BURNOUT, COMPASSION FATIGUE AND PHYSICAL HEALTH IN

HUMAN SERVICE WORKERS: PREVALENCE AND INTERVENTION

QUAH SAW HAN

(B. Soc. Sci. (Hons), NUS

M. App. Psy. (Clinical), Murdoch)

A THESIS SUBMITTED

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
DEPARTMENT OF PSYCHOLOGY
NATIONAL UNIVERSITY OF SINGAPORE

2014

DECLARATION

I hereby declare that this thesis is my original work and it has been written by me in its entirety. I have duly acknowledged all sources of information which have been used in the thesis.

This thesis has also not been submitted for any degree in any university previously.

…………………………………
Quah Saw Han
4 July 2014

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

Summary

In Singapore, there is not yet any large-scale study on the prevalence of burnout and compassion fatigue, as well as the physical health status of human service workers within the social service sector. A survey containing measures of burnout and compassion fatigue was sent to human service workers in family service centres, voluntary children's homes, as well as those within a local government agency specializing in care and protection of at-risk children, youths and families. Results indicate that the Maslach Burnout Inventory – Human Services Survey's (MBI-HSS, Maslach & Jackson, 1981) original three-factor model is applicable to the local Singaporean sample, while the Professional Quality of Life Scale – Fifth edition (ProQOL-V, Stamm, 2010) appears to require further modification for the local sample. Out of 181 human service workers who completed the surveys, 33.7% reported experiencing significant levels of burnout symptoms. Human service workers from the government agency also reported significantly poorer sense of self-efficacy on the job, when compared to their counterparts from the family service centres.

Personal, job, and organizational variables (e.g., length of service, trait anger, coping strategies, life satisfaction, social support from colleagues/supervisors, supervision, etc.) were examined in relation to burnout, compassion fatigue, physical health and turnover intent. The most salient variables associated with human service workers' turnover intent were the workers' lengths of service, their perceptions of having adequate supervision, and their levels of emotional exhaustion. Limitations of the study and the implications of the findings were discussed.

In another study, a randomized controlled trial of a twelve-hour cognitive-behavioural stress management programme was conducted with human service workers from the government agency. Comparison of pre-programme and post-programme tests showed promise in reducing emotional exhaustion in Singaporean human service workers. However, the findings were limited by small sample sizes. Other limitations and further implications of the results were discussed.

List of Tables

List of Figures

Chapter 1

Introduction

"The human service workforce is responsible for ensuring the safety and well being of many underprivileged and financially disadvantaged members of society" (National Council of Crime and Delinquency, NCCD, 2006, p. 4). Yet, the paradox is that for such an important job of working with vulnerable individuals with high needs, the human service workforce often has to make do with limited resources (e.g., Esposito & Fine, 1985). Limited resources, high caseloads, low pay, lack of supervision and training, lack of standards and systemization, unrealistic expectations from the public and media – all have been shown to contribute to the high stress, turnover and burnout rate in human service workers working with at-risk populations (e.g., Anderson, 2000; Kim, 2011; NCCD, 2006).

There is limited published international research on job turnover and retention in human service workers like child protection and welfare officers (Burns & Christie, 2013). Annual staff turnover in child welfare and other human services has been estimated to be in the range of 20% to 60% in the United States (e.g., Annie E. Casey Foundation, 2003, cited in NCCD, 2006; Cyphers, Light, Gertz, MacGowan, Vandergrift, & Plummer, 2005; Geurts, Schaufeli & De Jonge, 1998; Jayaratne & Chess, 1984). In Singapore, no official figures are available, but anecdotal accounts indicate that while turnover rates in similar services may not be as high as 60%, it is still well within the lower end of the range

estimated in the United States. As NCCD (2006) pointed out, this high turnover has far-reaching impact: the workers that do not leave will have to absorb higher caseloads which directly affects the available time they have for existing cases and therefore increases stress levels and risks of burnout. Moreover, there are substantial financial costs incurred everytime a worker is lost: anywhere between 70% to 200% of the worker's annual salary (Kaye & Jordon-Evans, 2008). The implication of having an overstretched workforce with burnout or stressed workers, as well as financial costs incurred within an already stretched budget, is lower quality services provided to the vulnerable children/youths and families. Needless to say, lower quality or less consistent services will not earn the trust of already mistrustful children/youths and families, nor will workers be encouraged or positively reinforced to stay in service or for new recruits to be willing to join. And then the vicious cycle goes on – one can only imagine the long-term political, economic and societal costs of a population of under-serviced vulnerable children/youths and families.

What are the characteristics of workers who tended to leave a human service organization? In a study involving a meta-analysis of 25 articles (with 23 out of 25 studies on child welfare, social welfare and human service workers in North America), Mor Barak and associates (Mor Barak, Nissly, & Levin, 2001) found that workers who actually quit after contemplating leaving tended to be unhappy with their jobs, lacked commitment to their organization and profession, experienced high

2

stress and burnout, lacked social support, were unhappy with management practices and had other employment opportunities. Although this reported meta-analysis had several limitations, such as the relatively small number of studies and heterogenous populations, and with almost all the studies conducted in the United States of America, with the exception of two studies from the Netherlands, it provided some indication that the phenomenon of burnout was a significant influencing factor on staff turnover. Similarly, various organizational and research reports, again largely from the United States, also suggested compassion fatigue to be a significant factor contributing to high staff turnover in human social services (e.g., Alaska Department of Health and Social Services, 2008). On the other hand, Seti (2008) suggested that perhaps the various personal, job and organizational factors associated with staff turnover could be the causes of stress and burnout in human service workers.

Relatively little has been published on the estimates of rates of burnout and/or compassion fatigue in human service workers, and most of the literature has been from the United States of America. Instead, turnover rates were often cited as evidence of burnout and/or compassion fatigue, which may not be an accurate reflection. As reviewed earlier, other factors like lack of career advancement and lack of agency and supervisory support, can be cited as significant factors leading to high turnover (e.g., NCCD, 2006). In a study by Conrad and Kellar-Guenther (2006) conducted in Colorado, United States, it was

found that 39.7% of the 363 child protection workers had moderate or high risk of developing burnout. Another study involving 1000 practising National Association of Social Workers members in the United States estimated a burnout rate of 39% (Siebert, 2006). On the other hand, studies done with child protection workers in the United States indicated rates of between 15.2% (Bride, 2007) and 37% (Cornille & Meyers, 1999) of workers experiencing clinically significant levels of secondary trauma (i.e., compassion fatigue, cf. Figley, 1995).

To the author's knowledge, there was only one study that conducted cross-cultural comparisons of burnout levels in child and youth care workers from thirteen cultures: Australia, Austria, Canada-English, Canada-French, Denmark, England, Germany-East, Germany-West, Israel, Poland, Scotland, the Slovak Republic, and the United States (Savicki, 2002). In this study, 21 percent of the 835 participants were classified as experiencing high burnout. The rates of high burnout in participants ranged from approximately 12 percent to 44 percent across the thirteen cultures. More importantly, methodological limitations (e.g. convenience sampling) notwithstanding, Savicki (2002) found work environment and coping factors that were found in the United States to be related to burnout to generalize across the thirteen cultures as well. Hence in this thesis, largely due to the more readily available literature from the United States, and following from Savicki's (2002) findings, staff turnover, burnout and compassion fatigue rates, as well as

associated variables, would be mainly using reported findings from the United States as points of reference and comparison.

In Singapore, a government agency overseeing rehabilitation and protection of at-risk children, youths and families is the largest employer of human service workers in Singapore. This agency serves a wide range of clients with a multitude of issues. There are child protection officers who serve young clients presenting with problems related to physical/emotional/sexual abuse and neglect. There are caseworkers within the institutional settings that work with youth offenders or teenage child abuse victims who require residential programmes. There are probation officers who conduct pre-sentencing assessments for juvenile and adult community offenders, and oversee the probation of these offenders. All frontline workers in this government agency are legally mandated under the Children and Young Persons Act (CYPA) to protect children and youths under the age of 16 years These clients are often from families in crisis with complex and difficult issues, such as parental incarceration, parental mental illness, domestic violence, poverty/homelessness, and so on. Therefore, often times, workers have to engage with the family members in their attempts at providing services and intervention.

Similar to their counterparts in California (Kim, 2011), these local government agency workers often work in the most difficult circumstances while bearing the responsibility of ensuring the safety and

5

welfare of their clients and their families. They often have to make difficult decisions and face the risk of criticism and finger-pointing by the public if these decisions do not work out (e.g., The Straits Times, 11 Oct 1996, p. 3). All these duties are expected to be performed despite inadequate resources, insufficient monetary rewards (as compared to some professions), and the complex requirements of the child protection and legal systems (which include other stakeholders, such as the courts and the police). However, very little research has been done in Singapore to better understand the mental and physical health states of these frontline workers or explore factors that are associated with burnout or compassion fatigue. Yet staff burnout and compassion fatigue are often the usual suspects for high rates of turnover (e.g., Siefert & Jayaratne, 1991) and absenteeism (due to psychological stress or somatic symptoms) which can seriously compromise the standards of care given to high-risk and high-needs children and adolescents.

The current studies have several aims:

1. To examine the psychometric properties of two instruments used to measure burnout and compassion fatigue amongst human social service workers: Maslach Burnout Inventory – Human Services Survey (MBI-HSS; Maslach & Jackson, 1981) and the Professional Quality of Life Scale–Fifth edition (ProQOL-V, Stamm, 2010) respectively.

2. To estimate the prevalence of burnout and compassion fatigue in human service workers in Singapore.

3. To study the inter-relationship between burnout and compassion fatigue, and the impact of burnout and compassion fatigue on workers' turnover intent, that is, workers' intent to leave the organization, as well as workers' self-reports of physical health symptoms.

4. To explore if a commercially available stress management programme would be effective in ameliorating the effects of burnout and compassion fatigue if these were contributing factors to workers' intent to leave the organization or their self reports on physical health.

The first three aims were addressed by the first study which sampled human social service workers from different community and government agencies within Singapore, to explore if MBI-HSS (Maslach & Jackson, 1981), and ProQOL-V (Stamm, 2010) were reliable measures of burnout and compassion fatigue in the local context. Specifically, data collected was used to determine whether the original factor structures of MBI-HSS and ProQOL-V were maintained when administered to the local Singapore sample. In addition, a number of individual and job measures, a measure of workers' turnover intent, together with reports of physical health, were collected in an attempt to determine factors associated with workers' turnover intent, as well as their self-reports of health. Furthermore, burnout and compassion fatigue were examined as potential mediating the relationships between

the individual/job charateristics and workers' turnover intent, as well as their self-reported health.

Hence, the research questions in Study 1 are the following:

1) What are the psychometric properties of MBI-HSS (Maslach & Jackson, 1981) and ProQOL-V (Stamm, 2010) when administered to a Singaporean sample? Is there factorial validity?

2) How are burnout and compassion fatigue associated with each other?

3) What is the estimated prevalence of burnout and compassion fatigue amongst human social service workers in Singapore?

4) Are there significant differences between workers from the government agency and their community counterparts in the reported levels of burnout and compassion fatigue?

5) What are the individual and job/organizational factors associated with workers' turnover intent and self-report on physical health? Do reported levels of burnout or compassion fatigue explain these associations?

In Study 2, a cognitive-behavioural based stress management programme was offered to all the frontline workers in the government agency described above, with a quasi-experimental design of wait-list control condition versus treatment condition. Specifically, the research questions to be answered by the second study are the following:

1) Is the stress management programme based on cognitive behavioral therapy approaches efficacious in improving reported levels of burnout and compassion fatigue?

2) Will the programme be effective in improving individual psychosocial characteristics, such as social support and trait anger?

Chapter 2

Literature Review

In this chapter, there will be a review of the literature from theoretical and empirical papers in relation to burnout and compassion fatigue, as well as the intervention models or programmes that have been developed to address staff burnout within the human service sector. In addition, the relationships amongst psychological symptoms and physiological responses in relation to stress, burnout and compassion fatigue, will be briefly touched upon. Furthermore, there would be a quick review on the individual and job/organizational characteristics associated with workers' self-report on physical health and workers' intent on leaving the organization, focusing particularly on the contribution of burnout and compassion fatigue factors to self-reported workers' physical health and turnover intent.

Stress, burnout and compassion fatigue.

To date, the terms: stress, burnout and compassion fatigue, have appeared numerous times and often almost side by side. This is often the case in many reports and papers written on staff welfare and turnover in the human social services (e.g., Bacharach, Bamberger & Conley, 1991; Darr & Johns, 2008; Etzoin, 1984; Kyriacou, 1987; McManus, Keeling & Paice, 2004). However, one author's "stress" can be different from another author's stress. For example, Bacharach et al (1991) were looking specifically at stressors related to a worker's role (e.g., as a wife, officer, etc.), while McManus et al (2004) operationalized stress as the

symptoms measured by the General Health Questionnaire (Goldberg, 1972).

Indeed, as Baum (1990) had wisely pointed out: stress, as a construct, had been widely studied by researchers and commonly accepted, in a taken for granted manner, by the community at large. Yet, it is hard to clearly define due to its almost ubiquitous symptoms and effects observed in the human mind and body. Baum (1990) believed that a great part of the challenge lay in the probalistic nature of stress: "depending in part on the characteristics of threats, challenges, or danger and in part on the cognitive, behavioural, and emotional factors associated with one's experience of these events" (p. 672). It is not the intent of this dissertation to examine the construct of stress in detail nor to review all the various important theoretical models and research studies (e.g., Folkman, 1984; Selye, 1955) that have greatly expanded our understanding of stress. For the purpose of this current series of studies, stress is conceptualized as a negative experience in response to perceived harm, threat or demand, resulting in emotional, physiological and behavioural changes that are associated with the process of accommodating or adapting to the perceived harm, threat or demand (see Baum, 1990 and Taylor, 2006).

Burnout, as a term or syndrome, is not new. The term burnout is widely recognized to be coined by clinical psychologist, Herbert Freudenberger (1974, 1975), to refer to both physical and emotional

11

exhaustion, resulting from unrealistic and excessive demands that were placed on individuals, either by themselves or others (Barford & Whelton, 2010; Decker, Bailey & Westergaard, 2002; Seti, 2008). Since then, there have been many different definitions of burnout (Seti, 2008). Amongst these definitions, the most widely used definition came from Maslach who was amongst the pioneering psychologists studying this phenomenon. She defined burnout as a "syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people-work' of some kind" (Maslach, 2003, p. 2).

In Maslach's opinion, burnout can be considered as "a type of job stress" specially faced by any individuals whose jobs involved dealing extensively with other people – in particular, people with problems (Maslach, 2003). According to Maslach, the *emotional exhaustion* component represented the "basic individual stress dimension of burnout" (Maslach, Schaufeli & Leiter, 2001, p. 399), which was related to feelings of being overextended, as well as emotional and physical exhaustion. The *depersonalization* component was more closely linked to the interpersonal context of burnout – referring to having "a negative, callous, or excessively detached response to various aspects of the job" (Maslach et al, 2001, p. 399). Lastly, the component of reduced *personal accomplishment* was the self-evaluation dimension, referring to "feelings of incompetence and a lack of achievement and productivity at work" (Maslach et al, 2001, p. 399). Hence, to Maslach, burnout can be

12

experienced by "anyone in a position of providing extensive care for another person" (Maslach, 2003, foreword). That is, a spouse caring for a dementia patient, is equally at risk of developing burnout, as the human service workers and their other "people-work" counterparts (e.g., police officers, nurses, teachers, reception counter staff, home caregivers, etc.).

While Maslach did not explicitly state that the three components of burnout (as defined by her) are part of a stage model of the development of burnout, there was an implicit order in which the components were expounded. In Maslach's view (2003), emotion overload from "people-work", if not regulated, will lead to emotional exhaustion. As *emotional exhaustion* sets in, the affected human service worker will start to adopt a more detached response style towards his/her clients. However, while detachment can somewhat "shield" the individual from the emotional strain of close involvement with his/her clients, it may then lead to the development of a relatively cold and callous disregard of another human being's suffering. This is the point when depersonalisation develops. As time goes on, the human service worker who has been experiencing *emotional exhaustion* and *depersonalisation*, will experience a double whammy – he/she will start experiencing guilt about his/her relatively cold and detached response to his/her clients as it is opposite of his/her original intent. This is when the individual will experience reduced *personal accomplishment*.

On the other hand, Figley had noted in the context of the family being an important part of treatment for trauma victims: "… for loving, supportive families that those who are most effective in abating this emotional stress are also more susceptible to being traumatized themselves in the process." (p. 286, Figley, 1985). Indeed, Figley had initially called compassion fatigue a form of burnout (Figley, 1983), although he later contrasted burnout and compassion fatigue in another paper (Figley, 1995). Compassion fatigue, also called secondary traumatic stress, is described by Figley (1995) as the behaviours and emotions that followed from knowing about a traumatizing event experienced by a significant other, and developing stress responses from helping or wanting to help the traumatized suffering person. According to Figley (1995), compassion fatigue shares the same symptomalogy as post traumatic stress disorder. When helping professionals hear emotionally intense or graphically shocking accounts from victims of trauma, or when they have to directly deal with destabilized victims of trauma, they are at risk of being traumatized in the process, developing compassion fatigue.

In Figley's (1995) opinion, burnout develops gradually as a result of emotional exhaustion from work demands, whereas compassion fatigue, otherwise known as secondary trauma stress, can develop suddenly, with a quicker onset of symptoms, from exposure to another's traumatic suffering. Furthermore, Figley (1995) noted that in compassion fatigue, in contrast to burnout, "there is a sense of

14

helplessness and confusion, and a sense of isolation from supporters; the symptoms are often disconnected from real causes, and yet there is a faster recovery rate." (Figley, 1995, p. 12). That burnout and compassion fatigue are independent constructs seems to be borne out by empirical studies. For example, Conrad and Kellar-Guenther (2006), in their study of 363 child protection officers, found that officers who reported high levels of compassion fatigue had low reported levels of burnout. In another earlier study of 148 female psychologists and counsellors working with sexual violence survivors, Schauben and Frazier (1995) found that negative affect and burnout (as measured by MBI-HSS) were not associated with vicarious trauma, which is conceptually close to compassion fatigue, although strictly speaking, with a different focus (Pearlman & Saakvitne, 1995).

Hence while burnout and compassion fatigue are different from each other, they are, to a large extent, special cases of stress. Recall that stress is a negative experience in response to perceived harm and threat (for example, from hearing traumatic experiences in compassion fatigue) or demand (for example, from increased workload or chronic challenges with interpersonal relationships in burnout), which results in emotional, physiological and behavioural symptoms that can either be adaptive or maladaptive. Attention will be turned to these various emotional, physiological and behavioural symptoms and consequent sequelae associated with burnout and compassion fatigue. At the same time, there will be a review of the literature on what are the likely causes

and who are likely to be vulnerable to burnout and/or compassion fatigue.

Burnout: Symptoms, causes and effects.

"The burned-out provider is prone to health problems, psychological impairment, loss of self-esteem, and a growing dissatisaction with the job….It can hurt the recipients who receive less good service and are treated in a more dehumanized manner. It can hurt the institution, which gets less than optimal performance from its employees and has to struggle with the disruptive problems of absenteeism and high turnover. It can hurt the caregiver's family, who experience more domestic strife and find an emotional gulf between them." (Maslach, 2003, p.123).

Maslach's conceptualization of the three components of burnout, as measured by the Maslach Burnout Inventory (MBI, e.g. Maslach & Jackson, 1981): emotional exhaustion, depersonalization and personal accomplishment, and their implied order of development have been widely debated. Different researchers have different viewpoints on how related these three components are. Some researchers view emotional exhaustion as the central component of burnout (e.g., Purvanova & Muros, 2010) and that the other two components are factors associated with emotional exhaustion (e.g., Drake & Yadama, 1996; Koeske & Koeske, 1989). For example, from the analyses of their data collected from a series of five studies, Koeske and Koeske (1989) suggested that

emotional exhaustion was the key component linked to outcomes, such as, intention to leave, while psychometrically, depersonalization was the weakest of the three components requiring further development. A more interesting finding from moderated regression was that personal accomplishment could be the moderator of the relationship between emotional exhaustion and intention to quit. Yet other researchers did not think personal accomplishment ought to be part of burnout (e.g., Leiter, 1993). As Siebert (2006) sagely pointed out, while there is disagreement on the components of burnout, there seemed to be a common conception that burnout is a process "which occurred as a result of gradual exposure to job stress and/or strain" (p. 26).

At this point of the literature review, the researcher would like to highlight that the current studies were not designed to examine whether burnout is a process. The MBI was developed to measure the frequency and intensity of respondents' experience of symptoms from each of these components, and hence, an appropriate instrument to be used for estimating the prevalence of the burnout symptoms among Singaporean human service workers, and to explore variables associated with the phenomena of burnout.

In the frontline, amongst the different helping professionals, burnout is often the first to come to mind whenever a co-worker complains about feeling under the weather, stressed or tired. Burnout symptoms are varied and can be physical or/and emotional in nature: for

17

example, recurring bouts of influenza, gastrointestinal problems, headaches/migraines, insomnia, poor self esteem, withdrawal behaviour, interpersonal relationship difficulties, rigid adherence to rules, poor concentration, impatience and low tolerance towards clients to the extent of blaming them for their problems (Levin & Decker, 2008; Seti, 2008).

In 1978, Pines and Maslach observed that health care workers in San Francisco often had significant levels of burnout, which were often associated with low morale, being absent from work, and high job turnover. In an oft-cited literature review, Kahill (1988) summarized the various symptoms of burnout into five main categories:

1) Physical symptoms: for example, fatigue, sleep problems, somatic problems, gastrointestinal problems, colds/flu;

2) Emotional symptoms: for example, irritability, depression, anxiety, guilt;

3) Behavioural symptoms: for example, aggression, callousness, substance use;

4) Work-related attitudinal symptoms: for example, leaving the organization, poor work performance, being absent from work without good reason;

5) Interpersonal symptoms: for example, poor concentration/focus, withdrawal from clients or colleagues.

However, as pointed out by Savicki (2002), "there is no set of indisputable signs that apply to all people under all circumstances" (p. 12). For this reason, as Savicki (2002) noted and Maslach (2003) pointed out, it would be more fruitful to look at the developmental process of burnout and for empirical clues on what could be done to prevent burnout. In particular, Maslach (2003) noted that when burnout occurred, individuals tended to blame themselves or others for causing it – the *who*, rather than looking at the broader situation: *what* is causing the burnout? For example: is it the the work task, work environment, or the work rules? She further concluded from her research findings that while personality played a part, burnout would still be "best understood (and modified) in terms of situational sources of job-related, interpersonal stress" (p. 14).

There were a number of studies looking at personal characteristics and burnout. For example, age and years of experience were often studied, with mixed results. In a mailed survey study with 139 female masters level social workers, from the Texas chapter of the National Association of Social Workers, Corcoran (1987) found that age and years of experience were correlated with burnout. That is, younger and less experienced respondents reported higher levels of burnout on the MBI. However, Corcoran's results also indicated that burnout was due to negative impressions of clients, rather than the social workers' age or years of experience. Yet in another study of 316 teachers from Iowa, Russell and colleagues (Russell, Altmaier, & Van Velzen, 1987)

found that amongst the various teacher characteristics studied, only age was significantly related to burnout. However, this relationship only accounted for 6% of the variance in the burnout scores. In a more recent study, Siebert (2006) found a negative weak correlation between age of his social worker respondents from North Carolina (N=751) and burnout scores.

Gender and marital status have also been studied in relation to burnout. In general, the literature on gender differences in burnout has produced mixed results. In an attempt to address this issue, Purvanova and Muros (2010) did a meta-analysis of 183 studies. Their results did not support the common belief that women tended to experience more burnout. Instead, a more nuanced relationship was discovered: women were slightly more emotionally exhausted than men (δ= .10), and men were more depersonalized than women (δ= -.19). More interestingly, when they compared the gender differences across three regions, United States, Australia, and European Union, they found that the gender differences were smallest when the region had more "progressive" labour policies, such as, longer maternity leave and shorter work hours. That is, in the European Union, where labour policies are generally believed to be more progressive, the gender difference was significantly smaller than the United States. In their review on job burnout, Maslach and her colleagues shared their observation that unmarried males tended to experience more burnout than their married male or female counterparts (Maslach, Schaufeli &

Leiter, 2001). They also noted that singles experienced higher burnout than individuals who were divorced. In his study of North Carolina social workers, Siebert (2006) also similarly found that married social workers experienced significantly lower burnout when compared to single social workers.

There has also been some research that looked at burnout in relation to personality characteristics and coping/learning styles. In a longitudinal study of medical students who then went on to qualify as doctors in the United Kingdom, McManus and colleagues found that doctors with high neuroticism scores were more likely to be emotionally exhausted at the end of the 12-year study period (McManus, Keeling & Paice, 2004). Moreover, using the Approaches to Work Questionnaire (Kirby, Delva, Knapper & Fleming, 2003), McManus and colleagues (2004) found that doctors who adopted a surface-disorganized approach, that is, having a cursory understanding of tasks without being sure what was needed to complete the task and having difficulty organizing time effectively, tended to experience higher levels of emotional exhaustion as well. In another study, Brondolo and associates (Brondolo et al., 2002) found that trait anger in New York city traffic enforcement agents, as measured by the Spielberger Trait and Anger Expression Inventory, (STAXI; Spielberger, Krassner, & Solomon, 1988) was positively correlated to the frequency of burnout and was positively associated with an increase in burnout over a four-month period. On the other hand, having a sense of personal meaning from one's job in child

21

and youth care workers was found to be an ameliorative factor for burnout (Savicki, 2002). In addition, Anderson (2000) found that child protection workers from southeastern United States, who used active coping strategies, were less likely to feel depersonalized, and more likely to feel a sense of personal accomplishment. Similarly, Jenaro, Flores and Arias (2007) found in their sample of 211 Spanish child protection workers and in-home caregivers (residential staff), that personal accomplishment was positively correlated to problem-focused coping strategies, such as, positive reinterpretation and focusing efforts on solving the problem situation.

Social support is an often studied variable as well. In a study on 211 traffic enforcement agents in New York, Baruch-Feldman and her colleagues found that different types of support had different influences (Baruch-Feldman, Brondolo, Ben-Dayan, & Schwartz, 2002). They found that support from family was negatively associated with burnout and positively associated with job satisfaction. On the other hand, immediate supervisor support was more significantly related to job satisfaction and work productivity in a positive direction, but not to burnout. In a meta-analytical study of 114 published studies representing 122 uniques samples, Halbesleben (2006) found that work sources of social support were more strongly and negatively related to exhaustion whereas nonwork sources of social support were more strongly related to depersonalization in a negative direction and personal accomplishment in a positive direction. Interestingly, in a study on 323

Direct Care Workers for adults with developmental disabilities, in a large American city, by Gray-Stanley and Muramatsu (2011), it was found that whether work social support made a difference on burnout was dependent on the types of work stressors.

Although there have been much research done on the inter-relationships amongst personal characteristics and the burnout components, there is general belief and empirical evidence to indicate that work characteristics and organizational factors are more important in contributing to workers' burnout (e.g., Cordes & Dougherty, 1993; Maslach et al., 2001; Siebert, 2006). Some of the organizational or work characteristics that had been found to contribute to burnout include long working hours, heavy caseloads, large amounts of administrative paperwork, too much over-time work, and lack of supervision and training (Decker et al., 2002; NCCD, 2006). In their review of earlier empirical studies on burnout in social work, Soderfeldt, Soderfeldt and Warg (1995) also listed the following work/organizational factors that positively associated with burnout: low work autonomy, lack of challenge on the job, role ambiguity, working in the public sector, low professional self-esteem, low salary, dissatisfaction with agency goals and difficulties in providing services to clients. In another survey in New York city, in addition to the severity of AIDS as a disease, professionals working with HIV/AIDS patients also indicated other stressors related to the organization of work: lack of funding, personnel shortages, high worker turnover rates, lack of linkages to other work units, attitudes of other

health professionals, and working in a bureaucratic environment (Cushman, Evans & Namerow, 1995).

Yet others have found that pressure to achieve work targets – be it speed in discharging or achieving numbers, to be a powerful predictor of overall stress (Collings & Murray, 1996; Kadushin & Kulys, 1995). Another significant source of work stress for human service workers is dealing with clients' challenging behaviours like self-harm and violent behaviours.   There is evidence that suggests that workers who are exposed to challenging behaviours at a higher frequency and intensity, tend to be at risk for stress, burnout , and mental health problems (Rose, Homes, Rose & Hastings, 2004).

To summarize, burnout is not as clearly defined a construct as we would like it to be. While this researcher and many others have adopted Maslach's model where burnout is conceptualized as consisting of three components: emotional exhaustion, depersonalization and personal accomplishment, there is still debate on whether emotional exhaustion ought to be the central construct with the other two components as moderators or outcomes. Perhaps, the most useful way to think about burnout and Maslach's model is to think of burnout as a process – a point made by Maslach (2003) and Siebert (2006). Research has also shown time and time again that burnout is a complex process – in both its causes and effects, not to mention its presentation in different individuals. Thus far, there has been empirical evidence to indicate at

least a dozen variables having association with at least one of the components of burnout . Out of these variables, more attention has been given to work and organizational factors, as Maslach (2003) pointed out, these are the areas where there are more possibilities for change. Nonetheless, as Siebert (2006) pointed out, personal characteristics associated with burnout are still worth taking note of and will advise plans in preventing or intervening for burnout. As highlighted in earlier sections, it was not the aim of the current studies to examine whether burnout was a process or not, and which components of burnout was/were most salient. However, insofar that the current study intended to explore the various variables associated with the burnout phenomena amongst Singapore human service workers, it would be useful to bear in mind that there are complex processes at play.

Compassion fatigue: Symptoms, causes and effects.

"The very act of being compassionate and empathic extracts a cost under most circumstances. In our effort to view the world from the perspective of the suffering we suffer. The meaning of compassion is to bear suffering. Compassion fatigue, like any other kind of fatigue, reduces our capacity or our interest in bearing the suffering of others." (Figley, 2002, p. 1434).

In the earlier section, it was noted that burnout is not as clearly defined a construct as it appeared to be. Similarly, there has been much debate regarding compassion fatigue as a construct, a situation that was

complicated with compassion fatigue being used interchangeably with secondary traumatic stress/ secondary trauma and vicarious traumatization. As suggested by the quotation from Figley in the previous paragraph, compassion fatigue is "simply" being drained from too much caring. Figley further defined compassion fatigue as "a state of tension and preoccupation with the traumarized patients by re-experiencing the traumatic events, avoidance/numbing of reminders persistent arousal (e.g., anxiety) associated with the patient" (2002, p. 1435). At the same time, Figley had defined secondary traumatic stress as "the natural consequent behaviours and emotions resulting from knowing about a traumatizing event experienced by a significant other – the stress resulting from helping or wanting to help a traumatized or suffering person" (Figley, 1993, as cited in Figley, 1995, p. 7). In Figley's (1995) opinion, compassion fatigue and secondary traumatic stress can be used interchangeably as they are both describing more or less the same phenomena observed amongst professionals working with trauma victims. Furthermore, Figley (1995) opined that compassion fatigue was the less stigmatizing term of the two.

However, McCann and Pearlman (1990) had also coined the term vicarious traumatization to describe the change in cognitive schemas and belief systems of trauma workers, as a result from long-term exposure and empathic engagement with trauma survivors. The three terms: compassion fatigue, vicarious traumatization and secondary traumatic stress, have been used somewhat interchangeably. Although

26

there is still debate, and in particular, Pearlman and Saakvitne (1995) had opined that vicarious traumatization might overlap with compassion fatigue, the two concepts differ in focus and emphasis. Jenkins and Baird (2002) elaborated on the differences: 1) focus on symptomatology in secondary trauma versus theory in vicarious traumatization, 2) nature of symptoms (observable reactions in secondary trauma versus more covert changes in thinking in vicarious traumatization); 3) relevant populations (combat veterans and sexual assault survivors for secondary trauma versus mental health professionals working with sexual abuse survivors for vicarious traumatization), and 4) critical amount of exposure to trauma survivors (one severe exposure can lead to secondary trauma versus cumulative exposure to trauma clients over time for vicarious traumatization).

However, Craig and Sprang (2010) pointed out that there has been no definitive data to suggest that these constructs are conceptually distinct and independent. For example, in a study on convergent and discriminant validity of a vicarious trauma measure with a sample of 185 masters level social work students from the National Assocation of Social Workers in the United States, there was significant overlap of the vicarious trauma measure scores with Maslach's burnout scores, suggesting that vicarious trauma may not be a clearly distinct construct (Adams, Matto & Harrington, 2001). In another study by Jenkins and Baird (2002) with a sample of 99 American counsellors from sexual assault or domestic violence agencies, the correlation between

compassion fatigue, as measured by the Compassion Fatigue Self-Test for Psychotherapists (CFST, Figley, 1995), and vicarious trauma, as measured by the TSI Belief Scale, Revision L (TSI-BSL, Pearlman, 1996), was significant. Furthermore, the magnitude of the correlation was larger than expected. As the jury is still out, and there are studies to reflect similarities, this author agrees with Craig and Sprang (2010) that perhaps it is better to consider the empirical research on compassion fatigue, secondary traumatic stress or vicarious traumatization when reviewing the literature on the symptoms and factors related to compassion fatigue.

Essentially, the symptoms of compassion fatigue or secondary trauma are nearly identical to Post Traumatic Stress Disorder (Bride, 2007; Figley, 1995): for example, increased startle response, depressed mood, anxiety, intrusive thoughts and memories, avoidance behaviours ,etc., except that the symptoms are all associated with the exposure of the human social service worker to another person's traumatic event. In his study on the prevalence of secondary traumatic stress in a sample of 282 master's-level social workers in southern United States, Bride (2007) found that the most frequently reported symptom (40.5% of respondents) was intrusive thoughts related to work with clients. Other often reported symptoms were avoidance of clients (31.6%), irritability (27.7%), concentration difficulties (27%), emotional numbing (25.9%), diminished interest in activities (25.5%), and sleeping difficulties (24.4%). Using the Secondary Traumatic Stress Scale (Bride,

Robinson, Yegidis, & Figley, 2004), which closely followed the Post Traumatic Stress Disorder (PTSD) criteria B, C and D in the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV, American Psychiatric Association, 1994), 55% of the 282 social workers in Bride's study met at least one diagnostic criterion for PTSD, 20% of the sample met two criteria, and 15.2% of the sample met all three core diagnostic criteria for PTSD. In Bride's (2007) study, 81.7% of his sample reported a client population that experienced moderate to very severe trauma, and 86.7% of his samples' clients reported fear, helplessness or horror toward their traumatic experiences.

In addition, Figley (1995) also suggested that cognitive shifts (e.g., from more optimistic and positive views of the world to more pessimistic views) and relational disturbances are also part of the symptomalogy of compassion fatigue, which, as noted in earlier sections, overlapped with vicarious traumatization. Schauben and Frazier (1995) surveyed a sample of 142 psychologists and counsellors working with sexual violence survivors from midwestern United States, using the TSI Belief Scale (Traumatic Stress Institute; Pearlman & Mac Ian, 1995), and a symptom checklist based on the PTSD criteria in DSM-III-R (American Psychiatric Association, 1987). Participants were also asked to rate on a Likert scale the extent to which they were experiencing vicarious trauma, as a result of exposure to their clients' traumatic experiences (for example, nightmares, heightened fear and increased feelings of vulnerability). Correlational analyses indicated that

psychologists and counsellors with higher percentages of sexual violence survivors as clients reported more disruptions in beliefs about the goodness of other people, more symptoms of PTSD and more vicarious trauma.

Thus there has been evidence indicating that human service workers working with trauma clients do develop symptoms that have been proposed to indicate compassion fatigue. The next questions will be how do these workers develop compassion fatigue and what are the predictors of developing compassion fatigue? Figley (1995, 2002a, 2002b) proposed a causal model consisting of eleven variables that was based on "the assumption that empathy and emotional energy are the driving force in effective working with the suffering in general ,establishing and maintaining an effectively therapeutic alliance, and delivering effective services including an empathic response" (2002b, p. 1436).

Figley proposed an etiological model of compassion fatigue, which eleven variables were thought to work together, forming a causal model that predicts compassion fatigue (Figley, 2002a, 2002b). The model is replicated in Figure 1.

Figure 1. Compassion Stress and Fatigue Model (reproduced from Figley, 2002b)
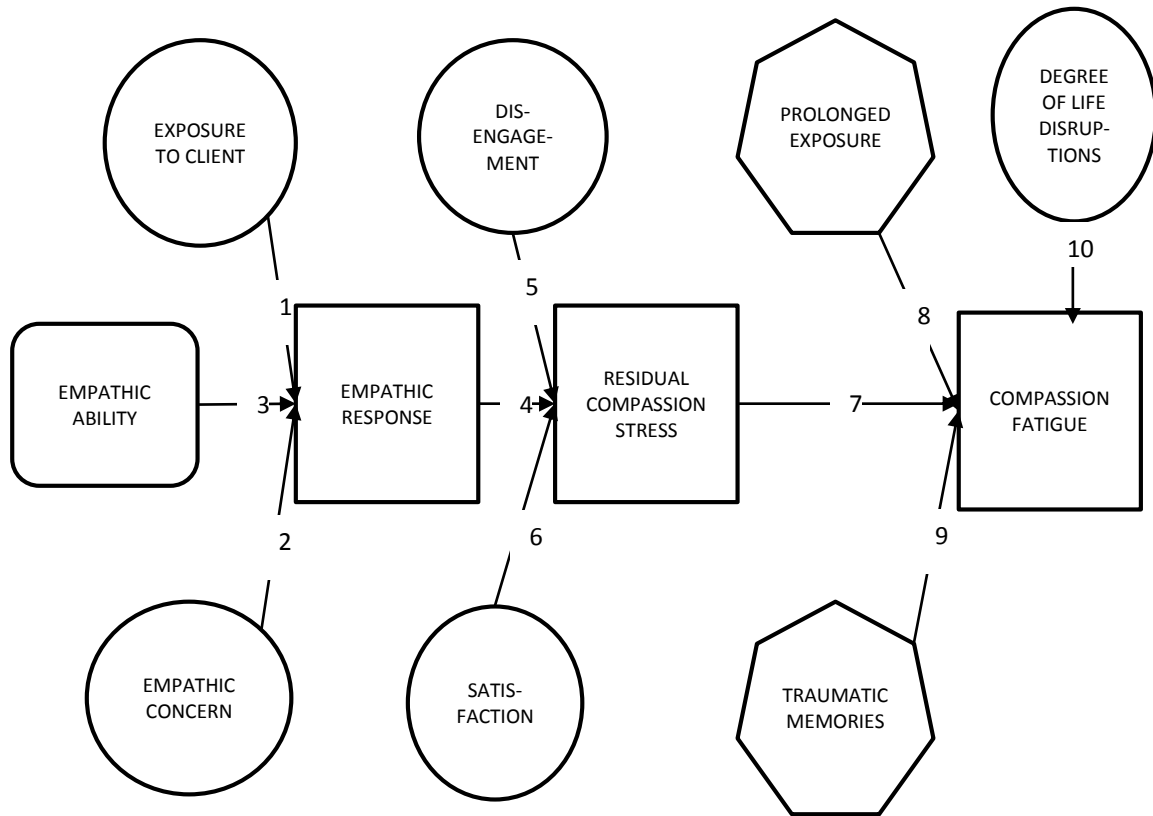
When a human service worker is exposed to the suffering client (Variable 1: Exposure to Client), his/her motivation is to respond to the client's need (Variable 2: Empathic Concern). He/she would not have been able to respond if he/she did not have the aptitude to notice the client's suffering in the first place (Variable 3: Empathic Ability). All these factors lead to an Empathic Response (Variable 4), which is the extent the human service worker tries to reduce the suffering of the client through empathic understanding. It is through this response that the

human service worker may experience the fear, hurt and other emotions experienced by the client.

The residue of the emotional energy and the on-going effort in relieving the client's suffering then contribute to the Compassion Stress, which can be lowered or prevented by the extent that the worker is satisfied with his/her efforts (Variable 5: Sense of Achievement) or whether the worker could "let go" after each interaction or session with the client of the thoughts and feelings associated with the encounter (Variable 6: Disengagement). If the human service worker's Compassion Stress (Variable 7) is not lowered or under control, and if there is a prolonged period of responsibility for the client's suffering (Variable 8: Prolonged Exposure), or/and traumatic memories that are triggered in the human service worker by the client's suffering, either from clients' or the worker's prior experiences (Variable 9: Traumatic Recollection), or/and an unexpected life event or stressor that disrupts the worker's routine and schedule (Variable 10: Life Disruption), then the human service worker is at risk of developing Compassion Fatigue (Variable 11).

Overall, there has been empirical evidence to support the various variables in Figley's theoretical model of causation from empirical studies conducted with different subpopulations of helping professionals, but no researcher has yet studied Figley's model as a whole, and there were also empirical findings that did not support the proposed variables.

For example, Baird and Kracen (2006) examined empirical findings of published research and dissertations written in English from 1994 to 2003, and found persuasive evidence for personal trauma history and reasonable evidence for perceived coping style as predictors of vicarious traumatization. In addition, they also found persuasive evidence for amount of exposure to trauma material and reasonable evidence for personal trauma history as predictors of secondary traumatic stress. Furthermore, Nelson-Gardell and Harris (2003) found that personal trauma history, in the form of child abuse and neglect, was positively associated with risk of secondary traumatic stress in child welfare workers from southeastern United States. Baird and Kracen (2006) had defined persuasive evidence as when the hypothesis was supported by a statistically significant finding in at least 3 studies published in peer-reviewed journals, or when there were significant findings in at least 5 studies from book chapters or dissertations. Reasonable evidence was when the hypothesis was supported by significant findings in at least 2 studies published in peer-reviewed journals, or in at least 3 or 4 studies from book chapters or dissertations. What was apparent from Baird and Kracen's (2006) paper was that there was also reasonable evidence to indicate that personal trauma history was not linked to the development of secondary traumatic stress, nor did amount of exposure to trauma material increase the likelihood of vicarious traumatization.

In a more recent study, Sprang, Clark and Whitt-Woosley (2007) surveyed a sample of 1,121 certified behavioural health providers, out of

a total of 5,752 practitioners licensed in a rural southern state in United States. These practitioners included psychologists, psychiatrists, social workers, marriage and family therapists, professional counsellors, as well as drug and alcohol counsellors.   Their findings indicated that female gender, young age, a higher educational degree, less clinical experience, and a higher percentage of clients with PTSD predicted higher levels of compassion fatigue (42% of variance) and burnout (69%), as measured by the Professional Quality of Life Scale (Stamm, 2002). These findings replicated the results from a few earlier studies. For example, Kassam-Adams (1999), and Meyers and Cornille (2002) concluded from their findings that females were more at risk of developing secondary traumatic stress and vicarious traumatization. However, there were also empirical findings that indicated that neither years of experience nor age were significantly correlated with the risk of secondary traumatic stress (Craig & Sprang, 2010; Nelson-Gardell & Harris, 2003).

The mixed findings were largely due to methodological limitations and differences in sample characteristics. For example, Nelson-Gardell and Harris (2003) had a convenience sample of 398 child protection officers, supervisors, managers and professionals from two southeastern states from the United States, who had attended a training programme on secondary traumatic stress. For the study conducted by Craig and Sprang (2010), a random sample of 532 clinical psychology or clinical social work practitioners were surveyed. Unlike earlier studies

conducted by Meyers and Cornille (2002) or Sprang and colleagues (2007), this sample had an older mean age of the participants. Furthermore, Craig and Sprang (2010) faced issues like moderate correlations and multicollinearity between age and years of experience, as they appeared to have participants who started their careers later and had less experience than younger participants.

