludick & Figley, 2016). On the other hand, a negative work environment can be isolative,

distant, or emotionally toxic, leaving staff feeling strained with nowhere to get support (Ludick & Figley, 2016). Fenlason and Beehr (1994) state that while social support has the potential to reduce occupational stress, there is also a potential for it to increase stress, and therefore make the situation worse.

Co-worker social support has been recognized as one of the key protective factors in burnout (Davis-Sacks, Jayaratne & Chess, 1985). However, there have been mixed results, with some studies suggesting that perceived co-worker support is a poor predictor of stress and burnout (Collings & Murray, 1996; Um & Harrison, 1998). There are many possible reasons for these mixed results, however, one main reason is the lack of a clear definition across the board, which can lead to issues with interpretation and thus inconsistent results (Van der Doef & Maes, 2002; Ivicic & Motta, 2016).

Previous research has found that social support plays a vital role when it comes to adjustment after exposure to trauma (Măirean, 2016; Zhao, Wu, & Xu, 2013; Eriksson et al., 2001; Brewin, Andrews, & Valentine 2000; Green, Wilson, & Lindy, 1985; Lind, 2000; Lugin, 2000; Resick, 2000; Thompson, Norris, & Ruback, 1998; Weiss et al., 1995). Schaefer and Moos (1992) posit that social support helps workers cope by enhancing social resources through relationships with others and personal resources such as character strengths. Therefore, it may be assumed that low levels of social support may inhibit the ability to cope with vicarious exposure to trauma. This is supported by Newsome, Waldo, and Gruszka's (2012) study which found that the negative effects of trauma exposure are intensified in helping professionals who are lacking social support.

Boscarino, Figley and Adams (2004) examined secondary traumatic stress in social workers involved in the September 11 World Trade Centre collapse. It

was found that effective workplace support was significantly negatively correlated with STS. Sexton (1999) posited that a workplace team is a potential source of coping with STS, as it allows for trauma to be absorbed and diffused among members with an understanding of similar experiences.

**Social support outside of the workplace.** Bonach and Heckert (2012) found perceived social support from family and friends to be negatively related with STS in forensic interviewers, and Manning-Jones et al. (2016) found the same relationships with medical doctors, nurses, psychologists, counsellors, and social workers.

### **Social support and Positive Psychological Outcomes**

It appears that social support not only helps workers cope with the stress from secondary trauma, but it may also enhance positive psychological consequences (Cieslak, Benight, & Caden, 2008; Luszczynska, Sarkar, & Knoll, 2007; Stapleton, 2017). Killian (2008) found that social support from friends,

family, and the community was the strongest predictor of compassion satisfaction. The Compassion Fatigue Resilience model (shown in Figure 1) outlines the variables which interact with vicarious traumatic exposure to lead to STS and, if treated, Compassion Fatigue Resilience (CFR) (Ludick & Figley, 2016). Social support is noted as an indicator of trauma resilience. Thus, if a worker maintains a social support network they are more likely to retain compassion satisfaction

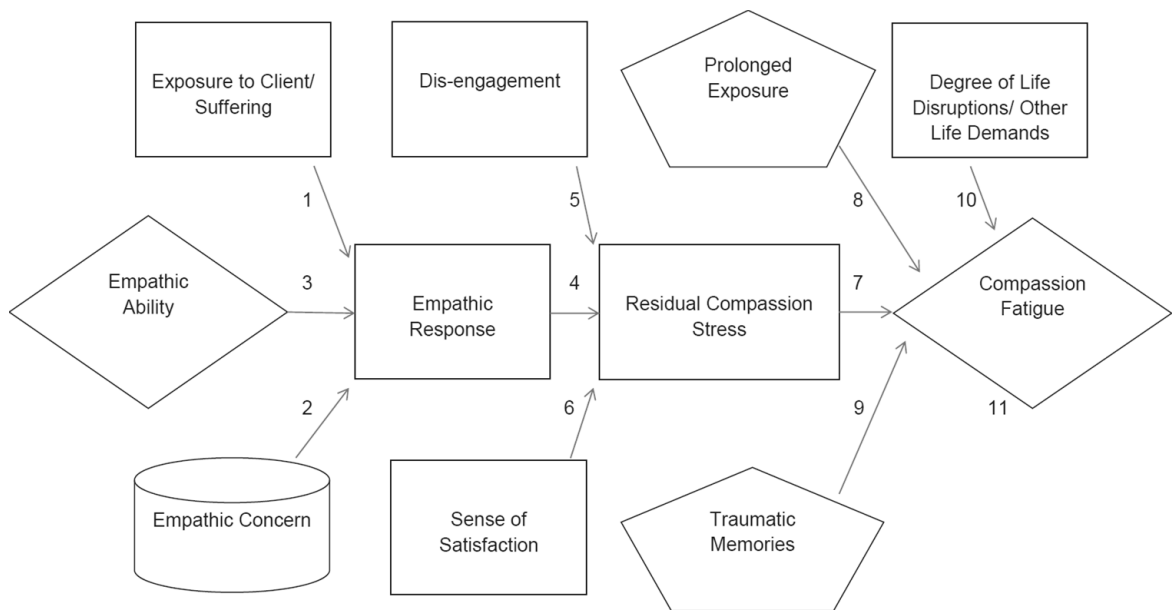


Figure 1. Compassion Fatigue Resilience Model (Ludick & Figley, 2016).

(Ludick & Figley, 2016).

## Conclusion

Overall, many studies have found social support to be linked to high levels of well-being and low levels of secondary traumatic stress (Adriaenssens, De Gucht, & Maes, 2012; Măirean, 2016), however, there is still some mixed results, with other studies showing no significant link (Tempitope, 2015; Hyman, 2004) and some research showing possible damaging consequences of social support (Tempitope, 2015).

## **Purpose of the Study**

A significant body of literature has examined VT and BO within a variety of helping professions, with a focus on social workers, counsellors, therapists, and child/youth protective service workers (Rhineberger-Dunn et al., 2016).

Several self-care strategies have been proposed for workers to prevent and manage the risks associated with burnout (Wagman, Geiger, Shockley, and Segal, 2015). Maintaining overall physical health through exercise, recreation, sleep, and nutrition can help reduce vulnerability to burnout and STS (O'Halloran & O'Halloran, 2011; Zimering, Munroe, & Gulliver, 2003; Wagman et al., 2015). One such coping strategy which has been examined extensively but has mixed results is the use of social support.

The literature on social support and its impact on vicarious trauma has mixed results (Ivicic & Motta, 2016). While some research provides evidence for the benefits of social support, other research notes that some types of support are ineffective and potentially damaging following vicarious traumatic exposure (Temitope, 2015).

However, to date, no systematic review or meta-analysis has been conducted to examine the relationship between social support and the multiple negative outcomes of secondary trauma.

The purpose of this study is to conduct a meta-analysis of the relationship between compassion fatigue, secondary traumatic stress, vicarious traumatization, or burnout (as an outcome of VTE), and social support.

## Chapter Two: Method

A meta-analysis was conducted to synthesize research related to the negative outcomes of secondary trauma among helping professionals and examine how social support is related to these outcomes.

A meta-analysis is a method of research which applies statistical analysis to quantitatively total and compare results of different individual studies (Lipsey & Wilson, 2001). Meta-analysis present findings based on the effect sizes found in studies, rather than statistical significance, which is used in narrative review (Bercier, 2013; Lipsey & Wilson 2001). A meta-analysis pools the effect sizes across multiples studies, providing an outcome with more statistical power than any study alone (Bercier, 2013; Lipsey & Wilson 2001).

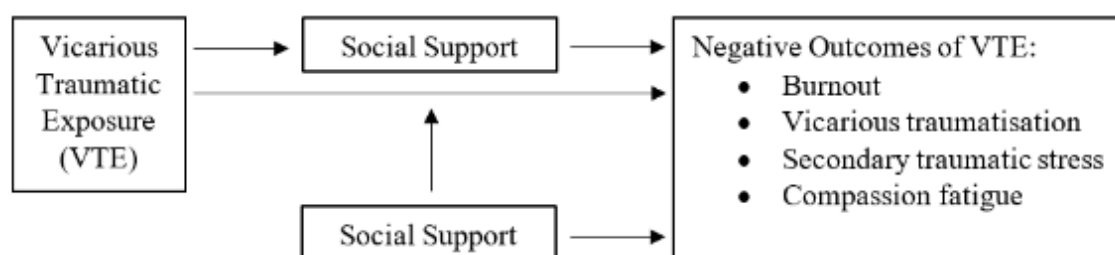


Figure 2. Research Model

This meta-analysis was designed to examine the relationship between social support and VT. The above model (see Figure 2) outlines the various ways social support may be related to VT, including a direct relationship (predictor), a moderated relationship, and a mediated relationship.

### Research Question and Hypothesis

How is Social Support related to the negative outcomes of vicarious traumatic exposure?

Hypothesis: Social support will be related to the negative psychological consequences of vicarious traumatic exposure.

## **Overview of Review**

**Fixed vs. Random-effects model.** A fixed-effects model is used when all studies are drawn from a single population, whereby identical subjects and methods are used. These studies would thus share a common effect size, meaning that the effect size is fixed (Borenstein, 2009). A random-effects model is used when the studies used are drawn from a universe of populations, where the true effect size varies from population to population (Borenstein, 2009).

The meta-analysis will examine data collected from helping professionals. However, due to how this is defined, there are many different professions which could fall under this population. Because of this variation, and the many other variations which occur in social science research, a random-effects model would fit the review best (Field & Gillett, 2010).

## **Conducting and Documenting the Search and Selection Process**

All searches were tracked with a search log maintained in Microsoft Excel. This included two separate spreadsheets. The first spreadsheet recorded; (1) The search number, (2) the engines utilised, (3) the keywords used in the search, (4) the number of hits returned from the search, and (5) the date of search. The second spreadsheet contained; (1) the study title, (2) which database/website the study was found on, (3) whether the study population was from the helping professionals or not, (4) whether it was published in English, (5) whether it included a measure or one or more of the negative outcomes (BO, STS, VT, or CF), (6) whether it measured social support, (7), whether it gave measurements which could be converted into an effect size, (8) whether the study was chosen to be included in the full-text searching phase or not, (9) why it was chosen to be

included/excluded, and (10) at which stage the study was excluded, if it was not chosen for the meta-analysis.

The search strategy can be broken down into three stages; a review of study titles and abstracts (initial review), a review of the full-text (secondary review), and a supplementary review of the reference lists for all downloaded articles (shown in Figure 3).

**Initial Review Inclusion and Exclusion Criteria.** During the initial reviewing stage, titles, abstracts, and keywords of all the returned studies were reviewed against the inclusion and exclusion criteria listed below.

At this stage, studies who met the following exclusion criteria were omitted from the meta-analysis.

1. The study was on non-human participants
2. The study was on children (under 18 years old)
3. The study was qualitative in nature
4. The study was on an unrelated topic, such as stress or purely primary trauma
5. The study looked at a population of people who would not fit under the “helping professionals” category. The definition of helping professional being used in this study is that from Loyola (2016, pp 26) “Helping professions include a broadly knit collection of professionals, each fitting a particular need or segment of society... Helping professions are considered relationship intensive careers. As such, helping professionals like the psychologists, guidance counsellors, and teachers in general must possess certain traits, competencies, and skills that facilitate the development of interpersonal relationship.”

Children were not included in the meta-analysis, as the focus of this review is in the workplace, and children are generally not a part of the workplace.

In addition to the exclusion criteria, studies had to meet all the below inclusion criteria for it to move onto the secondary review stage.

1. None of the exclusion criteria were met
2. The search terms “vicarious traumatic exposure” or “secondary trauma” or “vicarious trauma” or “secondary traumatic stress” or “secondary traumatic stress disorder” or “compassion fatigue” were used in the title, keywords, or abstract.

OR the above terms and “burnout” were used in the title, keywords, or abstract. Burnout is not necessarily an outcome of secondary traumatic exposure; therefore, the term burnout must be accompanied with a mention of secondary trauma to be considered for the meta-analysis.

3. The study measured a form of social support. This includes but is not limited to the following; peer support, social support, perceived social support, organizational support, supervisory support, collegial support.

