

JOB STRESS AMONG HUMANITARIAN AID WORKERS

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PREFACE

I am currently employed as a lecturer in the psychology department at Webster University, Geneva, which has strong ties to international humanitarian organisations headquartered in the Geneva area. Over the course of a series of conversations with key stakeholders in the humanitarian sector (among them ombudsmen, staff counsellors, staff welfare officers, chief of medical services, human resource managers, and community-based mental health professionals), I grew aware of the urgent concern about possible psychological morbidities in the humanitarian organisational workforce. It was brought to my attention that the psychological health of staff in these international organisations is not yet well characterised. Although some anecdotal and incidental evidence on this issue is available, organisational leaders (particularly, the chief of staff welfare of the United Nations High Commissioner for Refugees (UNHCR) and the ombudsman of Global Fund) emphasised a desperate need in the sector for a global staff wellbeing survey that would produce a scientific evidence base capable of informing interventions to reduce and prevent work-related stress and psychological harm.

The studies on two humanitarian organisations presented in this thesis marked the beginning of a large-scale project that has since expanded to include four organisations; moreover, two further humanitarian organisations have expressed their strong interest in joining this fast-growing, multi-site, and global research project. The present research is a collaborative effort between Webster University (Prof. Roslyn Thomas and myself) and key stakeholders of several humanitarian or humanitarian aligned organisations. This thesis was developed from my own work on the project commissioned and funded by the two humanitarian organisations. In the organisational reports that followed data collection, and in applied research projects of this nature, some teamwork was necessary. Although the surveys were administered from within the organisations, the data analyses, theoretical and methodological ideas, and arguments and chapters presented here are my own work and were my sole responsibility. Although some organisations have chosen to remain anonymous,

the aim was to create a core common instrument that would allow for the benchmarking of the results in this occupational sector.

This thesis presents analyses based on data from the 2014 Global Staff Wellbeing Survey on the mental health of humanitarian workers within the United Nations High Commissioner for Refugees (UNHCR). The survey, referred to as a ‘landmark survey’ at a recent conference, highlighted the readiness and commitment of UNHCR’s Staff Health and Welfare Service to ground its health and welfare protection strategies on sound empirical evidence. In response to presentations on the survey results, considerable effort has already been made to shift the currently reactive psychological support to staff to more proactive forms. The results of the Global Staff Wellbeing Survey have proven to be extremely insightful, as relevant up-to-date trends were identified, leading to a better understanding of mental health risks. The staff wellbeing survey will be conducted every three years in UNHCR, allowing for appropriate monitoring of trends and identification of patterns that require particular attention and intervention. The same monitoring of health outcomes and risks is expected and planned in other humanitarian organisations involved in the project

The second organisation, also UN aligned, chose to remain anonymous. Both a survey and a qualitative study informed a new staff wellbeing strategy, based on key outcomes from the research. The organisation responded very well to key research findings, and new interventions, policies, and training are now offered, together with the appointment of a wellbeing team (including an occupational health specialist), improvements in mental health insurance policies, and management training on ‘stress in the workplace’ and ‘work-life boundary management’.

The present research had two objectives. Firstly, I aimed to honour my responsibility to humanitarian staff and the organisations by sharing the results of the statistical analysis of the data collected by the surveys. My second aim was to raise awareness and stimulate discussion on mental health, highlighting the central role of work and psychosocial risk to mental health outcomes. By accomplishing these two objectives, organisational leaders have received the

evidence, encouragement, and support to introduce relevant and necessary policies and programmes to help humanitarian aid workers in their demanding, yet rewarding, role.

ABSTRACT

Objective: This thesis examined the prevalence of burnout, alcohol consumption, and psychological distress and their association with stress-related working conditions – defined either in terms of the Effort-Reward Imbalance (ERI) model, or the ERI model combined with the Job Demand-Control-Support (job strain) model (DCS) – in two large-scale international samples of humanitarian aid workers. The studies herein were the first in the extant literature to examine organisational stressors using job stress models in this occupational group. Furthermore, given the paucity of previous research on the subjective stress-related experiences of humanitarian aid workers, this thesis also contains an interview-based study that explored how humanitarian aid workers perceived the transactional stress process. One key characteristic of this thesis was that both quantitative and qualitative approaches were utilised to provide a deep and ecologically valid understanding of the stressor-strain relationship. Identifying the links between stressful aspects of work and both psychological and behavioural health outcomes may help inform the design of sector-specific health interventions.

Methods: A mixed-methods approach was adopted to allow for a thorough examination of the prevalence of health and health-related behavioural outcomes, their relationship to stress-related working conditions (psychosocial stressors), and the concept of work-related stress in the population under study. Survey designs were used for Study 1 and 2 and involved the administration of a structured questionnaire. For the first study (Parts 1-2, Organisation A), logistic regression analyses were run based on a cross-sectional survey ($N = 1,980$) conducted separately for men and women to investigate the relations between ERI and both burnout (Part 1) and heavy alcohol consumption (Part 2) while controlling for demographic and occupational characteristics. In Study 2 (Organisation B), logistic regression analyses were based on a cross-sectional survey ($N = 283$) conducted separately for men and women to investigate the independent and combined relations between the ERI and DCS models and psychological distress while controlling for demographic and occupational

characteristics. The final study was interview-based (Study 3, Organisation B) and it explored how humanitarian aid workers ($N = 58$) employed by a United Nations-aligned organisation perceived the transactional stress process.

Results: The prevalence rates for the burnout components were as follows: high emotional exhaustion—36% for women and 27% for men; high depersonalisation—9% and 10%; and low personal achievement—47% and 31% for women and men, respectively. Intermediate and high ERI scores were associated with a significantly increased risk of high emotional exhaustion, with mixed findings for depersonalisation and personal achievement. The prevalence of heavy alcohol consumption among women (18%) was higher than the corresponding rate for men (10%), lending support for the effort-reward perspective only among women. Intermediate and high ERI scores in women was associated with a three-fold risk of heavy alcohol consumption. The results broadly suggest that occupational stressors from the ERI and DCS models, both individually and in combination, are significantly associated with psychological distress. A thematic analysis undertaken within the qualitative study revealed several main themes. An emergency culture was found where most employees felt compelled to offer an immediate response to humanitarian needs. The rewards of humanitarian work were perceived as motivating and meaningful, and employees experienced a strong identification with humanitarian goals and reported high engagement. Constant change and urgent demands were reported by the participants to result in work overload. Finally, managing work-life boundaries, and receiving positive support from colleagues and managers, helped buffer perceived stress, work overload, and negative health outcomes.

Conclusions: The results of the present thesis convincingly demonstrate the usefulness of the ERI model as a framework for investigating burnout and heavy alcohol consumption among humanitarian aid workers. Furthermore, the findings demonstrate the independent and combined predictive effects of components of two alternative job stress models (ERI and DCS) on psychological distress. Taken together, the findings underscore the deleterious associations between work-related psychosocial hazards and mental and behavioural health outcomes. Specifically, unique insights were obtained about

the work-related stress process in relation to humanitarian aid workers – for example, the emergency culture shaping organisational norms. The results suggest that interventions based on these two influential theories, and supplemented by knowledge on role-specific stressors evident in the sector, hold promise for reducing health outcomes. The practical implications of the results are discussed and suggestions are made in the light of the present research and stress theory.

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LIST OF ABBREVIATIONS

Depersonalisation (DP)
Effort-Reward Imbalance model (ERI)
Emotional Exhaustion (EE)
European Union (EU)
Job Demand-Control-Support model (DCS)
Job Demands-Resources Model (JD-R)
Personal Accomplishment (PA)
Post-Traumatic Stress Disorder (PTSD)
Secondary Traumatic Stress (STS)
Secondary Traumatic Stress Scale (STSS)
United Nations (UN)
World Health Organisation (WHO)

CHAPTER 1. INTRODUCTION

1.1 Statement of the problem

Occupational health and wellbeing researchers have long acknowledged the wide-ranging and powerful impact of persistent job stress on employee health (see a review by Harvey et al., 2017). Job stress can be broadly defined as harmful physical and emotional responses to harmful and aversive characteristics of work content, organisation, and environment. It emerges when the requirements of the job do not match a worker's needs, competences, or resources (Levi & Levi, 2000). In the literature, the term "stressor" is usually used to denote a precursor to stress (i.e. environmental situations or events capable of producing a state of stress), whereas the term "strain" refers to the consequences of stress, or reactions to the condition of stress (Dollard, 2003).

There is a growing empirical evidence demonstrating that exposure to workplace psychosocial hazards (defined as the aspects of work design and their social and organisational contexts, e.g. high workload, low rewards, and poor relationships with supervisors) may be a common source of workers' psychological and physical health problems (Clarke & Cooper, 2004; D'Souza, Strazdins, Lim, Broom, & Rodgers, 2003; Rugulies, Bültmann, Aust, & Burr, 2006). Psychosocial hazards at work emerge from job design, organisational environment/culture, and management contexts (Cox, Griffiths, & Rial González, 2000). The relationship between workplace psychosocial hazards and employee mental health is frequently referred to as occupational or job stress (Hall, Dollard, & Coward, 2010). Prolonged exposure to psychosocial hazards has been shown to be associated with a wide range of mental and physical health outcomes (Hassard et al., 2014)

Occupational stress is related to a wide variety of problems ranging from psychological disorders to physical illnesses. Specifically, the range extends from cardiovascular diseases (Belkiç et al., 2004; Peter & Siegrist, 1999), through chronic low back pain (Hoogendoorn, van Poppel, Bongers, Koes, &

Bouter, 2000) and musculoskeletal diseases (Ariëns et al., 2001) to absenteeism from work (Godin & Kittel, 2004; Houtman et al., 1999). Behavioural and social outcome studies have frequently related stress to rising alcohol and other drug abuse (Levi, 1996), increased job dissatisfaction (Fox, Dwyer, & Ganster, 1993), poorer work-life balance (Kalleberg, 2008), withdrawal from family and spouse (Burke, Weir, & DuWors, 1980), as well as relationship breakdown (e.g. divorce) and even suicide (Hackett & Violanti, 2003). Therefore, potential outcomes of work stress are extremely varied and harmful, and have a powerful impact on individuals, families, and organisations (Houtman, 2005).

The challenging nature of job stress is reflected in the increasingly large financial problems borne by organisations and national economies (Cynkar, 2007; Wallace, Edwards, Arnold, Frazier, & Finch, 2009). Although employers frequently remain unaware of how costly mental illness and stress at work are, mental health problems are forecast to be one of the top economic burdens for employers (Goetzel et al., 2004). Specifically, the considerable human and economic consequences of mental health problems in the workplace include loss of productivity, absenteeism, high staff turnover, and early retirement (Sanderson & Andrews, 2006). According to a recent estimate, the total cost of work-related depression across the 27 European Union member states amounted to nearly €620 billion per annum, with €270 billion borne by employers as a result of absenteeism and presenteeism (reduced performance at work) and another €240 billion by the economy because of lost output (Matrix, 2013). In Europe, more than 20 billion Euros was invested in initiatives aimed at addressing stress-induced symptoms (Milczarek, Schneider, & Rial González, 2009). In the UK alone, stress, depression, and anxiety account for 46% of reported illnesses and, therefore, constitute the largest cause of workplace absenteeism (Cooper & Dewe, 2008). In Switzerland, the location of headquarters for many humanitarian agencies, disability allowances for psychiatric disorders doubled between 1998 and 2007, and the financial cost related to stress issues has been estimated by the State Secretariat for Economic Affairs (SECO) at 4 billion francs (in Schabracq, Winnubst, & Cooper, 2003). Therefore, as becomes apparent from the above, prevention of mental illness and

promotion of mental health are salient focus areas for organisations and countries.

However, organisations have historically tended to be reluctant to address psychosocial conditions contributing to employee stress (Comcare Australia, 2008; Richardson & Rothstein, 2008). Instead, they have shown preference to invest in strategies to help workers cope with a stressful workplace (including, among others, cognitive behavioural therapy, relaxation training, and mindfulness training programmes). Nevertheless, there is currently a drive to prevent or reduce the organisational sources of employee stress (Comcare, 2008; Richardson & Rothstein, 2008; Caulfield, Chang, Dollard, & Elshaug, 2004). For example, in the European Union (EU), there have been a number of noteworthy developments towards the management of psychosocial risks achieved at the policy level. Since the introduction of the 1989 European Commission Council Framework Directive 89/391/EEC on Safety and Health of Workers at Work, a new culture of risk prevention has emerged with a focus on best practice (Leka, Jain, Iavicoli, Vartia, & Ertel, 2011).

With regard to the nature of stressors in the workplace, previous research on the effects of job stress has consistently demonstrated that stress levels are influenced by the industry or area where people work. Employees who face the highest risks of job stress are engaged in human services (Dollard, Dormann, Boyd, Winefield, & Winefield, 2003; Greenglass & Burke, 2003; Karasek & Theorell, 1990). Among these human-service professions, particularly prone to a high risk of job stress is humanitarian work, which has been identified as an occupation with a high incidence of trauma and psychological distress (e.g. Connorton, Perry, Hemenway, & Miller, 2011). The main mission of humanitarian organisations is to educate, aid, and relieve the pain and suffering of the most vulnerable populations across the world. Both local (national) and expatriate (international) humanitarian employees are frequently the first to be deployed in any relief effort, often at the risk of many adverse psychological and physical risks to themselves (Lopes-Cardozo et al., 2005). As a result of a hostile and difficult work environment – including, for example, traumatic events, witnessing people in distress, environment unpredictability, high workload, life

threatening events, difficult living conditions, or lack of resources (McFarlane, 2004) – humanitarian aid workers are exposed to multiple stressors in their employment (Bierens de Haan, van Beerendonk, Michel, & Mulli, 2002; Eriksson et al., 2009; Musa & Hamid, 2008; Vergara & Gardner, 2011). These stressors can result in numerous types of strain, including burnout, compassion fatigue, secondary stress, and post-traumatic stress disorder (Antares Foundation, 2006; Ehrenreich & Elliot, 2004; Figley, 1995; Yanay, Benjamin, & Yamin, 2011). In this thesis, burnout, psychological distress, and heavy drinking will be examined, while taking into consideration the impact of witnessing or experiencing trauma.

The dominant conceptual framework to interpret complex humanitarian aid work is the paradigm of trauma and post-traumatic stress disorder (PTSD) (Thomas, 2008), where aid workers are often viewed as prone to becoming victims of work-related psychological trauma. This is not surprising, as humanitarian aid workers are exposed to events and situations in conflict zones that are likely to generate more distress than normal, everyday situations (Thomas, 2008). As pointed out by McFarlane (2004), humanitarian aid workers are particularly susceptible to stress as a result of dealing with victims and being trapped in difficult situations; as a result, humanitarian aid workers may develop symptoms of PTSD and secondary traumatic stress (STS), such as intrusive thoughts and images, highly distressing emotions, negative changes in behaviour, and a variety of physical complaints.

However, while this medical model is the dominant form of engagement between humanitarian aid workers and their employers (Ehrenreich & Elliot, 2004), it can be seen as limiting the full understanding of workplace risk factors. Specifically, the tendency of humanitarian organisations and their workers to rely on the language of trauma and consequent pathology has two important consequences. Firstly, it can be argued that, by adopting this view, humanitarian workers' strengths, such as their motivation and resilience, are disregarded (Thomas, 2008). Although resilience and protective factors remain a largely understudied area in this field, preliminary research suggests that a healthy social network and dispositional features – such as age, gender, and intelligence –

account for a significant portion of variance in mental health symptoms (Comoretto, 2008). Secondly, the model outlined above places the focus on the individual (to receive treatment), rather than on the organisation (prevention and changing organisational stressors that are common to many occupational groups, e.g. workload) in the remediation of job strain. However, in any large service organisation (e.g. teaching, military, hospital, or police), employees are subject not only to the operational demands of their profession, but also to their general organisational environment and working circumstances. Overall, emergency service work includes both operational/occupational stressors arising from “job content” (i.e. the aspects of work inherent in the occupation, e.g. exposure to trauma or working overtime, see Abdollahi, 2002; Swanson, Territo, & Taylor, 2005), and organisational stressors arising from “job context” (i.e. aspects of the work environment arising because of the “structural arrangements and social life inside the organisation,” see Shane, 2010, p. 815). Previous studies have consistently shown it is the organisational, rather than operational, aspects of emergency service work (police, firefighters) that employees report as being the primary sources of stress and that are most strongly linked to negative outcomes (Brough, 2004; Kop, Euwema, & Schaufeli, 1999). Importantly, as compared with operational work demands, experiences of organisational stressors have longer-term effects on individual health outcomes (Hart, 1994; Hart, Wearing, & Headey, 1995).

Broadly speaking, job stress research (outside the emergency service and humanitarian sectors) has mostly focused on the relationship between everyday working conditions (organisational context) and health outcomes (e.g. Cooper, Dewe, & O’Driscoll, 2001; Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Jex, Cunningham, De La Rosa, & Broadfoot, 2006). Given that humanitarian stress literature has consistently pointed out the salience of occupational stressors related to trauma (Lopes-Cardozo et al., 2005), the omission of organisational stressors appears to be an oversight. Both organisational context and operational content of the work itself are important when examining mental health, yet relevant studies on the etiology and prevalence of mental health in humanitarian aid workers remain scarce (Adams, Boscarion, & Figley, 2006; McCormack & Joseph, 2012). More specifically, little is known about the effects

of daily organisational stressors on aid workers' wellbeing. In this context, it can be argued that humanitarians may not only occasionally suffer from traumatic events, but also, like many other "white collar" workers, regularly face high levels of routine stressors, such as poor management, lack of communication, work overload, role ambiguity, excessive paperwork, or incompetent co-workers. The increasing bureaucratisation of humanitarian organisations lends some support to this assumption (Thomas, 2008). In sum, there is still a lack of information on how various stressors differentially impact mental and behavioural health outcomes in the humanitarian sector.

To gain a deeper insight into the relationship between workplace characteristics and employee health, the present investigation will use two theoretical approaches to psychosocial stress at work: the Effort-Reward Imbalance (ERI) model (Siegrist, 1996; Siegrist et al., 2004) and the Demand-Control-Support (DCS) model (Karasek et al., 1998; Karasek & Theorell, 1990). These two models have strong explanatory power for a large number of harmful physical and mental health outcomes and have been reported to be important tools for understanding stress in working life (Bliese, Edwards, & Sonnentag, 2017). The conditions identified in both models are postulated to lead to the arousal of the autonomic nervous system and associated neuroendocrine responses linked to the development of stress-related disease (Perrewé & Ganster, 2002). Both models are discussed in further detail in Chapter 3.

Furthermore, as shown by a recent survey of practices in humanitarian aid organisations aiming to mitigate and manage stress in their field staff (Ehrenreich & Elliott, 2004), the contribution of these practices in this area is limited; even the simplest screening of staff with respect to risk factors for adverse responses to stress is not common. Many organisations do not provide hands-on training with respect to stress management; therefore, awareness of the role of bureaucratic and organisational actions in reducing stress remains limited (Ehrenreich & Elliott, 2004). Examining the relationships between job stressors and employee mental health undertaken in the present thesis will highlight the importance of addressing the organisational sources of work-related stress and

shed more light on how working conditions need to be managed to prevent and/or reduce stress-related illnesses.

Furthermore, the sample sizes used in extant humanitarian mental health research tend to be small and are typically drawn from a single country (Connorton et al., 2011). For instance, between 1999 and 2010, only 12 studies examined the mental health of humanitarian workers with a combined sample size of $N = 1,842$. Half of these participants came from one study and only four studies had a sample size of more than 100 participants. Additionally, only one study compared expatriate/international and local/national workers, and only one study examined alcohol consumption (Connorton et al., 2011). To date, no theoretical model of work-related stress has been used to examine the relationship between stressors and mental health outcomes in this unique occupational sector. Therefore, in the present thesis, the sample of humanitarian workers was large and global, consisting of both national and international employees.

Finally, most research in the occupational stress health literature relies on cross-sectional surveys, and the same holds true for the humanitarian sector. In a recent review of research on mental health effects of relief work, all 12 studies were found to be cross-sectional in nature (Connorton, Perry, Hemenway, & Miller, 2012). Therefore, in order to add depth and meaning to the stressors at play in the humanitarian context, in the present thesis, a cross-sectional study design will be combined with a qualitative, interview study component.

1.2 Research aims

In view of the cost of work-related psychological health problems, stakeholders from humanitarian and international organisations have recently called for an empirical investigation of the prevalence and determinants of mental health for workers in international settings (Tol et al., 2012). The present research seeks to measure the prevalence of mental health outcomes among humanitarian workers and the relationship of these outcomes to workplace stressors. Using a mixed-methods approach (combining both quantitative and qualitative research

methods), the present investigation adds breadth and depth to our current understanding of the relationship of stress to health outcomes, while offsetting the weaknesses inherent in the use of each approach alone. One of the important strengths of conducting a mixed-methods research is the possibility of complementarity, i.e. the use of several means (methods, data sources) to examine and gain insights into the relationship of stressors to health outcomes. This requires a careful analysis of the type of information provided by each method, including its strengths and weaknesses.

In the quantitative studies (Studies 1 and 2) included in the present thesis, theoretical insights into the relationships between workplace characteristics (measured by either the ERI model or DCS model, or both) and employee health were gained. Quantitative research provides a way of testing theories. While there is considerable research on stress at work and how it may relate to certain job characteristics or individual differences, as well as a plethora of models that seek to capture these processes, the research that considers these variables simultaneously and, therefore, how these variables compare with and relate to each other, is much rarer. Therefore, the principle of using multiple constructs to investigate the antecedents and consequences of stress is crucial in guiding much of the work described in the present thesis. In the qualitative study (Study 3), new insights and understanding are generated on workplace risk and resilience factors specific to this occupational sector. This approach can help generate, validate, and build on occupational health theoretical perspectives and models. Examining research questions from methodologically different angles, the studies in the present thesis can yield unexpected findings and reveal potential contradictions. Furthermore, any relationships established through the use of a quantitative methodology can be further explored and explained by the processes involved in qualitative research. The qualitative findings can provide a foundation for the development of a sector-specific quantitative risk assessment tool and tailored interventions.

The aims of the present thesis are specified below according to the studies included. In Study 1, the main aim is to examine stress-related working conditions – defined in terms of ERI – and their association with burnout and

heavy drinking among a large-scale international sample of humanitarian aid workers operating across four continents (Organisation A). Study 2 aims to examine the individual and combined contribution of two influential theoretical models (ERI and DCS) in explaining psychological distress. The research was conducted in Organisation B. Study 3 is a qualitative study that follows and deepens the acquired understanding of work-related stress obtained in Study 2. Specifically, Study 3 focuses on the subjective stress-related experiences of humanitarian aid workers working in Organisation B and aims to explore how humanitarian aid workers perceive the transactional stress process.

1.3 Importance of research

Previous research has convincingly demonstrated that adverse working conditions are intrinsically intertwined with negative health and health behaviour outcomes, and that these associations are detrimental to individuals, industry, and national economies (Hart & Cotton, 2003; Riga, 2006; Wallace et al., 2009). In this context, the present investigation aims to make *five* important contributions to the work-related stress, occupational health, and humanitarian aid literatures. First and foremost, the present research provides much sought-after knowledge on the prevalence of health outcomes and the relationship between stress-related working conditions and multiple measures of health outcomes. Currently, available literature on the mental health of humanitarian aid workers is limited (small sample sizes) and fragmented (only several countries, limited work demographics) (Connorton et al., 2011). Therefore, this occupational group has not been studied on any substantial scale. However, it can be reasonably expected that the course and outcomes of mental health among humanitarian aid workers may differ between countries, work demographics, and exposure to trauma. In this context, the present research – collating data from across four continents – is set up to remedy this deficit of knowledge in mental health etiology and outcomes. The present investigation can also help identify the working conditions that need to be addressed to prevent/reduce stress-related decrements in humanitarian health.

The second contribution of the investigation is the thorough examination of the stressor-health relationship. Unlike most previous studies on occupational stress that have used quantitative methods (see review by Mazzola, Schonfeld, and Spector, 2011), in the present thesis, a mixed-methods approach, i.e. a combination of quantitative and qualitative methodologies, is used. Doing so minimises the risk of overlooking the most important stressors and strains for employees (Keenan & Newton, 1985). As the occupational group of humanitarian aid workers remains largely understudied in the area of theoretical stress models, it is imperative to seek to contribute as full a picture as possible to gauge the relevance and contribution of theories to humanitarian aid workers. Findings from different methodologies will assist in identifying specific humanitarian circumstances in which working conditions may undermine or enhance employee performance. In this context, qualitative research is particularly valuable, as it can provide a deeper understanding of stressors, strains, and coping behaviours not captured by using predefined, structured, survey-type instruments. A more granular understanding afforded by the use of the qualitative approach may then inform the development of more effective stress-management strategies.

Given the complexity of work-related psychosocial factors, measurement would benefit from being based on a theoretical model, which is a useful tool for dealing with real-life complex phenomena in the workplace. In this respect, the third contribution of the present investigation is that it is theoretically-based and, therefore, will contribute to a better understanding of the relationships (in the humanitarian aid sector) between stress-related working conditions (specifically, the ERI and DCS models) and multiple measures of employee health outcomes. If the effects of psychosocial working conditions are understood in terms of their health outcomes, organisations may get a better grasp of the relationship between particular stressors and particular outcomes. Work demographics (e.g. regions, job grade, expatriate, or local status) with demonstrated relationships to negative health outcomes or stressors will also provide a valuable insight into particularly vulnerable and resilient groups of workers.

Furthermore, as mentioned in Section 1.1, organisations are still more likely to pay more attention to individual employees and developing their coping and resilience skills, rather than addressing the organisational sources of work-related stress (Murta, Sanderson, & Oldenberg, 2007). Therefore, the fourth key contribution of the present thesis is that the results may encourage organisations to implement more comprehensive approaches to stress prevention/reduction by employing both individual *and* organisational interventions. This is more likely to be achieved through scientific evidence demonstrating health consequences and implications associated with work-related stressors (Bevan, 2010). Humanitarian aid work is an occupational sector that heavily relies on the resilience and dedication of employees (Perry & Wise, 1990). Thus, evidence of stress-induced health problems associated with employment in the humanitarian aid sector can be meaningfully used to address both the sources and symptoms of work-related stress. This evidence will also help clinicians to provide more relevant and effective assistance and interventions and, ultimately, promote success of humanitarian assignments in foreign countries.

The fifth contribution of the present investigation lies in clarifying the strength of relations between particular psychosocial hazards and certain health outcomes in the humanitarian context. This thesis focuses on two health outcome measures – psychological distress and burnout – and one health-related behavioural outcome, heavy drinking. The findings will extend available stressor-health relationship research, which has rarely examined different health outcomes within the same investigation (Bakker, Demerouti, & Verbeke, 2004; Eatough, Chang, Miloslavic, & Johnson, 2011). By incorporating multiple independent measures of health in one investigation, and within a specific occupational group, this investigation can provide a more accurate depiction of how stress-related working conditions differentially impact health.

Therefore, the studies included in the present thesis aimed to provide the following benefits:

Practical benefits:

1. Provide evidence underscoring the importance of work stress prevention.
2. Provide information on role and occupational stressors to inform sector-specific intervention
3. Provide a baseline to longitudinal tracking of changes in health outcomes in the sector
4. Alert managers to demographic groups at particularly high risk of stress-related outcomes
5. Provide evidence to initiate changes in health policies and improving health insurance options
6. Provide support for the appointment of in-house psychosocial support for employees

Theoretical benefits:

7. Evaluate the efficacy of theoretical jobs stress models in an understudied occupational group
8. Deepen the current understanding of stressors in the workplace and identify any occupation- or role-specific stressors
9. Provide deeper insights into theoretical stress models and their relevance for this occupational sector
10. Identify the buffers to stress and healthy coping strategies employed by humanitarian aid workers to inform theory development.

1.4 Overview of the present thesis

The present investigation is divided into three studies (Studies 1-3). Study 1 uses the data collected from Organisation A; Studies 2 and 3 are based on the data collected from Organisation B. Study 1 employs data from a cross-sectional survey, collected at one point in time in 2014. In Studies 2 and 3, a mixed-methods approach and a sequential design are used. Study 2 is a cross-sectional

survey, while Study 3 is a qualitative interview study. The aims of each study are specified in Section 1.2.

1.4.1 Method

1.4.1.1 Research design

The investigation presented herein consists of three studies. As specified in Section 1.4, Studies 1 and 2 used a cross-sectional design. Cross-sectional studies are carried out at one time point and are usually used to estimate the prevalence of an outcome for a population of interest. However, in such research designs, causality between antecedent variables and outcomes cannot be inferred. In cross-sectional design studies, data are collected on individual characteristics, including exposure to risk factors, alongside the information about the outcomes. Therefore, these studies provide only a ‘snapshot’ of the outcomes (in the present thesis, heavy drinking and burnout (Study 1), and psychological distress (Study 2), as well as characteristics associated with those outcomes. Given the scope of the present research, a longitudinal approach, though obviously valuable, would not have been practicable, largely because of expected data collection challenges, as well as timeframe and cost limitations. Therefore, a mixed-methods design was employed for a comprehensive assessment of several aspects of the stress experience among humanitarian aid workers. In occupational health research, it is usually possible to characterise a research study’s methodology as qualitative, quantitative, or as a combination of the two, in which case it is typically referred to as a mixed-methods approach. In the present research, Studies 1 and 2 comprise the quantitative components; a survey methodology was used to collect data on the study variables. By contrast, Study 3 is qualitative in nature and is based on the data from semi-structured interviews.

1.4.1.2 Mixed-methods approach

While research designs always have the purpose of collecting data (numbers, words, etc.), data collection occurs in different ways and for different purposes.

Johnson and Turner (2003) have argued that the essential principle of mixed methods research is that “multiple kinds of data should be collected with different strategies and methods in ways that reflect complementary strengths and non-overlapping weaknesses, allowing a mixed methods investigation to provide insights not possible when only qualitative or quantitative data are collected” (Harwell, 2011, p. 151). In the present thesis, mixed-methods research is understood as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (Johnson & Onwuegbuzie, 2004, pp. 17-18).

Mixed-methods research is an attempt to validate the use of multiple approaches in answering research questions. Not limited to either method, the first rationale behind combining the two methods in the present thesis is to achieve complementarity, where qualitative and quantitative data results are used to assess overlapping and distinct facets of the stress phenomenon among humanitarian aid workers. Secondly, using a mixed-methods design, the results from one method can challenge or support the results affordable by the other method, or stimulate new directions for the research.

1.4.1.3 Sampling restrictions

Preferably, a representative sample would require a probability sampling technique to acquire a random sample of humanitarian aid workers. However, because of time constraints, resource restrictions, and challenges in accessing information that would be needed for such methods, this sampling approach was not feasible in the survey component of the present research. Consequently, non-probability samples of humanitarian aid workers (using self-selection sampling – i.e. when every person in the organisation was given the opportunity to participate, but s/he decided whether or not to do so) were obtained. However, despite the sampling limitations, the surveys sampled respondents from two large international organisations, resulting in a sample that was geographically diverse (four continents). The surveys also ensured a wide-cross section of respondents working in different capacities and roles. The respondents were not subject to exclusion criteria: any individual interested in the survey and

employed at the time by the selected humanitarian organisation was able to participate. In the qualitative study, a different approach was used. A random sample ($N = 116$) was selected from a complete employee list of the humanitarian organisation (B) ($N = 700$). This ensured there was no researcher (or managerial) bias in the selection of the participants, although 32% (38/116) of the randomly selected participants did not participate for several reasons, such as, among others, time constraints, illness, holiday leave, or no show. The advantages of this approach were that, firstly, a large sample size was acquired for a qualitative study ($N = 58$) and, secondly, substantial reductions in possible bias from the researcher (unconsciously) approaching some kinds of respondents and avoiding others (Lucas, 2014) were ruled out.

1.4.1.4 Rationale for self-report data

Self-report methods – specifically, questionnaires – have been the primary means of collecting data in occupational stress research (Razavi, 2001). A major advantage associated with the use of self-report data is that this is one of the most efficient ways of determining participants' subjective experiences. Furthermore, self-report methodology is relatively quick and easy to administer and less expensive compared to other methods. In occupational health research, self-report methods use standardised procedures to obtain data about participants' personal and environmental characteristics and affective responses to the environment (e.g. job satisfaction), as well as mental and physical health (Razavi, 2001). The quantitative studies reported in the present thesis involved the development of a multi-measure questionnaire to assess the variables of interest. This would involve several multi-item scales that form a questionnaire. However, a longer questionnaire can have limitations related to response time and burden. Therefore, to reduce the frustration and fatigue associated with the use of longer instruments, while not limiting the number of measured constructs, shorter versions (of comparable validity and reliability as compared to longer versions) were sometimes chosen (Fisher, Matthews, & Gibbons, 2016). In previous research, even very short single-item measures have been shown to be satisfactory with respect to validity in survey research (Williams, 2012; Williams & Smith, 2016; Galvin & Smith, 2015). For the reasons outlined above,

self-report data were used in the present research. The validity and reliability of the instruments are discussed in Sections 4.2 and 5.3 and they show acceptable psychometric properties.

1.4.2 Summary of Studies 1-3

1.4.2.1 The relationship of Effort-Reward Imbalance (ERI) to heavy drinking and burnout among humanitarian aid workers (Study 1)

Although several previous studies have documented the mental health of humanitarian workers in several contexts, none of them assessed theoretical models of work stress and evaluated their relationship to health outcomes. Still, the few available small-scale studies suggest that humanitarian aid workers' mental health is a salient area of concern (Lopes-Cardozo et al., 2005; Ager et al., 2012). In response to this issue, the results of Study 1 bridge the gap in the literature by reporting the prevalence of health outcomes (burnout, heavy drinking, PTSD, and secondary stress) and relating those outcomes to important demographic characteristics. Organisational stressors measured by the ERI model and their relationship to burnout and heavy drinking were also examined. Regression analysis was performed to determine if Effort-Reward Imbalance (ERI) and over-commitment (OC) were related to burnout and heavy drinking while controlling for a variety of variables (including exposure to PTSD and secondary stress). Therefore, the results of Study 1 informed the design and targeting of sector-specific interventions to reduce burnout or problematic alcohol consumption.

1.4.2.2 The job Demand-Control-Support (DCS) and Effort-Reward Imbalance (ERI) models as individual and combined predictors of psychological distress in humanitarian aid workers (Study 2)

Study 2 investigated the ERI and DCS models and their relationship to psychological distress. The two major aims of Study 2 were as follows: a) to compare the predictive power of the two models in explaining the general strain outcome in the occupational group under investigation and b) to identify whether

a combined model (which combined dimensions of the DCS and ERI models) performed more effectively than either model independently.

1.4.2.3 Work-related stress: A qualitative investigation among humanitarian aid workers (Study 3)

To bridge the gap in the literature caused by a paucity of research on the subjective stress-related experiences of humanitarian aid workers, Study 3, an interview-based qualitative study, explored how humanitarian aid workers ($N = 58$) employed by a United Nations aligned organisation (the same organisation as in Study 2) perceived the transactional stress process. Thematic analysis was used to derive the main themes. The practical and theoretical implications of the results of Study 3 are discussed and suggestions are made in the light of current research and stress theory.

1.5 Publications

The research undertaken in the present thesis has resulted in the publication/acceptance for publication of the following three journal articles. These papers directly contributed to the aims identified in the present thesis and supported the overall findings.

- Jachens, L., Houdmont, J., & Thomas, R. (2016). Effort-reward imbalance and heavy alcohol consumption among humanitarian aid workers. *Journal of Studies on Alcohol and Drugs*, 77(6), 904-913.
- Jachens, L., Houdmont, J., & Thomas, R. (In Press). Effort-reward imbalance and burnout among humanitarian aid workers. *Disasters*.
- Jachens, L., Houdmont, J., & Thomas, R. (In Press). Work-related stress in a humanitarian context: A qualitative investigation. *Disasters*.

1.6 Awards

One of the papers specified in Section 1.5 (namely, Jachens, L., Houdmont, J., & Thomas, R. (2016). Effort-reward imbalance and heavy alcohol consumption among humanitarian aid workers. *Journal of Studies on Alcohol and Drugs*, 77(6), 904-913) has received the following research award: “Best publication for an author who has less than 6 publications” by the Institute of Mental Health (UK).

1.7 Conference presentations and posters

The results of the present thesis have been reported in the following conference presentations:

- Jachens, L. (2015). *Mental health of humanitarian workers*. Paper presented at 20th International Humanitarian Conference on “Family, Migration and Separation”. Geneva.
- Jachens, L. (2016). *Effort-reward imbalance, over-commitment, and burnout among humanitarian aid workers*. Paper presented at The European Academy of Occupational Health Psychology Conference, Athens.
- Jachens, L. (2016). *Effort-reward imbalance and heavy alcohol consumption among humanitarian aid workers*. Poster presented at The European Academy of Occupational Health Psychology Conference, Athens.

CHAPTER 2. REVIEW OF PSYCHOSOCIAL RISK IN HUMANITARIAN AID WORK

While there is a considerable body of literature on how the humanitarian community responds to complex emergencies and issues, very little research addresses the physical and psychological harm and risks associated with the very nature of humanitarian work (for exceptions, see, e.g., Antares Foundation, 2002; McFarlane, 2004).

This chapter outlines the context and describes the nature of humanitarian work and its associated challenges, with an emphasis on both the growing number of traumatic encounters in humanitarian settings and the increasing and multiple work demands humanitarian workers face. Humanitarian aid workers are introduced as the participants in the studies reported in this thesis and a literature review presented in this chapter synthesises the nature, challenges, and consequences of their work. The prevalence of mental health outcomes associated with these risks will also be presented and discussed. The findings of the review are used to identify current knowledge relating to stressors and consequent strains that have been investigated to date. Identifying limitations in this research informed the hypotheses that were tested in the present thesis.

Nature and challenges of humanitarian aid work

Humanitarian aid workers attempt to save lives and ease suffering in complex emergencies. According to Leaning (1994), these emergencies can be understood as “crises in life support and security that threaten large civilian populations with suffering and death and impose severe constraints on those who would seek to offer help” (p.12). Emergencies typically refer to exposure to war, genocide, social, and ethnic conflict, as well as destruction of infrastructure, including communication (Thomas, 2008). In turn, aid workers are civilian employees of non-governmental organisations or international bodies, such as the United Nations (UN) and Red Cross. They are not the same as “peace keepers” who are military personnel. Aid workers can be categorised into

international staff, i.e. expatriates, and national staff, also referred to as locals, who are hired in the country of crisis/disaster. The professional status of both types of humanitarian aid staff ranges from blue collar (e.g. drivers or guards) to highly skilled professionals (e.g. medical professionals or engineers) (Connorton et al., 2012).

Humanitarian aid work is done by an assortment of different actors: local populations, national governments, civil society organisations, United Nations (UN) agencies, and non-governmental organisations (NGOs) (Rubio, 2004). Humanitarian organisations are difficult to define and classify, as humanitarian action is differently understood and defined by different actors. Additionally, many organisations that provide assistance during complex humanitarian disasters or crises come from a variety of backgrounds. For example, such organisations may be multilateral, bilateral, or indigenous nongovernmental organisations. Multilateral organisations, also known as multinational or international, are organisations that work to fund international or intergovernmental organisations (IGOs), and other non-governmental organisations (NGOs) (Rubio, 2004). Multilateral/international organisations are supported by multiple countries and include, for example, the UN High Commissioner for Refugees, the World Food Program, the World Bank, UNICEF, and the European Union. Bilateral organisations are governmental organisations in one country that provide direct support to other countries through government-to-government funds or through agencies (UN or other NGOs). One example of a bilateral organisation is the US Agency for International Development (USAID) that provides bilateral aid worldwide. The Sphere Project (2003) refers to all organisations that provide humanitarian aid using the umbrella term ‘Humanitarian Assistance Organisations’. This collective term includes both international and inter-governmental organisations and international and indigenous non-governmental humanitarian agencies.

Aid or relief work provided by aid workers “[...] is valued for its contribution to helping people during difficult times: assisting them with their pain and discomfort and encouraging them to cope with dramatic changes in their environments” (Soliman & Gillespie, 2011, p. 790). However, humanitarian aid

work is distinct from more conventional work settings because of its specific environment and associated work characteristics. Unlike employees in more traditional work domains, humanitarian aid workers are continuously exposed to a variety of severe stressors, such as violence and human rights atrocities. These severe stressors are combined with high job demands (Curling & Simmons, 2010). As a result, aid workers themselves experience challenging living conditions, substantial work demands, lack of perceived support, and increased risk to violent trauma – all of which are commonly acknowledged as risk factors for depression, anxiety, posttraumatic stress disorder (PTSD), and burnout (Ager et al., 2012).