Sprang and her associates (2007) also found that older age predicted compassion satisfaction, and more interestingly, specialized trauma training increased compassion satisfaction while reducing levels of compassion fatigue and burnout. This finding was similar to Ortlepp and Friedman (2002) who found that having a supportive work environment, adequate supervision and specialized training could protect against burnout and secondary traumatic stress. On the other hand, Kassam-Adams (1999), in her study on psychotherapists treating sexual trauma clients, found that availability of supervision and support were not related to the level of PTSD symptoms. However, compared to the two earlier reviewed studies (Ortlepp & Friedman, 2002; Sprang et al., 2007), Kassam-Adams' sample was relatively smaller, with 100 participants from central Virginia and central Maryland. The sample of psychotherapists might not have been representative, and the sample size might not have provided enough statistical power, which could explain the non-significant results. A few studies have also reported that longer work hours or assignment, and high caseloads of trauma patients, increased the incidence of secondary traumatic stress and compassion

fatigue (e.g., Meyers & Cornille, 2002; Regehr, Hemsworth, Leslie, Howe, & Chau, 2004).

A number of personal variables, such as personality traits and coping styles, were also found to be associated with compassion fatigue, secondary traumatic stress or vicarious traumatization. For example, in a survey of 355 genetic cousellors in Canada, those counsellors with low optimisim and external locus of control were at higher risk for compassion fatigue (Injeyan, Shuman, Shugar, Chitayat, Atenafu, & Kaiser, 2011). Self-reported emotional intelligence and emotion management, and adaptive coping were all found to be inversely associated with compassion fatigue in a sample of 182 health care professionals from Israel (Zeidner, Hadar, Matthews, & Roberts, 2013). In another study on the relationship between self care and compassion fatigue, burnout and compassion satisfaction amongst hospice professionals from the Midwest region in the United States, it was found that the higher level of compassion fatigue reported, the fewer self-care activities were reported (Alkema, Linton, & Davis, 2008). On the other hand, Regehr and her associates (2004) tested individual and organizational factors in a hypothesized model for predicting post traumatic stress in child welfare workers from Toronto, Canada. While they found that workers with a greater sense of control over their lives and who were better at having meaningful relationships with others reported lower levels of distress as measured by the Beck Depression Inventory (Beck & Beamesderfer, 1974) and Impact of Events Scale

(Zilberg, Weiss, & Horowitz, 1982), it was organizational factors, such as, ongoing stressors related to workload, difficult clients, organizational change and public scrutiny, that were the strongest predictors of distress.

While Figley's causal model on compassion fatigue makes clinical sense and appears plausible, the empirical evidence supporting the various proposed predictors has been mixed. This is due partly to the lack of clarity in compassion fatigue as a construct, the different instruments used to measure compassion fatigue or secondary traumatic stress, and much research focusing on establishing the symptoms and prevalence of compassion fatigue or secondary traumatic stress, instead of studying the hypothesized effects on the individual or organization (Elwood, Mott, Lohr, & Galovski, 2011; Sabine-Farrell & Turpin, 2003). Furthermore, Elwood et al. (2011) pointed out that the research on compassion fatigue and secondary trauma had only utilized basic statistical analyses – which limited the understanding and clarification of the etiology and course of secondary traumatic symptoms. Nonetheless, as concluded by Sabine-Farrell and Turpin (2003), there is at least evidence to indicate that for some of the workers and professionals studied, there were apparent and identifiable effects of trauma work that had impacted on their mental health and beliefs. Furthermore, as reviewed in the introduction section, compassion fatigue, together with burnout, are often thought to impact on workers' turnover rates in organizations. Hence, similar to the construct of

burnout, while there are still many questions surrounding the construct, process and mechanism, compassion fatigue cannot be overlooked when assessing workplace risks and in improving staff welfare and managing staff turnover rates.

The psychophysiology of burnout and compassion fatigue.

Earlier in this chapter, it was suggested that burnout and compassion fatigue could be considered special cases of stress resulting from work/interpersonal demands and from secondary trauma respectively. It follows then that many of the psychophysiological effects of stress found in empirical research will probably be found in those research studies of the psychophysiological effects of burnout or compassion fatigue. Hence, there will be a quick review of the psychophysiological pathways and effects of stress before the research on the psychophysiological effects from burnout and compassion fatigue is reviewed.

Much of the relationship between stress and health has been learnt through the many empirical studies in the fields of health psychology and psychoneuroimmunology. As pointed out by Miller and his colleagues, what used to be thought of as speculative hypotheses have been more widely accepted as empirically supported findings that psychosocial risk factors, such as stress, depression, hostility and social isolation, lead to the development of poorer immunity and diseases like cardiovascular problems (Miller, Chen, & Cole, 2009). Stress is a

response to perceived harm, threat or demand, which usually results in emotional, physiological and behavioural changes. More specifically, stress-inducing events are believed to impact on our physical health by causing negative emotions (e.g., fear, anxiety, depression), which in turn trigger physiological responses within our immune system and other biological processes, or influence our health behaviours (e.g., less exercise, more binge eating) that can increase our risk of developing poor health (Cohen, Janicki-Deverts, & Miller, 2007).

Stress increases the activation of the hypothalamic-pituitary-adrenal (HPA) pathway, as well as sympathetic activation through negative emotions (Cohen et al., 2007). Chronic HPA activation, which occurs in depressed individuals (e.g., Ehlert, Gaab, & Henrich, 2001), increases levels of glucocorticoids which can contribute to central obesity, insulin resistance, hypertension, and hyperlipedemia, which in turn contributes to cardiovascular disease (Carney, Freedland, & Veith, 2005). Chronic sympathetic activation, which occurs in depression (Matthews, Owen, Kuller, Sutton-Tyrrell, Lassila, & Wolfson, 1998) and hostility (Suarez, Kuhn, Schanberg, Williams, & Zimmermann, 1998), decreases the ability for parasympathetic relaxation of arousal, increases cardiovascular workload, increases hemodynamic stresses (Curtis & O'Keefe, 2002), which can decrease heart rate variability (Frasure-Smith, Lesperance, & Talajic, 1995) and increase risk for fatal arrhythmic events (e.g., Carney, Freedland, Rich, Smith, & Jaffe, 1993). Furthermore, chronic HPA activation and chronic sympathetic activation

not only interfere with the cardiovascular system, but also the pulmonary, hepatic, musculo-skeletal, and immune systems (Cohen et al., 2007), via mechanisms like increased inflammatory responses (e.g., Kiecolt-Glaser, Preacher, MacCallum, Atkinson, Malarkey, & Glaser, 2003) and less effective autoimmune responses (e.g., Glaser, Rice, Speicher, Stout, & Kiecolt-Glaser, 1986). It also does not help that when stressed, individuals may choose behaviours like smoking or binge eating, which further tax their vital organs and increase risks to their psychological and physical health.

Maslach and her colleagues (Maslach, Schaufeli & Leiter, 2001) noted that the exhaustion component of burnout had the most validity in predicting stress-related health outcomes and the reported physiological correlates were similar to those found in studies on chronic stress. Indeed, in the literature on burnout, there is evidence on how burnout can affect physical health (Kim, Ji, & Kao, 2011). For example, Grossi and his colleagues (Grossi, Perski, Evengard, Blomkvist, & Orth-Gomer, 2003) found that amongst Swedish women, those with high emotional exhaustion were found to report more physical fatigue and mental health symptoms, such as depression and anxiety. These same women also tended to exhibit more enhanced inflammatory responses and oxidative stress than other women who reported lower burnout levels. In addition, personal accomplishment has also been found to be positively correlated to immunity with high scores related to higher numbers of lymphocytes (Bargellini, Barbieri, Rovesti, Vivoli, Roncaglia, & Borella,

2000) while low scores were associated with lower natural killer cell activity (Nakamura, Nagase, Yoshida, & Ogino, 1999).

Similar to psychophysiological research on stress, burnout has been associated with the development of cardiovascular diseases. In their comprehensive review, Melamed and associates (Melamed, Shirom, Toker, Berliner, & Shapira, 2006) presented empirical findings that supported several mechanisms linking burnout with poor health, in particular, to cardiovascular disease. These mechanisms were essentially similar to those established or hypothesized in the stress pathways to poor health: dysregulation of HPA and sympathetic nervous system activation, metabolic syndrome, inflammation, sleep disturbances and poor health behaviours.

In a longitudinal study on Finnish workers spanning ten years, Toppinen-Tanner and her colleagues (Toppinen-Tanner, Ahola, Koskinen, & Väänänen, 2009) found that emotional exhaustion and cynicism, as measured by the MBI General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996), were predictive of hospitalization due to cardiovascular disorders. In another longitudinal study in Japan, middle managers with burnout were found to have significantly greater increases in waist circumference, body weight and Body Mass Index, when compared to their peers without burnout, over an approximately five-year period (Kitaoka-Higashiguchi et al., 2009). Moreover, the

Japanese researchers found that the odds ratio of the burnout group to develop hypercholesterolemia was 2.80 after controlling for age.

Grossi and associates (Grossi, Thomten, Fandiño-Losada, Soares, & Sundin, 2009) studied 2,300 women living in the Stockholm County and their result indicated that burnout (as measured by Shirom-Melamed Burnout Measure; Melamed, Kushnir & Shirom, 1992) contributed significantly to the onset and perpetuation of musculoskeletal pain, as well as the functional impairment that the musculoskeletal pain caused. In another study with a Dutch worker sample of 12,140 participants, it was found that burnout was significantly associated with common cold, flu-like symptoms and stomach flu (Mohren, Swaen, Kant, van Amelsvoort, Borm, & Galama, 2003). Yet another study on burnout and insomnia found that despite controlling for depression and other possible confounds, and in a largely healthy sample of Israeli workers, burnout and insomnia were significantly correlated with each other (Armon, 2009). Furthermore, in an earlier study by Toppinen-Tanner and her associates on Finnish forestry workers, it was found that severe burnout significantly predicted future medically certified sick leave for mental, cardiovascular, musculoskeletal and respiratory disorders (Toppinen-Tanner, Ojajärvi, Väänaänen, Kalimo, & Jäppinen, 2005).

Unfortunately, there were not many published studies on the impact of burnout on workers' health. Hence, the varied occupations

42

and countries of origin in the few studies reviewed thus far. However, one can argue that humans, regardless of their ethnicity, culture or locale, will have the same physiological responses. Similarly, while the jobs are different, the many job stressors faced by different occupations would be more or less similar, albeit in differing amounts and combinations. Moreover, most of the studies reviewed have used at least a version of Maslach Burnout Inventory, and there are enough central characteristics in the burnout construct to allow generalization of research findings across different occupations. A recent study done by Kim and his associates (Kim, Ji & Kao, 2011) provided some evidence that were similar to earlier studies on other worker populations. In a longitudinal study, they found burnout significantly affected the physical health of the social workers they had surveyed. That is, higher levels of burnout led to more physical health problems one year after the initial assessment, and workers who reported higher levels of burnout experienced greater decline in overall physical health within a year.

While there has been much literature and research on the prevalence of compassion fatigue and its associated symptoms, there has been a relative lack of psychophysiological studies that directly looked into the physical health impact of compassion fatigue, or secondary trauma and vicarious traumatization. This was understandable as the symptoms of compassion fatigue are widely believed and accepted as similar to posttraumatic stress disorder (e.g., Figley, 1995).

In a longitudinal study of Vietnam War veterans from the United States, Boscarino (1997) found that having a diagnosis of PTSD significantly increased the risk for reported medically diagnosed chronic disorders, such as, cardiovascular disease, digestive problems, musculoskeletal pain, endocrine problems, respiratory problems and infections. Boscarino and Chang (1999) then went on to find, in the same sample, that chronic PTSD was significantly correlated with cardiovascular disease symptoms: positive electrocardiogram (ECG) findings, atrioventricular conduction defects and occurrence of heart attacks. These results suggest that the physiological pathways of trauma influencing physical health are similar to the mechanisms of how stress and burnout affect physical health. Indeed, in a quantitative meta-analysis done by Pole (2007), PTSD was found to be related to higher resting heart rate, as well as larger heart rate responses to standardized trauma cues, startling sounds and idiographic trauma cues. In addition, for studies that looked at resting baselines, it was found that the effect sizes for systolic blood pressure (SBP) and diastolic blood pressure (DBP) were correlated. However, the effect sizes for DBP were larger, suggesting that a symptom of trauma would be a slower psychophysiological recovery.

To the author's knowledge, there has not yet to be any empirical study that examined the association between compassion fatigue and sick leave taken. In a study of Norwegian oil rig workers who were in an

oil rig collapse versus workers who were not in the collapse, Holen (1991) found that although there were no significant differences between the two groups prior to the trauma event. The group that experienced the incident had twice as many episodes of sick leave and had longer periods of sick leave, compared to the control group, suggesting that stress from experiencing a traumatic event would impact on general health. Moreover, in a review on psychological trauma faced by emergency mental health practitioners, Flannery (1999) observed that untreated trauma and PTSD in these professionals might result in increased sick leave. Extrapolating from these findings and the notion that compassion fatigue/secondary trauma is similar to stress and trauma in its symptoms and effects, it is likely that compassion fatigue will be positive correlated with increased number of days of sick leave.

To summarize, while there has been relative little research done on the impact that compassion fatigue or secondary trauma and burnout have on the physical health of human service workers, research on the psychophysiological effects of stress has indicated a number of pathways, via the HPA axis, sympathetic nervous system activation and health behaviours, on how stress can have a direct negative impact on physical health. While many of the health impact studies on burnout were not done with the human service workers, the results have shown similar patterns across different occupations, as well as similar patterns to those studies on stress and physical health. Similarly, studies that looked at traumatic symptoms and physical health had similar patterns

45

of findings as the studies on stress and health, and since secondary trauma or compassion fatigue is supposed to share many similar symptoms as post-traumatic stress disorder, the results can probably be generalized to the current study population.

Turnover in human social services.

As described in the previous chapter, high staff turnover in social services is costly and has negative impact on service quality and outcomes for clients seen at these services. For example, in a report on child welfare agencies in Milwaukee, high turnover in human social service workers was associated with delay in successful placement of children on permanency plans (Flower, McDonald & Sumski, 2005).

In the preceding section, it was shown that burnout and compassion fatigue could lead to negative impact on physical health of human social service workers. There were relatively few recent studies looking specifically on the impact of poor physical health on turnover motivation or intent to leave in human social service workers, or the costs to an organization due to its workers' physical health (or lack of). It was widely believed that poor physical health contributed to employee absence and to the cost burden due to loss of worker productivity (e.g., Goetzel, Long, Ozminkowski, Hawkins, Wang, & Lynch, 2004). Furthermore, in earlier studies, such as the one conducted by Kemery and colleagues (Kemery, Mossholder, & Bedeian, 1987) on staff from a southeastern American university, indicated that self-reports of physical

health directly influenced turnover intentions. That is, the more physical health symptoms were reported by a respondent, the shorter time the respondent expected a person to stay on the job at the university. In a more recent study of 179 women returning to work in North Carolina after childbirth (Carlson, Gryzwacz, Ferguson, Hunter, Clinch, & Arcury, 2011), good physical and mental health, as measured by SF-12 Physical and Mental Health Summary Scales (SF12; Ware, Kosinski, & Keller, 1996), were negatively correlated with voluntary turnover. That is, when the researchers asked these women, 12 months after they had returned to work, whether they had changed jobs, women who reported poorer physical and mental health tended to report that they had changed jobs.

In addition to physical health, a number of antecedents to staff turnover in human social services were found in past empirical studies. However, there has not been any unifying model that can explain turnover among human social service workers (Mor Barak, Nissly, & Levin, 2001). Furthermore, strictly speaking, many past studies did not measure actual staff turnover, but rather the intent to quit (i.e. turnover intent), which has been shown to be the single strongest predictor of actual turnover (e.g., Hendrix, Robbins, Miller, & Summers, 1999; Mor Barak et al., 2001).

In a meta-analysis of 25 empirical studies published between 1980 and 2000 on the antecedents of intention to leave and turnover among human social service workers, it was found that demographic

variables (e.g., age, number of years of experience, locus of control), professional perceptions (e.g., burnout, job satisfaction), organization conditions (e.g., job stress, supervisor support) were all statistically significant predictors of intention to leave and turnover (Mor Barak et al., 2001). However, while it was statistically significant, the demographic factors category had a relatively weaker relationship to intention to leave and turnover, when compared to the other two categories of variables. Amongst the categories of professional perceptions and organization conditions, organizational and professional commitment, burnout and job satisfaction, were found to be the better predictors of intention to leave and turnover. Furthermore, social support, which included coworker support and supervisor support, were found to have a significant impact on intention to leave and turnover. Specifically, the more social support reported by workers, the less likely they intended to leave. Interestingly, in another prospective study comparing child welfare workers who stayed in service and who chose to leave service, the main finding was that the "stayers" reported more guidance received from their supervisors and they were more attached to their supervisors (Yankeelov, Barbee, Sullivan, & Antle, 2009). Amongst the different variables associated with intention to leave and turnover, burnout, especially as measured by the emotional exhaustion subscale on the MBI-HSS (Maslach & Jackson, 1981), had been shown to be a significant factor (e.g., Alarcon, 2011; Drake & Yadama, 1996; Koeske & Koeske, 1989; Williams, Nichols, Kirk, & Wilson, 2011).

A recent study took a rather different perspective and investigated how coping resources within the organizational culture and coping strategies adopted by workers were related to workers' intention to remain in service (Lee, Forster, & Rehner, 2011). The sample was 234 frontline workers employed in a department of human services in a region in the United States of America. Latack's (1986) coping scale was used to measure individual coping strategies and of particular interest, were two of the subscales: control coping which consisted of actions and cognitive reappraisals that were proactive, and escape/avoidance coping which consisted of behaviours and cognitions that were related to avoidance. Coping resources, such as quality of supervision and collegial support, and control coping were found to be positively correlated with workers' intention to remain in service. Moreover, control coping mediated the relationship between coping resources within the organization and workers' intention to remain in service. On the other hand, avoidance coping was not significantly associated with workers' intention to remain in service.

A variable that has been gaining interests amongst scholars is life satisfaction. Since the movement of positive psychology started (e.g. Seligman & Csikszentmihalyi, 2000), scholars have increasingly focused on studying the experience of subjective well-being (Erdogan, Bauer, Truxillo, & Mansfield, 2012; Pavot & Diener, 2008). Together with the presence of positive affect and the absence of negative affect, life satisfaction is a constituent of subjective well-being. Specifically, life

satisfaction refers to individuals' subjective cognitive appraisal of the circumstances that enhance their sense of well-being (e.g. Diener et al., 1985; Pavot & Diener, 2008). Life satisfaction has been associated with job satisfaction (e.g., Rode, Rehg, Near, & Underhill, 2007), better physical health (e.g., Chida & Steptoe, 2008), less burnout (Haar & Roche, 2010), and lower turnover intent (e.g. Rode et al., 2007). While there were scholars who thought of life satisfaction as the opposite end of the same continuum as burnout and depression, there is evidence to indicate that life satisfaction is more than the lack of negative affective state (Hakanen & Schaufeli, 2012).

Dealing with burnout and compassion fatigue.

As the previous sections suggested, burnout and compassion fatigue can be costly to human service workers and their clients, as well as the organization. Moreover, as indicated by the preceding section, burnout, in particular, appeared to have a significant impact on workers' intention to leave and turnover. As stated by Kim and colleagues (Kim et al., 2011), there is a need to proactively deal with the issue of burnout with these workers, either through prevention or intervention efforts.

To date, most approaches or programmes adopted to address the issue of job stress or burnout focused on the individual worker, rather than changing the organizational culture or environment (Brough & O'Driscoll, 2010; LaMontagne, Keegel, Louie, Ostry, & Landsbergis, 2007). In a recent review done by Awa and colleagues (Awa, Plaumann

& Walter, 2010), they found 25 primary intervention studies from 1995 to 2007 published in peer-reviewed journals. Amongst these studies, 17 were individual-focused, two of them were organization-focused, and the remaining six were a combination of individual and organization-focused approaches. In addition, Awa and her colleagues (2010) noted that most of the individual-focused interventions employ cognitive-behavioural strategies in teaching participants how to improve job performance and personal coping, increase social support, as well as teaching different kinds of relaxation exercises. On the other hand, organization-focused interventions involved task restructuring, work evaluation ,supervision and increasing workers' participation in decision-making (Awa et al., 2010).

In general, studies on individual-focused intervention for burnout mostly report positive results (Awa et al., 2010). For example, Rowe (2000) divided her sample of 113 healthcare professionals from healthcare and school settings within the area of Philadelphia into three groups: Control, 6-week Programme only and 6-week Programme plus 2-year follow up. The 6-week programme consisted of weekly sessions where adaptive coping strategies were taught and the 2-year follow up consisted of 1-hour refresher sessions at 5 months, 7 months and 17 months from when the participants first started the programme. Compared to the Control group, both experimental groups reported significant reductions in emotional exhaustion and depersonalization post-intervention and the positive results maintained up to one year.

However, only for the group, which had the 2-year follow up of refresher sessions, was the significant reduction in emotional exhaustion maintained. In another randomized controlled trial study by Cohen-Katz, Wiley, Capuano, Baker, & Shapiro (2005), American nurses and midwives who had undergone an 8-week programme closely modelled on Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) programme (Kabat-Zinn, 2013), reported significant reductions in emotional exhaustion and depersonalization, as measured by MBI. Moreover, these positive changes were maintained for at least three months.

Indeed, regardless of the target participants: doctors (Ro, Tyssen, Hoffart, Sexton, Aasland, & Gude, 2010), dentists (Te Brake, Gorter, Hoogstraten et al, 2001), teachers (Zolnierczyk-Zreda, 2005), healthcare workers (Siu, Cooper & Phillips, 2013), nurses (Cohen-Katz et al., 2005; Ro, Gude, Tyssen, & Aasland, 2010; Kravits, McAllister-Black, Grant, & Kirk, 2010; MacKenzie, Poulin & Seidman-Carlson, 2006), or staff working with people with disabilities (Innstrand, Espnes & Mykletun, 2004), cognitive-behavioural type of interventions appeared to significantly decrease one of the core components of burnout, emotional exhaustion. Moreover, Lloyd and his colleagues (Lloyd, Bond & Flaxman, 2013), in their attempt at studying the psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout, found that a significant increase in psychological flexibility

following intervention mediated the significant decrease of emotional exhaustion afterwards.

Furthermore, there is some evidence that stress management programmes not only have positive impact on levels of staff burnout, but also on their physiological states. In a randomized controlled study on 303 employees from information technology and media firms, participants in a 6-month web-based stress management programme were found to have biochemical markers that indicated better immune response and less stress activation, when compared to the control group (Hasson, Anderberg, Theorell, & Arnetz, 2005). In another study (Granath, Ingvarsson, von Thiele, & Lundberg, 2006), both cognitive behavioural therapy and yoga were found to have significant positive impact on psychological indicators (e.g., anger, exhaustion, quality of life) and physiological measures (e.g., blood pressure, heart rate, salivary cortisol).

To date, there have been many papers suggesting and describing useful strategies and interventions for compassion fatigue (e.g., Aycock & Boyle, 2009; Gentry, Baranowsky & Dunning, 2002; Phipps & Bryne, 2003), but there are relatively few empirical studies to provide evidence for these suggested strategies and programmes. In a recently submitted dissertation, Bercier (2013) found only two studies (Gentry, Baggerly & Baranowsky, 2004; Landis, 2010) that met full inclusion criteria in her meta-analysis on intervention studies for compassion fatigue, secondary

trauma or vicarious traumatization. She was interested in mental health professionals and she was examining studies published in peer-reviewed journals, as well as unpublished manuscripts from 1984 to 2012. Overall, she concluded that the interventions tested were promising in reducing compassion fatigue.

In a study at a southeastern American hospital, 185 workers, from the intensive care units for children, attended a 4-hour educational seminar on compassion fatigue, grief and stress management (Meadors & Lamson, 2008). It was found that not only did the participants report an increase in awareness of compassion fatigue; they also felt that they had the resources to prevent compassion fatigue. Moreover, participants reported significantly less negative feelings (e.g., tense, jittery and overwhelmed) and more positive feelings of being calm and peaceful. The 4-hour educational seminar focused on explaining compassion fatigue and its impact, the management of stress, as well as explaining the factors associated with grief. In another study, American oncology nurses who attended a 5-week programme adapted from the Accelerated Recovery Programme by Gentry and his colleagues (Gentry, Baranowsky & Dunning, 1997), were found to have a significant decrease in secondary traumatization scores (as measured by ProQOL-IV) immediately after the programme. The decrease maintained at 3 months after the programme and the scores further dropped at 6 months after the programme (Potter, Deshields, Berger, Clarke, Olsen, & Chen, 2013).

On the other hand, Bober and Regehr (2006) queried if focusing on educating trauma counselors on vicarious trauma, and teaching them intervention and coping strategies "unduly individualize the problem" (p. 1), when the focus ought to be on improving safety and work conditions – a more organizational approach. Bober and Regehr (2006) found in their sample of 259 Canadian mental health workers that while participants generally believed in the recommended coping strategies for vicarious trauma (e.g., self-care, supervision, peer consultation), they did not necessarily practice the strategies, and the level of vicarious trauma of these participants were still largely determined by time spent on counselling trauma victims. That is, those participants who spent more time counselling individuals who were victims of trauma reported higher levels of intrusion symptoms as measured by the Impact of Event Scale (Zilberg et al., 1982).

To summarize, while there are more randomized controlled trials of intervention programmes in the reduction of staff burnout compared to compassion fatigue, cognitive-behavioural type of programmes have been generally found to be effective in reducing burnout in workers from various occupations and in reducing secondary traumatization in healthcare workers. However, even for the intervention studies on burnout, many of the studies had relatively small sample sizes, and control groups may not be available. Other than a few studies that tracked progress in participants up to one to three years, many studies

were restricted to pre-intervention and post-intervention comparisons. Furthermore, many of these studies have focused on outcomes as measured by psychometric tests, and have not studied process factors, e.g., participants' engagement and satisfaction with the intervention.

Current Studies

Similar to their American counterparts, the frontline workers in the Singaporean government agency face demand for their services with limited resources. These Singaporean workers can experience stress from the role conflict between advocating for their clients and meeting the organizational needs, especially when they are operating from within a bureaucratic environment. Anecdotally, there are reports of stress and burnout, which can lead to higher rates of sick leave in some workers. There have also been instances where workers' job performance and empathy for their clients seem to have been affected by burnout and stress. However, to date, no systematic study on burnout has been conducted with human service workers in Singapore. Although compassion fatigue, as a construct, still requires much clarification, it is generally accepted as a legitimate workplace risk that can affect staff health. As with burnout, there is not yet a published study on an estimate of the prevalence of compassion fatigue in human service workers in Singapore.

The Maslach Burnout Inventory – Human Services Survey (MBI-HSS, Maslach & Jackson, 1981) is widely used internationally as a

56

measure for burnout and has the most empirical evidence on its reliability and validity. However, there is not yet a local published study on its psychometric properties and factorial validity. Similarly, Stamm's Professional Quality of Life Scale – Fifth edition (ProQOL-V, Stamm, 2010) is a widely used scale to measure compassion fatigue and there has not been any local Singaporean study on its factor structure and other psychometric properties. Therefore, the first study was done to determine if these two scales could be used to measure burnout and compassion fatigue in human social service workers in Singapore. At the same time, the study would be an opportunity to provide a baseline estimate of the prevalence of burnout and compassion fatigue amongst human social service workers in Singapore.

Human service workers were sampled from both the government agency and community agencies (family service centres and voluntary children's homes). This was an attempt to have a representative sample of human service workers, with the aim of contributing towards the validation of the MBI-HSS (Maslach & Jackson, 1981) and ProQOL-V (Stamm, 2010) in Singapore, as well as to obtain as accurate an estimate of the prevalence of burnout and compassion fatigue as possible. Moreover, the researcher, a Singaporean human service worker, often heard comments made by her superiors and colleagues on the supposed differences amongst the different work settings: for example, government versus community, and residential care versus non-residential care. It was hoped that the data collected in the current

study would shed light on the veracity of these "observations". Unfortunately, as revealed in the later chapter, the researcher was not able to obtain the representative sample she had wished.

Staff turnover within the human social services is an issue worth addressing. As described in earlier chapters, the costs of high staff turnover included less efficient case management and poorer client outcomes (Flower et al., 2005), further burnout in remaining workers (Cahalane & Sites, 2007), increased administrative and training costs (Graef & Hill, 2000), and so on. A myriad of individual, job and organizational factors were found to be associated with workers' intention to leave, which in turn was the strongest predictor of actual turnover (e.g., Mor Barak et al., 2001). In particular, burnout, especially the emotional exhaustion component, was found to be significantly associated with workers' intention to leave (e.g., Drake & Yadama, 1996). While there were relatively fewer studies on the role of compassion fatigue on staff's decision to leave service, reports were also available to suggest that compassion fatigue was a significant factor contributing to staff turnover in human social services (e.g., Alaska Department of Health and Social Services, 2008).

At the same time, a myriad of individual, job and organizational factors were associated with burnout and/or compassion fatigue (e.g., Regehr et al., 2004; Seti, 2008; Sprang et al., 2007). In fact, there was overlap amongst the factors that were associated with workers' intention

to leave or staff turnover, and with burnout. Seti (2008) suggested that the various factors associated with staff turnover could be causes of burnout in human social service workers. However, it could also be that burnout and perhaps even compassion fatigue, were mediating the effects of these various individual, job and organizational factors on staff turnover. In addition, previous research seemed to suggest that burnout and compassion fatigue have a direct impact on physical health in terms of sick leave taken by workers, as well as reported physical health symptoms (e.g., Kim et al., 2011). Furthermore, previous research also suggested that physical health statuses or self reports of symptomalogy were also directly associated with workers' intention to leave (e.g., Carlson et al., 2011).

Kemery, Mossholder and Bedeian (1987) examined the causal relationships amongst job role stressors, physical symptoms and turnover intentions. Their findings supported a version of Schuler's (1982) model that hypothesized that when there were job role stressors, such as, role conflicts, a worker's job satisfaction and physical health symptoms would be affected. Schuler's (1982) model also predicted that job satisfaction and physical health symptoms would directly affect workers' turnover intentions, which was supported by the findings from the study done by Kemery and his colleagues (1987). In a more recent study, Lee, Forster and Rehner (2011) tested a model where coping strategies mediated the relationship between organizational factors and workers' intentions to remain employed in child welfare services.

Therefore another goal of the first study was also to explore the various correlates of burnout and compassion fatigue, and to examine the associations of demographic variables, social support variables and coping strategies with workers' physical health and turnover intent. Moreover, the possibility of burnout and compassion fatigue as mediating variables will be examined. The schematic diagram of the proposed pathways to turnover intent is presented in Figure 2.

Figure 2. Schematic Diagram of Pathways to Turnover Intent
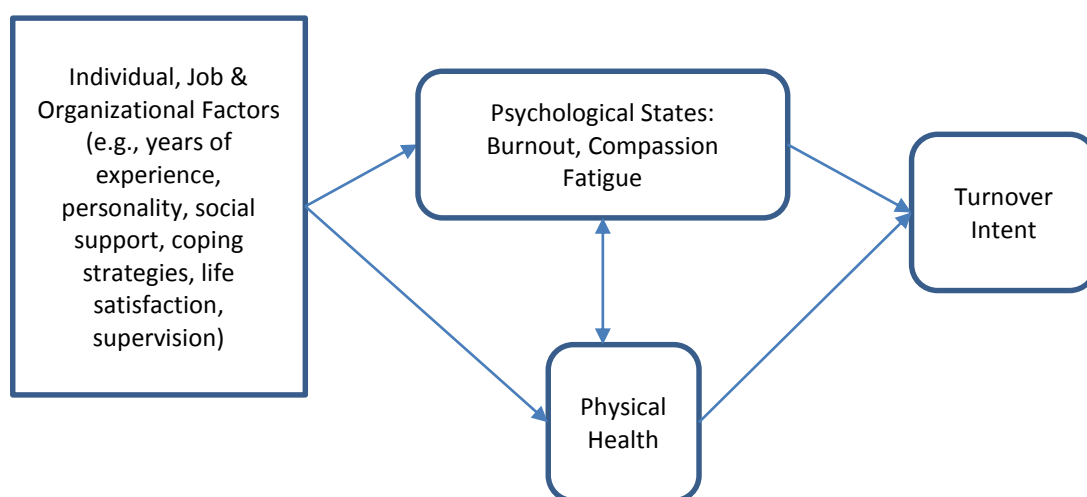
For parsimony's sake and in order not to burden participants with too long a questionnaire, a few key select individual, job and organizational factors were selected for part two of the first study. In addition to burnout and compassion fatigue measures, trait anger, coping, the extent of social support network and satisfaction on social support received, and general satisfaction with life were also included for individual factors. Job factors that were studied include the job role

of respondents, the number of years that respondents had been in the organization, and the number of actual work hours per week. Organization factors under study included the number of hours of training and supervision received by respondents, as well as whether they perceived themselves as receiving adequate peer and supervisory support, training and formal supervision. Physical health of human service workers was measured by a checklist of common health and illness symptoms, as well as the number of visits to the doctor's clinic and the number of days of sick leave. In addition, respondents were asked whether they had intention to leave the organization, and how likely they were going to act on their intent.

In Study 2, a randomized trial of a cognitive-behavioural stress management programme was conducted to study whether it would be an effective intervention for ameliorating or improving reported levels of burnout and compassion fatigue, and other individual psychosocial variables. The Williams LifeSkills programme (Williams & Williams, 1997) was chosen for a number of reasons. Firstly, the programme has been shown to be effective in reducing psychosocial distress symptoms in different samples, such as, workers in the corporate setting (Williams, Brenner, Helms, & Williams, 2009) and participants reporting elevated psychosocial distress within the community setting (Kirby, Williams, Hocking, Lane, & Williams, 2006). Locally, Bishop and colleagues found that the programme was effective in reducing psychosocial distress symptoms and cardiovascular reactivity in a sample of male coronary

bypass grafting patients (Bishop, Kaur, Tan, Chua, Liew, & Mak, 2005). All these studies reported maintenance of the positive intervention effects at three or six months follow up. Secondly, the Williams LifeSkills is a readily available commercial programme that is structured and manualized. It focuses on the learning and practicing of coping skills through built-in cognitive and behavioural strategies, and is relatively short – consisting of 12 hours of contact time with participants. In addition, the programme includes components that have been found to be generally effective in reducing burnout and compassion fatigue as reviewed in the earlier sections: relaxation exercises, problem-solving and emotional regulation.

Chapter 3

Study 1

Study 1 was essentially two parts of a survey study done with different groups of human social service workers in Singapore. One group consisted of frontline workers from a government agency specializing in rehabilitation and protection of vulnerable children, youths and families. Another group consisted of frontline workers from family service centres serving vulnerable families in the community, and the third group consisted of frontline workers from voluntary children's homes working with children and youths in residential care.

The government agency is the largest employer of human social service workers in Singapore, and the researcher had received approval and support from the relevant agency authority for the survey. Furthermore, the study was conceived with the eventual intention to provide feedback to the agency leaders and to provide suggestions on staff welfare and retention. Hence, the agency respondents completed a longer version of the survey compared to the respondents from the family service centres and voluntary children's homes. Agency respondents first completed a long version of the staff characteristics form that included basic demographic variables, questions on job and organization characteristics, such as their intention to leave, whether they perceived that they had adequate supervision and training, and how supported they felt by their supervisors and colleagues. They also completed a health form that collected some basic health information,

such as, height, weight, health behaviours like smoking and caffeine intake, medical leave taken and whether they had chronic illnesses. In addition to the burnout and compassion fatigue measures, the government agency workers also completed other psychosocial measures of trait anger, coping strategies, social support and satisfaction with life.

Human social service workers in community agencies: family service centres and voluntary children's homes were asked to complete a shorter staff characteristics form consisting of basic demographic and work variables, as well as the burnout and compassion fatigue measures. This was done intentionally as an attempt to increase cooperation and participation from the community organizations. Due to the government agency's dual roles in providing frontline services, as well as regulatory and licensing functions, it was anticipated that there would be apprehension from the community counterparts in participating in the survey when approached by the researcher, who is a middle manager in the government agency.

One of the main objectives of Study 1 was to ensure that a burnout measure, MBI-HSS (Maslach & Jackson, 1981) and a compassion fatigue measure, ProQOL-V (Stamm, 2010) were reliable and valid tools for use in Singapore to measure burnout and compassion fatigue respectively. Another purpose was to establish some baseline estimates of the prevalence of burnout and compassion fatigue amongst

human social service workers in Singapore, and to explore if there were any significant differences in the levels of burnout and compassion fatigue between the government agency workers and their community counterparts.

Hence, the specific hypotheses in Part 1 of Study 1 were the following:

1) The three-factor structure of MBI-HSS would be found when used with a Singaporean sample.

2) The three-factor structure of ProQOL-V would be found when used with a Singaporean sample.

3) The prevalence of burnout amongst human social service workers in Singapore would be similar to their American counterparts at around 35% (using the findings from Conrad et al, 2006 and Siebert, 2006, as points of reference, rounded down to the nearest five for a more conservative estimate).

4) The various burnout and compassion fatigue subscale scores would be correlated with one other. Specifically, emotional exhaustion, depersonalization, compassion fatigue and burnout, would all be positively correlated with one another, while negatively correlated with personal accomplishment and compassion satisfaction. On the other hand, personal accomplishment and compassion satisfaction were expected to be positively correlated with each other, while negatively

65

correlated with emotional exhaustion, depersonalization, compassion fatigue and burnout.

5) The prevalence of compassion fatigue amongst human social service workers in Singapore would be similar to their American counterparts at around 25% (rounded average of the rates found in Bride, 2007 (15.2%) and Cornille & Meyers, 1999 (37%).

6) There would be significant differences between the government human social service workers and their community counterparts in the reported levels of burnout and compassion fatigue.

The key purpose of getting the government human social service workers to complete the longer survey with additional measures was to determine if some of the previous findings from research that was largely conducted in the United States would be replicated with a Singaporean sample. Specifically, the factors associated with burnout, compassion fatigue, coping, social support, physical health and workers' intention to leave, would be examined. Furthermore, it was hoped that the findings from the current study could shed some light on the inter-relationships amongst the individual and job/organizational factors, burnout, compassion fatigue, coping , social support, physical health and workers' turnover intent. For example, amongst the various variables studied, which would be the ones that would have most influence on workers' turnover intent? Which of these variables under study would be mediating factors?

Specifically, the hypotheses for Part 2 of Study 1 were the following:

1) Factors associated with Burnout

    a) Demographic Variables:

        i) Age: Younger, compared to older respondents would report higher levels of emotional exhaustion.

        ii) Gender: Female respondents would report higher levels of emotional exhaustion than male respondents would, while male respondents would report higher levels of depersonalization than female respondents would.

        iii) Marital Status: Married respondents would report lower levels of emotional exhaustion when compared to single respondents.

        iv) Experience: The less experienced respondents, as measured by the number of years they had worked in human social services, would report higher levels of emotional exhaustion when compared to their more experienced counterparts.

    b) Individual Psychosocial Variables:

        i) Trait Anger and avoidant coping would be positively associated with emotional exhaustion and depersonalization, but active coping would be negatively associated with emotional exhaustion and depersonalization, and positively associated with personal accomplishment.

        ii) Self-reported social support network and satisfaction with social support received would be negatively associated with emotional exhaustion and depersonalization.

iii) Overall satisfaction with life would be positively associated with personal accomplishment but negatively associated with emotional exhaustion and depersonalization.

c) Job Variables:

i) Longer working hours would be positively associated with emotional exhaustion and depersonalization.

ii) The senior ranked workers would experience more personal accomplishment, and less emotional exhaustion and depersonalization when compared to the junior workers.

d) Organization Variables:

i) Respondents' perception of having received adequate training would be negatively associated with emotional exhaustion and depersonalization, while positively associated with personal accomplishment.

ii) Respondents' perception of having received adequate supervision would be negatively associated with emotional exhaustion and depersonalization, while positively associated with personal accomplishment

iii) Perceived support from colleagues and from supervisors would be negatively associated with emotional exhaustion and depersonalization, while positively associated with personal accomplishment.

2) Factors associated with Compassion Fatigue

a) Demographic variables:

i) Age: Younger, compared to older respondents would report higher levels of compassion fatigue.

ii) Gender: Female respondents would report higher levels of compassion fatigue than male respondents would.

iii) Education: The higher educated respondents (with postgraduate degrees) would report higher levels of compassion fatigue than lower educated respondents would.

iv) Experience: The less experienced respondents, as measured by the number of years they had worked in human social services, would report higher levels of compassion fatigue when compared to their more experienced counterparts.

b) Individual Psychosocial Variables:

i) Active coping would be negatively associated with compassion fatigue and positive associated with compassion satisfaction, while avoidance coping would be positively associated with compassion fatigue and negatively associated with compassion satisfaction.

ii) Self-reported social support network and satisfaction with social support received would be negatively associated with compassion fatigue and positively associated with compassion satisfaction.

iii) Overall satisfaction with life would be positively associated with compassion satisfaction but negatively associated with compassion fatigue.

c) Job variables:

    i) Longer working hours would be positively associated with compassion fatigue.

    ii) Workers who worked primarily with abuse victims would report higher levels of compassion fatigue compared to their counterparts who work with other clientele.

d) Organization variables:

    i) Respondents' perception of having received adequate training would be negatively associated with compassion fatigue, while positively associated with compassion satisfaction.

    ii) Respondents' perception of having received adequate supervision would be negatively associated with compassion fatigue, while positively associated with compassion satisfaction.

    iii) Perceived support from colleagues and from supervisors would be negatively associated with compassion fatigue, while positively associated with compassion satisfaction.

3) Factors associated with Physical Health Symptoms reported

a) Female respondents would report more physical health symptoms than male respondents.

b) Emotional exhaustion and compassion fatigue would be positively correlated with the physical health symptoms reported, as well as the number of days of sick leave taken by workers within the past 6 months of responding to the survey.

4) Factors associated with Turnover Intent

a) Demographic variables:

i) Age: Younger respondents would have higher turnover intent than older respondents would.

ii) Length of Service/ Years of Experience: Respondents, who had shorter lengths of service in the government agency or fewer years of experience in human social services, would have higher turnover intent than those who had longer lengths of service or more years of experience.

b) Individual Psychosocial variables:

i) Active coping would be negatively correlated with turnover intent.

ii) Respondents' overall satisfaction with life and social support would be negatively correlated with turnover intent.

iii) Emotional exhaustion, depersonalization, and compassion fatigue would be positively associated with turnover intent.

iv) Respondents' self-reports on physical health symptoms would be positively correlated with turnover intent.

c) Job variables:

i) Longer working hours would be positively associated with turnover intent.

ii) Workers who worked primarily with abuse victims would report higher turnover intent when compared to workers who worked with other clientele.

d) Organization variables:

i) Respondents' perception of having received adequate training would be negatively associated with turnover intent.

ii) Respondents' perception of having received adequate supervision would be negatively associated with turnover intent.

iii) Perceived support from colleagues and from supervisors would be negatively associated with turnover intent.

5) Path analysis results would support the hypothesized model in Figure 2 (p. 60).

Sample.

The study was approved by the National University of Singapore Human Subjects Institutional Review Board (IRB) and the participants provided informed consent prior to participating. The data collection period was from November 2012 to Mar 2013.