The meta-analysis included measures for several types of social support to examine whether specific types of social support or measures for social support produced more significant results than others.

If there was any doubt about whether a study met the inclusion and exclusion criteria from the title and abstract, the studies were moved into the secondary review stage, where the full text was screened for clarification.

Any meta-analyses on a similar topic found in this initial review were kept aside for further screening. This screening involved searching the bibliographies

and reference lists of the meta-analyses for potential studies which had not been picked up in the initial search.

**Secondary Review Inclusion and Exclusion Criteria.** The final review consisted of a screening of the full-text of each article against inclusion and exclusion criteria. If the article met any of the following exclusion criteria, they were omitted from the meta-analysis.

1. The study was on non-human participants
2. The study was on children (under 18 years old)
3. The study was qualitative in nature
4. The study was on an unrelated topic, such as stress or purely primary trauma
5. The study looked at a population of people who would not fit under the “helping professionals” category

If the article met all the following inclusion criteria, the studies were included in the meta-analysis.

1. The study was on human participants
2. The study was on adults (over 18 years old)
3. The study was quantitative in nature
4. The study focussed on members from a helping profession who work with traumatised clients. The definition of helping professional being used in this study is that from Loyola (2016, pp 26) “Helping professions include a broadly knit collection of professionals, each fitting a particular need or segment of society... Helping professions are considered relationship intensive careers. As such, helping professionals like the psychologists, guidance counsellors, and teachers in general must possess certain traits,

competencies, and skills that facilitate the development of interpersonal relationship.”

5. There was no geographical context, however studies had to be published in English
6. The search included studies from 1974 through until 2017. This is due to the concept of workplace burnout originating in 1974, secondary traumatic stress originating in 1983, vicarious trauma originating in 1990, and compassion fatigue in the early 80's.
7. The study had to include one or more negative outcomes of secondary trauma (secondary traumatic stress, burnout, vicarious traumatization, or compassion fatigue)
8. The study had to include a measurement for social support
9. The studies had to report sample sizes, means, and standard deviations; if means and standard deviations were not reported, some other type of statistic that could be converted into a standardized mean effect size (Cohen's d) was necessary.

As part of the first phase of searching, all titles and abstracts were reviewed and screened using the inclusion and exclusion criteria list. If these studies met all of the inclusion criteria, the full-text was downloaded, to be further screened in phase two. If there was any question about whether the study was appropriate or not at phase one, the full text was downloaded to be screened in phase two of the search process. Studies which were in an electronic format were stored in a folder on a computer.

**Reference checking review stage.** The reference lists of all downloaded articles were checked. For a study to be downloaded, it had to mention one of the

negative outcomes of vicarious traumatic exposure in the title (BO, CF, STS, or VT) and it had to mention social support, support, coping strategies, peer support, or something similar. Therefore, some discretion was used to determine whether the study would be downloaded.

### **Search Strategy for Identification of Relevant Studies**

**Selection of papers.** Papers were selected following an extensive search by using electronic databases PsycInfo, ProQuest Social Sciences, Web of Science and the University of Waikato research commons during 2017. These databases were easily accessible through the Waikato University student library, would give a range of results, and were thought likely to give results on the chosen topic.

**PsycINFO.** The initial search took place on PsycINFO/PsycNET database on the 10th of December 2017. The search used the following terms -  
Keywords: “secondary traumatic stress” OR Keywords: "vicarious traumatization" OR Keywords: "compassion fatigue" AND Keywords: "burnout" AND Keywords: "social support"  
NOT Keywords: “posttraumatic stress disorder” NOT Any  
Field: students AND Age Group: Adulthood (18 yrs & older) AND Methodology: Quantitative Study AND Population Group: Human AND Year: 1974 To 2017.

This search yielded 207 “hits”. From these results, 34 articles were downloaded to take part in the secondary review.

Of these 34 downloaded articles, 12 articles met all inclusion criteria and were therefore chosen to be a part of the meta-analysis.

**Web of science.** The second search took place on Web of Science on the 17<sup>th</sup> of December 2017. The search used the following terms – “(TS=("social

support")) AND LANGUAGE= English AND (TS=("burnout") AND TS=("compassion fatigue" OR "secondary traumatic stress" OR "vicarious traumatization") NOT TS=("posttraumatic stress disorder")) AND LANGUAGE=English”.

This search yielded 27 “hits”. From these results, 18 studies were downloaded to take part in the secondary review phase.

From the downloaded articles, seven studies met all inclusion criteria and were therefore chosen to be a part of the meta-analysis.

***ProQuest social sciences.*** The third search took place on ProQuest Social Sciences database on the 17<sup>th</sup> of December 2017. The search used the following terms – “Vicarious traumatization OR secondary traumatic stress OR compassion fatigue AND burnout AND social support NOT post-traumatic stress disorder (All subjects and indexing - SU”). Source type = scholarly journals, working papers, and dissertations/theses. Document type= Article, dissertation/thesis, literature review, and working paper/pre-print. Language= English. Years= 1974-2017. Database = Psychology.”

This search yielded 79 “hits”. From these results, seven studies met the criteria to be downloaded to take part in the secondary review phase. One study met all inclusion criteria during the secondary review phase, and therefore became part of the meta-analysis.

***Research commons.*** The fourth search took place on the University of Waikato Research Commons. The search terms used were “secondary trauma AND social support”. This search returned 269 “hits”. From these results, one study met the criteria to be downloaded to take part in the secondary review

phase. This article met all criteria and so was chosen to be a part of the meta-analysis.

*Reference checking stage.* The references of all downloaded articles were searched against the inclusion and exclusion criteria to identify any other studies which could be included in the meta-analysis. This produced 42 results.

*Meta-analysis reference checking stage.* Two meta-analyses were identified during the database and website searches. The reference lists of these studies were searched, which produced 10 studies to download for the secondary review phase. At this stage, the articles were downloaded and checked against the inclusion and exclusion criteria, however no studies met all inclusion criteria.

### **Results of Search**

Overall, the database and website searches produced 582 results. After a review of the abstracts, 60 were chosen for full text retrieval.

Reference list searches produced 42 articles, which were all downloaded for the studies to be checked against inclusion and exclusion criteria. Of these downloaded articles, three were downloaded to take part in the meta-analysis.

Overall, a total of 112 studies were retrieved for phase two screening of the full text and 21 were chosen to take part in the meta-analysis (due to some double-ups. Table 1 outlines the articles which were included in this meta-analysis.

Studies which were not selected to take part in the meta-analysis were due to the inability of the study to meet all inclusion criteria. Other studies which may have met criteria but were not included were studies which were not able to be obtained due to a lack of access through my university account or those studies which were only printed in a physical book form. All studies included had to be

accessible through the university online library, as this meta-analysis was being undertaken via distance learning, therefore, no physical books were included in the analysis.

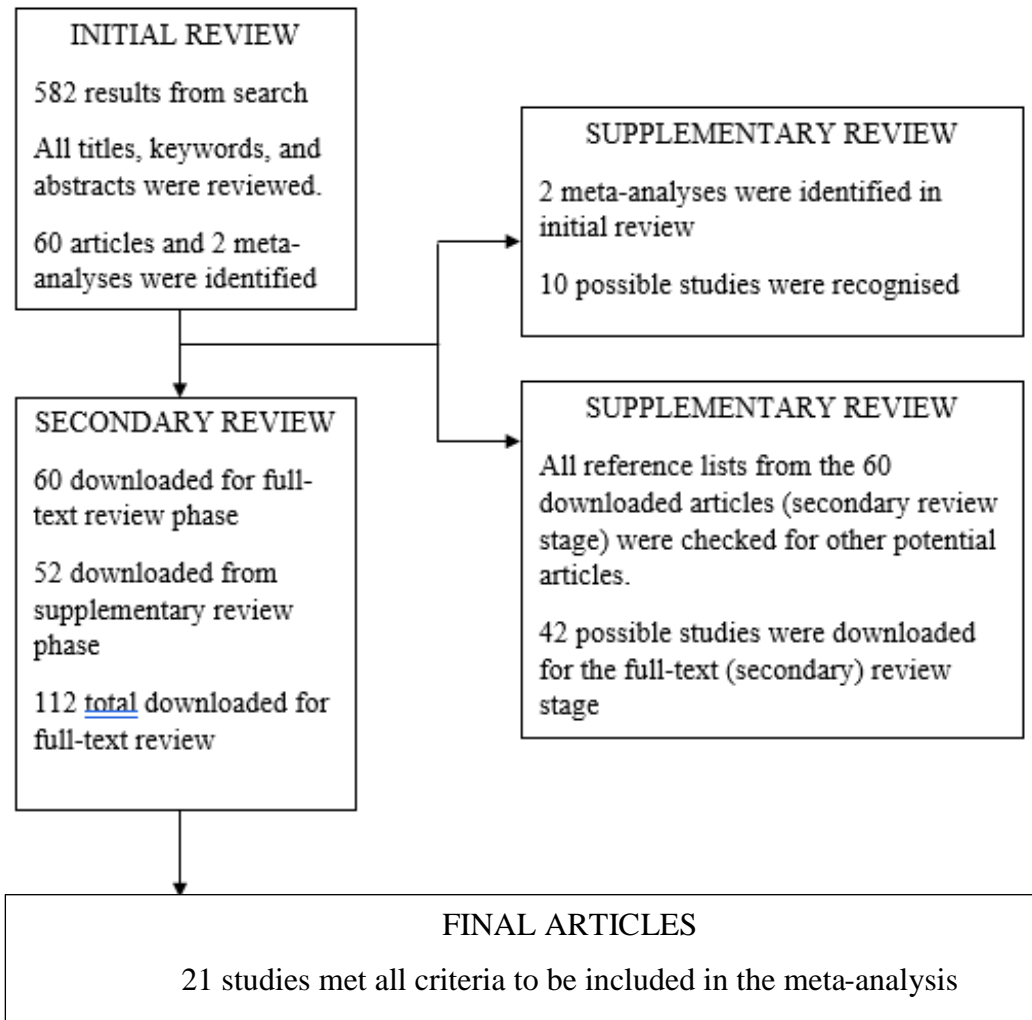


Figure 3. Review process flow chart

## **Statistical Analysis**

**Statistical analysis of effect sizes.** To maintain statistical independence, one effect size was calculated for each outcome variable.

Most studies reported correlational data using Pearson's  $r$ . This data was input into Comprehensive Meta-Analysis (CMA) along with the sample size and direction of correlation. The authors who did not report correlational data used regression analysis and therefore reported beta coefficients. This data could not be used in CMA to conduct a meta-analysis, and therefore all authors who had reported beta coefficients were contacted and asked for the raw data or the correlational data.

Some studies examined more than one type of social support. In this case, an average was taken to give an overall result for social support in general, rather than choosing to include and exclude certain support outcomes.

Some studies also reported the outcomes for the subscales of the measures, rather than reporting an overall statistic for the measure. For example, instead of reporting correlational data for the concept of STS, some studies reported the correlational data for the three subscales that make up STS; intrusion, avoidance, and hyperarousal. To overcome this, an average was taken of all subscales, to give one overall result. This averaging was done because only one set of data can be entered for a meta-analysis from any given population.

**Test of homogeneity.** In many meta-analyses, a test for homogeneity is run to compare the observed variance between studies and what would be expected from sampling error. It is often run in order to decide whether a fixed or random effects model should be employed; however, this is an incorrect use of the test. The decision to use a fixed or random effects model should be based on how

the studies were acquired, and therefore should not be contingent on a statistically significant p-value for heterogeneity (Borenstein, Hedges & Rothstein, 2007).

The null hypothesis for heterogeneity is that the studies share a common effect size. A significant Q value rejects the null hypothesis, suggesting that the variability of effect sizes is greater than what would be probable from sampling error (Lipsey & Wilson, 2001). A test for heterogeneity is automatically run through CMA when running an analysis. This however, is not used to decide which effects model is used.

**Publication bias.** Publication bias may occur when the authors or editors choose to only publish studies with positive and significant effects or publish such studies at a greater frequency than studies with insignificant findings (Cooper, 2010). Therefore, this review has made every attempt to include both published and unpublished studies, to minimize such an occurrence, by including theses and dissertations in the review.