To date, several studies have addressed the risks and consequences of aid work in complex humanitarian emergencies, or investigated how organisations can appropriately manage and support staff while providing aid in disaster or post-conflict settings (Eriksson et al., 2013; Eriksson, Bjorck, & Abernethy, 2003; Eriksson, Kemp, Gorsuch, Hoke, & Foy, 2001; Holtz, Salama, Cardozo, & Gotway, 2002; Lopes-Cardozo et al., 2012; McCall & Salama, 1999; Shah, Garland, & Katz, 2007). The following review outlines the nature, risks, and consequences of humanitarian aid work.

The risks of humanitarian aid work

The last two decades have witnessed a dramatic increase in the number of humanitarian expatriates and aid agencies working in areas of complex emergency and natural disasters (Roth, 2015; Dahlgren et al., 2009). This increase has been paralleled by growing recognition of the exposure to stressors in humanitarian aid work and their potential impact upon mental and physical health (Setti, Lourel, & Argentero, 2016). Nowadays, stress is acknowledged to be “one of the most commonly reported work-related illnesses among healthcare professionals internationally” (Morrison & Joy, 2016, p. 2894). Relevant literature conveys that “[...] work stress is particularly widespread among physically and psychologically demanding jobs such as emergency workers” (Setti et al., 2016, p. 261). This is thought to be because they are “[...] the first responders who intervene in the early stages of critical incidents and are

responsible for the protection of not only individuals' lives, but also their properties and environment" (Setti et al., 2016, p. 261). Moreover, in their professional careers, humanitarian aid workers and professional healthcare providers deal with human health and life. These careers are considered to be stressful and threatening to the physical and psychological health of practitioners (Asgarnezhad & Soltani, 2017).

While acute stress results from single, specific events such as critical life events or traumatic experiences, chronic stress stems from repeated exposure to situations (often called daily hassles) (Sonnetag & Frese, 2003). Researchers of trauma advocate that the critical factor with a strong link to health outcomes is the direct exposure to violence and hostile environments. By contrast, the proponents of the psychosocial approach argue that complex emergencies are caused and aggravated by stressful social and material conditions (Miller & Rasmussen, 2010). According to the latter view, distress is seen as rooted largely in the stressful conditions of everyday life. Both acute and chronic stressors may have a negative influence on aid workers' wellbeing, mainly in terms of burnout and vicarious traumatisation (Setti et al., 2016), as aid workers are "[...] often exposed to traumatic events and human suffering in the context of their deployments" (Eriksson et al., 2015, p. 13). Humanitarian aid workers, especially novices in the field, are exposed to factors such as political instability, cultural diversity, resource and infrastructure limitations, personal risk, and human suffering (Paton, 1992; Robbins, 1996; Stearns, 1993). These factors may cause shock on a scale that exceeds anything in their previous life experience (Paton, 1992; Robbins, 1996; Stearns, 1993).

In addition, as suggested by Macnair (1995), the stressors experienced by workers tend to be dangerously cumulative. Therefore, the effectiveness of humanitarian employees' work is compromised and constrained by numerous factors. Firstly, as a result of the unpredictability of the operational environment, humanitarian workers constantly face real and palpable threats of attack and violence (Paton & Purvis, 1995; Slim, 1995; Slim & Visman, 1995). Secondly, workers' living conditions are frequently precarious and can exacerbate stress. For example, humanitarian workers live and work in close proximity to each

other, often without their families and other support networks. Over time, the lack of privacy and small disagreements can become major problems and result in the breakdown of the workers' relationships with colleagues (Hugh-Jones, 1992; Macnair, 1995; Robbins, 1996).

According to Miller and Rasmussen (2010), since daily stressors are strongly related to the severity of psychological distress, and because their effects are cumulative, it is necessary to include daily stressors in any model purporting to explain patterns of distress in war-affected populations. However, in the case of humanitarian workers, extant research often fails to address the psychosocial aspects impacting on their health outcomes. Therefore, daily stressors should be investigated in greater depth and then targeted for change through well-designed interventions. In what follows (Sections 2.2.1-2.2.8), the risks faced by humanitarian aid workers will be considered in more detail.

2.2.1 Physical risks and exposure to trauma

Aid workers offer a variety of services, frequently having to rely on their experience and ingenuity to figure out ways of meeting the humanitarian needs of specific populations (Soliman & Gillespie, 2011). However, this work is typically done with insufficient resources and under considerable risk and pressure. As a result, aid workers are susceptible to secondary trauma, physical and emotional exhaustion, and, in many cases, inadequate protection (Soliman & Gillespie, 2011).

The terms “rescue workers” or “aid workers” refer to individuals who, on a professional or voluntary basis, engage in stressful activities targeted at providing assistance to people in emergency circumstances (Sifaki-Pistolla, Chatzea, Vlachaki, Melidoniotis, & Pistolla, 2017). Many rescue workers share a common mission of aiding refugees arriving by sea and offer them search, rescue, and first aid services. These duties entail that humanitarian aid workers are exposed to traumatic events on an almost daily basis and witness terrifying scenes of dead, dying, or severely wounded people of all ages, and of those in mourning and agony (Sifaki-Pistolla et al., 2017; Smith, Agger, Danieli, &

Weisaeth, 1996; Straker, 1993). The reactions to these scenes arouse a mixture of emotions, ranging from horror to relief. For example, human aid personnel often report feeling a (forbidden) sense of elation that they are alive. However, these emotions are often accompanied by conflict and survivor's guilt (Smith et al., 1996). Moreover, when encountering death, human aid workers are directly confronted with the realities of their own mortality, such as the realisation that life is brief and unpredictable. This often results in the contemplation of one's own or other people's death, and is usually accompanied by anxiety and anger.

Furthermore, humanitarian workers operate in a climate infused with mistrust and fear of those they seek to assist. Recent surveys show increasing violence against humanitarian workers. For example, in 2012 alone, the Aid Worker Security Report (Harmer, Stoddard, & Toth, 2013) reported 167 incidents of major violence against aid workers in 19 countries. These attacks resulted in 274 aid workers being kidnapped, killed, or seriously wounded. The report also demonstrated that, over the last decade, the number of cases of aid worker kidnappings has quadrupled. Since 2009, more aid workers have become victims of kidnapping than of any other form of attack. Relevant research indicates that these traumatic events correlate with higher risks for long-term mental health difficulties (Miller & Rasmussen, 2010).

Since increased levels of stress-related symptoms have been reported in aid workers involved in post-disaster work, it has been suggested that aid organisations should consider pre-disaster training of volunteers to develop, not only clinical skills, but also communication and team-building skills (Walsh, 2009). As suggested by Walsh (2009), "[...] when these concepts are combined with ongoing support post disaster, a decrease in the frequency and severity of PTSD has been reported" (p. 234). In this context, further studies are needed to address the long-term effects of trauma exposure and violence, and, particularly, the consequences of aiding in refugee crises. Also, effective measures to prevent PTSD need to be examined (Sifaki-Pistolla et al., 2017).

2.2.2 Geographic location

Varying levels of stress among aid workers may relate to geographic location. For example, Putman et al. (2009) report that aid workers in Africa and Europe experience higher numbers of traumatic events and PTSD symptoms compared to other regions. To address these concerns, it is important to examine sources of hardship, challenge, and difficulty that aid workers experience in different locations, as well as develop strategies and models to address these concerns (Soliman & Gillespie, 2011). Currently, only a few studies in humanitarian literature examine the health of humanitarian workers worldwide (Connorton, Perry, Hemenway, & Miller, 2012). Therefore, future research needs to broaden the geographical scope to assess across countries and investigate the impact of geographical locations on health outcomes for humanitarian workers.

Importantly, such research across contexts and countries would face several important challenges, most important of which being the existing tools for evaluating and measuring psychosocial stressors and interventions, such as self-report questionnaires that may not be ideal for non-western conflict settings (de Jong et al., 2016). Therefore, the frequent use of the existing western self-report questionnaires to evaluate health and intervention outcomes in the areas of on-going conflict is an area of concern, as the main limitations of these instruments include their lack of cultural validity and reference to western mental health concepts (de Jong et al., 2016). Careful choice of instruments, and analysis of validity and reliability of instruments, is essential in all cross-cultural research.

2.2.3 Organisational factors

Alongside tragedies and chaotic working conditions on assignment, humanitarian aid workers also experience stressors that are common to other jobs. These may include funding constraints and unclear job descriptions, as well as lack of training, time, and resources.

Humanitarian workers live and work in physically demanding conditions that are characterised by long working hours, heavy workload, fatigue, and a lack of

privacy (Antares, 2002). Together with the traditional qualities of bravery, altruism, and compassion, humanitarian workers are also expected to show, both on and off the field, additional core competencies, such as consistent professional behavior, organisational commitment, effective communication, teamwork, adaptability and flexibility (Hammock & Lautze, 2000). These additional expectations and demands on the humanitarian workforce highlight that a large part of the job requirements for humanitarian workers is now subject to bureaucracy (Thomas, 2008). In this sense, there are considerable similarities between humanitarian work and white collar professions, in which attending meetings, sending emails, writing reports, and interfacing with headquarters and embassies is a fundamental part of the job description (Thomas, 2008).

As noted by Career (2001), some humanitarian agencies tend to develop a “house culture,” in which the workplace environment itself contributes to the creation of stress within the workforce. Important stress-inducing workplace factors include miscommunication, inappropriate management/ leadership styles, and unregulated allocation of time/resources, as well as elements related to hierarchy and bureaucracy. These work environment factors may contribute to the development of a negative organisational culture within the agency, leading to the development of chronic stress and making daily stressors an ongoing threat to the psychological wellbeing of humanitarian aid workers.

Furthermore, prolonged exposure to a high-stress organisational environment may negatively impact the workers’ coping mechanisms and decrease their tolerance levels. In line with this, Kubiak (2005) reports that constant exposure to daily chronic stressors diminishes an individual’s ability to effectively cope over time. Ineffective coping mechanisms make humanitarian workers vulnerable and increase the risks of PTSD symptoms following a traumatic life event. Although the majority of humanitarian workers tend to report their work as highly fulfilling and satisfying, aid work as a stress-inducing environment cannot be denied (Bergman, Ahmad, & Stewart, 2003; Ehrenreich & Elliott, 2004).

In addition, the psychological wellbeing of humanitarian workers may suffer, as “many [humanitarian workers] lack the support for self-care by their agencies” (Min-Harris, 2011, p. 1). In fact, organisational support is essential in all high-demand occupations. For example, in military settings, soldiers are formed into tight-knit groups to provide each other with support/protection in a high stress, violent environment. Although extrapolating soldiers to humanitarian workers might not be straightforward, the importance of organisational support is apparent (Lopes-Cardozo & Salama, 2002). As shown by a survey involving 113 recently returned staff from humanitarian aid agencies, the workers who perceived high levels of organisational support experienced fewer PTSD symptoms, despite experiencing high levels of trauma (Eriksson et al., 2013). This suggests that organisational support is crucial for the wellbeing of aid workers, as it acts as a buffering factor against stress.

2.2.4 Identification with the organisation

Although very little research exists on the role of identification with the organisation as part of humanitarian work and the role it may play in mitigating or contributing to stress, there are multiple ways in which such identification may moderate the work-stressor–employee relationship. Employees of human service (especially non-profit) organisations are frequently considered to have multiple and strong identities. Strong identifications can develop relating to the organisation (e.g. aspects of the organisation, such as its humanitarian focus). Humanitarian organisations are also often characterised by tightly-formed programmes or work units that have a specific client-focused function. As a result, employees can develop a very strong identification with their work unit, which leads to better intergroup relations because of a shared group identity. Subsequently, this positively influences attitudes related to the organisation overall: an empirical study has found that facets of organisational identification positively predict job satisfaction (Newton & Teo, 2014). Identification with departments or work groups may moderate the work stressor-employee adjustment relationship by enhancing social support and coping by a developed sense of belonging, and/or a subjective fit with the organisation (Newton & Teo, 2014).

Overall, previous research confirmed that the organisational culture influences an individual's stress response (Summerfield, 1990; Etzion & Westman, 1994). For example, it is not uncommon for employees working within an organisation to internalise the organisational values and practise them as individuals, thus conforming to the values defined in the workplace (Macnair, 1995; Paton & Purvis, 1995; Robbins, 1996). For example, Smith et al. (1996) suggest that employees not only act as representatives of their organisation, but also strive to identify themselves with its goals, values, and work. Consequently, the authors argue that humanitarian workers are likely to adopt the values at the core of the organisational culture of humanitarian workplaces. However, a concern here is the inherent value of humanitarian agencies to morally commit oneself to alleviate the suffering of others, which might compel the workforce, consciously or unconsciously, to go to extreme measures to place the needs of others ahead of their own. For example, workers may tacitly accept any working conditions proposed by the administration. Humanitarian workers are also prone to "white man's guilt" syndrome. This concept stems from the idea that the sufferings of the western world are nothing compared to the sufferings experienced by the people residing in the underdeveloped nations. As a result, humanitarian workers may feel the need to suppress their emotions and refrain from verbalising their problems, possibly because of the fear that their problems will be disregarded as insignificant (McCann & Pearlman, 1990; Straker, 1993). In the long run, this suppression may negatively influence their psychological wellbeing.

Workers may, therefore, feel burdened to align their behaviours and attitudes with the expectations of the organisation. This could result in workers going to extreme measures to ensure they do not violate the principle values of the organisational culture they pertain to. Additionally, because of the fear of violating the values of the organisation, or the pressure to not take a break from work because it directly influences the lives of others, humanitarian workers may work long hours and fail to justify their position on taking a holiday (Thomas, 2008).

2.2.5 Role stressors

Role ambiguity, defined as “confusion and uncertainty about the nature of one’s job, its purpose and its responsibilities” (Leaning, Briggs, & Chen, 1999, p. 156) is an issue that has been considered to be a likely cause of ineffectiveness within humanitarian work. Role ambiguity plays a particularly important role during long-term relief operations, i.e. those that continue for months without producing any significant positive outcomes.

In a similar vein, Korff (2012) suggests that humanitarian work is characterised by a high degree of uncertainty because of the dynamic situations and contexts present in aid work. Therefore, defining clear roles and job requirements is a challenge for humanitarian organisations. This can contribute to the confusion experienced by aid workers, which, in turn, may contribute to the development of stress. For example, McFarlane (2004) suggests that, among aid workers, “[...] high uncertainty and role ambiguity are associated with elevated levels of anticipatory anxiety and distress” (p. 6).

Occupational health literature reports evidence in support of the notion that role ambiguity, conflict, and overload are major causes of stress among workers (Dolan & Renaud, 1992; Macnair, 1995; Örtqvist & Wincent, 2006; Paton & Purvis, 1995; Robbins, 1996). A study investigated how role ambiguity factors influences employee outcomes (Newton & Jimmieson, 2009) such as uncertainty about what is required to perform a role; role conflict, such as conflicting information about the same role; and role overload, such as too much work to complete (Newton & Jimmieson, 2009). Role ambiguity was related to a reduction in psychological health, and lower commitment to the organisation (Newton & Teo, 2009). In addition, role ambiguity was found to be related to burnout indicators, such as emotional exhaustion, depersonalisation, low personal accomplishment, and less favourable levels of job-related attitudes, such as job satisfaction, organisational commitment, and turnover (Newton & Jimmieson, 2009).

Another type of role stressor is related to solving ethical dilemmas. Humanitarian workers are often required to suppress their emotions to maintain a professional demeanour and to make clear and rational judgements (Leaning et al., 1999). They are expected to make decisions on tough ethical dilemmas, such as determining the allocation of limited food resources. Ethical dilemmas highlight uncertainty and ambivalence of aid work, and contribute to the overall psychological distress experienced by humanitarian aid workers (Walkup, 1997).

2.2.6 International vs. national role comparison

The diverse range of operations that humanitarian organisations execute means many humanitarian employees are required to work in foreign recipient countries. Therefore, many workers are stationed on foreign grounds for this purpose, often for an extended period of time. However, the structural organisation of most humanitarian agencies creates major disparities between national (local) and international (expatriate) staff. Such inequalities are related to workers' status, as well as their position in relation to organisational leadership, and access to resources and information, among other things. For example, international humanitarian staff members generally receive more attention in terms of security training and security measures (Brooks, 2015; Roth, 2015). As a result of the aspects related to insurance, aid organisations are more concerned with the wellbeing of international staff, and it is generally perceived that international workers have a heightened security risk. As a result, international workers tend to have higher living standards, higher pay scales, as well as access to abundant security measures. By contrast, since national humanitarian workers are presumed to be more familiar with the local context and thus able to blend in with and influence local populations, they are deployed on more operations and are assigned a higher workload. Therefore, the security of national humanitarian workers may be under-prioritised (Brooks, 2015).

However, some professional and personal challenges appear to affect international humanitarian employees more than national employees. For example, separation from close family and friends can lead to isolation.

Additional restrictions – such as having to stay within a closed compound guarded by security officials in a conflict zone – further contribute to the loneliness that international workers may experience (Roth, 2015). Another challenge is adjusting to the new social, cultural, and climatic conditions, as well as learning to live with limited services and facilities within the host country (Black & Gregersen, 1999; Black, Mendenhall, & Oddou, 1991). In this context, higher wages and better conditions specified above can be viewed as a compensation or reward for the negative aspects of their work in a foreign territory.

Available research suggests humanitarian expatriates are at an increased risk of health problems and death when they are directly exposed to human suffering and crises (Dahlgren et al., 2009). This is further supported by Walsh (2009), who reports that “more than one-third (36.4%) reported worse health on return from the (humanitarian aid) mission” (p. 231). In addition, as compared to national workers, expatriates seem to be more at risk of hazardous alcohol consumption (Lopes-Cardozo et al., 2005). Research with a US non-humanitarian sample also suggests expatriates are at a greater mental health risk than local workers (Sharar, 2011). Taken together, all these studies highlight the risks of international workers’ experience.

However, another variable that should be considered is the degree to which aid workers identify themselves with the victims, as this can challenge the patterns described above. In this respect, Lopes-Cardozo et al. (2005) found that national (local) aid workers in Kosovo had significantly higher rates of PTSD, depression, and anxiety than their international counterparts. Lopes-Cardozo et al. (2005) also note that aid workers who have a tendency to identify themselves with the victims were more likely to suffer from PTSD than those who do not. This may provide an explanation for the higher PTSD rates seen for national (local) workers. In a similar vein, Ursano, Fullerton, Vance, and Kao (1999) report that expatriate relief workers may identify less with the victims, compared to local aid workers.

There is a scarcity of information on the differential stressors and contexts between national and international humanitarian workers. Furthermore, the results that are available are often conflicting. These findings make a compelling comparison point for mental health challenges (Truman, Sharar, & Pompe, 2011) and, for that purpose, international and national workers will be compared in this thesis.

2.2.7 Re-entry stress

For some aid workers, the most disturbing part of the humanitarian experience is returning back to their home countries (McCormack, Orenstein, & Joseph, 2016). Many humanitarian workers experience reverse cultural shock, as they re-adjust to an environment quite different from the one they have become used to while working in foreign lands. This may act as a source of stress for the workers who have spent an extensive amount of time away from the social set-up of their home country. Many workers report feeling isolated and state that many individuals from their home social networks are not interested in hearing their experiences (Thomas, 2008). Furthermore, humanitarian workers receive limited financial awards for their work and frequently face difficulties in finding employment opportunities after returning from crisis locations.

In a study based on extensive interviews with humanitarian workers, Macnair (1995) reported that nearly 75% of the 200 participants stated that they experienced significant difficulties readjusting to their old environment. Some key experiences reported by the participants include feelings of disorientation (33%), problems getting a job (24%), lack of understanding from family and friends (17%), and financial difficulties (26%).

Part of the job requirement of humanitarian work is to display the utmost level of professionalism, such as controlling emotions and personal biases, while making important ethical decisions. Therefore, some workers may experience extreme emotional reactions upon returning home, after suppressing their emotions while deployed overseas. As a result, workers may begin to confront their feelings once they settle back in their homes (Smith et al., 1996).

Furthermore, humanitarian workers are “trained to be tough and not to let certain feelings affect them” (Grant, 1995, p. 75). Therefore, it appears that aid workers may deny stress-related symptoms more than other workers in helping professions (Chester, 1983). Some may fail to seek help because of their belief that they can cope on their own. Others may fail to seek help because they believe it is an admission of personal weakness, or a barrier to their professional growth within the humanitarian sector. McConnan (1992) reports that nearly 73% of surveyed aid workers claimed they did not receive an adequate debriefing by the organisation upon returning to their home countries. Therefore, many aid workers may remain unaware of supportive resources available to them.

Overall, humanitarian workers returning home experience resurfacing of suppressed emotions and emotional conflicts that originate as the workers’ attempts to readjust to the society. As humanitarian work encourages free expression of one’s morality, joining a workplace environment that does not allow such a moral expression can lead to the development of emotional tension and internal conflict (Jones & Jones, 1994).

2.2.8 Pre-existing problems

There are several background and personality characteristics that tend to affect aid workers’ performance in their jobs. These are different from deployment-related variables. For some individuals, pre-existing problems and issues can drive their motivation to participate in aid work. As noted by Smith et al. (1996), “people who seek to enter especially hazardous or upsetting situations must be acting on some neurotic motivation” (p. 38). Interestingly, when categorising the motivations and intentions of the people around them for entering relief work, relief workers themselves use descriptions such as “martyr, misfit, masochist, or running away from bad relationships” (Smith et al., 1996, p. 38).

Prior to entering aid work, many humanitarian workers have pre-existing problems that negatively impact their psychological wellbeing. As noted by Engel (1980), “[...] individuals with personality problems [tend to] volunteer for the tropics” (p. 304). These pre-existing problems may influence both an

individuals' motivation to enter aid work and increase the likelihood of their experiencing stress during/after aid work. In fact, pre-event problems, e.g. unemployment or a loss of a loved one, can significantly increase the chances of post-traumatic adjustment problems (Epstein, Fullerton, & Ursano, 1998). Moreover, local and expatriate aid workers with a history of psychiatric illnesses also demonstrate higher levels of depressive symptoms and nonspecific psychiatric morbidity (Lopes-Cardozo et al., 2005).

Furthermore, Corneil, Beaton, Murphy, Johnson, and Pike's (1999) cross-sectional survey revealed that earlier psychological treatment or counselling in humanitarian workers acted as a risk factor associated with the development of PTSD. Therefore, individuals with a history of pre-existing conditions, such as psychosis or depression, may be highly vulnerable to psychological distress. This suggests that aid workers should be selected with careful consideration of these crucial pre-existing factors (Barron, 1999). Taken together, the results of previous studies show that workers with a history of psychological instability may have elevated health risks (compared to those with no history) when exposed to trauma, tragedy experience, and isolation from friends and family who serve as a primary support system.

Impact on health

There is growing evidence that humanitarian aid agencies seek to develop strategies to address the issues of staff wellbeing, staff retention, and increased productivity (Ager, Flapper, van Pieterse, & Simon, 2002; Porter & Emmens, 2009). However, less attention has been paid to health-related consequences of humanitarian aid work, despite workers often having direct and indirect exposure to trauma (Eriksson et al., 2015; Porter & Emmens, 2009; Stoddard, Harmer, & Haver, 2006). This direct and indirect exposure to highly stressful events has been reported to be associated with several negative mental health outcomes (Eriksson et al., 2015). In what follows, the issues of health and health-related behavioural outcomes known to be linked with the humanitarian occupational sector are discussed.

2.3.1 Burnout, post-traumatic stress (PTSD) and secondary traumatic stress (STS)

Based on both the number of direct traumatic incidents and exposure to life-threatening events, previous research examining risks for humanitarian aid workers has demonstrated the increased risk of post-traumatic stress, secondary traumatic stress, vicarious trauma, and burnout among humanitarian aid workers (Eriksson et al., 2001; Jones, Müller, & Maercker, 2006). Indirect or secondary exposure to traumatic events has also been associated with these negative mental health outcomes in expatriate aid workers (Eriksson et al., 2001; Shah et al., 2007). In the remainder of this section, some key health outcomes in the humanitarian literature are described and compared.

2.3.1.1 Burnout

Burnout is defined as “a syndrome of physical and emotional exhaustion involving the development of a negative self-concept, negative job attitudes and loss of concern and feeling for clients” (Pines & Maslach, 1978, p. 233). The term “burnout” was originally coined to identify occupational stress and distress experienced by persons working in different types of caring professions, such as, for example, practitioners dealing with AIDS patients (Hayter, 2000), psychologists (Rupert & Morgan, 2005), psychiatrists (Fothergill, Edwards, & Burnard, 2004), nurses (Allen & Mellor, 2002; Demir, Ulusoy, & Ulusoy, 2003), and social workers (Evans et al., 2006). These jobs require consistent attendance to the needs of an individual or a group of individuals and, because of this demand, generate situations of prolonged emotional investment, ambiguity, and frustration. The same holds true for aid work, and humanitarian aid workers have been found to be at an increased risk of burnout after they return from deployment. Of note, this risk does not diminish even 3–6 months after assignment completion (Lopes Cardozo et al., 2012).

Burnout begins slowly and then progressively aggravates over time. It accounts for disorders that develop because of a prolonged exposure to day-to-day stressful work patterns. Common physical symptoms include loss of energy,

chronic fatigue, headaches, sleep disorders, and muscle pain. Psychological symptoms include depression, helplessness, hopelessness, loss of meaning in work, irritability/anger, over-activity, slow thinking, and concentration problems (Maslach, 1979; Maslach, Schaufeli, & Leiter, 2001).

Burnout can be categorised into three distinct dimensions: emotional exhaustion (EE), depersonalisation (DP), and personal accomplishment (PA) (Maslach, Jackson & Leiter, 1996; Cooper, Dewe, & O'Driscoll, 2001; Cordes & Dougherty, 1993). First, EE is the feeling of a lack of, or depletion of one's emotional energy. Second, DP is the development of a negative or cynical attitude towards the recipient of one's work because of mental distancing oneself from recipients. Third, PA is a positive evaluation of one's competence, accomplishments, and success. EE occurs as a consequence of high emotional demands, which results in DP through people psychologically distancing themselves from their work and, therefore, a lack of professional proficiency (PA) (Setti et al., 2016).

With regard to possible causes and/or antecedents of burnout, these remain controversial: namely, while employers support the notion that an inherent weakness within the individual acts as a triggering factor, unions and employees argue that the work environment itself provokes the development of burnout. Stearns (1993) claims that aid workers are more at risk of developing burnout compared to workers in other professions. Some characteristics unique to workers in helping professions include altruism, idealism, and high sensitivity to the needs of other people, all of which increase their vulnerability to burnout (Patel, 2013). Interestingly, Demir et al. (2003) suggest that burnout tends to decrease with professional experience. Results reported by Paton (1992) also show that idealist, novice relief workers are more prone to burnout compared to their more experienced colleagues. This trend is further supported by Eriksson et al. (2013) who claimed that working longer in the humanitarian field is associated with less risk of anxiety and depression. This trend may be underpinned by the fact that novice aid workers are more likely to experience disappointment, failure, and perhaps feelings of inadequacy as a result of not fulfilling the unrealistic expectations they have set for themselves in their

profession. From this perspective, the causes of burnout could be considered to be intrinsically related to personal characteristics unique to aid workers.

However, literature supports the view that the development of burnout is not just owing to personal characteristics of the caregiver. Evidence is also available showing the development of burnout largely depends on factors within the organisational environment. There are specific occupational factors that put healthcare professionals at a greater risk of experiencing burnout. For example, healthcare professionals (e.g. doctors) who work an excessive number of hours generally experience a higher work-related strain (Sochos et al., 2012). Cardozo et al. (2012) found in the humanitarian context that “chronic stressors during deployment were correlated with higher levels of burnout depersonalisation” (p. 8). Other organisational environmental factors include administrative hassles and programme bureaucracy, coupled with the lack of legitimacy to complain because of a prevailing “macho” culture (e.g. military careers, Etzion & Westman, 1994). Furthermore, lower social support and low team cohesion are risk factors for anxiety and burnout, respectively (Eriksson et al., 2013). One study, focused on the occupational stressors among Jordanian nurses, identified “[...] the positive relationship of support from co-workers with self-report of effectiveness in job performance and social support from family and colleagues acts as a buffer to occupational stress” (Eriksson et al., 2013, p. 671). This suggests that social support is an important organisational characteristic for the protection of workers. Another study has constructed a pathway model linking different occupational stressors, different sources of social support, and burnout (Sochos et al., 2012).

As suggested by the literature overview presented above, it is essential to view burnout as a complex product of personal, institutional, and organisational forces, rather than a result of a single factor alone. This allows for burnout to be viewed as more than just a personal weakness of the worker, while ensuring that organisational intervention is justified in dealing with this issue.

Burnout among healthcare professionals (including humanitarian aid workers) is a serious issue across different cultures and countries across the globe. It is

associated with physical illness, emotional problems, absenteeism, and negative attitudes, as well as a reduction in the quality of client care (Sochos et al., 2012). Several studies suggest that failing to recover or detach from work can negatively impact health and reduce performance (Eden, 2001; Fritz & Sonnentag, 2005, 2006; Sonnentag, 2001). Furthermore, burnout is linked to increased alcohol consumption in some helping occupations, for example, in surgeons and ambulance workers (Alexandrova-Karamanova et al., 2016). In sum, it is clear that stress-related burnout in healthcare professionals is “a global concern both due to its detrimental effect on their health and wellbeing and because of its potential impact on quality and safety of patient care” (Alexandrova-Karamanova et al., 2016, p. 1061).

In view of the above, humanitarian aid organisations would benefit from gaining a better understanding of the process of burnout. Further research is needed to understand the underlying processes that connect work strain with mental and physical health outcomes and the determinants that can potentially influence functional performance. In the present thesis, burnout is measured as a health outcome for humanitarian aid workers, and its prevalence and association to both demographic (e.g. gender) and work stress variables is investigated.

2.3.1.2 Post-traumatic stress disorder (PTSD) and secondary traumatic stress (STS)

PTSD is a condition where a specific psychosocial stressor is explicitly tied to etiology. A threat appraisal of a traumatic incident or situation is followed by an acute stress response that comprises emotional, behavioural and biological components (Sabin-Farrell & Turpin, 2003). While most studies on the development of PTSD after traumatic events focus on victims, relevant research focused on humanitarian aid workers remains scarce. A recent study by Sifaki-Pistolla et al. (2017) was the first “to assess PTSD prevalence among rescue workers that are operating in high-pressure spots during the European refugee crisis” (p. 52).

Humanitarian aid workers involved in high-risk missions and interventions, such as wars or natural and human-made disasters, are exposed to numerous traumatic stressors. The exposure to such stressors often increases the risk of PTSD (Sifaki-Pistolla et al., 2017). Of note, the risk of developing PTSD increases proportionally to the increase of the number of traumatic events. A lack of previous experience in aid interventions was also found to be significantly associated with a higher risk of probable PTSD diagnosis (Sifaki-Pistolla et al., 2017). This lack of experience is mainly encountered among volunteers. A recent systematic review and meta-analysis suggests that the prevalence of PTSD is much higher in rescuers (a wider sample including police, medical staff, firefighters etc.) compared to the general population (10% vs. 4%, respectively) (Berger et al., 2012).

Other studies provide further evidence of a significant distress in populations of humanitarian aid workers, with the rate of PTSD ranging from 2 to 10% among participants. For example, in a survey of 113 humanitarian aid staff recently returned to the US, Eriksson et al. (2013) found that 10% met full diagnostic criteria for PTSD in their first six months after re-entry. Furthermore, in a comparative study of aid workers and UN soldiers (providing aid service in Yugoslavia), Kaspersen, Matthiesen, and Göttestam (2003) report lower PTSD rates among aid workers (2.8-7.8%) as compared to the corresponding rates among the UN military force (5.6-20.8%). This difference was explained by the fact that the soldiers were more highly exposed to trauma than the aid workers. Finally, international staff working in a complex humanitarian emergency in Kosovo were found to have lower diagnostic levels of PTSD (2%), compared to national staff (7%) (Lopes-Cordozo & Salama, 2002). Sifaki-Pistolla et al. (2017) suggest that, compared to national aid workers, international aid workers are provided with more organised, comprehensive, and continuous care by their foundation. For example, the majority of international professional aid workers (95%) were offered psychological support, either individually or as group therapy, within the context of their foundation. By contrast, most local aid workers were either not aware of (60%) or not offered (38%) such services (Sifaki-Pistolla et al., 2017). It is clear that differences between national and international workers in terms of exposure to trauma, the prevalence of PTSD

and the support offered to both groups needs to be further investigated in larger samples.

In recent years, the focus of research on humanitarian aid organisations has increasingly shifted towards PTSD models as a means of explaining workers' post-deployment reactions and identification of the signs of psychological turmoil. Although some studies have shown that many cope well emotionally after the exposure to potentially traumatic events, PTSD is considered a relatively common mental condition among aid workers (Sifaki-Pistolla et al., 2017). The excess burden of probable PTSD among aid workers indicates the urgent need for targeted interventions that will reduce the psychological burden. Further studies are necessary to explore the most effective measures to prevent PTSD among aid workers, as well as to address long-term effects regarding the prevalence of PTSD and burnout (Sifaki-Pistolla et al., 2017).

Secondary traumatic stress (STS) is also increasingly being recognised and diagnosed among professionals working in caring roles (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). STS is results from witnessing or knowing about the trauma experienced by significant others (Bride, Robinson, Yegidis, & Figley, 2004; Huggard, 2003). It refers to a set of psychological symptoms that mimic PTSD, and is acquired through the direct exposure to persons suffering trauma (Bride, Hatcher, & Humble, 2009). For example, Lopes et al. (2013) conducted a study in which local staff working in Sri Lanka listened to trauma stories of their clients. More than half of the aid workers reported experiencing loss of sleep or intrusive thoughts, all of which negatively influenced the workers' functionality (Lopes et al., 2013). More recently, STS has started to be conceptualised as driven by fear that arises from a threat to one's personal safety (Huggard, Stamm, & Pearlman; 2013).

The Secondary Traumatic Stress Scale (STSS) developed by Bride et al. (2004) is a measure used to quantify the negative effects occurring in those who encounter traumatised patients. The scale, used in this thesis, conceptualises STS as a construct built upon the symptomatic components of PTSD. It attempts to evaluate the incidence of arousal, avoidance, and intrusion among professionals

within these three sub-scaled domains. It conceptually links only to those *workplace* factors that refer to direct or indirect exposure to trauma content (Cieslak et al., 2014).

It is apparent that much of the research emphasis within the emergency services is focused on the experience of traumatic stressors. New research should seek to bridge the divisive split between advocates of trauma-focused and psychosocial approaches to understanding and addressing mental health needs. This is possible by emphasising not only exposure to trauma, but also the role that daily stressors play in mediating trauma exposure and mental health outcomes (Brough, 2002; Hart & Cotton, 2003). Further research could also investigate the maintenance and acquisition of resources or rewards that could offset losses and facilitate resilience/posttraumatic growth and minimise occupational stressors (Sochos et al., 2012). Although PTSD and STS are not the focus of this thesis, there are known associations between certain health outcomes (e.g. heavy alcohol consumption, burnout) and both PTSD and STS (Deahl et al., 2001; McLean et al., 2014; Sirtatt, 2001). This makes it important to measure and adjust for PTSD and STS when examining the relationship between organisational stressors (e.g. ERI) and outcomes such as alcohol use or burnout.

2.3.2 Other mental health consequences of humanitarian work

Alongside negative health outcomes described in Section 2.3.1, several previous studies have also identified other mental health risks associated with humanitarian work. Among them, depression is a major mental health risk. In their survey with Kosovo's aid workers, Lopes-Cardozo and Salama (2002) found that aid workers reported high levels of depression and anxiety. Similarly, in Eriksson et al.'s (2001) study, around 15% of 101 humanitarian participants reported symptoms that placed individuals at high risk of developing a depressive disorder.

Generally, previous research has established that the frequency of direct exposure to life-threatening traumatic events in the humanitarian field is associated with symptoms of depression (Lopes-Cardozo et al., 2005). For

example, Eriksson, Foy, and Larson (2004) have analysed epidemiology reports which stated that, 11 months after the 9/11 terrorist attacks, the rescue workers of the New York City Fire Department continued to remain on leave from duty. The causes of their absence were diverse and, for some workers, included reports of depression, anxiety, bereavement symptoms, and PTSD symptoms. Many clinicians working with humanitarian workers note that reactions to stress may range from a loss of self-esteem to anger, psychosomatic problems, and sexual promiscuity (Carr, 1994; Donovan, 1992).

2.3.3 Physiological health consequences

In this section, both physiological and behavioural health consequences of humanitarian aid work will be outlined. As demonstrated by Raj and Sekar's (2014) examination of stress among community level employees working in disaster areas, stress is related to physiological disorders, such as increased blood pressure and heart rate, cardiovascular diseases, increased cholesterol, increased blood sugar, insomnia, headache, infection, skin disorders, and fatigue. In what follows, the link between stress and physiological disorders is clarified.

Scientific discoveries related to the physiological stress response highlight the important role of the glucocorticoid receptor and the effects of a cortisol hormone released in the bloodstream (Stickle & Scott, 2016). The effects of the cortisol hormone involve the disruption of the metabolism and protein breakdown. The cortisol hormone also provides fuel for the fight or flight response, in which the body enters the survival mode. Thus, cortisol can help the body prepare to deal with a situation or to run away. This significant discovery (Cannon, 1939) guided endocrinologist Hans Selye to the idea that, regardless of the source of the stress, the body reacts in the same manner (Stickle & Scott, 2016).

Selye's general adaptation syndrome is crucial for our understanding of the body's reaction to stress levels. The general adaptation syndrome involves the following three stages: 1) alarm reaction, which is in essence the fight or flight response; 2) resistance, where a "survival strategy" begins to develop or a coping

mechanism is used; 3) exhaustion, where the demand of the situation on the body is too much and distress ensues (Stickle & Scott, 2016). Therefore, in a stress response, the prolonged productions of glucocorticoids in the bloodstream lead to serious adverse effects on the immune system (Bowler, 2001) and may result in physiological disorders.

2.3.3.1 Exhaustion/fatigue

A study assessing health risk and risk-taking behaviour of humanitarian expatriates has found that a high proportion of expatriates report exhaustion and find the mission more stressful than expected (Dahlgren et al., 2009). This study reported that both stress and exhaustion can have a negative influence on judgment and increase the risk of incidents with health consequences. The researchers suggest that stress and exhaustion are interrelated, and need to be dealt with in an integrated way (Dahlgren et al., 2009). Specifically, while the International Committee of the Red Cross (ICRC) already has a programme in place for stress management, more work is needed to improve on this issue (Dahlgren et al., 2009). The findings also indicate that social support is important for effective stress management. For example, those humanitarian workers who had someone to talk to reported less exhaustion (Dahlgren et al., 2009).

These findings have important implications for the design of stress management interventions. One obvious recommendation, stemming from the study by DeArmond et al. (2014), is to reduce workload. Although it is likely that many employers would not view this as a feasible solution, DeArmond et al. (2014) warn that failing to do so may backfire. For example, not reducing workload may result in diminished functionality, which will ultimately negatively impact performance. Furthermore, these findings suggest a psychological mechanism by which workload may be associated with decreased performance in the field (DeArmond et al., 2014).

2.3.4 Behavioural health outcome: Alcohol use and coping

Excessive alcohol consumption has surfaced frequently as a behavioural consequence of the work of human service professionals. For instance, the results of a study on health professionals from seven European countries showed a significant positive association between stress and higher alcohol consumption (Alexandrova-Karamanova et al., 2016). Furthermore, Holtz et al. (2002) report that aid personnel consume excessive quantities of alcohol, and similar trends are observed among other service workers exposed to trauma, such as, for example, firefighters doing rescue and recovery work (Boxer & Wild, 1993; North et al., 2002) or military personnel in a Kazakhstan mission (Britt & Adler, 1999). Indeed, many previous studies suggest that increased consumption of alcohol and tobacco can result from experiencing occupational stress (Yong, Nasterlack, Pluto, Lang, & Oberlinner, 2013; Sifaki-Pistolla et al., 2017; Tuckey & Scott, 2014).

Of note, previous research has demonstrated that excessive drinking is related to some coping styles¹, since, as noted by Skinner et al. (2013), how people “[...] deal with stress can reduce or amplify the effects of adverse life events and conditions not just on emotional distress and short-term functioning, but also long-term, on the development of physical and mental health or disorder” (p. 216). Overall, the individuals who rely more on problem-focused coping and less on avoidance coping are less likely to develop substance abuse problems.