An e-mail explaining the purpose of the study, together with the IRB approval, was sent to heads of departments (HODs) from family service centres and voluntary children's homes from the community service sector, as well as those within the government agency specializing in rehabilitation and protection work, to seek their approvals to invite their staff for the survey study. Upon receipt of the HODs' approval, another email explaining the study was sent to invite participation from human social service workers in consenting agencies. Almost all frontline workers in the government agency were invited, and 124 workers out of a possible 220 responded. Discarding incomplete surveys with more than 10 missing items (5% of total number of items in the survey) and surveys with more than three unanswered items on each psychometric test, 113 valid responses remained, giving a response rate of 51%. On the other hand, four family service centres and eleven voluntary children's homes were invited to participate in the survey. However, only the heads of three family service centres and five voluntary children's homes gave consent. Out of an estimate of 90 total possible responses from these agencies from the community, 70 human service workers responded. However, after removing two invalid surveys (with more than three items missing); the response rate was 75%.

Procedure.

Once the invitation-to-participate email recipients consented to participate in the survey study, they were asked to follow an embedded weblink to the online survey consisting of the Maslach Burnout Inventory – Human Services Survey (MBI-HSS, Maslach & Jackson, 1981); Professional Quality of Life Scale – Fifth edition (ProQoL-V, Stamm, 2010); and a form consisting of some basic demographic and work variables. As the researcher is a middle manager in the government agency, no identifying information was collected from the respondents to protect their privacy and the confidentiality of their responses.

Measures for part 1 of study 1.

Staff characteristics form – short.

As indicated earlier, the respondents from family service centres and voluntary children's homes completed a short staff characteristic form collecting basic staff information, which includes gender, age group, marital status, highest level of education, number of working hours per week, job role, length of service in current organization, and number of years working in human social services.

Burnout measure.

Burnout was measured by the Maslach Burnout Inventory – Human Services Survey (MBI-HSS), a 22-item survey developed for use in the human services and health care settings (Maslach & Jackson, 1981), which was the measure of choice in the majority of the reviewed

literature on burnout. There are three subscales: *Emotional Exhaustion*,

Depersonalization and *Personal Accomplishment*. Examples of items in

the respective three subscales are presented in Table 1.

Table 1. Sample Items from MBI-HSS* (Maslach & Jackson, 1981)

Subscale	Example Items
Emotional Exhaustion (9 items)	3. I feel fatigued when I get up in the morning and have to face another day.
Depersonalization (5 items)	10. I've become more callous toward people since I took this job.
Personal Accomplishment (8 items)	7. I deal very effectively with the problems of my recipients.

*Permission is only granted for three sample items from a single form of this instrument to be reproduced for inclusion in a proposal, thesis or dissertation.

Respondents rated statements on a 7-point Likert scale according

to how frequently they felt the feelings described in the statements about

their job, with "0" representing "Never" and "6" representing "Every Day".

High scores on the *Emotional Exhaustion* and *Depersonalization*

subscales and a low score on the *Personal Accomplishment* subscale

would indicate a **high degree of burnout**. On the other hand, low

scores on the *Emotional Exhaustion* and *Depersonalization* subscales

and a high score on the *Personal Accomplishment* subscale would

indicate a **low degree of burnout**. An **average degree of burnout**

would be indicated by average scores on all the subscales. The internal

consistency coefficients reported by Maslach and Jackson (1981) were

.89 for *Emotional Exhaustion*, .77 for *Depersonalization* and .74 for

Personal Accomplishment.

Compassion fatigue measure.

Compassion fatigue was measured by the Professional Quality of Life Scale – Fifth edition (ProQOL-V, Stamm, 2010), a 30-item survey with the following subscales: *Compassion Satisfaction*, and *Compassion Fatigue* (comprising of *Burnout* and *Secondary Traumatic Stress*). The instrument of choice in a majority of research reviewed on compassion fatigue, ProQOL-V was designed by Stamm (2010) to measure the positive and negative aspects of work as a helper for individuals who work in helping professions. Compassion Satisfaction constituted the positive aspect, while Compassion Fatigue constituted the negative aspect. According to Stamm (2010), the two subscales that made up Compassion Fatigue include Burnout concerned feelings that were typical from exhaustion from work, while the Secondary Traumatic Stress subscale tapped into feelings "driven by fear and work-related trauma" (p. 8).

Respondents rated statements on a 5-point Likert scale, from "1" being "Never" to "5" being "Very Often", regarding their self-perceptions, their reactions to work, their beliefs regarding their work, and their experiences of traumatic symptoms, based on how frequently each item was experienced in the prior 30 days. Each scale consists of 10 items, and for the Burnout subscale, five of the items were reverse scored. Examples of the items in each of the three subscales are presented in Table 2.

Table 2. Examples of Items in ProQOL-V (Stamm, 2010)

Subscale	Example Items
Compassion Satisfaction (10 items)	3. I get satisfaction from being able to help people. 6. I feel invigorated after working with those I help. 12. I like my work as a helper.
Compassion Fatigue: Burnout (10 items)	1. I am happy (*reverse* scored). 8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I help. 10. I feel trapped by my job as a helper. 26. I feel "bogged down" by the system.
Compassion Fatigue: Secondary Traumatic Stress (10 items)	2. I am preoccupied with more than one person I help. 5. I jump or am startled by unexpected sounds. 14. I feel as though I am experiencing the trauma of someone I have helped.

Higher scores on the *Compassion Satisfaction* subscale indicate greater satisfaction with the respondent's ability to be effective in his/her work. On the other hand, higher scores on the *Burnout* and *Secondary Traumatic Stress* subscales indicate increased risks.   The internal consistencies of the subscales are good with reported Cronbach Alpha values ranging from .72 (*Burnout*) to .87 (*Compassion Satisfaction*) (Stamm, 2005).

Although the three subscales are supposedly independent from one another, the *Burnout* subscale is not chosen as a measure for burnout for the following reasons:

1. Of the two measures, the MBI-HSS is the more recognized
   measure for burnout.

2. Unlike the *Burnout* subscale, which was part conceptualized as part of the construct of Compassion Fatigue, the MBI-HSS specifically measures the different aspects of burnout in relation to human services work: emotional exhaustion, depersonalization and personal accomplishment. In addition, the *Burnout* subscale has been found to correlate with the Beck Depression Inventory, State-Trait Anxiety Inventory and the *Emotional Exhaustion* subscale of MBI-HSS (Circenis, Millere & Deklava, 2011). From the present review, it appears that the MBI-HSS will be more suited for the purpose of this study.

Measures for part 2 of study 1.

Staff characteristics form – long.

One hundred and thirteen frontline workers from the government agency completed this longer version of the staff characteristics form that included all the items described above in the short form, with additional questions. Firstly, respondents were asked if they had worked at other organizations prior to joining the government agency. They were also asked to report the actual number of hours they put in at work per week. Furthermore, participants were asked to write down an estimate of the number of hours of formal supervision and the number of hours training they had received per month. They were also asked to indicate with a "yes" or "no", whether they felt that they had adequate supervision and training respectively. Participants' perception of the amount of support they received from their supervisors and colleagues

respectively were measured by a 4-point Likert scale ("Never", "Rarely", "Sometimes" and "Always"). Respondents' intention to leave was measured with two items. The first item asked the respondents if they had thoughts of leaving the organization ("yes" versus "no"), and then respondents were requested to reflect on an 11-point scale how likely they were to act on their thoughts of leaving the organization, with "0" being "Very unlikely" to "10" being "Very likely". This longer staff characteristic form is attached in Appendix A.

Physical health measures.

Participants' basic health information, some health behaviours and reports of illness symptoms, were recorded via a Health Information form and the extent to which they experienced physical health symptoms was measured by the Physical Health Questionnaire (PHQ; Schat et al., 2005). In the Health Information form, participants reported their height and weight (for the calculation of Body Mass Index), then used an 11-point scale to reflect how their own perception of their current physical health, with "0" being "Very unhealthy" to "10" being "Very healthy". Participants were also asked how often they had visited the doctors in the past 6 months, and how many days of sick leave they had taken in the past 6 months. A further question was asked of participants as to the number of hours they had taken vacation leave or unofficial time-off to rest and recuperate from fatigue or poor health in the past 6 months. In addition, participants were asked how often they exercised with 4 descriptors to choose from: No Exercise; Mild Exercise (e.g., climb

stairs, walk short distance, golf); Occasional Vigorous Exercise (less than four times a week for 30 minutes); and Regular Vigorous Exercise (four or more times a week for 30 minutes). Furthermore, participants were asked to put a tick on boxes next to the type of caffeinated drinks that they usually drank, with "None" as being one of the choices as well. They were then asked to write down how many cups/cans of caffeinated drinks they usually consume every day. Participants were also asked to indicate with a "yes" or "no" if they smoked, and whether they had a chronic illness condition that required regular medical follow up. If participants indicated that they had a chronic illness condition, they were asked to specify what the condition(s) was/were. A copy of the Health Information sheet is attached in Appendix B.

The Physical Health Questionnaire (PHQ; Schat et al., 2005) is a 14-item self-report scale of somatic symptoms with four distinct subscales: *Gastrointestinal Problem*, *Headaches*, *Sleep Disturbances*, and *Respiratory Illness*. Respondents rated on a 7-point Likert scale, from "1" being "Not at all" to "7" being "All of the time", on items focusing on how they had been feeling physically during the past six months. The validation samples included university students, staff from a hospital, employees of a social service agency, and staff from three small health care settings in Ontario, Canada. The internal consistency coefficients of the subscales obtained from a sample of university students were good: *Gastrointestinal Problem* (α= .86), *Headaches* (α= .90), *Sleep*

Disturbance (α= .81) and *Respiratory Illness* (α= .77). A sample of the items is presented in Table 3.

Table 3. Examples of Items in PHQ (Schat, Kelloway & Desmarais, 2005)

Subscale	Example Items
Sleep Disturbances (4 items)	1. How often have you had difficulty getting to sleep at night? 4. How often has your sleep been peaceful and undisturbed? (*Reverse scored*).
Headaches (3 items)	5. How often have you experienced headaches? 6. How often did you get a headache when there was a lot of pressure on you to get things done?
Gastrointestinal Problems (4 items)	8. How often have you suffered from an upset stomach (indigestion)? 10. How often did you feel nauseated ("sick to your stomach")?
Respiratory Infections (3 items)	12. How often have you had minor colds (that made you feel uncomfortable but didn't keep you sick in bed or make you miss work)?

Trait anger measure.

The 113 government agency workers who participated in the study also completed the State-Trait Anger Expression Inventory-2 (STAXI-2, Spielberger, 1999). For the current study, only the Trait Anger subscale was used as trait anger has been found to be associated with burnout (e.g., Baruch-Feldman, Brondolo, Ben-Dayan & Schwartz, 2002; Brondolo et al 1998). An earlier version, STAXI (Spielberger, 1988) had been reported to have adequate internal consistency (Cronbach alphas greater than .70) and test-retest reliabilities in an

Asian population (Bishop & Quah, 1998). In the current revised version used, an additional Anger Expression subscale was added to the inventory. The Cronbach alpha coefficients for the scale and subscales, for normal and psychiatric populations, ranged from .73 to .95 (Spielberger & Reheiser, 2004).

The Trait Anger subscale in STAXI-2 (Spielberger, 1999) had 10 items, and respondents rated on a 4-point Likert scale, from "1" being "Almost never" to "4" being "Almost always", indicating how they generally felt or reacted. Some of the items of the Trait Anger subscale are the following: "I have a fiery temper"; "I get angry when I'm slowed down by others' mistakes"; and "When I get mad, I say nasty things".

Coping and social support measures.

The coping strategies of the 113 government agency workers were measured by the 28-item Brief COPE (Carver, 1997), which came about when Carver and his colleagues found their patient participants become impatient with completing the full 60-item COPE (Carver et al., 1993). The COPE asks respondents to think about the extent that they had used a particular strategy to cope with the stress in their lives. Responses are indicated on a 4-point Likert scale ranging from "1" being "I haven't been doing this at all" to "4" being "I've been doing this a lot". It consists of 14 subscales with 2 items each: *Active Coping*, *Planning*, *Positive Reframing*, *Acceptance*, *Humor*, *Religion*, *Using Emotional Support*, *Using Instrumental Support*, *Self-Distraction*, *Denial*, *Venting*,

82

Substance Use, *Behavioral Disengagement* and *Self-Blame*. The alpha coefficients for the various subscales range from .50 to .90. The data for the reliability analyses was collected from participants recruited from a community that was affected by *Hurricane Andrew* in the United States. A sample of the items is presented in Table 4. For this study, the items in the Substance Use subscale had the word "drug" changed to "medication" as requested by the ethics review board, as the word "drug" was deemed too sensitive to be used, especially in Singapore where there are strict laws against the use of any drugs.

Table 4. Examples of Items in Brief COPE (Carver, 1997)

Subscale	Example Items
Self-distraction (2 items)	1. I've been turning to work or other activities to take my mind off things.
Active coping (2 items)	2. I've been concentrating my efforts on doing something about the situation I'm in.
Denial (2 items)	3. I've been saying to myself "this isn't real".
Substance use	4. I've been using alcohol or medication to make myself feel better.
Use of emotional support	5. I've been getting emotional support from others.

Table 4. Examples of Items in Brief COPE (Carver, 1997) (continued)

Subscale	Example Items
Use of instrumental support	10. I've been getting help and advice from other people.
Behavioral disengagement	6. I've been giving up trying to deal with it.
Venting	9. I've been saying things to let my unpleasant feelings escape.
Positive reframing	12. I've been trying to see it in a different light, to make it seem more positive.
Planning	14. I've been trying to come up with a strategy about what to do.
Humor	18. I've been making jokes about it.
Acceptance	20. I've been accepting the reality of the fact that it has happened.
Religion	22. I've been trying to find comfort in my religion or spiritual beliefs.
Self-blame	13. I've been criticizing myself.

Human social service workers from the government agency were also asked to indicate the extent of their social support network and their satisfaction with the social support they had received on the Short Form Social Support Questionnaire (SF-SSQ, Sarason et al., 1987). The SF-SSQ was reported to have Cronbach alpha coefficients ranging from .90 to .93, and it correlated well with the original 27-item Social Support Questionnaire (Sarason, Levine, Basham & Sarason, 1983). Both forms of the Social Support Questionnaire were also reported to correlate with personality variables such as self-esteem. The SF-SSQ consisted of six

items asking respondents who they would turn to for support in six different situations, and how satisfied they were with the support received on a 6-point scale: "1" being "Very dissatisfied" to "6" being "Very satisfied". An example of the situations would be the following: "Whom can you really count on to distract you from your worries when you feel under stress?" Two indices are derived from these items. The number of support persons for all six different situational items are summed up and then divided by 6 to derive SSQ-N, an index indicating the availability of social support. Then the satisfaction ratings are summed up for all six situational items, and divided by 6 to arrive at SSQ-S, indicating the overall sense of satisfaction an individual experienced with the support that he/she received.

Finally, the Satisfaction with Life Scale (SWLS, Diener et al., 1985) was used to measure the government agency workers' own assessments of their global life satisfaction. This measure was included for the following reasons:

1) The SWLS was recommended as an adjunct to measures that assess negative states (Pavot & Diener, 1993). The majority of the measures in the current study described thus far assess negative states like anger, burnout and compassion fatigue.

2) As the SWLS was designed to tap into individuals' positive experiences, and it was found to be partially independent of affective measures (Pavot & Diener, 1993), this made it a suitable

indicator of how successful the government agency workers were in coping with stress and life in general.

The SWLS correlated with independent ratings of life satisfaction among the elderly and subjective well-being for college students. All five items in this short scale were supposed to load onto one single factor and a total score on satisfaction with life is calculated by summing up all the ratings on the 7-point scales, with "1" representing "strongly disagree" and "7" representing "strongly agree". In addition, the internal consistency for SWLS was reported by the same authors to be good (α= .87). The items are presented in Table 5.

Table 5. Items in SWLS (Diener, Emmons, Larsen & Griffin, 1985)

Items
1. In most ways my life is close to ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have got the important things I want in life.
5. If I could live my life again, I would change almost nothing.

Summary

Due to practical constraints, Study 1 had two versions of a survey: short and long administered to three groups of human service workers in Singapore. Specifically, the short version consisting of a shorter staff characteristics form, the burnout measure and the compassion fatigue measure, was administered to human service workers from family service centres and voluntary children's homes. The long version

consisting of a longer staff characteristics form, health measures, burnout measure, compassion fatigue and various other psychosocial measures, was administered to the human service workers from the government agency.

Before the results of Study 1 are revealed in the following chapter, the author would like to acknowledge that despite her attempt of organizing the survey participants according to their setting: government agency with statutory function, community agency, and residential care, the current sample of human service workers was as heterogeneous as it could be. Amongst the government agency workers, for example, there are young workers, senior workers and managers with specialized roles in family and child welfare, offender rehabilitation, or residential care. In the family service centres, there are counsellors, social workers and managers, and they could be focusing on programmes for at-risk children and youths, vulnerable families, or on welfare for the elderly. In the voluntary children's homes, there are care workers, social workers and managers. Different homes will also have different mix of challenging cases, with some homes having more cases with higher needs than others do.

The literature review in the previous chapter suggested that there are complex processes involved with the development of burnout or compassion fatigue in human service workers, regardless of their client types and work settings. The interplay amongst personal, job and

organization variables can lead to different outcomes for human service workers in different work settings. However, the researcher would like to suggest that regardless of job role, work setting or client type, if there are job characteristics (e.g. high caseload, tight deadlines, and high administrative load) and organization factors like highly bureaucratic environment and poor supervision structure, the human service workers in this Singaporean sample would have similar risks of developing burnout. For compassion fatigue, the research evidence appears to be less evident on job and organization variables, but more evident on the exposure of significant vicarious trauma during the course of the human service workers' duties.

Thus, this study will not be too focused on the differences amongst the participants from different agencies and different departments, but would focus more on the general prevalence of burnout and compassion fatigue, as well as examine the various personal, job and organizational characteristics that could be associated with burnout, compassion fatigue and workers' intent to leave their work organizations. The assumptions are that physiological responses are more or less similar in all human beings, and that processes of developing burnout or compassion fatigue are more similar than different across different occupations and cultures when there is a "right" confluence of "key" factors.

Chapter 4

Participant Characteristics for Study 1

In total, 181 participants completed the surveys: 113 participants were from the government agency, 39 participants were from the family service centres, and 29 participants were from the voluntary children's homes. Overall, the majority of the participants were relatively young, female, single and highly educated with at least a university degree. There appeared to be more or less similar representation of experienced and inexperienced workers, with almost equal numbers sampled in the various work roles. Most of the other professionals sampled were either counselors or psychologists working in the social service sector. Almost all the respondents worked full time and the mean number of work hours put in per week was greater than the official guideline of 42 hours per week. The breakdown of participant characteristics is presented in Table 6.

Table 6. Participant Characteristics for Study 1

	FSC	VCH	Agency	Total
n	39	29	113	181
(%r)	(21.5)	(16.0)	(62.4)	(100.0)
Item				
Gender				
Male	13	4	30	47
(%c)	(33.3)	(13.8)	(26.5)	(26.0)
Female	26	25	83	134
(%c)	(66.7)	(86.2)	(73.5)	(74.0)
Age Group				
21 – 30 years	13	19	56	88
(%c)	(33.3)	(65.5)	(49.6)	(48.6)
31 – 40 years	15	4	34	53
(%c)	(38.5)	(13.8)	(30.1)	(29.3)
41 – 50 years	10	3	13	26
(%c)	(25.6)	(10.3)	(11.5)	(14.4)
51 – 60 years	1	2	6	9
(%c)	(2.6)	(6.9)	(5.3)	(5.0)
More than 60 years old	0	1	4	5
(%c)	(--)	(3.4)	(3.5)	(2.8)
Marital Status				
Single	25	22	64	111
(%c)	(64.1)	(75.9)	(56.6)	(61.3)
Married	12	5	42	59
(%c)	(30.8)	(17.2)	(37.2)	(32.6)
Divorced	2	2	1	5
(%c)	(5.1)	(6.9)	(0.9)	(2.8)
Missing	0	0	6	6
(%c)	(--)	(--)	(5.3)	(3.3)

FSC - Family Service Centres; VCH – Voluntary Children's Homes; Agency – Government Agency; %r – Row percentage; %c – Column percentage

Table 6. Participant Characteristics for Study 1 (continued)

Item	FSC	VCH	Agency	Total
Education				
Diploma	1	8	10	19
(%^{c})	(2.6)	(27.6)	(8.8)	(10.5)
Postgraduate Diploma	3	0	4	7
(%^{c})	(7.7)	(--)	(3.5)	(3.9)
Bachelor's degree	19	13	61	93
(%^{c})	(48.7)	(44.8)	(54.0)	(51.4)
Masters/Doctorate/PhD	16	5	32	53
(%^{c})	(41.0)	(17.2)	(28.3)	(29.3)
Missing	0	3	6	9
(%^{c})	(--)	(10.3)	(5.3)	(5.0)
Length in Service				
0 – 2 years	18	19	35	72
(%^{c})	(46.2)	(65.6)	(31.0)	(39.8)
2 – 5 years	10	6	32	48
(%^{c})	(25.6)	(20.7)	(28.3)	(26.5)
5 – 10 years	9	4	19	32
(%^{c})	(23.1)	(13.8)	(16.8)	(17.7)
More than 10 years	2	0	26	28
(%^{c})	(5.1)	(--)	(23.0	(15.5)
Missing	0	0	1	1
(%^{c})	(--)	(--)	(0.9)	(0.6)
HSS Experience				
0 – 2 years	12	14	26	52
(%^{c})	(30.8)	(48.3)	(23.0)	(28.7)
2 – 5 years	5	10	29	44
(%^{c})	(12.8)	(34.5)	(25.7)	(24.3)
5 – 10 years	11	4	25	40
(%^{c})	(28.2)	(13.8)	(22.1)	(22.1)
More than 10 years	11	1	30	42
(%^{c})	(28.2)	(3.4)	(26.5)	(23.2)
Missing	0	0	3	3
(%^{c})	(--)	(--)	(2.7)	(1.7)
Working Arrangement				
Full time	37	29	107	173
(%^{c})	(94.9)	(100.0)	(94.7)	(95.6)
Part time	2	0	6	8
(%^{c})	(5.1)	(--)	(5.3)	(4.4)

FSC - Family Service Centres; VCH – Voluntary Children's Homes; Agency – Government Agency; %^{r} – Row percentage; %^{c} – Column percentage; HSS Experience – Human Social Services Experience

Table 6. Participant Characteristics for Study 1 (continued)

Item	FSC	VCH	Agency	Total
Work Role				
Supervisor/Manager	8	5	32	45
(%c)	(20.5)	(17.2)	(28.3)	(24.9)
Senior Worker	1	3	31	35
(%c)	(2.6)	(10.3)	(27.4)	(19.3)
Human Service Worker	12	10	33	55
(%c)	(30.8)	(34.5)	(29.2)	(30.4)
Other Professional	17	10	16	43
(%c)	(43.6)	(34.5)	(14.2)	(23.8)
Missing	1	1	1	3
(%c)	(2.6)	(3.4)	(0.9)	(1.7)

FSC - Family Service Centres; VCH – Voluntary Children's Homes; Agency – Government Agency; %r – Row percentage; %c – Column percentage; HSS Experience – Human Social Services Experience

Within the subset of the government agency workers (113 participants), about a quarter of them primarily worked with abuse victims, while about half of them primarily worked with offenders, and the remainder quarter of them worked with a mix of victims and offenders. About 30% of the agency workers had less than 2 years of experience in human social services and the agency was their first employer after their graduation from school. The majority of the agency workers worked full-time (42 hours per week), with an average of five additional hours put in at work per week, over and beyond the official work hours. The highest average hours spent at work per week was reported by one respondent to be 70 hours. Respondents reported that they received an average of 5 hours of formal supervision per month and about half of them perceived that they did not receive adequate supervision. Moreover, the agency respondents reported that they received an average of 8 hours of training per month, and majority of them (about

75%) reported feeling that they had received adequate training. A majority of the respondents also reported at least receiving support from their colleagues and supervisors sometimes. About one third (36.3%) of the respondents reported that they were likely to act upon their thoughts of leaving the government agency. This was within the range of turnover rates found in the United States: 20% to 60% (e.g., Cyphers et al., 2005; Geurts et al., 1998; Jayaratne & Chess, 1984). The detailed breakdown of the additional work and organizational variables for the agency respondents is presented in Table 7.

Table 7. Additional Information from Agency Workers

Item	n (%)
Primary Clients	
Abuse Victims	25 (22.1)
Offenders	62 (54.9)
Mixed Clients	26 (23.0)
No. of Prior Organizations	
None	33 (29.7)
One	37 (32.7)
Two	22 (19.5)
Three and more	21 (18.6)
Number of Actual Work Hours per week	Mean*: 47.08 hours Range: 3 – 70 hours
Number of Hours of Formal Supervision per month	Mean**: 4.91 hours Range: 0 – 58 hours
Number of Hours of Training per month	Mean**: 8.37 hours Range: 0 – 45 hours

*n= 106; **n=97

Table 7. Additional Information from Agency Workers (continued)

Item	n (%)
Feel there is Adequate Supervision	
No	50 (44.2)
Yes	61 (54.0)
Missing	2 (1.8)
Feel there is Adequate Training	
No	28 (24.8)
Yes	80 (70.8)
Missing	5 (4.4)
Feel there is Support from Supervisor	
Never	1 (0.9)
Rarely	4 (3.5)
Sometimes	40 (35.4)
Always	67 (59.3)
Missing	1 (0.9)
Feel there is Support from Colleagues	
Never	0 (--)
Rarely	1 (0.9)
Sometimes	32 (28.3)
Always	80 (70.8)
Intend to Leave Organization	
No	70 (62.9)
Yes	41 (36.3)
Missing	2 (1.8)

Data analyses and results.

All the analyses were done using PASW Statistics version 18.0 and IBM® SPSS® Amos version 20.0.

Data Analyses and Results for Part 1 of Study 1.

Descriptive statistics and reliability.

As explained previously, responses were deemed valid as long as there were not more than three missing items on each psychometric test completed by the participants. The item mean was then used as a substitute where a rating was missing for the particular item for a respondent. Overall, for MBI-HSS, only 20 missing values were replaced with item means (0.5% of all possible item responses in MBI-HSS for 181 respondents). For ProQOL-V, there were 33 missing values that required replacement with item means, constituting 0.6% of all possible item responses in ProQOL-V for 181 respondents. The use of item means allowed the researcher to maintain the number of cases available for data analyses. However, as many scholars have pointed out in recent years (e.g. Osborne, 2013, Pigott, 2001), using item means to replace missing data decreases the variance of the data as the actual values will likely vary from the mean. For the current study, the amount of missing data was relatively small at less than one percent of the total number of responses. Furthermore, for both MBI-HSS and ProQOL, there are unidimensional subscales consisting of multiple items that are expected to have strong intercorrelations. According to Schafer and Graham (2002), if the internal consistencies are high, and there are

multiple items, the bias introduced by the use of item means does not appear to be significant.

Descriptive statistics were then obtained for the various subscales of MBI-HSS and ProQOL-V. In addition, reliability coefficients were obtained for these various subscales. As can be seen in Table 8 (Psychometric Properties of MBI-HSS and ProQOL-V), the internal consistencies for the various subscales of MBI and ProQOL-V are all good to excellent, with Cronbach's Alphas ranging from .77 to .92.

Table 8. Psychometric Properties of MBI-HSS and ProQOL-V

Variable	*M*	*SD*	α	Range Potential	Actual	Skew
MBI *(N= 181)*						
Emotional Exhaustion	22.14	10.90	.92	0 – 54	1 – 48	0.29
Depersonalization	6.87	5.16	.77	0 – 30	0 – 24	0.81
Personal Accomplishment	32.24	7.82	.85	0 – 48	3 – 47	-0.81
ProQOL-V *(N= 181)*						
Compassion Satisfaction	37.62	5.79	.90	0 – 50	21 – 49	-0.36
Burnout	23.54	5.26	.79	0 – 50	10 – 36	-0.06
Secondary Trauma	21.81	5.53	.84	0 - 50	11 - 36	0.16

Confirmatory factor analysis for MBI-HSS.

To examine the factorial validity of MBI-HSS (Maslach & Jackson, 1981), a confirmatory factor analysis was done. Model fit was assessed by looking at the Root Mean Square Error of Approximation (RMSEA), which tests whether a model fits reasonably well in the population (Harrington, 2008), and by looking at the Comparative Fit Index (CFI), which evaluates the fit of a model relative to a nested baseline model (Harrington, 2008). The model chi-square (χ^2) was reported for all CFA analyses but as the model chi-square is dependent on sample size (Harrington, 2008); due to the relative large sample size in this current study, it would be significant for the various model fits.

The original three-factor model demonstrated adequate fit to the data: $\chi^2(206)= 448.80$, *p*< .001, CFI= .87, RMSEA= .08, 90% CI [.07,

.09]. Kline (2005) had suggested a criterion of .90 for CFI for an acceptable fit and Brown (2006) had suggested that when the sample is relatively small, an RMSEA of .08 could still be considered an adequate fit. Thus, the results suggested that MBI-HSS could be used to measure burnout in Singapore as it was. The factor loadings of the three-factor confirmatory model are presented in Table 9. All parameters were significant at $p < .001$.

Table 9. Factor Loadings for 3-Factor Confirmatory Model of MBI-HSS* (Maslach & Jackson, 1981), *N*= 181

	DP		PA		EE	
Item	Unstd (*SE*)	Std	Unstd (*SE*)	Std	Unstd (*SE*)	Std
Item 5	1.00 (---)	.66				
Item 10	1.28 (.15)	.76				
Item 11	1.45 (.16)	.84				
Item 15	.64 (.11)	.51				
Item 22	.67 (.14)	.40				

* Permission is only granted for three sample items from a single form of this instrument to be reproduced for inclusion in a proposal, thesis or dissertation.
DP – Depersonalization; PA – Personal Accomplishment; EE – Emotional Exhaustion; Unstd – Unstandardized; Std – Standardized; All parameters significant at *p* < .001

Table 9. Factor Loadings for 3-Factor Confirmatory Model of MBI-HSS (Maslach & Jackson, 1981), *N*= 181 (continued)

Item	DP		PA		EE	
	Unstd (*SE*)	Std	Unstd (*SE*)	Std	Unstd (*SE*)	Std
Item 4			1.00 (---)	.51		
Item 7			1.24 (.19)	.72		
Item 9			1.43 (.22)	.76		
Item 12			1.07 (.20)	.53		
Item 17			1.30 (.21)	.68		
Item 18			1.14 (.20)	.59		
Item 19			1.25 (.20)	.72		
Item 21			1.13 (.18)	.66		
Item 1					1.00 (---)	.80
Item 2					.95 (.09)	.71
Item 3					1.03 (.09)	.77
Item 6					.84 (.08)	.69
Item 8					1.13 (.08)	.88
Item 13					.95 (.08)	.78
Item 14					.87 (.09)	.66
Item 16					.65 (.07)	.63
Item 20					.95 (.08)	.77

* Permission is only granted for three sample items from a single form of this instrument to be reproduced for inclusion in a proposal, thesis or dissertation.
DP – Depersonalization; PA – Personal Accomplishment; EE – Emotional Exhaustion; Unstd – Unstandardized; Std – Standardized; All parameters significant at *p*< .001

Confirmatory factor analysis for ProQOL-V.

Similarly, a confirmatory factor analysis was done with the items from ProQOL-V (Stamm, 2010), to examine the validity of the original three-factor structure. The original three-factor model fitted poorly to the data, $\chi^2(402)= 1071.77$, $p< .001$, CFI= .72, RMSEA= .10, 90% CI [.09, .10]. To explore on how the original model could be improved, the generated modification indices were examined (please see Appendix C for the modification indices output). The largest modification index of 60.93 suggested that Item 8 (*I am not as productive at work because I am losing sleep over traumatic experiences of a person I [help]*) ought to be part of the factor on Secondary Traumatic Stress, rather than Burnout. The next largest two modification indices of 46.63 and 25.94 involved Item 21 (*I feel overwhelmed because my case [work] load seems endless*) which showed a complex pattern of having its error term correlated with the other two factors. Hence it would appeared that it be best to remove Item 21. Another large modification index (M.I.= 23.92) suggested to add a covariance between the error terms of item 10 (*I feel trapped by my job as a [helper]*) and item 26 (*I feel"bogged down" by the system*). This modification resulted in the following fit statistics: $\chi^2(373)= 819.87$, $p< .001$, CFI= .81, RMSEA= .08, 90% CI [.07,.09].

The fit statistics after the first modification of the model were still not good. Examining the modification indices generated (please see Appendix D for the modification indices output), a further four items showed problematic patterns of having error terms correlated with another factor, other than what they were supposed to be loaded onto. Furthermore, their error terms tended to correlate with the error terms from factors, other than error terms of other items within their original intended factor. Hence, the four items were removed for the second modification of the model: Item 4 – Reversed (*I am happy* – Reversed), Item 10 (*I feel trapped by my job as a [helper]*), Item 17 – Reversed (*I am the person I always wanted to be* – Reversed) and Item 19 (*I feel worn out because of my work as a [helper]*). The second modified model demonstrated good enough fit to the data: $\chi^2(272)= 489.16$, $p< .001$, CFI= .88, RMSEA= .07, 90% CI [.06, .08]. A quick scan of the modification indices suggested that further modification would only marginally improve the model. The factor loadings of the modified three-factor confirmatory model with five items removed and one item moved to another factor are presented in Table 10. All parameters were significant at $p< .001$, except for those of items 5 and 7, which were significant at $p= .002$ and $p= .001$ respectively.

Table 10. Factor Loadings for Modified 3-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N*= 181

Item	CS Unstd (*SE*)	Std	CF:Burnout Unstd (*SE*)	Std	CF:STS Unstd (*SE*)	Std
3. I get satisfaction from being able to *[help]* people.	1.00 (---)	.63				
6. I feel invigorated after working with those I *[help]*.	.86 (.16)	.45				
12. I like my work as a *[helper]*.	1.37 (.17)	.73				
16. I am pleased with how I am able to keep up with *[helping]* techniques and protocols.	1.20 (.16)	.65				
18. My work makes me feel satisfied.	1.55 (.18)	.79				
20. I have happy thoughts and feelings about those I *[help]* and how I could help them.	1.28 (.16)	.69				
22. I believe I can make a difference through my work.	1.28 (.16)	.70				
24. I am proud of what I can do to *[help]*.	1.47 (.18)	.73				
27. I have thoughts that I am a "success" as a *[helper]*.	1.15 (.16)	.62				
30. I am happy that I chose to do this work.	1.53 (.17)	.80				

CS – Compassion Satisfaction; CF:Burnout – Compassion Fatigue: Burnout; CF:STS – Compassion Fatigue: Secondary Traumatic Stress; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .002 and item marked with ** which was significant at *p*= .001. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout subscale. **Item 8 was moved from Burnout to Secondary Traumatic Stress.***

Table 10. Factor Loadings for Modified 3-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N*= 181 (continued)

Item	CS		CF:Burnout		CF:STS	
	Unstd (*SE*)	Std	Unstd (*SE*)	Std	Unstd (*SE*)	Std
1. I am happy *(reversed)*.			1.00 (---)	.61		
15. I have beliefs that sustain me *(reversed)*.			1.02 (.16)	.56		
26. I feel "bogged down" by the system.			.84 (.21)	.32		
29. I am a very caring person *(reversed)*.			.80 (.14)	.48		
2. I am preoccupied with more than one person I *[help]*.					1.00 (---)	.27
5. I jump or am startled by unexpected sounds.					1.68* (.53)	.45*
7. I find it difficult to separate my personal like from my life as a *[helper]*.					1.84** (.58)	.48**
9. I think that I might have been affected by the traumatic stress of those I *[help]*.					2.26 (.65)	.76
11. Because of my *[helping]*, I have felt "on edge" about various things.					2.31 (.68)	.62

CS – Compassion Satisfaction; CF:Burnout – Compassion Fatigue: Burnout; CF:STS – Compassion Fatigue: Secondary Traumatic Stress; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .002 and item marked with ** which was significant at *p*= .001. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout subscale.* **Item 8 was moved from Burnout to Secondary Traumatic Stress.**

Table 10. Factor Loadings for Modified 3-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N*= 181 (continued)

	CS		CF:Burnout		CF:STS	
Item	Unstd (*SE*)	Std	Unstd (*SE*)	Std	Unstd (*SE*)	Std
13. I feel depressed because of the traumatic experiences of the people I *[help]*.					2.22 (.64)	.72
14. I feel as though I am experiencing the trauma of someone I have *[helped]*.					2.20 (.64)	.70
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I *[help]*.					2.26 (.67)	.62
25. As a result of my *[helping]*, I have intrusive, frightening thoughts.					2.40 (.69)	.74
28. I can't recall important parts of my work with trauma victims.					1.64 (.49)	.59
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I *[help]*.					2.22 (.64)	.76

CS – Compassion Satisfaction; CF:Burnout – Compassion Fatigue: Burnout; CF:STS – Compassion Fatigue: Secondary Traumatic Stress; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .002 and item marked with ** which was significant at *p*= .001. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout subscale.* **Item 8 was moved from Burnout to Secondary Traumatic Stress.**

The modifications left the Burnout subscale with only four items: Item 1 – reversed (*I am* happy- reversed), Item 15 – reversed (*I have beliefs that sustain me* – reversed), Item 26 (*I feel "bogged down: by the system*) and Item 29 – reversed (*I am a very caring person* – reversed). It was hard to understand how these items could be measuring the same factor, and whether this greatly reduced subscale could be called the Burnout subscale at all. The three reversed scored positively worded items could potentially be understood in a positive manner by the participants and could then load onto the factor of Compassion Satisfaction instead. From the analysis output, item 26 (*I feel "bogged down" by the system*) also appeared to load onto the factor for Secondary Traumatic Stress as well. Furthermore, the factor loadings for the remaining four items in the new subscale were relatively low. A quick check of the Cronbach's Alpha of the new subscale with four items also indicated poor reliability as expected, α= .49.

Hence a further confirmatory factor analysis was done on an alternative 2-factor model with Item 1 (*I am* happy), Item 15 (*I have beliefs that sustain me*), and Item 29 (*I am a very caring person*), as they were without being reversed, moved to the Compassion Satisfaction factor. On the other hand, Item 26 (*I feel "bogged down" by the system*) was grouped with the other items from the Secondary Traumatic Stress subscale and taken as the higher-order factor of Compassion Fatigue. The fit statistics for this alternative 2-factor model were similar to the fit statistics for the modified 3-factor model: $\chi^2(274)= 494.82$, $p< .001$, CFI=

.88, RMSEA= .07, 90% CI [.06, .08]. More importantly, the factor

loadings showed overall improvement and they are presented in Table

11. Moreover, the new 13-item Compassion Satisfaction subscale and

the new 12-item Compassion Fatigue subscale had excellent reliability

with Cronbach's Alphas of .90 and .85 respectively. Thus based on the

current results, it would appear that a reduced 25-item ProQOL-V with a

two-factor structure would be more suitable for use for the subsequent

analyses in the current studies.

Table 11. Factor Loadings for 2-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N*= 181

	CS		CF	
Item	Unstd (S.E.)	Std	Unstd (S.E.)	Std
3. I get satisfaction from being able to *[help]* people.	1.00 (---)	.63		
6. I feel invigorated after working with those I *[help]*.	.87 (.16)	.45		
12. I like my work as a *[helper]*.	1.38 (.17)	.73		
16. I am pleased with how I am able to keep up with *[helping]* techniques and protocols.	1.19 (.16)	.64		
18. My work makes me feel satisfied.	1.55 (.18)	.79		
20. I have happy thoughts and feelings about those I *[help]* and how I could help them.	1.28 (.16)	.69		

CS – Compassion Satisfaction; CF – Compassion Fatigue; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .005 and item marked with ** which was significant at *p*= .002. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout factor.* **Items 1, 8, 15, 26 and 29 were originally from Burnout subscale.**

Table 11. Factor Loadings for 2-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N***= 181** (continued)

Item	CS		CF	
	Unstd (*SE*)	Std	Unstd (*SE*)	Std
22. I believe I can make a difference through my work.	1.29 (.16)	.70		
24. I am proud of what I can do to *[help]*.	1.48 (.18)	.73		
27. I have thoughts that I am a "success" as a *[helper]*.	1.14 (.16)	.62		
30. I am happy that I chose to do this work.	1.54 (.18)	.80		
1. I am happy.	1.02 (.15)	.58		
15. I have beliefs that sustain me.	1.03 (.16)	.54		
29. I am a very caring person.	0.91 (.15)	.51		

CS – Compassion Satisfaction; CF – Compassion Fatigue; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .005 and item marked with ** which was significant at *p*= .002. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout factor.* **Items 1, 8, 15, 26 and 29 were originally from Burnout subscale.**

Table 11. Factor Loadings for 2-Factor Confirmatory Model of ProQOL-V (Stamm, 2010), *N*= 181 (continued)

Item	CS		CF	
	Unstd (S.E.)	Std	Unstd (S.E.)	Std
2. I am preoccupied with more than one person I *[help]*.			1.00 (---)	.27**
5. I jump or am startled by unexpected sounds.			1.68** (.54)	.45**
7. I find it difficult to separate my personal like from my life as a *[helper]*.			1.84 (.58)	.48
9. I think that I might have been affected by the traumatic stress of those I *[help]*.			2.28 (.66)	.76
11. Because of my *[helping]*, I have felt "on edge" about various things.			2.34 (.69)	.62
13. I feel depressed because of the traumatic experiences of the people I *[help]*.			2.24 (.65)	.72
14. I feel as though I am experiencing the trauma of someone I have *[helped]*.			2.22 (.65)	.70
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I *[help]*.			2.26 (.67)	.61
25. As a result of my *[helping]*, I have intrusive, frightening thoughts.			2.42 (.70)	.74
28. I can't recall important parts of my work with trauma victims.			1.65 (.50)	.59
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I [help].			2.22 (.64)	.76
26. I feel "bogged down" by the system.			1.61* (.57)	.34*

CS – Compassion Satisfaction; CF – Compassion Fatigue; Unstd – Unstandardized; Std – Standardized. All parameters significant at *p*< .001, except for item marked with * which was significant at *p*= .005 and item marked with ** which was significant at *p*= .002. *Item 4 – Reversed, Item 10, Item 17 – Reversed, Item 19 and Item 21 were all removed from Burnout factor.* **Items 1, 8, 15, 26 and 29 were originally from Burnout subscale.**

Correlations amongst the MBI-HSS and ProQOL-V subscales.

The scores were calculated for all three subscales of MBI-HSS, as well as the two subscales of the modified ProQOL-V. Two-tailed correlation tests' results largely supported the hypotheses that the subscales would be significantly correlated with one another. As expected, Emotional Exhaustion was positively associated with Depersonalization, $r(179)= 0.58$, $p< .001$, and Compassion Fatigue, $r(179)= 0.31$, $p< .001$. Moreover, Depersonalization is also positively correlated with Compassion Fatigue, $r(179)= 0.32$, $p< .001$. The strong correlation between Emotional Exhaustion and Depersonalization suggested that these two subscales might be largely measuring the same underlying latent construct.