## **Chapter Three: Results**

This chapter reports the results of this study, including the effect sizes, as well as heterogeneity and publication bias calculations which were calculated using Comprehensive Meta-Analysis (CMA) V3.

### **Meta-Analysis Results**

Individual effect sizes were calculated for each study using Pearson's  $r$  via Comprehensive Meta-Analysis software (CMA) [Version 3]. The random effects model was selected a priori, due to the variation that exists between study populations (Cooper & Hedges, 2009). Factors varying from study to study include; age, gender, outcome measures, social support measures, profession, culture, amongst other variables. These factors can lead to variances in effect size, and therefore a random effects model was considered more appropriate.

Many of the studies which met the inclusion criteria for the meta-analysis reported beta coefficients (regression data) instead of correlation coefficients, which are needed for a meta-analysis. The use of beta coefficients in meta-analysis has been a state of contention for researchers, with some researchers positing that beta coefficients can be converted into estimate correlation coefficients relatively well, and others questioning the reliability of this.

Due to the lack of consensus surrounding the use of regression data in meta-analysis, two analyses were run. The first analysis included the correlational data provided either in the published article, or via contact with the study's author. This first analysis excluded any studies which reported their data using beta coefficients, which had not responded to my request for raw data. The second analysis included both studies which reported correlational data, as well as regression data. The studies included in each analysis can be seen in Table 1.

Table 1 *Studies Included in the Meta-Analysis*

Study (First author, publication year)	Subjects	Social support measure	Negative outcome measure	$r$ or $\beta$ value
Badger, K. (2008).	121 social workers from trauma centres in the USA	Multi-dimensional Scale of Perceived Social Support (MDSPSS; Zimet, Dahlem, Zimet, & Farley, 1988)	Secondary Traumatic Stress Scale (STSS; Bride, Robinson, Yegidis, & Figley, 2004)	$r = -.29$ , $p < .001$
Bourke, M. L. (2014).	Child exploitation workers – 593 from USA, 231 from UK	COPE scale (Carver, Scheier, and Weintraub, 1989).	STSS	$\beta = -.08$ (USA population). $r = -.08$ $\beta = -.022$ (UK population). $r = -.22$

Choi, G.-Y. (2011).	154 social workers who work with family violence and sexual assault survivors	Social Structural Scale (SSS; Spreitzer, 1995, 1996)	STSS	$\beta = -.235$ (organisational support) $\beta = -.241$ (socio-political support) $r = -.238$
Cieslak, R. (2013).	247 clinical psychologists (47.0%), counsellors or psychotherapists (29.6%), and social workers (23.5%).	MDSPSS	STSS	$r = -.33, p < .001.$
Dagan, S. W. (2016).	255 social workers in Israel	MDSPSS	STSS	$r = -.16$ $p < .01$
Devilley, G. J. (2009)	152 mental health professionals from Australia	Interpersonal Support Evaluation List. (ISUL; Cohen S, Mermelstein R, Kamarck T, Hoberman H. (1985).	STSS, Copenhagen Burnout Inventory (no $r$ or $\beta$ given for this measure – CBI; Borritz & Kristensen, 1999), and The TSI Belief Scale-Revision L (TSI-BSL; Pearlman, 1996)	$\beta = 0.23$ (STS) $\beta = -.43$ (VT) Average $r = .015$

Finklestein, M. (2015)	99 mental health professionals from Gaza and Gaza bordering places	Self-made scale	Compassion Fatigue Questionnaire (CFQ ; Figley, 1995).	$\beta = .243$ $r = .743$
Hahn, K. J. (2010)	234 DV and rape centre workers in the USA	Self-made measure	Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997)	$r = -.17$ $p < .05$
Hoing, M. (2015)	40 Dutch CSOA volunteers working with prisoners	Organizational social support was measured with two other subscales of the job content questionnaire (Karasek, 1985): Supervisor Support and Co-Worker support with re-worded items from this scale	The Professional Quality of Life Scale (ProQOL V; Stamm, 2010)	$r = -.30$ (supervisor support), $r = -.31$ (co-worker support), $p < .05$ Average $r = -.305$
Komachi, M. H. (2012)	176 Japanese nurses	Social support questionnaire (SSQ; Saresen et al., 1983)	IES-R	$r = -.02$
Linley, P. A. (2007)	156 therapists	Crisis Support Scale (CSS; Joseph, Andrews, Williams, & Yule, 1992).	ProQOL	$\beta = .04$ Using $r = \beta + .05 \lambda$ $r = .54$

MacRitchie, V. (2010)	64 Trauma workers from Gauteng region	CSS	Compassion Fatigue Self-Test (CFST; Stamm and Figley, 1996) and (TSI-BLS)	STS $r = -0.36$ ; $p < 0.05$ . CF $r = -0.28$ ; $p < 0.05$ .
Măirean, C. (2016)	135 nurses	Medical Outcomes Study Social Support Survey (MOS; Sherbourne & Stewart, 1991),	STSS	$r = -.156$
Manning-Jones, S. (2016)	365 health professionals	The Social Support Scale (SSS; Caplan, Cobb, French, Van Harrison, & Pinneau, 1975)	STSS	$r = -.30$ $p < .01$ .
Michalopoulos, L. M. (2012)	160 social workers from Maryland USA	MSPSS	Vicarious Trauma Scale (VTT; Vrkleviski & Franklin, 2008)	$\beta = -.10$ $r = -.10$
Miller, A. (2017)	186 dispatch personnel in Florida, USA	The survey of perceived organizational support (SPOS; Eisenberger et al., 1986)	ProQOL	$r = 0.189$ (averaged)
Rzeszutek, M. (2015)	80 trauma therapists	Berlin Social Support Scales (BSSS; Schulz & Schawzer, 2003)	PTSD Questionnaire (Strelau, Zawadzki, Oniszczenko, & Sobolewski, 2002).	$r = -.32$ $P < .01$ . (perceived social support)

Setti, I. (2016)	782 Italian rescuers	The Support Appraisal for Work Stressors inventory (Lawrence, Gardner, Callan, 2007)	STSS, MBI	Average of subscales; $r = -.146$
Shakespeare -Finch, J. (2015)	60 emergency medical dispatchers from Australia	2-Way Social Support Scale (2- Way SSS; Shakespeare-Finch and Obst, 2011)	IES-R	$\beta = -.42$ $r = -.42$
Slattery, S. M. (2009)	148 domestic violence advocates	Work Environment Scale (WES; Moos, 1994)	PTSD Checklist–Stressor Specific Version (Weathers, Litz, Herman, Huska, & Keane, 1993)	Workplace social support $r = -.229$ , $p < .01$
Stapleton, M. (2017)	72 clinical psychologists from New Zealand	MSPSS	STSS	$r = -.013$ (average taken from 3 types of social support)

---

*Note.* All correlation coefficients listed after a beta coefficient were converted using the equation  $r = \beta + .05 \lambda$ .

The beta coefficients reported in regression studies were converted into Pearson's  $r$  using a formula from an article published by Peterson and Brown (2005). The authors state that the results of their research indicate that under some conditions, the use of beta coefficients in place of missing correlations can produce largely accurate effect size estimates. They also provided some beta estimation procedures (BEPs) for this process. The BEPs have been widely used in meta-analyses across a variety of disciplines since the release of this research however, some researchers caution against using this approach (Roth, Le, Oh, Van Iddekinge, & Bobko, 2018). Roth and colleagues (2018) examined the impact that the use of such BEPs has on the results of meta-analyses. The results from analysing existing meta-analyses and running Monte Carlo simulations revealed that BEPs were related to potentially large biases. Overall, the authors suggest it is best to use caution when using beta coefficients in meta-analyses, and therefore urge researchers to follow standard practice and only use correlational data.

**First Analysis: Without beta coefficients.** The first analysis included only the studies which reported correlation coefficients for the relationship between social support and a negative psychological consequence of VTE. One other study was included, as the author provided me with the data needed. This meant that a total of 14 studies were included in this first analysis.

These studies are summarised in the forest plot in Figure 4. The size of the squares on the plot show the weight assigned to each study based on sample size, whereby the smaller squares indicate smaller weights and the larger squares indicate larger weights. The closer the squares are to right side of the plot, the larger the positive relationship is between the two variables, and vice versa for the left side of the plot. Zero indicates no effect.

An overall mean effect size was  $-.202$  ( $p < 0.01$ ). According to Field (2014), a correlation coefficient with a value of  $\pm 0.1$  represents a small effect size,  $\pm 0.3$  is a medium effect size, and  $\pm 0.5$  is a large effect size. Therefore, a small effect size was found, suggesting that there is a small but significant negative relationship between social support and VT.

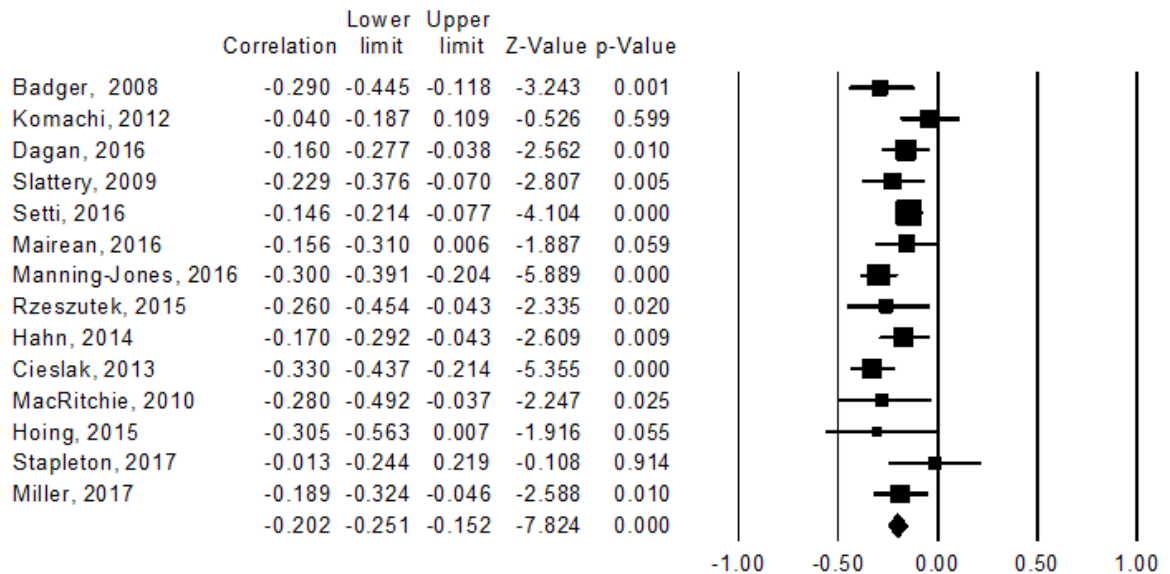


Figure 4. Forest plot for the first analysis.  
*Note.* All correlations are listed in Pearson's  $r$ .

**Second Analysis: With beta coefficients.** The second analysis included the same studies as in the first analysis as well as the studies which reported beta coefficients in their analysis, bringing the total number of studies to 21 (see Figure 5). The beta coefficients reported in these studies were converted into correlation coefficients before being entered into CMA. The formula used to convert beta coefficients to Pearson's  $r$  was taken from Peterson and Brown (2005). Where  $\lambda$  is a variable that equals 1 when  $\beta$  is non-negative and 0 when  $\beta$  is negative.

$$r = \beta + .05 \lambda$$

Table 1 shows the studies estimated correlation coefficients after using the above equation. Correlation coefficients and sample size were entered into the software. An overall mean effect size was generated resulting in the overall effect size of  $-0.162$  ( $p < 0.01$ ). Therefore, a small effect size was found, suggesting that there is a small but significant negative relationship between social support and VT. This suggests that social support may help reduce the occurrence of VT.

This is relatively consistent with the effect size found from the first analysis, suggesting that the estimate gained from the use of Peterson and Brown's (2005) conversion equation produced relatively accurate results in this context.