Alexandrova-Karamanova et al. (2016) provide further evidence for the relationship between stress and substance abuse and underscore the importance for coping mechanisms. This study states that painkiller use “was the behaviour most strongly associated with the burnout dimensions in our study” (p. 1067). Moreover, as noted by the authors, “[...] frequent painkiller use is tied to the need for coping with pain and discomfort in cases of existing somatic complaints, established as consequences or concomitants of burnout” (p. 1067).

¹ Specifically, Skinner, Edge, Altman, and Sherwood (2003, p. 239) discuss five categories of coping styles: Problem solving, support seeking, avoidance, distraction, and positive cognitive restructuring. See also Section 2.5.2 for further discussion of coping styles.

In conclusion, negative health behaviours such as heavy drinking are reported as behavioural outcomes among humanitarian aid workers that can significantly compromise their health. Thus, for the sake of prevention and intervention of various health problems, “[...] it is necessary to identify risk groups that show a maladaptive profile of coping for the prevention and intervention of various health problems” (Doron, Trouillet, Maneveau, Neveu, & Ninot, 2015, p. 89). Few studies have examined alcohol consumption differences between international and national aid workers, and few (if any) have examined organisational stressors related to this outcome in this sector. This thesis sets out to remedy this gap in the literature.

Individual protective or risk factors

The literature review undertaken in the present thesis underscores the importance of identifying risk factors associated with the development of outcomes such as burnout, STS, and PTSD. Identifying such risk factors (i.e. those that considerably influence and modify a person’s response to stressful events, or their ability to stay resilient in the face of adversity) is essential, as it can act as a means of changing an individual’s response to stressful life events. Among relevant risk factors are age, gender, previous work experiences in the adult population, and physical wellbeing. In what follows, these factors are discussed in further detail.

2.4.1 Age and gender

As noted earlier, exposure to stressful life events during aid work can result in the development of PTSD in some aid workers (Sifaki-Pistolla et al., 2017). With regard to gender, female aid workers are reported to have an approximately two times higher risk of PTSD than males (Sifaki-Pistolla et al., 2017). This gender difference is also supported by Ager et al. (2012) who found that female humanitarian aid workers reported significantly more symptoms of anxiety, depression, PTSD, and emotional exhaustion than males.

While gender differences in developing PTSD may be the result of differences in peri-traumatic emotion (Sifaki-Pistolla et al., 2017), these differences can also be underpinned by other causes. For example, a UK study measuring occupational stress in conjunction with gender and social class reports that “[...] relationships with other people and organisational structure/climate are key stressors at a higher rate in female workers compared to male workers” (Fotinos-Ventouratos & Cooper, 2005, p. 18). Interestingly, this study also discovered that, compared to women, men are less likely to use coping mechanisms to deal with stressful events. Furthermore, gender roles have shifted work-life balance. For example, as Stickle and Scott (2016) stated, “[...] it has become more difficult for many women, especially mothers, to continue the transition from the home to the workforce, to bring in additional income and develop professionally if raising children” (p. 32).

Gender and age also influence the consumption of drugs and alcohol. With respect to the former, a more frequent use of painkillers for self-medication has been found to be related to female gender and an older age (Alexandrova-Karamanova et al., 2016). With regard to alcohol, more frequent alcohol consumption has been found to be associated with being a male (Alexandrova-Karamanova et al., 2016).

In sum, previous research suggests that individual vulnerability to work stressors may further differ because of gender and age (Yong et al., 2013). These findings highlight the need to focus on gender as a key research variable, and pay more attention to female aid workers to create targeted interventions to reduce their psychological burden (Sifaki-Pistolla et al., 2017).

2.4.2 Previous work experience

Findings reported in the last few years have suggested that the length of work experience may act as either a positive or a negative factor, in the development of resilience. Support for the notion that the length of work can act as a positive factor was obtained in Lopes-Cardozo and Salama’s (2002) survey of the prevalence of mental health problems among Kosovar Albanian workers.

Specifically, the authors specify that the majority of individuals experiencing post-mission depression and/or anxiety were on their very first mission and had only been working for their organisation for less than 6 months (Lopes-Cardozo & Salama, 2002).

However, the length of work (and the corresponding exposure to stressful events) can also act as a negative factor. For example, in The Centre for Disease Control Mental Health Survey, carried out in Kosovo, Lopes-Cardozo et al. (2005) investigate the role of work experience with the focus on the workers who had worked on at least 5 previous assignments and, therefore, could be considered as having extensive professional experience. The results of the survey indicate that these individuals were more at risk of developing mental health problems compared to workers who had only been deployed on two to three missions. The authors conclude that “[...] mental health problems may be correlated with the number of trauma events experienced, which are, in turn, related to number of missions and amount of time spent in the field” (Lopes-Cardozo et al., 2005, p. 252). These findings are further supported by Corneil et al. (1999) who report that firefighters with more than 15 years of experience were at increased risk of developing PTSD compared to their less experienced colleagues.

It is not only the duration of work, but also the amount of workload that negatively influences humanitarian aid workers’ mental health. For instance, in a study exploring the longitudinal relation between work characteristics and subsequent development of psychiatric disorders, based on a sample of middle-aged employees, Stansfeld, Fuhrer, Shipley, and Marmot (1999) found that the workers who were exposed to high amounts of workload over a long period of time were at an increased risk of developing a mental health problem.

Despite the seeming contradiction in the findings outlined above, there is an explanation for both trends in the humanitarian sector. Conflicting results occur because of previous work experiences: those with long employment and successful experiences may have positive outcomes, while those with long employment and experience of traumatic incidents or unsuccessful operations

may be at risk of poor wellbeing (Brooks, Dunn, Amlôt, Greenberg, & Rubin, 2016).

2.4.3 Physical wellbeing

Physical wellbeing and positive health status are predictive of resilience. Since individuals have personal perceptions regarding their physical wellbeing and health, these perceptions tend to provide invaluable information regarding their level of resilience they may exhibit during sickness or during a physical difficulty. Internalising certain aspects of physical health is also important. For example, individuals who have good physical health, maintain good sleeping patterns, and demonstrate physical strength are also likely to automatically perceive themselves as psychologically well (Kumpfer, 1999; Kauai, Werner, & Smith, 1982). These studies support the idea that the internalisation of physical health is important for psychological wellbeing.

Cognitive protective factors

As shown in Section 2.4, there is a certain variation within the immediate response of individuals to stressful situations and traumatic life events. The variation can be considered a predictive factor for the level of resilience that an individual will demonstrate in a stressful situation (Matthews et al, 2006; Folkman, 2013). In what follows, cognitive protective factors are discussed in further detail.

2.5.1 Resilience

Resilience is a term that refers to the capacity to adapt effectively to life adversity with a short-lived decline in functioning (Bonanno, 2005). Humanitarian aid work is based on the acts of service, responsibility, and values, irrespective of whether the organisation is embedded in a spiritual tradition, such as a faith-based nongovernmental organisation with a stated mission, or, more generally, within the ethics of the humanitarian imperative, protected in the United Nations' framing of human rights and dignity (Eriksson et al., 2015).

Humanitarian aid workers may participate in aid missions to make a contribution that surpasses their own self-interest and a spiritual orientation to the work. This may create a context for resilience and support for many aid workers (Eriksson et al., 2015).

Recent research provides evidence that stress may be an important opportunity for building the capacity of resilience, which leads to a beneficial growth in wellbeing and mental health (Crane & Searle, 2016). Workers with some lifetime adversity or stressors tend to experience less psychological distress, as well as have a capacity for psychological resilience (Seery et al., 2010). This evidence suggests that resilience research should not only focus on characteristics that the individual brings to the situation and instead consider the important role of experiences and context (Crane & Searle, 2016 Ungar, 2012). For example, the characteristics of environments that are most facilitative of resilience reflect the ease with which individuals are able to access resources, and the meaningfulness of the resources provided (Ungar, 2012). Research on cognitive behavioural interventions shows that the benefits of “fostering resilience in the face of trauma exposure include enhancing appraisal styles, positive reframing and coping mechanisms as well as increasing perceived self-efficacy” (Putman et al., 2009, p. 113).

Successfully overcoming stressors can sometimes enhance coping resources (Hobfoll, 1989). In turn, this suggests that the interventions designed to improve employee wellbeing should not only consider the nature of stressors in a workplace, but also consider employee resilience as a critical variable. For example, managers may be able to reframe the meaning of stressors, which will increase the degree to which the stressor is perceived as a challenge or highlight what valued outcome might be gained as a consequence of stressor engagement. Thus, stressor engagement may become an opportunity to build resilience.

2.5.2 Coping mechanisms

In the literature, coping is described as the process by which one manages the demands and emotions generated by something that is appraised as stressful

(Lazarus, 1999). Alternatively, Park (1998) provides the following definition of coping:

[...] the transactional process between individuals and their environment, involving appraisals such as whether the situation or event is a threat, a challenge, or a loss, and appraisals of what can be done (p. 271).

Coping involves purposeful attempts to manage stress regardless of effectiveness. Resilience may be described as the ability to cope positively. Coping behaviours of individuals can vary depending upon the type of situation they are in and their response. Therefore, coping behaviours are partly innate and partly acquired through learned experiences (Manciaux, 1999).

Occupations relating to international development or emergency aids are fundamentally characterised by an overwhelming workload and constant exposure to a variety of stressful and traumatic events. Developing effective emotional strategies and technical coping skills is essential for workers operating under these occupations. For instance, Selye (1985) suggests that using ineffective or inappropriate coping methods to deal with stressful events can only further exaggerate the effects of these stressors, rather than allow an individual to recover.

Individual differences in coping styles and the varying abilities of people to handle stressors tend to influence the effectiveness or successfulness of individuals' responses to trauma and, consequently, personal wellbeing. For example, Jew and Green (1998) demonstrated that coping behaviours and resilience may be learned over time. Specifically, to deal with future traumatic events, some individuals possess the capability to effectively cope with stress through employing particular skills, as well as through attempting to evaluate and learn from their experience. The individuals who possess these skills are more effective at building resilience. Furthermore, Jew and Green's (1998) findings reveal that individuals may develop a sense of mastery after successfully tackling a stressful situation. This positive self-perception of strength tends to positively impact their mental health (Jew & Green, 1998). These findings are further supported by Rutter (1996) who postulates that the

development of resilience within an individual depends on that individual's effectiveness in terms of coping with a stressful event at a certain point in time. Once these coping mechanisms are identified and used, they further aid in fostering a resilient attitude in the face of future adversity (Rutter, 1996).

Varying coping mechanisms may be based on the individuals' efforts carried out to change the environment, as well as to alter the meaning attached to a given set of stressful events. Altering the meaning provides a better understanding and awareness of a particular situation. Problem-focused cognitive coping strategy is used when an individual feels that the stressors must be dealt with constructively. This involves an active effort to change the problematic circumstances on part of the individual (Carver, Scheier, & Weintraub, 1989). Emotion-focused coping style is used when an individual feels that these stressors should be endured. It is directed inwards where the individual tries to evaluate, manage, and gain an understanding of the emotional response associated with a stressful event (Catanzaro, Wasch, Kirsch, & Mearns 2000; Lazarus & Folkman, 1984). Cognitive-focused coping involves the alteration of the fundamental meaning of specific stressors as a means of coping with them (Pearlin, 1991).

Still, certain coping strategies, such as dealing with stress through over-working, can be counter-productive. A humanitarian worker may trick themselves into being more productive, while effectively avoiding full confrontation with the problem. The strategy of complete immersion into work can emotionally isolate the worker and lead to exhaustion and burnout (Hugh-Jones, 1992; Paton, 1992; Straker, 1993).

Negative coping strategies may prevent individuals from developing resilience. As suggested by Carver et al. (1989), negative coping strategies may play a significant role in impeding effective adjustment to trauma and stressful events. In an investigation of types of coping strategies in a sample of 764 emergency workers, Cicognani, Pietrantonio, Palestini, and Prati (2009) found that, among the coping strategies employed, the use of self-criticism and distraction was high, particularly in response to burnout. Furthermore, as noted by the authors, "[...]

use of cognitive and behavioural avoidance, commonly observed after a trauma, predicted greater psychological distress among professional firefighters and ambulance personnel” (Cicognani et al., 2009, p. 452).

Furthermore, Jackson and Maslach (1982) report that, in order to keep their mind occupied and to entirely avoid their problems, police officers frequently deal with stress by smoking, having a drink, getting away from people, or finding other activities to indulge in. Similarly, Pastwa-Wojciechowska and Piotrowski (2016) suggest that police officers’ maladaptive coping strategies in response to occupational stress contributes to dangerous alcohol abuse. Therefore, negative coping styles among emergency response personnel can negatively influence their wellbeing and hamper their perceptions regarding self-resilience.

Another frequently used coping response is rationalising a stressful event by dehumanising the population being helped. For instance, a humanitarian worker may assume that, contrary to the general population, a certain affected population does not find an event disturbing. De Waal (1988) demonstrates this phenomenon by providing the following classic example: “Africans do not feel pain as we do. These people are always surrounded by death and sickness, so it’s nothing new for them” (p. 7). This type of coping mechanism can promote emotional dysfunction among aid workers, rather than help build resilience.

Distancing and detachment from a stressful situation is therefore a type of coping strategy used by humanitarian workers (Gibbs et al., 1993; Mitchell & Dyregrov, 1993). The detachment coping strategy is employed as a means of facilitating work performance without allowing emotions and perceptions to incapacitate a worker (Mitchell & Dyregrov, 1993). One perspective suggests that, unless humanitarian personnel actively used the distancing coping strategy, they would be rendered paralysed and incapable of properly performing their duties (Stearns, 1993). From this perspective, the strategy may allow a worker to avoid emotional identification and over-involvement. However, over time, these coping strategies can lead to the development of feelings of cynicism and, ultimately, burnout.

Environmental protective factors

Various environmental factors tend to influence resilience and recovery rates among aid workers; therefore, the relationships of an individual with the surrounding environment and people are important.

Workers respond to threats and negative emotions associated with those threats, and seek to prevent additional loss/harm in the future. This can be exhausting (Lazarus & Folkman, 1984). Thus, mobilising resources in response to threats of stress is geared to avoiding the anticipated loss/harm (Tuckey et al., 2016). Job resources do not just meet basic needs, such as protecting workers against excessive job demands, but also shape the intensity of demands themselves. A harmful job demand may reflect the absence of a corresponding resource (Demerouti & Bakker, 2011). This is consistent with the proposition that job resources function to reduce job demands (Demerouti & Bakker, 2011). The perception of being in danger and lack of social support may be risk factors, or threats to wellbeing; conversely, perception of safety and adequate social support may facilitate resilience, i.e. be a ‘resource’ or protective factor. In the remainder of this section, several important environmental protective factors are discussed in further detail.

2.6.1 Social support

Social support refers to the availability of people who one can easily trust and rely on. This includes the patterns of social ties that an individual has come to form over the years. These social ties play a central role in the physical and psychological integrity of an individual (Kossek, Pichler, Bodner, & Hammer, 2011). Therefore, the immediate and extended social network of aid-workers tends to positively influence their level of resilience. Social support comprises different dimensions of social networks, including family, close friends, team colleagues, neighbours, managers, organisational personnel that an individual works with, and so on.

Although social support is widely documented to have a positive impact on the psychological wellbeing of workers, the mechanisms behind social support have been much debated. The social hypothesis, or the main effects model, asserts that social support directly reduces work strain by fulfilling essential human needs, such as affection and security (Caplan, Cobb, French, Van Harrison, & Pinneau, 1975). However, many researchers have argued that social support also exerts an indirect effect on the experience of distress. For example, the buffering hypothesis asserts that social support moderates the effects of perceived occupational stressors on health outcomes (Sochos et al., 2012). However, empirical evidence on this issue remains inconsistent.

The type of coping strategy used by an individual may influence how much they use the social support available to them. While problem-focused coping involves taking direct action, emotion-focused coping involves managing stress by attempting to alter emotional responses to the situation, which may be associated with growth following stressful events (Sattler et al., 2014). Emotion-focused coping may also involve seeking emotional support and positive reframing, as well as recognising that “[...] passive and disengagement coping strategies are associated with increased stress” (Sattler et al., 2014, p. 358). By contrast, avoidance coping involves avoiding or disengaging from a situation, as well as not communicating with individual or organisational support resources.

Sochos et al. (2012) demonstrated that social support plays an important role in the relationship between work stressors and strain. For example, perceived social support has been found to have a negative correlation with PTSD, as social support from colleagues and family plays an important protective role in the development of PTSD (Sifaki-Pistolla et al., 2017). The importance and substantial role of occupational social support in combating PTSD was highlighted. For example, occupational social support was reported to provide a sense of community, collaboration, and cooperation (Sifaki-Pistolla et al., 2017).

Furthermore, in a study on humanitarian workers in Uganda, Ager et al. (2012) demonstrated a link between social support and depression symptoms. Those workers who reported higher levels of perceived social support were

significantly more likely to report a lower number of depression symptoms. Other research in adult populations has also shown that social support can protect and increase resilience levels in a variety of pathological states (Conger, Rueter, & Elder, 1999), such as low birth weight, arthritis, tuberculosis, depression, alcoholism, and substance dependence. Procidano and Heller (1983) suggested that social support can act as a mediating factor between life events and distress and can also contribute to personal development and positive adjustment of an individual in the times of crisis.

Kaspersen et al. (2003) have compared the role of social networks as moderators between trauma exposure and the development of post-traumatic stress symptoms. Two different samples were selected: relief workers and United Nations soldiers. Social support from social networks – such as family, close friends, and colleagues – was found to act as a mediator between trauma exposure and individual responses to a specific stressful event. Furthermore, social support proved to be a highly effective protective factor in both samples, regardless of the extent of their trauma exposure, i.e. in both UN soldiers with high trauma exposure and in relief workers with lower trauma exposure. Therefore, social support provides humanitarian workers with a sense of belonging and connection with their country of origin. It can take the form of peer support or family/spousal support. It allows them to overcome the cultural shock experienced when integrating into a new society (Blanchetiere, 2006). Finally, it also provides humanitarian workers with the opportunity to make the experience more meaningful.

Humanitarian peer supportive networks

Peer support networks within humanitarian organisations are usually made up of volunteer staff, and train and operate under professional counselors. Peer support networks are considered to be highly valuable by humanitarian organisations and their successful use is consensually reported. Possibly the biggest advantage of peer support networks is that they allow individuals to relate to each other's experiences and share their stories. According to Stewart and Hodgkinson (1994), talking about and sharing one's experiences and perspective with each

other is pivotal in humanitarian aid work. Additionally, relating to other people's experiences and showing understanding and empathy are also equally important. According to previous studies, those individuals who feel a sense of belonging, i.e. perceive themselves as a part of a social or professional network, are more likely to have good mental health status and are less likely to experience work-related stress (Gibbs, Drummond, & Lachenmeyer, 1993).

Marital support

Marital support, i.e. support gained from a spouse, tends to act as a protective factor when individuals are dealing with stressful situations. Evidence is also available that high marital support is highly likely to significantly reduce the consequences of economic pressure (Conger et al., 1999). Specifically, couples with good relationship dynamics and the capacity to exercise great problem-solving skills are reported to be less likely to experience marital conflict and distress. Therefore, “[...] family networks can be particularly important in offsetting stressors encountered by aid workers” (Cardozo & Salama, 2002, p. 250).

2.6.2 Debriefing

Debriefing involves “sharing observations and facts about the event and discussing emotional reactions and thoughts about the incident with peers and facilitators immediately following the event” (Sattler et al., 2014). Overall, the use of debriefing after experiencing critical incident stress is a form of effective support to prevent or minimise the development of stress reactions. It can also reduce the impact of their feelings on their lives (Walsh, 2009). Adequate debriefing training for relief workers prior to undertaking an assignment is essential in terms of decreasing the psychosocial effects of relief work (Walsh, 2009). Strategies such as formal debriefing and social support were cited as beneficial tools for the management of STS (Morrison & Joy, 2016). However, time and experience were found to inhibit the common use of these tools (Morrison & Joy, 2016).

Group psychological debriefing was introduced 30 years ago as a technique to minimise the negative effects of potentially traumatic events for emergency service workers (Mitchell & Everly, 1993). In a randomised controlled trial, one relevant study has examined group critical incident stress debriefing with emergency services personnel (Tuckey & Scott, 2014). The findings of this study demonstrate that, as an early intervention, single-session individual debriefing is contraindicated. It was also suggested that the efficacy of group psychological debriefing for protecting emergency workers from psychological harm remains unresolved. This was the case despite years of research. However, the authors state that the methodological flaws in the evidence base have prevented drawing reliable and valid conclusions.

Summary

Humanitarian aid workers engage in difficult tasks under extraordinary conditions. Relevant literature has consistently demonstrated that humanitarian employees are subjected to numerous kinds of stress that constrain their effectiveness and give rise to several serious psychological consequences (Macnair, 1995; Mitchell & Dyregrov, 1993; Paton, 1992; Paton & Purvis, 1995). In this chapter, the role of a variety of individual, organisational, and environmental features was explored to provide a better understanding how each of these features is related to the development of mental health risks in humanitarian aid workers. Among these consequences are vicarious traumatisation, burnout, PTSD, and depression, as well as alcohol and drug abuse. By and large, humanitarian crises are associated with an increase in mental disorders and psychological distress among aid workers. Based on the literature overview presented in the sections above, it is evident, as Soliman and Gillespie (2011) stated that “[...] if these conditions are not addressed, workers may suffer physically, emotionally and psychologically, which can influence their abilities to provide adequate services” (p. 780).

To date, little research has addressed the consequences of organisational stress on humanitarian aid workers and the measures organisations can take to effectively manage and support workers providing aid before, during, and after

conflicts (Lopes-Cardozo et al., 2013). Furthermore, relevant research on motivators and rewards among aid workers, as well as how these may vary across different cultures and contexts around the globe remains scarce (Walsh, 2009). Despite the growth in realisation of the challenges faced by humanitarian workers, there are many gaps in the current understanding of stress and distress among this occupational group.

Firstly, this literature review has identified a gap for a greater understanding of the prevalence of mental and behavioural health issues. Only a handful of studies to date have examined health outcomes globally for this occupational group, and the available studies typically have small sample sizes and focus either on international workers or national workers. Secondly, the literature has shown that much humanitarian research examines direct or indirect exposure to trauma and related outcomes such as PTSD. One unique aspect of this thesis is the use and application of theoretical models of occupational stress (see Chapter 3 for further discussion). These models of work stress can be used to examine the contribution of stressful organisational, social, and material conditions (daily stressors) to help explain the high rates of psychological distress among aid workers. Considering that it is necessary to examine the contribution of different pathways through which humanitarian work contexts influence psychological wellbeing of aid workers, previous findings have found increasing support for the need to use a more complex model (Miller & Rasmussen, 2010). In view of the complex and many demands placed on humanitarian aid workers, it likely that many factors, besides exposure to trauma, are at play.

Tol et al.'s (2012) qualitative research reiterates the findings of the literature review undertaken in this chapter. Tol and colleagues (2012) called for prioritising mental health and psychosocial support in humanitarian settings. In the authors' analysis of nine focus group discussions with a total of 114 participants recruited in three humanitarian settings (Peru, Uganda, and Nepal), it was established that the participants placed a strong emphasis on research questions related to assessing the prevalence and burden associated with mental health. Thematic analyses of transcripts indicated that the participants broadly agreed on research themes in the following order: (1) the prevalence and burden

of mental health and psychosocial difficulties in humanitarian settings; (2) how implementation can be improved; (3) evaluation of specific interventions; (4) determinants of mental health and psychological distress; and (5) improved research methods and processes (Tol et al., 2012).

The researchers concluded that, in order “[...] to advance a collaborative research agenda, stakeholders in the humanitarian aid field need to bridge the perceived disconnect between the goals of relevance and excellence, with research conducted with more sensitivity to questions and concerns arising from humanitarian interventions” (Tol et al., 2012, p. 25). Additionally, the recommendations were that “[...] practitioners need to take research findings into account in designing interventions for psychosocial problems, and the wider impact of mental health problems on productivity, livelihoods, family and community functioning” (Tol et al., 2012, p. 25). The perceived obstacles to humanitarian aid interventions discussed by the participants included the disconnection between the priorities of those on the central level, such as policymakers and researchers, and those at the implementation sites, such as the aid workers (Tol et al., 2012). The aid workers’ opinion was that policymakers and academics were not well attuned to the actual needs on the ground (Tol et al., 2012).

The present thesis is a response to both the issues that surfaced in the literature overview presented above and is in line with the themes developed in Tol et al.’s (2012) research. This research determines the prevalence of mental health and psychosocial difficulties in humanitarian settings. It also adds to the literature on the determinants of mental health and psychological distress. Finally, the research seeks to inform different types of interventions based on occupational health stress models.

Nowadays, organisations are beginning to recognise the perils encountered by aid workers as they contribute to the lives of endangered crisis victims. Humanitarian aid workers provide a lifeline to humanity in highly precarious circumstances. They provide benevolent strength, available resources, and navigational paths to survival. In turn, researchers provide meaningful insights

that influence the decisions on preventative and effective measures vital to the support of humanitarian aid workers themselves.

Conclusion

Humanitarian aid organisations have recently started to identify the need for organisational policy and response to the psychological consequences of humanitarian work. Both agencies and individuals have proposed programmes oriented to select, train, and support staff. This notwithstanding, there remains a serious lack of scientific knowledge and organisational understanding, which hinders organisations in managing and supporting staff, and hampers workers' productivity (Lopes-Cardozo et al., 2012).

Further research can help contribute to the development of targeted training with specific pre- and post-aid resources, as well as directly address the critical mental, physical, and psychological requirements for these workers.

CHAPTER 3. THEORETICAL MODELS OF JOB STRESS

Understanding the stress phenomenon

Stress at work and its negative impact on the health of employees are major problems for modern societies. The American Psychological Association (2009) estimates that work is a significant source of stress in the lives of 69% of employees (Gillispie, Britt, Burnette, & McFadden, 2016). In Europe, 25% of workers report they experience work-related stress for all or the majority of their working time, and a similar proportion say that work negatively affects their health (Eurofound and EU-OSHA, 2014). Therefore, work-related stress is a worldwide issue with important implications for employees, organisations, and economies.

From an economic perspective, the cost of stress has been estimated to amount to between 200 and 300 billion dollars in the United States; and from an organisational perspective, the costs include lost productivity, stress-related lawsuits, and health care expenses (Newton & Teo, 2014). Furthermore, in 2016/17, an estimated 25.7 million working days were lost in the United Kingdom because of self-reported work-related illness (Health and Safety Executive, 2017). This creates a financial burden for individuals, organisations, and the government to the amount of €9.3 billion (Health and Safety Executive, 2016). The Confederation of British Industry (CBI) considers stress to be the second most cited cause of absence from work (Asgarnezhad & Soltani, 2017). In addition to employee absence, significant financial difficulties caused by stress include underperformance, high turnover, accidents, and substance abuse (Beehr & Newman, 1978; Fletcher, 1988; Harnois & Gabriel, 2000; Karasek & Theorell, 1990; Holt, 1993; Mosadeghrad, 2013; Steffy & Jones, 1988).

Recent studies report that between 26 and 40% of workers experience extreme work-related stress in organisations with managers that “[...] lack an understanding of stress and stress-management techniques and the wellbeing of

employees of the company” (Stickler & Scott, 2016, p. 27). Therefore, managers need training and awareness on the potential causes of occupational stress, such as working conditions that produce extreme pressure, a heavy workload above an employee’s mandate, an unpleasant workspace, as well as lack of support, advancement opportunities, and resources (Stickler & Scott, 2016). An employee under prolonged stressful conditions is at risk of mental and physical health issues induced by chronic stress, including, among others, cardiac problems, ulcers, allergies, immune system disorders, depression, and burnout (Abraham, Conner, Jones, & O’Connor, 2008). Above all, the cost of unmanaged stress is represented by an increased risk of morbidity and mortality, and the ultimate consequences of stress for employees can, therefore, be life-threatening (Newton & Teo, 2014).

Job stress and its strong link to physical and mental health of employees has been extensively studied over the last three decades (Akbari, Akbari, Shakerian, & Mahaki, 2017). Advancing this knowledge to further deepen our understanding of stress experienced by humanitarian aid workers is critical for designing viable interventions required to limit the potential serious economic and human consequences of stressful workplaces. The purpose of this chapter is to provide an overview of current perspectives and definitions of stress, as well as to examine the relationship between stress and workplace features, individuals, and job characteristics. Theoretical models of job stress provide a meaningful framework to examine these relationships and are presented and evaluated below, with a particular emphasis on the ERI model and the job DCS model – the two most relevant theoretical frameworks selected for the present thesis. Wherever possible, humanitarian literature will be referenced to provide context to the theory.

3.1.1 Definitions of stress

Stress is most frequently defined as an overarching “umbrella” concept that lacks specificity and covers several categories, including physiological changes, work dissatisfaction, mental disorders, avoidance, and violence (Buunk, de Jonge, Ybema, & de Wolff, 1998). Therefore, a viable consensus regarding the

definition of stress is still to be achieved by the scientific community (Bliese, Edwards, and Sonnentag, 2017). This has resulted in complications both vis-à-vis research cohesiveness and those related to theoretical construction, which, in turn, has resulted in a fragmented body of literature (Bliese, Edwards, and Sonnentag, 2017; Cooper, 1998, Kinman & Jones, 2005).

In the early 1900s, physiological scientists discovered that stress is directly connected to the neurological system, resulting in a “fight or flight” stress response (Stickler & Scott, 2016). This stress response is a bodily instinctive reaction when a person encounters highly stressful stimuli. This internal response prepares the body for a strenuous activity and enables a person to confront the stressor or run away from it (Bowler, 2001; Stickler & Scott, 2016).

However, a wider and more comprehensive definition of stress contains the following three categories: (1) demands, threats, and challenges of the environment; (2) individuals’ psychological, physiological, and behavioural responses to those environmental stressors; (3) the interaction between (1) and (2) above (Ganster & Perrewé, 2011; Kahn & Byosiére, 1992). An example of a widely accepted definition of work-related stress is “the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope” (Leka, Griffiths, & Cox, 2003, p. 3). To encapsulate a broad definition, the following four main approaches in the area of stress research have been developed:

1. External factors that originate from an event or situation and that affect an individual, including potentially harmfully, rendering stress as a stimulus
2. The psychological or physiological response to environmental demands and effects
3. The process of an individual’s response to situations or events by developing strain reactions
4. The cognitive appraisal approach, whereby individuals assess the situational load as well as the resources that are available to them to meet the demands (Buunk et al., 1998; Moore & Cooper, 1998)

Fletcher, Hanton, and Mellalieu (2006) define stress as “an ongoing process that involves individuals transacting with their environments, making appraisals of the situations they find themselves in, and endeavoring to cope with any issues that may arise” (p. 329). This transactional conceptualisation of stress is less attentive to the specific components of an interaction and is more concerned with the underlying psychological processes of stress.

The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984, 1987) proposes that different people can differently perceive the same stressor. Central to the transactional theory of stress is the concept of cognitive appraisal. Appraisals converge to determine whether the person-environment transaction is regarded as significant for wellbeing and, if so, whether it is primarily threatening, containing the possibility of harm or loss, or challenging, which holds the possibility of mastery or benefit (Clarke, 2012, Kahn, 1990; Lazarus & Folkman, 1984).

Lazarus and Folkman (1984) define stress as “a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing” (p. 21). This definition treats stress as a dynamic concept that includes both perception of and responses to external factors.

3.1.2 Challenge, hindrance, and threat - Appraisal of stressors

Olpin and Hesson (2013) define stress as “a demand made upon the adaptive capacities of the mind and body” (p. 3). Appraisal of stressors, rather than just stressor type, is thought to be critical for long-term wellbeing, since such appraisal can influence emotional and behavioural responses to stress (Crane & Searle, 2016). Occupational stress theory examines the deleterious effects of job demands on employees’ health, wellbeing, and job performance. These demands can vary according to whether they constitute threats (to personal harm), hindrances (obstructing work goals), or challenges (offering opportunities for mastery) (Tuckey et al., 2016). In this respect, Crane and Searle (2016) emphasise the interpersonal variation in stress appraisal as follows:

[...] even though challenge stressors are likely to be appraised positively as opportunities for mastery or personal growth (i.e. as opportunities for mastery or personal growth), and hindrance stressors are likely to be appraised negatively, there is nevertheless much variation between people in how stressors are appraised (p. 9).

There is also variation in the resources that workers can employ to overcome challenges. The types of available resources differ according to the extent that they assist workers in meeting challenges and managing demands or, alternatively, in regulating emotional responses to threats and hindrances (Tuckey et al., 2016). There is a limited pool of social and organisational resources available for humanitarian aid workers (Ehrenreich & Elliott, 2004). Resources help combat job demands, but the supply or deficit of resources shapes the perception and the intensity of experienced demands.

The distinction between challenge and hindrance relates to the possibility (challenges) or blockage (hindrances) of personally meaningful gains (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Tuckey et al., 2016). The potential for stressors to threaten the self does not fit the descriptions of either challenge or hindrance. To better understand the stressors faced by humanitarian workers, demands appraised as having the potential for future harm to the self – i.e. threat demands – should also be considered (Tuckey, Searle, Boyd, Winefield, & Winefield, 2015).

3.1.2.1 Job stressors as challenges, hindrances or threats

Many occupational stressors fall into the category of “[...] threat demands, perceived by workers as having the potential to damage, disrupt, or diminish their valued resources, whether psychosocial (e.g. personal autonomy, dignity, self-esteem), financial (e.g. income), physical (e.g. health), or social (e.g. family and social life)” (Tuckey et al., 2016, p. 104). Although threat appraisals are a core stress appraisal in Lazarus and Folkman’s (1984) transactional model, theory and methods within occupational stress research have not always captured this element, emphasising instead challenge and hindrance stressors, while tacitly incorporating threats as interchangeable with hindrances (Tuckey et al., 2016).

Despite the scarcity of empirical research on the issue, relevant evidence is available that demonstrates that challenge stressors (such as workload) and hindrance stressors (such as role ambiguity and role conflict) are primarily appraised as such in an occupational context (Webster, Beehr, & Love, 2011). Differential effects of these two types of stressors would be expected in relation to work-related attitudes, affective responses, and work performance (Cavanaugh et al., 2000). On the one hand, hindrance stressors (including situational constraints, hassles, role ambiguity, role and interpersonal conflict, role overload, supervisor-related stress, organisational politics, and concerns about job security) can be predicted to have negative affective and behavioural outcomes, as they are unlikely to be overcome by an employee, even with extra effort. On the other hand, challenge stressors (such as high workload, time pressure, job scope, and high responsibility) are obstacles that can be overcome with extra effort to result in the accomplishment of goals and the potential for personal development. These stressors have been found to be positively associated with job satisfaction, high motivation, and, therefore, lead to better performance, as individuals are likely to believe that there is a positive relationship between effort and expectancy (DeArmond et al., 2014). Conversely, hindrance stressors are not motivating, as the effort expended to cope with them is not always successful.

Challenge stressors are positively related to a plethora of positive job-related factors. However, previous findings indicate that challenge stressors, despite their benefits (Crane & Searle, 2016), can lead to negative stress, as “[...] both challenge and hindrance stressors are positively associated with exhaustion” (Hargrove & Nelson, 2012, p. 62). Identifying the diversity of job demands faced by humanitarian aid workers, and how they are appraised, can provide a deeper understanding of the nature of this work, job stress-related health implications, and how to combat them. In this context, qualitative studies may be important to better understand the nuances of how stressors are appraised. Accordingly, the present thesis incorporates a qualitative methodological approach to examine the appraisal process (see Study 3 reported in Chapter 6).

3.1.3 Psycho-social stressors

In the work stress literature, while environmental stressors are referred to as psychosocial stressors, the term “strains” is used to describe individuals’ responses to those stressors and the events or work circumstances that affect employees psychologically rather than physically (Griffin & Clarke, 2011). Based on the occupational aspect that results in strain, work stressors are categorised into several groups. These groups include stressors that are intrinsic (i.e. tied to the task being performed) (Pottier et al., 2015) and extrinsic (i.e. such that encompass circumstances of work environment and work scheduling factors). The definition for intrinsic and extrinsic factors used by Greishaber, Parker, and Deering (1995) describes intrinsic factors as those related to job content, “including achievement, recognition, the work itself, and responsibility” (p. 23). Alternatively, extrinsic factors are described as those related to job context, such as supervision, company policy and administration, interpersonal relations, and working conditions” (Greishaber et al., 1995). Roles within the organisation and relationships at work are examples of extrinsic stressors, such as lack of support from superiors or colleagues and harassment. In addition, a lack of work-life balance and career development issues are examples of stressors that have the potential to cause strain in employees (Cooper & Cartwright, 1997; Cousins et al., 2004).

Other researchers term “job content” stressors as operational stressors – i.e. those that are related to the aspects of work inherent in the occupation, such as operational overtime and job-related violence (Amaranto, Steinberg, Castellano, & Mitchell, 2003; Glasser, 1999). “Job context” stressors are referred to as organisational stressors. They encompass aspects related to the organisational structure, such as bureaucracy, capacity, and work schedules (Pilcher & Huffcutt, 1996), as well as the items related to various aspects of organisational life, including facilities and equipment, role ambiguity, and role conflict (Vila & Kenney, 2002). Shane (2010) defines organisational stress as “the niggling aspects of the work environment that pervades organisations because of the structural arrangements and social life inside the organisation” (p. 815).

Furthermore, according to Health and Safety Executive (2007), psychosocial stressors are categorised into the following six key areas of work design which, unless properly managed, can contribute to numerous negative outcomes: (1) demands (e.g. workload, work patterns, work environment: noise, temperature, lighting etc.); (2) control; (3) support; (4) relationships (e.g. conflict, bullying at work); (5) role (understanding of roles, and conflict between roles); (6) and organisational change (how changes are managed, communicated, and feedback).

Research on stress is typically conducted on individuals employed within the “helping” or human service professions, such as positions in the medical, teaching, emergency services (police, firefighters, ambulance), and social work areas, as these are thought to be extremely stressful (Popov, Popov, & Damjanović, 2015). Contrary to what was initially believed, the organisational (job context) aspects of emergency service work have been found to be more stressful than the operational aspects (job content) (Brough, 2004).

As per research involving other emergency service personnel, studies in the humanitarian literature have focused on several occupational or operational aspects that expose aid workers to higher occupational stress and, therefore, lead to unfavourable psychological and physical health outcomes. Difficulties during a mission are commonly related to the environment, whereby workers face conditions such as large-scale poverty, injustice, suffering, despair, and death, as well as powerlessness, overwhelming responsibility and ethical dilemmas, unpredictable circumstances, cross-cultural adjustment, and isolation (Paton, 1992; Slim, 1995). Furthermore, in addition to facing the aforementioned difficulties, it is important to highlight that aid workers are at an increased risk of illness, injury, and death because of both unfavourable work conditions and the lack of appropriate medical care. This increased risk is convincingly demonstrated in a study comparing aid workers in the field to those who remained and worked at home. The results of this study demonstrate that the mortality rates of the former group were two-fold compared to the latter (Schouten & Borgdorff, 1995). Other research has confirmed 540 humanitarian

aid workers were killed, kidnapped or seriously wounded in 2009 and 2010 (Taylor et al., 2012).

Therefore, much of the research on stress among emergency personnel emphasises the experience of traumatic and operational stressors and their effects on employee wellbeing. However, more recent investigations have highlighted that, to produce a more accurate evaluation of psychological health and wellbeing, it is important to consider not just major traumatic stressors, but also minor sources of stress, such as daily hassles (Brough, 2002; Brown, Fielding, & Grover, 1999; Hart & Cotton, 2003). This point was particularly elaborated in the comparison of effects between organisational stressors and trauma, and it was found that the former appears to play a central role among emergency service employees (Kop et al., 1999). Furthermore, compared to operational demands, organisational stressors have been found to have a much more powerful effect on individual health outcomes (Brough, 2004; Hart, 1994; Rineer, Truxillo, Bodner, Hammer, & Kramer, 2017; Stinchcomb, 2004).

Humanitarian aid workers may find themselves trapped in a vicious circle, as the job stress they experience leads to negative health and occupational outcomes such as attrition, illness, and even death, and these outcomes, in turn, leave workers less able or unable to meet work demands and lead to a deterioration of their job performance (Mitchell & Dyregrov, 1993). The latter concern is particularly urgent, as aid workers tend to have high expectations about meeting work demands and meeting humanitarian aid needs, and not being able to do so exposes them to further emotional stress and, consequently, exhaustion (Stearns, 1993). Furthermore, aid workers face a heavy work burden which results in long working weeks, with nearly a half of aid employees reporting regularly working more than 60 hours a week (Macnair, 1995). Therefore, humanitarian service encompasses a high workload that affects aid worker functioning (Curling & Simmons, 2010; Eriksson et al., 2003). This leaves them with an improper work-life balance and further exacerbates their stress, as they are left with less time to rest and potentially recover from their occupational strains.