Similarly, as predicted, the two positive subscales: Personal Accomplishment and Compassion Satisfaction, were also significantly correlated with each other in a positive manner, $r(179)= 0.37$, $p< .001$. Moreover, Compassion Satisfaction was negatively correlated with Emotional Exhaustion, $r(179)= -0.23$, $p= .002$, Depersonalization, $r(179)= -0.23$, $p= .002$, and Compassion Fatigue, $r(179)= -0.22$, $p= .003$. However, Personal Accomplishment turned out to be rather independent from all the negative subscales. While the correlation coefficients showed the correct negative direction, Personal Accomplishment was not significantly associated with Emotional Exhaustion, $r(179)= -.06$, $p=$

0.45, Depersonalization, r(179)= -.11, *p*= .15, as well as Compassion Fatigue, r(179)= -.12, *p*= .12.

Prevalence of burnout and compassion fatigue.

The scores from the Emotional Exhaustion, Depersonalization and Personal Accomplishment subscales of MBI-HSS were then recoded to indicate the categorization of risk according to the cutoff levels provided in the test manual (Maslach & Jackson, 1981). That is, total scores on the Emotional Exhaustion subscale that were 0 to 16.55 were transformed to the category of Low Risk of Emotional Exhaustion; scores between 16.56 to 26.55 were recoded to Moderate Risk of Emotional Exhaustion; and scores that were higher than 26.56 were recoded to High Risk of Emotional Exhaustion. Similarly, Depersonalization subscale scores from 0 to 6.55, 6.56 to 12.55 and higher than 12.56, were recoded to Low, Moderate and High Risk of Depersonalization, respectively. Finally, Personal Accomplishment subscale scores from 0 to 31.55, 31.56 to 38.55 and scores higher than 38.56 were recoded to Low, Moderate and High Sense of Personal Accomplishment respectively.

The following figures show the breakdown of participants in the various risk categories as indicated by the Emotional Exhaustion, Depersonalization and Personal Accomplishment subscales in MBI-HSS. Sixty-one out of 181 respondents (33.7%) were in the High Risk of Emotional Exhaustion category, 26 out of 181 respondents (14.4%)

were in the High Risk of Depersonalization category, and 80 out of 181 respondents (44.2%) had Low Sense of Personal Accomplishment. Overall, 83 out of 181 respondents (45.9%) did not report high-risk scores on any of the three MBI-HSS subscales. Seventy out of 181 respondents (38.7%) presented with high emotional exhaustion, high depersonalization, or low sense of personal accomplishment. Twenty-seven out of 181 respondents (14.9%) reported scores of concern on two of the three subscales. Only one respondent reported experiencing high emotional exhaustion, high depersonalization and low sense of personal accomplishment.

Figure 3. Risk of Emotional Exhaustion on MBI-HSS
(*N*= 181)

Category	Percentage
High	33.7%
Moderate	33.1%
Low	33.1%

Figure 4. Risk of Depersonalization on MBI-HSS (*N*= 181)

High — 14.4%
Moderate — 28.2%
Low — 57.5%

Figure 5. Sense of Personal Accomplishment on MBI-HSS (*N*= 181)

High — 22.1%
Moderate — 33.7%
Low — 44.2%
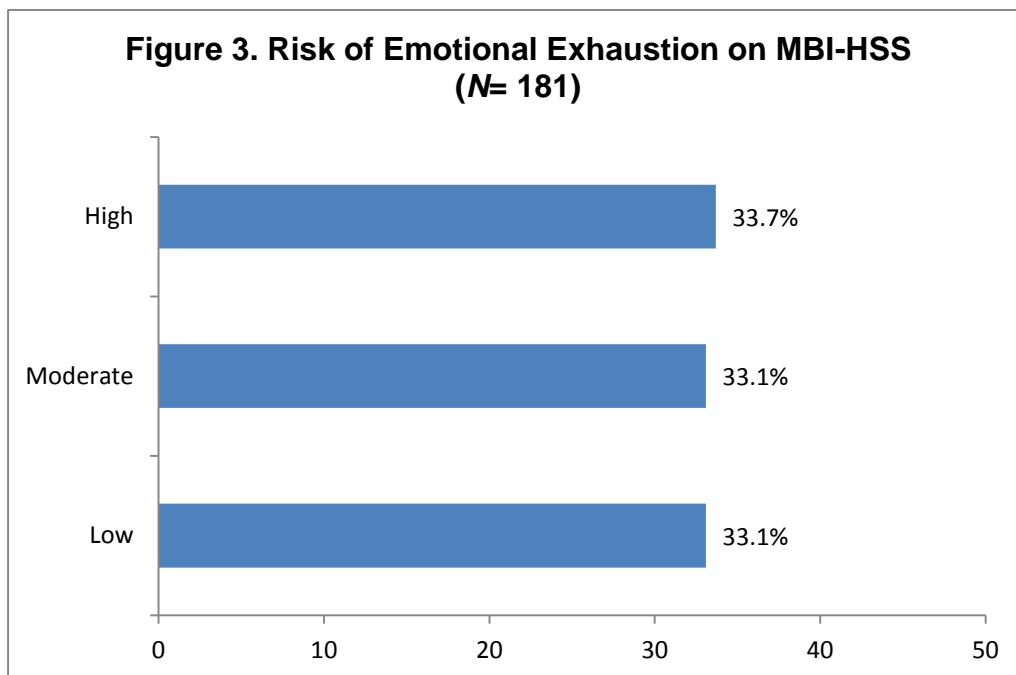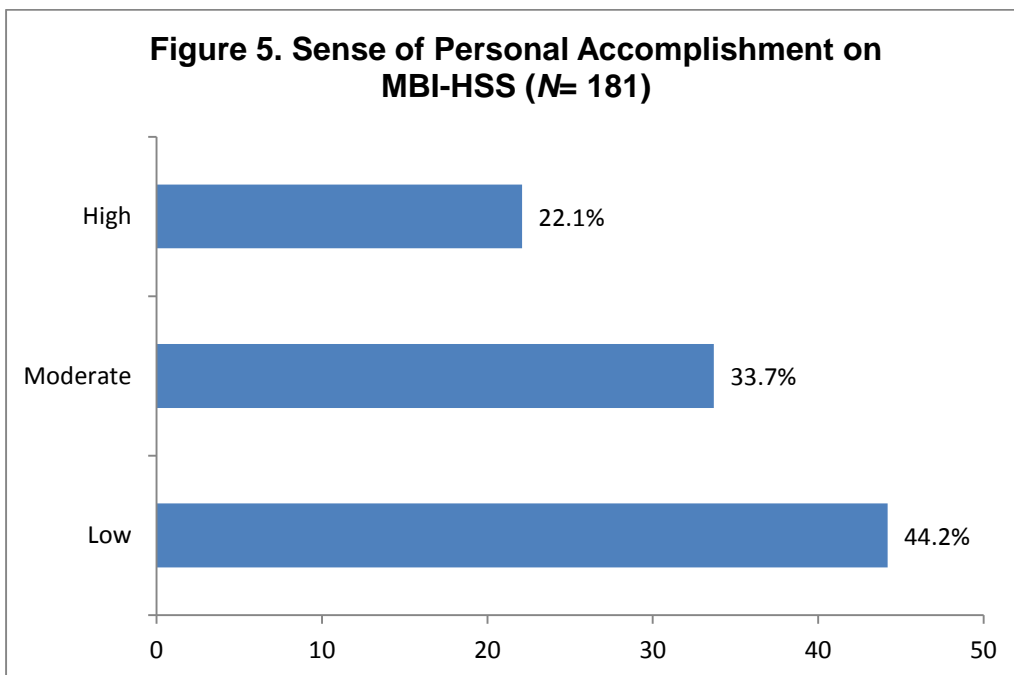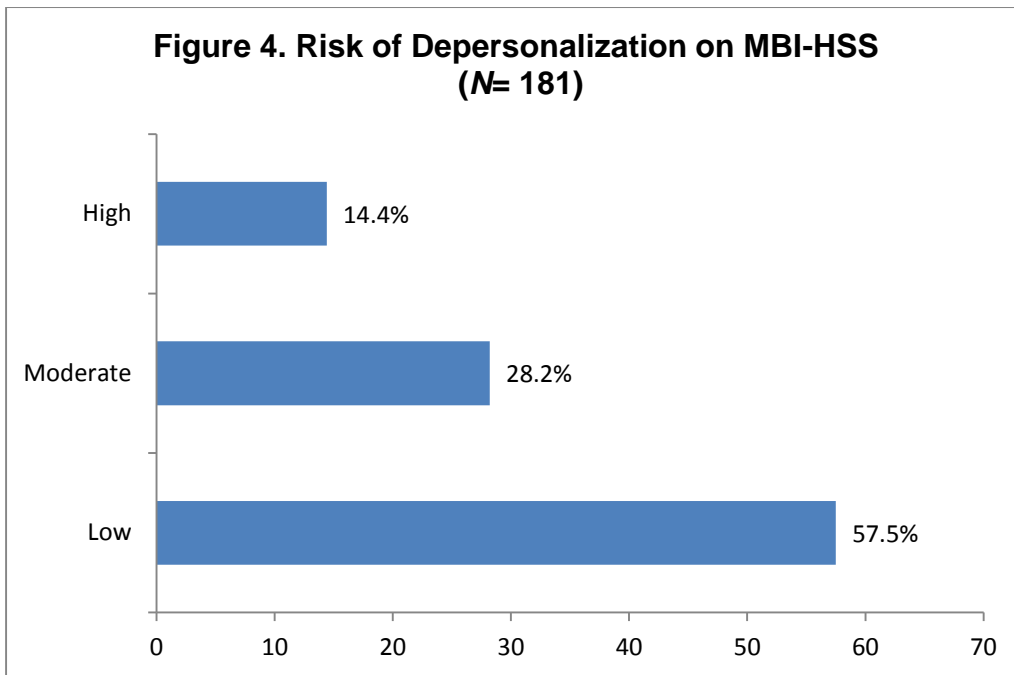
Following the confirmatory factor analyses, the ProQOL-V was modified for use with the current data. There was a negative skew on the distribution of scores from the modified 13-item Compassion Satisfaction subscale, and a positive skew on the distribution of scores from the 12-item Compassion Fatigue subscale. The psychometric properties of the modified ProQOL-V are presented in Table 12.

Table 12. Psychometric Properties of Modified ProQOL-V (*N*= 181)

Variable	*M*	*SD*	α	Range Potential	Range Actual	Skew
Compassion Satisfaction (13 items)	49.46	7.09	.90	13 – 65	29 – 64	-0.32
25th %tile	45.0					
50th %tile	50.0					
75th %tile	54.0					
Compassion Fatigue (12 items)	26.61	6.49	.85	12 – 60	14 – 44	0.27
25th %tile	21.4					
50th %tile	27.0					
75th %tile	31.0					

Originally, the scores from the three 10-item subscales of ProQOL-V: Compassion Satisfaction, Burnout and Secondary Traumatization, were grouped into categories indicating Low, Average or High sense of compassion satisfaction or risks of burnout and secondary trauma. Scores of 22 or less were classified as Low, 23 to 42 were classified as Average, and scores higher than 42 were classified as High, according to the cutoff criteria in the test manual (Stamm, 2010).

As the original cutoff scores were based on 10-item subscales, adjustments were made to accommodate the increase in the number of items in the two new subscales by adding 15 to the original cutoff scores for the modified Compassion Satisfaction subscale, and adding 10 to the original cutoff scores for the modified Compassion Fatigue subscale. Therefore for Compassion Satisfaction, scores of 37 or less would be Low, 38 to 57 would be Average, and scores higher than 57 would be classified as High. On the other hand, for Compassion Fatigue, scores of 32 and less would be classified as Low; scores of 23 to 52 would be Average, and scores higher than 52 would be classified as High.

The next few figures show that breakdown of participants according to the various categories for each subscale. In general, the participants reported low to average risks of Compassion Fatigue, and only 9 out of 181 participants (5%) reported experiencing low Compassion Satisfaction. These results would need to be read with caution. Firstly, the current results were from a modified version of ProQOL-V. In fact, the results from the earlier confirmatory factor analysis and the current set of analyses could be a consequence of measurement error from various sources: the questions could have been misunderstood by the respondents; the responses could have been incorrectly indicated on the scales when respondents became tired or careless, or it could be due to social desirability.

Social desirability is defined as "the tendency of individuals to 'manage' social interactions by projecting favourable images of themselves, thereby maximizing conformity to others and minimizing the danger of receiving negative evaluations from them." (Johnson & Van de Vijver, 2003, p. 194). The Singaporean respondents in this study could have reported lower levels of distress in general so that they would not exhibit too much "weakness" and might end up with poorer appraisal of their work capabilities by colleagues and superiors. That is, the respondents could have "automatically edited" their responses out of habit. Cross-cultural research scholars believe that social desirability influence respondents' test-taking behaviour in a similar way across varied cultural groups (e.g. Johnson & Van de Vijver, 2003; Tüurk Smith, Smith, & Seymour, 1993).

Figure 6. Sense of Compassion Satisfaction on Revised ProQOL-V (*N*= 181)

Level	Percentage
High	15.4%
Average	79.6%
Low	5%

115

Figure 7. Risk of Compassion Fatigue on Revised ProQOL-V (*N*= 181)
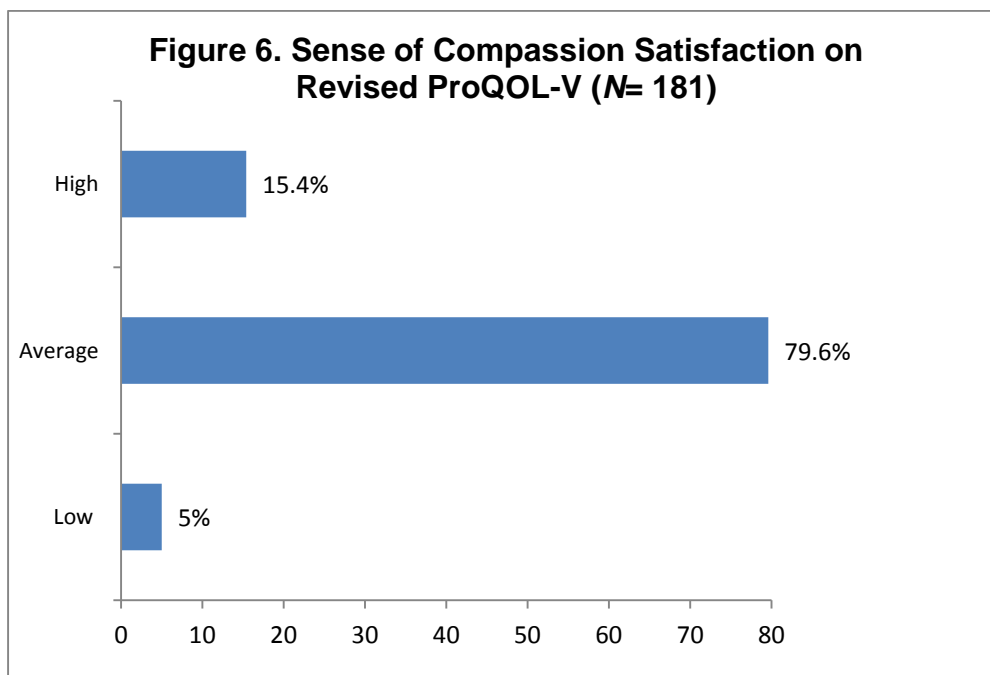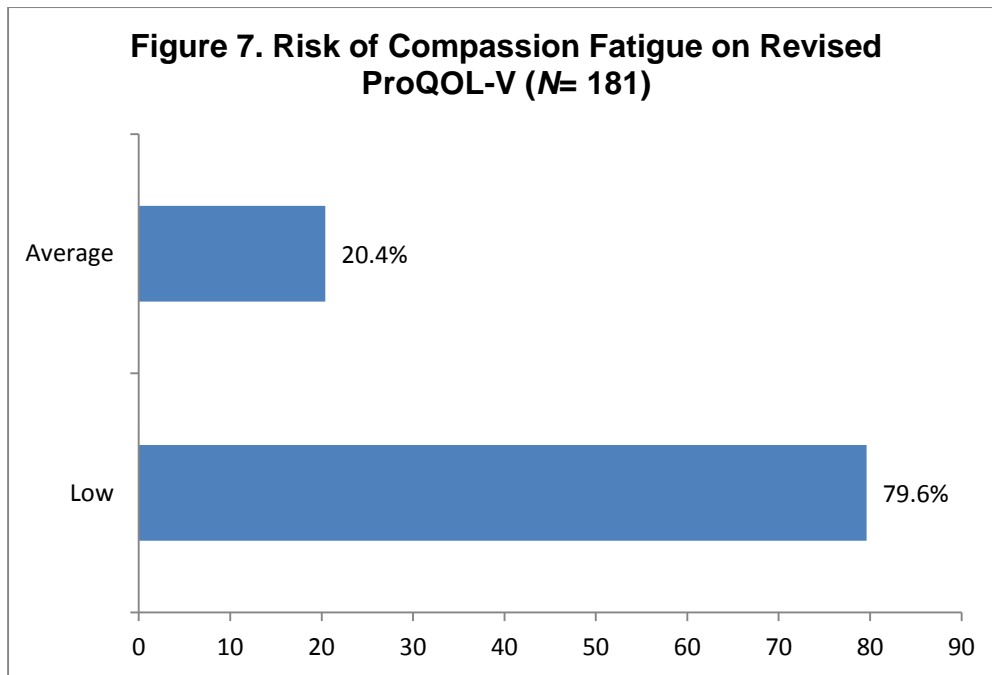
One-way analysis of variance (ANOVA).

A one-way between subjects ANOVA was conducted to compare the mean levels of Emotional Exhaustion, Depersonalization, Personal Accomplishment, Compassion Satisfaction, and Compassion Fatigue amongst the different human social services. As the work conditions faced by Voluntary Children's Home (VCH) workers and Family Service Centre (FSC) workers are different, it was decided to test them as separate groups, with the government agency workers as the third separate group. There were no significant differences in the subscale scores amongst the groups, except for the Personal Accomplishment subscale score, $F(2,64)= 4.74$, $p= 0.01$. The assumption of homogeneity of variance was violated hence the Welch F-ratio is reported. As equal variances could not be assumed, the Games-Howell post hoc test was used, which revealed a significant difference in the sense of Personal

Accomplishment between the agency workers and FSC workers, $p=$ 0.008, $d=$ 0.35. Figure 8 shows the error bar chart of the Means of Personal Accomplishment for the different groups of workers.

Figure 8. Error Bar Chart of Mean Scores for Personal Accomplishment
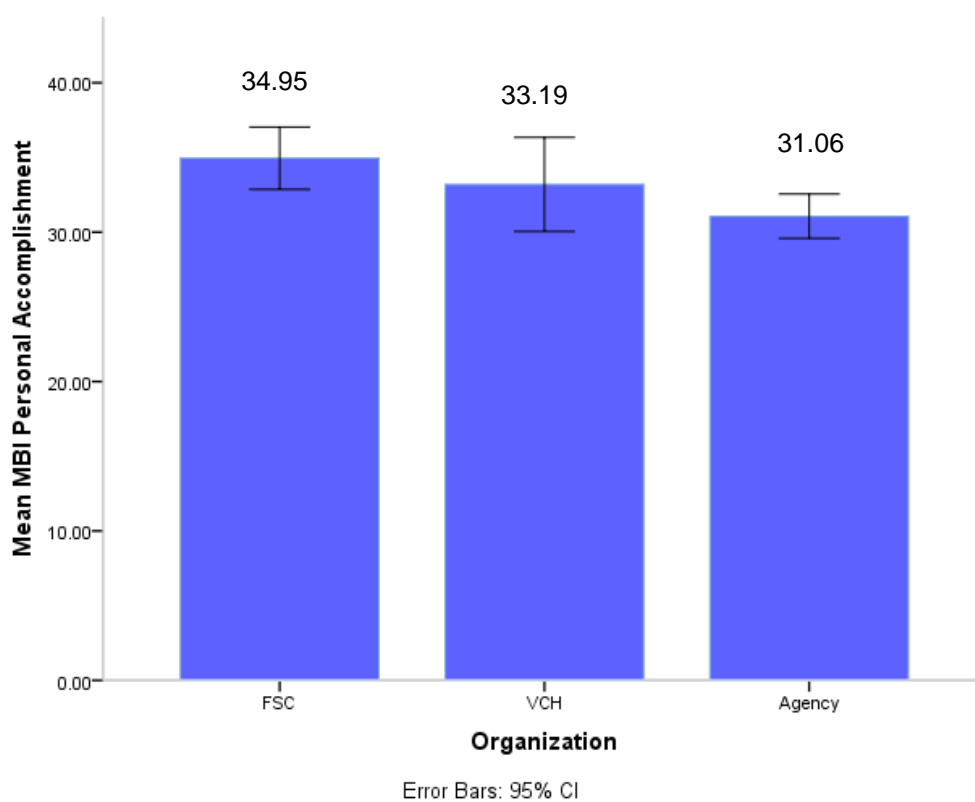
Summary and Discussion of Results for Part 1 of Study 1

Confirmatory factor analyses suggested that the original 3-factor structure of MBI-HSS (Maslach & Jackson, 1981) remained valid for use in Singapore. The Cronbach Alphas for the three MBI-HSS subscales were found to be good to excellent, with values from 0.77 to 0.92. As hypothesized, the prevalence of burnout amongst human service workers in Singapore was similar to their overseas counterparts with

33.7% of the 181 participants presenting high risk of emotional exhaustion on the MBI-HSS. When considering all the subscales, 54.1% of the 181 participants presented with either high levels of emotional exhaustion, high levels of depersonalization or low levels of sense of personal accomplishment.

On the other hand, ProQOL-V (Stamm, 2010) required modification to the original 3-factor structure to a 2-factor structure, as well as removal of five items, for adequate fit to the local data. There were a few plausible explanations for the difference in structure. Firstly, as suggested in an earlier section, there might be measurement errors due to social desirability and other sources of bias, which are commonly reported in cross-cultural research (Van de Vijver & Tanzer, 2004). In particular, there were cross-cultural studies that highlighted the issue of mix-worded measures of psychological constructs that were unidimensional for Americans separating into positive- versus negative-wording factors for Asians (Wong, Rindfleisch, & Burroughs, 2003). Secondly, the Burnout and Secondary Traumatic Stress subscales were developed as two related aspects of Compassion Fatigue, which meant that the items from these subscales would naturally have been somewhat correlated, resulting in some items from the Burnout subscale loading onto the Secondary Traumatic Stress subscale.

None of the 181 respondents rated themselves as experiencing high levels of compassion fatigue, while only 9 out of 181 respondents

rated themselves as having low sense of compassion satisfaction. The majority of ratings fell within the average range on both subscales of the modified ProQOL-V, suggesting that perhaps the items were not sensitive enough for the local respondents, or there needed to be a revision of the cut-off criteria. On the other hand, it could also be reflecting that compassion fatigue was not a significant issue amongst human service workers in Singapore. Most human service organizations, taking the lead from the government agency, were mindful of the risk of compassion fatigue, and training packages and supervision generally would have an objective of preventing compassion fatigue. The two subscales for the modified ProQOL-V showed excellent internal consistencies with reliability coefficients of 0.90 for Compassion Satisfaction and 0.85 for Compassion Fatigue.

The inter-correlations amongst the MBI-HSS and ProQOL-V subscales were mostly in the expected directions. As expected, Compassion Fatigue and Compassion Satisfaction from the modified ProQOL-V were correlated with each other significantly and negatively, even though the strength of the correlation was relatively weak. Emotional Exhaustion and Depersonalization were strongly correlated with each other in a positive manner. However, Personal Accomplishment was not significantly correlated with either Emotional Exhaustion or Depersonalization. Moreover, Personal Accomplishment was significantly correlated with Compassion Satisfaction in a positive direction, but it its correlation with Compassion Fatigue was not

significant. As Personal Accomplishment was meant to capture the participants' overall sense of professional competence and work efficacy, this result could suggest that workers could develop risks of burnout and compassion fatigue in spite of their professional competence.

The one-way between subjects analyses of variance on the burnout and compassion fatigue subscale scores of the different organizational groups of human service workers failed to reject the null hypotheses. There was one exception. Sense of personal accomplishment was significantly lower in the government agency workers compared to workers from the community family service centres (FSC). The mean score of Personal Accomplishment in the agency workers was 31, which met the cut-off criterion for the classification of Low Personal Accomplishment, indicating higher burnout. The result was understandable as compared to FSC workers, the agency workers faced more organizational red-tape and restrictions, as well as public criticisms due to them working in a large governmental agency and taking on more challenging cases due to their additional roles as legal custodians.

Data Analyses and Results for Part 2 of Study 1

Further data analyses were done with the additional data collected from 113 participants from the government agency specializing in human social services. The participants' characteristics were already presented in the earlier section for Part 1 of Study 1. As these participants completed a much longer questionnaire, there were more incomplete responses towards the end of the questionnaire. After replacing missing values with item means where appropriate, nine participants still had incomplete data for the later tests, such as, STAXI-2 and Social Support Questionnaire. Consequently, 104 valid cases were analyzed after removing the nine participants with incomplete data.

Psychometric properties of tests used in part 2 of study 1.

The basic psychometric properties of the various tests used in Part 2 of Study 1 were examined. As MBI-HSS and the modified ProQOL-V were studied in detail earlier, only their reliability coefficients and descriptive statistics were examined for the subset of the data (presented in Table 14). The Cronbach Alpha coefficients for the subscales of these tests remained more or less similar to those found in the larger sample. The total scale of Physical Health Questionnaire (PHQ) of 14 items had good internal consistency, $\alpha= .86$. For STAXI-2, as the main measure of interest was Trait Anger, only its internal consistency was examined. The Cronbach Alpha for the 10-item Trait Anger subscale was good at .81.

Carver (2007) stated that he did not recommend for a total score to be derived or used from the 28-item Brief COPE. Moreover, he recommended that researchers use their own data to determine the composition of higher-order factors. As he originally grouped the 28 items from Brief COPE to 14 subscales of two items each, this author decided to do as recommended and attempted to reduce the number of factors using a Principal Components factor analysis with an Oblimin rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .73, greater than the criterion value of .60. In addition, the Bartlett's Test of Sphericity was significant at $p< .001$. Both the KMO index and Bartlett's Test result indicated that the current data set was suitable for factor analysis.

Eight factors with Eigenvalues of more than 1.0 were obtained, explaining 70.2% of variance. Notably, three of the original 14 subscales remained the same: Religion, Denial and Humour. However, the remaining items were grouped in a manner that was relatively hard to interpret. For example, one of the Planning items loaded onto the same factor as the two items with Active Coping, but the other Planning item loaded onto another factor with an item from Behavioural Disengagement and another item from Self-distraction. From the scree plot, it appeared that a 2-factor solution might be more appropriate. Therefore, another Principal Components factor analysis with an Oblimin rotation was conducted with the number of extracted factors limited to two.

The two factors extracted explained 37.2% of variance and the results were more interpretable, with items from Active Coping, Use of Instrumental Support, Positive Reframing, Use of Emotional Support, Planning loading onto the same factor, with a number of other items from other subscales that could be interpreted as positive coping strategies. On the other hand, the other factor constituted of items from Self-Blame, Behavioural Disengagement, Denial, Venting, Substance Use and a number of other items that could be interpreted as negative coping strategies. However, the items from the Religion subscale had low factor loadings, with one of the loading as low as .27, hence another Principal Components factor analysis with an Oblimin rotation was conducted with the two items from the Religion subscale removed, and with the number of extracted factors limited to two.

The resulting 2-factor solution explained slightly more variance than the previous factor analysis: 39.4%. All the factor loadings were greater than .30 and the two extracted factors were easily interpretable. Factor 1 consisted of items from the following subscales: Use of Instrument Support, Use of Emotional Support, Acceptance, Active Coping, Planning, Positive Reframing, and Humour. In addition, one item from the Self-Distraction loaded onto this factor. The item had to do with using pleasurable activities, such as watching television and going to the movies, to distract oneself from the stressful situation. Hence, Factor 1 could be interpreted as all coping strategies that were related to Active Coping – whether through behaviours of help-seeking or problem-solving, or through cognitive reappraisals. On the other hand, Factor 2 consisted of items from the following subscales: Denial, Substance Use, Behavioural Disengagement, Venting, and Self-Blame. Furthermore, there was one item from the Self-Distraction subscale on using work to distract oneself from stress. Therefore taken as a whole, Factor 2 appeared to be a collection of negative coping strategies that fitted the theme of Avoidance Coping. The factor loadings are presented in Table 13. The two derived subscales from Brief COPE: Active Coping and Avoidance Coping had good internal consistencies with Cronbach Alphas of .88 and .77 respectively.

Table 13. Factor Loadings for Principal Component Factor Analysis with Oblimin Rotation of Brief COPE, *n*= 104

Item	Factor 1 *Active Coping* Eigen= 6.18, Variance Explained= 23.9%	Factor 2 *Avoidance Coping* Eigen= 4.11, Variance Explained= 15.5%
COPE10 *Been getting help and advice from other people*	**.74**	.28
COPE15 I've been getting comfort and understanding from someone	**.73**	.18
COPE20 *Been accepting the reality of the fact that it has happened*	**.70**	-.16
COPE12 *Been trying to see it in a different light, to make it seem more positive*	**.70**	-.29
COPE23 *Been trying to get advice or help from other people*	**.69**	.28
COPE24 *Been learning to live with it*	**..65**	.03
COPE14 *Been trying to come up with a strategy about what to do*	**.64**	-.14
COPE17 *Been looking for something good in what is happening*	**.62**	-.20
COPE07 *Been taking action to try to make the situation better*	**.62**	-.23
COPE02 *Been concentrating efforts on doing something about the situation I'm in*	**.60**	-.09
COPE25 *been thinking hard about what steps to take*	**.60**	.02
COPE05 *Been getting emotional support from others*	**.60**	.33
COPE19 *Been doing something to think about it less, such as going to movies, watching TV etc*	**.46**	.26
COPE18 *Been making jokes*	**.45**	.31
COPE28 *Been making fun of the situation*	**.36**	.35

Table 13. Factor Loadings for Principal Component Factor Analysis with Oblimin Rotation of Brief COPE, *n*= 104 (continued)

Item	Factor 1 *Active Coping* Eigen= 6.18, Variance Explained= 23.9%	Factor 2 *Avoidance Coping* Eigen= 4.11, Variance Explained= 15.5%
COPE13 *Been criticizing myself*	.16	**.66**
COPE06 *Been giving up trying to deal with it*	-.21	**.63**
COPE26 *Been blaming myself for things that happened*	.14	**.60**
COPE21 *Been expressing my negative feelings*	.39	**.58**
COPE11 *Been using alcohol or medication to help me get through it*	-.11	**.56**
COPE08 *Been refusing to believe that it has happened*	-.08	**.56**
COPE04 *Been using alcohol or medication to make myself feel better*	-.16	**.55**
COPE03 *Been saying to myself "this isn't real"*	.07	**.53**
COPE16 *Been giving up the attempt to cope*	-.12	**.47**
COPE09 *Been saying things to let my unpleasant feelings escape*	.21	**.46**
COPE01 *Been turning to work or other activities to take my mind off things*	.26	**.34**

Lastly, the Short Form- Social Support Questionnaire (SF-SSQ) and Satisfaction with Life Scale (SWLS) had excellent internal consistencies and exploratory factor analyses indicated that both remained as single factor scales as they were originally intended. The two indices for SF-SSQ, SSQ-N (availability of support) and SSQ-S (satisfaction with support) had reliability coefficients of .95 and .96 respectively. The reliability coefficient of SWLS was .89. The mean, standard deviation, range and skew for each measure used in part 2 of Study 1 are reported in Table 14, together with the reliability coefficients of each scale.

Table 14. Psychometric Properties of Measures used in Part 2 of Study 1, *n*=104

Variable	M	SD	α	Range Potential	Range Actual	Skew
MBI - HSS						
EE	22.53	10.55	.91	0 – 54	1 – 48	0.16
DP	6.97	5.10	.80	0 – 30	0 – 24	0.76
PA	30.95	7.93	.85	0 – 48	3 – 47	-0.54
Mod. ProQOL-V						
Compassion Satisfaction	49.05	7.37	.92	13 – 65	29 – 64	-0.30
Compassion Fatigue	25.87	6.44	.85	12 – 60	14 - 42	0.30
Physical Health Questionnaire	42.13	11.26	.86	7 – 98	21 – 77	0.43
STAXI-2 Trait Anger	16.49	3.93	.81	10 – 40	10 – 31	1.06
Brief COPE						
Active Coping	39.50	7.87	.88	15 – 60	15 – 59	-0.66
Avoidance Coping	17.67	4.14	.77	11 – 44	11 – 34	0.79
SF-SSQ						
SSQN	3.72	2.12	.95	0 – 9	0 – 9	0.68
SSQSI	5.29	0.83	.96	1 – 6	1 – 6	-2.28
SWLS	24.98	5.90	.90	7 – 35	9 – 35	-0.64

MBI-HSS: Maslach Burnout Inventory – Human Services Survey; EE: Emotional Exhaustion; DP: Depersonalization; PA: Personal Accomplishment; Mod ProQOL-V: Modified Professional Quality of Scale – V; SF-SSQ: Short Form – Social Support Questionnaire; SSQN: Social Support Questionnaire Social Network Index; SSQSI: Social Support Questionnaire Satisfaction Index; SWLS: Satisfaction with Life Scale

Personal demographic influences on measures.

Independent-samples t-tests and one-way ANOVAs were conducted to examine the influences of personal demographic variables, such as, Age, Gender, Marital Status, Education, Length of Service in the Organization, Years of Experience in the Human Social Services, on the various measures.

Age.

Due to the need to protect the confidentiality of the participants' responses as much as possible, participants chose from a list of 6 age groups (21 – 30 years; 31 – 40 years; 41 – 50 years; 51 – 60 years; and >61 years) when reporting their ages. As there were only 4 participants who were older than 61 years and another 5 participants who were between 51 and 60 years old, these two age groups were merged with the age group with ages between 41 and 50. This resulted in more comparable sample sizes for the different age groups. One-way between-subject ANOVAs were conducted on twelve measures: Emotional Exhaustion, Depersonalization, Personal Accomplishment, Compassion Satisfaction, Compassion Fatigue, Physical Health Symptoms, Trait Anger, Active Coping, Avoidance Coping, Social Support Network, Social Support Satisfaction and Satisfaction with Life. As there were many comparisons, a Bonferroni correction was made for the significance level, $0.05/12 = .004$. The homogeneity of variances amongst the age groups could be assumed equal for all the measures.

As the sample sizes were still slightly different amongst the groups, the Gabriel's test was used for post-hoc analyses.

There were no significant differences amongst the different age groups for all twelve measures except for Emotional Exhaustion, $F(2, 101)= 4.39$, $p= 0.02$, but this difference became not significant after the Bonferroni correction. Nonetheless, the trends of the post-hoc analysis for the age differences on Emotional Exhaustion were similar to the hypothesis that younger respondents, compared to older respondents, would report higher levels of emotional exhaustion. The respondents, who were 41 years and older, reported lower levels of Emotional Exhaustion, $M= 17.05$, $SD= 12.28$, when compared to respondents who were between 21 and 30 years old, $M= 22.82$, $SD= 10.78$, $d= 0.51$, $p= 0.09$, as well as when compared to respondents who were between 31 and 40 years old, $M= 25.59$, $SD= 8.22$, $d= 0.86$, $p= 0.01$.

Gender.

Independent-samples t-tests were conducted to compare the twelve measures between male and female respondents. Two variables: Physical Health Symptoms and Social Support Network were found to be significantly different between male and female respondents, even after the Bonferroni correction. Female workers reported experiencing significantly more physical health symptoms, $M= 44.11$, $SD= 11.26$, than male workers, $M= 37.01$, $SD= 10.41$, $t(102)= 2.94$, $p= 0.004$, $d= 0.17$. Female workers also reported significantly

130

more persons who they could turn to for support and help during stressful situations, *M*= 4.10, *SD*= 1.20, when compared to male workers, *M*= 2.70, *SD*= 2.12, *t*(102)= 3.13, *p*= 0.002, *d*= 4.50.

Marital Status.

Four out of 104 participants did not indicate their marital statuses. This could be due to further precaution taken by the participants to ensure that their identities remained confidential. As part of the procedure approved by the ethics review board, participants were informed that they could refrain from answering any item or question that they did not want to. Hence, for this set of analyses, the valid sample size was 100.

The original Marital Status groups were reduced to two groups: Not Married and Married. For the Not Married group, the one respondent who reported being divorced was included. Independent-samples t-tests were then conducted to compare the differences between married and not married respondents on the psychosocial variables. Equal variances could be assumed for all comparisons, except for those of Compassion Satisfaction and Satisfaction with Life. There were differences between the married and not married respondents on Emotional Exhaustion, Compassion Satisfaction, Physical Health Symptoms, and Satisfaction with Life. The married respondents reported less emotional exhaustion and physical health symptoms, and greater compassion satisfaction and satisfaction with life compared to the not married respondents. However,

131

after the Bonferroni correction, only the difference in Satisfaction with Life was significant. Married respondents, $M=$ 27.31, $SD=$ 4.65, were more satisfied with their lives in general, $t(98)=$ 3.80, $p<$ .001, $d=$ 0.73, than Not Married respondents, $M=$ 23.16, $SD=$ 6.27.

Education.

Six out of 104 participants did not report their education qualification, probably for the similar reasons shared in the previous section. Therefore, there were only 98 valid cases for the analyses. One-way ANOVA analyses were done to compare the mean levels of the psychosocial variables amongst the different groups of Educational qualification in respondents. As there were only nine and four participants with Diplomas and Postgraduate Diplomas respectively, hence they were combined into one group, and compared with respondents with Bachelor's degrees and those with postgraduate degrees. The results failed to reject all the null hypotheses, except for Social Support Network, $F(2,95)=$ 3.85, $p=$ .02. As the sample sizes were different, Hochberg's test was used for post-hoc analyses. Respondents with diplomas and postgraduate diplomas, $M=$ 2.32, $SD=$ 1.86, reported having fewer support persons they turned to for help, when compared to respondents with Bachelor's degrees, $M=$3.86, $SD=$ 2.02, $d=$ 0.39, $p=$ 0.05, as well as respondents with postgraduate degrees, $M=$ 4.19, $SD=$ 2.26, $d=$ 0.87, $p=$ 0.02. However, after the Bonferroni correction, these differences became non-significant.

Years of experience in human social services.

Two out of 104 participants did not report their number of years of experience working in human social services. Therefore, there were 102 valid cases for this set of analyses. One-way ANOVA analyses were done to compare the mean levels of the psychosocial variables amongst the agency workers with different number of years of experience in human social services: 0 -2 years, 2 – 5 years, 5 – 10 years and more than 10 years.

All comparisons were not significant, except for the differences in the reported levels of Emotional Exhaustion, which remained significant after the Bonferroni correction, $F(3,98)= 5.74$, $p= .001$. Respondents with between 5 and 10 years of experience in human social services reported higher levels of Emotional Exhaustion, $M= 30.17$, $SD= 10.15$, when compared to respondents with less than two years of experience, $M= 21.02$, $SD= 8.41$, $d= 0.98$, $p= .02$, respondents with between 2 and 5 years of experience, $M= 21.64$, $SD= 10.85$, $d= 0.81$, $p= .02$, and respondents with more than 10 years of experience, $M= 18.95$, $SD= 10.71$, $d= 1.07$, $p= .001$.

Length of Service in Organization.

One out of 104 participants did not report his/her length of service in the government agency, probably for the similar reasons shared in the previous sections. Therefore, there were 103 valid cases for this set of analyses. One-way ANOVA analyses were done to compare the mean

levels of the psychosocial variables amongst the agency workers with different lengths of service in the organization: 0 -2 years, 2 – 5 years, 5 – 10 years and more than 10 years. When the assumption of homogeneity of variance was violated, the Welch F-ratio is reported. For comparisons that could assume equal variances, the Gabriel post-hoc test was used. For comparisons that could not assume equal variances, the Games-Howell post-hoc test was used. There were a few interesting differences amongst the different lengths of service, but these were all not significant after the Bonferroni correction. However, as these results were interesting and might be useful for future consideration, they are described below nonetheless.

The group of workers with 5 to 10 years of service in the agency was found to report higher levels of Emotional Exhaustion, M= 30.99, SD= 11.62, when compared to the workers with less than 2 years of service, M= 21.28, SD= 7.92, d= 1.04, p= .03, workers with between 2 and 5 years of service, M= 21.19, SD= 12.06, d= 0.82, p= .05, and workers with more than 10 years of service, M= 20.21, SD= 9.72, d= 1.03, p= .02, $F_{Welch}(3,46)$= 3.62, p= .02.

There was also a difference in the levels of Trait Anger reported by workers with different lengths of service, $F(3,99)$= 3.76, p= .01. Workers with between 5 and 10 years of service reported higher Trait anger scores, M= 18.82, SD= 3.91, than workers with between 2 and 5 years of service, M= 15.19, SD= 3.41, d= 1.01, p= .007. Lastly, there

were differences in the tendencies to use Active Coping strategies amongst the workers with different lengths of service, $F_{Welch}(3,48)= 4.53$, $p= .007$. Workers with between 2 and 5 years of service tended to use more Active Coping strategies, $M= 43.38$, $SD= 5.75$, when compared with workers with less than two years of service, $M=38.18$, $SD= 7.84$, $d= 0.75$, $p= .02$ and workers with greater than 10 years of service, $M=37.42$, $SD= 9.67$, $d= 0.76$, $p= .04$. Although the difference was not significant, workers with between 2 and 5 years of service also tended to use more Active Coping strategies when compared to workers with between 5 and 10 years of service.

Summary and discussion of personal demographic influences.

While the pattern of the results followed the trends described in the hypotheses on the influences of personal demographic variables on levels of burnout, compassion fatigue and other psychosocial measures, most of the results failed to reach statistical significance.

Burnout measures.

There was a trend of workers older than 41 years old reporting lower levels of emotional exhaustion when compared to their younger peers. Females had slightly higher means for emotional exhaustion than males, while males had slightly higher means for depersonalization than females. Married workers reported lower levels of emotional exhaustion

when compared to their non-married peers, even though this difference was not statistically significant after the Bonferonni correction.

For the burnout measures, the only significant results were for the comparison amongst workers with different years of experience in human social services, as well as workers with different lengths of service in the agency. While there would be overlap between these two variables, as there would be a great number of workers joined the agency as their first job and remained there, there were still at least about a fifth of the workers who had joined the agency after they had a few years of experience in other human social service organizations.

Contrary to what was hypothesized, workers with between 5 and 10 years of experience in human services had significantly higher levels of emotional exhaustion compared to their peers with either fewer years or more years of experience. Similarly, workers who had joined the agency for 5 to 10 years reported significantly higher levels of emotional exhaustion compared to their colleagues who had shorter or longer lengths of service. Perhaps this was a reflection of this group of workers being the "sandwiched generation" in human social services and in the agency: they would have to take more complex and difficult cases as they were more experienced and they would have to take on more supervisory and administrative roles due them being more senior in the organization. On the other hand, workers with more than 10 years of experience, or were in the organization for more than 10 years, would

have likely a drastically reduced caseload as they would have moved to more administrative and supervisory roles. Furthermore, for these very experienced workers to remain in the human social services or the organization, either they could be resilient right from the start, or they had learnt effective strategies to manage job stress and burnout.

As the trait anger subscale was measuring the respondents' general tendencies in experiencing and expressing anger, the finding that the workers with 5 to 10 years of service in the agency having significantly greater trait anger scores could be an indication of them feeling frustrated at being "sandwiched" between their juniors and the seniors at the organization. Moreover, looking at the differences in the use of active coping strategies, one cannot help but speculate whether the workers with 2 to 5 years of service were experienced enough and not yet overwhelmed by caseloads and administrative work, so they were more likely to be "energetic" enough to use active coping strategies.