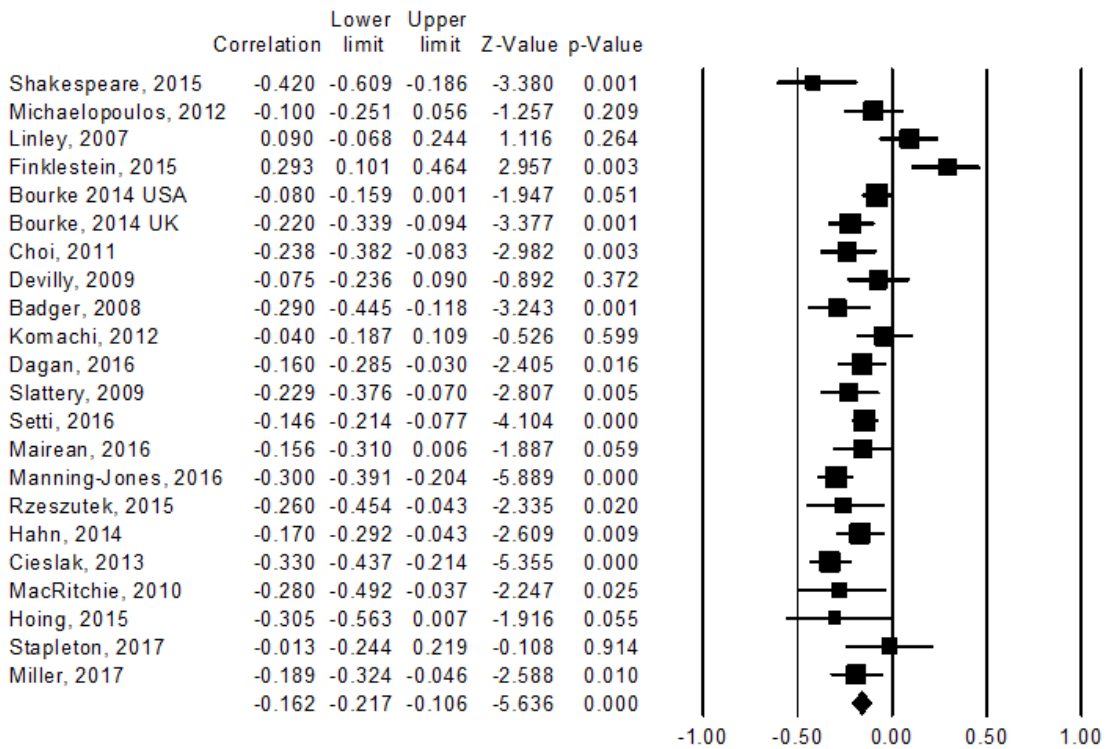


Figure 5. Forest plot for the second analysis.  
*Note, All correlations are listed in Pearson's  $r$ .*

## **Test for Heterogeneity**

Heterogeneity measures the variability between studies and therefore gives an indication of how comparable studies in the meta-analysis are. When using a random effects model, there will be some dispersion, both due to random sampling error within studies and the true effect sizes varying from the mean effect size, since studies are from different populations.

CMA calculates an I-squared statistic, which examines what proportion of dispersion is due to real dispersion of the true effect sizes and what is simply due to random sampling error (Borenstein, 2009). The I-squared figure (see Figure 6 and 7) shows that around 69% of the dispersion is due to true dispersion of the effect size and not simply random dispersion. A high I-squared value would suggest that the studies in the meta-analysis may not be from the same population, since there is such a variance in the true effect sizes. If the I-squared value is low, then there is no heterogeneity and hence nothing to be examined in a subgroup or moderator analysis, however, if the I-squared value is large, such an analysis might be valuable (Hak, Van Rhee, & Suurmond, 2016).

Hak and colleagues (2016) recommend that researchers do not interpret the combined effect size as meaningful when a large I-squared value is returned, as there is too much dispersion amongst effect sizes. Therefore, an analysis of dispersion and its determinants should be the next step of investigation. Potential avenues for further analysis will be considered further in the discussion but are beyond the scope of this thesis.

Model	Heterogeneity				Tau-squared	
	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error
Fixed	68.419	21	0.000	69.307	0.012	0.006
Random						

Figure 6. Heterogeneity testing for random effects model  
- Second analysis

Model	Number Studies	Effect size and 95% interval			Test of null (2-Tail)	
		Point estimate	Lower limit	Upper limit	Z-value	P-value
Fixed	22	-0.160	-0.189	-0.131	-10.741	0.000
Random	22	-0.162	-0.217	-0.106	-5.636	0.000

Figure 7. Effect size data for fixed and random effects models  
Second analysis

## Publication Bias

Publication bias is the process of selecting studies to publish that show positive results, as opposed to studies with null or negative results (Hopewell, Clarke, & Mallett, 2005). Literature searches are most likely to uncover published studies, which can lead to a lack of unpublished studies being included in meta-analyses (Jackson, 2006). The validity of results of a meta-analysis that does not take measures to address publication bias can be seriously compromised. It can lead to an overestimation of results or might reduce the overall effect size estimate (Niemeyer, Musch, & Pietrowsky, 2013).

A funnel plot depicting the standard error of Fisher's Z was generated to evaluate the possible publication bias. A funnel plot assumes that the largest

studies will be plotted near the average, and smaller studies will be spread evenly on both side, creating a funnel-shaped distribution. Deviation from this distribution can indicate publication bias.

The funnel plot for the first analysis (see Figure 8) shows a mostly symmetrical figure of studies around the effect size resembling a funnel shape. This depiction implies an absence of publication bias (Borenstein et al., 2009). The funnel plot for the second analysis (see Figure 9) is not as symmetrical as the plot for the first analysis, however, there are still very few outlying studies and still resembles a funnel-shaped distribution.

If bias exists, the bottom of the plot should show a greater amount of studies on one side of the mean than the other, which reflects the fact that smaller studies are more likely to be published if they have larger than average effects (Borenstein, 2009).

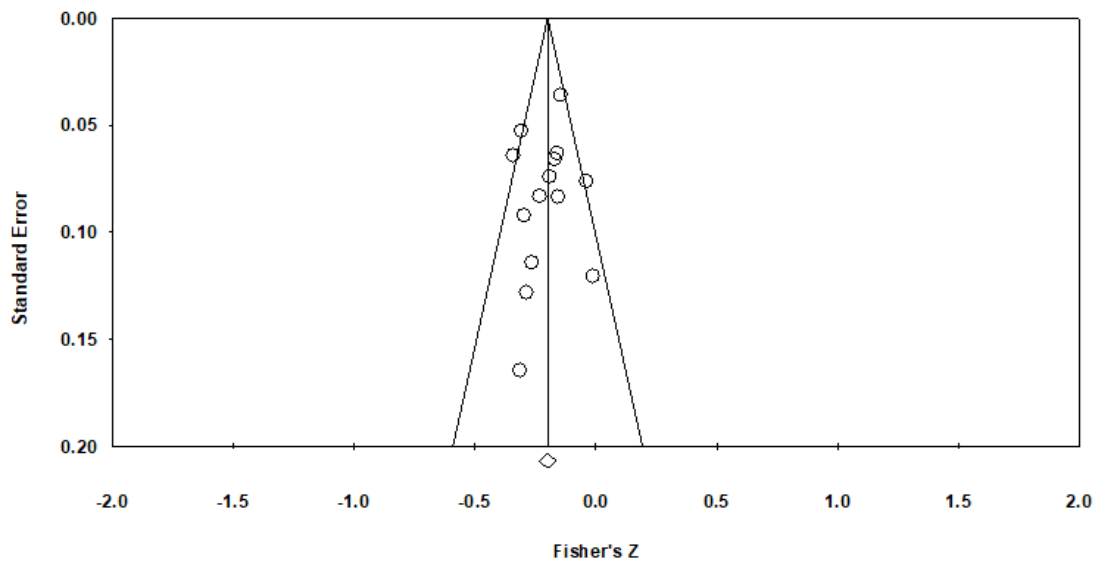


Figure 8. Funnel plot for the first analysis

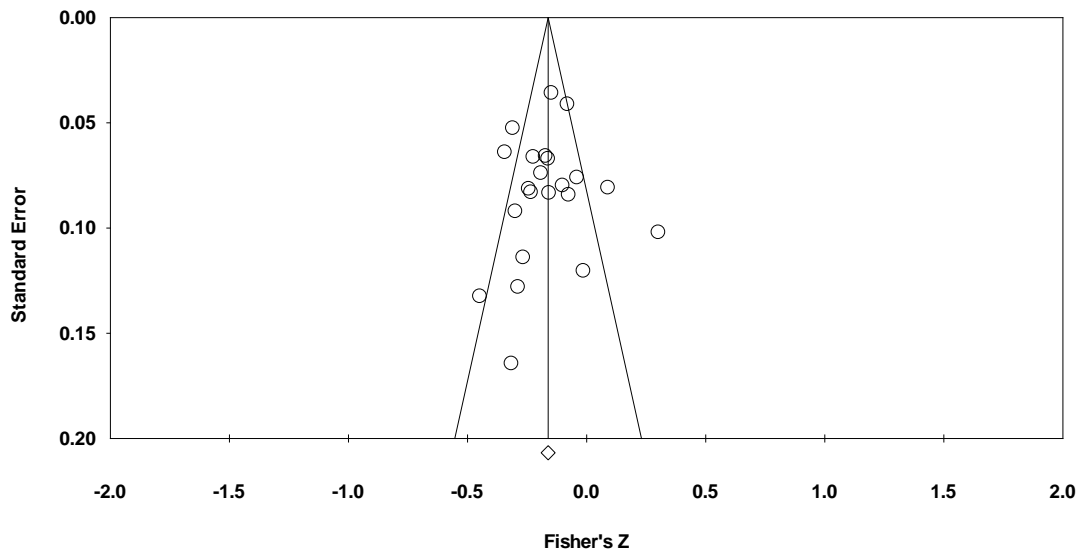


Figure 9. Funnel plot for the second analysis

### Conclusion

Overall, there appears to be an absence of publication bias in the meta-analyses. However, although the overall effect size appears to suggest a small negative relationship between social support and the negative outcomes of VTE, due to the I-squared value being so large, the significance of this relationship is questionable. Therefore, further analysis needs to occur to examine where this dispersion is occurring, either through moderator or subgroup analysis. To conclude, the small negative effect sizes obtained through the meta-analysis did not include 0 within the error, and so likely represent a true effect. Thus, it can be concluded that in this meta-analysis, VT was negatively related to social support. This suggests that in some contexts, social support could be used to mitigate the impact of VT.

## **Chapter Four: Discussion**

This chapter provides a summary of the study and discusses the points-of-interest of the research findings and conclusions drawn from the findings. This includes an overview of the study and findings, practical implications, strengths and limitations, suggestions for further research, and limitations.

### **Summary of the study**

The present study sought to examine the relationship between the negative psychological outcomes of vicarious traumatic exposure and social support. The aim was to examine whether implementing social support into the workplace could help mitigate the impact of VTE for employees who are exposed to vicarious trauma due to their line of work. This was accomplished by conducting a meta-analysis of all research into the relationship between social support and negative psychological outcomes of VTE from 1974 (when the concept first came about) until 2017. This meta-analysis is grounded in organisational psychology and therefore the studies were all from workplace populations.

There is literature examining the impact that vicarious traumatic exposure can have on individuals who work with traumatised clients dating back to the 1970's and continues to be a popular topic today. The literature on vicarious traumatization has been largely focussed in the helping professions, due to the use of compassion being so key to the role of a helping professional (Turgoose & Maddox, 2017) and the exposure to traumatised clients. This exposure can lead to not only negative effects for individuals but ultimately will have a negative impact on the organisations in which the individuals work (Middleton & Potter, 2015; NSPCC, 2013). Despite the risk, not all helping professionals working with

traumatised clients end up with VT. According to Constructivist self-development theory (CSDT), a professional will react differently in response to vicarious traumatic exposure due to intrinsic features of an individual and multiple characteristics of the work being done. Therefore, whether VT occurs depends on an interplay between both internal and external influences (McCann & Pearlman, 1990). Thus, VT might possibly be able to be avoided if certain characteristics are put in place which mitigate the impact of VT and it is important that such variables are identified and put into place to help lessen VT. Social support was chosen as a characteristic of focus for this analysis.