Similar to the many and varied definitions of stress and stressors outlined in Sections 3.1.1-3.1.3, there are numerous theories of stress. These theories help us make sense of the complexity of stress. While each theory adopts its own particular focus and definitions, most of them are designed around a set of components linked together in a process-oriented relationship. The idea of the process is frequently expressed through the ideas of “fit or balance”. The two most researched and thus most influential models of stress are the job DCS (Karasek & Theorell, 1990) and the ERI models (Siegrist, 1996). These two models are used as a basis for the present investigation.

Job (work-related) stress models

As mentioned in Section 3.1, there are several perspectives from which the concept of stress can be viewed and, accordingly, several stress theories have been proposed. Firstly, very early scientific research on the correlation between stress and illness conceptualised stress as a biological and deterministic process; this approach has been termed *physiological*. Response-based paradigms such as this understand stress as a physical response pattern that is relatively constant across environmental factors, while stimulus-based paradigms suggest that stress is reliant on upon the presence of specific stressors in the environment (Cooper, 1998; Mason, 1975). According to a stimulus-based perspective (also known as the *engineering approach*) stress is considered a stimulus that, for example, may take the form of a demand and that precedes the development or onset of an undesirable health outcome (Cox & Griffiths, 1995). In the support of this approach, Symonds (1947) explains it as something that happens to the individual, and not what happens in him (in Cox & Griffiths, 1995). Thirdly, in *the interactive approach*, stress is perceived as an interaction between the stimulus and the individual, or simply the individual’s response to the stressful event (Cox & Griffiths, 1995). This has also been termed either a *psychological or cognitive approach*, and it takes into consideration the mental aspect during a stress response or a stressful situation (Cox & Griffiths 1995). Given the cognitive or psychological aspect of this interactive approach to conceptualising stress, it is considered to be a more contemporary of the three approaches outlined above. It should be noted that both the engineering and the physiological

approaches are conceptually weak, as their correlation between the individual and the stimulus is such that the individual is treated as a passive victim. Furthermore, these two approaches do not take into consideration cognitive or situational factors that affect health and wellbeing (Cox & Griffiths, 1995). By contrast, through encompassing the influence of individual differences that affect stress processing – such as personality, gender, and coping abilities – the interactive approach compensates the shortcoming of the other two approaches. All these individual differences are central for understanding the reasons why some individuals find certain situations stressful, while others do not.

The transactional model of stress and coping provided by Lazarus and Folkman (1984) is a well-known extension of an interactional model and suggests that the experience of stress is a consequence of a complex series of transactions between the individual and the environment. The emphasis is primarily on the role of characteristics that are inherently unique to each individual and result in the subjective perceptions of stress, including, but not limited to, differences in coping, appraisal, personality, and locus of control. Individual differences in perceptions and coping resources are considered essential in determining the relationship between environmental stressors and employee strain reactions. Stress is therefore seen as process, and the stress processes reveal interactions that “feedforward and feedback and the interactions are multiple and cross-level as well as being time based” (Cox & Griffiths, 2010, p. 45). However, in practical terms, this process is difficult to operationalise. Even research espousing to the transactional perspective, although comprehensive, still measures separate components of the process (stressors, strain, and coping) that are treated as static constructs (Cooper, Dewe, & O’Driscoll, 2001).

Numerous attempts have been made to model the process of work stress from an interactional approach and several prominent models have been developed based on empirical research. Two of the most prominent models in the conceptualisation of occupational stress and its effects on employee health are the job DCS model (Johnson & Hall, 1988) and the ERI model (Siegrist, 1996; Siegrist, Siegrist, & Weber, 1986). Both models are complementary in that they provide distinctive contributions towards explaining work stress. This can lead

to targeted interventions that focus on combinations of stressors that best explain distress for specific work contexts. In the remainder of this section, and in Section 3.3, these two models will be examined in detail and a contextual literature evaluation provided.

3.2.1 The job demand-control-support (DCS) model

The initial job demand-control model, developed by American sociologist Karasek in 1979, is a descriptive model that measures only particular kinds of hazards (Schaufeli & Taris, 2014). Karasek's (1979) job demand-control model is a frequently used job stress model when it comes to describing the association between the occupational psychosocial environment and the resulting health outcomes (Bosma, Peter, Siegrist, & Marmot, 1998).

3.2.1.1 Model overview

The model embraces a combination, balance, or tension between two central aspects – namely, the occupational requirements or demands and employee autonomy or control. Occupational requirements refer to psychological demands – such as constraints of task performance – including quantity, complexity, and time constraints, to name just a few. On the other hand, employee autonomy refers to an employee's latitude for decision, or their control of the work and the use of their competences. The tension between the two components lies at the heart of Karasek's (1979) model that contends that stress arises when occupational requirements are high and autonomy or latitude is low (see Figure 1). Furthermore, a combination of high demand and high autonomy is considered as active and allows an employee to develop protective mechanisms against strain (Karasek & Theorell, 1990). On the other hand, low demands combined with low strain result in a passive work environment that does not encourage defence mechanisms against stress and is likely to result in a lack of interest, which eventually results in low productivity, loss of previously acquired skills, and learned helplessness (Karasek & Theorell, 1990). Generally, the model suggests that a low strain job is most desirable; however, since very low demands

are themselves somewhat problematic, they have been most frequently referred to as “not excessive demands” (Karasek & Theorell, 1990).

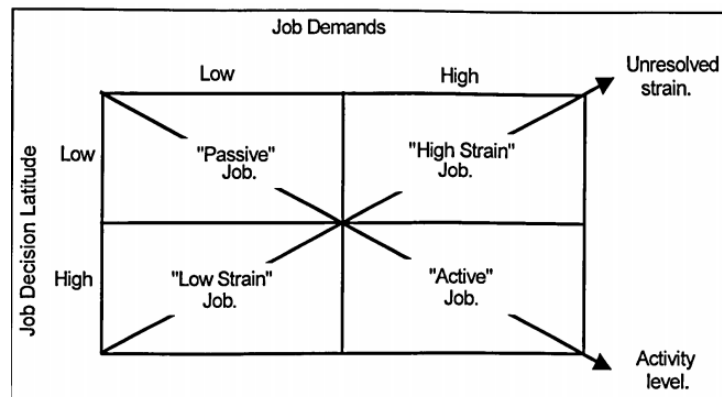


Figure 1. The job demand-control model (adapted from Theorell & Karasek, 1996, p. 11)

An addition to the model was a third dimension that was later combined with the other two variables – namely, social support (SS) at work (Johnson & Hall, 1988), which resulted in the adapted job demand-control-support (DCS) model. In an occupational context, SS refers to both the quality and availability of a worker’s relationship with supervisors and colleagues, as well as the amount of positive support they offer (Cohen & Wills, 1985). The availability of facilities that help employees achieve a healthy balance between work and family responsibilities is also considered to be a form of occupational SS (Thomas & Ganster, 1995). Finally, according to Greenglass, Fiksenbaum, and Burke (1996), evidence is available in support of SS having a positive effect on both employees’ wellbeing and satisfaction. This model incorporates the concept of iso-strain, which refers to occupational situations where demands are high while control and SS are low (‘iso’ here being isolation or low SS). Overall, there are two dominant hypotheses on the different variables of the model and how they affect employees’ wellbeing: (1) the (iso)strain hypothesis and (2) the buffer hypothesis.

3.2.1.2 *The strain (iso-strain) vs. buffer hypotheses*

According to the strain hypothesis of the model, the employees working in a high-strain job – namely, under conditions of high demands and low control – experience the lowest amounts of wellbeing (see Figure 1). On the other hand, according to the buffer hypothesis, job control can moderate or attenuate the negative effects of high demands on employee health. When these hypotheses are juxtaposed onto the extended DCS model, the most detrimental outcomes are predicted by the iso-strain hypothesis, according to which occupational environments marked by high demands, low job control, and low SS/isolation have the most negative effects on workers' wellbeing. This is somewhat different from the buffer hypothesis according to which SS can attenuate or mitigate the negative impact of high strain on wellbeing (van der Doef & Maes, 1999; Viswesvaran, Sanchez, & Fisher, 1999). A moderating effect of SS is thought to be rooted in the fit between stressor type and the kind of support that is either provided or received (Cutrona & Russell, 1990).

While there is evidence in support of both the strain and the buffer hypotheses, the former has been well-established, published, and supported, while the latter remains more equivocal (Stansfeld, Head, & Marmot, 1998b; van der Doef & Maes, 1999). In this respect, Van der Doef and Maes (1999) suggest that comparing the validity of the two hypotheses is difficult, as each of the two measures have a different outcome and, therefore, the two models should in fact be considered theoretically distinct. This leads to different approaches to improve occupational environments so that they reduce strain. If, for example, the greatest variance in terms of health outcomes is explained by the buffer hypothesis, a reduction in stress by simply increasing control would be a solution. On the other hand, if negative health outcomes are better explained by the strain hypothesis, taking the same approach by focusing on control alone would not be sufficient because of the independent negative effect of high job demands.

3.2.1.3 Validity and theoretical criticisms

The DCS model is valued for its simplicity and to the extent to which it has gained a paradigmatic function in work and health research (Chirico, 2016). The three key components – job demands, job control, and social support – are ubiquitous to any working environment, regardless of the industry or occupations involved (Karasek & Theorell, 1990). The DCS model also has strong predictive capacity and numerous studies have applied this model to different physical and psychological health outcomes (Schaufeli & Enzmann, 1998). This was demonstrated in a recent meta-review (examining four moderate-quality reviews) that provided good evidence for a prospective association between high job demand, low job control, and low social support and poorer employee mental ill health (Harvey et al., 2017). However, the model is not without criticism.

Since both independent and dependent variables of the DCS model are assessed via self-reports, the model is frequently criticised for its reliance on the measures that are suspected to lead to method bias and, therefore, an overestimation of the associations between occupational environments and employee health outcomes (van der Doef & Maes, 1999). As a response to this criticism, a 3-year prospective cohort study including 1739 participants was conducted (de Jonge, Reuvers, Houtman, Bongers, & Kompier, 2000b). In this study, the authors investigated associations between demand, control, support, and health outcomes and found that the correlation between DCS characteristics and employee satisfaction, and absence of psychosomatic ailments and illness was linear and additive without any evidence of interaction (de Jonge et al., 2000b). Taris (2006) showed that only 9 out of 90 tests (in a reanalysis of 64 studies) provided support for the demand X control interaction effect. Previous examinations of the predictive power of the model have claimed that the cross-sectional nature of the DCS model may enable erroneous inferences of causality. A longitudinal research review of the model found only mild support for the job strain hypothesis and a lack of support for interactive effects, such as those predicted by the buffer hypothesis (De Lange, Taris, Kompier, Houtman, & Bongers, 2003).

Another criticism of the DCS model is that it is overly simplistic in its approach to evaluating the modern working world, as it does not consider critical workplace stressors such as job instability, underemployment, redundancy, and forced occupational mobility (Calnan, Wadsworth, May, Smith, & Wainwright, 2004). To remedy this omission, it has been recommended to add additional variables that are sufficiently appropriate to capture the complexity of the modern occupational climate (Van Veldhoven, Taris, de Jonge, & Broersen, 2005).

A final criticism of the DCS model is that, rather than evaluating the perceptions of occupational environments as is usually done in neurotic disorders (Cropley, Steptoe, & Joeke, 1999) and anxiety (Cropley et al., 1999; Evans & Steptoe, 2002), it is thought to have been intended to simply describe occupational situations (Morrison, Payne, & Wall, 2003). The DCS model is seen as restricted to the situational aspects of the psycho-social work environment (and not include intrinsic or person characteristics) (de Jonge, Bosma, Peter, & Siegrist, 2000a; Siegrist, 2016).

3.2.1.4 Relationship to physiological and psychological health outcomes

An extensive body of literature has investigated the health effects of occupational characteristics in the context of the DCS model. Of particular interest here are the physiological conditions such as cardiovascular disease and associated risk factors, all of which have been consequently well established, albeit with inconclusive results (e.g. Bosma et al., 1998; Riese, Houtman, Van Doomen, & de Geus, 2000). Furthermore, it was found that job strain can predict high blood pressure (Landsbergis, Schnall, Warren, Pickering, & Schwartz, 1994; Schnall et al., 1990; Theorell, Karasek, & Eneroth, 1990), high blood pressure and cholesterol (Kawakami & Haratani, 1999), cardiovascular disease (Theorell & Karasek, 1998), myocardial infarction (Yoshimasu, 2001), and cardiovascular mortality risk (e.g. Kivimäki et al., 2002). Other than the aforementioned extensive investigations of cardiovascular diseases and associated conditions within the paradigm of the DCS model, very few other ailments have been investigated in a similar context, yet some evidence is

available on an association between DCS and musculoskeletal symptoms (e.g. Skov, Borg, & Orhede, 1996).

Alongside the association with negative physiological outcomes, the DCS model (in particular, high demand) has been found to play a predictive role in a number of psychological health outcomes, such as increased risk of psychiatric disorder (Stansfeld et al., 1999), depression (Stansfeld et al., 1998b; Tsutsumi, Kayaba, Theorell, & Siegrist, 2001b), anxiety (Cropley et al., 1999; Evans & Steptoe, 2002; Perrewé, 1986), psychological distress (Bourbonnais, Brisson, Moisan, & Vézina, 1996; Yeung & So-kum Tang, 2001), and poor mental health status (Yang, Ho, Su, & Yang, 1997).

3.2.1.5 Gender differences

In the literature on gender differences, there is a wide consensus that it is largely undecided whether job demand effects on psychological stress are gender-based (Vermeulen & Mustard, 2000; Muhonen & Torkelson, 2003). In support of this contention, a study on the main and interactive effects of the DCS model in a sample of Swedish male and female telecom workers has found support for the main effect hypothesis for both genders and no interactions were observed (Muhonen & Torkelson, 2003). The authors also demonstrated that, while female wellbeing is predicted by demands only, male health is predicted by both demands and low social support (Muhonen & Torkelson, 2003). Similarly, van der Doef and Maes (1999) suggest that, in terms of psychological wellbeing according to the DCS model, samples should include male subjects in order for the results to be supportive of the model.

Furthermore, a study of the correlations (main effects) between demands, control, and support, on the one hand, and cardiovascular health, on the other hand, in a Belgian sample of 16,329 males and 5,090 females found that job demands are positively associated with blood pressure and cholesterol in males and with hypertension in females (Pelffene, de Backer, Mak, de Smet, & Komitzer, 2002b). Finally, in their study of nurses providing palliative care,

Fillion et al. (2007) pointed out that the interaction hypothesis was rarely supported in female samples.

3.2.1.6 Summary: The demand-control-support (DCS) model

In sum, the DCS model is a frequently used model to address the association between occupational environment and employee wellbeing (Bosma et al., 1998). Within this model, the strain and the buffer hypotheses seek to delineate how each of the DCS variables contributes to the entirety of health outcomes. However, while the strain hypothesis (i.e. high demand, low control, low support) is well established in its predictions of undesirable health outcomes, the buffer hypothesis (i.e. the moderating effect/s of control and/or social support) is not. The model has also been criticised for its reliance on self-report measures, cross-sectional study design, and the lack of an account of modern working environment characteristics, such as job insecurity (Calnan et al., 2004).

However, as it is difficult to include all job stressors in a single investigation related to health outcomes, it is important to select those conditions that will provide the best opportunity to identify these relationships. The DCS model (Karasek & Theorell, 1990) is appropriate for the current investigation for several reasons. Empirically, the stress-related working conditions represented in the DCS have been found to be strong predictors of a range of stress-related outcomes at work, including health and satisfaction (de Lange et al., 2004). This has resulted in the widespread use of this model and consistent support for the additive effects of demands, control and support (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010). Large-scale reviews of the DCS model (de Lange et al., 2003; Harvey, et al., 2017; Häusser et al., 2010; van der Doef & Maes, 1999) have provided strong support for the additive effects of the three components on employee wellbeing outcomes. In relation to the study context, the DCS conditions are relevant to the needs and circumstances of humanitarian personal, particularly since research has increasingly shown lack of support, increased bureaucracy, and heavy workload as psychosocial conditions experienced by humanitarian workers (Lopes Cardozo et al., 2013; Thomas, 2008).

3.2.2 The effort-reward imbalance (ERI) model

Another approach to work stress that has been becoming increasingly popular in the field of occupational psychology was developed by Siegrist (1996), a medical sociologist. This interactional approach is called the effort-reward model (ERI) and focuses on efforts and rewards of work, rather than on demands and controls. The fundamental aspect of the model is social reciprocity, i.e. a constant equilibrium between efforts and rewards (Siegrist, 1996). According to the ERI model, strain is not simply a result of an employee effort, such as the workload or job demands, but is rather the perceived imbalance between what is expected of an employee (effort) and the reward they receive, such as, for example, money, esteem, and career opportunities. However, the concept of reward does not refer only to a material form of remuneration, but also has social and symbolic aspects, such as recognition and meaning assigned to the effort, respectively. The ERI model determines the level of perceived employee distress as a result of effort and reward imbalance and it is this imbalance that, according to the model, can lead to negative emotions and strain.

3.2.2.1 Model overview

The ERI model cannot be discussed without prior mention of social exchange, within which the foundations of the model can be found. The founding fathers of social exchange – namely, Homans (1958), March and Simon (1958), Gouldner (1960), and Blau (1964) – have investigated the concept from a dynamic view point that included several disciplines, ranging from psychology to economics and all having common basic notions that culminated in one theory. The concepts of reciprocity and social exchange theory have been commonly implemented and have resulted in an improvement of the current understanding of the occupational relationship (Shore & Coyle-Shapiro, 2003).

According to the theory of social exchange, social behaviour is an exchange of tangible and intangible goods and resources where individuals balance their relationships by means of controlling both the value and the quantity of exchanged resources (Homans, 1958). This exchange has also been described as

an equilibrium between inducements and contributions, which, in the occupational realm, translates to a balance between what the company offers (inducements) and what the employee offers in return (contributions) (March & Simon, 1958). The foundations of this concept are rooted within the need to balance exchanges (Gouldner, 1960), as feelings of indebtedness drive this need or obligation to reciprocate, and this reciprocation between two parties is thus termed reciprocity (Coyle-Shapiro & Conway, 2004). Social exchange has been characterised by several components, such as “obligations, trust, interpersonal attachment, or commitment to specific exchange partners” (Emerson, 1981, p. 35). This is in part because the concept of reciprocity largely relies on trust within the social exchange relationship to counterbalance the presence of an inherent risk of the actual exchange not always resulting in a returned benefit or reciprocity (Cotterell, Eisenberger, & Speicher, 1992).

The concept of reciprocity is widely present in the occupational sector. Here, employee-organisation relationships are mentioned as an umbrella term used with reference to the range of interactions and interpersonal dynamics between the employee and the organisation, whereby both have expectations that must be reciprocally met (Coyle-Shapiro & Shore, 2007). The unrequited contributions and incentives are the biggest challenges within the employee-organisational relationship, as trust can be breached and reciprocity can become uneven (Shore, Porter, & Zahra, 2004). In turn, this can lead to a friction within the relationship, resulting in negative outcomes for both parties (Shore et al., 2004). This negative aspect of the relationship has been discussed by Taylor (1991) as follows: “[...] negative events appear to mobilise physiological, affective, cognitive, and certain types of social resources to a greater degree than do positive or neutral events” (p. 72). Resonant in this quote is the hypothesised concept that negative events and relationships are a particularly important subject of investigation, as they have an even stronger effect on consequences than positive relationships (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). This has been speculated to be because of the recurring and enduring set of negative feelings, judgements, intentions, and behaviours that characterise negative relationships that, per se, have more lasting consequences (Labianca & Brass, 2006).

As a theoretical model developed by Siegrist and Peter (1996) and characterised by mutual cooperation between an employee and an organisation whereby an undertaken action is accompanied by the expectation that it will be reciprocated by a reward, the ERI model is founded upon the concepts of the social exchange theory (Siegrist, 2000) (see Figure 2). It is safe to assume that the concept of reciprocity within the ERI model is void if the investments are either not returned or reciprocated by rewards that are lower in value than expected. This undesirable outcome leads individuals to experience a variety of negative emotions, such as anxiety, stress, or depression (Siegrist & Theorell, 2006) (see Figure 2). However, in case of a balance between an efforts of an employee and the rewards offered to them in return by the organisation, the outcome is seen as positive with positive consequences and emotions, including happiness, feelings of wellbeing, or satisfaction, all of which are beneficial to employee health and wellbeing (Siegrist, 1996) (see Figure 2). When the concept of reciprocity is juxtaposed onto the ERI model, whereby the effort variable is the nominator and the reward variable is the denominator, the equilibrium between the costs and gains experienced at work can be viewed as a ratio, and thus can be measured numerically. Therefore, this equation can be used to measure or calculate cut-off points, whereby any value above 1.0 refers to a desirable cost-gain situation (reward exceeds or equals effort), while a value below 1.0 (effort exceeds reward) indicates the opposite – namely, a risky work situation with undesirable outcomes (Peter et al., 1998a).

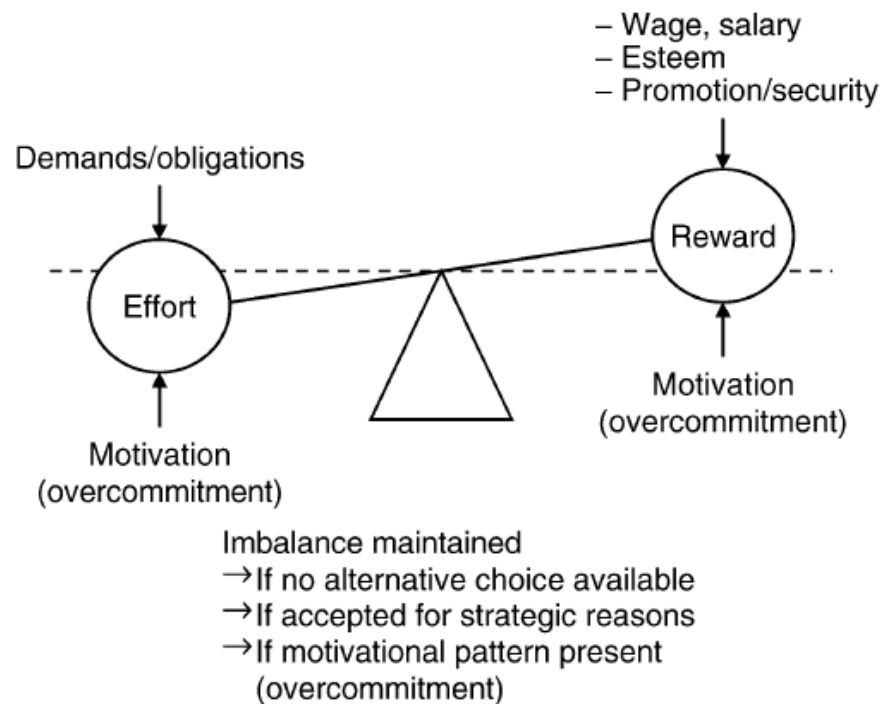


Figure 2. The efforts-reward imbalance model (Siegrist, 1996, adapted by Cox & Griffiths, 2010, p.31)

Depending on the perspective, effort within the ERI framework is differentiated into two categories: intrinsic and extrinsic. The former refers to the extent to which an employee is motivated and feels the need for control, while the latter is used to describe the more objective job demands. To refer to intrinsic effort, the term “over-commitment”, defined as “[...] set of attitudes, behaviours and emotions reflecting excessive striving, in combination with an underlying motivation to seek esteem and approval” (Siegrist, 2001, p. 55), has been used.

Over-commitment has been speculated to work in two ways and have, accordingly, direct and indirect effects. Firstly, with regard to direct effects of over-commitment, employees who are over-committed – as compared to their less committed colleagues – are at a higher risk of experiencing dissatisfaction and a lack of appreciation. Secondly, with regard to indirect effects of over-commitment, the negative consequences of a lack of equilibrium between effort and reward are assumed to have a much more dramatic impact on over-committed employees than on those who are not as committed (Siegrist, 1996). Siegrist (1996) also speculates that an over-committed employee will be

considerably less flexible in their response to a high effort and low reward situation, and thus experience more strain and stress. Over-committed employees will therefore be seen as more prone to disease than their less committed counterparts in the same situation. Overall, over-commitment has been mentioned in the literature in the form of support for the main effects hypothesis of over-commitment, whereby over-committed individuals report more frequent and severe physical and psychological health symptoms (van Vegchel, de Jonge, Bosma, & Schaufeli, 2005). On the other hand, extrinsic effort and rewards have been reported to depend on the occupational environment or situation (van Vegchel et al., 2005).

As noted in Section 3.2.2, rewards can include both material remuneration and have social or symbolic aspects. Overall, reward has been conceptualised to encompass three variables: (1) financial gains; (2) esteem (i.e. recognition and support from colleagues/superiors); and (3) status control (i.e. job insecurity or lack of promotion prospects) (Siegrist, 1996). The three forms of reward function in a similar way: while both rewards and recognition have been found to be negatively associated with perceptions of stress (AbuAlRub & Al-Zaru, 2008; Gelsema, van der Doef, Maes, Akerboom, & Verhoeven, 2005), recognition has also been found to be negatively associated with emotional exhaustion (Macky & Boxall, 2008).

Contingent on the reciprocity within the employee-organisation relationship, the ERI model is rooted within three major hypotheses (see Figure 2). These are (1) *the extrinsic ERI hypothesis*, according to which high efforts in combination with low rewards increase the risk of poor health; (2) *the intrinsic over-commitment hypothesis* that states that a high level of over-commitment may increase the risk of poorer health; and (3) *the interaction hypothesis*, whereby employees reporting an extrinsic ERI and a high level of over-commitment have an even higher risk of poor health (van Vegchel et al., 2005, p. 1119).

Among these three hypotheses, it is the extrinsic ERI hypothesis that is well supported and most frequently referred to in the literature, whereas two other hypotheses have yielded inconsistent results (van Vegchel et al., 2005). In this

context, what has been largely understudied is the moderating effect of over-commitment on the association between (extrinsic) ERI and employee health outcomes. Overall, Siegrist (2012, p. 2) lists the following three conditions under which an imbalance between high effort and low reward is maintained:

1. Unclear work contracts and very few options to choose from regarding alternate employment options (e.g. because of low level of skill, lack of mobility, precarious labour market);
2. Employee “tolerance” of current unfavourable conditions of imbalance for future returns (this strategy is mainly chosen to improve future work prospects by anticipatory investments);
3. Employees who experience over-commitment or behavioural patterns of handling demands characterised by excessive commitment are more likely to experience “high cost/low gain” than their counterparts who are less committed. Over-commitment is suspected to lead to a perceptual distortion that hinders male and female workers from fairly estimating cost-gain relations. In other words, these men and women suffer from inappropriate perceptions of demands and of their own coping resources, both of which result in more stress and undesired health outcomes.

Overall, there is evidence suggestive of a co-occurrence of high effort and low reward indicators being a consistent predictor of employee health and wellbeing, while its association with variables such as job satisfaction and termination intention remains less clear. Furthermore, some evidence is available that points to the correlation between over-commitment and employee wellbeing, and it is surprising that very little research has been conducted on this association thus far.

3.2.2.2 Validity and theoretical criticisms

The three aforementioned hypotheses (see section 3.2.2.1) enables measurement and modelling of the experiences or perceptions of employees through the self-

reporting nature of the ERI model (see, e.g., de Jonge, van der Linden, Schaufeli, Peter, & Siegrist, 2008; Rantanen, Feldt, Hyvonen, Kinnunen, & Mäkikangas, 2012; Siegrist et al., 2004). This self-reporting questionnaire as a means of measuring associations has resulted in the ERI model becoming a standardised self-report measure (Siegrist, 2012). Of note, the theory does appear to directly relate to and underpin the concept of measurement (see, e.g., Bohle, Quinlan, McNamara, Pitts, & Willaby, 2015; Hoven, Wahrendorf, & Siegrist, 2015; Formazin et al., 2014; Siegrist et al., 2014). Considerable literature reports investigations on ERI and mental health whereby the role of model is investigated in the occupational context and its impact on the psychological and psychosocial aspects of employee health and wellbeing (see, e.g., Tsutsumi et al., 2008, 2009; Tsutsumi, Ishitake, Peter, Siegrist, & Matoba, 2001a; Weyers, Peter, Boggild, Jeppesen, & Siegrist, 2006; Zurlo, Pes, & Siegrist, 2010).

The ERI model has served as an example measure used as a means to understand various mental health or psychosocial health outcomes in several occupational contexts (see, e.g., Li, Yang, Cheng, Siegrist, & Cho, 2005b; Magnavita, 2006; Preckel, Meinel, Kudielka, Haug, & Fisher, 2007; Shimazu & de Jonge, 2009; Siegrist, Wege, Puhhofer, & Wahrendorf, 2009; Silva & Barreto, 2010). The model's applicability also lies within its capacity to explain why numerous physical or psychological disorders are observed under different circumstances (see, e.g., Backé, Seidler, Latza, Rossnagel, & Schumann, 2012; Chandola, Heraclides, & Kumari, 2010; Eller et al., 2009; Marmot, Siegrist, Theorell & Feeney, 2006; Marmot, Theorell, & Siegrist, 2002; Nieuwenhuijsen, Bruinvels, & Frings-Dresen, 2010). All these studies are examples of the wide applicability of the ERI model (Montano, Li & Siegrist, 2016; Siegrist, 2002, 2005; Tsutsumi & Kawakami, 2004; van Vegchel et al., 2005).

In an extensive review of 45 studies on the ERI model conducted between 1986 and 2003, van Vegchel et al. (2005) concludes that the extrinsic effort hypothesis has received the most attention and is well-supported, while the results regarding over-commitment remain inconsistent. Furthermore, the authors highlight that the moderating nature of over-commitment in the relationship between (extrinsic) ERI and health has been largely ignored (van Vegchel et al., 2005).

The very concept of over-commitment and its role in the ERI model has also been scrutinised, partially because the concept was originally considered part of the effort (intrinsic) component, and yet later studies have treated it as an independent unit (Siegrist, 2002). Another criticism is that over-commitment has been viewed as a concept with differing roles within the literature (van Vegchel et al., 2005). Said differently, while there are examples that consider over-commitment as a moderator of the relationship between ERI and health (e.g. de Jonge et al., 2000a), others studies suggest that it may have a direct effect on health, regardless of reward. Furthermore, over-commitment has been discussed as either having a possible direct influence on or being an outcome of the ERI (Appels, Siegrist, & de Vos, 1997).

Furthermore, in order to minimise the associated method variance, it has been suggested that the ERI model should be used without the concept of intrinsic effort (Ostry, Kelly, Demers, Mustard, & Hertzman, 2003). Along the same lines, according to van Vegchel et al. (2005), the effort and reward variables are composed of an array of items with different dimensions, and this is seen as another potential weakness of the ERI model. This point highlights a rather global approach to measurement may lead to overlooking the significance of specific types of efforts and rewards that are specific to certain occupational realms.

Overall, the meaning of “imbalance” within the ERI model has been widely accepted to mean the deviation from the equilibrium between effort and reward. As such, the numerical ratio between the two has also been widely used as a means to measure a lack of reciprocity and, consequently, its effect on employee health and wellbeing. However, although there is substantial evidence from epidemiological studies that have identified the ERI ratio (i.e. reward/effort) as an effective method to determine disease risk within populations (Peter et al., 1998a; Kivimäki, Vahtera, Elovainio, Virtanen, & Siegrist, 2007), some authors do question the operationalisation of the relationship between effort and reward as a ratio (Prekel, Meinel, Kuehler, Haug, & Fischer, 2007; van Vegchel, de Jonge, & Landsbergis, 2005). Others claim that additive models or multiplicative

terms (i.e. reward \times effort) are much more powerful in detecting significant effects (Prekel et al., 2007; van Vegchel et al., 2005).

Of particular interest has been the critique that a ratio may not be sufficiently suitable as the best representation of the work environment within studies designed to assess model fit in relation to a subset of the community (nurses, police officers, etc.). The reasoning behind this is that the proposed cut-off levels may not be appropriate for all as disease risk classifications (Lehr, Koch, & Hillert, 2010). Furthermore, they claim that a discrepancy between the mathematical operationalisation of balance and what an employee perceives as balance may have been made. In attempts to address this issue, other researchers have implemented a distribution-based method to operationalise ERI and to determine cut-offs, whereby they have distributed data into tertiles, in which the upper tertiles form a high-risk group whereas the lower tertiles form low-risk groups (e.g. Pikhart et al., 2004). Tertiles may improve the observation of dose-response-effects of the ratio on health outcomes compared to a dichotomous split of the sample. However, this method has a limitation that it may lead to paradox situations (Lehr et al., 2010). For example, a tertile-based cut-off used in a high-risk sample (in which many have severe stress), may have many other participants who also experience stress within the low-risk group. This highlights the potential of low sensitivity of the tertile-based cut-off method. One way to address some of the issues could be to first examine the independent contributions of the effort and reward variables prior to investigating interactions. This could help provide additional information about the importance of imbalance, especially when more specific samples are used.

Another area for improvement of the ERI model is the reward component. Very few previous studies focused on the model's different reward dimensions on the varying impacts on employee strains (e.g. van Vegchel et al., 2002). Therefore, additional improvement to the model would be an expansion of examined target variables. Thus far, research has predominantly focused on the association between the extrinsic ERI hypothesis and physical or psychological health (see Tsutsumi & Kawakami, 2004; van Vegchel, de Jonge, Bosma et al., 2005 for reviews), and, considering that the results of previous studies are fairly

inconsistent (Kouvonen et al., 2005), further research on the associations between ERI and behavioural outcomes, such as alcohol consumption or addiction, is warranted.

The recommendations outlined above serve as suggestions that may help strengthen or broaden the general knowledge of occupational stress and, more specifically, the ERI model. The present investigation will focus on the ERI model and will examine its role as well as to assess the relative importance of differential components of the model (effort/reward imbalance and over-commitment), to predict health and behavioural indicators of employee strain in a previously understudied occupational group (humanitarian workers).

3.2.2.4 Relationship to physiological and psychological health outcomes

The ERI model has mostly been studied in association with physiological health outcomes, such as cardiovascular disease and related disorders (Kivimäki & Siegrist, 2016; Siegrist, 1996; Bosma et al., 1998). For instance, a prospective 6.5-year cohort study of 416 male blue-collar workers without symptoms of coronary heart disease has shown that the combination of low control and high effort (either intrinsic or extrinsic) independently predicts acute myocardial infarction and/or sudden cardiac death (Siegrist, 1996). Another prospective study conducted on a cohort of 812 males (baseline measurements controlling for age, gender, occupational group, and biological/behavioural risk factors) reports that the combination of high effort and low rewards in the form of low compensation, lack of approval, and poor career prospects all significantly predict cardiovascular mortality rates (Kivimäki et al., 2002).

Additionally, baseline measures of ERI have been found to predict increased incidence of coronary heart disease and both fatal and non-fatal myocardial infarction. It has also been demonstrated that a single-item measure of intrinsic effort (“Has your work often stayed with you so that you are thinking about it after work hours?”) could suffice to prognosticate undesirable cardiac health outcomes (Kuper, Singh-Manoux, Siegrist, & Marmot, 2002). These findings were part of the 11-year follow-up Whitehall II study conducted on 6,895 male

and 3,213 female civil servants aged between 33 and 55 years old. The same sample was used for another investigation, in which a mean follow-up of 5.3 years was conducted, to find that ERI has the power to predict angina and doctor-diagnosed ischemia (after controlling for occupational factors, negative affectivity, and CHD risk factors, such as cholesterol and hypertension) (Bosma et al., 1998).

Furthermore, previous research on middle managers based on the analysis of cross-sectional data has pointed to an association between high effort and low reward and hypertension (Peter & Siegrist, 1997; Siegrist, 1996) and cholesterol (Peter & Siegrist, 1997), with the effect being particularly strong in men (Peter, Alfredsson, Knutsson, Siegrist, & Westerholm, 1998a). The correlation between musculoskeletal conditions and ERI has also been investigated (after adjustments for age, gender, socioeconomic status, shift work), where an association between over-commitment and increased musculoskeletal pain was established (Joksimovic et al., 2002a). Similarly, high intrinsic effort in employees has been found to be associated with musculoskeletal problems, such as pain and/or stiffness in the neck, shoulders, upper and lower arm, wrists, and fingers, as well as upper and lower back (Tsutsumi, Ishitaki, Peter, Siegrist, & Matoba, 2001a). Finally, the workers within the high effort/high salary category has been found to be at a higher risk of reporting pain in the neck/shoulders, middle and lower back, and arms or legs (van Vegchel, de Jonge, Bakker, & Schaufeli, 2002).

While other health and wellbeing indicators are much more rarely reported in the literature, several other associations have been found as well. Specifically, minor health complaints, such as recently experienced headaches, have been found to be more frequent among employees within the high effort/high salary, high effort/low esteem, and high effort/low job security categories (van Vegchel et al., 2002). Furthermore, ERI has been reported to be significantly associated with gastrointestinal symptoms and self-reported general health (Peter et al., 1998b).

In a cohort study taken from the Whitehall II sample, Kuper et al. (2002) finds ERI to predict reduced (self-reported) physical functioning (independently of age, gender, and occupational grade). An increased risk of poor self-rated health has also been found in a study on Dutch nurses within the high effort/low reward category, and the observed effects tend to be more severe within the participants who reported high levels of over-commitment (Weyers et al., 2006).

While extensive research has been conducted on correlations between ERI and physical health and wellbeing, with considerably less attention paid to the correlations of ERI with psychological conditions, several studies have also fairly consistently demonstrated ERI's predictive power of psychological stress. For instance, van Vegchel et al. (2002) reported that employees at risk of reporting mental exhaustion were more than 7 times more likely to do so under conditions of high effort/low salary than for low effort/high salary. Among those employees, those in the high effort/low esteem category significantly more frequently reported exhaustion. In addition, sleep disturbance and self-reported fatigue have been found to be significantly associated with occupational conditions of high effort and low reward (Peter et al., 1998).

Furthermore, as measured by the SF-36 Health Survey in a cohort study of 10,308 employees taken from Whitehall II, Kuper et al. (2002) observe an association between ERI and poor mental functioning. Furthermore, within that same cohort, possible associations have been investigated between ERI and the General Health Questionnaire (GHQ) scores, and a significant relationship at follow-up (controlling for age, employment grade, and baseline GHQ scores) has been observed (Stansfeld et al., 1998b). In addition, in their investigation of 204 German nurses, Bakker, Killmer, Siegrist, and Schaufeli (2000) found that those nurses who reported a high level of imbalance also reported higher scores on 2 out of 3 core dimensions of burnout (emotional exhaustion and depersonalisation). In addition, emotional exhaustion and reduced personal accomplishment (burnout) were especially high among the participants who reported high ERI and intrinsic effort, based on significant interaction effects. Several other studies have also investigated associations of ERI and depression, with the results suggesting that a high ERI tends to predict the condition (Pikhart

et al., 2004, cited in Vearing & Mak, 2007). Also, a study on Japanese factory workers has found a link between depressive symptoms and ERI (including over-commitment) (Tsutsumi et al., 2001b). Rugulies, Aust & Madsen (2016) state that onset of depressive disorders is determined by various interacting factors including biological, psychological and social factors. Their systematic review of prospective cohort studies on ERI and depressive disorders suggests that ERI may be one of these factors.

3.2.2.5 Gender differences

While there is infrequent research that specifically focuses on the examination of gender-specific relationships between the ERI model and health and wellbeing outcomes, some researchers argue that the model may have a stronger predictive power in female subjects than the DCS model (Tsutsumi & Kawakami, 2004). Their rationale for this is that female employees are more likely to emphasise the balance/imbalance between “costs” and “gains,” rather than their need for job control.

3.2.2.6 Summary: The effort-reward imbalance (ERI) model

In sum, the ERI model (Siegrist, 1996) is rooted within the theory that focuses on the equilibrium between perceived effort and job rewards and the suggestion that any deviation thereof will result in negative health outcomes on part of employees. This model was proposed as an alternative to earlier job stress models, including the DCS model. The ERI model encompasses a degree of measure of individual differences, and by doing so, is capable of addressing some limitations of the DCS model (Calnan et al., 2000). For example, the ERI framework theory proposers a distinction between an economic transaction and a social transaction. As the ERI model focuses on the social exchange process at work, it can address some of the criticisms of the work-oriented job stress theories. It does this by encompassing socio-emotional processes within the workplace by including individual differences in the form of a cognitive-motivational pattern (termed ‘over-commitment’). The separation between economic and social transactions provides the theoretical grounds for examining

the differential relationships between psychosocial working conditions and different health or behavioural measures in the current investigation.