Compassion Fatigue Measures.

There was only one finding that was significant before the Bonferonni correction was applied. Married respondents reported experiencing higher levels of compassion satisfaction compared to their non-married peers. Therefore, no other hypotheses on the personal demographic variables' influence on the compassion fatigue measures were supported.

137

Other Measures.

There was a significant finding on the physical health symptoms reported by participants. As hypothesized, female workers reported experiencing more physical health symptoms when compared to the male workers. This result will be revisited and discussed in detail in a later section on the data analyses related to the other physical health measures. Female workers were also found to report having more persons they turned to for help and support than male workers. This was consistent with the widespread belief that females tended to be more expressive and proactive in seeking the company of others when they were feeling stressed. Another significant finding that was consistent with popular belief was that married respondents reported greater sense of overall satisfaction with life compared to their non-married peers. There were no significant findings for comparisons on trait anger and satisfaction with social support.

Data analyses for burnout measures.

Individual psychosocial variables associated with burnout.

Correlation analyses were conducted to examine the association of individual psychosocial variables like trait anger, active coping, avoidant coping, social support and satisfaction with life, with the burnout measures of emotional exhaustion, depersonalization and personal accomplishment. The results are presented in Table 15 below.

Table 15. Correlations Amongst Maslach Burnout Inventory Subscales and Individual Psychosocial Variables, *n*= 104

	EE	DP	PA	TAng	Active	Avoid	SSN	SSS
EE	-----							
DP	.47**	-----						
PA	-.08	-.20*	-----					
TAng	.40**	.35**	-.13	-----				
Active	-.00	-.09	.40**	-.08	------			
Avoidant	.34**	.18	.09	.39**	.18	-----		
SSN	.11	-.14	.28**	-.00	.40**	.12	-----	
SSS	-.20*	-.25*	.26**	-.28**	.30**	-.16	.42**	-----
SWL	-.47**	-.25*	.39**	-.27**	.29**	-.17	.28**	.43**

EE: Emotional Exhaustion; DP: Depersonalization; PA: Personal Accomplishment; TAng: Trait Anger; Active: Active Coping; Avoid: Avoidant Coping; SSN: Social Support Network; SSS: Satisfaction with Social Support; SWL: Satisfaction with Life; *$p< .05$;**$p< .01$

As hypothesized, higher scores reported by respondents on the Trait Anger subscale were associated with higher levels of emotional exhaustion and depersonalization reported by respondents. The hypothesis that greater tendency to engage in avoidant coping would be significantly associated with higher levels of emotional exhaustion was also supported. Furthermore, greater propensity to engage in active coping was significantly associated with greater sense of personal accomplishment. However, the hypothesis that propensity to engage in avoidant coping would be significantly correlated with depersonalization was not supported, although the trend of the non-significant association was in the positive direction as hypothesized. Moreover, propensity to engage in active coping was uncorrelated with either emotional exhaustion or depersonalization.

Social support network, that is, the average number of support persons a respondent could turn to in times of stress and sadness, was not significantly correlated with emotional exhaustion and depersonalization scores. However, the hypothesis that reported satisfaction with the social support received would be significantly and negatively correlated with emotional exhaustion and depersonalization scores was supported. As expected, higher scores of personal accomplishment were significantly associated with higher numbers of support persons and greater sense of satisfaction with social support. Furthermore, the propensities to report having more support persons and greater sense of satisfaction with social support were also significantly correlated with the propensity to engage in active coping strategies.

The hypothesis that greater sense of overall satisfaction with life would be significant associated with greater sense of personal accomplishment on the job was supported. In addition, the hypotheses that satisfaction with life would be significantly and negatively associated with emotional exhaustion and depersonalization were also supported. Unsurprisingly, greater sense of satisfaction with life was also significantly associated with more support persons reported, greater satisfaction with social support and the propensity to use active coping strategies.

Job and organizational variables associated with burnout.

A bivariate correlation analysis was conducted for the number of work hours per week reported by the respondents and the burnout measures of emotional exhaustion and depersonalization. The hypothesis that longer work hours would be associated with higher levels of emotional exhaustion was supported, $r(102)= 0.21$, $p= .03$. However, while longer work hours were positively associated with depersonalization scores the correlation coefficient was not significant.

A one-way between-subjects ANOVA was conducted to compare the mean levels of Emotional Exhaustion, Depersonalization, and Personal Accomplishment amongst respondents with different work ranks: Human Service Workers, Senior Workers and Supervisors/Managers. This variable was a re-coding of another variable called Work Roles, where Human Service Workers and Other Professionals were grouped together. This was done as there was certainty that the Other Professionals were mainly counselors and psychologists who were not Senior Workers or Supervisors/Managers. The results did not support the hypotheses that the more senior ranked workers would experience greater sense of personal accomplishment, and less emotional exhaustion and depersonalization, when compared to the junior ranked workers. No comparisons were statistically significant, and the mean scores reported for each of the groups on each burnout measure were rather similar.

The respondents were asked to indicate "yes" or "no", if they felt that they had received adequate training, as well as adequate supervision. They were also asked how often they felt supported by their supervisors ("*Never*", "*Rarely*", "*Sometimes*" and "*Always*"). There were 100 valid responses for the question on adequate training while there were 102 valid responses for the question on adequate supervision. Independent samples t-tests were conducted to examine the differences in the different burnout measures.

The hypotheses that the perception of having adequate training would be associated with the emotional exhaustion and depersonalization scores were not supported. The differences were not statistically significant. However, the hypothesis that the respondents who perceived that they had received adequate training would also report greater sense of personal accomplishment was supported, $t(33)=$ 2.88, $p=$ .007, $d=$ 0.81. That is, respondents who perceived that they had received adequate training, $M=$ 32.56, $SD=$ 6.49, reported higher scores for personal accomplishment than respondents who perceived that they did not receive adequate training, $M=$ 26.46, $SD=$ 10.06.

On the other hand, all the hypotheses on the associations between perceived adequate supervision and the burnout measures were supported. Respondents who reported that they did not feel that they had received adequate supervision reported significantly higher levels of emotional exhaustion, $M=$ 25.63, $SD=$ 9.74, than respondents

who reported feeling that they had adequate supervision, $M= 20.16$, $SD= 10.90$, $t(100)= 2.63$, $p= .01$, $d= 0.52$. Similarly, respondents reporting that they had adequate supervision reported significantly higher levels of depersonalization, $M= 8.49$, $SD= 4.98$, than respondents who reported that they had adequate supervision, $M= 5.75$, $SD= 5.05$, $t(100)= 2.73$, $p= .007$, $d= 0.55$. Although the statistical result just reached significance, respondents who reported feeling that they had adequate supervision also reported higher sense of personal accomplishment, $M= 32.62$, $SD= 7.49$, compared to respondents who reported that they did not have adequate supervision, $M= 29.69$, $SD= 7.48$, $t(100)= 1.96$, $p= .05$, $d= 0.39$.

Respondents were also asked whether they received support from their co-workers ("*Never*", "*Rarely*", "*Sometimes*" and "*Always*"). For both the supervisory and collegial support items, very few respondents chose the "*Never*" or "*Rarely*" choices as answers. Only one respondent rated as having never received support from his/her supervisor, and three respondents rated as rarely received their supervisors' support. For the item on support from co-workers, none chose the option "*Never*" and only one person rated as having rarely received support from his/her colleagues. Therefore, for the variables on supervisors' support and co-workers' support, the "*Never*" and "*Rarely*" response groups were merged with the "*Sometimes*" responses. This response pattern for the items on supervisors' support and co-workers' support could be due to social desirability bias, which

was described in earlier sections, or more likely, it could be a reflection of the actual camaraderie that workers experienced. The researcher is not a direct colleague or supervisor to the majority of the respondents, and with the researcher being blind to their identities, there was no apparent reason to have a "socially desirable" response. On the other hand, the social services industry is popularly perceived as a warmer work environment, when compared with other industries, such as the finance sector.

The hypotheses on the associations between perceived support from supervisors and the burnout measures were all supported. Specifically, respondents who perceived receiving their supervisors' support all the time reported significant less emotional exhaustion ($M=$ 20.26, $SD=$ 10.62) than their peers who perceived that they sometimes (or less) received their supervisors' support at work, $M=$ 25.88, $SD=$ 10.05, $t(102)=$ 2.70, $p=$ .008, $d=$ 0.54. Similarly, the respondents who reported receiving their supervisors' support all the time had significantly lower scores for depersonalization, $M=$ 5.95, $SD=$ 4.81, when compared to the respondents who reported receiving supervisors' support sometimes or less, $M=$ 8.48, $SD=$ 5.52, $t(102)=$ 2.47, $p=$ .02, $d=$ 0.50. On the other hand, respondents who perceived that they had received supervisors' support all the time had significantly greater sense of personal accomplishment at work, $M=$ 32.60, $SD=$ 7.66, compared to the respondents who reported receiving supervisors' support sometimes or less, $M=$ 28.52, $SD=$ 8.13, $t(102)=$ 2.60, $p=$ .01, $d=$ 0.52.

Although respondents who reported that they had always received colleagues' support at work had lower emotional exhaustion and depersonalization scores than the respondents who reported receiving colleagues' support sometimes or less, these differences were not statistically significant. However, the hypothesis that the respondents who reported receiving colleagues' support all the time would have a greater sense of personal accomplishment, M= 32.78, SD= 7.42, compared to the respondents who reported only receiving colleagues' support sometimes or less, M= 26.84, SD= 8.06, was supported, t(102)= 3.67, p< .001, d= 0.78.

Summary of Results on Analyses for Burnout.

Overall, unlike the relative lack of statistical support for the hypotheses on the associations between personal demographic variables and the burnout measures, majority of the hypotheses on the associations amongst individual psychosocial, job and organization and the burnout measures were supported. Even for the hypotheses that were not supported by statistical significant results, the general directions of the associations were as hypothesized. Furthermore, out of the three burnout measures, it appeared that Emotional Exhaustion was the most salient, like what was previously observed by Drake and Yadama (1996), as well as other burnout researchers.

Perhaps due to the relatively small sample size, many previous findings on the associations between personal demographic variables and the burnout measures were not replicated in this study. Specifically, the results in this study followed the trend of previous findings, but they were not statistically significant. For example, there was a trend that younger workers reported higher levels of emotional exhaustion compared to older workers. Female workers also reported higher levels of emotional exhaustion while male workers reported higher levels of depersonalization although the differences were not statistically significant. Married respondents also reported lower emotional exhaustion scores compared to their non-married counterparts, but this difference was not statistically significant.

The most interesting finding had to do with respondents' years of experience in the human social services. It was hypothesized that the less experienced workers would report higher emotional exhaustion scores when compared to more experienced workers. However, what was found in the current study suggested that there was an inverted U-shaped relationship between years of experience in human social services and levels of emotional exhaustion. Workers with human social service experience between 5 and 10 years had significant higher levels of emotional exhaustion compared their colleagues with less than 2 years of experience, between 2 and 5 years of experience, and greater than 10 years of experience. This finding has an important practical

implication on the human social services and it will be re-visited in later sections.

From the results of the current analyses, while the three-factor structure of MBI-HSS appeared to be "intact" for use in Singapore, personal accomplishment appeared to be "running parallel" to emotional exhaustion and depersonalization. Emotional exhaustion was positively associated with depersonalization, but not with personal accomplishment. Work and organizational variables, such as, longer work hours, years of experience in human social services and supervision were associated with emotional exhaustion, but not so much with depersonalization or personal accomplishment. Trait anger was associated with emotional exhaustion and depersonalization but not with personal accomplishment, while avoidant coping, but not active coping, was related to emotional exhaustion. On the other hand, active coping was significantly correlated with personal accomplishment, as were all the "resource" variables in this study: perceived support from supervisors, perceived support from colleagues, perceived adequate training, having more support persons in the social support network, satisfaction with the social support received, and overall satisfaction with life. Interestingly, whether respondents perceived if they had adequate training or not, did not have any association with the levels of emotional exhaustion and depersonalization.

In fact, the pattern of findings appeared to provide some support for Leiter's (1993) Process Model of Burnout where emotional exhaustion was thought to mediate the impact on work conditions, such as, long working hours, on depersonalization, whereas resources, such as, social support and training influenced personal accomplishment. Leiter (1993) further noted that emotional exhaustion and personal accomplishment had different predictors, although these two constructs could be influenced by variables like coping styles.

Data analyses for measures of compassion fatigue.

Individual psychosocial variables associated with compassion fatigue.

Correlation analyses were conducted to examine the association of individual psychosocial variables like trait anger, active coping, avoidant coping, social support and satisfaction with life, with the measures of compassion satisfaction and compassion fatigue. The results are presented in Table 16.

Table 16. Correlations amongst Modified ProQOL-V Subscales and Individual Psychosocial Variables, *n*= 104

	CS	CF	TAng	Active	Avoid	SSN	SSS
CS	-----						
CF	**-.26****	-----					
TAng	-.05	.18	-----				
Active	**.42****	-.11	-.07	-----			
Avoidant	.02	**.36****	**.39****	.18	------		
SSN	**.22***	-.08	- .00	**.40****	.12	-----	
SSS	**.25***	-.14	**-.28****	**.30****	-.16	**.42****	-----
SWL	**.33****	-.18	**-.27****	**.29****	-.17	**.28****	**.43****

CS: Compassion Satisfaction; CF: Compassion Fatigue; TAng: Trait Anger; Active: Active Coping; Avoid: Avoidant Coping; SSN: Social Support Network; SSS: Satisfaction with Social Support; SWL: Satisfaction with Life; **p< .05;**p< .01*

None of the hypothesized associations of the individual psychosocial variables with the measure of compassion fatigue were supported, except for the significant positive correlation between the propensity to use avoidant coping and compassion fatigue. On the other hand, the propensity to use avoidant coping strategies was not correlated with compassion satisfaction, but the propensity to use active coping, having more support persons in the social support network, having more satisfaction with social support received and satisfaction with life, were all significantly associated with compassion satisfaction in the positive direction. This was a similar pattern as the burnout measures which was not surprising as personal accomplishment had a significant moderate strength positive correlation with compassion satisfaction.

Job and organization variables associated with compassion fatigue.

A bivariate correlation analysis was conducted for the number of work hours per week reported by the respondents and the measures of compassion satisfaction and compassion fatigue. In addition, a one-way between subjects ANOVA was conducted to compare the mean levels of Compassion Satisfaction and Compassion Fatigue amongst workers with different primary clients: abuse victims, offenders and mix of victims and offenders. All the group means were within the average range of scores for compassion fatigue. There were no significant difference in the compassion satisfaction scores amongst the different groups, but there was a significant difference in the scores for compassion fatigue, $F(2,101)= 5.65$, $p= 0.005$. The assumption of homogeneity of variance was not rejected, thus the Hochberg's post-hoc test was used, revealing that workers whose primary clients were abuse victims had significantly higher scores for compassion fatigue, $M= 29.28$, $SD= 5.31$, when compared with workers who worked with a mix of victim and offenders, $M= 23.15$, $SD= 7.70$, $p= .003$, $d= 0.91$. The compassion fatigue scores for workers who primarily worked with offenders were also lower, $M= 25.80$, $SD= 5.69$, than the workers who primarily worked with abuse victims, but the result just missed statistical significance, $p= .07$, $d= 0.62$. Figure 7 shows the error bar chart of the Means of Compassion Fatigue for the workers with different client groups.

Figure 9. Error Bar Chart of Mean Scores for Compassion Fatigue

Error Bars: 95% CI
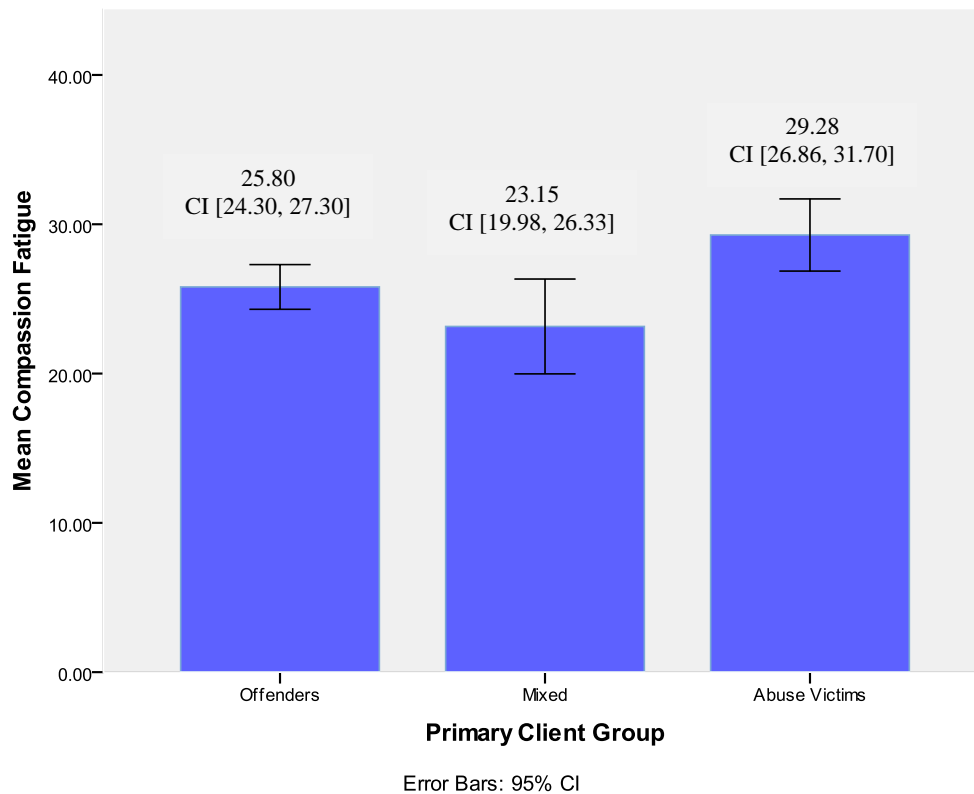
Independent samples t-tests were conducted to examine the relationships of the organizational variables (respondents' perceptions of adequate training, adequate supervision, supervisors' support and co-workers' support) with the scores of compassion satisfaction and compassion fatigue. The explanation of how these variables were operationalized and coded was provided in the earlier section on the data analyses for the burnout measures hence no further explanation will be provided here.

None of the hypotheses related to compassion fatigue were supported by the results. That is, it did not appear that having adequate training or supervision, or support at work, had any impact on levels of compassion fatigue reported by workers. However, the compassion fatigue scores were positively skewed and they had relatively limited range. None of the scores reached the cutoff that qualified for a high score.

The t-test results did not support the hypotheses that respondents' perception of receiving adequate training and their perception of receiving adequate supervision would be associated with higher scores on compassion satisfaction. However, respondents who reported experiencing support from their supervisors at all times had higher scores of compassion satisfaction, $M= 51.03$, $SD= 6.61$, compared to their peers who experienced their supervisors' support sometimes or less, $M= 46.14$, $SD= 8.03$, $t(102)= 3.39$, $p= .001$, $d= 0.68$. Similarly, respondents who reported experiencing support from their co-workers at all times had higher scores of compassion satisfaction, $M= 50.55$, $SD= 6.84$, compared to their peers who experienced their co-workers' support sometimes or less, $M= 45.69$, $SD= 8.14$, $t(102)= 3.15$, $p= .002$, $d= 0.67$.

Summary of results of analyses for compassion fatigue.

As mentioned in the earlier section on psychometric properties of the measures used in this study, the range of scores for the two subscales of the modified ProQOL-V was limited as all scores fell within the low to average range, with none reaching clinical cutoffs. Nonetheless, it was worthwhile to examine the patterns of relationships compassion satisfaction and compassion fatigue had with various individual, job and organization variables.

Although compassion fatigue was moderately correlated with emotional exhaustion and depersonalization, and compassion fatigue was moderately correlated with personal accomplishment, the pattern of findings on associations (or lack of association) of these measures had with the other individual psychosocial, job and organizational variables, provided tentative support to the theoretical belief that compassion fatigue and burnout were different constructs.

One of the most salient findings was the significantly higher scores of compassion fatigue (even though all scores were within the low to average range) reported by workers who primarily worked with abuse victims. This finding was most supportive of Figley's (1995) and others' (e.g., McCann & Pearlman, 1990) theories on exposure to clients' trauma could lead to human service workers developing symptoms of compassion fatigue.

Another set of interesting findings was the positive association between avoidant coping and compassion fatigue, and the positive association between active coping and compassion satisfaction. Firstly, these findings, taken together with the findings in this study on the associations between coping and burnout reported earlier, further added to the empirical evidence that coping strategies were related to burnout and compassion fatigue (e.g., Anderson, 2000; Injeyan et al., 2011). Secondly, with the lack of significant correlation between avoidant coping and active coping, these findings suggested that there were parallel pathways to compassion satisfaction and compassion fatigue, much similar to the theory that personal accomplishment was "parallel" to emotional exhaustion and depersonalization.

Data analyses on factors associated with physical health symptoms.

Staff Health Characteristics.

Table 17 summarizes the basic information collected in the survey on the health behaviours and health characteristics of the survey respondents in the government human social service agency.

Table 17. Agency Staff Health Characteristics, *n*= 113

Item	Number of Participants (n)	Percentage (%)
Body Mass Index		
Underweight (< 18.5)	12	10.6
Normal (18.5 – 22.9)	72	63.7
Overweight (23.0 – 27.4)	17	15.0
Obese (≥ 27.5)	5	4.4
Missing	7	6.2
Exercise		
No exercise	10	8.8
Mild (climb stairs, walk short distance)	40	38.9
Occasional vigorous (<4x/week for 30 mins.)	44	35.4
Regular vigorous (>4x/week for 30 mins.)	16	14.2
Missing	3	2.7
Caffeine Intake Per Day		
No or one in few days	24	21.3
1 -2 cups	67	59.3
3 cups or more	12	10.7
Missing	10	8.8
Smoking		
Yes	7	6.2
No	104	92.0
Missing	2	1.8
No. of Visits to Doctor in Past 6 months		
None	24	21.2
Once	35	31.0
2 to 3 times	28	24.8
4 to 5 times	13	11.5
6 or more times	7	6.2
Missing	6	5.3
No. of Days of Sick Leave in Past 6 months (Mean= 2.97 days)		
None	35	31.0
One day	16	14.2
2 to 3 days	33	29.2
4 to 5 days	11	9.7
6 or more days	14	12.6
Missing	4	3.5

Table 17. Agency Staff Health Characteristics, *n*= 113 (continued)

Item	Number of Participants (n)	Percentage (%)
Chronic Health Conditions		
No	89	78.8
Yes	23	20.4
Hypertension/ high blood	8	7.1
cholesterol	1	0.9
Dermatological	3	2.7
Eye, Nose, Throat	2	1.8
Gastric	1	0.9
Hepatic	2	1.8
Neurological	3	2.7
Orthopedic	1	0.9
Multiple (Gynaecological and	2	1.8
others)	1	0.9
Multiple (Diabetes and others)		
Missing		

Overall, the state of health of the agency staff was no different or better than the national norms as indicated by the national prevalence rates of BMI risk, cigarette smoking, physical activity and disease burden obtained from the National Health Survey (Epidemiology and Disease Control Division, Ministry of Health, Singapore, 2010). For example, 23% of the current study participants had high BMI, which is similar to the national prevalence reported in the National Health Survey (2010). Similarly, although the classification of physical activity or exercising behaviour was slightly different, the rate of physical activity of the agency staff was similar to the pattern reported of the national population. The prevalence of cigarette smoking was lower in the current sample (6.2%) compared to the national sample (14.3%). Comparing within each gender group, the rate of smoking within the male respondents in the current sample, 6 out of 29 respondents, 20.7%, was comparable to the rate for male smokers in the national sample, 24.7%. For the female

sample in the current study, 1 out of 82 respondents smoked, giving a rate of 1.2%, which was lower than the rate found in the national sample for female smokers, 4.2%. In the National Health Survey (2010), the prevalence rates of diabetes, hypertension, and high blood cholesterol were 11.3%, 23.5% and 17.4% respectively. As can be seen from Table 17, the comparative rates in the current sample were much lower.

At the beginning of this chapter, it was hypothesized that female respondents would report more physical health symptoms on the Physical Health Questionnaire (PHQ, Schat et al, 2005) than male respondents. As shared in the earlier section on the influences of demographic variables on the measures, independent samples t-test demonstrated that female respondents reported experiencing significantly more physical health symptoms, M= 44.11, SD= 11.26, than male workers, M= 37.01, SD= 10.41, t(102)= 2.94, p= 0.004, d= 0.17. The hypothesis was supported and the finding was consistent with previous research on the differences between men and women on somatic symptom reporting (e.g., Barsky, Peekna, & Borus, 2001).

Bivariate correlation analyses were done with the following variables: PHQ score, the number of days of sick leave taken by respondents within the past 6 months prior to them completing the survey, how often respondents exercised, and all the psychosocial variables. Firstly, the reported number of days of sick leave was not associated with any of the psychosocial variables. Reported number of

157

days of sick leave only had a weak positive association with the report of somatic symptoms on the PHQ, $r(102)= 0.24$, $p= .02$. Not surprisingly, respondents' regularity in exercise had a weak negative correlation with the reported number days of sick leave, $r(102)= -.21$, $p= .04$.

The hypothesis that emotional exhaustion would have a significant positive association with the physical health/somatic symptoms reported on the PHQ was supported, $r(102)= 0.48$, $p< .001$. Similarly, the hypothesis that compassion fatigue would have a significant positive association with reported physical health symptoms was also supported, $r(102)= 0.25$, $p= .01$. Consistent with previous research on the association between anger and health (e.g., Thomas & Williams, 1991), there was a strong positive association between respondents' trait anger scores and reports on physical health symptoms on the PHQ, $r(102)= 0.50$, $p< .001$. Not surprisingly then, since there was a strong significant positive correlation between trait anger and avoidant coping, reported somatic symptoms on the PHQ also had a significant positive correlation with respondents' propensity to use avoidant coping, $r(102)= 0.39$, $p< .001$. There was also a weak but significant negative association between respondents' overall satisfaction with life score and somatic symptoms reported on the PHQ, $r(102)= -.23$, $p= .02$.

Data analyses on factors associated with turnover intent.

In the survey, respondents were asked whether they had thoughts of leaving the organization by indicating their answer as "yes" or "no", and then they were asked to rate on a 10-point scale on how likely they were to act upon their thoughts of leaving, with "0" being not at all and "10" being very much so. The Turnover Intent score was calculated by multiplying the absence/presence (coded as "0" and "1" respectively) of thoughts of leaving the organization with the likelihood of acting upon the thoughts (indicated on the 10-point scale). The resulting composite score ranged from 0 to 10, with a mean of 3.20 and a standard deviation of 3.33. There were 102 valid responses.

Personal demographic variables.

Age.

A One-way Between-Subject ANOVA analysis was conducted to compare the intention to leave amongst the three different age groups: 21 to 30 years old, 31 to 40 years old, and 41 years and older. There was a significant difference amongst the groups, $F(2,99)= 4.32$, $p= .02$, and there was an inverted U-shaped pattern: the respondents aged 31 to 40 years had greater intention to leave the organization, $M= 4.48$, $SD= 3.07$, compared to the respondents who were aged 21 to 30 years, $M= 2.33$, $SD= 3.08$, $d= 0.70$, $p= .01$. The mean intention to leave score for the respondents who were aged 41 years and older was somewhere in between the other two age groups, and the differences were not

significant. Therefore, the hypothesis that younger workers would have higher intention to leave than older workers was not supported.

Length of Service.

A One-Way Between-Subject ANOVA analysis was done to compare the intention to leave in respondents with different lengths of service in the agency: 0 to 2 years, 2 to 5 years, 5 to 10 years, and longer than 10 years. There were 101 valid responses. There was a significant difference amongst the groups, $F(3,97)= 8.09$, $p< .001$.

Workers who had worked between 5 and 10 years at the agency were more likely to act upon their thoughts to leave the organization, $M= 6.12$, $SD= 3.14$, than their co-workers who had worked between 2 and 5 years, $M= 2.86$, $SD= 2.76$, $d= 1.13$, $p= .005$, and those who had worked less than 2 years in the agency, $M= 1.64$, $SD= 2.64$, $d= 1.59$, $p< .001$. One important thing to note from this set of results is that the mean intention to leave score for the workers with 5 to 10 years of service was actually over the half-way mark of the 10-point scale. This suggested that the agency was at risk of really losing many workers from this group.

The group of workers with more than 10 years of service in the organization showed some differences from the other groups, which approached significance. They had less intention to leave, $M= 3.77$, $SD= 3.64$, compared to the workers with 5 to 10 years of service, $M=$

6.12, *SD*= 3.14, *d*= 0.68, *p*= .09, but they had greater intention to leave the organization compared to the workers with less than 2 years of experience, *M*= 1.64, *SD*= 2.64, *d*= 0.68, *p*= .06. Therefore, the hypothesis that respondents with shorter lengths of service would have higher intention to leave than those who had longer lengths of service was not supported.

Years of experience in human social services.

A One-Way Between-Subject ANOVA was done to compare the intention to leave in respondents with different years of experience within human social services: 0 to 2 years, 2 to 5 years, 5 to 10 years, and longer than 10 years. There were 100 valid responses. There was a significant difference amongst the groups, *F*(3,96)= 3.98, *p*= .01. Respondents who had 5 to 10 years of experience in human social services were more likely to have thoughts of leaving the agency, *M*= 4.55, *SD*= 3.40, than respondents with less than two years of experience, *M*= 1.52, *SD*= 2.56, *d*= 1.01, *p*= .01. Moreover, there was a trend of respondents with longer than 10 years of experience in human social services having a higher likelihood of acting on their thoughts of leaving the agency, *M*= 3.89, *SD*= 3.67, compared to respondents with less than two years of experience, although this difference approached significance, *d*= 0.74, *p*= .06. Therefore, the hypothesis that the less experienced respondents would have greater intention to leave the agency compared to more experienced respondents was not supported.

Psychosocial and physical health measures.

Bivariate correlation analyses were conducted with the intention to leave score and the psychosocial and physical health measures: emotional exhaustion, depersonalization, personal accomplishment, compassion satisfaction, compassion fatigue, trait anger, active coping, avoidant coping, social support network, social support satisfaction, satisfaction with life, and physical health symptoms. There was a significant strong positive correlation between the index for intention to leave and emotion exhaustion, $r(100)= 0.51$, $p< .001$. There were moderate strength significant positive associations between intention to leave and the propensity to use avoidant coping, $r(100)= 0.31$, $p= .001$, as well as between intention to leave and physical health symptoms reported, $r(100)= 0.30$, $p= .002$. Trait anger had a significant but weak positive correlation with the intention to leave, $r(100)= 0.21$, $p= .03$, while satisfaction with life had significant negative correlation with intention to leave, $r(100)= -.28$, $p= .005$.

There results from the correlation analyses provided mixed support for the hypotheses stated earlier in this chapter. While avoidant coping was found to positively associate with intention to leave, active coping was uncorrelated with intention to leave. Similarly, respondents' overall satisfaction with life was negatively correlated as hypothesized, but there were no significant associations between the social support variables and intention to leave. Emotional exhaustion was found to

have a very strong positive correlation with intention to leave, but there was no significant relationship found between the other burnout or compassion fatigue measures and intention to leave. However, as hypothesized, there was a positive association between physical health symptoms reported and intention to leave. The more somatic symptoms respondents reported, the greater likelihood of them acting on their thoughts of leaving the organization.

Job and organizational variables.

It was hypothesized that longer working hours per week would be positively associated with respondents' intention to leave. However, this hypothesis was not supported. Working hours per week was not correlated with the index for intention to leave, $r(100)= 0.08$, $p= .43$. The hypothesis that respondents who worked primarily with abuse victims would report greater intention to leave when compared to other respondents who worked with other client types was also not supported. One-way between-subjects ANOVA indicated there were differences amongst the workers with different groups of primary clients, $F(2,99)= 3.42$, $p= .04$. However, post-hoc analyses were not statistically significant. Furthermore, it was the difference between the group of respondents who worked with a mixed group of clients: abuse victims and offenders, $M= 4.21$, $SD= 3.51$, and respondents who worked primarily with offenders, $M= 2.46$, $SD= 3.14$, that approached significance in the post-hoc tests, $d= 0.54$, $p= .09$.

The hypothesis that respondents who perceived that they had received adequate training would report less intention to leave, $M=$ 3.31, $SD=$ 3.47, compared to respondents who perceived that they did not receive adequate training was not supported, $M=$ 3.28, $SD=$ 3.01, $t(97)=$ 0.40, $p=$ 0.97. Similarly, the results from independent samples t-tests were not statistically significant and did not support the hypotheses that respondents who perceived that they had received support from their colleagues or supervisors at all times would report less intention to leave than respondents who reported receiving colleagues' or supervisors' support sometime or less at work. However, the result from independent samples t-test comparison supported the hypothesis that respondents who perceived receiving adequate supervision, $M=$ 2.48, $SD=$ 3.48, would have less intention to leave when compared to respondents who perceived that they did not receive enough supervision, $M=$ 4.09, $SD=$ 2.99, $t(98)=$ 2.44, $d=$ 0.49, $p=$ .02.

Testing the hypothesized model.

Although the current sample size would be considered small, and the cross-sectional data would limit any conclusion on causality, it was hoped that the path analysis could shed some light on the pathways that could influence workers' intention to leave the human social service organization. Earlier in chapter 3, following a comprehensive literature review, a schematic diagram of the hypothesized pathways to the participants' turnover intent was presented in Figure 2 (p. 60).

As reported in the previous section, there were a number of significant zero-order correlations between workers' likelihood to act on their thoughts of leaving the organization and the other demographic, job/organizational and psychosocial variables. Specifically, turnover intent had been found to be significantly correlated with years in service within the organization, whether workers' perceived themselves as having adequate supervision, workers' propensity to use avoidant coping strategies, workers' self-reports on physical health symptoms, trait anger, and emotional exhaustion. Furthermore, there were significant zero-order correlations amongst these variables that were linked to intention to leave. Using the hypothesized pathways in Figure 2 (p. 60) as a guide, these variables were entered into a path model for analysis.

The model was tested with the maximum-likelihood method and the fit statistics indicated a good fit between the model and the current data set: χ^2(9, N=102)= 3.89, p=.92, CFI= 1.00, RMSEA= .00, 90% CI [.00, .04], p= .96. The path diagram with the standardized parameter estimates is presented in Figure 10.

165

Figure 10. Path Model with Standardized Parameter Estimates

*p<.05, **p<.005, ***p<.001
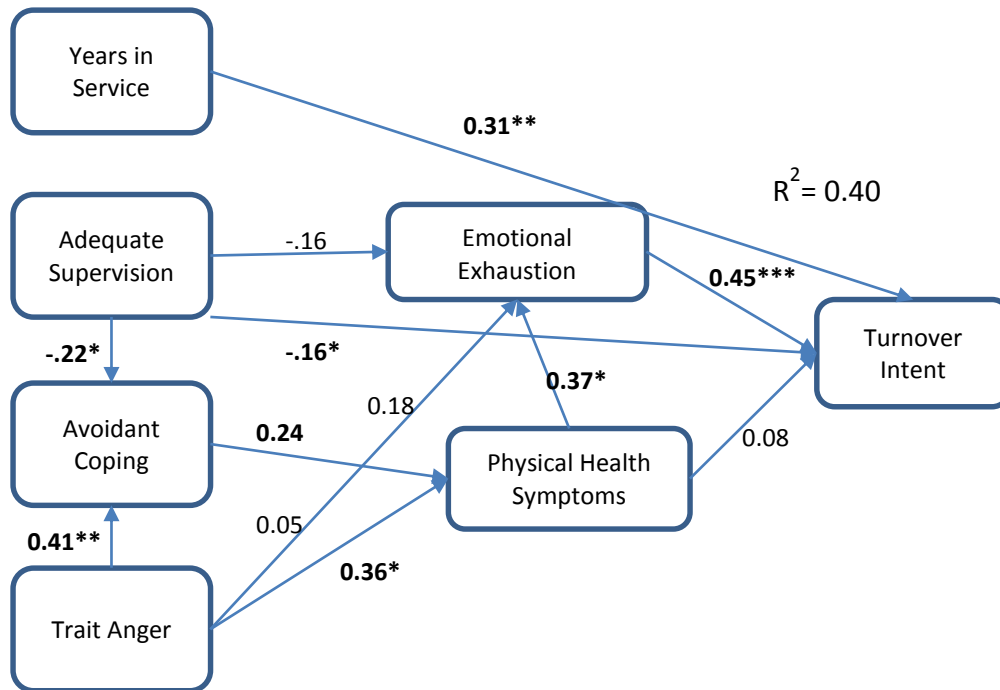
The path model in Figure 10 explained 40% of the variance in workers' likelihood of acting upon their thoughts of leaving the organization. As predicted, years in service was significantly and positively correlated to workers' intention to leave the organization, $\beta=0.31$, $p<.001$. Similarly, emotional exhaustion was also significantly and positively correlated to intention to leave, $\beta=0.45$, $p<.001$. There was also a significant negative association between workers' perception of having adequate supervision and intention to leave, $\beta= -.16$, $p= .04$. However, there was no significant relationship found between physical health symptoms and intention to leave. Instead, Sobel's z test revealed

a significant indirect effect of physical health symptoms on intention to leave through emotional exhaustion, $z=4.30$, $p<.001$.

There were significant positive associations between trait anger and physical health symptoms, $\beta=.36$, $p<.001$, and between trait anger and avoidance coping, $\beta=.41$, $p<.001$. In addition, avoidance coping was significantly correlated with physical health symptoms in a positive direction, $\beta=.24$, $p=.01$. In other words, workers' tendencies to experience anger had a direct influence on their reports of physical health or somatic symptoms, but also an indirect influence through the mediating variable of avoidance coping. Sobel's z test revealed the indirect effect to be significant, $z=3.18$, $p=.001$.

Surprisingly, trait anger was not significantly associated with emotional exhaustion in the path model when there was a strong significant positive zero-correlation between the two variables. While there appeared to be no direct effect of trait anger on emotional exhaustion, there was an indirect effect on emotional exhaustion via the mediating variable of reported physical health symptoms, Sobel's $z=3.91$, $p<.001$. While avoidant coping was significant correlated with physical health symptoms, there was no significant correlation between avoidant coping and emotional exhaustion. There was also no significant correlation between workers' perception of adequate supervision and emotional exhaustion. However, there was a significant negative association between workers' perception of adequate

supervision and avoidant coping, $\beta = -.22$, $p = .01$, suggesting that the more a worker perceived that he/she had inadequate supervision, he/she would be more likely to adopt avoidant coping strategies.

Summary and Discussion of Results for Part 2 of Study 1

Consistent with some of the previous research (e.g., Drake & Yadama, 1996), emotional exhaustion appeared to be the most salient component of Maslach's burnout construct. Moreover, compared to compassion fatigue, emotional exhaustion appeared to be more associated with the individual, job and organizational variables like trait anger, years in service and perception of adequate supervision. However, this difference could be due to the measure used for compassion fatigue to be less sensitive for the Singaporean sample.

There appeared to be some evidence for different predictors for the positive and negative components of burnout and compassion fatigue respectively. The perception of having adequate training was positively associated with personal accomplishment and not with the other two negative components. Moreover, all the "positive" variables: active coping, the social support indicators and overall satisfaction with life, were more correlated with personal accomplishment than with the negative components. It was a similar pattern observed between compassion satisfaction and compassion fatigue, where active coping, the social support indicators and overall satisfaction with life were all positively correlated with compassion satisfaction.

168

For the physical health measures, the number of days of sick leave taken by workers was not a salient enough variable. On the other hand, the summary index of how frequent somatic symptoms were experienced on the Physical Health Questionnaire (Schat et al., 2005) was the more salient measure. The PHQ score was found to be positively associated with emotional exhaustion, compassion fatigue, trait anger and avoidant coping. This finding was not surprising since there had been previous research showing similar patterns (e.g., Grossi et al., 2003; Thomas & Williams, 1991).

Overall, the control variables, such as gender, age, and so on, had minimal influence on the various measures. Amongst the job and organization variables, it appeared only the perception of having adequate supervision was the most salient variable – having significant associations with respondents' emotional exhaustion levels and their intention to leave. Pulling together the few key salient associated variables, a path model was constructed to predict workers' intent to leave the agency. The results were interesting.

The three most salient variables in predicting the likelihood of a human social service worker to leave the agency were the worker's length of service in the agency, his/her perception of lack of supervision, and his/her level of emotional exhaustion. That is, the longer a worker remained in the organization, especially from the 5th year onwards, the

169

more likely that the worker would act upon his/her thoughts of leaving the organization – if the worker had thought of leaving. If the worker perceived to have received inadequate supervision, he/she were more likely to act upon his/her intention to leave the agency. Furthermore, the higher the levels of emotional exhaustion reported, the more likely the workers would act upon their intention to leave the agency.

Surprisingly, trait anger and perception of inadequate supervision were not significantly associated with emotional exhaustion in the path model. Instead, these two individual and job stress factors had an indirect influence on the experience of somatic symptoms via the mediating variable of avoidant coping. Trait anger also had an indirect effect on emotional exhaustion via the mediation of somatic symptoms. In other words, the results suggested that workers who tended to experience more anger and workers who perceived that they did not have enough supervision, tended to adopt avoidant coping strategies when they faced stressful situations, which led to them feeling physically more poorly. This more frequent experience of somatic symptoms like headaches and sleep disturbances then influenced the overall sense of emotional exhaustion with regard to their work, which then contributed significantly to the likelihood to act upon thoughts of leaving the organization.

From the current findings, all the key salient factors that are associated with workers' turnover in a human social service organization, except for the number of years of service in the organization, had to do with interpersonal relationships and coping, which potentially could be prevented or intervened. The "stage" is now set for the examination on whether an intervention programme could have any positive effects on some of these salient "risk" factors for workers' turnover.

Chapter 5

Study 2

From Study 1, emotional exhaustion, trait anger and avoidant coping are all part of the pathways leading to agency human service workers' increased likelihood to leave the organization. Moreover, workers with 5 to 10 years of service with the agency also tended to have thoughts of leaving and were more likely to act upon these thoughts of leaving. As highlighted earlier in chapters one and two, staff turnover in human social services is costly. In this case, it appears to be even costlier as the government agency holds a central role in providing services for abuse victims and offenders, as well as fulfilling the legal custodian roles. Yet, from the pattern of the current results, the agency runs the real risk of losing valuable experienced workers who could take on cases that are more complex and provide clinical supervision to the less experienced staff.

Study 2 is essentially a follow up to Study 1: the most logical question that could be asked in Study 2 is whether we can do something about the findings in Study 1. Can we try to help workers to reduce the anger they experienced? Can we help them to reduce the use of avoidant coping strategies? Can we help them to reduce their levels of emotional exhaustion? It is hard to ask someone point blank to not think about leaving the organization or to act on their thoughts of leaving, but perhaps we could influence the decision-making process by helping

them manage their psychosocial distress a little better and to help them problem-solve and build better relationships at work.

As mentioned in earlier chapters, the Williams LifeSkills programme (Williams & Williams, 1997), a cognitive-behavioural structured programme, was designed to help participants control their hostility and to build better relationships. Moreover, Williams and Williams (1997) also indicated that the strategies taught in LifeSkills could also help participants with issues related to loneliness and depression. Although there were other programmes that targeted anger management, stress reduction and relationship-building, the Williams LifeSkills programme (LifeSkills; Williams & Williams, 1997) was chosen as it was a commercial programme that was readily available and it focused on building skills through role plays, interactive discussions and imagery exercises while maintaining relative short length of contact time (12 hours in total). LifeSkills was also strength-based: instead of presenting itself as a programme aimed at reducing anger and stress, the goals of the programme were to build relationships and enhance well-being.