### **Overview of Findings**

The present study examined the impact of social support on the negative outcomes of vicarious traumatic exposure. The meta-analysis included 21 studies representing a range of helping professionals from dispatchers and emergency workers to mental health professionals and clinical psychologists. Two analyses were run to examine the impact of using beta coefficients in meta-analysis. As stated earlier, the first analysis only contained studies which reported correlation coefficients, while the second analysis also included studies which reported beta coefficients. These beta coefficients were converted to correlation coefficients using a formula by Peterson and Brown (2005). After running two analyses on CMA (V3), the overall effect size for the first analysis was  $-.194$  and  $-.147$  for the second analysis, representing a small negative relationship between social support and VT. These effect sizes are relatively similar, suggesting that the estimate gained from the use of the conversion equation produced relatively accurate results in this context.

The effect sizes produced both suggest a small negative relationship exists between social support and VT. The I-squared value produced was high, which reflects that there is a lot of dispersion amongst effect sizes. Therefore, an analysis of dispersion and its determinants should be the next step of investigation, however, this was beyond the scope of the current thesis.

Despite this dispersion, the effect sizes did not include 0 within the error, and therefore is likely to be a true effect, suggesting it does represent a real impact of social support on VT. This small effect size may mean that social support may help mitigate the impact of VT, but there are likely to be other variables which could further strengthen this relationship. This model makes sense when reflecting upon the CSDT, which suggests that the attainment of VT depends on an interaction between multiple internal and external influences. Therefore, the reason why this effect is so small may be partially because other variables come into play within this relationship, including possible mediators and moderators of this relationship.

**Moderators.** A moderator is a variable which changes the direction or strength of the relationship between a predictor and dependant variables (Baron & Kenny, 1986; Temitope, 2014). Such unknown or unaccounted-for variables may have impacted the effect size of the current meta-analysis.

Grosch and Olsen (2000) and Weiner (1989) propose that burnout and occupational stress is an interaction of individual and institutional features, whereby “the self” interacts with “the system”, to influence the stress reaction (Galek et al., 2011). They posit that personal resources such as social support, self-efficacy, and self-esteem play a pivotal role in having VT and related syndromes (Galek et al., 2011).

Following on from this, an organisational climate which is perceived as unsupportive has been found to increase the likelihood of VT, thus suggesting it may moderate the relationship between perceived social support and VT (Brockhouse et al., 2011). Other authors have found that organisations which promote self-care activities and convey that the organisation is partially responsible for mitigating the impact of VT have been linked with lower levels of VT in staff (Hensel, Ruiz, Finney, & Dewa, 2015).

Burnout is a state which can happen without traumatic exposure, but simply through being exposed to job stressors. Some researchers have theorized that workers who are burnt out may be more likely to react with greater intensity to traumatic exposure (Badger, Royse, and Craig, 2008; Regehr, Hemsworth, Leslie, Howe, and Chau, 2004). Thus, burnout could act as a moderator between social support and VT, as perhaps other coping strategies are also needed when a worker is already depleted.

**Mediators.** A mediator is a variable which is influenced by the independent variable and then in turn influences the dependent variable. Thus, mediation analysis can help facilitate a better understanding of the relationship between independent and dependant variables, when there appears to be no definite direct connection (MacKinnon, 2008). Such unknown and unaccounted-for variables could impact the effect size found in the current meta-analysis.

Pearlman and MacIan (1995) found that respondents with personal trauma history who also did not receive adequate supervisory support, showed higher levels of VT. This was also found regarding those who had less experience in the field as well as low supervisory support. This relationship was not found for the direct relationship between supervisory support and VT. Thus, other variables,

such as personal trauma history and experience in the field, may mediate the relationship between social support and VT. Therefore, this may partially reflect why the effect sizes found in this meta-analysis were so small.

There are numerous other factors which could mediate stress reactions and burnout, which can often be ignored in the literature. These include, personality, cognitive appraisal, life events, and coping mechanisms. Such factors can create variance in reactions to identical situations (Farber, 1991)

**Lack of information.** A lack of information in the literature, whether that be due to clarity or the scope of focus, can impact the effect size obtained in the current meta-analysis. Although all the studies included in the meta-analysis measured social support, these measures do not take into account many other important factors which could be important to understanding the true relationship between social support and VT.

Social support can be seen as a process, which includes actual behaviour as well as perceptions of support (Hobfoll, 2002; Galek et al., 2011). This suggests that individuals must choose to take on any social support available as a coping strategy. Christie and Shultz (1998) found that females were more likely to use social support and peer relationships as self-care coping strategies to manage stress at work than men. Therefore, although social support may be available in the workplace or at home to be used as a coping strategy against VT, some workers may choose not to use it, thus possibly skewing the results in the studies.

Where the support comes from may also play a role of the effect of social support on VT. Thomas (2012) investigated the relationship between social support and VT amongst correctional officers. The author found that family

support was the strongest predictor of VT, perhaps partly due to the amount of leisure activities undertaken with family members as a form of social support.

Many of the studies investigating the effect of supervision and social support on VT or BO have focussed on the quantity, not quality of supervision. This could be an issue, as it does not examine the whole picture regarding social support, possibly leaving out crucial information needed to accurately examine the relationship (Slattery & Goodman, 2009; Ivicic & Motta, 2016).

It is clear to see from these examples that more information about social support in the workplace may be needed to gain a better understanding, and perhaps a larger effect size on the relationship between VT and social support.

**Subgroups.** Another plausible reason as to why the effect size was small may be due to the large dispersion amongst the helping professionals' population, as shown with the high I-squared value. This I-squared value makes any significance around the small relationship questionable, as there is too much dispersion to run significance testing. Therefore, further analysis needs to occur to examine where this dispersion is occurring, either through moderator or subgroup analysis.

**Methodology.** There is also some possibility that the methods used in these studies, including the measures used, are not specific enough to gain one consistent agreement for the relationship between social support and VT (Van der Doef & Maes, 2002). This may be due to the subjective nature of some survey questions, as without a definition, what some may interpret as a traumatic experience may differ amongst individuals, thus leading to inconsistent results (Creamer & Liddle, 2005; Ivicic & Motta, 2016). Literature on VT has also relied heavily on self-report measures, which involves a reliance on the individuals

answering the surveys to be able to accurately reflect on their own reactions, which can again lead to inconsistencies (Ivicic & Motta, 2016).

The studies in this meta-analysis also included different measures of social support. Some studies reported an overall support statistic, while others broke it down by support type. Perhaps different results would have been found if the analysis was focussed on one particular type of social support, as the more variability there is within measures, the more variability there may be amongst effects sizes. To make the data able to be input into CMA, some social support scores needed to be averaged to give a total social support score. This is because only one outcome statistic can be reported per population (Field, 2010). This averaging process may have partially led to a smaller effect size.

Although the effect size was small, it still does not include 0 within the error, so it likely represents the true effect. Therefore, despite the small effect size, the study does represent a real impact of social support on VT, suggesting that further research should be done into this relationship.

### **Practical Implications**

There are several practical implications which could be considered by organisations and researchers from this present study. Firstly, organisations should monitor their staff's exposure to vicarious trauma in the workplace. If an organisation is not keeping track of their occupational hazards, then any strategies implemented cannot be properly inspected and improvements cannot be tracked. Secondly, workplaces should investigate how multiple variables might interact within the workplace to lessen or worsen VT. Every workplace is unique and faces unique challenges. This means that what works for one organisation may not

work in all organisations. Organisations should be proactive about examining what is happening in their workplace. It appears that social support as a mitigating factor of VT in the workplace may need to be examined more before implementing it into the workforce. In conclusion, employers should be aware of the various ways they can help lessen the impact of VT on their staff. Although the present study did not find a significant relationship between social support and VT, with further subgroup and moderator analysis, more clarity around this relationship might be found.

### **Strengths**

One strength of the current study was that the publication bias analysis run in CMA appears to show an absence of publication bias in the meta-analysis. Publication bias is a common issue within meta-analysis, and therefore, the lack of bias in this study is a positive result. Thus, the analysis should reflect relatively well significant and non-significant findings.

Another strength is that, to date, from my knowledge, no meta-analysis has been run regarding the relationship between social support and VT in helping professionals. The results, therefore, provide an overall insight into what all the researchers have found on this topic.

This meta-analysis also provided a comparison between the use of beta-coefficients in meta-analysis and the use of correlation coefficients. This was achieved through running two analyses, where the first used only correlation coefficients which were reported in the studies or sent through directly from the authors. The second analysis involved the same correlation coefficients as the first analysis, but also included beta coefficients which were converted using a

equation from Peterson and Brown (2005). The effect size produced in each analysis were relatively similar, suggesting that the use of beta coefficients, at least in this context, may be appropriate.

### **Limitations**

**The number of studies.** There were only 21 studies included in this meta-analysis. This was due to a lack of access to articles, particularly unpublished articles, through the online university library. This led to a small number of studies being included in the final meta-analysis.

**Small sample size.** A few of the studies included relatively small sample sizes. A small sample size can increase the likelihood of assuming a false result (Faber & Fonseca, 2014). Therefore, it may be advisable to run another meta-analysis, where studies with small sample sizes are excluded. This was not done due to the small number of studies already included in the meta-analysis.

**Different measures of social support.** There are several types of social support which were included in the meta-analysis. I decided to not constrict the samples by only including certain social support measures, as there was a lack of evidence to support one type of social support over another, and the sample size was already relatively small. Further analysis could benefit from examining whether the different types of social support have an impact on the overall result, however, this was beyond the scope of this thesis.

**Positive psychological consequences of VTE.** The current meta-analysis did not look at the positive psychological outcomes of VTE. This was because it was a concept which was a lot newer than the negative psychological outcomes. However, since the impact of social support could mitigate VT in a two-fold way; both through directly impacting VT levels or by increasing the likelihood of

VPTG, this should be examined in further research. Unfortunately, this was beyond the scope of this thesis.

**Burnout as an outcome of VTE.** Although burnout was included in this meta-analysis, it was only included if it was measured as an outcome of trauma. This was because the primary focus of this analysis was the negative psychological outcomes of vicarious traumatic exposure. However, the studies who measured burnout as an outcome often measured VT, CF, or STS additionally. Because only one data set can be used from each study population in a meta-analysis, the decision was made to average the results from each measure. This may not be as accurate as completing a meta-analysis on each individual outcome variable. However, with the amount of overlap that exists amongst the literature and the lack of consensus around scales for each variable, it was decided that averaging the results for each measure would be more do-able.

**High I-squared value.** The high I-squared value computed for these studies suggests that the studies in the meta-analysis may not be from the same population, since there is a variance in the true effect sizes. The population used for this meta-analysis was helping professionals using the definition from Loyola (2016, pp 26) “Helping professions include a broadly knit collection of professionals, each fitting a particular need or segment of society... Helping professions are considered relationship intensive careers. As such, helping professionals like the psychologists, guidance counsellors, and teachers, in general, must possess certain traits, competencies, and skills that facilitate the development of interpersonal relationship”. This definition is relatively broad, and in this study included a range of professionals; from dispatchers and emergency workers to clinical psychologists and mental health workers. Helping

professionals were chosen as an overarching population due to the focus on compassion needed for these roles, and the toll this compassion takes on workers when exposed to trauma. Despite all these professionals having the likelihood of being exposed vicariously to trauma, there is obviously some variability that exists amongst the distinct types of helping professionals, including the type of vicarious trauma they are exposed to and the other supports in place in their fields of work. Therefore, further research into the several types of helping professions in regard to VT would be beneficial. A moderator or subgroup analysis would be useful for further analysis; however, this is beyond the scope of this thesis.

### **Future Research**

Future research needs to examine the distinct types of social support. This study did not examine the impact of several types of social support. Because of how diverse this topic is, there are many different measures, including self-made measures, which examine social support. Investigating whether particular types of social support are more effective than others in regard to VT would be a useful next step in the research.

Because of discrepant results, it is important that future research continues to examine the impact of both positive and negative psychological consequences of VTE. There is potential that social support can impact VT in a two-fold manner, through mitigating VT and through boosting VPTG. Therefore, it is important that this relationship is explored further.