Furthermore, it has been speculated that the ERI model might be more suitable than the DCS model to predict stress in nursing and other service professions (Marmot et al., 2006; Calnan et al., 2004; Tsutsumi & Kawakami, 2004). However, as specified in Section 3.2.2.2, the ERI model is not devoid of limitations. This is largely because of the bifurcation of the use of over-commitment, or intrinsic effort, which was originally used as a part of the effort component, but eventually developed into an independent concept. This has resulted in inconsistent results reported for the ERI model, which is otherwise widely used and well supported.

With regard to negative health-related outcomes, while most ERI studies have been published in the context of cardiovascular disease (see Siegrist, 1996; Bosma et al., 1998; Kivimäki et al., 2002; Kuper et al., 2002) and associated risk factors (e.g. Siegrist, 1996; Peter & Siegrist, 1997; Peter et al., 1998a), some evidence is available that links the ERI model with musculoskeletal symptoms (e.g. Tsutsumi et al., 2001a; Joksimovic et al., 2002b; van Vegchel et al., 2002), headaches (van Vegchel et al., 2002), gastrointestinal symptoms (Peter, Geißler, & Siegrist, 1998b), reduced physical functioning (Kuper et al., 2002), and poor self-rated general health (Weyers et al., 2006).

Furthermore, despite a suggestion that job stress models may not be as suitable predictors of depression and anxiety as for other physical or psychological health outcomes (Calnan et al., 2004), strong associations have also been found between ERI and psychological outcomes, including mental exhaustion (van Vegchel et al., 2002), sleep disturbance and self-reported fatigue (Peter et al., 1998a), poor mental functioning (Kuper et al., 2002), psychological distress (Stansfeld et al., 1998b), burnout (Bakker et al., 2000), and depression (Tsutsumi et al., 2001b; Pikart et al., 2004). The considerable empirical support that has been obtained for the ERI model (van Vegchel et al., 2005), made it a relevant theoretical model to use in this investigation to help explain psychological morbidities in humanitarian workers. ERI has also been linked to heavy alcohol

consumption, a behavioural health outcome investigated herein (Puls, Wienold, & Blank, 1998, cited in Siegrist & Rödel, 2006).

There are several reasons why the ERI model was chosen as one of the theoretical models used in the present investigation. Firstly, two out of the three reward components directly address and incorporate the changing dynamics of the modern occupational realm, including prospects for advancement, job security, and salary or wage levels (Godin, Kittel, Coppeiters, & Siegrist, 2005). Secondly, the applicability of the ERI model is particularly convenient in that it allows for investigations of occupations that involve person-based interactions (Calnan et al., 2004; Marmot, Siegrist, Theorell, & Feeney, 2006). Finally, given that it is composed of both extrinsic (perceived demands and perceived rewards) and intrinsic (coping with demands, over-commitment as a motivational risk element) factors, the ERI model enables for the analysis and measurement of both the employee perspective and the occupational environment (perceived situational/contextual characteristics).

3.2.3 Comparing and combining the ERI and DCS models

As specified in Section 3.2.1.3, the DCS model characteristic of job strain approach does not make a distinction between individual differences in the perception of stress (Calnan, Wainwright, & Almond, 2000). By contrast, the ERI model incorporates intrinsic issues via “need for control” (Matschinger, Siegrist, Siegrist, & Dittmann, 1986, cited in Bosma et al., 1998; Vearing & Mak, 2007) and over-commitment (de Jonge et al., 2000a; Siegrist, 1996; van Vegchel et al., 2005). It is this inclusion of individual characteristics that represents subjectivism of the meaning of work experience in the work stress process (Calnan et al., 2000). The ERI model also considers labour market aspects and the work role from the perspective of a larger social scale (Calnan et al., 2000; Marmot et al., 1999b; Peter, Siegrist, Hallqvist, Reuterwall, & Theorell, 2002; Siegrist, 1996). It also focuses on a wider sense of fairness and reciprocity within social exchange, while the DCS model analyses immediate work content while implying that control within work tasks is imperative to lower job strain (Marmot et al., 2006; Siegrist, 1996). Tsutsumi and Kawakami

(2004) highlight the differences between the ERI and DCS models, mentioning that the two have their focus on different occupational dimensions. As the adverse health outcomes are independent of each other, they therefore suggest that the two models are possibly complementary. However, there are some areas where the two models are similar, one of which is the fact that time pressure and workload are central to both models. Furthermore, there is some overlap with respect to the dimension of extrinsic effort (job demands) and esteem reward (social support at work).

Calnan et al. (2000) also suggest that a combination of the two models may be able to explain a greater amount of variance. After examining the two models separately and combined, it has been found that, while the two models independently predicted mental stress and job satisfaction, the paradigms combining different dimensions of the two models predicted both outcomes most strongly (Calnan et al., 2000). It has also been found that both models predict the most undesirable working conditions among low-status manual service or blue-collar occupations (Karasek & Theorell, 1990; Siegrist, 1996; Theorell & Karasek, 1996). Furthermore, a cross-sectional survey of Dutch men and women found associations between the two models and wellbeing with findings that indicated independent, cumulative effects of both models on wellbeing without significant gender or age differences (de Jonge et al., 2000a).

Furthermore, evidence is available that the two models are associated with different occupational conditions (Tsutsumi et al., 2001b). The results of a study examining job stress and depression showed that job strain is most prevalent among assembly line workers, while those working on indirect, supportive tasks (and targets for downsizing) reported higher ERI.

In an examination of the ability of the two models to predict cardiovascular disease mortality risk, job strain has been found to be associated with a 2.2-fold increased mortality risk and, at the same time, the risk ratio for ERI amounted to 2.4 (Kivimäki et al., 2002). In another study, the greatest mortality risk for acute myocardial infarction resulted from combining information from the two models

by defining groups characterised by simultaneous exposure to effort-reward imbalance and job strain employees (Peter et al., 2002).

Furthermore, the predictive validity of both models of self-reported chronic disease presence and health status were investigated in a sample of sawmill workers. In this study, it was found that, while self-reported health status was predicted by both models, chronic disease was predicted only by ERI, and the combination of the two models was the best predictor of both outcomes (Ostry et al., 2003). ERI predicted a marginally better validity when modelled with intrinsic effort, rather than with extrinsic effort alone.

In a different study illustrating the significance of using situation-specific models, a sample of palliative nurses has been examined via an integrated job stress model (DCS and ERI combined) and hierarchical regression models (DCS, ERI, and specific palliative care stressors and resources). The best job satisfaction predictors were job demand, effort, reward, and people-oriented culture (Fillion et al., 2007).

Furthermore, in a comparative study of two occupational groups – namely, managers/professionals and manual workers – Rydstedt, Devereaux, and Sverke (2007) compare the predictive validity of the DCS and ERI models for mental strain and determine whether the two models and associated levels of mental strain differed. The authors report that small, but significant, proportions of variance in mental strain for both occupational groups could be explained by both models. Their results also suggest that a combination of both models may increase the proportion of variance in mental strain explained by either of the models alone. Furthermore, another study reports that negative health outcomes are frequently more strongly associated with exposures to a combination of stressors (such as working hours, noise, and exposure to physical stressors) assessed in terms of the effects of a composite score (Smith, McNamara, & Wellens, 2004).

3.2.3.1 Summary: Combined effects of the DCS and ERI models

Taken together, the results of a number of studies on the combined predictive power of the ERI and DCS models indicate that both models have independent power to predict cardiovascular ailments (e.g. Bosma et al., 1998; Kivimäki et al., 2002) and poor health status (e.g. Stansfeld et al., 1998a). However, combining the two models results in an explanation of the most variance in health outcomes.

Considering the proposed complementarity of the two models, as well as their wide and strong support as models in the investigations of occupational effects on health, there has been a need for additional prospective studies to investigate their predictive power in the relationship between occupational environments and employee wellbeing via a combination that would hopefully capture a wider spectrum of job stressors (de Jonge et al., 2000a; Marmot et al., 2006; Peter et al., 2002; Siegrist & Marmot, 2004). While many studies using a combination of the two models have reported an improved predictive power (Bosma et al., 1998; de Jonge et al., 2000a; Ostry et al., 2003), a cross-sectional investigation suggests that, compared to the DCS model, the ERI model consistently relates to self-reported measures on wellbeing (Calnan et al., 2004).

Stress in different occupations may be marked by different types of working conditions (Marmot et al., 2006; Sparks & Cooper, 1999), which is why researchers have proposed the idea that, in their explanations of work stress in different employment conditions, the two models may associate with specific contributions (Marmot et al., 2006). In a similar vein, van Vegchel et al. (2005) also suggest that the ERI model has primarily considered human service sector employees and additional studies that incorporate different occupations are warranted in order to generalise the utility of the findings.

Conclusion

Occupational health researchers have tried to gain more understanding into the relationship between work characteristics and employee health with the help of

job stress models. They attempt to reduce the complex interplay between environment and person into comprehensive and parsimonious models and constructs in order to explain job-related health. Although other models exist, two of the most important models that have recently guided occupational health research are the ERI model (Siegrist, 1996; Siegrist, Siegrist, & Weber, 1986) and the DCS model (Karasek, 1979; Theorell & Karasek, 1996).

According to Bliese, Edwards, and Sonnentag (2017) influential theories are those which have the following key elements: (a) are work specific, such as role overload, (b) can be readily measured and (c) are relevant to white collar and service-related populations (p. 398). As the ERI and DCS models demonstrate these key elements, and therefore hold possible relevance to the humanitarian literature, they are chosen as the theoretical frameworks for this thesis.

Studies have attempted to compare the performance of the DCS model with the ERI model in predicting strain outcomes (Bosma, Peter, Siegrist, & Marmot, 1998; Dai, Collins, Yu & Fu, 2008). Initial findings have highlighted the potential advantages in devising a hybrid job stress model that combines a wider range of personal and environmental factors to help explain differences in employee strain outcomes (Calnan, Wainwright, & Almond, 2000). The more transactional nature of the ERI also has the potential to complement the more static and objective nature of the DCS model.

It is of theoretical and practical interest to examine whether the two models explain strain outcomes in a comparable manner. As the two models emphasise different elements of the psychosocial work environment in different ways, there is considerable promise in studying their combined effects (Karasek et al, 1998). As yet, few comparisons have been made to examine these issues, and none in the humanitarian context.

CHAPTER 4. THE RELATIONSHIP OF ERI TO BURNOUT AND HEAVY ALCOHOL CONSUMPTION (STUDY 1)

Summary

Previous research has demonstrated that negative health outcomes – such as alcohol consumption and burnout – have potential detrimental implications for employee work outcomes and are associated with exposure to work stressors. In one cross sectional survey, the main purpose of Study 1 reported in this chapter was to explore the prevalence of burnout (part 1) and heavy drinking (part 2) and their association with stress-related working conditions – defined in terms of effort-reward imbalance (ERI) – in a large sample of humanitarian aid workers operating across four continents. In part 1, the aim was to investigate the correlates of the ERI model and the following three burnout dimensions (Maslach Burnout Inventory-Human Services Survey): emotional exhaustion (EE), depersonalisation (DP), and personal accomplishment (PA). Part 2 investigated the correlates of the effort–reward imbalance (ERI) model and heavy drinking measured by the Audit-C.

In part 1 of Study 1, descriptive statistics were performed on the cross-sectional survey data ($N = 1,980$) to profile ERI and burnout, and Pearson's χ^2 tests were used to characterise associated socio- and occupational-demographic factors. The associations between ERI and burnout were established using binary logistic regression to generate odds ratios and 95% confidence intervals adjusted for potential confounding variables. According to the results, the prevalence rate of high emotional exhaustion was 36% for women and 27% for men; that of high depersonalisation was 9% and 10%; and that of low personal achievement 47% and 31% for women and men, respectively. Intermediate and high ERI was associated with significantly increased odds of high emotional exhaustion, with mixed findings for depersonalisation and personal achievement. These results led to the conclusion that the ERI model is a useful framework for investigating occupational correlates of burnout.

In Part 2 of Study 1, logistic regression analyses were conducted separately for men and women (with different cut-off points to identify heavy drinking) to investigate the relationship between ERI and the risk of heavy alcohol consumption while controlling for several of sociodemographic and occupational variables. The results suggest that the prevalence of heavy alcohol consumption among women (18%) was higher than the corresponding rate for men (10%). These findings support the effort–reward perspective among women only: Intermediate and high ERI in women was associated with a tripling of risk of heavy alcohol consumption. Therefore, it can be concluded that relevant interventions to reduce ERI among female humanitarian aid workers might help to reduce heavy drinking within this population.

Method

4.2.1 Survey

An online (Survey Monkey) cross-sectional survey was administered in 2014. This approach is advantageous for the following three reasons: (1) it is not time-consuming; (2) it allows to estimate the prevalence of the outcomes of interest (in our case, heavy drinking, and burnout); and (3) it allows to assess and work-related and socio-demographic risk factors (see Section 1.4.1-1.4.2 for further information on the design). The design also facilitated the measurement of two health outcomes at the same time and was therefore able to assess the contribution of the ERI model for each of these different outcomes. However, the limitations of a survey design prevented causal relationships being confirmed.

.2.2 Participants and procedure

The participants were expatriate (international) and local (national) employees of a humanitarian organisation that operates in 128 countries, from major capitals to remote and oftentimes dangerous locations. Slightly more than seven per cent of employees were based in Geneva, Switzerland, while all others (87%) were based in the field, assisting the most vulnerable victims. The multilateral,

international organisation at stake is financially supported by governments, foundations, and private donors, and provides assistance to people affected by complex humanitarian disasters or crises (Archer, 2003). More specifically, this organisation faces multiple crises on multiple continents and provides vital assistance to refugees and asylum-seekers, as well as internally displaced and stateless people. The organisation has developed partnerships that range from governments to non-governmental organisations, the private sector, civil society, and refugee communities.

All employees ($N = 9,062$) of the organisation were sent an email inviting them to participate in an online survey. The email detailed the purpose of the survey and assured the participants of anonymity and confidentiality. Participants were provided a description of the study, and an indication of what type of questions were going to be asked. As some questions were of a sensitive nature an appropriate mental health support helpline number and email was provided for participants. Participants were assured that the online survey would not capture information not voluntarily provided such as their IP address. No incentives were offered and the participants had the option to withdraw from the online survey at any time. Ethical approval was granted by Webster Institutional Review Board and the research followed the British Psychological Society's (2014) Code of Human Research Ethics.

4.2.3 Measurement

The following instruments were chosen based on their validity and reliability previously attested across various settings. The measurement instruments overlapped to a large degree in both part one and two of this study, and are presented here, just once, to address any overlap of material.

Independent variables: Effort–reward imbalance. This study used the abbreviated ERI questionnaire (Siegrist, 1996) that has been widely employed in occupational health studies (Bosma et al., 1998; Peter & Siegrist, 1997; Stansfeld et al., 1998a). This questionnaire comprises 16 Likert-scaled items to be scored on a four-point scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *agree*,

4 = *strongly agree*). Effort (three items, $\alpha = .77$) is defined as the demanding aspects of the work environment (e.g. “I have constant time pressure due to a heavy work load”). Reward (seven items, $\alpha = .75$) is operationalised as follows: (a) esteem reward (2 items, $\alpha = .74$; e.g., “I receive the respect I deserve from my superiors”); (b) reward related to promotion prospects (three items, $\alpha = .63$; e.g., “My job promotion prospects are poor”); and (c) job security (two items, $\alpha = .52$; e.g., “I have experienced or I expect to experience an undesirable change in my work situation”). The over-commitment subscale (six items, $\alpha = .81$) measures an exhaustive coping style with the demands of work (e.g. “People close to me say I sacrifice too much for my job”). Responses are summed for each scale and the ERI ratio is calculated to assess the degree of imbalance between high cost and low gain at work using the formula $\text{effort} / (\text{reward} \times \text{correction factor})$. The correction factor compensates for the differing number of items in the two scales (the number of reward items as the numerator divided by the number of effort items as the denominator) – in this study, $3 / 7 = 0.43$. Following a convention in the work-related stress scientific literature (e.g. Kivimäki et al., 2002; Kouvonen et al., 2005), the resultant ERI score was divided into tertiles. A high-risk group (high efforts in relation to rewards) formed the upper tertile and the lowest risk group (reference/baseline) indicated the position of low efforts relative to rewards. The summed over-commitment score was similarly divided into tertiles.

Dependent variables: Alcohol consumption. The Alcohol Use Disorders Identification Test–Consumption (AUDIT-C; Bush et al., 1998) was used to assess alcohol consumption. This brief validated screening tool has been used in several recent studies involving workers in high-stress occupations, such as military personnel (Whybrow et al., 2016), firefighters (Piazza-Gardner et al., 2014), veterinary surgeons (Bartram et al., 2009), and emergency department staff (Nordqvist, Johansson, & Bendtsen, 2004). The measure includes the following three questions ($\alpha = .65$) concerning the frequency and quantity of alcohol consumption: (1) “How often do you have a drink containing alcohol?” (*never* = 0 points; *monthly or less* = 1 point; *2–4 times a month* = 2 points; *2–3 times a week* = 3 points; *4 or more times a week* = 4 points); (2) “How many drinks containing alcohol do you have a on a typical day when you are

drinking?” (1 or 2 = 0 points; 3 or 4 = 1 point; 5 or 6 = 2 points; 7–9 = 3 points; 10 or more = 4 points); and (3) “How often do you have six or more drinks on one occasion?” (never = 0 points; less than monthly = 1 point; monthly = 2 points; weekly = 3 points; daily or almost daily = 4 points). A sum score for the scale was calculated with possible scores ranging from 0 to 12.

For analytical purposes, alcohol consumption was treated as a dichotomous variable with “non-heavy” and “heavy” categories. Dichotomisation was undertaken for the following three reasons: (1) the AUDIT-C instrument was designed to identify at-risk individuals, which is desirable in the context of research that seeks to inform the design of tailored and targeted workplace health promotion interventions; (2) skew and kurtosis scores violated parametric assumptions, thereby hindering the application of hierarchical linear regression; and (3) dichotomisation of AUDIT-C scores is a common practice in the occupational health scientific literature (e.g. Bartram et al., 2009; Dawson, Grant, & Stinson, 2005; Neumann et al., 2012; Nordqvist et al., 2004; Piazza-Gardner et al., 2014; Whybrow et al., 2016) and, therefore, facilitates a comparison of findings from the present study with those conducted in other high-stress occupational groups. Tuunanen, Aalto, and Seppä (2007) recommend that cut-off scores for the identification of heavy consumption should be tailored to the populations under examination; following this precedent (Aalto, Aalto, Alho, Halme, & Seppä, 2009; Dawson et al., 2005; Neumann et al., 2012), scores of 6 or greater in men and of 4 or greater in women identified heavy drinking.

Dependent variables: Burnout. The Maslach Burnout Inventory Human Services Survey (Maslach et al., 1996, MBI-HSS) was used. This survey contains 22 statements which relate to each of the three burnout domains – namely, emotional exhaustion (EE) (nine items, $\alpha = .89$), depersonalisation (DP) (five items, $\alpha = .67$), and personal accomplishment (PA) (eight items, $\alpha = .79$). Respondents were asked to use a seven-point Likert scale to indicate the frequency with which they experience the feeling described by the statement, ranging from 0 = *never* to 6 = *every day*. Summing the applicable items yields the scores for each of the three domains.

Examples of items on the three scales were as follows: EE scale, “Working with people all day is really a strain for me”; DP scale, “I worry that this job is hardening me emotionally”; PA scale, “I feel very energetic”. EE consists of nine items (score range from 0-54); DP of five items (score range from 0-30); and PA of eight items (score range from 0-48). High scores on EE and DP and low scores on PA are indicative of burnout. The MBI manual provides a table of norm scores for each burnout subscale and cut-off points for easy categorisation. Scores are considered to be high if they are in the upper third of the normative distribution, average if they are in the middle third, and low if they are in the lower third. High risk of burnout is typically associated with scores at or above 27, at or above 13, and at or below 31 for the EE, DP, and PA subscales of the Maslach Burnout Inventory (Maslach & Jackson, 1996), respectively. When calculating odds ratio, these cut offs were used to dichotomise each subscale into two groups: the healthy group and the unhealthy (or “at risk”) group. The psychometric properties of the MBI are well established across geographic contexts and multi-national populations (Golembiewski, Boudreau, Goto, & Murai, 1993; Richardsen & Martinussen, 2005; Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Storm & Rothmann, 2003). Permission to administer the MBI was obtained.

Covariates: Demographics. Information was collected on age, gender, marital status, and expatriate (international) or local (national) status, as well as geographical region of current operation. It was deemed appropriate to control for demographic and work characteristics to prevent the confounding effects that may arise in the investigation of the relationships between defined working conditions and employee health outcomes. Chapter 2 describes these co-variates, identified as possible confounders for the relationship between job characteristics and health outcomes. Accounting for the key demographic variables will also help to establish whether demographic variables are implicated in the stressor-health relationship.

Posttraumatic stress disorder and secondary traumatic stress. Previous research has reported high correlations between job burnout and both secondary traumatic stress (STS, vicarious exposure to trauma) and post-traumatic stress

disorder (PTSD, direct exposure to trauma) (Jenkins & Baird, 2002; Mitani, Fujita, Nakata, & Shirakawa, 2006; Cieslak et al., 2014). There is also a known association between heavy drinking and both PTSD and STS (Deahl, Srinivasan, Jones, Neblett, & Jolly 2001; McLean, Fu, & Foa, 2014). These findings make it important to adjust for both PTSD and STS when examining the relationship between ERI and alcohol consumption or burnout. Research in this area faces definitional and measurement challenges. The measures chosen in this study for PTSD and STS are conceptually linked only to those workplace factors that refer to direct or indirect exposure to trauma content (Cieslak et al., 2014). As humanitarian aid workers are vulnerable to trauma-related outcomes (Musa & Hamid, 2008) this study measured the risk of PTSD and STS in order to control for the potential confounding effects of these variables in the analyses.

The PTSD symptoms were assessed using the PCL-6 (PTSD Checklist, abbreviated civilian version), a well-established self-report measure with good psychometric properties (Lang & Stein, 2005; Wilkins, Lang, & Norman, 2011). The items ask respondents to rate the degree to which they were bothered by symptoms related to a stressful experience in the past month; the ratings were made on a five-point rating scale (1 = *not at all*; 2 = *a little bit*; 3 = *moderately*; 4 = *quite a bit*; and 5 = *extremely*). The Cronbach's α coefficient was .90. The cut off recommended and employed was 14, with an excellent specificity of .72 and sensitivity of .92. at that level (Lang & Stein, 2005)

The STSS Scale (Bride et al. 2004)) was designed to assess the frequency of intrusion, avoidance, and arousal symptoms associated with indirect exposure to traumatic events. The STSS (17 items, $\alpha = .94$) assesses a set of symptoms similar to those of PTSD (American Psychiatric Association, 1994). The wording of instructions and the stems of stressor-specific items are designed such that the traumatic stressor is identified as exposure to clients. Respondents are instructed to indicate how frequently the statement made by each item was true for them in the past 7 days using a five-point Likert scale (1 = *never*; 2 = *rarely*; 3 = *occasionally*; 4 = *often*; 5 = *very often*). A cut-off of 38 or above was used for STSS scores, indicating the presence of secondary stress (Bride, 2007). The STSS has demonstrated evidence of convergent, discriminant, and factorial

validity and high levels of internal consistency (Ting, Jacobson, Sanders, Bride, & Harrington, 2005).

4.2.4 Data screening and parametric assumption testing

The sample size was found to be appropriate, given the formula for calculating sample size of $n > 50 + 8m$ (where m = number of independent variables) (Burmeister & Aitken, 2012). Significance tests for skewness and kurtosis, as well as a visual evaluation of frequency histograms and scatterplots, were applied to assess normality, linearity, and homoscedasticity of the data and variables. These results of these screening techniques indicated that the ERI model variables violated skewness and kurtosis parametric assumptions. Even after logarithm transformations to improve analysis (Tabachnick & Fidell, 2007), the tests for normality, linearity, and homoscedasticity of the data and variables still indicated that some assumptions were not being met. Unfortunately, the data arising from many studies do not approximate the log-normal distribution, so applying this transformation does not necessarily reduce the skewness of the distribution. In fact, in some cases, applying the transformation can make the distribution more skewed than the original data (Feng et al., 2014). For that reason, non-parametric tests were used for all analyses – namely, chi-square and binary logistic regression.

The chi-square statistic is a non-parametric (distribution free, i.e. robust with respect to the distribution of the data) tool designed to analyse group differences when the dependent variable is measured at a nominal level. It does not require equality of variances among the study groups or homoscedasticity in the data. It permits evaluation of both dichotomous independent variables and of multiple group studies (McHugh, 2013).

Logistic regression is a statistical method commonly used in epidemiology that permits a relatively simple prediction of odds ratios. An odds ratio (OR) is a measure of association between categorical responses and represents a relative estimate of risk when no direct risk estimate is possible. Logistic regression predicts the probability of obtaining the desired outcome, conditioned by the

values of the independent variables following a specific model (Irala, Fernandez-Crehuet Navajas, & Serrano del Castillo, 1997).

4.2.5 Data analytic strategy

For burnout (Part 1), descriptive statistics were calculated for each of the study variables, with Pearson's χ^2 tests applied to compare prevalence across socio- and occupational-demographic categories. Bivariate correlations were applied to assess relationship valence (positive or negative) and strength between independent (predictor) variables (ERI, OC), the covariates (PTSD, STS) and the target variable burnout (dimensions PA, DP, EE).

ERI was regressed onto each burnout dimension in three logistic regression models. Model 1 was unadjusted (crude). Model 2 was partially adjusted, taking into account socio- and occupational demographic variables that may influence the relationships under investigation. Model 3 was fully adjusted for the same variables as Model 2 plus secondary stress and PTSD. In each logistic regression, the hypothetically least adverse work condition was selected as a reference category (Kouvonen et al., 2005). All regression models – one for each burnout dimension – were run separately for males and females, based on the following two considerations: (1) each population (male and female) was sufficiently large for independent analysis and (2) gender was associated with two of three burnout components (EE and PA). Regressions for ERI and OC variables were also run separately to avoid multi-collinearity. Missing data were excluded pairwise (meaning that the cases were excluded only if they were missing data required for the specific analysis) (Pallant, 2010). As a result of missing data, the total number of participants varied for each variable under consideration. Data analyses were conducted using IBM SPSS version 22 (IBM Corp., Armonk, NY).

For alcohol use (Part 2), descriptive statistics (mean, standard deviation) were calculated for each of the study variables. Logistic regression analyses were conducted to examine the association of work stress variables with alcohol consumption. Adjusted odds ratios (ORs) and their 95% confidence intervals

(CIs) were calculated for the prevalence of heavy alcohol consumption according to work stress indicators. The analyses were stratified by gender, as differential gender associations between stressors and drinking-related outcomes have previously been reported (Rospenda, Fujishiro, Shannon, & Richman, 2008).

Covariates that significantly correlated with alcohol consumption (in preliminary univariate analyses) were controlled for in logistic regression analyses. Model 1 was unadjusted (crude). Model 2 was adjusted for age, marital status, local/expatriate status, and region. Model 3 was additionally adjusted for secondary traumatic stress and posttraumatic stress disorder. As recommended by Pallant (2010), missing data were excluded pairwise. As a result of missing data, the total number of participants differed for each variable under consideration. Data analyses were conducted using IBM SPSS, version 22 (IBM Corp., Armonk, NY).

Part 1: ERI and burnout

4.3.1 Background

The role of humanitarian aid workers encompasses the protection of civilians and the provision of food, water, shelter, and health services to vulnerable populations in global humanitarian crises and emergencies, such as prolonged civil conflict, poverty, and disaster (Tassell & Flett, 2007). The humanitarian work environment incorporates a variety of unique and challenging characteristics (McCall & Salama, 1999; McFarlane, 2004), resulting in humanitarian aid workers being at elevated risk of traumatic stress (related to experiencing or witnessing life-threatening situations), chronic stress (related to environmental stressors and under resourced and difficult living conditions), and organisational stress (related to specific aspects of the work environment, such as team conflict) (Cardozo & Salama, 2002). Furthermore, humanitarian aid workers are frequently separated from regular sources of psychological and social support during deployment (e.g. family or community ties) that may buffer against undesirable stress-related outcomes (Eriksson et al., 2009).

Prolonged exposure to challenging work environments may come at a cost to the physical and mental health of humanitarian aid workers (Sheik et al., 2000; Eriksson et al., 2001; Blanchetiere, 2006). Previous research has shown that, especially during the first 3- to 6-month period after deployment (McCormack, Orenstein, & Joseph, 2016), humanitarian aid workers are at an increased risk of various undesirable states, including PTSD, depression, anxiety, burnout (Lopes-Cardozo et al., 2005; Connorton et al., 2011; Ager et al., 2012), as well as hazardous alcohol consumption (Jachens, Houdmont, & Thomas, 2016).

Burnout is commonly defined as a state of physical, emotional, and mental exhaustion that results from long-term exposure to an extensive range of stressors in an emotionally demanding work situation (Schaufeli & Enzmann, 1998; Maslach et al. 2001; Schaufeli & Greenglass, 2001). Burnout is generally conceptualised to encompass three dimensions: emotional exhaustion (EE), depersonalisation (DP), and (reduced) personal accomplishment (PA) (Maslach et al., 1996; for further detail, see Section 2.3.1.1). Burnout has been shown to be prevalent among human service professionals such as healthcare workers (Lee & Ashforth, 1993; Jeanneau & Armelius, 2000; Stevens & Higgins, 2002; Rupert & Morgan, 2005; Rupert & Kent, 2007), police officers (Houdmont, 2013; Houdmont & Randall, 2016), and humanitarian workers (Tassell & Flett, 2007). Concerns have been raised about the prevalence of burnout among humanitarian aid workers, with the corresponding rates ranging between 21% and 45% for EE, 10% to 24% for DP, and 23% to 49% for PA (Eriksson et al., 2009; Ager et al., 2012; Lopes-Cardozo et al., 2012).

Given the demonstrated association of burnout with physical and mental health risks, such as cardiovascular disease (Toker, Shirom, Shapira, Berliner, & Melamed, 2005; Toppinen-Tanner, Ahola, Koskinen, & Väänänen, 2009), coronary heart disease (Toker et al., 2012), diseases of the circulatory, respiratory musculoskeletal systems (Toppinen-Tanner, Ojajärvi, Väänänen, Kalimo, & Jäppinen, 2005), heightened mortality rates (Ahola, Väänänen, Koskinen, Kouvonen, & Shirom, 2010), depression (Peterson et al., 2008), and anxiety (Oehler, Davidson, Starr, & Lee, 1991), burnout is an important barometer of workers' health. Burnout also compromises the effectiveness of

organisations (Chiu & Tsai, 2006) by increasing the risk of future absences (Toppinen-Tanner et al., 2005), impairing performance (Demerouti, Bakker, & Leiter, 2014), and exerting a detrimental impact on patient/client care and contentment (Girgis, Hansen, & Goldstein, 2009).

Recognising the potential detrimental effects of burnout for health and work outcomes, which is a key objective of this research, entails the necessity of an examination of work-related correlates of burnout. The occupational health literature has consistently shown that workplace characteristics concerned with the design, management, and organisation of work – the so-called psychosocial hazards or organisational stressors – may have an impact on health and lead to burnout (Sverke, Hellgren, & Näswall, 2002; Stansfeld & Candy, 2006; Bonde, 2008; Schütte et al., 2014b). Previous studies have repeatedly shown that it is the organisational aspects of emergency service work, rather than the operational ones (e.g. exposure to trauma as part of their occupation), that employees report as being the primary sources of stress and that are most strongly linked to negative health outcomes (Brough, 2004; Houdmont, 2016).

Theory-wise, this investigation aims to be the first to contribute to the current understanding of the relationships between organisational stressors and burnout using the ERI model in the occupational group of humanitarian aid workers. Associations between the elements of this model and another most influential job stress model – namely, the DSC model – and burnout have been demonstrated, though these appear to be slightly stronger and more consistent for the ERI model (see review by Chirico, 2016). Further support for this comes from a review of job-related wellbeing studies, where employees with high effort and low reward were shown to have an elevated risk of the burnout component emotional exhaustion (van Vegchel et al., 2005). Given the complexity of work-related psychosocial factors, there are benefits to be yielded from measurement informed by an established theoretical model, not least because this can inform the design and direct health promotion interventions in an evidence-based manner.

The ERI model is a relevant theoretical framework to do so (see Section 3.2.2 for an outline of the model). Links between ERI and burnout have been demonstrated in numerous studies based on the samples of human service professionals, such as nurses and teachers (Bakker et al., 2000; Schulz et al., 2009). As burnout is particularly relevant in occupations involving considerable human interaction (Marmot et al., 2006), it appears to be a sensitive outcome of effort–reward imbalance and its principles of reciprocity (Bakker et al., 2000). However, available research on the prevalence and work correlates of burnout experienced by humanitarian aid workers remains scarce (Adams et al., 2006). As reflected in relevant literature (see, e.g., Connorton et al., 2011 for a review), the dominant stress or conceptual framework to interpret the humanitarian work context has been through the stress paradigms of trauma and PTSD (Thomas, 2008). Specifically, several humanitarian aid worker investigations have identified the importance of both the exposure to trauma and more frequently experienced organisational or chronic stressors (e.g. workload, living conditions, security concerns, and team conflicts) shown to affect aid worker burnout (Ager, 2012; Lopes-Cardozo et al., 2012). However, one common limitation of humanitarian aid studies that examined the prevalence of burnout is that they failed to report the results separately for expatriates (international, working outside of their home country) and locals (national, recruited from the local population). This disregard of the need to study the two groups of workers separately is important, because, as compared to the latter workers, expatriates face specific challenges and rewards, such as separation from family and friends, financial incentives, and difficulties in adjusting while abroad (Black & Mendenhall, 1991; Gregersen & Black, 1999). In their turn, local workers report tensions because of inequality of treatment between expatriate and local/national staff (Ager et al., 2012). Another limitation of available literature is its reliance on small samples, potentially limiting generalisability, and a focus on a single geographic region, with no comparisons on relevant variables between different geographic locations that are, however, known to influence gender differences in burnout (cf. Purvanova & Muros, 2010).

The present investigation considers a theoretical stress model for burnout development in humanitarian aid workers. Given that the ERI model addresses

complex socio-emotional processes within the workplace and explicitly acknowledges individual differences in the form of a cognitive-motivational pattern (termed “over-commitment”), this research moves beyond the assumption that the mere presence (or absence) of a given environmental factor will lead to employee strain. Since organisations can play a key role in reducing psychosocial risks (McCormack & Joseph, 2012), further research on this issue is imperative and can reasonably be expected to be capable of providing relevant evidence to guide the design of preventative interventions.

4.3.2 Aims

To the best of my knowledge, the investigation reported in this chapter is the first attempt to use a theoretical model of job stress in relation to burnout in the humanitarian context. The main three research questions addressed here are as follows:

1. What is the prevalence of burnout in a large international sample of expatriate and local humanitarian aid workers?
2. What is the relationship between socio- and occupational-demographic characteristics and burnout among humanitarian aid workers?
3. What is the relationship between psychosocial working conditions (defined in terms of the ERI model) and burnout among humanitarian aid workers?

The specific theoretical hypotheses tested were:

H1: The higher the level of effort reward imbalance (at risk for ERI) the greater the risk for each burnout dimension (EE, DP, PA).

H2: The higher the level of over-commitment (at risk for OC) the greater the risk for each burnout dimension (EE, DP, PA).

4.3.3 Results

From the 9,062 employees of the organisation invited to participate in the survey, 2,380 questionnaires were returned. However, 400 questionnaires had more than

20% of the questionnaire missing, and these cases were deleted. Therefore, 1,980 evaluable questionnaires were received, generating the response rate of 22%. The demographic and occupational profile of the respondent sample was broadly consistent with that of the survey population, with the exception that female humanitarian aid workers were slightly overrepresented in the respondent sample ($\chi^2 = 5.83, p < .05$).

4.3.3.1 Descriptive statistics

The mean respondent age was 40.73 years ($SD = 9.35$), with individuals between 35 and 44 years old ($N = 697$) constituting the largest age group. Females amounted to 53.7% of the sample ($N = 1063$); while the proportion of males was 46.3 % ($N = 917$). More than half of the respondents were married (62%, $N = 1210$), 36% single ($N = 595$), and 8% ($N = 158$) divorced or widowed. The demographic and occupational profile of the respondent sample reflected that of the population, with a slight variation for gender (see Table 1).

Table 1. Comparison of Respondents' (N = 1,980) Demographic and Occupational Characteristics against Organisation's Employee Population (N = 9,062)

Variable	Survey	Total	χ^2	P
	Respondents n (%)	organisation staff, n (%)		
Gender				
Female	1,063 (53.7%)	3,374 (36.8%)	5.83	0.2
Male	917 (46.3%)	5,688 (62.7%)		
Age, in years				
< 35	569 (29.3%)	2,495 (27.8%)	0.25	.97
35–44	697 (35.9%)	3,175 (35%)		
45–54	492 (25.4%)	2,404 (26.5%)		
> 54	181 (9.3%)	988 (11%)		
Region				
Americas	161 (8.1%)	317 (3.9%)	6.75	.24
Europe	274 (13.8%)	738 (9.2%)		
Africa	578 (29.2%)	3,898 (48.5%)		
Middle East & North Africa	421 (21.3%)	1,763 (21.9%)		
Asia Pacific	301 (15.2%)	1,312 (16.3%)		
Switzerland	245 (12.4%)	1,034 (12.9%)		
Job category				
International staff (expatriate)	703 (38.4%)	2,358 (26.2%)	3.14	.08
National staff (local)	1,129 (61.6%)	6,642 (73.8%)		

Note: Significant findings are in **bold**.

Overall, 32% of humanitarian aid workers were at risk of EE, 43% of PA, and 10% of DP 10%. Cross-tabulations (Pearson chi-squares) between the socio-demographic variables, ERI, OC, and burnout components are summarised in Table 2.

Table 2. Associations between Socio-Demographic Characteristics, ERI, and Burnout

Variables	N (%)	ERI (highest tertile)	Over-commitment (highest tertile)	EE (at risk)	DP (at risk)	PA (at risk)
	<i>n</i> (%)					
Gender						
Male	917 (46.3%)	370 (34%)	363 (40%)	247 (27%)	92 (10.1%)	357 (39.1%)
Female	1063 (53.7%)	312 (35%)	395 (37%)	377 (35.5%)	96 (9%)	495 (46.6%)
χ^2		0.13	1.23	16.47	0.60	11.29
<i>p</i>		0.72	0.27	< .001***	0.44	< .001***
Marital status						
Married/co-habiting	1210 (62%)	408 (34%)	478 (40%)	350 (28.9%)	105 (8.7%)	512 (42.4%)
Single, divorced, or widowed	753 (38%)	264 (35%)	274 (36%)	265 (35.2%)	81 (10.8%)	329 (43.8%)
χ^2		0.37	1.91	8.59	2.41	0.35
<i>p</i>		0.54	0.17	< .01**	0.13	0.57
Age						
< 34	569 (29%)	175 (31%)	184 (32%)	190 (33.5%)	74 (13%)	251 (44.2%)
35-44	697 (36%)	244 (35%)	277 (40%)	222 (31.9%)	57 (8.2%)	287 (41.3%)
45-54	492 (25%)	174 (35%)	207 (42%)	141 (28.7%)	43 (8.8%)	213 (43.3%)
55+	181 (9%)	71 (39%)	73 (40%)	52 (28.7%)	11 (6.1%)	79 (43.6%)
χ^2		5.53	12.46	3.47	12.26	1.19
<i>p</i>		0.14	< .01**	0.32	< .01**	0.76

Note. Significant findings are in **bold**. **p* < .05; ** *p* < .01; ****p* < .001.

Gender, marital status, and age were each significantly associated with one or more ERI or burnout elements. Specifically, gender (females were more at risk than males) was associated with EE ($p < 0.001$) and PA ($p < 0.001$); marital status (those who were single, divorced, or widowed more at risk than those married) was associated with EE ($p < 0.01$); age (those under 34 more at risk than older groups) was associated with OC ($p < 0.01$) and DP ($p < 0.01$).

Similarly, cross-tabulations revealed that each occupational factor was significantly associated with one or more of the ERI or burnout dimensions (see Table 3). Work region was significantly associated with each measure: ERI ($p < 0.001$), OC ($p < 0.001$), burnout ($p < 0.05$), EE ($p < 0.001$), DP ($p < 0.001$), and PA ($p < 0.001$). Additionally, the country of origin (expatriate versus local) was significantly associated with EE ($p < 0.05$) and PA ($p < 0.001$).