Therefore in Study 2, LifeSkills was offered to all the frontline workers in the government agency described in Study 1, with a quasi-experimental design of wait-list control condition versus treatment condition. Specifically, the hypotheses of the second study were the following:

173

1) LifeSkills would be efficacious in improving reported levels of emotional exhaustion in participants, compared to wait-list control subjects.

2) Participants in the LifeSkills programme would have improved psychosocial outcomes, such as reduced trait anxiety, trait anger, reduced depressive symptoms reported, and reduction in the use of avoidant coping strategies, when compared to the wait-list control subjects.

Sample.

The study was approved by the National University of Singapore Human Subjects Institutional Review Board (IRB) and the participants provided informed consent prior to participating. The data collection period was from November 2013 to May 2014.

An e-mail explaining the purpose of the study, together with the IRB approval, was sent to heads of departments (HODs) in the government human social service agency to seek their approvals to invite their staff for the study in November 2013. Between December 2013 and Jan 2014, upon receiving the respective HODs' approval, another email was sent to human social service workers in the government agency to explain the study and invite participation. All frontline workers in the government agency were invited. Between December 2013 to January 2014, 28 agency workers gave initial consent to participate. However, only 12 out of the 28 workers remained

committed to the study after they were randomly assigned to either the wait-list control or LifeSkills group. Another email was sent out in an attempt to recruit more participants for the study between January 2014 and February 2014, and 16 more agency workers responded. In the end, there were 28 participants in this study, with 12 participants in the wait-list control condition and 16 participants in the LifeSkills condition. It was an intentional "oversampling" for the LifeSkills condition in case there was attrition from the group.

The inclusion criteria for the study were the following:

a) Male and female adults aged 21 years and above

b) Workers who have direct contact with clients

The exclusion criteria for the study were the following:

a) Workers with no direct contact with clients

b) Individuals who present with active symptoms of psychiatric disorders

The breakdown of participant characteristics is presented in Table 18.

Table 18. Participant Characteristics for Study 2

	Control	LifeSkills	Total
N	12	16	28
(%r)	(42.9)	(57.1)	(100.0)
Item			
Gender			
Male	9	5	14
(%c)	(75.0)	(31.3)	(50.0)
Female	3	11	14
(%c)	(25.0)	(68.8)	(50.0)
Age Group			
21 – 30 years	2	8	10
(%c)	(18.2)	(50.0)	(37.0)
31 – 40 years	5	5	10
(%c)	(45.5)	(31.3)	(37.0)
41 – 50 years	1	3	4
(%c)	(9.1)	(18.8)	(14.8)
51 – 60 years	1	0	1
(%c)	(9.1)	(---)	(3.7)
More than 60 years old	2	0	2
(%c)	(18.2)	(---)	(7.4)
Marital Status			
Single	5	8	13
(%c)	(45.5)	(50.0)	(48.1)
Married	5	7	12
(%c)	(45.5)	(43.8)	(44.4)
Divorced	0	1	1
(%c)	(---)	(16.3)	(3.7)
Missing	1	0	1
(%c)	(9.1)	(---)	(3.7)
Education			
Diploma	4	0	4
(%c)	(36.4)	(---)	(14.8)
Postgraduate Diploma	1	2	3
(%c)	(9.1)	(12.5)	(11.1)
Bachelor's degree	5	9	14
(%c)	(45.5)	(56.3)	(51.9)
Masters/Doctorate/PhD	1	5	6
(%c)	(9.1)	(31.3)	(22.2)

%r – Row percentage; %c – Column percentage

Table 18. Participant Characteristics for Study 2 (continued)

Item	Control	LifeSkills	Total
Length in Service			
0 – 2 years	4	3	7
($\%^c$)	(36.4)	(18.8)	(25.9)
2 – 5 years	2	8	10
($\%^c$)	(18.2)	(50.0)	(37.0)
5 – 10 years	1	5	6
($\%^c$)	(9.1)	(31.3)	(22.2)
More than 10 years	4	0	4
($\%^c$)	(36.4)	(--)	(14.8)
HSS Experience			
0 – 2 years	3	2	5
($\%^c$)	(25.0)	(12.5)	(17.9)
2 – 5 years	2	7	9
($\%^c$)	(16.7)	(43.8)	(32.1)
5 – 10 years	0	3	3
($\%^c$)	(---)	(18.8)	(10.7)
More than 10 years	6	4	10
($\%^c$)	(50.0)	(25.0)	(35.7)
Missing	1	0	1
($\%^c$)	(8.3)	(--)	(3.6)
Working Arrangement			
Full time	11	15	26
($\%^c$)	(91.7)	(93.8)	(92.9)
Part time	0	1	1
($\%^c$)	(---)	(6.3)	(3.6)
Missing	1	0	1
($\%^c$)	(8.3)	(---)	(3.6)
Work Role			
Supervisor/Manager	2	4	6
($\%^c$)	(16.7)	(25.0)	(21.4)
Senior Worker	3	7	10
($\%^c$)	(25.0)	(43.8)	(35.7)
Human Service Worker	6	5	11
($\%^c$)	(50.0)	(31.3)	(39.3)
Other Professional	1	0	1
($\%^c$)	(8.3)	(---)	(3.6)

$\%^r$ – Row percentage; $\%^c$ – Column percentage; HSS Experience – Human Social Services Experience

Table 18. Participant Characteristics for Study 2 (continued)

Item	Control	LifeSkills	Total
No. of Prior Organizations			
None	5	5	10
(%^{c})	(41.7)	(31.3)	(35.7)
One	4	2	6
(%^{c})	(33.3)	(12.5)	(21.4)
Two	1	1	3
(%^{c})	(8.3)	(12.5)	(10.7)
Three and more	1	6	7
(%^{c})	(8.3)	(37.5)	(25.0)
Missing	1	1	2
(%^{c})	(8.3)	(6.3)	(7.1)
Number of Actual Work Hours per week	11	16	27
No. of Respondents	(39.3)	(57.1)	(96.4)
(%^{r})	47.2	48.4	47.9
Mean			
Number of Hours of Formal Supervision per month			
No. of Respondents	10	16	26
(%^{r})	(35.7)	(57.1)	(92.9)
Mean	5.2	3.4	4.1
Feel there is Adequate Supervision			
No	2	6	8
(%^{c})	(16.7)	(37.5)	(28.6)
Yes	8	10	18
(%^{c})	(66.7)	(62.5)	(64.3)
Missing	2	0	2
(%^{c})	(16.7)	(---)	(7.1)
Number of Hours of Training per month	11	16	27
No. of Respondents	(39.3)	(57.1)	(96.4)
(%^{r})	5.1	5.1	5.1
Mean			
Feel there is Adequate Training			
No	3	7	10
(%^{c})	(25.0)	(43.8)	(35.7)
Yes	8	9	17
(%^{c})	(66.7)	(56.3)	(60.7)
Missing	1	0	1
(%^{c})	(8.3)	(---)	(3.6)

%^{r} – Row percentage; %^{c} – Column percentage

178

Table 18. Participant Characteristics for Study 2 (continued)

Item	Control	LifeSkills	Total
Feel there is Support from Supervisor			
Never	0	0	0
(%c)	(---)	(---)	(---)
Rarely	0	0	0
(%c)	(---)	(---)	(---)
Sometimes	3	5	8
(%c)	(25.0)	(31.3)	(28.6)
Always	7	11	18
(%c)	(58.3)	(68.8)	(64.3)
Missing	2	0	2
(%c)	(16.7)	(---)	(7.1)
Feel there is Support from Colleagues			
Never	0	0	0
(%c)	(---)	(---)	(---)
Rarely	0	0	0
(%c)	(---)	(---)	(---)
Sometimes	3	5	8
(%c)	(25.0)	(31.3)	(28.6)
Always	8	11	19
(%c)	(66.7)	(68.8)	(67.9)
Missing	1	0	1
(%c)	(8.3)	(---)	(3.6)
Thoughts of Leaving Organization			
No	7	4	11
(%c)	(58.3)	(25.0)	(39.3)
Yes	4	12	16
(%c)	(33.3)	(75.0)	(57.1)
Missing	1	0	1
(%c)	(8.3)	(---)	(3.6)

%r – Row percentage; %c – Column percentage

Overall, the agency workers who participated in this study were relatively young, with most of them aged 40 years and below. About half of them were married, and another half of them were not married. A majority of the workers had at least a university degree, and almost all of them worked full-time. About one third of them had more than 10 years of experience in the human social services, while the majority of

the rest of the participants had 5 years' and less experience in the human social services. There were no significant differences between the wait-list control group and the intervention group in the number of work hours put in per week, the number of hours of supervision received per month, or the number of hours of training received per month. A majority of the participants perceived that the formal supervision they had received was adequate, and although it appeared that more participants in the LifeSkills intervention group reported that they perceived training to be inadequate, there was no statistically significant difference between the two groups. Similarly, although it appeared that more participants in the LifeSkills group had worked at least in three prior organizations, the differences in the number of previous work organizations were not statistically significant between the control and the intervention groups.

However, there were three significantly different participant characteristics between the control group and the LifeSkills group. There were more male participants in the control group while there were more female participants in the LifeSkills group, $\chi^2(1, N=28)= 5.25$, $p= .02$. There were more participants in the LifeSkills group who had served 5 years or less in the government agency, while there were more participants in the control group who had served 10 years and more at the agency, $\chi^2(3, N=27)= 9.82$, $p= .02$. Furthermore, there were more participants in the LifeSkills group who had thoughts of leaving the organization compared to the control group, $\chi^2(1, N=27)= 4.03$, $p= .04$.

Despite some of these differences in the participant characteristics, a comparison of the means for all the psychosocial measures between the two groups turned out to be statistically not significant. That is, as far as the pre-experiment scores were concerned, the control group and the LifeSkills group did not differ on any of the psychosocial measures.

Procedure.

Upon approval from their respective heads of department, all frontline workers from the government agency were informed of the study via an electronic mail. In the electronic mail, procedural information detailing both the LifeSkills and Waitlist Control group conditions was given, and a web link to a consent form was embedded. If a frontline worker consented to participate in the study, he/she would then leave his/her name and electronic mail address for the researcher to further contact him/her to inform him/her of the experimental condition he/she was assigned to, as well as to arrange the logistics for subsequent contact.

After collating the names of the participants who consented, they were randomly assigned to the LifeSkills programme group or the waitlist control group. There were two waves of random assignment as the first period of recruitment between December 2013 and January 2014 was not successful in gathering enough participants, and therefore there was a second period of recruitment between January and February 2014. Random selection of participants was carried out by putting the

181

participants' names in a bag, and taking turns to draw out names for the LifeSkills group and the Waitlist control group. The researcher enlisted a third party who was unrelated to the research project to draw out the names.

The LifeSkills programme was conducted for five groups with 2 to 6 participants in each group at three different sites. The agency workers were stationed at different locations due to different primary clientele, for example abuse victims, offenders serving community probation, or institutionalized juvenile offenders. As could be gathered from the relative small numbers of participants recruited compared to Study 1, it was more challenging for agency workers to agree to Study 2 because of the time commitment needed. While the researcher had the approval and support of the various heads of departments, she was unable to ensure that the participants' time could be counted as work hours. That is, all participants had volunteered their time and effort, over and above their existing workload. Hence, the researcher conducted the LifeSkills programme on site at the office location of the consenting participants who were randomly assigned to the LifeSkills group. The LifeSkills sessions were during lunch times or late afternoons, and simple lunches were provided to participants when the sessions were held during lunchtime.

The LifeSkills programme used in this study is a version of the Williams Life-Skills programme (Williams & Williams, 1997) modified for

use with Asian populations (e.g., the examples were changed to local context). The researcher cum facilitator was trained in the delivery of the programme by Virginia Williams, one of the programme developers. The programme is manualized with media materials designed specifically for improving visual attention and easy understanding. The intervention was conducted in six sessions of 2 hours each, spread over six weeks. The sessions included components addressing the following: –

•   Evidence for the link between stress and health

•   Thoughts and feelings - self-awareness and self-regulation

•   Evaluating thoughts and feelings – overcoming negative thoughts and feelings

•   Communication skills – assertion, prioritizing, listening, empathy

•   Deflection skills and Reflection skills

•   Building relationships and a positive attitude towards life.

The focus of the programme was the hands-on practice of the skills that were advocated during the sessions and with practice assignments given at the end of each session.

Participants in the LifeSkills Programme completed a Pre-programme survey prior to the first session. The survey included a demographic form, a health behavior form, Maslach Burnout Inventory – Human Services Survey (MBI-HSS, Maslach & Jackson, 1981); Professional Quality of Life Scale – Fifth edition (ProQoL-V, Stamm, 2010); Physical Health Questionnaire (PHQ, Schat et al., 2005); State-

183

Trait Anger Expression Inventory-2 (STAXI-2, Spielberger, 1999); State-Trait Anxiety Inventory (STAI, Spielberger, 1983); Center for Epidemiological Studies Depression Scale; (CES-D, Radloff, 1977); Brief COPE (Carver, 1997); Short-Form Social Support Questionnaire (SF-SSQ, Sarason et al., 1987) and Satisfaction with Life Scale (SWLS, Diener et al., 1985). As the researcher is a middle manager in the government agency, to protect the privacy of respondents and the confidentiality of their responses, no identifying information was collected in the survey. Participants were also asked to come up with a unique identification tag (self-determined) for their respective surveys, and they dropped the completed surveys in a collection box during the first LifeSkills session. This was to ensure that the researcher would be blind to their responses while allowing the matching of pre-programme, post-programme and follow-up surveys.

At the end of each session, LifeSkills participants were asked to complete the Work Alliance Inventory – Short Form (WAI-S, Tracey & Kokotovic, 1989), a measure of participants' perception of how well their needs and expectations are met by the facilitator. Upon completion of the programme, LifeSkills participants were given a Post-programme survey to complete. The pack consisted of the same questionnaires as the Pre-programme survey except for the exclusion of the demographic and health behaviour forms. Participants used their own unique identification tags for the Post-programme survey. At 1 month after the completion of the programme, participants were contacted to get their

further feedback on the programme, and they completed the Follow-up survey, which was similar to the Post-programme survey.

For participants in the Waitlist Control group, a handout on stress management (please see Appendix E) was given to them along with the equivalent of the Pre-Programme survey given to the Lifeskills participants. Procedural information indicating that they would be asked to complete a similar survey pack at approximately 2 months, then 3 months after the first survey, was also given to Control group participants. These were all sent out to participants via electronic mail, with the instruction to send the completed surveys back to the researcher via the agency's internal mail system. In addition, Control group participants were given the option to request for the LifeSkills programme to be provided to them after the completion of the study. Control group participants were asked to come up with unique identification tags for their survey packs as well. This was to allow matching of survey packs without compromising their privacy and confidentiality rights.

Measures.

Essentially, the measures used in Study 2 were similar to those used in Study 1, with the addition of two extra measures for anxiety and depression. These measures were added as LifeSkills was supposed to help ameliorate symptoms of anger, anxiety and depression. As there

were already detailed descriptions of the various measures in the earlier chapter on Study 1 (pp. 74 – 86), only the additional measures for anxiety and depression will be covered below. In addition, at the end of each LifeSkills session, participants were asked to complete a measure on their perception of how well their needs and expectations were met during the sessions. This therapeutic alliance measure will also be described below.

Anxiety Measure.

The State-Trait Anxiety Inventory (STAI, Spielberger, 1983) consisted of two separate scales of 20 items each for measuring State Anxiety and Trait Anxiety. Spielberger (1983) reported that amongst samples of working adults, students and military recruits, the median reliability coefficients for the State Anxiety Subscale and Trait Anxiety Subscale were excellent at 0.90 and 0.93 respectively. As the State Anxiety Subscale was intended to measure how respondents felt at the very moment of responding to the questions, and could fluctuate according to immediate stressors at the time of responding, it was not useful for the purpose of the current study. On the other hand, the Trait Anxiety subscale had questions that asked how respondents generally felt. Therefore only the Trait Anxiety Subscale score was used for the purpose of this study.

In the Trait Anxiety Subscale, respondents rated the items indicating how they generally felt, on a 4-point scale with "1" representing

"Almost Never", "2" representing "Sometimes", "3" representing "Often" and "4" representing "Almost Aways". There were 9 "anxiety-absent" items that required reversed scoring. Some of the items are presented below in Table 19.

Table 19. Sample Items from STAI (Spielberger, 1983)

Sample Items

21.   I feel pleasant. (*reverse scored*)
22.   I feel nervous and restless.
27.   I am 'calm, cool, and collected'. (*reverse* scored)
28.   I feel that difficulties are piling up so that I cannot overcome them.
29.   I worry too much over something that really doesn't matter.

Depression Measure.

The Centre for Epidemiologic Studies depression Scale (CES-D; Radloff, 1977) contains 20 items that measure the current level of depresssed mood in the general population. 4 items were worded in the positive direction. The respondents rated on a 4–point scale with "0" representing "Rarely or none of the time (less than 1 day)", "1" representing "Some or a little of the time (1-2 days), "2" representing "Occasionally or a moderate amount of time (3-4 days)", and "3" representing "Most or all of the Time (5-7 days)", to describe how often they felt or behaved as described by the individual items during the past week. The possible range of scores is from 0 to 60. The Cronbach Alpha was reported to be .80 or greater by Radloff (1977) for all subgroups: White Americans and Black Americans, males and females,

young and old, and amongst different education qualifications. Sample items are displayed in Table 20.

Table 20. Sample Items from CES-D (Radloff, 1977)

Sample Items

1. I was bothered by things that don't usually bother me.
4. I felt that I was just as good as other people (*reverse* scored).
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
8. I felt hopeful about the future (*reverse scored*).

Therapeutic Alliance Measure.

The Working Alliance Inventory – Short Form (WAI-S; Tracey & Kokotovic, 1989) was a 12-item inventory that was modified from the 36-item Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) based on confirmatory factor analysis findings. The WAI was based on Bordin's (1979) theory that good therapeutic alliance could result from clients' and therapists' agreement on treatment goals, treatment tasks and strong therapist-client bonds. The WAI is one of the therapeutic alliance measures that has been used widely (Martin, Garske & Davis, 2000). Both WAI and WAI-S have three subscales each that correspond to Bordin's (1979) three factors to building therapeutic alliance: Task Agreement, Goal Agreement and Client-Therapist Bond. Furthermore, both WAI and WAI-S have two versions each: Clients' report and Therapists' report. The WAI-S clients' report was used in this study to check the participants' engagement in the LifeSkills sessions. WAI-S was chosen as it is much shorter than WAI and it has been found to be interchangeable with WAI by Busseri and Tyler (2003). The three

different subscales in WAI-S have four items each, with two items from the Goal subscale reverse scored. The clients' report version of WAI-S has been found to have good internal consistencies with Cronbach Alphas ranging from .73 to .86 (Busseri & Tyler, 2003). The items were rated on a 7-point scale with "1" representing "Never" to "7" representing "Always", and the wording was slightly modified to suit the workshop setting. A sample of the items are presented in Table 21.

Table 21. Sample Items from WAI-S (Tracey & Kokotovic, 1989)

Sample Items

1. _____ and I agree about the things I will need to do in the workshop to help improve my situation (*Task*).
2. What I am doing in the workshop gives me new ways of looking at my problem (*Task*).
3. I believe _____ likes me (*Bond*).
4. _____ does not understand what I am trying to accomplish in the workshop (*Goal*) (*Reverse scored*).
5. I am confident in _____'s ability to help me (*Bond*).
6. _____ and I are working towards mutually agreed goals (*Goal*).

Programme adherence, attrition and valid responses.

All 16 LifeSkills participants completed the programme and all sessions were facilitated by the researcher. The LifeSkill groups ran more or less concurrently from Februray 2014 to April 2014. There were a few participants who could not attend one or two of the scheduled session for their group, but they attended another group for a make up of the session they missed.

Comparisons of the mean therapeutic alliance measure scores across the 5 different groups did not reveal any statistically significant differences. However, comparisons of the mean therapeutic alliance measure scores across the 6 LifeSkills sessions were statistically significant for the WAI-S Task subscale, $F(5,24)= 5.97$, $p= .001$, WAI-S Bond subscale, $F(5,24)= 5.39$, $p= .002$, and WAI-S Goal subscale, $F(5,24)= 2.74$, $p= .04$. For the WAI-S Task subscale score, the score from LifeSkills Session 1 was significantly lower than the scores reported in LifeSkills Sessions 3, 4, 5 and 6. For WAI-S Bond subscale, the score from Session 1 was significantly lower than scores from Sessions 4, 5 and 6. On the other hand, for WAI-S Goal subscale, there was a trend of increased ratings as the sessions progressed, but the post hoc tests were not statistically significant. The details of the post hoc comparison results are presented in Appendix F.

As the surveys were all unidentified and returned to the researcher blind, there was a challenge with incomplete data as it was not possible to double check that participants had completed all items and they were given a choice to not answer any question if they did not want to. There was also a challenge in reminding participants in the Control group to return their completed surveys. In general, all participants were given one week to complete and return the surveys during each collection period: at the start of the study (0 week), 6th week from start of the study and 10th week from start of the study. A first reminder was sent to all participants one week after the surveys were

due, and a second reminder was sent again in the subsequent week. Despite the efforts, the response rates for the surveys dropped drastically, especially for the waitlist control group, as the study progressed from pre-programme, post-programme to follow-up.

There were 9 surveys from the waitlist control group and 15 surveys from the LifeSkills group that had complete responses for the psychosocial outcome measures for both the pre-programme and post-programme data collection points, except for the measures for compassion satisfaction, trait anger and trait anxiety, where there were only 14 valid cases in the LifeSkills group. Moreover, for the measure on social support satisfaction, there was only 8 valid cases for the comparison between pre-programme and post-programme for the Control group. For the post-programme and follow up comparison, there was only 3 valid cases from the wairlist control group and 12 valid cases from the Lifeskills group.

Data Analyses

The Cronbach Alphas for all the psychosocial measures used were at least .80 or greater, with the exception of the measure for Avoidant Coping, an eleven-item subscale derived from the two-factor solution of the Brief Cope, α= .64. These internal consistencies were derived from a sample size of between 26 and 27 (depending on the completedness of the pre-programme surveys returned). A summary of the mean pre-programme and post-programme scores for the

psychosocial outcome measures by experimental groups is presented in

Table 22.

Table 22. Pre- and Post-Programme Psychosocial Outcome Measures' Scores by Study Phase and Experimental Group

Measure (α) Study Phase	Control (*n*= 9) Mean (*SD*)	LifeSkills (*n*=15) Mean (*SD*)
Emotional Exhaustion (α= .90)		
Pre	16.44 (11.57)	22.47 (10.70)
Post	21.22 (13.52)	17.67 (9.04)
Depersonalization (α= .80)		
Pre	6.00 (5.57)	8.07 (6.02)
Post	6.89 (6.79)	6.40 (4.32)
Personal Accomplishment (α= .80)		
Pre	30.11 (10.08)	31.93 (5.66)
Post	31.22 (4.12)	32.73 (4.59)
Compassion Satisfaction (α= .92)		
Pre	50.22 (6.82)	48.78[+] (4.97)
Post	48.78 (4.97)	49.79[+] (6.76)
Compassion Fatigue (α= .84)		
Pre	25.89 (5.58)	27.60 (6.67)
Post	24.33 (9.97)	23.07 (3.94)
Trait Anger (α= .90)		
Pre	16.22 (2.54)	18.64[+] (6.91)
Post	17.67 (5.00)	17.07[+] (4.16)
Trait Anxiety (α= .92)		
Pre	41.44 (10.01)	41.21[+] (8.99)
Post	40.33 (9.68)	36.57[+] (7.07)
Depressive Symptoms (α= .87)		
Pre	11.78 (8.26)	11.22 (7.41)
Post	11.22 (7.41)	6.73 (5.19)

[+]n=14; [++]n=8

Table 22. Pre- and Post-Programme Psychosocial Outcome Measures' Scores by Study Phase and Experimental Group (continued)

Measure (α) Study Phase	Control (n= 9) Mean (SD)	LifeSkills (n=15) Mean (SD)
Active Coping (α= .89)		
Pre	34.67 (8.54)	39.93 (7.16)
Post	31.89 (8.30)	40.73 (8.15)
Avoidant Coping (α= .64)		
Pre	17.11 (2.42)	16.73 (4.23)
Post	16.89 (3.41)	14.80 (2.37)
Social Support Network (α= .91)		
Pre	3.39 (2.50)	3.98 (1.68)
Post	3.52 (2.50)	4.36 (2.07)
Social Support Satisfaction (α= .91)		
Pre	4.92[++] (0.64)	5.20 (0.51)
Post	4.83[++] (0.60)	5.44 (0.47)
Satisfaction with Life (α= .89)		
Pre	25.11 (4.94)	24.53 (6.72)
Post	25.56 (4.95)	27.20 (6.08)

[+]n=14; [++]n=8

Pre-programme versus post-programme.

A comparison of pre-programme and post-programme outcomes was done using the general linear model with the psychosocial measures from the pre-programme and post-programme surveys as repeated measures, and the experimental group condition (Control versus LifeSkills) as the between-subjects factor.

Out of the repeated measures ANOVAs for the 13 psychosocial outcome measures, there were four significant findings. The significant

results are summarized in Table 23. The summary of the repeated

measures ANOVAs' results for the remaining 9 outcome measures are

in Appendix G.

Table 23. Repeated Measures Analysis of Variance

Measure Effect	*MS*	*df*	*F*	*p*
Emotional Exhaustion				
Between-Subjects				
Group	17.11	1	.08	.78
Error	212.86	22		
Within- Subjects				
Time	<.01	1	<.01	.99
Time*Group	258.00	1	9.52	.005
Error	27.09	22		
Compassion Fatigue				
Between-Subjects				
Group	.56	1	.01	.93
Error	72.61	22		
Within- Subjects				
Time	104.27	1	7.97	.01
Time*Group	24.94	1	1.90	.18
Error	13.09	22		
Trait Anxiety				
Between-Subjects				
Group	43.65	1	.30	.59
Error	143.47	21		
Within- Subjects				
Time	90.69	1	7.97	.01
Time*Group	34.17	1	3.00	.10
Error	11.38	21		
Satisfaction with Life				
Between-Subjects				
Group	3.20	1	0.05	.83
Error	65.75	22		
Within- Subjects				
Time	27.22	1	6.32	.02
Time*Group	13.89	1	3.22	.09
Error	4.31	22		

For Emotional Exhaustion, there was a significant interaction between the point of time the assessment was made (pre-programme versus post-programme) and the group condition that the participants were in (LifeSkills versus Control), $F(1,22)= 9.52$, $p= .005$. Although the mean score from the LifeSkills group was higher at pre-programme than the mean score from the Control group, the difference was not statistically significant, and the mean scores were not within the high-risk range. However, the emotional exhaustion levels reported by the LifeSkills participants reduced significantly at post-programme, $t(14)= 2.42$, $p= .03$, while the increase in reported emotional exhaustion levels by the Control group participants approached significance, $t(8)= 2.12$, $p= .07$.

On the other hand, there were significant main effects of time for compassion fatigue, $F(1,22)= 7.97$, $p= .01$, trait anxiety, $F(1,21)= 7.97$, $p= .01$ and satisfaction with life scores, $F(1,22)= 6.32$, $p= .02$. Post-hoc contrasts revealed that while there were reductions in scores in both experimental groups, the reduction in the mean compassion fatigue score was significant for the LifeSkills group, $t(14)= 3.42$, $p= .004$, compared to the Control group, $t(8)= 0.92$, $p= .38$. Similarly, the reduction in the mean trait anxiety score was significant for the LifeSkills group, $t(13)= 3.04$, $p= .009$, compared to the Control group, $t(8)= 1.27$, $p= .24$. For the mean satisfaction with life score, while there were trends of increased scores from pre-programme to post-programme, the

increase for the LifeSkills group was statistically significant, $t(14)= 2.89$, $p= .01$, while the increase for the Control group was not, $t(8)= 1.18$, $p= .27$.

Therefore there appeared to be some empirical support for the study hypotheses so far: the LifeSkills programme appeared to have some positive effects on decreasing self-reports of emotional exhaustion, compassion fatigue and trait anxiety in the agency workers who attended the programme compared to their peers who did not. On the other hand, participants from the LifeSkills group reported significant increase in overall satisfaction with life compared to their peers in the Control group.

Post-programme versus follow-up.

Unfortunately, there were only three valid cases in the Control group that had intact data from post-programme to follow-up. Hence it was not possible to do a similar set of repeated measures analyses of variance as was done for the comparison of intervention effects between the Control group and LifeSkills group. However, it was still worthwhile to examine whether the significant intervention effects reported for LifeSkills on emotional exhaustion, compassion fatigue, trait anxiety and satisfaction with life maintained one month later at follow-up.

Helmert contrasts were conducted to compare the means scores for emotional exhaustion, compassion fatigue, trait anxiety and satisfaction with life across time (pre-programme, post-programme and follow-up) for the LifeSkills group. The results are summarized in Table 24.

Table 24. Summary of Results from Helmert Contrasts

Measure *Test*	*MS*	*df*	*F*	*p*
Emotional Exhaustion				
Within- Subjects				
Time	46.69	2	1.19	.32
Error	39.11	24		
Post-Hoc Contrasts				
Time 1 vs Later	117.00	1	1.97	.19
Error	59.50	12		
Time 2 vs Time 3	30.77	1	0.40	.54
Error	77.10	12		
Compassion Fatigue				
Within- Subjects				
Time	111.56	2	10.11	.001
Error	11.04	24		
Post-Hoc Contrasts				
Time 1 vs Later	330.02	1	12.03	.005
Error	27.44	12		
Time 2 vs Time 3	6.23	1	0.82	.38
Error	7.56	12		
Trait Anxiety				
Within- Subjects				
Time	78.11	2	5.13	.02
Error	15.23	22		
Post-Hoc Contrasts				
Time 1 vs Later	225.33	1	7.06	.02
Error	31.92	11		
Time 2 vs Time 3	12.00	1	0.65	.44
Error	18.36	11		
Satisfaction with Life				
Within- Subjects				
Time	16.18	2	3.21	.06
Error	5.04	24		
Post-Hoc Contrasts				
Time 1 vs Later	35.56	1	4.65	.05
Error	7.64	12		
Time 2 vs Time 3	17.31	1	1.74	.21
Error	9.97	12		

As can be seen from Table 24, only the reductions in compassion fatigue and trait anxiety were maintained at follow up. Specifically, there were significant reductions in the reported levels of compassion fatigue and anxiety for LifeSkills participants right after they finished the 6-week programme, and while there was a trend of further reductions one month after the programme, there were no significant differences between the post-programme scores and follow-up scores. However, the reductions from the pre-programme levels in these two psychosocial remained significant.

Feedback from participants.

One month after the completion of the LifeSkills programme, participants from the Control Group and LifeSkills Group were asked a few open-ended questions to gather their general feedback on what contributed to work stress and what could be done to reduce work stress. In addition, the LifeSkills participants were asked to provide some feedback on the LifeSkills programme. Participants either sent their responses via electronic mail or had a short face-to-face feedback session with the researcher. In total, 3 participants from the Control group provided some feedback, while 9 participants from the LifeSkills group gave feedback. This short feedback exercise was not meant to have a representative sample and it was optional. It was meant to provide an opportunity for participants to express their thoughts or opinions that were not captured by the surveys. Moreover, the responses collated could be useful for generating ideas for future

research, and might be useful in explaining some of the findings from the quantitative data. All responses were de-identified and compiled.

There were three questions related to the work environment that were asked of all the participants from the Control and LifeSkills groups:

1) Do you think our work environment is stressful?

2) What do you think are the key factors that make our work environment stressful?

3) If you were in charge of staff welfare and you are free to change or do as you see fit, what are three things that you would like to dsee happen to improve work conditions and stress levels?

Overall, majority of the respondents (10 out of 12) thought that their work environment was stressful. One respondent thought the work environment was somewhat stressful and another respondent thought that the work environment was not stressful, but the workers were getting less resilient. Many of the responses had the theme of the work environment being stressful due to the crisis-oriented nature of the cases that they had to handle, leading to stress from the unpredictable situations and challenging clients. Another popular theme was having added responsibility as civil servants working in a larger ministry where there were public expectations, systems constraints, redtape and bureaucracy. Other factors that were shared included case load, tight deadlines, work role ambiguity, lack of support from supervisors, as well

as uncoordinated work processes and communication breakdown due to the organization being big and cases being complex.

The suggestions on how work conditions could be improved were more varied amongst the respondents. The most popular response with 4 out of 12 respondents mentioning it was to increase manpower. Another two more popular responses (3 out of 12 respondents) were related to having regular team-building activities and to allow workers the flexbility and autonomy on the job, as well as with planning their work hours (e.g., being able to report for work later in the morning having worked late the evening before for a night appointment). There were a few suggestions related to the organizational system: having regular feedback exercises for supervisors and supervisees, improvement in work procdesses, increasing targetted services, having more targetted staff welfare like helping staff find value and purpose in their work and having workshops or programmes like LifeSkills to teach staff effective work and stress management strategies. In addition, there were suggestions that more regular supervision and more training to be provided, as well as case loads to be reduced. Other suggestions included having a "Relax" room for staff to use when they needed a short break, to reduce work hours per week, to increase vacation leave, to increase the reward and recognition for the progression and to be allowed not to pick up calls after office hours.

LifeSkills participants were also asked the following questions:

1) Did you find the skills taught in the LifeSkills Programme useful in helping with your coping with work stress?

2) What were three things or skills that you found helpful from LifeSkills?

3) What were three things that you like about the LifeSkills Programme?

4) What were three things that you disliked about the LifeSkills Programme?

In general, consistent with the ratings on the Working Alliance Inventory –Short Form (WAI-S; Tracey & Kokotovic, 1989), majority of the respondents found the programme useful and they appeared to like the programme. Specifically, 8 out of 9 participants found the skills taught useful, with one participant finding the skills too basic, and felt that the programme would have been more appropriate for newly recruited workers. The skills that were most helpful and liked were rather similar: relaxation techniques, the heuristic and strategy taught on cognitive restructuring and problem-solving, and communication and relationship building strategies. A number of respondents shared that they liked the sharing of personal examples and the opportunities to role-play and practice the skills in the programme. However, there were also a number of respondents who felt that there were not enough role-plays, practice and exploration of personal choices in the programme. Although one participant liked the visual graphics used in the

programme, another participant thought the materials used were dated and coud have been even more tailored to the local culture. In response to the last question on what they disliked about the programme, a number of respondents expressed that the programme was too similar to what they already knew, although one respondent found it helpful as a refresher.

Summary and Discussion of Study 2.

Unfortunately, the sample size for this study was small. However, this study was not alone in the small number of participants recruited. Singapore is a small island with a population of approximately 5.4 million, where productivity and efficiecy are highly valued in daily work and life. This meant that many Singaporeans do not have time to participate in any surveys, or the much longer intervention trials. This researcher had previously tried to conduct a trial of the LifeSkills programme at a local hospital and despite having a potential subject pool of about 1,000 patients, she could only get 25 participants' consent and eventually, conducted the programme for 2 participants.

Despite the small numbers, the results of this randomized controlled trial of the LifeSkills programme with human social service workers were promising. Despite the programme material being perceived as more "basic" and familiar to these highly trained human social service professionals, the LifeSkills participants showed favourable responses to the programme, and the quantitative data indicated some positive results. Specifically, there was a significant reduction, post-programme, in the levels of emotional exhaustion, trait anxiety and compassion fatigue reported by the LifeSkills participants when compared to the participants in the waitlist control group. There was also a significant increase in the overall satisfaction with life reported by the LifeSkills participants compared to the control group participants. Furthermore, there was some evidence that the positive effects were maintained at one-month follow up for compassion fatigue and trait anxiety.

Chapter 6

Discussion

To the author's knowledge, this is the first study that attempted to study burnout and compassion fatigue, physical health, and their links with turnover intent, in the social service sector in Singapore on a larger scale. Previous informal attempts were made with individual departments or agencies, and there have been unpublished studies on the psychometric properties of Maslach Burnout Inventory – Human Services Survey (MBI-HSS, Maslach & Jackson, 1981) and Professional Quality of Life Scale – Fifth edition (ProQOL-V, Stamm, 2010) with a Singaporean sample of human service workers. Similar to the social services in the United States, the social service sector in Singapore faces the challenge of staff turnover and maintaining good services provided to the child, youths and families in need. Therefore it was important to explore and examine some of the factors that could lead to staff turnover in the human social services in Singapore. Furthermore, it was also important to explore what could be done to help prevent or intervene with human social service workers' burnout and compassion fatigue levels, as well as turnover rates.

MBI-HSS and ProQOL-V.

Study 1 started with examining the factor structure of two popular instruments, MBI-HSS and ProQOL-V, for measuring burnout and compassion fatigue respectively, using a sample of 181 human social service workers in Singapore. Overall, the patterns of findings

205

suggested that MBI-HSS could be used on a Singpaorean sample with little change while ProQOL-V would require further research to have a version suitable for local use. Although the fit statistics for the confirmatory factor analysis were just adequate, the three original factors in MBI-HSS: emotional exhaustion, depersonalization and personal accomplishment, remained intact and valid for the Singporean sample. On the other hand, confirmatory factor analyses indicated that some of the original items and the intended factor structure for ProQOL-V needed some modification for use in Singapore. Specifically, five items were removed from the burnout subscale, with the remaining items incorporated to the other two subscales. The compassion fatigue subscale was used as it was with one additional item from the burnout subscale, while the compassion satisfaction subscale had four additional items that were originally from the burnout subscale.

There are several reasons why ProQOL-V's original structure was not valid with this sample. Firstly, although it is widely accepted that they were more or less similar despite nuanced differences (Stamm, 2010), the definitions of compassion fatigue, secondary traumatic stress or vicarious traumatization are not as clearly delineated as we would like them to be. This resulted in instrumentation that had overlaps with the instruments that measured burnout and other stress symptoms.

Secondly, specific to ProQOL-V, this instrument was designed to examine the positive and negative aspects of helping professionals'

206

working life, and the "overall concept of professional quality of life" (Stamm, 2010, p.10) was complex with the interplay of the professionals' personal characteristics, work environment factors and the professionals' exposure to trauma at work (Stamm, 2010). In order to measure both the trauma and the work environment aspects, Stamm (2010) had a main factor of compassion fatigue split into two subfactors: burnout, to capture the work environment aspects, and secondary traumatic stress, to capture the trauma aspects. This resulted in items from these two subfactors having high inter-correlations, hence resulting in a number of the items from the burnout subscale loading onto the factor for the secondary traumatic stress subscale.

Furthermore, in the burnout subscale, there were also positively worded items which were reverse scored. As highlighted earlier in chapter 4, reverse-worded items and the presence of mixed-worded items tend to confound psychological measures (Wong et al., 2003). Although this issue has been demonstrated in cross-cultural research to be an issue particularly faced by Asians with American-developed measures (Wong et al., 2003), it has also been demonstrated in other studies of American measures being tested on an American sample. For example, it was demonstrated that the two-factor structure of the Rosenberg Self-Esteem Scale (Rosenberg, 1965) found by some studies, was an artifact of the use of mixed-worded items in the scale (Greenberger, Chen, Dmitrieva, & Farruggia, 2003). Another researcher, Marsh (1996), found that verbal ability of the respondents

affected how they answered the reverse-worded items in the Rosenberg Self-Esteem Scale. Respondents with poorer verbal ability tended to give inconsistent responses on the negatively worded and the positively worded items (Marsh, 1996).

Theoretical models of burnout and compassion fatigue.

The correlations amongst the burnout and compassion fatigue subscale scores were largely as predicted by the hypotheses and the theoretical frameworks behind the burnout and compassion fatigue constructs. All correlations were significant and in the expected directions – except for those that were related to the personal accomplishment subscale from MBI-HSS. Other than being positively correlated with the compassion satisfaction subscale from ProQOL-V, personal accomplishment was not significantly correlated with any of the subscales from ProQOL-V and MBI-HSS that measured the negative aspects of human service work. This finding lent some support to Leiter's (1993) mixed sequential and parallel development model of burnout.

Leiter (1993) proposed that the demands from the work environment (e.g., case load, conflicts) contributed to emotional exhaustion, which could lead to depersonalization, while the presence of resources in the work environment (e.g., training, social support) contributed to the sense of personal accomplishment. Indeed, besides not being significantly associated with emotional exhaustion and

depersonalization, personal accomplishment was the only MBI-HSS subscale to be significantly correlated with a number of "resource" variables: respondents' perception of having adequate training, greater number of support persons and propensity to use active coping strategies.

The emotional exhaustion subscale was strongly correlated with the depersonalization subscale, and both subscales were significantly correlated with trait anger in the positive direction. At the same time, emotional exhaustion was moderately correlated with avoidance coping style in the positive direction, while depersonalization was not significantly correlated with it. Instead depersonalization had a significant negative association with respondents' satisfaction with social support that they had received. These results were not surprising and fitted the developmental process of burnout described by Maslach (2003): workers prone to anger feelings and expression would have felt the emotion overload from "people-work" in a challenging work environment, and would then develop more symptoms of emotional exhaustion. As emotional exhaustion sets in, more detached response styles, or avoidant coping strategies would be adopted, which could slowly lead to more cold and cynical attitudes and feelings towards clients and colleagues (depersonalization), and impacted on the overall sense of satisfaction obtained from social relationships hence the decreased satisfaction with social support.

Figley (1995) had opined that compassion fatigue was different from burnout in construct and unlike burnout, which developed as a result of a stressful work environment, compassion fatigue would develop from exposure to others' traumatic suffering. In this current study, although there were significant correlations amongst compassion fatigue and all three burnout subscales, there was some evidence to support Figley's (1995) opinion. Most notably, the group of workers who dealt exclusively with abuse victims, hence most exposed to vicarious trauma, had significantly higher compassion fatigue scores than workers who had other client populations in the human service agency. On the other hand, there was no significant difference found in the emotional exhaustion scores when the comparison was made between workers who had primarily abuse victims and their counterparts with other client populations. Furthermore, while trait anger was significantly correlated with emotional exhaustion and depersonalization, it was not correlated with compassion fatigue. This result replicated Schauben and Frazier's (1995) finding that negative affect was not associated with vicarious trauma.

Prevalence estimates of burnout and compassion fatigue.

One third of the Singapore sample (33.7%) was found to have scores that met the cut off criterion for high levels of emotional exhaustion, the most salient of the three burnout components. If we counted anyone who had at least one burnout component (emotional exhaustion, depersonalization and personal accomplishment) that met

the high risk cut off, 54.1% of the sample were exhibiting symptoms of burnout. As predicted, these numbers were similar to those found in the American samples. For example, in Siebert's (2006) sample of North Carolina social workers, 39% were reported to have burnout. Clearly, burnout amongst the human service workers in Singapore's social service sector is a issue to be taken note of.

The range of scores for the modified ProQOL-V was limited, resulting in average to high levels of compassion satisfaction and low to average levels of compassion fatigue reported. As a result, the hypothesis that the sample would have similar rates of compassion fatigue as other overseas sample was not supported. There were a few possible reasons why the scores were low. Firstly, there could be social desirabillity effect, and the respondents reported more positively and less negatively than what they actually felt. However, the results obtained on the MBI-HSS suggested otherwise. If there were strong social desirability effects, then the scores on the MBI-HSS would have been similarly "muted". Secondly, it could be that the ratings on ProQOL-V were not sensitive enough to pick up the symptoms as the items were scored on a 5-point Likert scale compared to the 7-point Likert scale on the MBI-HSS. Thirdly, it could be that for the Singaporean population of human service workers, the cut off criteria needed to be lowered due to cultural differences in responding to the items. Lastly, it could also be that the compassion fatigue levels were really not high in the local sample. This was highly plausible as there is

generally a lot of attention paid to workers' risks of developing compassion fatigue within the social service sector in Singapore. It is a common practice to have critical incident debriefing or similar types of supportive programmes provided to workers within 24 hours of exposure to work crises. It is also common practice to check in with workers verbally on their levels of compassion fatigue during clinical and line supervision. Regardless of the reason, the current findings suggested that more research would be needed in future for an accurate estimate of the prevalence of compassion fatigue of human service workers in Singapore.