Moderator and subgroup analysis. Due to the large I-squared value, future research could investigate subgroups or moderators which may have impacted this meta-analysis. The large I-squared value suggests that perhaps the studies were

from different populations, therefore this analysis would be beneficial, as it could investigate the different types of professionals which make up the helping profession occupation.

### **Conclusion**

In conclusion, the present study examined how social support is related to the negative psychological consequences of vicarious traumatic exposure in the workplace. This was done through a meta-analysis of the literature. The results suggest that, while significant in this meta-analysis, social support may not be as relevant as previously thought in mitigating the negative psychological effects of VTE, however, further research is needed to examine the factors which influence and the significance of this relationship. Although the effect size was small, it still does not include 0 within the error, so it likely represents the true effect.

To maintain a healthy organisation of helping professionals, this study suggests that social support should be looked at as a potential source of coping for staff members faced with exposure to vicarious trauma. Organisations should be proactive about monitoring this occupational hazard in the workplace and examining factors which could mitigate the impact. Although the study results were not significant, this study lays a basis for further investigation into the relationship, as there is still a lot of room for enquiry.

## References

- Abraham-Cook, S. (2012). *The Prevalence and Correlates of Compassion Fatigue, Compassion Satisfaction, and Burnout Among Teachers Working in High-Poverty Urban Public Schools*. (Doctoral dissertation, Seton Hall University, New Jersey USA). Retrieved from <http://scholarship.shu.edu>
- 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. <http://dx.doi.org/10.1037/0002-9432.76.1.103>
- Adriaenssens, J., De Gucht, V., & Maes, S. (2012). The impact of traumatic events on emergency room nurses: Findings from a questionnaire survey. *International Journal of Nursing Studies*, 49(11), 1411-1422. <http://dx.doi.org/10.1016/j.ijnurstu.2012.07.003>
- Arnold, D., Calhoun, L. G., Tedeschi, R., & Cann, A. (2005). Vicarious posttraumatic growth in psychotherapy. *Journal of Humanistic Psychology*, 45, 239-263. <http://dx.doi.org/10.1177/0022167805274729>
- Arvay, M. J. (2001). Secondary traumatic stress among trauma counselors: What does research say? *International Journal for the Advancement of Counselling*, 23(4), 283–293
- Association., A. P. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5 ed.). Washington, DC.: American Psychiatric Association.
- Badger, K., Royse, D., & Craig, C. (2008). Hospital social workers and indirect trauma: An exploratory study of contributing factors. *Health and Social Work*, 33(1), 63-71.

- Baird, K., & Kracen, A. C. (2006). Vicarious traumatization and secondary traumatic stress: A research synthesis. *Counselling Psychology Quarterly*, *19*(2), 181-188.  
<http://dx.doi.org/10.1080/09515070600811899>
- Baron, R., Kenny, D., & Reis, Harry T. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182.
- Bell, H., Kulkarni, S., & Dalton, L. (2003). Organizational prevention of vicarious trauma. *Families in Society*, *84*(4), 463-470.
- Bercier, M. L. (2013). *Interventions That Help the Helpers: A Systematic Review and Meta-Analysis of Interventions Targeting Compassion Fatigue, Secondary Traumatic Stress and Vicarious Traumatization in Mental Health Workers*. (Doctoral dissertation, Loyola University, Chicago, USA). Retrieved from <http://ecommons.luc.edu>
- Bober, T., & Regehr, C. (2006). Strategies for reducing secondary or vicarious trauma: Do they work? *Brief Treatment and Crisis Intervention*, *6*, 1-9.  
<http://dx.doi.org/10.1093/brief-treatment/mhj001>
- Bonach, K., & Heckert, A. (2012). Predictors of secondary traumatic stress among children's advocacy center forensic interviewers. *Journal of Child Sexual Abuse*, *21*(3), 295-314. <http://dx.doi.org/10.1080/10538712.2012.647263>
- Borenstein, M., Hedges, L., & Rothstein, H. (2007). *Meta-Analysis Fixed effect vs. random effects*. Retrieved from <https://www.meta-analysis.com>
- Borenstein, M. (2009). *Introduction to Meta-Analysis*. Chichester, U.K.: John Wiley & Sons.

- Boscarino, J. A., Figley, C. R., & Adams, R. E. (2004). Compassion fatigue following the September 11 terrorist attacks: A study of secondary trauma among New York City social workers. *International Journal of Emergency Mental Health, 6*, 57–66.
- Bourke, M. L., & Craun, S. W. (2014). Coping with Secondary Traumatic Stress: Differences Between U.K. and U.S. Child Exploitation Personnel. *Traumatology, 20*(1), 57–64. <http://dx.doi.org/10.1037/h0099381>
- Borritz, M., & Kristensen, T. (1999). *PUMA: study on personal burnout, work burnout and client burnout*. Copenhagen: National Institute of Occupational Health.
- Brady, J. L., Guy, J. D., Poelstra, P. L., & Brokaw, B. F. (1999). Vicarious traumatization, spirituality, and the treatment of sexual abuse survivors: A national survey of women psychotherapists. *Professional Psychology: Research and Practice, 30*(4), 386-393.
- Brewin, C., Andrews, B., & Valentine, J. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748-766.
- Bride, B. E. (2004). The impact of providing psychosocial services to traumatized populations. *Stress, Trauma, and Crisis, 7*, 29-46.  
<http://dx.doi.org/10.1080/15434610490281101>
- Bride, B. E., Radey, M., & Figley, C. R. (2007). Measuring compassion fatigue. *Clinical Social Work Journal, 35*, 155-163.
- 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*, 27–35. <http://dx.doi.org/10.1177/1049731503254106>
- Brockhouse, R., Msetfi, R. M., Cohen, K., & Joseph, S. (2011). Vicarious exposure to trauma and growth in therapists: The moderating effects of sense of coherence,

organizational support, and empathy. *Journal of Traumatic Stress*, 24(6), 735-742.

<http://dx.doi.org/10.1002/jts.20704>

Calhoun, L. G., & Tedeschi, R. G. (1998). Posttraumatic growth: Future directions. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 215-238). Mahwah, NJ: Lawrence Erlbaum.

Calhoun, L. G., & Tedeschi, R. G. (2001). Posttraumatic growth: The positive lessons of loss. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss* (pp. 157–172). Washington, DC: American Psychological Association.

Canfield, J. (2005). Secondary Traumatization, Burnout, and Vicarious Traumatization. *Smith College Studies in Social Work*, 75(2), 81-101. [http://dx.doi.org/10.1300/J497v75n02\\_06](http://dx.doi.org/10.1300/J497v75n02_06)

Caplan, R., Cobb, S., French, J. R., Van Harrison, R., & Pinneau, S. R. (1975). *Job Demands and Worker Health*. Washington, D. C: US Department of Health, Education, and Welfare.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283.

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, 225-242. <http://dx.doi.org/10.1080/03643107.2011.575333>

Christie, M. D., & Shultz, K. S. (1998). Gender differences on coping with job stress and organizational outcomes. *Work and Stress*, 12(4), 351 - 361

- Cieslak, R., Benight, C. C., & Caden Lehman, V. (2008). Coping self- efficacy mediates the effects of negative cognitions on posttraumatic distress. *Behaviour Research and Therapy*, *46*(7), 788-798. <http://dx.doi.org/10.1016/j.brat.2008.03.007>
- Cieslak, R., Shoji, K., Luszczynska, A., Taylor, S., Rogala, A., Benight, C., & Reynolds, Cecil R. (2013). Secondary Trauma Self-Efficacy: Concept and Its Measurement. *Psychological Assessment*, *25*(3), 917-928.
- Clay, R., Knibbs, J., & Joseph, S. (2009). Measurement of posttraumatic growth in young people: A review. *Clinical Child Psychology and Psychiatry*, *14*, 411– 422
- Coates, D., & Max, C. (2005). *Healthy work: Productive workplaces. Why the UK needs more 'Good Jobs'*. London: The Work Foundation.
- Coffey, M., Dugdill, L., & Tattersall, A. (2004). Stress in social services: Mental wellbeing, constraints and job satisfaction. *British Journal of Social Work*, *34*(5), 735-746
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. M. (1985). Measuring the functional components of social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social support: Theory, research, and applications* (pp. 73–94). The Hague, Holland: Martinus Nijhoff. [http://dx.doi.org/10.1007/978-94-009-5115-0\\_5](http://dx.doi.org/10.1007/978-94-009-5115-0_5)
- Collings, J., & Murray, P. (1996). Predictors of stress amongst social workers: An empirical study. *British Journal of Social Work*, *26*, 375–387.
- Cooper, H. (2010). *Research synthesis and meta-analysis: A step-by-step approach* (4<sup>th</sup> ed.). Thousand Oaks, CA: Sage.
- Cooper, C., & Bevan, S. (2014). Business benefits of a healthy workplace. In Day, A., Kelloway, A., Hurrell, K., Kelloway, Kevin, & Hurrell, Joseph J. Jr. (2014). *Workplace well-being: How to build positive, psychologically healthy workplaces* (First ed.).

- Cooper, H., & Hedges, L. V. (2009). Research synthesis as a scientific process. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.). *The handbook of research synthesis and meta-analysis* (pp. 431-440). New York: Russell Sage.
- Cordes, C., & Dougherty, T. (1993). A review and integration of research on job burnout. *Academy of Management Review, 18*, 621-656.
- Craig, C. D., & Sprang, G. (2010). Compassion satisfaction, compassion fatigue, and burnout in a national sample of trauma treatment therapists. *Anxiety, Stress, & Coping, 23*, 319-339.
- Craun, S., Bourke, M., Bierie, D., & Williams, K. (2014). A Longitudinal Examination of Secondary Traumatic Stress among Law Enforcement. *Victims & Offenders, 9*(3), 299-316. <http://dx.doi.org/10.1080/15564886.2013.848828>
- Creamer, T. L., & Liddle, B. J. (2005). Secondary traumatic stress among disaster mental health workers responding to the September 11 attacks. *Journal of Traumatic Stress, 18*, 89–96. <http://dx.doi.org/10.1002/jts.20008>
- Dagan, Ben-Porat, & Itzhaky. (2016). Child protection workers dealing with child abuse: The contribution of personal, social and organizational resources to secondary traumatization. *Child Abuse & Neglect, 51*, 203-211. <http://dx.doi.org/10.1016/j.chiabu.2015.10.008>
- Davis-Sacks, M. L., Jayaratne, S., & Chess, W. A. (1985). A comparison of the effects of social support on the incidence of burnout. *Social Work, 30*(3), 240-244.
- Deville, G. J., Wright, R., & Varker, T. (2009). Vicarious trauma, secondary traumatic stress or simply burnout? Effect of trauma therapy on mental health professionals. *Australian and New Zealand Journal of Psychiatry, 43*, 373-385.