Table 3. Associations between Occupational-Demographic Characteristics, Effort-Reward Imbalance, and Burnout

Variables	N (%)	Effort-Reward Imbalance (highest tertile)	Over-commitment (highest tertile)	EE (at risk)	DP (at risk)	PA (at risk)
	<i>n</i> (%)					
Regions						
America	161 (8%)	51 (32%)	47 (29%)	57 (35.4%)	5 (3.1%)	54 (33.5%)
Europe	274 (14%)	86 (31%)	80 (29%)	78 (28.5%)	22 (8.0%)	155 (56.6%)
Africa	578 (29%)	189 (33%)	244 (42%)	150 (26%)	56 (9.7%)	172 (29.8%)
Middle East, North Africa	421 (21%)	178 (42%)	182 (43%)	167 (39.8%)	62 (14.8%)	187 (44.6%)
Asia Pacific	301 (15%)	79 (26%)	98 (33%)	63 (20.9%)	21 (7.0%)	135 (45%)
Switzerland	245 (13%)	99 (40%)	107 (44%)	109 (44.5%)	22 (9.1%)	149 (60.8%)
χ^2		26.72	30.54	58.55	24.10	100.43
<i>p</i>		< .01*	< .001***	< .001***	< .001***	< .001***
Expatriate/local						
Expatriate	703 (38%)	247 (35%)	285 (41%)	240 (34.1%)	73 (10.4%)	337 (47.9%)
Local	1129 (62%)	379 (34%)	428 (38%)	329 (29.2%)	98 (8.7%)	444 (39.4%)
χ^2		0.47	1.26	5.00	1.50	12.91
<i>P</i>		0.49	0.26	.03*	0.25	< .001***

Note. Significant findings are in **bold**. **p* < .05; ** *p* < .01; ****p* < .001.

Furthermore, correlations indicated significant relationships between the independent (predictor) variables (ERI, OC), the covariates (PTSD, STS), and the target variable burnout (dimensions PA, DP, EE), with the exception of the correlation between OC and PA (see Table 4). Both PTSD and STS were significantly positively correlated to EE and DP (range $r = .41 - .64$, $p < 0.01$) and negatively with PA ($r = -.1 - -.16$, $p < 0.01$). All correlation relationships were in the predicted direction.

Table 4. Descriptive Statistics and Correlations between Study Variable

Variables	Mean	SD	1	2	3	4	5	6
ERI	1.31	0.50	-					
OC	16.60	3.22	0.53**	-				
PTSD	12.61	5.86	0.43**	0.47**	-			
STS	34.97	12.41	0.43**	0.46**	0.68**	-		
EE	20.51	12.52	0.54**	0.52**	0.54**	0.64**	-	
PA	32.05	10.35	-.07**	-.01	-.10**	-.16**	-.01**	-
DP	5.21	5.26	0.32**	0.30**	0.41**	0.57**	0.56**	-.04

Note. SD = Standard Deviation. * $p < .05$; ** $p < .01$; two-tailed. ERI = effort reward imbalance; OC = overcommitment; PTSD = post traumatic stress disorder; STS = secondary traumatic stress; EE = emotional exhaustion; PA = personal accomplishment; DP = depersonalization.

4.3.3.2 Relations between ERI and burnout

Although the bivariate correlations support the relevance of the ERI model variables to burnout, they do not clarify the extent to which ERI and OC will account for burnout over and above the covariates (PTSD, STS). To respond to this concern, logistic regression was undertaken.

ERI was significantly associated with EE (see Table 5). These associations were significant in the crude and adjusted models. For example, in Model 2 (adjusted for age, marital status, local/ expatriate status, hardship level, and region), the odds ratio of male and female respondents with high ERI for EE was 18.29 (CI: 10.39 – 32.22, $p < 0.001$) and 12.58 (CI: 8.12 – 19.49, $p < 0.001$), respectively.

After further adjusting for secondary stress and PTSD (Model 3), these odds ratios remained significant, but decreased by around a half. The hypotheses that high ERI and high OC increased the risk for EE were supported.

Table 5. Associations between Effort-Reward Imbalance and Emotional Exhaustion

Stress indicators	N (%)	Model 1 (crude)		Model 2		Model 3		
		Females OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)	
Efforts								
Low	56 (15%)	1.00 (reference)	31 (13%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	68 (18%)	2.26 (1.52 - 3.36)***	46 (17%)	2.83 (1.73 - 4.63)***	2.08 (1.36 - 3.19)**	2.60 (1.52 - 4.44)***	1.10 (0.62 - 1.96)	2.05 (0.97 - 4.34)
High	253 (67%)	8.45 (6.00 - 11.90)***	170 (70%)	10.15 (6.64 - 15.52)***	7.93 (5.46 - 11.51)***	10.24 (6.48 - 16.19)***	4.15 (2.46 - 7.01)***	7.45 (3.93 - 14.12)***
Rewards								
High	79 (21%)	1.00 (reference)	31 (13%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	113 (30%)	1.82 (1.30 - 2.55)***	68 (27%)	3.18 (2.00 - 5.04)***	1.94 (1.35 - 2.78)***	3.65 (2.22 - 6.01)***	1.68 (0.99 - 2.86)	2.89 (1.44 - 5.80)**
Low	185 (49%)	3.77 (2.73 - 5.21)***	148 (60%)	8.16 (5.31 - 12.55)***	4.11 (2.88 - 5.84)***	8.93 (5.58 - 14.27)***	2.67 (1.57 - 4.54)***	4.11 (2.11 - 8.02)***
ERI								
Low	38 (10%)	1.00 (reference)	17 (7%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	111 (29%)	3.26 (2.18 - 4.89)***	68 (27%)	5.15 (2.94 - 8.99)***	3.42 (2.20 - 5.30)***	4.99 (2.77 - 8.99)***	2.14 (1.18 - 3.86)*	3.98 (1.78 - 8.88)**
High	228 (61%)	12.13 (8.14 - 18.05)***	162 (66%)	18.55 (10.84 - 31.74)***	12.58 (8.12 - 19.49)***	18.29 (10.39 - 32.22)***	6.08 (3.30 - 11.20)***	9.88 (4.59 - 21.30)***
OC								
Low	60 (16%)	1.00 (reference)	23 (9%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	82 (22%)	2.84 (1.94 - 4.15)***	61 (25%)	4.93 (2.95 - 8.26)***	2.72 (1.78 - 4.13)***	5.99 (3.37 - 10.64)***	1.53 (0.86 - 2.72)	2.52 (1.15 - 5.52)*
High	235 (62%)	8.69 (6.19 - 12.20)***	163 (66%)	10.81 (6.74 - 17.32)***	9.75 (6.70 - 14.21)***	14.21 (8.35 - 24.18)***	3.36 (1.97 - 5.67)***	5.25 (2.51 - 10.97)***

Note. OR = odds ratio, CI = 95% confidence interval. Significant findings are in **bold**. Model 2 adjusted for age, marital status, local/ expatriate status, and regions. Model 3 further adjusted for secondary stress and post-traumatic stress disorder. OR = odds ratio, 95% CI = 95% confidence interval. * $p < .05$; ** $p < .01$; *** $p < .001$.

DP was significantly associated with high ERI, high efforts, low rewards, and OC in the Crude Models 1 (crude) and Model 2 (see Table 6). For example, in Model 2, women and men with high OC were 5.88 and 5.84 times more likely to experience DP than those with low OC (95% CI: 3.06-11.33, $p < 0.001$; 95% CI: 2.8-11.92, $p < 0.001$), respectively. None of the associations between DP and ERI or any ERI component was significant for the male sample when the model included additional adjustments for secondary stress and PTSD (Model 3). However, the associations between DP and high effort (OR 3.09, 95% CI: 1.32-7.26, $p < 0.01$) and high OC (OR 2.55, 95% CI: 1.00-6.48, $p < 0.01$) were significant for females when the model included adjustments for co-occurring outcomes (see Model 3 in Table 6). The hypotheses that high ERI and high OC increased the risk for DP were supported, with some variations for gender.

Table 6. Associations between Effort-Reward Imbalance and Depersonalisation

Stress indicators	N (%)	Model 1(crude)		Model 2		Model 3		
		Females OR (95% CI)	N (%)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)
Efforts								
Low	19 (21%)	1.00 (reference)	13 (13%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	17 (18%)	2.69 (1.32-5.47)**	21 (22%)	1.52 (0.77-2.99)	2.45 (1.14-5.23)*	1.28 (0.62-2.66)	1.41 (0.53-3.70)	0.96 (0.37-2.50)
High	56 (61%)	4.86 (2.63-8.99)***	62 (65%)	3.44 (2.00-5.92)***	5.05 (2.61-9.77)***	3.19 (1.80-5.68)***	3.09 (1.32-7.26)**	1.54 (0.70-3.38)
Rewards								
High	16 (17%)	1.00 (reference)	17 (18%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	23 (25%)	2.15 (1.17-3.95)*	32 (33%)	1.80 (0.93-3.48)	2.35 (1.20-4.60)*	1.79 (0.90-3.58)	1.65 (0.70-3.88)	1.31 (0.53-3.25)
Low	53 (58%)	3.05 (1.71-5.41)***	47 (49%)	3.85 (2.15-6.89)***	3.95 (2.09-7.48)***	3.73 (2.02-6.89)***	1.62 (0.70-3.74)	1.48 (0.63-3.48)
ERI								
Low	13 (14%)	1.00 (reference)	15 (16%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	24 (26%)	1.44 (0.74 - 2.80)	24 (25%)	2.02 (1.01-4.06)*	1.34 (0.66-2.83)	2.16 (1.04-4.48)*	0.92 (0.35-2.37)	1.37 (0.52-3.58)
High	55 (60%)	3.78 (2.09 – 6.81)***	57 (59%)	4.89 (2.69-9.16)***	4.64 (2.42-8.92)***	4.62 (2.38-8.97)***	2.19(0.90 – 5.38)	1.26 (0.50-3.01)
OC								
Low	13 (14%)	1.00 (reference)	14 (14%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	23 (25%)	2.20 (1.08 – 4.51)*	18 (19%)	2.77 (1.37-5.60)**	2.19 (1.01-4.76)*	3.44 (1.57-7.55)**	1.36 (0.48-3.82)	0.98 (0.34-2.79)
High	56 (61%)	5.54 (3.05-10.05)***	64 (67%)	4.43 (2.38-8.27)***	5.88 (3.06-11.33)***	5.84 (2.8-11.92)***	2.55 (1.00-6.48)*	1.17 (0.44 – 3.13)

Note. Significant findings are in **bold**. Model 2 adjusted for age, marital status, local/ expatriate status, and regions. Model 3 further adjusted for secondary stress and post-traumatic stress disorder. OR = odds ratio, 95% CI = 95% confidence interval. * $p < .05$; ** $p < .01$; *** $p < .001$.

PA was not significantly associated with ERI or any ERI component in Model 2 (see final adjusted model in Table 7). All significant associations between PA and ERI or ERI components were gender-specific. For example, PA was significantly associated with intermediate and low reward and with ERI in Models 1 and 2 (see Table 7), but only for men. In Model 2, men who reported intermediate rewards were 1.72 times more likely to experience reduced PA than those with low rewards (95% CI: 1.19-2.47, $p < 0.01$). Additionally, PA was significantly associated with OC in both Models 1 and 2, but only for females. The hypotheses that high ERI and high OC increased the risk for PA were not generally supported, with some variations for gender.

Table 7. Associations between Effort-Reward Imbalance and Personal Accomplishment

Stress indicators	N (%)	Model 1 (crude)		Model 2		Model 3		
		Females OR (95% CI)	N (%)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)
Efforts								
Low	176 (35%)	1.00 (reference)	128 (36%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	108 (22%)	0.94 (0.68-1.29)	90 (25%)	1.26 (0.89-1.78)	0.90 (0.64-1.27)	1.20 (0.82-1.76)	0.99 (0.63-1.55)	0.90 (0.56-1.45)
High	211 (43%)	1.16 (0.88-1.52)	139 (39%)	1.20 (0.88-1.63)	1.07 (0.79-1.46)	1.08 (0.77-1.51)	0.97 (0.60-1.42)	0.83 (0.53-1.30)
Rewards								
High	176 (36%)	1.00 (reference)	136 (38%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	163 (33%)	1.25 (0.93-1.68)	114 (32%)	1.47 (1.05-2.05)*	1.23 (0.89-1.69)	1.72 (1.19-2.47)**	1.23 (0.81-1.89)	1.51 (0.95-2.40)
Low	156 (31%)	1.26 (0.94-1.69)	107 (30%)	1.51 (1.09-2.07)*	1.22 (0.88-1.68)	1.60 (1.13-2.27)**	1.01 (0.65-1.59)	1.07 (0.66-1.73)
ERI								
Low	141 (29%)	1.00 (reference)	104 (29%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	170 (34%)	1.12 (0.83-1.51)	120 (34%)	1.34 (0.97-1.87)	1.24 (0.89-1.71)	1.29 (0.90-1.85)	1.12 (0.73-1.73)	1.18 (0.75-1.87)
High	184 (37%)	1.29 (0.96-1.74)	133 (37%)	1.47 (1.06-2.03)*	1.24 (0.89-1.73)	1.43 (1.00-2.03)*	1.10 (0.68-1.79)	1.05 (0.65-1.72)
OC								
Low	176 (35%)	1.00 (reference)	134 (38%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate	133 (27%)	1.51 (1.09-2.06)*	89 (25%)	0.96 (0.68-1.36)	1.49 (1.06-2.11)*	1.11 (0.76-1.62)	1.39 (0.88-2.20)	1.01 (0.62-1.64)
High	176 (35%)	1.21 (0.92-1.56)	134 (37%)	0.85 (0.62-1.15)	1.23 (0.91-1.67)	0.90 (0.64-1.26)	1.09 (0.70-1.69)	0.66 (0.40-1.07)

Note. Significant findings are in **bold**. Model 2 adjusted for age, marital status, local/ expatriate status, and regions. Model 3 further adjusted for secondary stress and post-traumatic stress disorder. OR = odds ratio, 95% CI = 95% confidence interval. * $p < .05$; ** $p < .01$; *** $p < .001$.

4.3.4 Discussion

This study profiled the descriptive epidemiology of burnout in a large international sample of expatriate and local humanitarian aid workers and is the first study to date that investigates the relationships between burnout and theoretically grounded stress-related working conditions in this sector.

4.3.4.1 Prevalence and demographics of burnout

The proportion of participants at risk on each burnout dimension in part 1 of Study 1 was in the same range as in previous humanitarian studies (Eriksson et al., 2009; Ager et al., 2012; Lopes-Cardozo et al., 2012). Burnout was found to be associated with age, gender, regions, and work status (expat/local). Consistent with previous research (Nyssen, Hansez, Baele, Lamy, & De Keyser, 2003; Rupert & Morgan, 2005), in the present investigation, older human service professionals reported less burnout than their younger counterparts. These patterns can be explained by the fact that older individuals may have elaborated more effective stress management strategies (Ackerley et al., 1988), benefit from rich experience, and have higher occupational positions associated with respect, reward, and diminished work–family conflict (Stevanovic & Rupert, 2004; Wang et al., 2014). Burnout appears to be more prevalent earlier in one’s career (Maslach et al., 2001). It is also possible that, by advanced career stages, individuals experiencing burnout have left the profession.

Overall, gender has yielded mostly inconsistent findings in the burnout literature, with some studies reporting no gender differences (Ackerley et al., 1988), while others, including this investigation, have detected a significantly increased risk of EE for females (Rupert & Morgan, 2005; Purvanova & Muros, 2010; Ager et al., 2012). However, it should be mentioned that gender is sometimes confounded with type of occupation and, as a result, the reported gender differences may, in fact, reflect differences in occupations (Schaufeli & Greenglass, 2001). Another possible explanation is that women tend to be better at sharing their negative emotions, while

men tend to suppress their emotional impulses, which makes men more susceptible to adopting cynical attitudes as a means for coping with stress (and, therefore, more likely to report the depersonalisation component of burnout than women) (Schaufeli & Enzmann, 1998; Purvanova & Muros, 2010).

Furthermore, as suggested by the results, the respondents working in different regions experienced significantly different levels of burnout. This finding is consistent with the results reported by Poghosyan, Aiken, and Sloane (2009) who found that professionals from different countries performing the same job may differ in job burnout. Given that existing policies, social and other resources, conflict situations, and organisational characteristics are likely to vary across geographical zones, the determinants in the sociocultural context need further exploration.

As compared to local workers, expatriates experienced a significantly higher level of EE and diminished PA. Here, although available research on burnout among expatriates remains scarce (Bhanugopan & Fish, 2006), some studies suggest that burnout is related to the difficulty experienced in an unfamiliar work setting and is related to unrealistic job expectations (Jackson & Schuler, 1983; Maslach & Jackson, 1984).

4.3.4.2 Relationship of ERI and burnout

The results generally support this study's hypotheses that high ERI and high OC both resulted in an increased risk for burnout. In line with previous studies involving non-humanitarian samples such as physicians (Wang et al., 2014; Klein, Grosse, Blum, Siegrist, & von dem Knesebeck, 2010), teachers (Bakker et al., 2000), and police officers (Garbarino et al., 2013), the present investigation's findings demonstrate that organisational experiences involving a lack of reciprocity or perceptions of inequity at work are significantly associated with emotional exhaustion. Likewise, Schulz et al. (2009) have found the effort scale to be more strongly associated with emotional exhaustion as the major component of burnout than the reward scale.

Furthermore, although extant research shows significant associations between job burnout, STS, and PTSD (Cieslak et al., 2014; Sheen, Spiby, & Slade, 2015), the results suggest that, even after adjusting for STS and PTSD covariates (with resultant decrease in odds ratios), the ERI model still maintains a significant and strong relationship to burnout EE. Therefore, further research is needed to clarify the common and specific risk factors for these co-occurring mental health outcomes.

One of the strengths of this study is that it is the first to address burnout in a large and diverse sample of humanitarian aid workers across several geographical regions. Several possible confounding variables were controlled for, permitting a focus on the contribution of psychosocial work factors to risk of burnout. Despite some limitations of the survey (addressed in section 4.5 below) the results convincingly demonstrate that burnout in humanitarian work is related to efforts (demands) and occupational rewards. A practical implication of these findings is that perceptions of effort-reward balance are, at least partially, within the control of organisations. Therefore, relevant ERI interventions can change a work environment to reduce the imbalance between effort and reward and thereby prevent negative health outcomes such as EE. The workplace can be modified (i.e. organisations can to some extent choose the way they reward employees for their efforts), so that it gets perceived as more rewarding and meaningful. Examples of reward measures are improvement of promotion prospects, fair treatment and salary, enrichment of tasks, and providing ample opportunity for continued skill training. A simultaneous reduction of workplace demands will, in all probability, facilitate this perception (Rasmussen et al., 2016). Examples of appropriate intervention programmes aimed at adapting and/or regulating job demands/effort could include balancing the distribution of workload and providing sufficient opportunities to recover from work. In sum, increasing the amount of positive feedback that humanitarian aid workers receive, offering appropriate training for career development, improving interpersonal relationship skills of managers and the social support they provide, are all examples of viable approaches of applying the ERI model to reduce burnout.

4.3.5 Conclusion

In this study (Part 1 of Study 1), effort-reward imbalance and over-commitment were found to be significantly associated with increased risk of emotional exhaustion in both male and female humanitarian aid workers, demonstrating that the ERI model can be meaningfully applied to enhance the current understanding of relations between work-related psychosocial factors and psychological health in this sector. Furthermore, this investigation's findings suggest that application of an established theoretical perspective to the assessment and control of work-related stress in the humanitarian aid sector can, in all probability, facilitate effective stress management activities. Further research would benefit from exploring other occupational health stress models, or their combination, to determine their relationships to psychological health in this sector.

Part 2: ERI and heavy drinking

4.4.1 Background

Humanitarian aid workers operate in complex environments with various challenges and work-related stressors that may adversely affect their health and wellbeing (Holtz et al., 2002). One such behaviour is heavy alcohol consumption, defined by the World Health Organization (WHO) as “a repeated pattern of drinking that confers the risk of harm” (Saunders & Lee, 2000, p. 95). Yet, available research concerning the prevalence and occupational correlates of heavy alcohol consumption among humanitarian aid workers is insufficient (Connorton et al., 2011). Therefore, this study (Part 2 of Study 1) seeks to bridge this knowledge gap using a large sample of humanitarian aid workers operating across four continents.

Alcohol consumption may influence employee health, productivity, and safety outcomes (Frone, 2008b) and has been identified as a component cause for more than 200 health conditions (Rehm et al., 2010; Shield, Parry, & Rehm, 2013; WHO, 2014). To illustrate, alcohol consumption has been linked to diseases such as

hypertension and liver cirrhosis (e.g. Corrao, Bagnardi, Zambon, & La Vecchia, 2004), psychiatric illnesses such as depression and anxiety (e.g. Boden & Fergusson, 2011; Crum et al., 2013; Kessler, 2004), and also infectious diseases such as tuberculosis and pneumonia (Rehm et al., 2009; Samokhvalov, Irving, & Rehm, 2010). Employee alcohol use has also been linked to absenteeism (Bacharach, Bamberger, & Biron, 2010; Frone, 2008b; Head, Stansfeld, & Siegrist, 2004; McFarlin & Fals-Stewart, 2002; Salonsalmi, Rahkonen, Lahelma, & Laaksonen, 2015), coupled with high job turnover rates, reduced work performance, co-worker conflict, increased risk-taking behaviour, work-related accidents, higher health benefit costs, and workplace aggression (Heather, 1994; Mangione et al., 1999; McFarlin & Fals-Stewart, 2002; McFarlin, Fals-Stewart, Major, & Justice, 2001; Webb et al., 1994).

Considering the potential detrimental effects of alcohol consumption for employees' health and work outcomes, the examination of occupational correlates of heavy alcohol consumption has recently increased. A key focus of this research has been on psychosocial (stress-related) working conditions concerned with the design, management, and organisation of work (e.g. Biron, Bamberger, & Noyman, 2011; Crum, Muntaner, Eaton, & Anthony, 1995; Frone, 2008a; Gimeno, Amick, Barrientos-Gutiérrez, & Mangione, 2009; Liu, Wang, Zhan, & Shi, 2009; Saade & Marchand, 2013). This literature posits that alcohol use represents “a mode of relief and self-medication” (Biron et al., 2011, p. 251), i.e. a coping strategy for reacting to and dealing with negative emotions elicited by exposure to work stressors (Carpenter & Hasin, 1999; Frone, 2008b). Specifically, individuals may consume alcohol to reduce negative emotions or to enhance positive ones (Wills & Shiffman, 1985).

The ERI theory posits that an imbalance between perceived occupational rewards and expended effort threatens self-regulatory functions (i.e. mastery, efficacy, and esteem). This can cause a state of emotional distress that carries the potential for health-threatening behaviours (Cox & Griffiths, 2010; Zurlo et al., 2010), such as alcohol consumption.

However, the literature is not consistent in its findings on the association between psychosocial work stressors and alcohol consumption. While some reviews conclude on a consistent association between psychosocial work stressors and problem drinking (Trice, 1992), others reported mixed findings of positive and insignificant associations (Frone, 1999). Specifically, Frone (1999) and Ames, Delaney, and Janes (1992) found no evidence for an association between job strain and alcohol consumption. In addition, in a cross-sectional study of unfavourable working conditions in relation to diet, physical activity, alcohol consumption, and smoking among 6,243 employees in Helsinki, Lallukka et al. (2004) found no associations between heavy drinking and components of the DCS model. A further comparison of these results with studies elsewhere – in the UK (WII study) and Japan (Japanese Civil Servants Study) (Lallukka et al., 2008), US (Gimeno et al., 2009), and Finland (Kouvonen et al., 2005) – yielded convergent evidence for a lack of association between components of the DCS model and alcohol consumption (Lallukka et al., 2008). By contrast, more substantial evidence is available for the association of excessive drinking and the components of the ERI model (Trice, 1992). For example, ERI has been found to be associated with problem drinking and higher alcohol intake in a cross-sectional analysis among 694 participants from Russia, Poland, and the Czech Republic (Bobak et al., 2005). Similarly, Van Vegchel et al. (2005) found ERI to be associated with alcohol consumption. This link has been further confirmed in a number of studies, with stronger associations usually found in men (Bobak et al., 2005; Head et al., 2004; Siegrist & Rödel, 2006; Stansfeld et al., 2000). Therefore, considering the evidence accumulated thus far, the ERI model appears to be the natural choice.

Yet, similarly to the literature on burnout (see Section 4.3.1), a limitation of the literature on heavy drinking in humanitarian aid workers is that only a few studies have separately considered expatriates and locals. However, the few available studies do report the consistent pattern where expatriate workers tend to be more vulnerable to heavy drinking than local workers. One such study is Lopes-Cardoza et al. (2005) who have found that 16.2% of expatriate and 2.5% of local Kosovar

Albanian aid workers drank at heavy levels. In similar occupational contexts, both Britt and Adler (1999) and Mehlum (1999) found an increase in alcohol consumption during missions in medical humanitarian expatriates and United Nations peacekeepers respectively. Two further limitations of the literature is that humanitarian aid worker research typically involves small samples (Connorton et al., 2011) and that, to date, no studies have explored relations between psychosocial work conditions and alcohol consumption in humanitarian aid workers.

4.4.2 Aims

To the best of my knowledge, this study (Part 2 of Study 1) is the first to use a theoretical model of job stress in the humanitarian context and to consider it in relation to alcohol consumption. The ERI model is particularly appropriate in this context because of its applicability to occupations that involve person-based interactions (Marmot et al., 2006). The purpose of this study was to establish the prevalence of heavy drinking and its association with psychosocial work conditions among humanitarian aid workers. The specific theoretical hypotheses tested were: The higher the level of effort reward imbalance (at risk for ERI) the greater the risk for heavy drinking (H1); and the higher the level of over-commitment (at risk for OC) the greater the risk for heavy drinking (H2).

4.4.3 Results

Of the 9,062 employees invited to participate, evaluable questionnaires were returned by 1,980, yielding the response rate of 22%.

4.4.3.1 Descriptive statistics

The largest age group was the 35- to 44-year old participants ($N = 697$; 35.9%). The mean age was 40.73 years ($SD = 9.35$). Women amounted to 53.7% of the sample ($N = 1,063$) (sample characteristics reported in Table 1, p. 112).

Table 8 reports the alcohol consumption patterns observed in the data. Almost 2 of 5 respondents (35%, 95% CI [32.7, 36.9]) reported not drinking alcohol. Three of 20 (15%, 95% CI [13.6, 16.8]) respondents drank two or three times a week, while 8% (95% CI [6.5, 10.1]) of men and 7% (95% CI [5.4, 8.3]) of women drank four or more times a week.

Table 8. Alcohol Consumption among the Respondents (Part 2, Study 1)

Alcohol consumption/ AUDIT-C	Scores	Male (N = 917), n (%)	Female (N = 1,063), n (%)	Total (N = 1,980), % [95% CI]
Frequency of drinking: How often do you have				
a drink containing alcohol?		<i>a</i>	<i>a</i>	
Never	0	343 (37%)	345 (33%)	34.7% [32.7, 36.9]
Monthly or less	1	173 (19%)	246 (23%)	21.2% [19.3, 23.2]
2–4 times a month	2	188 (21%)	237 (22%)	21.5% [19.6, 23.4]
2–3 times a week	3	137 (15%)	163 (15%)	15.2% [13.6, 16.8]
≥4 times a week	4	76 (8.3%)	72 (6.8%)	7.5% [6.3, 8.6]
Typical quantity: How many drinks				
of alcohol do you have on a typical				
day when you are drinking?		<i>b</i>	<i>b</i>	
1–2	0	783 (85%)	986 (93%)	89.3% [88.0, 90.7]
3–4	1	96 (11%)	58 (5.5%)	7.8% [6.6, 9.0]
5–6	2	22 (2%)	16 (1.5%)	1.9% [1.4, 2.5]
7–9	3	11 (1%)	3 (0.3%)	0.7% [0.4, 1.1]
≥10	4	5 (0.5%)	0 (0%)	0.3% [0.1, 0.5]
Frequency of heavy episodic				
drinking: How often do you have				
six or more drinks on one occasion?		<i>c</i>	<i>c</i>	
Never	0	590 (64%)	824 (78%)	71.4% [69.2, 73.3]
Less than monthly	1	173 (19%)	145 (14%)	16.1% [14.6, 17.7]
Monthly	2	84 (9%)	68 (6.4%)	7.7% [6.5, 9.0]
Weekly	3	59 (6%)	23 (2.2%)	4.1% [3.3, 5.1]
Daily or almost daily	4	11 (1%)	3 (0.3%)	0.7% [0.4, 1.1]

Note: AUDIT-C = Alcohol Use Disorders Identification Test–Consumption; CI = confidence interval. ^a $\chi^2(4) = 10.02, p < .05$; ^b $\chi^2(4) = 32.60, p < .001$; ^c $\chi^2(4) = 52.77, p < .001$.

Fewer than 3% of respondents who drink consumed more than five alcoholic drinks on a typical day when drinking. Heavy episodic drinking (≥ 6 drinks on a single occasion) occurred at least weekly for slightly more than 1 in 20 men (6%, 95% CI [4.9, 8.1]) and 1 in 50 women (2%, 95% CI [1.3, 3.1]). There were significant differences between men and women in the frequency of drinking ($p < .05$), typical quantity consumed ($p < .001$), and frequency of heavy episodic drinking ($p < .001$).

Table 9 reports the proportion of the respondents at risk of high ERI, high over-commitment, and heavy alcohol consumption. Cross-tabulations (Pearson chi-squares) between the sociodemographic variables, ERI, over-commitment, and heavy drinking are also presented. The prevalence of heavy drinking was 18% among women and 10% among men. Married/co-habiting respondents reported lower levels of alcohol consumption than those who were not married/co-habiting.

Table 9. Associations between Demographic Variables, Heavy Alcohol Consumption, Effort–Reward Imbalance (ERI), and Over-Commitment

Variables	<i>n</i> (%)	ERI (highest tertile), <i>n</i> (%)	Over-commitment (highest tertile) <i>n</i> (%)	Alcohol (heavy) <i>n</i> (%)
Gender				
Male	917 (46%)	370 (34%)	363 (40%)	94 (10%)
Female	1,063 (54%)	312 (35%)	395 (37%)	186 (18%)
χ^2		0.13	1.23	21.29
<i>p</i>		.72	.27	.01*
Marital status				
Married/co-habiting	1,210 (62%)	408 (34%)	478 (40%)	146 (12%)
Single, divorced, or widowed	753 (38%)	264 (35%)	274 (36%)	132 (18%)
χ^2		0.37	1.91	11.40
<i>p</i>		.54	.17	<.01**
Age, in years				
<34	569 (29%)	175 (31%)	184 (32%)	94 (17%)
35–44	697 (36%)	244 (35%)	277 (40%)	86 (12%)
45–54	492 (25%)	174 (35%)	207 (42%)	68 (14%)
≥ 55	181 (9%)	71 (39%)	73 (40%)	26 (14%)
χ^2		5.53	12.46	4.57
<i>p</i>		.14	<.01**	.21

Note: Significant findings are in **bold**. * $p < .05$; ** $p < .01$; *** $p < .001$.

In Table 10, the findings for regions show a significant difference for all outcome measures (ERI, over-commitment, and heavy drinking). In Switzerland, 32% of the participants were at risk of heavy alcohol consumption, approximately double the proportion at risk in other regions (range between 8% and 17%). There was a significant difference between expatriates (21% at risk) and locals (9% at risk) for heavy alcohol consumption (i.e. expatriates were more than twice as likely to be at risk), but no significant difference was found for ERI or over-commitment. While secondary traumatic stress was significantly associated with alcohol consumption, PTSD was not (see Table 11).

Table 10. Associations between Work Characteristics, Heavy Alcohol Consumption, Effort–Reward Imbalance (ERI), and Over-Commitment

Variables	<i>n</i> (%)	ERI (highest tertile) <i>n</i> (%)	Over-commitment (highest tertile) <i>n</i> (%)	Alcohol (heavy) <i>n</i> (%)
Regions				
America	161 (8%)	51 (32%)	47 (29%)	19 (12%)
Europe	274 (14%)	86 (31%)	80 (29%)	46 (17%)
Africa	578 (29%)	189 (33%)	244 (42%)	75 (13%)
Middle East, North Africa	421 (21%)	178 (42%)	182 (43%)	38 (9%)
Asia Pacific	301 (15%)	79 (26%)	98 (33%)	24 (8%)
Switzerland	245 (13%)	99 (40%)	107 (44%)	78 (32%)
χ^2		26.72	30.54	84.64
<i>p</i>		<.001***	<.001***	<.001***
Expatriate/local				
Expatriate	703 (38%)	247 (35%)	285 (41%)	150 (21%)
Local	1129 (62%)	379 (34%)	428 (38%)	106 (9%)
χ^2		0.472	1.26	51.45
<i>p</i>		.49	.26	<.001***

Note: Significant findings are in **bold**. **p* < .05; ** *p* < .01; *** *p* < .001.

Table 11. Associations between Secondary Traumatic Stress (STS), Post-Traumatic Stress Disorder (PTSD), Heavy Alcohol Consumption, Effort–Reward Imbalance, and Over-Commitment

Variables	<i>n</i> (%)	ERI (highest tertile), <i>n</i> (%)	Over-commitment (highest tertile), <i>n</i> (%)	Alcohol (heavy), <i>n</i> (%)
STS				
At risk of STS	497 (38%)	254 (51%)	289 (58%)	90 (18%)
Not at risk of STS	801 (62%)	183 (23%)	214 (27%)	78 (10%)
χ^2		109.68	127.67	19.07
<i>p</i>		<.001***	<.001***	<.001***
PTSD				
At risk of PTSD	723 (37%)	390 (54%)	430 (60%)	112 (16%)
Not at risk of PTSD	1,257 (63%)	292 (23%)	328 (26%)	168 (13%)
χ^2		191.73	216.46	1.71
<i>p</i>		<.001***	<.001***	.19

Note: Significant findings are in **bold**. **p* < .05; ** *p* < .01; *** *p* < .001.

4.4.3.2 Effort–reward imbalance and heavy drinking

Table 12 shows the results from logistic regression models based on the total study population. In addition to crude findings (Model 1), the results were adjusted for age, marital status, expatriate/local status, and region (Model 2). Further adjustment was made for PTSD and secondary stress (Model 3). In the fully adjusted model (Model 3), women with both intermediate levels of ERI (OR = 3.17, 95% CI [1.47, 6.89]) and higher levels of ERI (OR = 3.38, 95% CI [1.49, 7.68]) were significantly more likely to report heavy drinking than women with low ERI. Over-commitment was not linked to heavy alcohol consumption.

Table 12. Associations between ERI, OC, and Heavy Alcohol Consumption

Stress indicators	Model 1		Model 2		Model 3			
	Females	Males	Females	Males	Females	Males		
	N (%)	OR (95% CI)	N (%)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	
Effort-Reward Imbalance (ERI)								
Low ERI	325 (31%)	1.00 (reference)	310 (34%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate ERI	368 (35%)	1.50 (1.01-2.25)*	295 (32%)	1.14 (0.66-1.98)	1.71 (1.07-2.73)*	1.17 (0.65-2.10)	3.17 (1.47-6.89)**	1.02 (0.47-2.22)
High ERI	370 (35%)	1.34 (0.89-2.02)	312 (34%)	1.45 (0.86-2.45)	1.43 (0.88-2.32)	1.46 (0.83-2.54)	3.38 (1.49-7.68)**	1.04 (0.49-2.22)
Over-commitment (OC)								
Low OC	415 (39%)	1.00 (reference)	329 (36%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Intermediate OC	253 (24%)	0.92 (0.61-1.40)	225 (24%)	1.14 (0.64-2.01)	0.99 (0.61-1.60)	1.37 (0.74-2.52)	1.41 (0.71-2.81)	1.69 (0.71-4.06)
High OC	395 (37%)	1.08 (0.75-1.55)	363 (40%)	1.27 (0.77-2.09)	1.08 (0.71-1.64)	1.36 (0.79-2.34)	1.48 (0.75-2.89)	1.48 (0.63-3.48)

Note. Significant findings are in **bold**. Model 2 adjusted for age, marital status, local/ expatriate status and region. Model 3 adjusted additionally for secondary traumatic stress and post-traumatic stress disorder. OR = odds ratio, 95% CI = 95% confidence interval. Ref. = reference. * $p < .05$. ** $p < .01$.

4.4.4 Discussion

Part 2 of Study 1 is the first to establish the prevalence of heavy alcohol consumption and its association with theory-based psychosocial work conditions among humanitarian aid workers. The prevalence rate for heavy alcohol consumption among women (18%) was almost double the corresponding rate for men (10%). The results of logistic regression analyses provide support for the effort-reward hypothesis of this study among women only: intermediate and high ERI in women were associated with a tripling of risk of heavy alcohol consumption. The OC hypothesis was not supported as OC was not related to increased risk of heavy drinking.

The prevalence of heavy alcohol consumption found in this study was considerably lower than the one reported in previous studies that have used the same assessment instrument –specifically, in the studies on the UK vets (Bartram, Sinclair, & Baldwin, 2009) and Australian police (Davey, Obst, & Sheehan, 2000). However, this investigation’s findings are similar to those reported about police and ambulance personnel in Norway (Sterud, Hem, Ekeberg, & Lau, 2007). The current finding about women being at a greater risk of heavy alcohol consumption than men is uncommon (Nolen-Hoeksema, 2004). Nevertheless, several previous studies suggest that the gender difference in drinking and alcohol-related problems has decreased (Grant, 1997; Nelson, Heath, & Kessler, 1998). A recent study on police officers has found a greater proportion of women at risk of heavy alcohol consumption than men (Houdmont, 2015). Therefore, further research is required to better understand this possible emerging trend in human service, high-stress occupations.

One-third of the participants operating out of Switzerland were at a high risk of heavy alcohol consumption, double the proportion in other regions. What can explain this pattern of results is that high-income countries, such as Switzerland, have the highest alcohol consumption per capita (WHO, 2004). Both this

investigation (across all regions) and Lopes-Cardozo et al. (2005) (Kosovar Albania only) report a higher prevalence of heavy alcohol consumption in expatriate employees compared to local employees. In this study, high and intermediate ERI was significantly associated with heavy alcohol consumption among women only. By contrast, studies on other working populations have found the strongest associations between ERI and alcohol problems in men (Head et al., 2004; Siegrist & Rödel, 2006). Further clarification on these divergent health outcomes by gender and employment type is warranted.

Heavy drinking is a preventable and modifiable risk factor for employee health. Examining relevant variables related to drinking habits can provide meaningful evidence to inform targeted prevention and intervention activities. The findings reported here underscore the psychosocial work environment as a risk factor for heavy alcohol consumption among humanitarian aid workers, suggesting that further research is required to (a) identify the specific psychosocial work characteristics experienced as problematic by such employees and (b) explore the extent to which these characteristics might be receptive to modification. This study also revealed differences in heavy alcohol consumption by gender, region, and employee type. This suggests that interventions involving employee education on the risks of heavy drinking and consumption-reduction strategies should be tailored to the needs of specific employee groups. Further organisational intervention research is required to evaluate the extent to which psychosocial work environment modifications might yield benefits in terms of reduced alcohol consumption.

This study used gender-specific cut-off scores for the identification of heavy alcohol consumption applied in several previous studies. However, there is inconsistency across the scientific literature on threshold locations, suggesting that applying different thresholds could have yielded divergent prevalence rates. Therefore, in future research, consistency across studies on the placement of cut-offs should be sought.

The two strengths of this study are that it is the first to address alcohol use in a large and diverse sample of humanitarian aid workers across regions and to use a stress model in this occupational sector. Several possible confounding variables were controlled for, permitting a focus on the contribution of psychosocial work factors to the risk of heavy alcohol consumption.

4.4.5 Conclusions

Addressing the gap in the literature on the prevalence of and risk factors for heavy alcohol consumption among humanitarian aid workers, this study found that almost 1 in 5 female humanitarian aid workers and 1 in 10 male humanitarian aid workers reported heavy alcohol consumption. ERI was found to be associated with a tripling of risk of heavy drinking among female humanitarian aid workers. Interventions to reduce ERI might help to reduce heavy drinking in this population.