The hypothesis that there would be significant differences between the government human service workers and their community counterparts in levels of burnout and compassion fatigue was only partially supported. The only difference found was between the government agency workers and workers from community family service centres. The agency workers were significantly less confident in their knowledge and efficacy in handling their work compared to the community workers.

There is a caveat to this finding. While the sample of the agency workers entailed more than half of the total population of agency workers, the sample of the community workers was less than adequate. There are 40 family service centres in Singapore (Ministry of Social and Family Development, 2013) and Study 1 only managed to sample three

212

of them. However, these three family service centres were amongst the largest and the response rates from these three centres were good. Even so, the finding was not surprising as the legal and welfare service structrure in Singapore is such that by default, the agency workers would take up higher risk cases and handle more families in crises as part of their work. Therefore, as a result of more challenging cases and higher public expectations on agency workers who were perceived to be government-linked, it would be human nature to feel less efficiacious and needing more knowledge and skills. In fact, there were agency workers who reported that the higher-risk and more crisis-prone nature of cases had contributed to the work stress experienced in the open-ended feedback obtained in the second study.

Influences of Individual, job and organizational factors on burnout, compassion fatigue.

Overall, the results in Study 1 were mixed when compared to previous literature on the individual, job and organizational variables associated with burnout and compassion fatigue. The results for hypothesized variables that were associated with compassion fatigue, especially, were largely not significant. Personal and work demographic variables like gender, age, seniority in rank, work hours etc., did not have much impact in this study, while individual psychosocial variables, coping styles, nonwork and work social support, job/organizational factors like training and supervision, had differing associations with on the burnout and compassion fatigue measures.

Previous reviews and research (e.g., Purvanova & Muros, 2010; Seti, 2008) had observed that the relationships between personal characteristics (e.g., gender and age) and burnout were mixed. In the current study, none of the personal demographic variables were significantly associated with the burnout measures. However, for the job-related demographic variables, the years of service in the government agency and the years of experience in human services had an inverted U-shaped relationship with emotional exhaustion. This was an interesting finding that was different from the usual finding that the younger human service workers tended to have higher levels of emotional exhaustion (e.g., Corcoran, 1987).

This finding could be unique to the agency's training and career progression frameworks. Typically, new workers joining the agency would be assigned less complex cases and there would a conscious cap on the number of cases they were assigned to. Instead, a lot of time and effort would be spent, within the first one to two years of joining, on these new workers and by them in specialized training programmes that were designed to equip them with the necessary skills and knowledge needed for good case management and intervention. Therefore, a worker would typically only start to take up significantly more cases and more complex cases at the end of the first or second year of service. Furthermore, most workers would move up the rank to take on more supervisory or managerial roles, on top of maintaining clinical work, by the fifth year of

service. By the time a worker reached 10 years of service, he/she would often be involved with supervisory, administrative and planning work, and maintain a drastically lower clinical case load or none at all, for some. This resulted in an interesting phenomenon of workers with 5 to 10 years of service being "sandwiched" between administrative and clinical work, as well as between the "rookies" and the "oldies" who would likely be taking on fewer cases than them.

None of the comparisons of compassion fatigue and compassion satisfaction scores for personal demographic variables were significant. The only finding that was significant before the Bonferonni correction was that married respondents had higher compassion satisfaction scores than non-married respondents. This was not surprising since in general, much support has been found for the positive association between marriage and general well-being (e.g., Coombs, 1991; Williams, 1988). In the current study, the married respondents also had significantly greater satisfaction with life when compared to the non-married respondents. Therefore it was possible that married workers with greater sense of life satisfaction would experience more compassion satisfaction from their work than their non-married peers.

Trait anger was positively associated with emotional exhaustion and depersonalization, but was not significantly associated with depersonalization, compassion fatigue and compassion satisfaction. This finding was similar to the previous findings by Brondolo and

215

associates on trait anger being positive correlated with the frequency and increase of burnout symptoms (Brondolo et al., 2002).

In this current study, similar to previous findings (e.g., Anderson, 2000; Jenaro et al., 2007), the respondents who reported that they tended to use active coping strategies also tended to report higher sense of personal accomplishment. Furthermore, respondents who reported using more active coping strategies also reported greater sense of compassion satisfaction. On the other hand, respondents who tended to use avoidant coping strategies also reported higher levels of emotional exhaustion, depersonalization, and compassion fatigue. These finding added to existing evidence that "escape" or avoidant types of coping strategies are associated with burnout symptoms like emotional exhaustion and depersonalization (e.g., Thornton, 1991) and with compassion fatigue (e.g., Injeyan et al., 2011).

In a sense, the Satisfaction with Life Scale (Diener et al., 1985) provided convergent and divergent validity for the various burnout and compassion fatigue subscales. Respondents' overall satisfaction with life scores were significantly associated with compassion satisfaction and personal accomplishment in a the positive direction, and were significantly associated with emotional exhaustion and depersonalization in the negative direction. One would expect respondents who reported higher levels of emotional exhaustion and depersonalization to experience lower satisfaction with life. Similarly,

one would expect respondents who reported feeling more efficacious and accomplished at work, as well as greater sense of satisfaction from their jobs as helping professionals, would report greater overall sense of life satisfaction. There was no significant correlation between satisfaction with life and compassion fatigue, and this could be due to the skewness and limited range of the compassion fatigue scores.

The results from the current study replicated some of the previous findings on the associations between different types of social support and burnout (e.g., Baruch-Feldman et al., 2002; Halbesleben, 2006). Similarly, there was mixed evidence supporting the hypothesized associations between social support and compassion fatigue/compassion satisfaction. Unsurprisingly, the number of support persons reported by a respondent and the satisfaction he/she has in receiving social support and help from the support persons reported were significantly correlated. However, these two variables were only significantly associated with compassion satisfaction and personal accomplishment. In addition, the perceived satisfaction from social support was negatively correlated with depersonalization. These results were similar to Halbesleben's (2006) finding that nonwork sources of social support would be more strongly related to depersonalization in a negative manner and personal accomplishment in a positive manner.

On the other hand, support from supervisors and from colleagues were negatively associated with levels of emotional exhaustion. That is,

217

respondents who reported feeling more supported by their supervisors and colleagues at work, tended to report lower levels of emotional exhaustion. These results were similar to those found by Halbesleben (2006). Moreover, respondents who perceived more support from their supervisors tended to report lower levels of depersonalization. However, perceived support from supervisors was not associated with respondents' sense of personal accomplishment. On the other hand, both support from supervisors and from colleagues were associated with increased compassion satisfaction in respondents. This finding was similar to previous findings (e.g., Killian, 2008). Furthermore, support from colleagues was associated with increased sense of personal accomplishment in respondents. Compassion fatigue was not associated with any of the work support variables, likely due to the limitations shared in earlier sections.

Human service workers in the government agency were asked if they perceived that they had adequate training and adequate formal supervision. About three quarters of them perceived that they had adequate training while about half of them felt that they had adequate supervision. On average, each worker received close to 5 hours of formal supervision per month while he/she would have on average one day of training per month. Interestingly, perception of adequate training was positively associated only with workers' sense of personal accomplishment while perception of adequate supervision was negatively associated only with emotional exhaustion and

218

depersonalization. This pattern of results again suggested that the development of personal accomplishment was parallel to the development of emotional exhaustion and depersonalization. Perception of adequate training and supervision were not associated with any of the compassion fatigue measures at all.

Longer working hours put in by human service workers per week had no association with all the burnout and compassion fatigue measures. On average, the workforce surveyed put in five extra hours of work in addition to the standard of 42 hours per week. The mode for working hours per week was 50 hours. There has been a concerted effort in the past three years within the government agency to encourage workers to keep to the standard work hours per week, and it appeared to be paying off, judging from the mean and mode of work hours per week. Although most workers were still working over time when compared to the standard 42 hours, the extra work hours put in were still within reasonable limits. Perhaps this was why longer work hours were not associated with any of the burnout and compassion fatigue measures.

Burnout, compassion fatigue, physical health, and intention to leave.

Kemery and colleagues (1987) suggested that their findings supported job satisfaction and physical health of workers in impacting on their eventual intention to leave their jobs. Burnout and compassion

219

fatigue were previously found to be amongst the key factors leading human service workers and other helping professionals to have the intention to leave their jobs (e.g., Mor Barak et al., 2001; Sung, Seo & Kim, 2012). The results from Study 1 were mixed when compared to the findings from previous research. Physical health and compassion fatigue were not salient factors associated with workers' intention to leave, and not all burnout measures were significantly associated with intention to leave.

Overall, the sample of human service workers appeared to be as healthy as the general population. The number of days of sick leave taken by workers, other than being weakly correlated with the frequency of somatic symptoms reported by workers, was not associated with any of the burnout or compassion measures and workers' intention to leave. This was probably due to more than two-thirds of the sample taking three days or less of sick leave every 6 months. Amongst the sampled workers, there were only 3 respondents who appeared to have more serious chronic medical conditions that required longer medical leave. The more salient measure, the reported frequencies of somatic symptoms experienced by workers, had strong positive associations with emotional exhaustion levels and workers' trait anger, and moderate positive associations with compassion fatigue and intention to leave.

Close to 60% of the sampled workers had thoughts of leaving the government agency. Amongst these workers, 1 in 2 had more than 50%

likelihood of acting upon their thoughts of leaving. Amongst these workers with higher likelihood of leaving the organization, 7 in 10 were workers with greater than 5 years of service. Essentially, when it came to workers' years in service within the agency, there was a similar inverted U-shaped relationship with workers' intention to leave, as it was with workers' emotional exhaustion levels. Workers' intention to leave, besides being moderately associated with physical health symptoms reported by workers, was strongly and positively associated with emotional exhaustion. Moreover, intention to leave was moderately and positively associated with workers' propensity to use avoidant coping strategies, and weakly correlated with workers' reported tendencies to experience anger.

Putting together all the various results obtained from the quantitative analyses in Study 1, it could be clearly seen that emotional exhaustion was the most salient variable amongst all the burnout and compassion fatigue measures. It was correlated with many of the other burnout and compassion fatigue measures, and there were individual psychosocial, as well as job/organizational factors associated with it. Most importantly, it shared the strongest positive correlations with workers' reported health symptoms and workers' intention to leave. In order to make sense of these myriad inter-relationships, and because it was important to understand the pathways leading to workers' physical health and workers' intention to leave, which had been found to be highly

correlated with actual turnover, a path analysis was conducted based on the pattern of results, as well as previous theoretical models.

The resulting path model explained 40% variance of workers' intention to leave. The correlation between physical health symptoms reported by workers and workers' intention to leave became nonsignificant in the path model. Instead, physical health symptoms had an indirect influence on workers' intention to leave via emotional exhaustion as the mediating variable. Workers' report of physical health symptoms was directly influenced by the frequency that they experienced anger. There were also indirect pathways from workers' experience of anger and their perception of lack of supervision to report of physical health symptoms via the propensity to use avoidant coping strategies. Therefore it appeared that physical health symptoms mediated the influences from trait anger, perceived lack of supervision and the use of avoidant coping, on emotional exhaustion, which tne influenced the workers' intention to leave. Furthermore, workers' years in service within the orgnization and their perception of lack of supervision also had direct impact upon workers' intention to leave.

Hence the path analysis results suggested that there is increased risk of workers having the intention to leave the organization after they had reached 5 years of service, and those workers who tended to experience anger or those workers who perceived that they lacked supervision, and who tended to use avoidant coping strategies, would

end up experiencing more physical health symptoms, and consequently experienced more emotional exhaustion symptoms, eventually impacting on their intention to leave. The results suggested several possible ways to prevent workers from having the intention to leave the organization: firstly, to be more mindful of the needs of workers with at least five years of experience; secondly, to ensure the development of good supervision framework and regularly check in with workers to see if they perceived that they had adequate supervision; and last but not least, to help individual workers with anger management and to develop positive coping skills. The results from the trial of the LifeSkills Programme in Study 2 held promise, especially with helping the individual workers.

LifeSkills programme.

Despite receiving feedback that it was too basic and contained skills and information that the participants already knew, and despite the very small sample size, LifeSkills was found to help participants experience a reduction in emotional exhaustion, compassion fatigue, and trait anxiety scores post-programme, when compared to control group subjects. Although the one-month follow up was too short a comparison period, and there were not enough subjects in the control group to provide comparison, there was a significant trend of the reduction in anxiety and compassion fatigue scores being maintained amongst the LifeSkills participants.

LifeSkills is a relatively simple programme on teaching participants relaxation skills, managing their negative feelings and building their communicaion skills so that they can build positive relationships with their loved ones and the larger community. LifeSkills focused on making information "common-sense" and skills easy-enough to master for individuals from all walks of life. One main target was to create as many chances for participants to practice the skills learnt, and for discussion to be driven by participants' real-life examples. The promising results from the randomized controlled trial of the LifeSkills programme in ameliorating emotional exhaustion, anxiety and compassion fatigue, were important as it meant that one of the strategies in preventing workers from having the intention to leave the organization would be to build programmes like LifeSkills into the staff welfare and training packages. Indeed, there were LifeSkills participants who suggested that LifeSkills, or similar programme, be included in the orientation programme for new workers, or to offer it to whole departments as part of team-building.

Limitations

One of the limitations of this series of studies would be the relatively small sample sizes for a relatively long list of variables under study. There was an initial aim to have 300 human service workers to participate in Study 1 for a nationally representative sample. Singapore is a small Southeast Asian island nation state with a population of about 5.4 million (Department of Statistics, Singapore, 2013). Singapore has

224

low rates of crime and the reports of family and child welfare cases are relatively low. For example, the number of child abuse cases investigated for the year of 2012 was 247 (Ministry of Social and Family Development, 2013). Therefore the population of the human social service workers from government and private voluntary organizations would not be large. However, only 181 valid survey responses were collected in Study 1. For Study 2, the initial aim was to have around 30 subjects each in the waitlist control group and in the LifeSkills group. However, in the end, only a little over 30 participants gave consent, and eventually, only 16 LifeSkills participants completed the whole study, while 9 control group participants lasted until post-test. The relatively small sample sizes were made worse by missing data.

There were a few reasons why the sample sizes fell short of initial targets. Firstly, the researcher is a middle manager in the government agency of human service workers. Due to her position, the ethics review board was exceptionally strict in ensuring that power differential was not used in coercing participation, and that all questionnaire responses were not easily identifiable to individual workers. Hence the researcher could only send general reminders through electronic mails in hopes for responses and complete data. Secondly, as many of the researcher's colleagues remarked: everyone was too busy and burnt out to participate, and when they did fill up the relatively long questionnaires, it was challenging to ensure that all items were answered. In any case, the participants were given the choice to not answer any questions that

they were not comfortable with. Given the above reasons, the amount of missing data was surprisingly kept to a minimum. In fact, considering that participation was voluntary and the researcher did not aggressively canvas for participation, the response rate was good. Anecdotally, there were instances where "official" surveys required three to four extensions of deadlines before even receiving adequate responses.

The recruitment of participants was exceptionally challenging for Study 2. While the LifeSkills programme was not considered a very long programme, it was still 12 hours in total length, and together with the pre-, post- and follow-up measurements, the time commitment required from the already busy agency workers was steep. Therefore there would have been a natural selection bias in having particularly helpful agency workers who eventually signed up and remained throughout the study. However, as the assignment to experimental groups was random, these helpful workers would have been in both the control and LifeSkills groups. It was due to the challenges in recruitment that the follow up period could not be longer. Even at one month follow-up, the researcher lost more than half of her already small control group. With the short follow up period and nonexistent control group, it was difficult to draw any conclusion on the maintenance effects.

The operationalization could be better for some of the variables. There were some demographic variables that could not be interval variables due to ethical constraints, but for other variables like those

226

related to work support, supervision and training, they could have been measured in different ways, rather than being limited as binary or ordinal data. Some of the measures had limited range and skewness: for example, the compassion fatigue measures, and the social support measures. There was also a challenge of parsimony versus comprehensiveness when deciding on the list of variables to be included in the studies. For that reason, some of the job/organizational variables, such as role ambiguity, role conflict, and so on, were not studied. However, it would have also been an issue if the list of variables were more comprehensive and hence longer as the eventual sample sizes for both studies would have been too small.

Strictly speaking, the "predictors" of workers' emotional exhaustion, physical health symptoms and workers' intention to leave were not true antecedents. The data in Study 1 was cross-sectional, and clearly, for any conclusion on causality, it would have been better if the design was longitudinal. Furthermore, although the sampling within the government agency was adequate for Study 1, the sampling for human service workers working in community agencies could have been better. Nonetheless, the patterns of associations amongst the variables under study were interesting and meaningful, with practical implications. Moreover, the data collected in Studies 1 and 2 could serve as a useful baseline for subsequent studies on burnout, compassion fatigue and turnover in human service workers and other workers' populations in Singapore.

Future Studies

The current studies tried to provide a "snapshot" of human service workers in Singapore: whether the widely used burnout and compassion scales developed overseas could be administered to them with confidence, the extent that burnout and compassion fatigue that they experienced, the factors that could impact upon their experience of physical health symptoms and their intention to leave their work organizations, and if a cognitive-behavioural based programme could be helpful in ameliorating their burnout and compassion fatigue levels. There are many studies that could and ought to follow.

Firstly, more work can be done to adapt the ProQOL-V for use with the local population. This would really be helpful to determine if indeed, the human service workers in Singapore had lower levels of compassion fatigue, or was it just not picked up by existing measures. Furthermore, future studies with the aims of providing local norms and cut off thresholds for both MBI-HSS and ProQOL-V would be useful. Secondly, given Singapore's relative small population and centralized organization of social services, longitudinal data on burnout and compassion fatigue for the entire national sample of human service workers, and their impact on workers' intention to leave and actual turnover would be useful in examining the causal processes.

It would also be interesting and useful to use the path model from this study to predict actual turnover rates to test if the salient variables were indeed impactful on workers' intention to leave and turnover. More variables ought to be studied in relation to workers' burnout, compassion fatigue, and intention to leave. As pointed out in earlier sections, there were many worthwhile variables like work load, role ambiguity, role conflict etc., that were not studied in the current studies.

The LifeSkills participants' feedback suggested that more could be done with providing programmes that enhanced workers' well-being and imparted useful coping and emotional management skills. Although there was an attempt at randomized controlled trial of a programme like LifeSkills, the sample size was too small and there were methodological flaws that prevented firm conclusions from being drawn. However, despite the flaws, the results were promising and certainly suggested that more such trials ought to be carried out, whether it is LifeSkills or another programme. In fact, from the results of the current studies, more ought to be done to study the effects of various intervention strategies aimed at reducing staff turnover in a systematic manner.

Conclusion

One third of the sampled Singaporean human service workers experiences significant levels of emotional exhaustion symptoms, and one in two human service workers experienced significant burnout symptoms. Amongst the human service workers within a government agency, one in two workers has had thoughts of leaving the organization, and higher levels of emotional exhaustion reported and the perceived lack of supervision was associated with the intention to leave. Perception of adequate training is associated with increased personal accomplishment but not associated with decreased emotional exhaustion or intention to leave. This has important implications: human service workers can feel more accomplished and efficacious on their jobs with adequate training, but they could still feel emotionally exhausted from the demands of their jobs, and have the intention to leave the organization regardless of how well trained and accomplished they felt.

A finding that is of concern is that human service workers with five or more years of length of service in the government agency tend to have a higher likelihood of acting up on their thoughts of leaving the organization. In the climate where cases are becoming more complex, the loss of accomplished senior staff that can supervise and take on cases that are more complex is costly. This is especially when there may not be ready replacements from the community agencies and it takes an average of two years to train a new worker.

Workers' characteristics like trait anger and use of avoidant coping strategies are associated with frequent experience of somatic symptoms, which in turn is associated with greater emotional exhaustion. This pattern of results suggests that there is still value in helping individual workers work on their emotional management and coping skills. Although it has been perceived to be basic and the content familiar to human service participants, the Williams' LifeSkills programme (Williams & Williams, 1997) shows promising results in reducing participants' reported levels of emotional exhaustion and other psychosocial symptoms. This suggests that even with a "simple" programme, positive results can be achieved with active engagement of participants. Perhaps, the key is really the engagement of staff – whether in giving them adequate supervision or giving them time and space to problem-solve interpersonal problems at work or at home.

The majority of human social service workers chose to enter the field because of their compassion and wanting to help the underprivileged. However, because of the interplay amongst individual workers' characteristics, and job/organizational characteristics, these workers can feel drained and contemplate quitting the jobs that they have initially loved. High staff turnover and negative organizational culture can have negative impact on the service quality and outcomes in the human social service sector (Glisson, Dukes, & Green, 2006). Perhaps, as Glisson and colleagues (2006) had suggested, that a more

concerted and longer term plan is needed to systematically address individual workers' concerns, and to change the organizational culture, so that the human social service workforce can continue to be healthy and happy, while delivering optimum services to the children, youths and families who need them most. One of the LifeSkills participants expressed similar suggestions to Glisson and his colleagues. It is hoped that the results from the current studies will contribute towards the improving of welfare and work conditions of human social service workers, who can then deliver better services and achieve better outcomes for the clients they serve.

References

Adams, K.B., Matto, H.C., & Harrington, D. (2001). The Traumatic Stress Institute Belief Scale as a measure of vicarious trauma in a national sample of clinical social workers. *Families in Society*, *82*(4), 363-371. doi: 10.1606/1044-3894.178

Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior*, *79*(2), 549-562. doi: 10.1016/j.jvb.2011.03.007

Alaska Department of Health and Social Services, Office of Children's Services. (2008). *Child and family services review: Alaska statewide assessment.*
Retrieved from
http://hss.state.ak.us/ocs/publications/pdf/CFSRstateAssessment.pdf

Alkema, K., Linton, J.M., & Davies, R. (2008). A study of relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life & Palliative Care*, *4*(2), 101-119. doi: 10.1080/15524250802353934

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders (3rd ed., rev.)*. Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC: Author.

Anderson, D. G. (2000). Coping strategies and burnout among veteran child protection workers. *Child Abuse & Neglect*, *24*(6), 839–848. doi: 10.1016/S0145-2134(00)00143-5

Armon, G. (2009). Do burnout and insomnia predict each other's levels of change over time independently of the job demand control–support (JDC–S) model?. *Stress and Health*, *25*(4), 333-342. doi: 10.1002/smi.1266

Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient Education and Counseling*, *78*(2), 184-190. doi: 10.1016/j.pec.2009.04.008

Aycock, N., & Boyle, D. (2009). Interventions to manage compassion fatigue in oncology nursing. *Clinical journal of oncology nursing*, *13*(2), 183-191. doi: 10.1188/09.CJON.183-191

Bacharach, S.B., Bamberger, P., & Conley, S. (1991). Work-home conflict among nurses and engineers: Mediating the impact of role stress on burnout and satisfaction at work. *Journal of*

Organizational Behavior, 12(1), 39-53. doi: 10.1002/job.4030120104

Baird, K., & Kracen, A.C. (2006). Vicarious traumatization and secondary traumatic stress: A research synthesis. *Counselling Psychology Quarterly, 19*(2), 181-188. doi: 10.1080/09515070600811899

Bakker, A.B., Van Der Zee, K.I., Lewig, K.A., & Dollard, M.F. (2006). The relationship between the Big Five personality factors and burnout: A study among volunteer counselors. *Journal of Social Psychology, 146*(1), 31–50. doi**:** 10.3200/SOCP.146.1.31-50

Barford, S. W., & Whelton, W.J. (2010). Understanding burnout in child and youth care workers. *Child and Youth Care Forum, 39*(4), 271-287. doi: 10.1007/s10566-010-9104-8

Bargellini, A., Barbieri, A., Rovesti, S., Vivoli, R., Roncaglia, R., & Borella, P. (2000). Relation between immune variables and burnout in a sample of physicians. *Occupational and Environmental Medicine, 57*(7), 453–457. doi:10.1136/oem.57.7.453

Barsky, A. J., Peekna, H. M., & Borus, J. F. (2001). Somatic symptom reporting in women and men. *Journal of General Internal Medicine, 16*(4), 266-275. doi: 10.1046/j.1525-1497.2001.016004266.x

Baruch-Feldman, C., Brondolo, E., Ben-Dayan, D., & Schwartz, J. (2002). Sources of social support and burnout, job satisfaction, and productivity. *Journal of Occupational Health Psychology, 7*(1), 84-93. doi: 10.1037/1076-8998.7.1.84

Baum, A. (1990). Stress, intrusive imagery, and chronic distress. *Health Psychology, 9*(6), 653-675. doi: 10.1037/0278-6133.9.6.653

Beck, A. T., & Beamesderfer, A. (1974). *Assessment of depression: the depression inventory*. S. Karger.

Bercier (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. Unpublished dissertation. Loyola University. Chicago, IL.

Bishop, G. D., Kaur, D., Tan, V. L., Chua, Y. L., Liew, S. M., & Mak, K. H. (2005). Effects of a psychosocial skills training workshop on psychophysiological and psychosocial risk in patients undergoing coronary artery bypass grafting. *American Heart Journal, 150*(3), 602-609. doi:10.1016/j.ahj.2004.10.015

Bishop, G.D., & Quah, S. (1998). Reliability and validity of measures of anger/hostility in Singapore: Cook & Medley Ho Scale, STAXI and Buss-Durkee Hostility Inventory. *Personality and Individual Differences, 24*(6), 867-878. doi: 10.1016/S0191-8869(98)00024-5

Bober, T., & Regehr, C. (2006). Strategies for reducing secondary or vicarious trauma: do they work?. *Brief Treatment and Crisis Intervention, 6*(1), 1. doi: 10.1093/brief-treatment/mhj001

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, research & practice, 16*(3), 252 - 260. doi: 10.1037/h0085885

Boscarino, J. A. (1997). Diseases among men 20 years after exposure to severe stress: implications for clinical research and medical care. *Psychosomatic Medicine, 59*(6), 605-614. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg

Boscarino, J. A., & Chang, J. (1999). Electrocardiogram abnormalities among men with stress-related psychiatric disorders: implications for coronary heart disease and clinical research. *Annals of Behavioral Medicine, 21*(3), 227-234. doi: 10.1007/BF02884839

Bride, B. E. (2007). Prevalence of secondary traumatic stress among social workers. *Social Work, 52*(1), 63-70. doi:10.1093/sw/52.1.63

Bride, B.E., Robinson, M.M., Yegidis, B., & Figley, C.R. (2004). Development and validation of the Secondary Traumatic Stress Scale, *Research on Social Work Practice, 14*(1), 27-35. doi: 10.1177/1049731503254106

Brondolo, E., Masheb, R., Stores, J., Stockhammer, T., Tunick, W., Melhado, E., … Contrada, R.J. (1998). Anger-related traits and response to interpersonal conflict among New York City traffic agents. *Journal of Applied Social Psychology, 28*(22), 2089 – 2118. doi: 10.1111/j.1559-1816.1998.tb01362.x

Brough, P., & O'Driscoll, M. P. (2010). Organizational interventions for balancing work and home demands: An overview. *Work & Stress, 24*(3), 280-297. doi: 10.1080/02678373.2010.506808

Brown, T. A. (2012). *Confirmatory factor analysis for applied research.* New York, NY: Guilford Press.

Burns, K. and Christie, A. (2013). Employment mobility or turnover? An analysis of child welfare and protection employee retention'.

Children and Youth Services Review, 35(2), 340-346, doi: 10.1016/j.childyouth.2012.11.014

Busseri, M. A., & Tyler, J. D. (2003). Interchangeability of the Working Alliance Inventory and Working Alliance Inventory, Short Form. *Psychological Assessment, 15*(2), 193-197. doi: 10.1037/1040-3590.15.2.193

Cahalane, H., & Sites, E. W. (2008). The climate of child welfare employee retention. *Child Welfare, 87*(1), 91-114. Retrieved from http://web.b.ebscohost.com.libproxy1.nus.edu.sg/

Carlson, D. S., Grzywacz, J. G., Ferguson, M., Hunter, E. M., Clinch, C. R., & Arcury, T. A. (2011). Health and turnover of working mothers after childbirth via the work–family interface: An analysis across time. *Journal of Applied Psychology, 96*(5), 1045 - 1054. doi: 10.1037/a0023964

Carney, R.M., Freedland, K.E., Rich, M.W., Smith, L.J. & Jaffe, A.S. (1993). Ventricular tachycardia and psychiatric depression in patients with coronary heart disease. *American Journal of Medicine, 95*(1), 23-28. doi: 10.1016/0002-9343(93)90228-H

Carney, R. M., Freedland, K. E., & Veith, R. C. (2005). Depression, the autonomic nervous system, and coronary heart disease. *Psychosomatic Medicine, 67*(Supplementary 1), S29-S33. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Carver, C.S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE, *International Journal of Behavioral Medicine*, 4: 92 – 100. doi: 10.1207/s15327558ijbm0401_6

Carver, C.S. (2007). *Brief COPE.* Retrieved from http://www.psy.miami.edu/faculty/ccarver/sclBrCOPE.html

Carver, C. S., Pozo, C., Harris, S. D., Noriega, V., Scheier, M. F., Robinson, D. S., Ketcham, A. S., Moffat, F. L., Jr., & Clark, K. C. (1993). How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology*, 65: 375-390. doi: 10.1037/0022-3514.65.2.375

Chida, Y. & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine*, 70: 741-756. doi:10.1097/PSY.0b013e31818105ba

Circenis, K., Millere, I., & Deklava, L. (2011). Stress-related psychological disorders among surgical care nurses in Latvia,

Review of Global Medicine and Healthcare Research, 2(2), 131 – 138.

Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA*, *298*(14), 1685-1687. doi:10.1001/jama.298.14.1685

Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, D. M., & Shapiro, S. (2005). The effects of mindfulness-based stress reduction on nurse stress and burnout, Part II: A quantitative and qualitative study. *Holistic nursing practice*, *19*(1), 26-35. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Collings, J.A., & Murray, P.J. (1996). Predictors of stress amongst social workers: An empirical study. *British Journal of Social Work, 26*(3), 375-387. Retrieved from http://bjsw.oxfordjournals.org.libproxy1.nus.edu.sg/content/26/3/375.full.pdf+html

Conrad, D., & Kellar-Guenther, Y. (2006). Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. *Child Abuse & Neglect*, 30: 1071–1080. doi:10.1016/j.chiabu.2006.03.009

Cooley, E., & Yovanoff, P. (1996). Supporting professionals at risk: Evaluating interventions to reduce burnout and improve retention of special educators. *Exceptional Children, 62*(4), 336–355. Retrieved from http://go.galegroup.com/ps/i.do?id=GALE%7CA17938845&v=2.1&u=nuslib&it=r&p=AONE&sw=w&asid=9c446fa7830699dff5f256b00896659b

Coombs, R. H. (1991). Marital status and personal well-being: A literature review. *Family relations*, *40*(1), 97-102. doi: 10.2307/585665

Corcoran, K.J. (1987). The association of burnout and social work practitioners' impressions of their clients. *Journal of Social Service Research*, *10*(1), 57-66. doi: 10.1300/J079v10n01_06

Cordes, C.L., & Dougherty, T.W. (1993). A review and an integration of research on job burnout. *Academy of Management Review*, *18*(4), 621-656. doi: 10.5465/AMR.1993.9402210153

Cornille, T.A., & Meyers, T.W. (1999). Secondary traumatic stress among child protective service workers: Prevalence, severity and predictive factors. *Traumatology*, *5*(1), 15-31. doi: 10.1177/153476569900500105

Cushman, L.F., Evans, P., & Namerow, P.B. (1995). Occupational stress among AIDS social service providers. *Social Work in Health Care*, *21*(3), 115-131. doi: 10.1300/J010v21n03_08

Craig, C.D., & Sprang, G. (2010). Compassion satisfaction, compassion fatigue, and burnout in a national sample of trauma treatment therapists. *Anxiety, Stress & Coping*, *23*(3), 319-339. doi: 10.1080/10615800903085818

Curtis, B.M. & O'Keefe, J.H. (2002). Autonomic tone as a cardiovascular risk factor: The dangers of chronic fight or flight. *Mayo Clinic Proceedings,* 77(1), 45-54. doi: 10.4065/77.1.45

Cyphers, G., Light, A., Gertz, L.L., MacGowan, N., Vandergrift, K.F., & Plummer, M. (2005) *Report from the 2004 Child Welfare Workforce Survey.* Washington, D.C.: American Public Human Services Association. Retrieved from http://www.theprofessionalmatrix.com/docs/WorkforceReport2005.pdf

Darr, W., & Johns, G. (2008). Work strain, health and absenteeism: A meta-analysis. *Journal of Occupational Health Psychology*, *13*(4), 293-318. doi: 10.1037/a0012639

Decker, J.T., Bailey, T.L., & Westergaard, N. (2002). Burnout among childcare workers. *Residential Treatment for Children and Youth*, *19*(4), 61–77. doi: 10.1300/J007v19n04_04

Department of Statistics, Ministry of Trade and Industry, Singapore. (2013). *Population trends 2013*. Retrieved from http://www.singstat.gov.sg/publications/publications_and_papers/population_and_population_structure/population2013.pdf

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75. doi: 10.1207/s15327752jpa4901_13

Drake, B., & Yadama, G.N. (1996). A structural equation model of burnout and job exit among child protective services workers. *Social Work Research*, *20*(3), 179-187. doi: 10.1093/swr/20.3.179

Eastwood, C.D., & Ecklund, K. (2008). Compassion fatigue risk and self-care practices among residential treatment center childcare workers. *Residential Treatment for Children and Youth*, *25*(2), 103–122. doi: 10.1080/08865710802309972

Ehlert, U., Gaab, J., & Henrich, M. (2001). Psychoneuro-endocrinological contributions to the etiology of depression, posttraumatic stress disorder, and stress-related bodily disorders: the role of the hypothalamus–pituitary–adrenal axis. *Biological*

Psychology, *57*(1-3), 141-152. doi: 10.1016/S0301-0511(01)00092-8

Elwood, L. S., Mott, J., Lohr, J. M., & Galovski, T. E. (2011). Secondary trauma symptoms in clinicians: A critical review of the construct, specificity, and implications for trauma-focused treatment. *Clinical Psychology Review*, *31*(1), 25-36. doi: 10.1016/j.cpr.2010.09.004

Epidemiology and Disease Control Division, Ministry of Health, Singapore. (2010). *National health survey 2010*. Retrieved from http://www.moh.gov.sg/content/moh_web/home/Publications/Reports/2011/national_health_survey2010.html

Erdogan, B., Bauer, T. N., Truxillo, D. M., & Mansfield, L. R. (2012). Whistle while you work: A review of the life satisfaction literature. *Journal of Management*, *38*(4), 1038-1083. doi:10.1177/0149206311429379

Esposito, B., & Fine, M. (1985). The field of child welfare as a world of work. In J. Laird & A. Hartman (Eds.), *A handbook of child welfare* (pp. 727–740). New York, NY: Free Press.

Etzion, D. (1984). Moderating effect of social support on the stress-burnout relationship. *Journal of Applied Psychology*, *69*(4), 615-622. doi: 10.1037/0021-9010.69.4.615

Figley, C.R. (1983). Catastrpohe: An overview of family reactions. In C.R. Figley, & H. I. McCubbin (Eds.), *Stress and the family, vol. 2: Coping with catastrophe* (pp. 3-20). New York, NY: Routledge.

Figley, C.R. (1985). The family as victim: mental health implications. In P. Pichot, P. Berner, R. Wolf, & K. Thau (Eds.), *Psychiatry: The state of the art, volume 6: Drug dependence and alcoholism, forensic psychiatry, military psychiatry* (pp. 283-291). New York, NY: Springer. doi: 10.1007/978-1-4613-2365-5_45

Figley, C.R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1-20). New York, NY: Routledge.

Figley, C.R. (2002a). Treating compassion fatigue. New York, NY: Brunner/Routledge.

Figley, C. R. (2002b). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of Clinical Psychology*, *58*(11), 1433–1441. doi: 10.1002/jclp.10090

Flannery, R.B. Jr. (1999) Psychological trauma and posttraumatic stress disorder. *International Journal of Emergency Mental Health*, 2,

135-140. Retrieved from http://www.ncccism.com/upload/Psychological%20Trauma%20and%20Posttraumatic%20Stress%20Disorder.pdf

Flower, C., McDonald, J., & Sumski, M. (2005). Review of turnover in Milwaukee County private agency child welfare ongoing case management staff. Retrieved from http://www.jessmcdonald.a25hourdaysites.com/f/wisconsin_report.pdf

Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46(4), 839-852. doi: 10.1037/0022-3514.46.4.839

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of personality and social psychology*, *50*(3), 571 - 579. doi: 10.1037/0022-3514.50.3.571

Frasure-Smith, N., Lesperance, F. & Talajic, M. (1995). The impact of negative emotions on prognosis following myocardial infarction: Is it more than depression? *Health Psychology,* 14(5), 388-398. doi: 10.1037/0278-6133.14.5.388

Freudenberger, H. J. (1974). Staff burn-out. *Journal of social issues*, *30*(1), 159-165. doi: 10.1111/j.1540-4560.1974.tb00706.x

Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative institutions. *Psychotherapy: Theory, Research & Practice*, *12*(1), 73-82. doi: 10.1037/h0086411

Gentry, E., Baggerly, J., & Baranowsky, A. B. (2004). Compassion fatigue resilience training for rehabilitation counselors. *Rehabilitation Review*, 24(10), 12-14. Retrieved from Traumatology Institute Forum: http://www.traumatologyinstitute.net/?p=36

Gentry, E., Baranowsky, A. B., & Dunning, T. (1997, September). Compassion fatigue: Accelerated recovery program (ARP) for helping professionals. In *meeting of the International Society for Traumatic Stress Studies on Linking Trauma Studies to the Universe of Science and Practice, Montreal, Quebec, Canada*.

Gentry, J. E., Baranowsky, A. B., & Dunning, K. (2002). ARP: The accelerated recovery program (ARP) for compassion fatigue. In C.R. Figley (Ed.), *Treating compassion fatigue* (pp. 123-137). New York, NY: Brunner-Routledge.

Geurts, S., Schaufeli, W., & De Jonge, J. (1998). Burnout and intention to leave among mental health-care professionals: A social

psychological approach. *Journal of Social and Clinical Psychology*, 17(3), 341-362. Retrieved from http://www.wilmarschaufeli.nl/publications/Schaufeli/110.pdf

Glaser, R., Rice, J., Speicher, C. E., Stout, J. C., & Kiecolt-Glaser, J. K. (1986). Stress depresses interferon production by leukocytes concomitant with a decrease in natural killer cell activity. *Behavioral neuroscience*, *100*(5), 675 - 678. doi: 10.1037/0735-7044.100.5.675

Glisson, C., Dukes, D., & Green, P. (2006). The effects of the ARC organizational intervention on caseworker turnover, climate, and culture in children's service systems. *Child Abuse & Neglect*, *30*(8), 855-880. doi:10.1016/j.chiabu.2005.12.010

Goetzel, R. Z., Long, S. R., Ozminkowski, R. J., Hawkins, K., Wang, S., & Lynch, W. (2004). Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting US employers. *Journal of Occupational and Environmental Medicine*, *46*(4), 398-412. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Goldberg, D.P. (1972). *The detection of psychiatric illness by questionnaire: A technique for the identification and assessment of non-psychotic psychiatric illness.* Oxford, England: Oxford U. Press.

Graef, M. I., & Hill, E. L. (2000). Costing child protective services staff turnover. *Child Welfare*, *79*(5), 517-533. Retrieved from http://web.b.ebscohost.com.libproxy1.nus.edu.sg/

Granath, J., Ingvarsson, S., von Thiele, U., & Lundberg, U. (2006). Stress management: a randomized study of cognitive behavioural therapy and yoga. *Cognitive Behaviour Therapy*, *35*(1), 3-10. doi: 10.1080/16506070500401292

Gray-Stanley, J.A., & Muramatsu, N. (2011). Work stress, burnout, and social and personal resources among direct care workers. *Research in Developmental Disabilities*, 32(3), 1065-1074. doi**:** 10.1016/j.ridd.2011.01.025

Greenberger, E., Chen, C., Dmitrieva, J., & Farruggia, S. P. (2003). Item-wording and the dimensionality of the Rosenberg Self-Esteem Scale: do they matter?. *Personality and individual differences*, *35*(6), 1241-1254. doi:10.1016/S0191-8869(02)00331-8

Grossi, G., Perski, A., Evengard, B., Blomkvist, V., & Orth-Gomer, K. (2003). Physiological correlates of burnout among women. *Journal of Psychosomatic Research*, 55: 309 – 316. doi: 10.1016/S0022-3999(02)00633-5

Grossi, G., Thomten, J., Fandiño-Losada, A., Soares, J. J., & Sundin, Ö. (2009). Does burnout predict changes in pain experiences among women living in Sweden? A longitudinal study. *Stress and Health*, *25*(4), 297-311. doi: 10.1002/smi.1281

Haar, J. M., & Roche, M. A. (2010). Family supportive organization perceptions and employee outcomes: The mediating effects of life satisfaction. *The International Journal of Human Resource Management*, *21*(7), 999-1014. doi: 10.1080/09585191003783462

Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders*, *141*(2), 415-424. doi: 10.1016/j.jad.2012.02.043

Halbesleben, J. R. B. (2006). Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *Journal of Applied Psychology*, 91(5), 1134-1145. doi: 10.1037/0021-9010.91.5.1134

Harrington, D. (2008). *Confirmatory factor analysis*. Oxford University Press. doi: 10.1093/acprof:sos/9780195339888.001.0001

Hasson, D., Anderberg, U. M., Theorell, T., & Arnetz, B. B. (2005). Psychophysiological effects of a web-based stress management system: a prospective, randomized controlled intervention study of IT and media workers [ISRCTN54254861]. *BMC public health*, *5*(1), 78. doi:10.1186/1471-2458-5-78

Hendrix, W. H., Robbins, T., Miller, J., & Summers, T.P. (1999). Effects of procedural and distributive justice on factors predictive of turnover. *Journal of Social Behavior and Personality*, 13(4), 611–632.

Holen, A. (1991). A longitudinal study of the occurrence and persistence of post-traumatic health problems in disaster survivors. *Stress Medicine*, *7*(1), 11-17. doi: 10.1002/smi.2460070104

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of counseling psychology*, 36(2), 223-233. doi: 10.1037/0022-0167.36.2.223

Injeyan, M.C., Shuman, C., Shugar, A., Chitayat, E.G., Atenafu, & Kaiser, A. (2011). Personality traits associated with genetic

counselor compassion fatigue: The roles of dispositional optimism and locus of control. *Journal of Genetic Counseling*, 20(5), 526-540. doi 10.1007/s10897-011-9379-4

Innstrand, S. T., Espnes, G. A., & Mykletun, R. (2004). Job stress, burnout and job satisfaction: an intervention study for staff working with people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *17*(2), 119-126. doi: 10.1111/j.1360-2322.2004.00189.x

Jayaratne, S., & Chess, W.A. (1984). Job satisfaction, burnout, and turnover: A national study. *Social Work*, 29(5), 448-453. Retrieved from http://sw.oxfordjournals.org/content/29/5/448.short?rss=1&ssource=mfc

Jenaro, C., Flores, N., & Arias, B. (2007). Burnout and coping in human service practioners. *Professional Psychology : Research and Practice*, 38(1), 80-87. doi: 10.1037/0735-7028.38.1.80

Jenkins, S.R., & Baird, S. (2002). Secondary traumatic stress and vicarious trauma: A validational study. Journal of Traumatic Stress, 15(5), 423-432. doi: 10.1023/A:1020193526843

Johnson, T. P., & Van de Vijver, F. J. (2003). Social desirability in cross-cultural research. In J.A. Harkness, F.J., Van de Vijver, & P.P., Mohler (Eds.), *Cross-cultural survey methods* (*Vol. 325*, pp. 195-204). Hoboken: Wiley-Interscience.