- Dignam, J. T., Barrera, M., Jr., & West, S. G. (1986). Occupational stress, social support, and burnout among correctional officers. *American Journal of Community Psychology, 14*, 177- 193
- Duffy, E., Avalos, G., & Dowling, M. (2015). Secondary traumatic stress among emergency nurses: a cross-sectional study. *International Emergency Nursing, 23*(2), 53-58. <http://dx.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). New York: Brunner/Mazel Publishers
- Eidelson., R. J., D'Alessio., G. R., & Eidelson., J. I. (2003). The impact of September 11 on psychologists. *Professional Psychology: Research and Practice, 34*(2), 144 – 50
- Eisenberger, R., Huntington, R., Hutchison, S. and Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500-507.
- 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*, 25-36. <http://dx.doi.org/10.1016/j.cpr.2010.09.004>
- Eriksson CB, Vande Kemp H, Gorsuch R, Hoke S, & Foy DW. (2001). Trauma Exposure and PTSD Symptoms in International Relief and Development Personnel. *Journal of Traumatic Stress, 14*(1), 205–212.
- Etzion, D. (1984). Moderating effect of social support on the stress-burnout relationship. *Journal of Applied Psychology, 69*, 615-622

- Faber, J., & Fonseca, L. (2014). How sample size influences research outcomes. *Dental Press Journal of Orthodontics*, 19(4), 27-29
- Farber, B. A. (1991). *The Jossey-Bass education series. Crisis in education: Stress and burnout in the American teacher*. San Francisco, CA, US: Jossey-Bass.
- Fenlason, K., & Beehr, T. (1994). Social support and occupational stress: Effects of talking to others. *Journal of Organizational Behavior*, 15(2), 157-175.  
<http://dx.doi.org/10.1002/job.4030150205>
- Field, A. (2014). *Discovering Statistics Using IBM SPSS Statistics* (4<sup>th</sup> ed.). London, UK: SAGE Publications.
- Field, A., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology*, 63, 665–694
- 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). Baltimore: Sidran Press.
- Figley, C. R. (1995). *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. New York: Brunner-Routledge.
- Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self-care. *Journal of Clinical Psychology*, 58, 1433–1441.
- Figley., C. R. & Nelson., T. (1989). Basic family therapy skills: Conceptualization and initial findings. *Journal of Marital and Family Therapy*, 15(4), 211-130.
- Finklestein, M., Stein, E., Greene, T., Bronstein, I., & Solomon, Z. (2015). Posttraumatic stress disorder and vicarious trauma in mental health professionals. *Health Soc Work*, 40(2), 25-31. <http://dx.doi.org/10.1093/hsw/hlv026>

- Garner, B., Knight, K., & Simpson, D. (2007). Burnout among corrections-based drug treatment staff. *International Journal of Offender Therapy and Comparative Criminology*, 51, 510-522.
- Giovannoni, J., McCoy, K. T., Mays, M., & Watson, J. (2015). Probation officers reduce their stress by cultivating the practice of loving-kindness with self and others. *International Journal of Caring Sciences*, 8(2), 325-343.
- Green, B. L., Wilson, J. P., & Lindy, J. D. (1985). Conceptualizing posttraumatic stress disorder: A psychosocial framework. In C. R. Figley (Ed.), *Trauma and its wake, Vol I: The study and treatment of post-traumatic stress disorder* (pp. 53-69). New York: Brunner/Maze
- Grosch, W., & Olsen, D. (2000). Clergy burnout: an integrated approach. *Journal of Clinical Psychology*, 56(5), 619–632
- Hahn, K. J. (2010). *Considering the power of context: Racism, sexism, and belonging in the vicarious traumatization of counsellors* (Doctor of Philosophy dissertation University of Kentucky, USA). Retrieved from <https://uknowledge.uky.edu>
- Hensel, J., Ruiz, C., Finney, C., & Dewa, C. (2015). Meta-Analysis of risk factors for Secondary Traumatic Stress in therapeutic work with trauma victims. *Journal of Traumatic Stress*, 28(2), 83-91
- Herman, J. (1997). *Trauma and recovery: The aftermath of violence-from domestic abuse to political terror*. New York: Basic Books.
- Hesse, A. R. (2002). Secondary trauma: How working with trauma survivors affects therapists. *Clinical Social Work Journal*, 30(3), 293-309.  
<http://dx.doi.org/10.1023/A:1016049632545>
- Hobfoll, S. E. (2002). Social and psychological resources and adaptations. *Review of General Psychology*, 6(4), 307–324

- Höing, M., Bogaerts, S., & Vogelvang, B. (2017). Volunteers in Circles of Support and Accountability Job Demands, Job Resources, and Outcome. *Sexual Abuse: A Journal of Research and Treatment*, 29(6), 541-562.
- Hopewell, S., Clarke, M., & Mallett, S. (2005). Grey literature and systematic reviews. In H. R. Rothstein, A. J. Sutton, & M. Borenstein (Eds.), *Publication bias in meta-analysis: Prevention, assessment and adjustments* (pp. 49–72). Chichester, England: Wiley. <http://dx.doi.org/10.1002/0470870168.ch4>
- Horwath, J., & Tidbury, W. (2009). Training the workforce following a serious case review: lessons learnt from a death by fabricated and induced illness. *Child Abuse Review*, 18(3), 181-194.
- House, J. S. (1981). *Work Stress and Social Support*. Reading, Mass: Addison-Wesley
- Iliffe, G., & Steed, L. G. (2000). Exploring the counselor's experience of working with perpetrators of domestic violence. *Journal of Interpersonal Violence*, 15, 393–412.
- Ivicic, R., & Motta, R. (2016.). Variables associated with secondary traumatic stress among mental health professionals. *Traumatology*, 1-9.  
<http://dx.doi.org/10.1037/trm0000065>
- Jackson, D. (2006). The implications of publication bias for meta-analysis' other parameter. *Statistics in Medicine*, 25, 2911–2921. <http://dx.doi.org/10.1002/sim.2293>
- Joseph, S., Andrews, B., Williams, R., & Yule, W. (1992). Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology*, 31, 63-73.
- Karasek, R. (1985). *Job Content Questionnaire and user's guide*. Lowell: University of Massachusetts, Department of Work Environment.

- Killian, K. D. (2008). Helping till it hurts? A multimethod study of compassion fatigue, burnout, and self-care in clinicians working with trauma survivors (2), 32-44.
- Knight, C. (2013). Indirect trauma: Implications for self-care, supervision, the organization, and the academic institution. *The Clinical Supervisor* 32(2), 224–243.
- Komachi, M., Kamibeppu, K., Nishi, D., & Matsuoka, Y. (2012). Secondary traumatic stress and associated factors among Japanese nurses working in hospitals. *International Journal of Nursing Practice*, 18(2), 155-163.  
<http://dx.doi.org/10.1111/j.1440-172X.2012.02014.x>
- Lambert, E. G., Altheimer, I., & Hogan, N. L. (2010). Exploring the relationship between social support and job burnout among correctional staff. *Criminal Justice and Behavior*, 37(11), 1217 - 1236. <http://dx.doi.org/10.1177/0093854810379552>
- Lambert, E. G., Hogan, N. L., Barton-Bellessa, S. M., & Jiang, S. (2012). Examining the relationship between supervisor and management trust and job burnout among correctional staff. *Criminal Justice and Behavior*, 39(7), 938 - 957.  
<http://dx.doi.org/10.1177/0093854812439192>
- Larsen, D. & Stamm, B. H. (2008). Professional quality of life and trauma therapists. In S Joseph & A Lindley (Eds). *Trauma, recovery, and growth: Positive psychological perspectives on posttraumatic stress* (pp. 275-296). Hoboken, NJ: Wiley Press
- Lawrence, S. A., Gardner, J., & Callan, V. J. (2007). The support appraisal for work stressors inventory: Construction and initial validation. *Journal of Vocational Behavior*, 70, 172–204. <http://dx.doi.org/10.1016/j.jvb.2006.09.003>
- Leiter, M. P., & Schaufeli, W. B. (1996). Consistency of the burnout construct across occupations. *Anxiety, Stress, and Coping*, 9, 229–243.  
<http://dx.doi.org/10.1080/10615809608249404>

- Lind, E. (2000). *Secondary traumatic stress: predictors in psychologists*. Dissertation Abstracts International: Section B: the Sciences & Engineering, 61, 5572. US: University Microfilms International.
- Linley, P., & Joseph, S. (2005). Positive and negative changes following occupational death exposure. *Journal of Traumatic Stress, 18*(6), 751-758. <http://dx.doi.org/10.1002/jts.20083>
- Linley, A. P., & Joseph, S. (2007). Therapy work and therapists' positive and negative well-being. *Journal of Social and Clinical Psychology, 26*(3), 385-403.
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Sage: Thousand Oaks
- Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: A review. *Journal of Mental Health, 11*(3), 255-265.
- Loyola, L. (2016). The Profile and Empathy Level of Helping Professionals. *Asia Pacific Journal of Multidisciplinary Research, 4*(3), 26-33.
- Ludick, M., & Figley, C. M. (2016). Toward a mechanism for secondary trauma induction and reduction: Reimagining a theory of secondary traumatic stress. *Traumatology, 23*(1), 1-12
- Lugris, V. (2000). *Vicarious traumatization in therapists: Contributing factors, PTSD symptomatology, and cognitive distortions*. Dissertation Abstracts International: Section B: The Sciences & Engineering, 61, 5572. US: University Microfilms International.
- Luszczynska, A., Sarkar, Y., & Knoll, N. (2007). Received social support, self-efficacy, and finding benefits in disease as predictors of physical functioning and adherence to antiretroviral therapy. *Patient Education and Counselling, 66*(1), 37-42. <http://dx.doi.org/10.1016/j.pec.2006.10.002>

- Mac Ritchie, 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. <http://dx.doi.org/10.1177/008124631004000204>
- MacKinnon, D. P. (2008). *Introduction to Statistical Mediation Analysis*. New York: Erlbaum.
- Măirean, C. (2016). Secondary traumatic stress and posttraumatic growth: Social support as a moderator. *The Social Science Journal, 53*(1), 14-21.
- Manning-Jones, S., de Terte, I., & Stephens, C. (2015). Vicarious posttraumatic growth: A systematic literature review. *International Journal of Wellbeing, 5*(2), 125-139. <http://dx.doi.org/10.5502/ijw.v5i2.8>
- Manning-Jones, S., De Terte, I., & Stephens, C. (2016). Secondary traumatic stress, vicarious posttraumatic growth, and coping among health professionals; a comparison study. *New Zealand Journal of Psychology, 45*(1), 20-29.
- Maslach, C. & Jackson, S.E. (1986). *Maslach Burnout Inventory Manual* (2nd Ed.). Palo Alto, CS: Consulting Psychologists Press Inc
- Maslach, C., & Leiter, M. P. (1997). *The Truth about Burnout: How Organizations Cause Personal Stress and What to do about It*. San Francisco, CA: Jossey-Bass.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397-422.
- McCann, L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress, 3*, 131-149. <http://dx.doi.org/10.1007/BF00975140>
- 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 and Trauma*, 21(6), 646-664.

<http://dx.doi.org/10.1080/10926771.2012.689422>

Middleton, J., & Potter, C. (2015). Relationship Between Vicarious Traumatization and Turnover Among Child Welfare Professionals. *Journal of Public Child Welfare*, 9(2), 195-216. <http://dx.doi.org/10.1080/15548732.2015.1021987>

Miller, A., Unruh, L., Zhang, N., Liu, X., & Wharton, T. (2017). Professional quality of life of Florida emergency dispatchers. (2017). *International Journal of Emergency Services*, 6(1), 29-39. <http://dx.doi.org/10.1108/IJES-01-2017-0001>

Moos, R. H. (1994). *Work Environment Scale manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press

Moos, R., & Schaefer, J. A. (1993). Coping resources and processes: Current conceptions and measures. In L. Goldberger & S. Breznits (Eds.), *Handbook of stress: Theoretical and clinical aspects* (pp. 234-257). New York, NY: The Free Press.