Limitations of Study 1 (Parts 1-2)

The limitations of the study should be acknowledged. The survey was cross-sectional, preventing conclusions with regard to the direction of the reported relationships. It is not possible to determine if, for example, high ERI leads to heavy alcohol consumption (normal causation) or vice versa (reverse causation), or whether or not these constructs may influence one another. However, as observed by Ibrahim, Smith, and Muntaner (2009), there are more significant paths from work to health outcomes than reverse paths from health outcomes to work, suggesting that the relationships between ERI and health outcomes found in the present study might reflect normal causation. On the other hand, associations have been found in the neuropsychology literature between reward processing and drinking problems. Alcohol use disorder is associated with alterations in neural reward systems (Makris et al., 2008); therefore, those affected find it particularly difficult to focus on conventional reward cues and engage in alternative (to alcohol) rewarding activities (Wrase et al., 2007). Therefore, it is possible that associations between ERI and alcohol use are bi-directional. Further studies are needed to investigate these

relationships beyond a single direction: supplying evidence for bi-directional effects may advance the theory on the complex mechanisms underlying stressor-health relationships (de Lange et al., 2004). In addition, a longitudinal study mapping the dynamics of the stressor-outcome association could remedy these design limitations (de Lange et al., 2003; de Lange, Taris, Kompier, Houtman, & Bongers, 2004).

There was also the possibility of a healthy worker effect having produced an underestimation of the prevalence of burnout (or heavy drinking) and the strength of association between ERI and burnout (or heavy drinking), that cannot be disregarded. During the data collection period, employees with high ERI or high burnout or drinking scores may have been absent (e.g. on sick leave). Yet, to help mitigate this effect, the survey instrument was available for an extended period of time (two months). Participants may also have underestimated their alcohol consumption (Midanik, 1988), and the true prevalence of heavy alcohol consumption in the study sample might be greater than reported here.

The survey did not measure all relevant demographic or occupational variables, such as educational level or specific job type. It is possible that these variables may have played an important role in the relationship between ERI and burnout or heavy drinking.

There were potential differences between responders and non-responders with respect to ERI, OC, and burnout or heavy drinking variables that may limit generalisability of the results. The response rate for the study was relatively low (22%). However, the sample was nevertheless representative of the population from which it was drawn. In survey research, as noted by Cook, Heath, and Thompson (2000), response representativeness is more important than response rate. As humanitarian aid workers often work in difficult situations (e.g. social isolation, conflict, or disaster zones), it is possible that resources such as time and computer access prevented completion of the survey.

The final limitation of the present study is that it remains uncertain whether expatriates had elevated levels of drinking or burnout before commencing fieldwork, or if the nature of the work contributed to the development of heavy drinking or burnout. In future studies involving humanitarian aid workers, it would be useful to establish the prevalence of burnout and alcohol consumption rates before deployment. To enhance the understanding of the forces responsible for determining the status of the variables explored herein via quantitative means, further research using a qualitative approach is needed.

General conclusions: Study 1 (Parts 1-2)

Across Parts 1 and 2 of Study 1 reported in this chapter, the ERI model was supported as a useful framework in the humanitarian sector to investigate occupational correlates of burnout and heavy drinking, with some gender-specific results. Effort-reward imbalance and over-commitment were found to be significantly associated with increased risk of emotional exhaustion in both male and female humanitarian aid workers, with mixed findings for depersonalisation and personal achievement. It was also established that women were at significantly higher risk of emotional exhaustion (35.5%) than men (27%). High ERI in women was associated with a tripling of risk of heavy alcohol consumption; moreover, the prevalence of heavy alcohol consumption among women (18%) was significantly higher than the corresponding rate for men (10%). Therefore, compared to men, women appear to be more at risk of these particular outcomes. Demographic and occupational variables are pivotal for understanding these outcomes, as each occupational or demographic factor was found to be significantly associated with one or more measures of ERI, burnout, or alcohol consumption. For example, humanitarian aid workers from different geographical regions were significantly different in their risk of ERI, OC, heavy drinking, and all three burnout dimensions.

CHAPTER 5. THE JOB DEMAND-CONTROL-SUPPORT (DCS) AND EFFORT-REWARD IMBALANCE (ERI) MODELS AS INDIVIDUAL AND COMBINED PREDICTORS OF PSYCHOLOGICAL DISTRESS IN HUMANITARIAN AID WORKERS (STUDY 2)

Summary

Two job stress models are frequently cited in the literature on associations between psychosocial hazards at work and workers' health: the effort-reward imbalance (ERI) model (Siegrist, 1996) and the job demand-control-support (DCS) model (Karasek & Theorell, 1990) (see Chapter 3 for a summary of the main features of these two models). Since both models measure different psychosocial hazards, the combination of two models should have stronger explanatory power for predicting health outcomes than one model alone. However, no study has been conducted on the co-effect of these two models for humanitarian workers.

In the study reported in this chapter – Study 2 – the ability of these two different models to explain (independently and combined) psychological distress in an understudied occupational group (humanitarian aid workers) was examined. Logistic regression analyses were performed on the data collected from a cross-sectional survey of humanitarian aid workers based in Geneva, Switzerland (Organisation B, $N = 283$, response rate of 40%). The findings provide evidence of the adverse effects on psychological distress of both job strain and ERI. For females, ERI as a model of work stress appears to have more explanatory power than DCS, whereas the reverse is true for males. The results further confirm, for both males and females, that a combined model performs better than either the DCS or ERI model alone. This is the first investigation on humanitarian workers to show the

independent and combined effects of the components of two alternative job stress models. It emphasises the deleterious effects of psychosocial work environment on mental health.

Background and aims

The experience of psychosocial hazards – i.e. aspects of work design and management, as well as social and organisational contexts that may cause psychological or physical harm – has been reported to have significant effects on individual health outcomes (Bonde, 2008; Cox & Griffiths, 2005; Schütte et al., 2014a; Stansfeld & Candy, 2006; Sverke et al., 2002). In some emergency services populations, work psychosocial hazards have been found to have a greater influence than trauma (Kop et al., 1999). However, this epidemiological approach to exploring the relationship between work characteristics and mental health has received little attention in the humanitarian literature.

The independent, predictive effect of both the DCS and ERI models has been established for physical health outcomes, such as cardiovascular diseases (e.g. Kivimäki et al., 2002; Kuper et al., 2002; Peter et al., 2002, Peter et al., 1998a, Theorell & Karasek, 1998; Van Vegchel et al., 2002; Weyers et al., 2006), as well as musculoskeletal diseases (e.g. Tsutsumi et al., 2001b; Van Vegchel et al., 2002). Evidence has also been found in support of associations between both models and mental health (Bakker et al., 2000; Evans & Steptoe, 2002; Pikart et al., 2004). Previous studies indicate that the two models are also complementary in their role of evaluating negative psychosocial outcomes (de Jong, et al., 2000a; Calnan, et al., 2004; Calnan et al., 2000; Kawaharada et al., 2007; Niedhammer, Chastang, David, Barouhiel, & Barrandon, 2006). Specifically, some previous studies demonstrate that combinations of the two models explain a greater portion of the variance in health and mental health outcomes than any of the two models alone (see Section 3.2.3 for a detailed discussion). Therefore, there is considerable evidence to support the predictive power of both models (de Jonge et al., 2000a).

Some of these results indicate that particular models, or components of models, tend to have differential impacts on health outcomes (e.g. Bosma et al., 1998; Peter et al., 2002; Ostry et al., 2003; Fillion et al., 2007) and also make distinctive contributions for explaining work stress for different types of occupations (Marmot et al., 2006). For example, Marmot et al. (2006, p. 121) suggest suggest that ERI is useful for and “frequent among service populations”; however, there is no indication that the DCS model is not useful for humanitarian populations. Therefore, this investigation has the exploratory aim of testing both models in the humanitarian work context.

To date, no studies have examined the two models (ERI and DCS) independently or simultaneously in the humanitarian context. In a handful of studies that have addressed organisational practices of aid/relief organisations, the focus has been on how organisations recruit, train, and support relief workers. This lack of scientific knowledge on work characteristics in this occupational sector presents an obstacle to the elaboration of relevant interventions for the of protection workers from hazards and improvement of worker productivity (Holtz et al., 2002; McCall & Salama, 1999; Thormar et al., 2010).

The two alternative models overlap to some degree: esteem reward in the ERI model is similar to social support in the DCS model; in addition, effort in the ERI model is similar to job demands in the DCS model (Siegrist et al., 2004). However, the two models also appear to contribute in distinctive ways. This investigation aims to measure the relative contribution of each model, as well as the power of combined occupational components, derived from each model and both models, in order to explain the greatest amount variance in explaining psychological distress. Current transactional models of stress suggest that it is important to examine the combined effects of occupational and individual variables that can influence health outcomes (Mark & Smith, 2008). Many factors need to be considered and job stress models frequently have additive effects with the sum of negative features of the job being a good indicator of negative outcomes (Smith, McNamara, & Wellens, 2004). As the two models emphasise different elements of the psychosocial work environment,

and in different ways, there is considerable promise in studying their combined effects (Karasek et al., 1998).

One common approach is to combine factors that measure similar things into composites. In this chapter, each stress model will be examined individually and in combination, to assess the association between occupational factors and psychological distress in the humanitarian work context. By doing so, the current investigation has theoretical and practical implications. Firstly, it is a robust and broad theoretical anchor point from which to develop refinements to best explain health outcomes. A combination of information derived from the two models captures a broader range of stressful experience at work and, therefore, may result in an improved risk estimation for disease onset and better interventions (see, e.g., Sparks & Cooper, 1999). The models may also have a differential explanatory power on health according to gender, and interventions may be more relevant and specific based on the best combinations for either males or females.

5.2.1 Aims

The main aims of Study 2 are as follows:

1. To examine the relationship between socio- and occupational-demographic characteristics and psychological distress (GHQ) among humanitarian aid workers;
2. To compare the performance of the two models (ERI and DCS) as indicators of psychological distress among humanitarian aid workers and to examine any gender- specific associations;
3. To assess whether a model that combines components of the DCS and ERI models might perform more effectively than either of the individual models or model components in the risk estimation of psychological distress.

Method

5.3.1 Participants and procedure

The sample consisted of humanitarian employees ($N = 283$) based at an international humanitarian organisation in Geneva, Switzerland. This organisation is financially supported by multiple countries and private donors and its primary mission is to alleviate illness and disease of populations in need (mostly developing countries). Although the participants travelled abroad regularly, they were not stationed in other countries for months at a time, and hence this humanitarian organisation does not classify their employees as international or national.

All employees ($N = 700$) were sent an email inviting them to participate in an online survey. The email detailed the purpose of the survey and assured the participants of anonymity and confidentiality. No incentives were offered. Ethical approval was granted by Webster Institutional Review Board and the research followed the British Psychological Society's (2014) Code of Human Research Ethics. Permission was obtained for the use of the General Health Questionnaire and the DCS questionnaire.

5.3.2 Measurement

Independent variables: Effort-reward imbalance. The abbreviated ERI questionnaire (Siegrist, 1996) previously used in numerous occupational health studies (see Tsutsumi & Kawakami (2004) and van Vegchel et al. (2005) for reviews) was employed (see Section 4.2.3 for further detail on the instrument structure and the calculation of the ERI score). Cronbach's α values were acceptable: over-commitment (six items, $\alpha = .83$), effort (three items, $\alpha = .75$) and reward (seven items, $\alpha = .77$).

Job content questionnaire. The DCS model evaluates perceived job stress and was measured by a 26-item version of the Job Content Questionnaire (JCQ) (Niedhammer, Chastang, & David, 2008). The best-known scales – (a) decision

latitude (job control) (9 items, $\alpha = .73$); (b) psychological demands (9 items, $\alpha = .71$); and (c) social support (8 items, $\alpha = .80$) – were used to measure the model of job strain development. Examples include “My job allows me to make a lot of decisions on my own”, “I am asked to do an excessive amount of work” and “my supervisor pays attention to what I am saying”. Answers were given on a Likert-type scale, ranging from 1 (= *strongly disagree*) to 4 (= *strongly agree*). Job strain indicates a ratio computed between the two scores of demands and job control, given the same weight to both variables (following the precedent of Knutsson, Hallquist, Reuterwall, Theorell, & Akerstedt, 1999; Ota, Masue, Yasuda, Tsutsumi, Mino, & Ohara, 2005; Peter et al., 2002; Theorell et al., 1998; Yu et al., 2013). In the present study, participants in the upper tertile of demand-control were operationally defined as being exposed to job strain, while the middle tertile was defined as an intermediate strain group and the lower tertile as low strain group (reference group). The sum social support score was similarly divided into tertiles, with the highest risk tertile (lowest tertile) forming the reference group (Calnan et al., 2004; de Jonge et al., 2000a; Li, Yang, & Cho, 2006).

Dependent variables. Psychological distress was measured using the 28-item General Health Questionnaire (GHQ-28). The GHQ-28 is a psychological screening tool used to determine nonspecific psychiatric morbidity (Goldberg & Hillier, 1979). The questionnaire focuses on the following two fundamental groups of problems: (1) inability to carry out one’s normal “healthy” functions and (2) the appearance of new phenomena of a distressing nature. Of note, it focuses on a break in normal functioning, rather than on permanent traits. The standardised scoring method categorises psychological symptoms into four seven-item scales: Somatisation, anxiety, social dysfunction, and depression. The items (e.g. “Over the past few weeks, have you been able to enjoy your normal day to day activities?”) are scored on a four-point scale so that higher scores are indicative of higher levels of psychological distress. Responses are given on a four-point scale (0 = *better than usual*, 1 = *same as usual*, 2 = *less than usual*, and 3 = *much less than usual*). The GHQ scoring method (0-0-1-1) was used to score the data, as advocated by the test

author (Goldberg & Williams, 1988). The points were summed to a global score ranging from 0–28 and the responses were dichotomised into non-distressed and distressed groups. Cronbach’s α value was acceptable for this measure ($\alpha = .83$).

The threshold of 5/6 for the GHQ 28 is reported to be the most optimal to identify likely cases of minor psychiatric morbidity (Makowska, Merecz, Mościcka, & Kolasa, 2002), yet a threshold of 4/5 has been the most widely used by researchers (Goodwin et al., 2013). Therefore, the cut off chosen for this study was set at 5 or above.

Covariates. Demographics. Information was collected on age in groups (less 34, 35-44, 45-54, 55+), gender, marital status (married/co-habitation or single/widowed/separated/divorced), and seniority (high, middle, and low pay grades as defined by the organisation).

5.3.3 Data analytic strategy

In order to fulfil the first aim, i.e. to examine the relationship between socio- and occupational-demographic characteristics and psychological distress (GHQ) among humanitarian aid workers, descriptive statistics were calculated for each of the study variables and Pearson’s χ^2 tests were then applied to compare the prevalence across socio- and occupational-demographic categories.

To examine the relative contribution of each model to the explanation of psychological distress in a humanitarian sample, the ERI model components (ERI and OC) and the DCS model components (JS, SS) were regressed (binary logistic regression) onto the health outcome psychological distress (GHQ). Model 1 was unadjusted (crude) and regressions were run separately for each model component. Model 2 was partially adjusted, taking into account socio- and occupational demographic variables that may influence the relationships under investigation.

Model 3 was fully adjusted for the same variables as Model 2 plus each stress model component (OC, ERI, JS, and SS) was adjusted for each other. This mutual adjustment was performed in order to test the independent contribution of each model component to the risk of psychological distress.

In each logistic regression, the hypothetically least adverse work condition was selected as the reference category (Kouvonen et al., 2005). All regression models were run separately for males and females, since, in previous research (e.g. Bruin & Taylor, 2006), it has been recommended not to make assumptions that a common regression equation, with equal slopes and intercepts, applies for both men and women. This type of research has demonstrated that the use of a common regression equation might yield biased results. Other reasons for separate analyses have been put forward in other chapters of this thesis (see Chapter 4). Furthermore, Study 2 aims to examine whether there is gender-specific associations between a stressful psychosocial work environment and psychological distress. The stress model variables used in all logistic regressions were all correlated to examine the threat of collinearity. The results showed that the highest correlation was .49 (ERI and OC), which does not exceed the conventional level of .70, where collinearity becomes a problem (Bachman & Paternoster, 2004; Meyers, Gamst, & Guarino, 2006).

In order to examine the combination of both models (combination of occupational components from the DCS and ERI models) and its association to the risk estimation of psychological distress, the combined effects approach (Smith et al., 2004) was applied. This approach examines the combined effect of the components of the two models on psychological distress and, unlike most previous research that has tended to focus on hazards in isolation, theorises that individuals are much more likely to be exposed to multiple hazards in the workplace and that the relationship between combinations of stressors is likely to be additive. Theoretically, this will explain more variance in the outcome measures than any of the independent variables in isolation (Kingdom and Smith, 2012). Scores (e.g. ERI ratio score, demands/control (JS) ratio score, OC total score) for the stress components were summed to create

composite or “combined effect” measures. Considering that different scales can have different metrics (e.g. different standard deviations), each component score included in the composite score was equally weighted by performing z score transformations (Ackerman & Cianciolo, 2000). Each occupational stress factor was made equivalent by having a mean of 0 and a standard deviation of 1. Overall, composite variables do not necessarily have to have conceptual unity but can be any combination of variables of practical or theoretical interest (Bollen & Bauldry, 2011). This type of composite or combined measure score approach has been meaningfully applied in other research areas. For example, in measuring malnutrition, researchers have developed an anthropometric failure score (a composite score consisting of z scores from the variables underweight, stunted, and wasted) (Seetharaman, Chacko, Shankar, & Mathew, 2007). A similar pattern of effect can be expected for an occupational equivalent where the composite measure functions better than any individual measure. Following this logic, in Study 2, the multiple hazards in the workplace were combined into a composite score and it was hypothesised that the relationship between combinations of stressors would be additive.

The following combined effect measures were computed in the following categories: (social support scores were subtracted from other stress indicators in the composite calculations, as a lower score in support indicated a more adverse result, which was different from other indicators where a lower score indicated a more positive result).

1. ERI score + OC score
2. JS score - Social Support score
3. JS score + OC score
4. ERI score - Social Support score
5. ERI score + JS score
6. ERI score + JS score + Social Support score
7. ERI score + OC score + JS score
8. ERI score + OC score + JS score - Social Support score

The combined negative occupational component scores represent exposure to multiple workplace stressors. The strongest effect on psychological distress was theoretically expected for category (8), the combination of all stress indicators. Each combined effect measure total score was then split into tertiles for further analysis. Two groups were then formed from this, the top tertile (high risk = 1) and middle and lower tertiles (medium/low risk = 0). These combined effect measures/components were regressed onto the health outcome psychological distress (GHQ). The regressions were adjusted taking into account socio- and occupational demographic co-variables that may influence the relationships under investigation.

The advantage of this approach is that it relies on continuous score calculations from each stress model component before categorising into tertiles. In their statistics paper on the problems encountered with dichotomisation, Royston, Altman, and Sauerbrei (2006) confirm that it is advisable to *first derive a continuous risk score* from a model in which all relevant covariates (in this case, stress components) are kept continuous, and then to *apply categorisation at the final step*, to meet the need of creating risk groups from models. Therefore, this approach may be preferable to the approaches where participants are categorised as high/low risk of an outcome based on combinations of already categorised high/low risk stress indicators (Peter et al., 2002). These latter approaches can potentially lose variations in the data, as the participants close to but on opposite sides of the cut point are characterised as being very different, rather than very similar. Furthermore, the number of participants that simultaneously meet high risk classification for several job stress indicators is substantially reduced, which, in small datasets, can cause numerical problems such as small cell sizes.

As all analyses described in Study 2 used tertile splits of independent measures, it allowed the determination of the relative influence of discrete levels of exposure to a particular stressor. For instance, it was possible to directly compare the relative effects of “low” and “high” exposure to work-related stressors in terms of psychological distress.

The overall model evaluations were verified by the likelihood ratio test and the fit of the logistic regressions models with the Hosmer-Lemeshow goodness of fit test (Allison, 1999). In all cases, the tests were satisfactory ($p < 0.05$) (details not shown). As recommended by Pallant (2010), missing data were excluded pairwise (i.e. the cases were excluded only if they were missing data required for the specific analysis). As a result of missing data, the total number of participants varied for each variable under consideration. Data analyses were conducted using IBM SPSS version 22 (IBM Corp., Armonk, NY).

Results

From a total of 700 employees invited to participate, 283 evaluable questionnaires were obtained, yielding the response rate of 40%. The demographic and occupational profile of the respondent sample (gender, age, grade, marital status) was not significantly different from the population from which the sample was drawn (chi-square analyses: $\chi^2 (N = 700) = 0.89, 0.09, 0.44, 0.35; p > .05$, respectively).

5.4.1 Descriptive statistics for and overview of the sample

Mean respondent age was 38.3 years ($SD = 6.15$), with individuals between 31 and 40 years old ($N = 144$) constituting the largest age group. Females amounted to 59% of the sample ($N = 166$). Most participants were married/in partnership (67%, $N = 189$) while others were single (24%, $N = 68$) and separated/divorced (9%, $N = 24$). Grades were collapsed into high pay, middle, and low pay grade. The middle pay grade had the most respondents (47%, $N = 133$), with 30% ($N = 85$) in the lower grade and 23% ($N = 65$) in the highest pay grade.

5.4.2 Associations between demographic or work-related variables and work stress variables or psychological distress

Overall, 149 (53%) of humanitarian aid workers were at risk of psychological distress. Cross-tabulations (Pearson chi-squares) between the different demographic variables, work stress variables, and psychological distress components are summarised in Table 13. Gender, marital status, and age were not significantly associated with work stress variables, and only marital status (those who were married were less at risk) was associated with psychological distress ($p < 0.01$). The participants in the highest pay grade were significantly more at risk of ERI ($p < 0.05$) than those in the lower pay grades.

Table 13. Associations between Demographic Variables, Psychological Distress, and Highest Risk Tertiles of Work-Related Stress Variables

Variables	N (%)	ERI model		DCS model		GHQ
		ERI (highest tertile) N (%)	Over-commitment (highest tertile) N (%)	Job Strain (highest tertile) N (%)	Social support (lowest tertile)	GHQ (at risk) N (%)
Gender						
Male	116 (41.1%)	34 (29.3%)	44 (37.9%)	35 (30.2%)	36 (31%)	54 (46.6%)
Female	166 (58.9%)	61 (36.7%)	75 (45.2%)	59 (35.5%)	49 (29.5%)	95 (57.2%)
χ^2		1.69	1.45	.89	.08	3.12
<i>p</i>		.20	.27	.37	.79	.09
Marital status						
Married/ co-habiting	190 (67.1%)	63 (33.2%)	82 (43.2%)	59 (31.1%)	56 (29.5%)	89 (46.8%)
Single, divorced or widowed	93 (32.9%)	32 (34.4%)	37 (39.8%)	35 (37.6%)	29 (31.2%)	45 (65.2%)
χ^2		0.44	0.29	1.22	.09	7.82
<i>P</i>		0.89	0.61	0.29	0.78	p < .001***
Age						
< 34	33 (11.7%)	14 (42.4%)	14 (42.4%)	14 (42.4%)	11 (33.3%)	23 (69.7%)
35-44	144 (50.9%)	48 (33.3%)	66 (45.8%)	52 (36.1%)	44 (30.6%)	79 (54.9%)
45- 54	77 (27.2%)	23 (29.9%)	33 (42.9%)	20 (26%)	22 (28.6%)	36 (46.8%)
55+	29 (10.2%)	10 (34.5%)	6 (20.7%)	8 (27.6%)	8 (27.6%)	11 (37.9%)
χ^2		1.65	6.29	4.04	0.35	7.72
<i>p</i>		0.65	0.09	0.26	0.95	.05
Pay grade						
Lower grade	26 (10.2%)	3 (11.5%)	11 (42.3%)	10 (38.5%)	6 (23.1%)	11 (42.3%)
Middle grade	215 (84%)	76 (35.3%)	87 (40.5%)	74 (34.4%)	66 (30.7%)	116 (54%)
High grade	15 (5.9%)	8 (53.3%)	7 (46.7%)	1 (6.7%)	3 (20%)	4 (26.7%)
Chi square		8.52	0.24	5.23	1.32	5.09
<i>p</i>		.01*	0.89	.07	0.52	.08

Significant findings are in **bold**. **p* < .05; ** *p* < .01; ****p* < .001.

5.4.3 Logistic regressions between work stress variables and psychological distress

ERI, OC, and JS were significantly associated with psychological distress in Models 1 and 2 (see Table 14). In Model 2 (adjusted for marital status, age, pay grade), the odds ratio of male and female respondents with high ERI for psychological distress was 5.40 (95% CI [2.03, 14.31]) and 4.49 (95% CI [1.98, 10.18]), respectively.

For males, in both Models 1 and 2, job strain odds ratios were higher with a range of 6.75 to 9.53 (95% CI [2.71, 16.84]), 95% CI [3.27, 27.76] respectively) compared to OC odds ratio range of 5.08 to 6.95 (95% CI [2.25, 11.48], 95% CI [2.69, 17.95] respectively). The opposite was true for females, where the odds ratios range for OC was 7.31 to 10.61 (95% CI [3.56, 15.00], 95% CI [4.40, 25.6] respectively) were higher than the odds ratio range for job strain of 4.19 to 4.72 (95% CI [2.03, 8.64]), 95% CI [2.09, 10.60] respectively).

To test the independent association of the different components from the two models with psychological distress, the stress model components (ERI, OC, JS, and SS) were adjusted for each other in addition to the covariates of age, marital status, and pay grade. As can be seen from Table 14, in Model 3, no significant contribution of ERI was found among males or females after adjustment (although significance was almost achieved at .05 for females). Among all respondents, JS and OC were significantly associated with the psychological distress after controlling for other stress indicators and additional confounders (Model 3). The pattern is gender-specific, as females reported higher odds ratios for OC than JS, and males reported higher odds ratio for JS than OC in all models. Social support was consistently significant across all models for males (range 4.82 to 6.38, 95% CI [2.04, 11.43], 95% CI [2.30, 7.68] respectively) and consistently non-significant across all models for females.

Table 14. Odds Ratios for Psychological Distress by Levels of Highest Risk Tertiles of Work-Related Stress Variables

Stress indicators	N (%)	Model 1 (crude)		Model 2			Model 3	
		Females OR (95% CI)	N (%)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)	Females OR (95% CI)	Males OR (95% CI)
ERI								
Low/Med	49 (51.6%)	1.00 (reference)	29 (53.7%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
High	46 (48.4%)	3.51 (1.75 – 7.04)***	25 (46.3%)	5.08 (2.09 – 12.32)***	4.49 (1.98 – 10.18)***	5.40 (2.03 – 14.31)**	2.50 (0.99 – 6.26)	1.90 (0.59 – 6.11)
OC								
Low/Med	34 (35.8%)	1.00 (reference)	23 (42.6%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
High	61 (64.2%)	7.31 (3.56 – 15.00)***	31 (57.4%)	5.08 (2.25 – 11.48)***	10.61 (4.40 – 25.60)***	6.95 (2.69- 17.95)***	6.79 (2.70 – 17.05)***	4.68(1.58- 13.91)*
Job Strain								
Low/Med	49 (51.6%)	1.00 (reference)	27 (50%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
High	46 (48.4%)	4.19 (2.03 – 8.64)***	27 (50%)	6.75 (2.71 – 16.84)***	4.72 (2.09 – 10.60)***	9.53 (3.27- 27.76)***	2.86 (1.17 – 7.02)*	6.35(1.94- 20.79)*
Social Support								
High/Med	63 (66.3%)	1.00 (reference)	28 (51.9%)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Low	32 (33.7%)	1.61 (0.81 – 3.22)	26 (48.1%)	4.82 (2.04 – 11.43)***	1.49 (0.71 – 3.14)	6.38 (2.30 – 17.68)***	1.09 (.43 – 2.73)	5.55 (1.64 – 18.80) *

Note. OR = odds ratio, CI = 95% confidence interval. Model 2 adjusted for age, marital status, and pay grade. Model 3 additionally adjusted each stress indicator for each other (ERI, OC, JS, and SS). Significant findings are in **bold**. * $p < .05$; ** $p < .01$; *** $p < .001$.

Eight different composite negative occupational variables/indicators (with various combinations of the two job stress models) were regressed on to the outcome psychological distress (see Table 15). For males at risk of psychological distress, the highest odds ratio (OR 18.24; 95% CI [5.69, 38.46]) was for the combined composite variable “ERI, JS, OC and SS,” whereas for females the highest odds ratio (OR 12.34; 95% CI [4.50, 33.81]) was for the combined composite variable “ERI, JS, and OC.” For females at risk of psychological distress, “JS and SS” combined had the lowest odds ratio (OR 2.81; 95% CI [1.32, 5.95]); for males, “ERI and SS” combined had the lowest odds ratio (OR 7.00; 95% CI [2.67, 18.32]). The occupational component combination that performed similarly well for both females and males was “ERI, JS, and OC,” odds ratio, 12.34 (95% CI [4.50, 33.81]), and 13.15 (95% CI [4.33, 39.92]), respectively.

For females, the ERI model components combined (ERI, OC) had a higher odds ratio (OR 11.17; 95% CI [4.19, 29.73]) than the odds ratio (OR 2.81, 95% CI [1.32, 5.95]) for the DCS model components combined (JS, SS). The opposite was true for males, where the odds ratio for job strain components combined (OR 14.05, 95% CI [4.81, 36.93]) was higher than the odds ratio for the ERI model components combined (OR 12.70, 95% CI [4.18, 38.58]). All of the odds ratios (final models) from combined occupational components were broadly much higher (see Table 15, odds ratio range 2.81, 95% CI [1.32, 5.95] to 18.24, 95% CI [5.69, 38.46]) when regressed on to psychological distress than when individual occupational components (see Table 14, odds ratio range 1.09, 95% CI [0.43, 2.73] to 6.79, 95% CI [2.70, 17.05]) were regressed on to psychological distress.

Table 15. Odds Ratios for Psychological Distress by Combined Levels of Work Stress Variables

Stress indicators	N (%)	Females OR (95% CI)	N (%)	Males OR (95% CI)
ERI and OC				
Low/med risk	48 (50.5%)	1.00 (reference)	24 (44.4%)	1.00 (reference)
High risk	47 (49.5%)	11.17 (4.19 – 29.73)***	30 (55.6%)	12.70 (4.18 – 38.58)***
JS and SS				
Low/Med risk	55 (57.9%)	1.00 (reference)	23 (42.6%)	1.00 (reference)
High risk	40 (42.1%)	2.81 (1.32 – 5.95)***	31 (57.4%)	14.05 (4.81 – 36.93)***
JS and OC				
Low/Med risk	49 (51.6%)	1.00 (reference)	24 (44.4%)	1.00 (reference)
High risk	46 (48.4%)	9.68 (3.74 – 25.01)***	30 (55.6%)	11.21 (3.83 – 32.80)***
ERI and SS				
Low/Med risk	54 (56.8%)	1.00 (reference)	25 (32.9%)	1.00 (reference)
High risk	41 (43.2%)	3.48 (1.57 – 7.72)***	29 (53.7%)	7.00 (2.67 – 18.32)***
ERI and JS				
Low/Med risk	50 (52.6%)	1.00 (reference)	26 (48.1%)	1.00 (reference)
High risk	45 (47.4%)	6.54 (2.74 – 15.58)***	28 (51.9%)	7.17 (2.70 – 19.01)***
ERI, JS, and SS				
Low/medium risk	52 (54.7%)	1.00 (reference)	24 (44.4%)	1.00 (reference)
High risk	43 (45.3%)	3.98 (1.79 – 8.86)***	30 (55.6%)	15.05 (4.82 – 39.92)***
ERI, OC, and JS				
Low/medium risk	48 (50.5%)	1.00 (reference)	24 (44.4%)	1.00 (reference)
High risk	47 (49.5%)	12.34 (4.50 – 33.81)***	30 (55.6%)	13.15 (4.33 – 39.92)***
ERI, OC, JS, and SS				
Low/Med risk	48 (50.5%)	1.00 (reference)	23 (42.6%)	1.00 (reference)
High risk	47 (49.5%)	8.19 (3.25 – 20.65)***	31 (57.4%)	18.24 (5.69 – 38.46)***

Note. OR = odds ratio, CI = 95% confidence interval. Model adjusted for age, marital status, and pay grade. Significant findings are in **bold**. * $p < .05$; ** $p < .01$; *** $p < .001$.

Discussion

Two influential models of stress (ERI and DCS) were examined, and both individual and combined occupational components were assessed for their relative contribution to understanding psychological distress. Incorporating a sound theory into the foundation of the used measures provides researchers with a deeper understanding

of stress concepts, enabling them to better establish the practical relevance of their findings (Dewe, 2000). Several relevant studies in the field of occupational health psychology have previously suggested that the elements of the DCS and the ERI models should be combined to improve their predictive power (e.g. Karasek et al., 1998; Benavides, Benach, & Muntaner, 2002). However, few attempts have been made to form composite measures from the full, original measures. The results of Study 2 suggest that, in combination, these two models have a great potential to provide a better insight into employees' psychological wellbeing. The enhanced predictive power of this combined model of work stress for psychological distress is likely to be because of the fact that it incorporates both personal characteristics and more objective features of the working environment, such as job control and social support.

In Study 2, around half (52.8%) of the participants were classified as at risk for psychological distress. Similar percentages at risk of psychological distress (50%) were found in another humanitarian study (Musa & Hamid, 2008), although this latter study was limited to one region (Darfur). However, Lopes-Cardozo et al. (2005) found only 11.5% of humanitarian aid workers in Kosovo at risk for psychological distress. Other high stress occupation group studies, such as in policing research, have found high prevalence rates similar to those obtained in Study 2. For example, Houdmont and Randall (2016) found that more than half (52%) of the respondents were at risk of psychological distress, highlighting the prevalence rate as considerably more than the general adult UK population (20%, see Murphy & Lloyd, 2007) and the average rate from UK occupation-based studies (32%, see Goodwin et al., 2013). A high prevalence of psychological distress could have negative long-term implications for health (May et al., 2002) and operational effectiveness. Study 2 presented in this chapter brings to light the need for humanitarian organisations to develop a coordinated and cooperative response to such high levels of psychological morbidity.

Interestingly, very few significant differences in psychological distress were identified by socio- and occupational-demographic status (see Table 13), including

gender. By contrast, as shown in the results reported in Tables 14-15, the links between occupational stressors as defined by stress models and psychological distress were consistent and strong while gender-specific patterns emerged. Therefore, these findings not only strengthen the relevance of work stress models to psychological distress in humanitarian workers, but also highlight the importance of running regressions separately for females and males. Of note, this suggestion runs counter to the common practice of just controlling for gender differences in logistic regression analyses when univariate statistics are non-significant for gender (De Bruin & Taylor, 2006).

The results of Study 2 broadly suggest that, both individually and in combination, occupational stressors from the ERI and DCS models are significantly associated with psychological distress. Furthermore, the combination of occupational components (composite scores) derived from the models showed stronger associations with psychological distress than the individual occupational components alone.

The main components of the DCS and ERI models were significantly associated with psychological distress in the anticipated direction, although social support remained non-significant for females. The components of the models that predicted psychological distress were subject to further variations by gender. For males, JS was consistently most strongly associated with psychological distress, whereas, for females, OC was the factor most consistently and strongly associated with psychological distress.

Although researchers typically include gender as a covariate in studies based on the DCS model, the role of gender has not yet been fully explored. For instance, van der Doef and Maes (1999) have reported that studies on females more often failed to support the strain hypothesis and concluded that men and women may react differently to the effects of high-strain work, with men appearing to be more vulnerable to the negative effects of high job demands and low job control. It has also been suggested that men are more likely to value their “organisational roles as

a central life interest” (Dodd-McCue & Wright, 1996, p. 1086) and that men may be more likely to interpret a lack of control in the workplace as a threat to their general self-worth. Likewise, Vermeulen and Mustard (2000) have concluded that characteristics of the workplace, such as job demands and job control, may have a greater influence on the psychological wellbeing of men as compared to women. This has driven some researchers to refer to the DCS model as a “male model” (cf. Johnson & Hall, 1988).

Low social support had strong and significant associations with psychological distress, but for males only. As explained by Ehrenreich and Elliott (2004), humanitarian workers report that their organisations are not very sympathetic to, or supportive of, staff members who experience work-related emotional distress, and that there is a “macho” culture of denial in terms of the negative psychosocial impact of exposure to the stresses of humanitarian work. Anecdotal evidence further describes humanitarian organisational culture as principally “macho-oriented”. This is thought to produce difficulties for individuals and organisations alike, such as being unable to acknowledge, support, or deal with stress and trauma (Etzion & Westman 1994; see many of the first-person reports compiled in Danieli, 2002). The above could partly explain the present investigation’s findings. In a similar way to the results herein, Stansfeld et al. (1999) found that lack of support from colleagues and supervisors was a more powerful predictor of psychological distress in males than females. Generally speaking, previous research demonstrates that males experience lower social support at work, while females seem to benefit more from both work and family social support (Nelson & Burke, 2002).

Furthermore, the results of Study 2 suggest that stressors tend to exert more negative effects in combination and that certain combinations of occupational factors tend to be more predictive of psychological distress than others. These findings support previous conclusions regarding the combined effects of the DCS and ERI models in predicting wellbeing (Calnan et al., 2000; de Jonge et al., 2000b; Peter et al., 2002; Ostry et al., 2003; Rydstedt et al., 2007). In the results, combinations of occupational factors regressed onto psychological distress had some gender- specific patterns,

although “ERI, OC, and JS” combined predicted similarly and very well for both males and females. It was hypothesised that, because of the “additive” effect described above, the combination of all occupational factors (ERI, OC, JS, and SS) would result in the highest associations with psychological distress. Whereas the regression results for males supported this hypothesis, for females, the highest odds ratio was for the composite factor “ERI, OC, and JS.”

For males, this study confirms that the composite score for the DCS model is more powerful than the composite score for the ERI model; however, the ERI model components contribute in a complementary way, so that all occupational factors combined (ERI, OC, JS, and SS) were more powerful than any other combination tested for the outcome psychological distress. For females, the results confirm that the composite score for the ERI model is more powerful than the composite score for the DCS model; however, the DCS model component JS contributes in a complementary way, so that the combined occupational factors composite (ERI, OC, JS) was more powerful than any other combination tested for the outcome psychological distress. Social support was not found to be strongly associated with psychological distress for females. Similarly, other researchers have documented gender-related differences, even in the same occupational group, that account for different levels of work stress and their health effects (Bergman et al., 2003; Escribaga & Tenias-Burillo, 2003).

Taken together, the results of Study 2 reported in this chapter demonstrate that psychosocial work exposures, both individually and combined, are significant determinants of psychological wellbeing. Seeking to avoid over-simplification of the work environment, a combined approach is broad in its examination of many key stressors related to health outcomes. A key benefit associated with incorporating a combined approach is that such analyses provide organisations with guidance on which combinations, out of a broad range of stressors, would be the most relevant to reduce. Usually, efforts to reduce the impact of job-related stressors have focused on helping employees with a variety of strategies to help them cope more effectively (e.g. Beehr, Jex, & Ghosh, 2001) and, to a lesser extent, reducing individuals’

stressors. Knowing which stressors to reduce is useful, because best practice should consider both group and individual level interventions (Bliese & Jex, 2002, Weinberg & Doyle, 2017). This study is the first to investigate both models in combination in this occupational sector. Still, further research is clearly needed to clarify and confirm these findings in this occupational sector and beyond.

5.5.1 Limitations

With regard to the limitations of Study 2 reported in this chapter, the first and obvious limitation relates to the cross-sectional design of the study and the use of self-report data. The problems inherent within cross-sectional and self-reported data are well recognised. However, while it is not possible to infer causality from the findings described in this chapter, it has nevertheless been shown that psycho-social hazards demonstrate greater associations with psychological distress in combination than when studied in isolation. It is important to note that several factors not measured in the current study may partially explain some of these results. For example, although the role of personality or negative affectivity has not been fully explored within the current sample, it is feasible that adaptive coping strategies may moderate some of the established negative relationships. There are also several possible demographic or occupational variables, such as ethnicity, that were not measured but that could be equally important.

Secondly, the analyses reported in this chapter consider only main effects. The interactive effects of components of job stress models (i.e. the “buffering effects” of control and social support as hypothesised in the DCS model, the moderating effects of over-commitment, or intrinsic effort on (extrinsic) effort-reward imbalance) were not measured. Yet, previous research in other occupational groups has been equivocal and inconclusive (van der Doef & Maes, 1999; van Vegchel et al., 2005).

Thirdly, the chosen cut-off points of the variables used were based on previous research of other occupational groups (e.g. GHQ) or on tertiles driven by the data itself (job strain). This might have led to a misclassification of subjects in some of

the categories used. It should also be noted that the categorising of stressors may have resulted in a different pattern of effects if continuous independent measures had been used. Uncertainty in how to select a “sensible” cut point to group a continuous variable into two or three classes has led researchers to use either the median or an “optimal” cut-point. The latter approach can give an inflated type 1 error probability (Royston, Altman, & Sauerbrei, 2006). Furthermore, while the use of continuous measures would enable for more robust conclusions about the linearity or non-linearity of associations between stressors and health to be drawn, an important aim of Study 2 was to describe the combined effects of stressors and to determine the relative influence of discrete levels of exposure. In this context, the use of derived categorical independent measures best facilitates this approach.