Kabat-Zinn, J. (2013). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness (Rev.*). New York, NY: Bantam Books.

Kadushin, G., &Regina, K. (1995) Job satisfaction among social work discharge planners. *Health & Social Work,* 20(3), 174-186. doi: 10.1093/hsw/20.3.174

Kahill, S. (1988). Symptoms of professional burnout: A review of the empirical evidence. *Canadian Psychology*, 29(3), 284-297. doi: 10.1037/h0079772

Kassam-Adams, N. (1999). The risks of treating sexual trauma: Stress and secondary trauma in psychotherapists. In B. H. Stamm (Ed.), *Secondary traumatic stress: Self care issues for clinicians, researchers and educators (2nd ed.*, pp. 37-47). Lutherville, MD: Sidran Press.

Kaye, B., & Jordan-Evans, S. (2008). *Love 'em or lose 'em: Getting good people to stay (4th ed.).* San Francisco, CA: Berrett-Koehler.

Kemery, E. R., Mossholder, K. W., & Bedeian, A. G. (1987). Role stress, physical symptomatology, and turnover intentions: A causal analysis of three alternative specifications. *Journal of Organizational Behavior*, *8*(1), 11-23. doi: 10.1002/job.4030080103

Kiecolt-Glaser, J. K., Preacher, K. J., MacCallum, R. C., Atkinson, C., Malarkey, W. B., & Glaser, R. (2003). Chronic stress and age-related increases in the proinflammatory cytokine IL-6. *Proceedings of the national Academy of Sciences*, *100*(15), 9090-9095. doi: 10.1073/pnas.1531903100

Killian, K. D. (2008). Helping till it hurts? A multimethod study of compassion fatigue, burnout, and self-care in clinicians working with trauma survivors. *Traumatology*. *14*(2), 32 – 44. doi: 10.1177/1534765608319083

Kim, H. (2011). Job conditions, unmet expectations, and burnout in public child welfare workers: How different from other social workers? *Children and Youth Services Review*, *33*, 358–367. doi:10.1016/j.childyouth.2010.10.001

Kim, H., Ji, J., & Kao, D. (2011). Burnout and physical health among social workers: A three-year longitudinal study. *Social Work*, 56(3), 258–268. doi: 10.1093/sw/56.3.258

Kirby, E. D., Williams, V. P., Hocking, M. C., Lane, J. D., & Williams, R. B. (2006). Psychosocial benefits of three formats of a standardized behavioral stress management program. *Psychosomatic medicine*, *68*(6), 816-823. doi: 10.1097/01.psy.0000238452.81926.d3

Kirby J.R, Delva M.D., Knapper C.K., & Birtwhistle, R.V. (2003). Development of the approaches to work and workplace climate questionnaires for physicians. *Evaluation and the Health Professions*, *26*(1), 104-121. doi: 10.1177/0163278702250097

Kitaoka-Higashiguchi, K., Morikawa, Y., Miura, K., Sakurai, M., Ishizaki, M., Kido, T., …Nakagawa, H. (2009). Burnout and risk factors for arteriosclerotic disease: Follow-up study. *Journal of Occupational Health*, *51*(2), 123-131. doi: 10.1539/joh.L8104

Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York, NY: Guilford press.

Koeske. G.F., & Koeske, R.D. (1989). Construct validity of the Maslach Burnout Inventory: A critical review and reconceptualization. *Journal of Applied Behavioral Science*, *25*(2), 131- 144. doi: 10.1177/0021886389252004

Kravits, K., McAllister-Black, R., Grant, M., & Kirk, C. (2010). Self-care strategies for nurses: A psycho-educational intervention for stress reduction and the prevention of burnout. *Applied Nursing Research*, *23*(3), 130-138. doi: 10.1016/j.apnr.2008.08.002

Kyriacou, C. (1987). Teacher stress and burnout: an international review. *Educational Research*, *29*(2), 146-152. doi:10.1080/0013188870290207

LaMontagne, A. D., Keegel, T., Louie, A. M., Ostry, A., & Landsbergis, P. A. (2007). A systematic review of the job-stress intervention evaluation literature, 1990–2005. *International Journal of Occupational and Environmental Health*, *13*(3), 268-280. doi: 10.1179/oeh.2007.13.3.268

Landis, E. (2010). Sharevision: A collaborative-reflective, expressive arts intervention to address secondary trauma. Unpublished dissertation. Lesley University. Cambridge, MA.

Latack, J. C. (1986). Coping with job stress: measures and future directions for scale development. *Journal of Applied Psychology*, *71*(3), 377 - 385. doi: 10.1037/0021-9010.71.3.377

Lee, J., Forster, M., & Rehner, T. (2011). The retention of public child welfare workers: The roles of professional organizational culture and coping strategies. *Children and Youth Services Review*, *33*(1), 102-109. doi: 10.1016/j.childyouth.2010.08.019

Leiter, M.P. (1993). Burnout as a developmental process: Consideration of models. In W.B. Schaufeli, Maslach, C., & Tadeusz, M. (Eds.), *Professional burnout: Recent developments in theory and research. Series in applied psychology: Social issues and questions* (pp. 237-250). Philadelphia, PA: Taylor & Francis.

Levin, A., & Decker, J.T. (2008). The assessment of staff satisfaction as compared to client satisfaction in two department of social service residential treatment facilities. *Residential Treatment for Children and Youth*, *23*(3), 61–82. doi**:** 10.1080/08865710609512717

Lloyd, J., Bond, F. W., & Flaxman, P. E. (2013). The value of psychological flexibility: Examining psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout. *Work & Stress*, *27*(2), 181-199. doi**:** 10.1080/02678373.2013.782157

Mackenzie, C. S., Poulin, P. A., & Seidman-Carlson, R. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Applied Nursing Research*, *19*(2), 105-109. doi: 10.1016/j.apnr.2005.08.002

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *Journal of consulting and clinical psychology*, *68*(3), 438 - 450. doi: 10.1037/0022-006X.68.3.438

Marsh, H. W. (1996). Positive and negative global self-esteem: A substantively meaningful distinction or artifactors?. *Journal of personality and social psychology*, *70*(4), 810 - 819. doi: 10.1037/0022-3514.70.4.810

Maslach, C. (2003). *Burnout: The cost of caring.* Cambridge, MA: Malor Book.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior, 2*(2), 99-113. doi: 10.1002/job.4030020205

Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, *52*, 397–422. Retrieved from www.annualreviews.org

Matthews, K.A., Owen, J.F., Kuller, L.H., Sutton-Tyrrell, K., Lassila, H.C., & Wolfson, S.K. (1998). Stress-induced pulse pressure change predicts women's carotid atherosclerosis. *Stroke, 29*(8), 1525-1530. doi: 10.1161/01.STR.29.8.1525

McCann, I.L., & Pearlman, L.A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress*, *3*(1), 131-149. doi: 10.1007/BF00975140

McManus, I.C., Keeling, A., & Paice, E. (2004). Stress, burnout and doctors' attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates. *BMC Medicine*, 2:29. doi:10.1186/1741-7015-2-29. Retrieved from: http://www.biomedcentral.com/1741-7015/2/29

Meadors, P., & Lamson, A. (2008). Compassion fatigue and secondary traumatization: Provider self care on intensive care units for children. *Journal of Pediatric Health Care*, *22*(1), 24-34. doi: 10.1016/j.pedhc.2007.01.006

Melamed, S., Kushnir, T., & Shirom, A. (1992). Burnout and risk factors for cardiovascular diseases. *Behavioral Medicine*, *18*(2), 53-60. doi: 10.1080/08964289.1992.9935172

Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin*, *132*(3), 327 – 353. doi: 10.1037/0033-2909.132.3.327

Meyers, T.W., & Cornille, T.A. (2002). The trauma of working with traumatized children. In C.R. Figley (Ed.), *Treating compassion fatigue* (pp. 39-56). New York, NY: Brunner-Routledge.

Miller, G., Chen, E., & Cole, S. W. (2009). Health psychology: Developing biologically plausible models linking the social world and physical health. *Annual review of psychology*, *60*, 501-524. Retrieved from http://www.annualreviews.org.libproxy1.nus.edu.sg/doi/pdf/10.1146/annurev.psych.60.110707.163551

Ministry of Social and Family Development, Singapore. (2013). *MSF Singapore Social Statistics in Brief 2013*. Retrieved from http://app.msf.gov.sg/Portals/0/Files/SPRD/MSF%20Singapore%20Social%20Statistics%20in%20Breief%202013.pdf

Mohren, D. C., Swaen, G. M., Kant, I., van Amelsvoort, L. G., Borm, P. J., & Galama, J. (2003). Common infections and the role of burnout in a Dutch working population. *Journal of Psychosomatic Research*, *55*(3), 201-208. doi: 10.1016/S0022-3999(02)00517-2

Mor Barak, M.E., Nissly, J.A., & Levin, A. (2001). Antecedents to retention and turnover among child welfare, social work, and other human service employees: What can we learn from past research? A review and meta-analysis. *Social Service Review*, *75*(4), 625–661. Retrieved from http://www.jstor.org/stable/10.1086/323166

Nakamura, H., Nagase, H., Yoshida, M., & Ogino, K. (1999). Natural killer (NK) cell activity and NK cell subsets in workers with a tendency of burnout. *Journal of Psychosomatic Research*, *46*(6), 569 – 578. doi: 10.1016/S0022-3999(99)00009-4

National Council on Crime and Delinquency. (2006). *Job turnover in child welfare and juvenile justice: The voices of former frontline workers* (Report submitted to Cornerstones for Kids). Retrieved from http://www.cpshr.us/workforceplanning/documents/06.02_Job_Turn_Chld_Well.pdf

Nelson-Gardell, D., & Harris, D. (2003). Childhood abuse history, secondary traumatic stress, and child welfare workers. *Child Welfare*, *82*(1), 5-26. Retrieved from http://web.b.ebscohost.com.libproxy1.nus.edu.sg/ehost/pdfviewer/pdfviewer?vid=3&sid=b08da3a0-8e84-41f0-bf60-d73065e94cee%40sessionmgr115&hid=124

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. doi: 10.1023/A:1015203327767

Osborne, J. W. (2012). *Best practices in data cleaning: A complete guide to everything you need to do before and after collecting your data*. Thousand Oaks, California: Sage.

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological assessment*, *5*(2), 164. doi: 10.1037/1040-3590.5.2.164

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, *3*(2), 137-152. doi: 10.1080/17439760701756946

Pearlman, L.A. (1996). Psychometric review of TSI Belief Scale, Revision L. In B.H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 415-417). Lutherville, MD: Sidran Press.

Pearlman, L. A., & Mac Ian, P. S. (1995). Vicarious traumatization: An empirical study of the effects of trauma work on trauma therapists. *Professional Psychology: Research and Practice*, *26*(6), 558-565. doi: 10.1037/0735-7028.26.6.558

Pearlman, L.A., & Saakvitne, K.W. (1995). Treating therapists with vicarious traumatization and secondary traumatic stress disorders. In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 150-177). New York, NY: Routledge.

Phipps, A. B., & Byrne, M. K. (2003). Brief interventions for secondary trauma: Review and recommendations. *Stress and Health*, *19*(3), 139-147. doi: 10.1002/smi.970

Pigott, T. D. (2001). A review of methods of missing data. *Educational Research and Evaluation*, *7*(4), 353 – 383. doi: 10.1076/edre.7.4.353.8937

Pine, A., & Maslach, C. (1978). Characteristics of staff burnout in mental health settings. *Psychiatric* Services, *29*(4), 233-237. Retrieved from http://www.psychiatryonline.org/ article.aspx?articleID=65877

Pole, N. (2007). The psychophysiology of posttraumatic stress disorder: a meta-analysis. *Psychological Bulletin*, *133*(5), 725. doi: 10.1037/0033-2909.133.5.725

Potter, P., Deshields, T., Berger, J. A., Clarke, M., Olsen, S., & Chen, L. (2013). Evaluation of a compassion fatigue resiliency program

for oncology nurses. *Oncology Nursing Forum, 40*(2), 180-187. doi: 10.1188/13.ONF.180-187

Purvanova, R.K., & Muros, J.P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior, 77*(2), 168-185. doi: 10.1016/j.jvb.2010.04.006

Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement, 1*(3), 385-401. doi: 10.1177/014662167700100306

Reghr, 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. doi: 10.1016/j.childyouth.2004.02.003

Ro, K. E. I., Gude, T., Tyssen, R., & Aasland, O. G. (2010). A self-referral preventive intervention for burnout among Norwegian nurses: one-year follow-up study. *Patient education and counseling, 78*(2), 191-197. doi: 10.1016/j.pec.2009.07.008

Ro, K. E. I., Tyssen, R., Hoffart, A., Sexton, H., Aasland, O. G., & Gude, T. (2010). A three-year cohort study of the relationships between coping, job stress and burnout after a counselling intervention for help-seeking physicians. *BMC Public Health, 10*(1), 213. doi:10.1186/1471-2458-10-213

Rode, J. C., Rehg, M. T., Near, J. P., & Underhill, J. R. (2007). The effect of work/family conflict on intention to quit: The mediating roles of job and life satisfaction. *Applied Research in Quality of Life, 2*(2), 65-82. doi: 10.1007/s11482-007-9030-6

Rose, D., Horne, S., Rose, J.L., & Hastings, R.P. (2004). Negative emotional reactions to challenging behavior and staff burnout: Two replication studies. *Journal of Applied Research in Intellectual Disabilities, 17*(3), 219 – 223. doi: 10.1111/j.1468-3148.2004.00194.x

Rosenberg, M. (1965). *Society and the Adolescent Self-Image.* Princeton, NJ: Princeton University Press.

Rowe, M. M. (2000). Skills training in the long-term management of stress and occupational burnout. *Current Psychology, 19*(3), 215-228. doi: 10.1007/s12144-000-1016-6

Russell, D.W., Altmaier, E., & Van Velzen, D. (1987). Job-related stress, social support and burnout among classroom teachers. *Journal of Applied Psychology, 72*(2), 269 – 274. doi: 10.1037/0021-9010.72.2.269

Sabine-Farrell, R., & Turpin, G. (2003). Vicarious traumatization: Implications for the mental health of health workers? *Clinical Psychology Review*, *23*(3), 449-480. doi: 10.1016/S0272-7358(03)00030-8

Sarason,I.G., Levine, H.M., Basham, R.B., & Sarason, B.R. (1983). Assessing social support: the social support questionnaire. *Journal of Personality and Social Psychology*, *44*(1), 127–139. doi: 10.1037/0022-3514.44.1.127

Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*(4), 497-510. doi: 10.1177/0265407587044007

Savicki, V. (2002). *Burnout across thirteen cultures: stress and coping in child and youth care workers.* Westport, CT: Praeger.

Schafer, J. L., & Graham, J. W. (2002). Missing data: our view of the state of the art. *Psychological methods*, *7*(2), 147. doi: 10.1037/1082-989X.7.2.147

Schat, A.C., Kelloway, E.K., & Desmarais, S. (2005). The physical health questionnaire (PHQ): Construct validation of a self-report scale of somatic symptoms. *Journal of Occupational Health Psychology*, *10*(4), 361–381. doi: 10.1037/1076-8998.10.4.363

Schauben, L.J., & Frazier, P.A. (1995). Vicarious trauma: The effects on female counselors of working with sexual violence survivors. *Psychology of Women Quarterly*, *19*(1), 49-64. doi: 10.1111/j.1471-6402.1995.tb00278.x

Schuler, R. S. (1982). An integrative transactional process model of stress in organizations. *Journal of Organizational Behavior*, *3*(1), 5-19. doi: 10.1002/job.4030030103

Seligman, M. E., & Csikszentmihalyi, M. (2000). *Positive psychology: An introduction* (Vol. 55, No. 1, p. 5). American Psychological Association.

Selye, H. (1955). Stress and disease. *Science*, New Series, *122*(3171), 625-631. Retrieved from http://www.jstor.org/stable/1749664

Seti, C.L. (2008). Causes and treatment of burnout in residential child care workers: A review of the research. *Residential Treatment for Children & Youth***,** *24*(3), 197-229. doi: 10.1080/08865710802111972

Schaufeli, W.B., Leiter, M.P., Maslach, C., & Jackson, S.E. (1996). *MBI-General Survey*. Published by Mind Garden, Inc., www.mindgarden.com

Siebert, D.C. (2006). Personal and occupational factors in burnout among practicing social workers. *Journal of Social Service Research*, *32*(2), 25-44. doi: 10.1300/J079v32n02_02

Siefert, K., Jayaratne, S., & Chess, W. (1991). Job satisfaction, burnout, and turnover in health care social workers. *Health & Social Work, 16*(3), 193-202. Retrieved from http://libproxy1.nus.edu.sg/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=1991131197&site=ehost-live

Siu, O. L., Cooper, C. L., & Phillips, D. R. (2014). Intervention studies on enhancing work well-being, reducing burnout, and improving recovery experiences among Hong Kong health care workers and teachers. *International Journal of Stress Management, 21*(1), 69. doi: 10.1037/a0033291

Soderfeldt, M., Soderfeldt, B., & Warg, L. (1995). Burnout in social work. *Social Work, 40*(5), 638-646. doi: 10.1093/sw/40.5.638

Spielberger, C.D. (1983). *State-Trait Anxiety Inventory for Adults Manual.* Published by Mind Garden, Inc., www.mindgarden.com

Spielberger, C. D. (1988). *State-Trait Anger Expression Inventory.* John Wiley & Sons, Inc.

Spielberger, C. D. (1999). *State-Trait Anger Expression Inventory-2: STAXI-2*. PAR, Psychological Assessment Ressources.

Spielberger, C. D., Krassner, S. S., & Solomon, E. P. (1988). The experience, expression, and control of anger. In M. P. Janisse (Ed.), *Health psychology: Individual differences and stress* (pp. 89-108). New York, NY: Springer-Verlag. doi: 10.1007/978-1-4612-3824-9_5

Spielberger, C.D. & Reheiser, E.C. (2004). Measuring anxiety, anger, depression, and curiosity as emotional states and personality traits with the STAI, STAXI, and STPI. In M.J. Hilsenroth, & D.L., Segal (Eds.), C*omprehensive handbook of psychological assessment, vol. 2: Personality assessment* (pp. 70-86). Hoboken, NJ: John Wiley & Sons.

Sprang, G., Clark, J.J., & Whitt-Woosley, A. (2007). Compassion fatigue, compassion satisfaction, and burnout: Factors impacting a professional's quality of life. *Journal of Loss and Trauma, 12*(3), 259-280. **doi:** 10.1080/15325020701238093

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). New York, NY: Brunner-Routledge.

Stamm, B.H. (2010) The Concise ProQOL Manual (2nd ed), Pocatello, ID: ProQOL.org. Retrieved from http://www.proqol.org/uploads/ProQOL_Concise_2ndEd_12-2010.pdf

Suarez, E. C., Kuhn, C. M., Schanberg, S. M., Williams, R. B., & Zimmermann, E. A. (1998). Neuroendocrine, cardiovascular, and emotional responses of hostile men: the role of interpersonal challenge. *Psychosomatic Medicine*, *60*(1), 78-88. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Sung, K., Seo, Y., & Kim, J.H. (2012). Relationships between compassion fatigue, burnout, and turnover intention in Korean hospital nurses. *Journal of Korean Academy of Nursing*, *42*(7), 1087-1094. doi: 10.4040/jkan.2012.42.7.1087

Taylor, S.E. (2006). *Health Psychology*. New York, NY: McGraw-Hill.

Te Brake, H., Gorter, R., Hoogstraten, J., & Eijkman, M. (2001). Burnout intervention among Dutch dentists: long-term effects. *European Journal of Oral Sciences*, *109*(6), 380-387. doi: 10.1034/j.1600-0722.2001.00086.x

The Straits Times (1996, October 11). Government to convene inquiry into Winny Ho case. Retrieved from http://eresources.nlb.gov.sg/newspapers/Digitised/Articles/straitstimes19961011-1.2.6.6.aspx

Thomas, S. P., & Williams, R. L. (1991). Perceived stress, trait anger, modes of anger expression, and health status of college men and women. *Nursing Research*, *40*(5), 303-307. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Thornton, P. I. (1992). The relation of coping, appraisal, and burnout in mental health workers. *The Journal of Psychology*, *126*(3), 261-271. doi: 10.1080/00223980.1992.10543360

Toppinen-Tanner, S., Ahola, K., Koskinen, A., & Väänänen, A. (2009). Burnout predicts hospitalization for mental and cardiovascular disorders: 10-year prospective results from industrial sector. *Stress and Health*, *25*(4), 287-296. doi: 10.1002/smi.1282

Toppinen-Tanner, S., Ojajärvi, A., Väänaänen, A., Kalimo, R., & Jäppinen, P. (2005). Burnout as a predictor of medically certified sick-leave absences and their diagnosed causes. *Behavioral medicine*, *31*(1), 18-32. doi: 10.3200/BMED.31.1.18-32

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, *1*(3), 207. doi: 10.1037/1040-3590.1.3.207

Tüurk Smith, S., Smith, K.D., & Seymour, K. (1993). Social desirability of personality items as a predictor of endorsement: A cross-cultural analysis. *Journal of Social Psychology*, *133*(1), 43 – 52. doi: 10.1080/00224545.1993.9712117

Van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, *54*(2), 119-135. doi: 10.1016/j.erap.2003.12.004

Wheeler, D.L., Vassar, M., Worley, J.A., & Barnes, L.L. (2011). A reliability generalization meta-analysis of coefficient alpha for the Maslach Burnout Inventory. *Educational and Psychological Measurement*, *71*(1), 231–244. doi: 10.1177/0013164410391579

Ware Jr, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Medical care*, *34*(3), 220-233. Retrieved from http://ovidsp.tx.ovid.com.libproxy1.nus.edu.sg/

Williams, D. G. (1988). Gender, marriage, and psychosocial well-being. *Journal of Family Issues*, *9*(4), 452-468. doi: 10.1177/019251388009004002

Williams, S. E., Kirk, A., & Wilson, T. (2011). A recent look at the factors influencing workforce retention in public child welfare. *Children and Youth Services Review*, *33*(1), 157-160. doi: 10.1016/j.childyouth.2010.08.028

Williams, V. P., Brenner, S. L., Helms, M. J., & Williams, R. B. (2009). Coping skills training to reduce psychosocial risk factors for medical disorders: a field trial evaluating effectiveness in multiple worksites. *Journal of occupational health*, *51*(5), 437-442. doi: 10.1539/joh.O8016

Williams, V., & Williams, R.B. (1997). *LifeSkills*. New York, NY: Times Books.

Wong, N., Rindfleisch, A., & Burroughs, J. E. (2003). Do reverse-worded items confound measures in cross-cultural consumer research? The case of the Material Values Scale. *Journal of consumer research*, *30*(1), 72-91. Retrieved from http://content.ebscohost.com.libproxy1.nus.edu.sg

Yankeelov, P. A., Barbee, A. P., Sullivan, D., & Antle, B. F. (2009). Individual and organizational factors in job retention in Kentucky's child welfare agency. *Children and Youth Services Review, 31*(5), 547-554. doi: 10.1016/j.childyouth.2008.10.014

Zeidner, M., Hadar, D., Matthews, G., & Roberts, R. D. (2013). Personal factors related to compassion fatigue in health professionals. *Anxiety, Stress & Coping, 26*(6), 595-609. doi: 10.1080/10615806.2013.777045

Zilberg, N.J., Weiss, D. S., & Horowitz, M. J. (1982). Impact of Event Scale: A cross-validation study and some empirical evidence supporting a conceptual model of stress response syndromes. *Journal of Consulting and Clinical Psychology, 50*(3), 407-414. doi: 10.1037/0022-006X.50.3.407

Zołnierczyk-Zreda, D. (2004). An intervention to reduce work-related burnout in teachers. *International journal of occupational safety and ergonomics: JOSE, 11*(4), 423-430. Retrieved from http://archiwum.ciop.pl/15243

Appendix A

Staff Characteristic Form – Long Version

INFORMATION SHEET

Please tick the appropriate boxes or fill in the blanks where indicated.

Gender: ❏ Male ❏ Female

Age : ❏ 21 – 30 yrs ❏ 31 – 40 yrs ❏ 41 – 50 yrs
❏ 51 – 60 yrs ❏ 61 yrs and above

Resident Status : ❏ Singaporean
❏ Permanent Resident
❏ Non-resident _____

Ethnicity: ❏ Chinese ❏ Malay
❏ Indian ❏ Other _____

Marital Status: ❏ Single ❏ Married ❏ Separated
❏ Divorced ❏ Widowed

Education: ❏ Diploma
❏ Post-graduate Diploma
❏ Bachelor's Degree
❏ Masters/Doctorate/PhD Degree

No. of years with current work organization:
❏ 0 – 2 yrs ❏ 2 – 5 yrs ❏ 5 – 10 yrs ❏ more than 10 years

No. of previous work organization(s) before joining current organization:
_____

Have you thought of leaving current organization? ❏ Yes
❏ No

If you have thought of leaving current organization, how likely do you think you will take action and act on the thought? (Please mark on the line the point which best represents the likelihood.)

|---|
Not likely Very Likely

Official Work Hours: ❏ Full time (44 hrs/wk)
❏ Part time (Hrs/wk_____)

Actual Work Hours per Week: _____

Appendix A

(continued)

Staff Characteristic Form – Long Version

Work Role: ❑ Supervisor/Manager ❑ Senior Worker
❑ Human Service Worker

No. of hours of formal supervision received per month: _____

Do you feel you have adequate supervision? ❑ Yes ❑ No

Do you feel your supervisor supports you?
❑ Never ❑ Rarely ❑ Sometimes ❑ Always

Do you think you get support from your colleagues or co-workers?
❑ Never ❑ Rarely ❑ Sometimes ❑ Always

No. of hours of training received on average per month: _____

Do you feel you have adequate training? ❑ Yes ❑ No

No. of years in Human/Social Services: ❑ 0 – 2 yrs ❑ 2 – 5 yrs
❑ 5 – 10 yrs ❑ more than 10
yrs

Appendix B

Health Information Sheet

HEALTH INFORMATION

Height(cm): _____ Weight (kg): _____

1. How would you rate your current physical health? (Please mark on the line the point which best represents the state of your current health)

|--|

    Very poor   Excellent

2. How often have you seen a doctor about your health in the past 6 months?

   ❑ None   ❑ _____ times

3. How many days of Medical Leave (with doctor's certificate) have you taken in the past 6 months? _____

4. How many hours of time off have you taken, in order to rest from fatigue/tiredness or to recover from illness, in the past 6 months?

   _____

5. Exercise:
   ❑ No exercise
   ❑ Mild Exercise (e.g. climb stairs, walk short distance, golf)
   ❑ Occasional vigorous exercise (less than 4x/week for 30 mins)
   ❑ Regular vigorous exercise (4x/week or more for 30 mins)

6. Caffeine (Tick all that apply):   ❑ None   ❑ Tea   ❑ Coffee
                                            ❑ Cola   ❑ Energy drink
   How many cups/cans per day? _____

7. Do you smoke? ❑ Yes   ❑ No

8. Do you have any health conditions that need regular doctor's follow up?
   ❑ Yes (please specify: _____)
   ❑ No

Appendix C

Modification Indices from Confirmatory Factor Analysis of ProQOL-V
(*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e23 ↔ e25	13.495	.124
e14 ↔ Burnout	4.865	-.032
e14 ↔ e23	7.226	-.091
e13 ↔ e14	11.407	.087
e11 ↔ Burnout	5.036	.040
e11 ↔ e25	4.277	-.069
e9 ↔ Burnout	6.845	.033
e5 ↔ Burnout	4.616	-.043
e2 ↔ e13	4.254	-.079
e2 ↔ e7	5.486	.133
e29r ↔ ST	4.712	-.024
e29r ↔ CS	14.11	-.063
e29r ↔ e25	4.963	-.071
e26 ↔ e5	5.102	-.153
e21 ↔ Burnout	12.497	.082
e21 ↔ CS	25.938	.117
e21 ↔ e29r	6.899	-.137
e21 ↔ e26	18.333	.338
e19 ↔ CS	9.297	.062
e19 ↔ e11	9.652	.151
e19 ↔ e7	8.251	.159
e19 ↔ e2	4.333	.121
e19 ↔ e29r	15.807	-.184
e19 ↔ e26	7.080	.186
e19 ↔ e21	46.632	.435
e17r ↔ ST	7.124	-.028
e17r ↔ CS	18.702	-.068
e17r ↔ e5	5.301	.098
e17r ↔ e29r	9.567	.112
e17r ↔ e21	4.069	-.100

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix C

(*continued*)

Modification Indices from Confirmatory Factor Analysis of ProQOL-V
(*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e15r ↔ CS	4.220	-.034
e15r ↔ e26	10.022	-.180
e15r ↔ e19	4.508	-.097
e15r ↔ e17r	5.793	.086
e10 ↔ ST	10.824	.038
e10 ↔ CS	9.773	.054
e10 ↔ e11	6.104	.103
e10 ↔ e9	10.992	.099
e10 ↔ e29r	8.991	-.119
e10 ↔ e26	23.922	.293
e10 ↔ e21	17.577	.229
e10 ↔ e19	14.463	.184
e10 ↔ e17r	9.374	-.115
e8 ↔ ST	60.927	.081
e8 ↔ Burnout	9.606	-.048
e8 ↔ e13	4.502	.060
e8 ↔ e9	9.897	.083
e8 ↔ e29r	10.208	-.112
e8 ↔ e17r	8.454	-.097
e4r ↔ ST	17.872	-.040
e4r ↔ CS	8.153	-.040
e4r ↔ e29r	9.795	.101
e4r ↔ e19	4.349	-.082
e4r ↔ e17r	7.198	.082
e4r ↔ e10	13.745	-.125
e4r ↔ e8	11.574	-.101

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix C

(*continued*)

Modification Indices from Confirmatory Factor Analysis of ProQOL-V
(*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e1r ↔ ST	5.333	-.022
e1r ↔ e5	5.742	-.091
e1r ↔ e2	9.057	-.122
e1r ↔ e4r	13.217	.099
e30 ↔ Burnout	4.306	-.026
e30 ↔ e29r	10.806	-.094
e30 ↔ e17r	4.046	-.055
e27 ↔ e30	4.378	-.053
e24 ↔ e25	11.900	-.095
e24 ↔ e9	4.071	.050
e24 ↔ e30	4.027	-.049
e24 ↔ e27	11.123	.098
e22 ↔ e25	4.349	-.055
e22 ↔ e11	8.559	.096
e22 ↔ e19	5.300	.087
e22 ↔ 15r	4.246	-.064
e22 ↔ e10	10.658	.106
e22 ↔ e30	5.216	-.053
e22 ↔ e24	16.016	.107
e20 ↔ e5	6.841	.098
e18 ↔ e23	4.806	.067
e18 ↔ e7	5.097	.077
e18 ↔ e17r	18.584	-.118
e18 ↔ e30	4.979	.047
e18 ↔ e24	4.333	-.051

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix C

(*continued*)

Modification Indices from Confirmatory Factor Analysis of ProQOL-V
(*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e16 ↔ e28	5.657	-.065
e16 ↔ e29r	4.282	-.068
e16 ↔ e26	4.461	-.106
e16 ↔ e17r	4.568	-.067
e12 ↔ ST	8.037	-.027
e12 ↔ Burnout	7.991	.040
e12 ↔ e14	7.882	-.075
e12 ↔ e7	4.247	-.078
e12 ↔ e5	4.263	-.077
e12 ↔ e26	7.372	.129
e12 ↔ e21	10.532	.141
e12 ↔ e17r	4.554	.064
e12 ↔e30	4.342	.049
e6 ↔ e25	5.782	.081
e6 ↔ e14	12.160	-.117
e6 ↔ e12	11.455	.112
e3 ↔ e2	8.936	.109
e3 ↔ e4r	36.943	-.150
e3 ↔ e1r	4.435	-.052
e3 ↔ e6	12.438	.107

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix D

Modification Indices from Confirmatory Factor Analysis of First
Modification of ProQOL-V (*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e23 ↔ e25	12.594	.118
e14 ↔ e23	7.503	-.092
e13 ↔ e14	10.458	.082
e9 ↔ e28	4.029	-.046
e5 ↔ e7	4.058	.108
e2 ↔ e13	4.901	-.084
e2 ↔ e7	5.440	.133
e29r ↔ ST	6.714	-.033
e29r ↔ e25	4.975	-.067
e19 ↔ ST	22.718	.084
e19 ↔ e11	12.896	.192
e19 ↔ e7	8.904	.180
e19 ↔ e29r	12.963	-.171
e17r ↔ e5	6.001	.095
e15r ↔ e26	5.644	-.123
e10 ↔ ST	30.634	.077
e10 ↔ e11	7.175	.113
e10 ↔ e9	10.652	.095
e10 ↔ e29r	5.495	-.088
e10 ↔ e19	18.458	.224
e8 ↔ e9	6.086	.049
e4r ↔ ST	12.671	-.037
e4r ↔ e10	6.600	-.080
e1r ↔ e5	6.379	-.095
e1r ↔ e2	7.199	-.108
e1r ↔ e17r	5.431	-.065
e1r ↔ e10	6.870	.087
e1r ↔ e4r	5.700	.060

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix D

(*continued*)

Modification Indices from Confirmatory Factor Analysis of First
Modification of ProQOL-V (*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e30 ↔ Burnout	5.463	-.029
e30 ↔ CS	4.240	-.022
e30 ↔ e29r	9.487	-.082
e27 ↔ e30	4.743	-.055
e24 ↔ Burnout	4.373	.030
e24 ↔ e25	12.661	-.098
e24 ↔ e27	11.893	.102
e22 ↔ e28	4.396	.054
e22 ↔ e11	9.606	.103
e22 ↔ e19	5.381	.095
e22 ↔ e10	6.530	.083
e22 ↔ e30	5.837	-.055
e22 ↔ e24	16.973	.111
e20 ↔ e5	7.260	.101
e20 ↔ e15r	4.020	.062
e18 ↔ e23	5.427	.070
e18 ↔ e7	5.263	.078
e18 ↔ e29r	4.084	.054
e18 ↔ e17r	19.412	-.109
e16 ↔ e28	6.341	-.068
e16 ↔ e13	4.242	-.054
e16 ↔ e26	6.180	-.115
e16 ↔ e17r	4.632	-.061
e16 ↔ e30	4.208	-.049

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix D

(*continued*)

Modification Indices from Confirmatory Factor Analysis of First
Modification of ProQOL-V (*N*= 181)

Covariances: (Group Number 1 – Default Model)

	Modification Index	Par Change
e12 ↔ Burnout	5.370	.032
e12 ↔ e14	7.997	-.075
e12 ↔ e7	4.127	-.077
e12 ↔ e26	6.938	.117
e12 ↔ e17r	7.878	.077
e6 ↔ e25	5.630	.078
e6 ↔ e14	11.887	-.115
e6 ↔ e7	11.166	.110
e3 ↔ e2	8.615	.106
e3 ↔ e17r	5.557	.059
e3 ↔ e4r	39.284	-.142
e3 ↔ e6	11.967	.104

ST – Secondary Traumatic Stress; CS – Compassion Satisfaction

Appendix E

Handout on Stress Management

coping with stress

Stress and Stressors

Stress is something that is part of normal life, in that it is experienced by everyone from time-to-time. However, some people suffer from stress which is so frequent or so severe that it can seriously impact on their quality of life. Stress can come from a huge range of sources (stressors), such as:

◊ Relationships with others
◊ Work-related issues
◊ Study demands
◊ Coping with illness
◊ Life changes, such as marriage, retirement, divorce
◊ Day-to-day activities and tasks
◊ Positive events, such as organising holidays or parties
◊ Juggling many roles or tasks at the same time

Some people are aware of what tends to trigger their stress, and this increases their ability to either prevent stress or to handle it more effectively. Many others are less able to deal with stress, and identifying stressors is a key step in this. If you often experience stress, take some time to consider what tends to set it off for you.

Symptoms of Stress

Some people do not even notice that they are stressed until symptoms begin to occur, including:

◊ Irritability or moodiness
◊ Interrupted sleep
◊ Worrying or feeling of anxiety
◊ Back and neck pain
◊ Frequent headaches, minor to migraine
◊ Upset stomach
◊ Increased blood pressure
◊ Changes in appetite
◊ Rashes or skin breakouts
◊ Chest pains
◊ Making existing physical problems worse
◊ More susceptible to cold/flu and slower recovery

These symptoms reduce quality of life, and people suffering from stress may notice that work performance or relationships suffer more as a result. You may be able to use some the strategies listed here, or you may find it useful to consult a professional for more help.

Stress Management Tips

1) **Identify your stressors**, and see if there are some things within your control to manage better. Some things will be beyond your control, for example if you work a job that is based on working towards deadlines then you can't change this without changing jobs. But perhaps you can control some aspects, such as scheduling to have at least a short lunch break each day, or to go to bed earlier so that you have more energy to cope with the daytime.

2) **Build regular exercise** into your life - as well as being part of a healthy, balanced lifestyle and giving you more energy, many people find that working out at the gym or playing sport helps them to unwind.

3) **Make sure that you eat and sleep well.**

4) **Take time out** for family, friends and recreational activities. Most of us know that this is important but we do not all do it. If you find it hard to make time for this, perhaps you need to take deliberate steps to have time out, such as set aside one evening a week where you meet up with friends or enjoy a hobby, or set aside one day of the weekend for relaxing at home.

5) **Problem-solving techniques** can be a useful way of clarifying the problem, brainstorming possible solutions, and then choosing one to put into action after listing the pros and cons of each option. See the handout *Problem Solving* for more details about this.

6) **Learn calming techniques** such as controlled breathing and progressive muscle relaxation, to train your mind and body to become more relaxed. These techniques require practice but can be helpful with regular use. See handouts *Calming Technique* and *Progressive Muscle Relaxation*.

7) You may wish to speak to a professional about **assertiveness training and communication skills** which can help you to deal with challenging situations more effectively, thereby reducing stress. See the handout *Assertive Communication*.

8) Last but definitely not least, consider whether there is **negative thinking** which is contributing to your stress. Negative thinking can make us worry more than is necessary, increasing stress, and generally does not motivate us to take positive actions. See the handouts *Thinking & Feeling, Analysing Your Thinking* and *Changing Your Thinking*.

This document is for information purposes only. Please refer to the full disclaimer and copyright statement available at http://www.cci.health.wa.gov.au regarding the information from this website before making use of such information. See website www.cci.health.wa.gov.au for more handouts and resources.

Centre for Clinical Interventions
·Psychotherapy·Research·Training

Reference: Centre for Clinical Interventions. (Date unknown). Coping with Stress. Retrieved from http://www.cci.health.wa.gov.au/ in 2012.

Appendix F

Results of Post-hoc Gabriel Test for Comparisons of WAI Ratings Across LifeSkills Sessions

WAI Subscale	Session	Mean (SD)	Mean Difference[+] (SE)	p	95% CI
Task	1	19.80 (1.67)	--- (0.84)		
	2	21.86 (1.31)	-2.06	.26	(-4.77, 0.65)
	3	22.63 (1.54)	-2.83	.04	(-5.54, -.12)
	4	23.03 (1.49)	-3.23	.01	(-5.94, -.52)
	5	23.53 (1.04)	-3.73	.003	(-6.44, -1.02)
	6	23.73 (0.65)	-3.93	.001	(-6.64, -1.22)
Bond	1	20.23 (1.65)	--- (0.82)		
	2	21.86 (1.72)	-1.63	.54	(-4.27, 1.02)
	3	22.35 (1.47)	-2.12	.20	(-4.77, 0.53)
	4	23.27 (1.12)	-3.03	.02	(-5.68, -.39)
	5	23.73 (0.72)	-3.49	.004	(-6.14, -.85)
	6	23.70 (0.71)	-3.47	.004	(-6.11, -.82)
Goal	1	22.33 (1.36)	--- (0.75)		
	2	22.97 (0.84)	-.63	.99	(-3.06, 1.79)
	3	22.96 (0.47)	-.63	.99	(-3.05, 1.80)
	4	23.87 (1.26)	-1.53	.50	(-3.96, 0.89)
	5	24.10 (1.40)	-1.77	.30	(-4.19, 0.65)
	6	24.70 (1.47)	-2.37	.06	(-4.79, 0.06)

[+]Mean difference calculated by subtracting subsequent sessions' ratings from Session 1's rating.

Additional Repeated Measures ANOVA Results for Study 2

Measure *Effect*	*MS*	*df*	*F*	*p*
Depersonalization				
Between-Subjects				
Group	7.00	1	0.13	.72
Error	54.51	22		
Within- Subjects				
Time	1.70	1	0.20	.66
Time*Group	18.37	1	2.17	.16
Error	8.46	22		
Personal Accomplishment				
Between-Subjects				
Group	31.25	1	.69	.42
Error	45.39	22		
Within- Subjects				
Time	10.27	1	0.33	.57
Time*Group	0.27	1	0.01	.93
Error	31.53	22		
Compassion Satisfaction				
Between-Subjects				
Group	2.73	1	.03	.86
Error	92.43	21		
Within- Subjects				
Time	0.04	1	0.01	.93
Time*Group	24.91	1	4.12	.06
Error	126.82	21		
Trait Anger				
Between-Subjects				
Group	9.13	1	0.21	.65
Error	42.61	21		
Within- Subjects				
Time	0.04	1	<0.01	.95
Time*Group	24.91	1	2.58	.12
Error	9.66	21		
Depression				
Between-Subjects				
Group	52.81	1	0.55	.47
Error	95.85	22		
Within- Subjects				
Time	93.17	1	3.13	.09
Time*Group	60.67	1	2.04	.17
Error	29.74	22		

Additional Repeated Measures ANOVA Results for Study 2

Measure *Effect*	MS	df	F	p
Active Coping				
Between-Subjects				
Group	560.04	1	5.25	.03
Error	106.63	22		
Within- Subjects				
Time	11.00	1	0.55	.46
Time*Group	36.00	1	1.81	.19
Error	19.86	22		
Avoidant Coping				
Between-Subjects				
Group	17.11	1	.66	.42
Error	12.63	22		
Within- Subjects				
Time	13.07	1	1.56	.22
Time*Group	8.24	1	0.37	.55
Error	8.69	22		
Social Support Network				
Between-Subjects				
Group	5.72	1	0.66	.42
Error	8.60	22		
Within- Subjects				
Time	0.72	1	1.56	.22
Time*Group	0.17	1	0.37	.55
Error	0.46	22		
Social Support Satisfaction				
Between-Subjects				
Group	2.09	1	4.50	.05
Error	0.46	21		
Within- Subjects				
Time	0.07	1	0.58	.46
Time*Group	0.28	1	2.38	.14
Error	0.12	21		