Najjar, N., Davis, L., Beck-Coon, K., & Carney Doebbeling, C. (2009). Compassion Fatigue. *Journal of Health Psychology*, 14(2), 267-277. <http://dx.doi.org/10.1177/1359105308100211>

Neumann, D. A., & Gamble, S. J. (1995). Issues in the professional development of psychotherapists: Countertransference and vicarious traumatization in the new trauma therapist. *Psychotherapy: Theory, Research, Practice, Training*, 32(2), 341-347. <http://dx.doi.org/10.1037/0033-3204.32.2.341>

Neveu, J.-P. (2007). Jailed resources: Conservation of resources theory as applied to burnout among prison guards. *Journal of Organizational Behaviour*, 28, 21-42. <http://dx.doi.org/10.1002/job.393>

- 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.
- Newell, J. D., Nelson-Gardell, D., & MacNeil, G. (2016). Clinician responses to client traumas: A chronological review of constructs and terminology. *Trauma, Violence and Abuse*, 17(3), 306-313. <http://dx.doi.org/10.1177/1524838015584365>
- Newsome, S., Waldo, M., & Gruszka, C. (2012). Mindfulness group work: Preventing stress and increasing self-compassion among helping professionals in training, *The Journal for Specialists in Group Work*, 1-15.  
<http://dx.doi.org/10.1080/01933922.2012.690832>
- Niemeyer, Helen, Musch, Jochen, & Pietrowsky, Reinhard. (2013). Publication Bias in Meta-Analyses of the Efficacy of Psychotherapeutic Interventions for Depression. *Journal of Consulting and Clinical Psychology*, 81(1), 58-74
- 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*, 17(1), 37-44.
- Northeastern University's Institute on Urban Health Research and Practice. (2013). *Vicarious Trauma Toolkit (VTT)*. Retrieved from <https://vt.ovc.ojp.gov>
- NSPCC. (2013). *Vicarious trauma: the consequences of working with abuse* (An NSPCC research briefing). Retrieved from <https://www.nspcc.org.uk>
- O'Halloran, M. S., & O'Halloran, T. (2001). Secondary traumatic stress in the classroom: Ameliorating stress in graduate students. *Teaching in Psychology*, 28(2), 92–97

- Ortlepp, K., & Friedman, M. (2002). Prevalence and correlates of secondary traumatic stress in workplace lay trauma counselors. *Journal of Traumatic Stress, 15*(3), 213-222. <http://dx.doi.org/10.1023/A:1015203327767>
- 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), 52–73. <http://dx.doi.org/10.1037/0033-2909.129.1.52>
- Pearlman, L. A. (1996). Psychometric review of the TSI Belief Scale, Revision L. In: Stamm BH, ed. *Measurement of stress, trauma and adaptation*. Lutherville: Sidran Press, 415-417.
- Pearlman, L. A., & Mac Ian, P. S. (1995). Vicarious traumatization: An empirical study on the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice, 26*, 558-565.
- Pearlman, L. A., & Saakvitne, K. W. (1995). *Trauma and the therapist: countertransference and vicarious traumatization in psychotherapy with incest survivors*. New York: W.W. Norton and Company.
- Peterson, R., & Brown, S. (2005). On the Use of Beta Coefficients in Meta-Analysis. *Journal of Applied Psychology, 90*(1), 175-181.
- Pines, A. M., & Aronson, E. (1998). *Career burnout: Causes and cures*. New York, NY: Free Press.
- 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. <http://dx.doi.org/10.1016/j.childyouth.2004.02.003>
- Resick, P. (2000). *Stress and trauma*. Psychology Press: Hove, UK

- Rhineberger-Dunn, G., Mack, K. Y., & Baker, K. M. (2016). Secondary trauma among community corrections staff: An exploratory study. *Journal of Offender Rehabilitation, 55*(5), 293-307. <http://dx.doi.org/10.1080/10509674.2016.1181132>
- Roth, P. L., Le, H., Oh, I.-S., Van Iddekinge, C. H., & Bobko, P. (2018, January 25). Using Beta Coefficients to Impute Missing Correlations in Meta-Analysis Research: Reasons for Caution. *Journal of Applied Psychology*. Advance online publication. <http://dx.doi.org/10.1037/apl0000293>
- Rzeszutek, M., Partyka, M., Gołąb, A., & Brown, Ronald T. (2015). Temperament Traits, Social Support, and Secondary Traumatic Stress Disorder Symptoms in a Sample of Trauma Therapists. *Professional Psychology: Research and Practice, 46*(4), 213-220. <http://dx.doi.org/10.1037/pro0000024>
- Sarason, I.G., Levine, H.M., Basham, R.B., et al. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology, 44*, 127- 139
- Satkunanayagam, K., Tunariu, A. & Tribe R. (2010) A qualitative exploration of mental health professionals' experience of working with survivors of trauma in Sri Lanka. *International Journal of Culture & Mental Health 3*(1), 43-51.
- Scales, P. C., Benson, P. L., Leffert, N., & Blyth, D. A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science, 4*, 27-46
- Schaefer, J. A., & Moos, R. H. (1992). Life crises and personal growth. In B. N. Carpenter (Ed.), *Personal coping: Theory, research, and application* (pp. 149-170). Westport, CT: Praeger.

- Schaufeli, W. B., & Peters, M. C. W. (2000). Job stress and burnout among corrections officers: A literature review. *International Journal of Stress Management*, 7, 19-48.
- Schulz, U., & Schwarzer, R. (2003). Social support in coping with illness: The Berlin Social Support Scales (BSSS). *Diagnostica*, 49, 73–82.  
<http://dx.doi.org/10.1026//0012-1924.49.2.73>
- Setti, I., Lourel, M., Argentero, P., & Bride, Brian E. (2016). The Role of Affective Commitment and Perceived Social Support in Protecting Emergency Workers Against Burnout and Vicarious Traumatization. *Traumatology*, 22(4), 261-270.  
<http://dx.doi.org/10.1037/trm0000072>
- Severson, M., & Pettus-Davis, C. (2013). Parole officers' experiences of the symptoms of secondary trauma in the supervision of sex offenders. *International Journal of Offender Therapy and Comparative Criminology*, 57(1), 5-24.  
<http://dx.doi.org/10.1177/0306624X11422696>
- Sexton, L. (1999). Vicarious traumatization of counselors and effects on their workplaces. *British Journal of Guidance & Counselling*, 27(3), 393–403.
- Shakespeare-Finch, J., & Obst, P. L. (2011). Development of the 2-Way Social Support Scale: A measure of giving and receiving, emotional and instrumental support. *Journal of Personality Assessment*, 93(5), 483–490.  
doi:10.1080/00223891.2011.594124
- Shakespeare-Finch, J., Rees, A., & Armstrong, D. (2015). Social Support, Self-efficacy, Trauma and Well-Being in Emergency Medical Dispatchers. *Social Indicators Research*, 123(2), 549-565.
- Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science and Medicine*, 32(6), 705–714.

- Shoji, K., Jock, J., Cieslak, R., Zukowska, K., Luszczynska, A., & Benight, C. C. (2014). Cultivating secondary traumatic growth among healthcare workers: The role of social support and self-efficacy. *Journal of Clinical Psychology, 70*(9), 831-846.  
<http://dx.doi.org/10.1002/jclp.22070>
- Sodeke-Gregson, E., 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).  
<http://dx.doi.org/10.3402/ejpt.v4i0.21869>
- Southwick, S., Vythilingam, M., & Charney, D. (2005). The Psychobiology of Depression and Resilience to Stress: Implications for Prevention and Treatment. *Annual Review of Clinical Psychology, 1*, 255-291.
- Spreitzer, Gretchen M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal, 38*(5), 1442-1465.
- Spreitzer, Gretchen M. (1996). Social structural characteristics of psychological empowerment. *Academy of Management Journal, 39*(2), 483-504.
- Stamm, B. H. (1997). Work-related Secondary Traumatic Stress. *PTSD Research Quarterly, 2*(8).
- Stamm, B. H. (1999). *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (2 ed.). Lutherville, MD: Sidran Press.
- Stamm, B. H (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the Compassion Fatigue and Satisfaction Test. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 107-119). London: Taylor and Francis Ltd

- Stamm, B. H. (2005). *The ProQOL manual: The Professional Quality of Life Scale: Compassion Satisfaction, Burnout & Compassion Fatigue/Secondary Trauma Scales*. Baltimore, MD: Sidrian Press.
- Stamm, B. H. (2009). *The Concise ProQOL Manual*: Pocatello.
- Stapleton, M. (2017). *Secondary Traumatic Stress and Vicarious Posttraumatic Growth in New Zealand Clinical Psychologists: The Consequences of Working with Traumatised Clients*. (Master's thesis, University of Waikato, New Zealand). Retrieved from <https://researchcommons.waikato.ac.nz/>
- Stebnicki, M. A. (2012). Psychosocial Impact of Empathy Fatigue on Professional Helpers. In *Psychological and Social Impact of Illness and Disability*, Sixth Edition 423–434.
- Steed, L., & Downing, R. (1998). A phenomenological study of vicarious traumatization amongst psychologists and professional counselors working in the field of sexual abuse/assault. *Australian Journal of Disaster and Trauma Studies*. Retrieved from <http://www.massey.ac.nz/>
- Strelau, J., Zawadzki, B., Oniszczenko, W., & Sobolewski, A. (2002). The factorial version of the PTSD Inventory (PTSD-F): The development of a questionnaire aimed at assessing basic dimensions of posttraumatic stress disorder. *Przełd Psychologiczny*, 45, 149–176
- Tedeschi, R., & Calhoun, L. G. (2004). Post-traumatic growth: Conceptual foundations and empirical evidence. *Psychology Inquiry*, 15(1), 1-18. [http://dx.doi.org/10.1207/s15327965pli1501\\_01](http://dx.doi.org/10.1207/s15327965pli1501_01)
- Tehrani, N. (2010). Compassion fatigue: Experiences in occupational health, human resources, counselling and police. *Occupational Medicine*, 60(2), 133-138. <http://dx.doi.org/10.1093/occmed/kqp174>

- Temitope, K. M. (2014). *Secondary Traumatic Stress, Burnout and the role of Resilience in New Zealand Counsellors* (Master's thesis Massey University, New Zealand). Retrieved from <https://mro.massey.ac.nz>
- Temitope, K. M., & Williams, M.-W. M. (2015). Secondary traumatic stress, burnout and the role of resilience in New Zealand counsellors. *New Zealand Journal of Counselling, 35*(1), 1-21.
- Thomas, B. (2012). *Predictors of Vicarious Trauma and Secondary Traumatic Stress Among Correctional Officers* (Doctor of Psychology Philadelphia College of Osteopathic Medicine). Retrieved from <https://digitalcommons.pcom.edu>
- Thompson, M. P., Norris, F. H., & Ruback, R. B. (1998), Comparative distress levels of inner-city family members of homicide victims. *Journal of Traumatic Stress, 11*, 223–242
- Turgoose, D., Glover, N., Barker, C., & Maddox, L. (2017). Empathy, Compassion Fatigue, and Burnout in Police Officers Working with Rape Victims. *Traumatology, 23*(2), 205–213. <http://dx.doi.org/10.1037/trm0000118>
- Um, M. Y., & Harrison, D. F. (1998). Role stressors, burnout, mediators, and job satisfaction: A stress strain-outcome model and an empirical test. *Social Work Research, 22*, 100–115
- Van der Doef, M., & Maes, S. (2002). Teacher-specific quality of work versus general quality of work assessment: a comparison of their validity regarding burnout, (psycho)somatic well-being and job satisfaction. *Anxiety, Stress, and Coping 15*, 327–344

- Van Deusen, 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
- Vrklevski, L. P., & Franklin, J. (2008). Vicarious trauma: The impact on solicitors of exposure to traumatic material. *Traumatology, 14*(1), 106–118
- Wagman, 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 Today, 60*(3), 201-209.  
<http://dx.doi.org/10.1093/sw/swv014>
- Walsh-Lyle, D. (2016). *Compassion Fatigue Interventions: A Systematic Review*. (Master of Business Administration), University of Prince Edward Island, Charlottetown, P.E.I.
- 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.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist: Reliability, validity, and diagnostic utility*. Paper presented at the annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX
- Weiner, W. (1989). Is burnout an institutional syndrome? *Loss, Grief & Care, 3*, 95–100.
- Weiss, D. S., & Marmar, C. R. (1997). The Impact of Event Scale-Revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp. 399–411). New York: Guilford Press.

- Weiss, D., Marmar, C., Metzler & Ronfeldt, H. (1995). Predicting symptomatic distress in emergency services personnel. *Journal of Consulting and Clinical Psychology*, 63, 361–368.
- Williams, P., Barclay, L., & Schmied, V. (2004). Defining social support in context: a necessary step in improving research, intervention, and practice. *Qualitative Health Research*, 14(7), 942 – 960.  
<http://dx.doi.org/10.1177%2F1049732304266997>
- Zhao, C., Wu, Z., & Xu, J. (2013). The association between post-traumatic stress disorder symptoms and the quality of life among Wenchuan earthquake survivors: The role of social support as a moderator. *Quality of Life Research*, 22(4), 733-743.  
<http://dx.doi.org/10.1007/s11136-012-0197-4>
- Zimering, R., Munroe, J., & Gulliver, S. B. (2003). Secondary traumatization in mental health care providers. *Psychiatric Times*, 20(4), 43–47.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41. [http://dx.doi.org/10.1207/s15327752jpa5201\\_2](http://dx.doi.org/10.1207/s15327752jpa5201_2)