Fourthly and finally, the confidence intervals reported in Study 2 are sometimes quite large. A single study usually gives an imprecise estimate of the overall population value at stake. The imprecision is indicated by the width of the confidence interval: the wider the interval, the lower the precision. Confidence intervals are relevant whenever an inference is to be made from the study to the wider world (Altman, Machin, Bryant, & Gardner, 2013). As the confidence intervals are large, caution is advised in doing so. Factors affecting the confidence interval size include sample size, variability of characteristics (between subjects, within subjects, measurement error, etc.), and the degree of confidence required (95% in Study 2). However, as the sample size was adequate, it is more likely that the confidence intervals were large because of variability of the characteristics under study.

Conclusion (Study 2)

The results of Study 2 both support and extend previous research on the relationships between occupational sources of stress and psychological distress. The results support previous suggestions that traditional job stress models explain more variance in health outcomes when considered in combination (as compared to being

considered in isolation). In Study 2 this was true for both males and females, although the results also showed some selective associations between model components and outcomes with respect to gender. Overall, in predicting psychological distress, the DCS model is more powerful for males, while the ERI model is more powerful for females. Finally, the observed patterns of association appear to be relatively robust, although the group under study was fairly homogenous in terms of type of occupation. Therefore, organisations wishing to identify all probable sources of stress affecting their employees would need to broaden their understanding of how these sources of stress may combine in terms of health effects. In this context, the results of Study 2 can inform practitioners on relevant approaches to interventions that can be modelled on eliminating or reducing stress in a more holistic way. This said, further research is still needed to examine the combined model approach and its applicability for interventions, as well as the transferability of the approach across different occupational groups.

CHAPTER 6. WORK-RELATED STRESS: A QUALITATIVE INVESTIGATION AMONG HUMANITARIAN AID WORKERS (STUDY 3)

Whereas Studies 1 (Chapter 4) and 2 (Chapter 5) used quantitative data collection methodologies, Study 3 reported in this chapter employed a qualitative approach. This use of mixed methods in the thesis is designed to enable a deeper exploration of work-related stress in humanitarian aid workers than using one method in isolation.

Summary

As most previous studies on stress in humanitarian aid workers have focused on trauma and related conditions, or adopted a quantitative approach, qualitative research on the experiences of humanitarian aid workers concerning exposure to organisational as opposed to operational work-related stressors is scarce. This unidimensionality of previous research has resulted in that relatively little is known about the lived experience of stress associated with the design, management, and organisation of work. Study 3 reported in this chapter is a qualitative, interview-based study of how humanitarian aid workers ($N = 58$) perceive the stress-strain-outcome relationship and the processes that give rise to the emotional experience of stress. The participants were employees of Organisation B based in Geneva, Switzerland, and many of them frequently travelled abroad to meet organisational objectives of reducing or eliminating health problems and diseases of developing countries. Interview transcripts were thematically analysed and this analysis amounted to the identification of eight main themes. An emergency culture was found where most employees felt compelled to fulfil humanitarian needs. Employees experienced a strong identification with humanitarian goals and reported strong engagement. The rewards of humanitarian work were perceived as motivating and meaningful. Constant change and a stream of urgent demands in the

humanitarian context resulted in work overload. The ability to manage work-life boundaries and positive support from colleagues and managers helped buffer perceived stress, work overload, and negative health outcomes. The results obtained from interview analysis are discussed and suggestions are made in light of the current research and stress theory literature. The chapter begins with a critical discussion of the context and motivation for a qualitative approach in this occupational sector.

Background

The occupational health literature has consistently shown that workplace characteristics may influence the health and wellbeing of workers (Bonde, 2008; Schütte et al., 2014a; Stansfeld & Candy, 2006; Sverke et al., 2002). Numerous psychosocial hazards include organisational structure, leadership quality, work demands, changes in business processes, quality of communication and relationships, excessive workload, insufficient resources, role ambiguity or conflict, and work-family imbalance (Koeske & Koeske, 1993; Manning & Preston, 2003; Tetrick, Slack, Da Silva, & Sinclair, 2000). Despite the lack of the research on psychosocial risk in the humanitarian literature, humanitarian agencies are becoming increasingly concerned about the impact of stress on the effectiveness and efficiency of service delivery (Welton-Mitchell, 2013). The quantitative studies reported in this thesis (Studies 1 and 2) have helped to address this gap in the humanitarian literature and confirmed the relevance of certain psychosocial hazards or work stressors (the ERI and DCS models) and their relationships to negative health outcomes and behaviours (burnout and heavy drinking). Although there are likely to be commonalities across occupations in terms of prevalent psychosocial hazards, many occupations will also encompass occupation-specific stressors. Furthermore, within occupations, there are likely role-specific stressors. The distinction between occupational and role-specific stressors is meaningful in that available evidence suggests that role-specific stressors may contribute separately from generic stressors in the generation of stress-related outcomes (Houdmont,

2013; Noblet, Teo, McWilliams, & Rodwell, 2005). Almedom and Glandon (2007) call for more research on aid personnel by exploring the lived experiences and perceptions of aid workers. Qualitative research such as this can contribute by exploring occupation- and role-specific stressors and resilience.

Conventionally, multidimensional concepts such as stress have been measured either through a set of indicators or through a composite index (Durand, 2015). This approach is particularly useful for comparisons across organisations and countries. However, quantitative methods have some limitations, as “[...] applying only quantitative methods is likely to overlook important variables or the context in which some phenomenon might or might not occur. Even in mature areas, the exclusive use of quantitative approaches risks too narrow a focus, failing to consider alternative explanations and important contextual variables” (Spector & Pindek, 2015, p. 13). Although researchers rely on psychometrically valid measurement tools, their assumption is based on relevant psychosocial hazards being assessed (Beiske, 2002). This approach may lead to overlooking a wide variety of variables that are meaningful for the population under study (Creswell, Clark, Gutmann, & Hanson, 2003; Mazzola et al., 2011; Schonfeld & Mazzola, 2012).

The intensity of exposure to psychosocial hazards and the relationship between them may also remain unobserved. Several reviews also confirm a lack of studies investigating psychosocial work factors other than those conceptualised by single theories or models (Bonde, 2008; Netterstrom et al., 2008).

Therefore, many questions remain unanswered with regard to theoretical stress models. Among these, one of the main questions is whether theoretical stress models reflect and match the reality and breadth of the humanitarian work experience. Other pertinent questions include the following:

1. How does the stress appraisal process unfold over time?

2. How long does it take for stressors to influence more general wellbeing outcomes?
3. How much does having a negative health outcome influence reward processing and possibly ERI scores?
4. Construct validity: since ERI (and other constructs) are scores or calculations, do participants *feel* an injustice or a lack of reciprocity?
5. Are the rewards measured in the ERI model sufficiently broad to capture the unique aspects of reward (e.g. altruism) in some careers, such as humanitarian aid workers?

The contemporary transactional stress theory seeks to describe the processes by which exposure to the work environment (e.g. demands, control) drives the experience of stress and workers' reactions to it, as well as the effects on their health. Stress is then the "combination of a person with certain motives and beliefs with an environment whose characteristics pose harm, threats or challenges depending on those characteristics" (Lazarus, 1990, p. 3). To illustrate, Tassell and Flett (2007) suggest it is not stressors per se that are responsible for burnout development in humanitarian work. The authors use the framework of Vallerand and Houliort (2003) to explain how a lack of self-determination and autonomy leads to the development of an obsessive passion for work. Obsessive passion is shown to be linked to a variety of adverse cognitive and affective outcomes. In the domain of humanitarian work, Tassell and Flett (2007) suggest that individuals with an obsessive passion are more likely to suffer adverse outcomes and, consequently, develop burnout when working in humanitarian crises.

The cognitive processes that give rise to the emotional experience of stress stemming from perceptions of the demands on them is a part of understanding stress as a process (Cox & Griffiths, 1995). Thus far, this thesis has examined the classical psychosocial hazards of work (defined by the DCS and ERI models) and related

them to the effects of stress which may be expressed in terms of poor health outcomes and behaviours. However, the process or dynamics that play out between the antecedents (stressors) and the outcomes (ill health) warrant further exploration. Specifically, particular attention is needed to assess the full context of the work environment and personal reactions to stressors. Therefore, in order to remedy the limitations of the quantitative approach (as applied in Studies 1-2), Study 3 will explore practical and theoretical insights on the stressor-strain-outcome relationship using a qualitative framework.

6.2.1 Aims

This study used qualitative interviews to address the following question: how is the work stress process perceived by humanitarian aid workers? The study aimed to elucidate the way stressors are appraised, as stressors' appraisal is one of the most potent causal pathways available to researchers (Dewe, O'Driscoll, & Cooper, 2010). The major intention of conducting this qualitative analysis of employee experience and perceptions was to provide the humanitarian sector and allied professions with a focus to address some of the persistent problems faced by employees beyond that which can be achieved using static stress models that explore pre-ordained generic work characteristics. The common dynamics and patterns of interaction within the organisation, and particularly those that employees find problematic or helpful, may be reasonably expected to bring conscious attention and stimulate reflection, discussion, and debate. The development of a healthy, engaged, and experienced workforce maintained through enlightened organisational policies and practice will facilitate the humanitarian mandate.

Method

6.3.1 Qualitative paradigm

Qualitative and quantitative research methods represent different paradigms. Each method studies different phenomena. The quantitative paradigm is based on

positivism. Research is empirical and phenomena can be reduced to observed indicators which represent the truth. By contrast, the qualitative paradigm is based on interpretivism (Secker, Wimbush, Watson, & Milburn, 1995) and constructivism (Guba & Lincoln, 1994). Ontologically, the view is one of multiple realities or truths based on one's construction of reality. However, the fact that the approaches are lacking parity does not mean that multiple methods cannot be combined in a single thesis if it is done for complementary purposes (Sale, Lohfeld, & Brazil, 2002).

It can be argued that quantitative methods cannot access some of the phenomena that occupational health researchers are interested in, such as lived experiences of an employee or patient and their patterned interactions. The distinction of phenomena in mixed-methods research is crucial and can be clarified by labelling the phenomenon examined by each method. In this thesis, the quantitative part of the mixed-methods research (Studies 1-2) aimed to quantitatively document statistical associations between standardised job stress measures and health outcomes using a survey methodology. The qualitative contribution described below explores the stress to strain processes as they are experienced by humanitarian aid workers using interviews. The distinction between “lived experience of stress” and “statistical associations between stress and strain” reconciles the phenomenon to its respective method and paradigm. The major aim is complementarity and the combined results seek elaboration, enhancement, illustration, and clarification of the results from one method with the results from another (Greene, Caracelli, & Graham, 1989).

6.3.2 Participants and procedure

Participants were selected by random sampling from the employee list of a humanitarian organisation (Organisation B) based in Geneva, Switzerland ($N = 700$), with a mandate for the promotion of health and wellbeing among vulnerable populations. This initial sample ($N = 116$, 17% of the organisation) was considered sufficiently large to allow for anticipated non-response while capturing data on the full range of experience. The selected employees were then sent emails with detailed

information about the study. Subsequently, each of the selected participants received a phone call inviting them to participate in a face-to-face interview. Of the listed 116 candidates, 20 could not be reached by telephone and 30 further employees declined the invitation, with the reasons cited for not participating including parental leave, travel, illness, lack of interest, or being too busy. There were several “no shows” for scheduled interviews ($N = 8$). Therefore, a total of 58 employees (28 men, 30 women) participated, representing 8.3% of the organisation’s workforce. With regard to the rank of the interviewees, approximately one-third were from senior, middle, and lower grades, respectively. The mean age was 41 years (range 25 – 61) and job experience ranged from 1 to 34 years ($M = 11$, $SD = 8.54$ years). Demographic information was not included in the results due to several employees expressing concern over anonymity and fear of being “found out”. All employees were based in Geneva at the time when the study was conducted, but many regularly travelled abroad on organisational business.

6.3.3 Ethics

The study received Webster University Institutional Review Board (IRB) ethics approval. Before commencing the interviews, the aims of the study and voluntary nature of participation, as well as issues of confidentiality and anonymity of the data and their right to withdraw from the study without justification, were explained. The participants signed a consent form and permission for the audio taping of the interviews was obtained (See Appendix A and B). Signposting to sources of support was provided should the interview raise issues participants might wish to discuss further.

6.3.4 Semi-structured interviews

A semi-structured interview was used to obtain the participants’ views on their experience of stress. In a semi-structured interview, the researcher uses a set of questions as a guide for topics to be covered during the interview, but has the flexibility to follow-up with relevant additional questions. Probing techniques are

also used to draw out additional information regarding topics of importance and provide the basis for comparison (Bernard, 2012). Therefore, the flow of the discussion is conversational and is partly determined by the respondent, allowing for a natural description of events.

An interview is “a specialised form of communication between people for a specific purpose associated with some agreed subject matter” (Anderson, 1990, p. 222). The purpose of the research interview is to obtain research question-relevant information from the interviewee and, therefore, is focused on achieving the research objectives of describing, predicting, or explaining the phenomenon at stake (Cohen, Manion, & Morrison, 2007). Compared to other data collection techniques, such as questionnaires, observation, etc., the interview method serves as a rich source for exploring people’s inner emotional states and attitudes. Wisker (2001) suggests using interviews to obtain information based on feelings, experiences, sensitive issues, and insider experiences. As the aim in Study 3 was to see the process of stress from the respondents’ perspective, this method was deemed highly suitable. Focus groups were considered less suitable, as it was thought that, because of job security fears and the stigma of mental health, respondents might not feel they could actively and easily discuss issues of stress and mental health in the presence of their supervisors or work colleagues (Dilshad & Latif, 2013).

A semi-structured interview comprising 12 questions was used to elicit information from the participants regarding their experience of the transactional stress process. Previous research (Bhui et al., 2016), theoretical stress models, and key organisational concerns (such as absenteeism rates) guided the development of the interview questions. The topics covered were work demands/efforts; rewards; job characteristics; perceived stress and social support (see Appendix 1 for the interview schedule). The questions were piloted on four employees with the purpose of refining the topics, and gaining feedback from the participants on clarity and appropriateness of the constructed questions. The interviews were audio recorded, lasted between 30 and 45 minutes, and took place in a private meeting room at the

organisation's premises in Geneva. The recordings were then transcribed verbatim for analysis purposes.

6.3.5 Analytic strategy: Rationale for using thematic analysis

A phenomenological approach was taken to examine the narratives conveyed in the transcripts with a view towards guiding an emergent understanding of humanitarian aid worker's perceptions, perspectives, and understandings of work-related stress (Starks & Trinidad, 2007). To ensure replicability and transparency of the analysis, the guidelines for thematic analysis set by Braun and Clarke (2006) were followed.

Thematic analysis is one of the most widely used analytical methods in qualitative research. In this method, data are analysed in detail through identifying and describing themes within those data (Braun & Clarke, 2006). However, it is not classified as a specific method of qualitative analysis, such as grounded theory or narrative analysis. Rather, thematic analysis is considered "a foundation method for qualitative analysis" (Braun & Clarke, 2006, p. 78) and its approach tends to be more accessible than others. Braun and Clarke (2006) further propose that thematic analysis can be applied across a range of theoretical and epistemological approaches and this flexibility allows for a comprehensive yet unhindered data analysis.

A theme represents something that is salient within the data and is derived from patterns or meaningful answers (Braun & Clarke, 2006). Themes can be inductive or deductive. Inductive themes are derived and driven by the data themselves, without trying to fit into the researcher's pre-existing analytic presumptions. On the other hand, deductive themes are analysis-driven and rely heavily on the researcher's theoretical interest in the topic (Braun & Clarke, 2006).

In Study 3, thematic analysis was used to describe and analyse themes and patterns grounded in the data. An inductive approach was chosen and deemed more appropriate owing to the exploratory nature of the investigation; this allowed for the emergence of unexpected themes (Braun & Clarke, 2006). A theme taken from the

data set is guided by the researcher's judgment and is based on whether it qualitatively captures something important, rather than serves as a quantifiable measure of the prevalence of responses. The data are intended not to underpin assertions regarding generalisability, but rather to suggest insights. Thematic analysis was considered appropriate for this study because of the flexibility and accessibility of this approach. The method allowed for the organisation of the data into meaningful patterns of responses reflected across the data set.

6.3.6 Thematic analysis procedure

Braun and Clarke (2006) suggest a six-phase process for thematic analysis, which was followed in this study. The six phases are summarised as presented in Table 16. Each interview was analysed and a coding framework was devised. Transcripts were first read and reread and summaries were made on initial interpretations. Codes were generated and collated into prospective themes that were then reviewed and named. For an issue to be considered a theme, at least 10 participants (17% of the sample) had to comment on it. The findings of each coder (researchers LJ and Roslyn Thomas, head of psychology, Webster University) were compared and final themes were agreed upon. Two coders were used not only to achieve inter-rater reliability, but also to expose disagreements, a critical process in refining a coding frame (Malterud, 2001). Finally, an experienced humanitarian professional was consulted to review all the transcripts and to assess credibility of the findings.

Table 16. *Phases of Thematic Analysis (Braun & Clarke, 2006, p. 87)*

Phase	Description of the process
1. Familiarising yourself	Transcribing data (if necessary), reading and re-reading the data, noting down with your data: Initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic “map” of the analysis.
5. Defining and naming	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

6.3.7 The role of the researcher

Inherent to validity and quality of results is the role of the researcher in data collection and analysis. In qualitative research, the researcher’s interpretation of thoughts and words of others is typical, leading to a potential emergence of bias. Therefore, the researcher should make an effort to view situations and events without making value judgments and attempt to remain neutral (Fetterman, 1998). This is difficult, as all researchers bring with them their personal beliefs and assumptions, which can lead to a biased interpretation. As a PhD student in Occupational Health Psychology, I read many theories and frameworks to

understand the concepts of stress, hazards and strain. This knowledge and particular lens was difficult to shed whilst examining the data, although I did try to view the data in a neutral and open way. Overall, the experience and training of the interviewer is vital to the reduction of bias. Interviewers need to be skilled in interviewing to avoid leading questions, failing to probe, and asking ambiguous or insensitive questions. The researcher should also be prepared to handle a large amount of information during data analysis (Denzin & Lincoln, 2000). Having worked on other qualitative studies and being trained to conduct interviews permitted the present researcher to provide the appropriate level of empathy to the participants and to ensure appropriate probing techniques. Experience and training helped the interviewer to control responses to statements made during the interviews, reducing error associated with the participants' responses based on the interviewer feedback. Some interviewees were clearly distressed when they were asked to talk about work stress, coping and health. It was really important that the interviewers had been trained to respond empathically and sensitively to these types of responses in interviews, especially for ethical reasons. For example, referrals to mental health practitioners were offered to all employees if they expressed a need for further support or were clearly distressed. Finally, being mindful of any preconceived notions helped the interviewer to control the effects of personal bias in questioning.

Results

The thematic analysis of interview transcripts highlighted only top level, main themes. The following eight main themes were identified (Table 17): (1) emergency culture; (2) rewards of humanitarian work; (3) constant change; (4) high engagement; (5) work overload; (6) managing work-life boundaries; (7) social support; and (8) health outcomes. These are illustrated by quotations extracted from the interview transcripts. Minor modifications were made to some quotes to preserve anonymity.

Table 17. Work-Related Stress Themes of Humanitarian Aid Workers

Theme	Description
Emergency culture	The organisation was seen as functioning in “emergency mode” and a sense of ongoing urgency/crisis was perceived.
Rewards of humanitarian work	The interviewees were passionate about and felt rewarded by humanitarian work. Fieldwork was important to remain motivated and connected to work.
Constant change	Many interviewees felt stressed as a result of ongoing, unpredictable, and rapid pace of change in the organisation.
High engagement	The interviewees expressed a high commitment to the organisation and their work. In addition, many felt unable to withdraw from work because of a compelling drive to meet beneficiary needs/humanitarian goals.
Work overload	The interviewees felt expected to undertake unrealistic or unmanageable workloads, which resulted in (and most commented on it as a source of) stress and negative health outcomes.
Managing work-life boundaries	Working long, unsocial, and unpredictable hours had a negative impact on the interviewees’ work-home life balance. Work was perceived as all-encompassing.
Social support	Supportive relationships were key in managing stress at work. The perceived support was largely dependent on the qualities of the managers.
Health outcomes	Stress was strongly linked to work overload, inability to withdraw from the demands of work, and negative mental and physical health outcomes. The interviewees reported distress in the form of anxiety, burnout, depression, and/or deterioration in physical health.

6.4.1 Emergency culture

Some employees explained how humanitarian goals and the work context influence their experience of stress. They explained how the organisation has to negotiate the demands and complexity of external expectations and “the disease burden”:

[...] these many external expectations put pressure on the organisation. This creates a constant internal pressure to satisfy expectations, sometimes undefined expectations that causes us stress. This challenging aspect is to balance strict internal deadlines and, at the same time, to respond to the multiple demands of external countries I feel we are always in emergency mode

Operating in a climate of “*everything is urgent*” was perceived as stressful. Many interviewees made reference to “*deadlines and to meeting them with urgency*” and the operation of the organisation as functioning in “*emergency mode*” or “*short-term modes of operation*” and admitted “*a constant feeling of crisis within the organisation.*” The results indicated that this “emergency mind-set” is a deeply embedded and accepted cultural norm in the organisation.

6.4.2 Rewards of humanitarian work

Many interviewees valued and “*felt energised*” by the experience of travelling to the field where they witnessed “*the positive impact*” of their work, and where they felt that “*visiting countries in need keeps me connected and motivated to do the things we all care about*”. However, a minority of the interviewees reported “*clocking in and clocking out*” and were “*not fully present*” and committed at work. Some attributed this to “*sitting here and filling out forms remotely in headquarters. We don’t get to see what it is all about.*” One of the employees put it as follows:

When I visit the field, I get a tingle of you know, what you are doing matters. But on the whole, on the average day, I don’t get that tingle anymore. We should all go to the field more often so we don’t become bored and disenchanted.

Most people held the mission and mandate in high regard, were passionate about what it represented, and were rewarded by the overall impact of the organisation on the populations it serves. This gave them “*the chance to save lives on a big scale.*” They derived meaning from their work by “*seeing the effect of our choices on the beneficiaries.*”

6.4.3 Constant change

Many interviewees shared the view that the organisation was one that changed and evolved all the time in response to the humanitarian context. Some employees celebrated the “*very creative, new innovative stuff*” and the “*interesting, global, and challenging environment*”. They perceived their work as an opportunity to “*change things and build relationships,*” and responded to “*the short-term results, the speed and the dynamism*”. The work environment was seen as presenting diverse opportunities and some embraced the “*ability to influence the direction of the organisation*”.

However, most interviewees were not comfortable with the ongoing, unpredictable, and rapid pace of change in the organisation. Therefore, common reactions were anxiety regarding change, loss of control, interpersonal competition, and frustration at the extent of the changes (e.g. restructuring and new procedures/processes) during recent years.

At this point, the organisation is changing and reinventing itself perhaps too fast. We don't seem able to get out of or control this cycle, so I just keep my head down and absorb the change.

People react very defensively if you try to change something. People anticipate something going wrong. Rumours about organisational change can create fears as to the stability of our existing jobs. They cause confusion and stress.

6.4.4 Strong engagement

Many respondents reported a high engagement and an inability to withdraw from work. This was perceived to be directly related to fulfilling humanitarian aims: “[...] *people are super engaged with a strong belief in the mission.*”

I plan to say no to requests, but I never do, because I want to help the organisation and all beneficiaries. I find the responsibility huge and so it is very difficult to switch off. If there are delays on a decision, the recipients can suffer.

We are over engaged – perhaps because of the mission. I know that my passion feeds into the organisational demands and expectations.

A deep commitment to the mandate enabled many interviewees to report fulfilment and satisfaction with their work.

I’m proud of the organisation and my small role. I joined as I identified with the mission. The enormity of what I am doing on the global scale pushes me to continue doing it, even though the team is completely stretched.

I like the moral dimension of contributing to something useful and I identify with the powerful and motivating mission of protecting and helping. I feel a human connection with each person we have helped.

6.4.5 Work overload

Work overload was another recurrent theme across all interviews and emerged as a significant source of stress. Managing one’s workload, as one of the interviewees phrased it, “[...] *is a hot potato, there are never enough resources.*” Some employees felt there was also an unfair distribution of resources: “*We could still certainly double the staff in our team. If you compare our workload to other divisions, we are suffering. We don’t have enough resources in our unit.*”

The interviewees also commented that they were expected to undertake unrealistic or unmanageable workloads that had several consequences, as described in the quote below:

I am exhausted each day and feel life is a marathon. I need the weekends to recover, rather than a time to enjoy. This causes a clash with my family commitments.

It doesn't matter what day it is, Monday or Saturday or a holiday, the minute I wake up it is work. I even dream about work. We are really balancing on the edge. It's difficult to solve this, because people are stretched so far and there's nothing to lean on and no time and resources to spend or invest in resolving some of these issues.

The internal dilemma faced by the employees of the organisation was aptly captured in a quote by one interviewee: “We are doing the right thing. My family say I love and I hate my job. I love the work and what it means and I hate the amount of work I have to do to achieve the results.” The consequences of work overload were clearly linked to stress, but also to performance, for example: “I never have time to review my work and read the guidelines”. The employees under excessive pressure were more likely to feel dissatisfied with their job, more likely to seek new employment, and were more likely to report negative effects on their physical and mental health.

6.4.6 Managing work-life boundaries

The interviewees expressed the need to work long, unsocial, and unpredictable hours to meet all the demands placed on them and this negatively impacted their work-home life balance:

You work non-stop during the day and know that you have work at night. I can't set boundaries.

I often don't manage my workload. I leave the office to take care of the children and once they are in bed I go back to work.

Many interviewees referred to the difficulty in balancing their personal and professional lives and, for some of them, work became all-encompassing:

I don't manage my workload. My priority is my job. I had a discussion with a counsellor as I had reached an emotional point where I realised that nothing but my job mattered. I have to learn to have a balance. Work becomes one's life when family and friends are not around.

Some interviewees felt more responsible for maintaining an acceptable degree of separation between the work and home domains. This sense of setting boundaries was perceived as helping them cope and they were more realistic about their own performance. This mind-set is well illustrated in the following quotes:

There is lots of talk about work/life boundaries, but it is really me who has to set them. I can only do my best, and that has got to be good enough.

I really need to step back and say your urgency is not my urgency. I have rights too. I do set boundaries for others and myself. It helps me cope.

6.4.7 Social support

6.4.7.1 Managers

Managers were seen to help employees deal with stress and work overload and were an “*incredible source of support.*” The interviewees described their experiences of managerial support as follows:

When I have a nurturing boss who cares, who sees me burning out, who tells me to calm down, someone who is a mirror, an intellectual partner. When I do not feel alone, this helps me a lot and I go the extra mile. This makes a huge difference.

I get a great deal of support from my manager. My manager is motivational and enthusiastic, yet sets high standards for himself and the rest of the team, but in such a positive way.

However, several interviewees reported that they “*hand pick whom they trust.*” The amount of support they received largely depended on the qualities of the manager they had: “*I am so careful about who I talk to, as I have learnt to have a deep fear of being judged and of never being enough.*”

The interviewees also suggested that managers might improve their skill set by attending training in leadership, as well as managerial and communication skills. This was particularly true if managers had been selected more on the basis of their specialised knowledge, rather than on their ability to manage people. A typical response of this type was as follows: “*We have specialists who run teams, but they are not trained managers.*”

When managerial relationships were not perceived as supportive, this contributed to work stress and negative health outcomes: “*I have no voice and am fearful of asking for help. I have been shot down, had doors closed on me. I have a sense of insecurity. I fear retaliation and am anxious to voice my opinion.*”

6.4.7.2 Team and colleague support

Almost all respondents discussed the importance of maintaining healthy teams comprising networks of relationships. Some expressed a sense of joy, fulfilment, and loyalty resulting from working as a team and being supported by colleagues. Supportive relationships were pivotal in managing stress at work and allowed the interviewees to find meaning in what they did. The quote below illustrates this point.

I enjoy positive reinforcement from my peers. It is great when they and the people on the ground give me feedback and recognition that we are making a difference.

The team is really everything and maintaining a cooperative culture is really essential. Strong and cohesive teams do exist and do provide motivation, trust, and a challenging and positive environment. We have a willingness to share the load.

Several interviewees emphasised the role trust plays in humanitarian work:

If people can't depend on each other and work together as professionals they fail. Forming mutually trusting relationships of support and confidence is not always obvious.

There is a lot of trust in the team, a lot of team-building, so it is a pleasure to go to work and makes it manageable.

Creating a supportive network served as a way to secure connection to others. This positive resource buffered against the costs of anxiety and lessened individual perception of stress. Threats to the mental health of employees were found in the underlying tensions and interpersonal conflicts with colleagues and managers. If challenges arose and interpersonal support was low, the outcomes referred to by the interviewees included physical discomfort, culture shock, as well as the feelings of isolation and loneliness.

6.4.8 Health outcomes

There was evidence that some interviewees perceived their work as chronically stressful. These respondents strongly linked stress, work overload, and an inability to withdraw from the demands of work to negative mental and physical health states. They reported distress in the form of anxiety, burnout, depression, and/or deterioration in physical health. The organisational consequence was clear in the form of reported absenteeism. These stress-related physical illnesses were sometimes sufficiently serious to warrant hospitalisation. To deal with mental health issues, some interviewees mentioned having requested coaching or counselling. Furthermore, three respondents reported having had an emotional breakdown during the previous year as a result of work pressure. For example:

I can't sleep and feel absolute fear at the stress that comes over me at times. I have this work anxiety every day, trying to cope with everything. There are

a lot of people ill in our team, on sick leave, in hospital, and I would say stress related.

I am exhausted each day. I feel unable to control or limit my job. I put in effort and then get many demands until I feel like I am emotionally drowning.

Discussion

Study 3 reported in this chapter provides deeper insights into organisational work-related stress experienced by humanitarian aid workers. The participants generally felt positive and rewarded by their contribution, yet experienced high levels of stress in the demanding context of their humanitarian aid work. To help consider the implications of these findings, suggestions were made to allow for a reflection on theory and practice and to consider relevant ways to reduce work-related stress within humanitarian work.

The interviewees recognised the external pressures and complexities faced by humanitarian organisations in helping people in need. Identifying with these altruistic ambitions, many of the respondents admitted operating in a constant state of urgency to meet deadlines. Many interviewees perceived the need to respond to changing contexts and urgent demands as stressful; therefore, better planning was suggested in order to move away from an emergency culture. Several employees also remarked on their inability to recover and rest as the demands never waived, and over several months; this led to a state of exhaustion. Previous research confirms the work environment of humanitarian aid workers as constantly changing, time pressured, and unpredictable (Majchrzak, Jarvenpaa, & Hollingshead, 2007; Yanay et al., 2011; Blanchet & Michinov, 2014).

Strong identification with the mission, coupled with responsibility for those in need, resulted in a constant strong engagement and a perceived inability to withdraw from work. Commitment is an important part of engagement, an optimal state where employees are intrinsically motivated and have high energy levels to enjoy work challenges. However, at the extreme, over-commitment can increase the chance of

strain reactions (van Vegchel et al., 2005). Overcommitted persons repeatedly overtax their own resources and, in doing so, precipitate exhaustion in the long run (Joksimovic et al., 1999). It seems possible that, on the one hand, commitment is a motivational factor promoting work engagement; however, on the other hand, too much commitment is a risk factor for negative health outcomes and stress (Feldt et al., 2013). Varying levels of work engagement might actually be more beneficial than constant high levels of work engagement (George, 2010), as the latter could potentially result in a loss of energy or may lead to work-family conflicts (Halbesleben, 2011) and even more demands (Sonnentag, Binnewies, and Mojza, 2010). Therefore, by offering important insights into motivations related to the inability to withdraw from work and excessive striving, the results can inform interventions developed to coach on healthier coping responses to external demands.

The findings of Study 3 also suggest that much of the stress and related anxiety among humanitarian aid workers is created by the volume and complexity of the work required to succeed. Work overload, constraints in the external environment, such as funding and resources, as well as a collective internal drive to meet humanitarian needs all contribute to the development of a culture where insufficient boundaries are placed around what people are reasonably expected (and expect themselves) to do. Many employees seem unable or struggled to achieve work-life balance. In a national Australian study, work overload was the strongest predictor of full-time employees' work-life conflict (Skinner & Pocock, 2008). In the present investigation, the interviewees also linked work overload and work life conflict to negative health outcomes, such as burnout and anxiety. Employees explained the process as experiencing job stress first and then ongoing stress is followed by strain (poor mental and physical health outcomes). This supports the stress to strain hypothesis central to both the ERI and DCS models. As noted by Bakker and Demerouti (2007), the health impairment process occurs where high demands exceed psychological and physical resources and, consequently, result in ill-health and negative organisational outcomes.

The same drive to meet humanitarian needs is also perceived as an important form of reward and, because of the overall impact of the organisation on the populations it serves, many humanitarian aid workers derive meaning from their work because of the overall impact the organisation has on those it helps. The social or altruistic reward of serving others is not currently included in theoretical stress models. As a predictor of strain in human service professionals, it may be a useful practical and theoretical addition to the frameworks such as effort and reward imbalance (Siegrist, 1996). In line with this proposal, researchers acknowledge that specific rewards may have specific effects and emphasise the importance of splitting different types of rewards (van Vegchel et al., 2002; Dragano, Knesebeck, Rodel, & Siegrist, 2003). Employees who were experiencing poor mental health also showed an inability or lack of desire to comment on positive or rewarding aspects of their job. This should be investigated further in future research as it suggests the possibility that being in poor health may affect reward processing.

Furthermore, as suggested by the results, the existence of supportive relationships and collaboration within teams and with managers was seen as key to employee wellbeing. Supportive relationships at work were perceived to help employees more effectively manage their workload and work-life balance. The respondents' reactions to psychosocial hazards were also directly influenced by the quality of their inter-personal relationships at work. The interviewees reported feeling more valued, understood, motivated, as well as less stressed and fearful, in contexts when sound collegial relationships and leadership were in place. Consistent with these findings, Mazzola et al.'s (2011) review identified interpersonal conflict as the most prevalent stressor in the workplace. Other studies also confirm that the relationship between leaders and their employees is associated with employee stress and affective wellbeing (Skakon, Nielsen, Borg, & Guzman, 2010). In the results of the present thesis, the perceived lack of trust was an important component that linked work relationships to increased stress. However, further research is recommended to advance the understanding of *processes* linking work relationships to employee stress.

Taken together, the results of Study 3 suggest that organisation-level interventions are warranted involving the development of leadership skills concerning day-to-day support provided to employees. The respondents expressed the need for a higher consistency of people management skills. Therefore, improvements in the quality of relationships with managers – particularly, building trust in leadership (Liu, Siu, & Shi, 2010) – could improve employee wellbeing. Relevant interventions could also include better work design, enhancing team work and control over work; promotion of informal social support; evaluation and planning for work demands and staffing in an emergency context; avoiding ambiguity in job security; and the design of adaptable work schedules to achieve work-life balance. Through relevant training, employees could increase their awareness, knowledge, skills, and coping resources to more effectively manage stressful conditions. Conditions relevant to this study include interpersonal relationships (between colleagues and with supervisors), over-engagement, work overload, and boundary management in an emergency culture.

Strengths and limitations

The key strength of Study 3 reported in this chapter lies in a successful examination of work-related stress in a hitherto neglected occupational group (Kidd, Scharf, & Veazie, 1996). Through a close examination of individual aid worker experiences, this study produced rich thematic descriptions providing valuable insights into the lived stress-related experiences of humanitarian aid workers. These descriptions were specific and relevant to the humanitarian context – the main research object of the present thesis.

Another strength of Study 3 is that some factors (such as the rewards of altruism, or emergency context) captured by using the qualitative approach adopted in Study 3 might have gone unidentified in generic (stress) questionnaire research. The interview-based data collection methodology enabled a full and frank sharing of experiences between the researcher and the interviewees.

Furthermore, the sample size used in Study 3 was sufficiently large ($N = 58$) and full thematic saturation was achieved. In this respect, Jensen, Christy, Gettings, and Lareau's (2013) analysis of the content of articles ($N = 13,670$) published in top-ranked journals in communication, public health, and interdisciplinary social science from 2005 to 2009 revealed that a typical interview study had approximately 30 participants (median = 27).

This said, several limitations of Study 3 need to be acknowledged. First, in the course of answering some of the interview questions, the interviewees had to rely on retrospective recollections of their fieldwork. Although most participants regularly travel to other countries ("the field"), this aspect should be considered when comparing the results reported in this study to other or future studies where participants may be living abroad. Furthermore, it is possible that the experiences of work-related stress under scrutiny in Study 3 are particular to the organisation under investigation, rather than indicative of humanitarian aid work in general; therefore, further research is required to confirm these findings on a sector-wide level.

Conclusion (Study 3)

There is a paucity of current research into the subjective stress-related experiences of humanitarian aid workers. Most previous studies investigating stress in humanitarian aid workers focus on trauma and related conditions or adopt a quantitative approach. The present interview-based study explored how humanitarian aid workers ($N = 58$) employed by a United Nations-aligned organisation perceive the transactional stress process. Thematic analysis revealed eight main themes. Firstly, an emergency culture was found where most employees felt compelled to fulfil humanitarian needs. Employees also experienced a strong identification with humanitarian goals and reported a high-level of engagement. Furthermore, the rewards of humanitarian work were perceived as motivating and meaningful. In addition, constant change and a stream of urgent demands resulted in work overload. The ability to manage work-life boundaries and positive support

from colleagues and managers also helped buffer perceived stress, work overload, and negative health outcomes. Taken together, the results of Study 3 yield a rich narrative-based knowledge base on organisational as opposed to operational work-related stress as experienced by humanitarian aid workers. These qualitative findings can provide a basis for the development of a sector-specific quantitative risk assessment tool and bespoke interventions.

CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS

The overarching aim of the present thesis was to describe organisational stressors and explore their association with burnout, heavy drinking, and psychological distress in the humanitarian context. Utilisation of a mixed methods approach allowed for the examination of generic and role-specific stressors within an established theoretical framework.

To address the aims of this investigation, Studies 1 to 3 sought to answer the following broad questions:

1. Is the ERI model useful in evaluating the risk estimation of burnout and heavy drinking in the humanitarian sector?
2. What is the individual and combined contribution of the DCS and ERI models in the risk estimation of psychological distress in the humanitarian sector?
3. How do humanitarian aid workers perceive and experience the work-related stress process?

In this chapter, the findings of the research studies are summarised according to the research questions above. The implications of the findings for the humanitarian sector are considered. The overall strengths and limitations of the thesis are then addressed. Recommendations for future research and are explored, as are ways to develop interventions to improve the wellbeing of humanitarian aid workers.

7.1 **Summary and implications of the research findings**

Results, on the whole, are consistent with prior research suggesting that stressors emanating from the design, management, and organisation of work play a vital role in contributing to health outcomes. Moreover, findings on the predictive capacity of these work variables provide further support for the continued use of the dimensions contained in contemporary stress models such as DCS and ERI. Overall, the research provided strong empirical evidence in support of examining multiple factors when trying to understand job stress and health among humanitarian aid workers. The qualitative results complement the findings of the quantitative job stress model research and add new and specific information for understanding humanitarian stress at work. The current findings underpin the importance of how this theoretical and combined methods approach can challenge conventional thought about what should be areas of focus for intervention programmes in the humanitarian sector. For example, humanitarian aid worker interventions to date have focussed on the individual (such as debriefing) or reducing occupational risks such as exposure to trauma. However, the present investigation shows a promising, broader approach capturing the complexities of the interactions between humanitarian worker perceptions and their work environments in determining job stress. The research results provide an evidence base for leaders within humanitarian organisations to address and reduce the organisational sources of employee stress.

7.1.1 Is the ERI model useful in evaluating the risk estimation of burnout and heavy drinking in the humanitarian sector? (Study 1)

Some humanitarian studies have highlighted various types of stress, burnout, and mental health problems encountered by aid workers during their work (Eriksson et al., 2001). Other humanitarian studies have examined the nature of the violence and exposure to trauma that aid workers endure while performing their jobs (Stoddard, Harmer, and DiDomenico, 2009). The purpose of this study was unique to this occupational sector as it applied a stress model drawn from the occupational health

literature to the context of humanitarian aid workers. Study 1 reported in this thesis demonstrated the value of the ERI model to humanitarian aid work by providing evidence of strong associations of components of the model to both burnout and heavy drinking, with some gender-specific results.

High effort-reward imbalance (ERI) and high over-commitment (OC) were significantly and strongly associated with increased risk (odds ratio of more than 12.5) of the main burnout dimension emotional exhaustion (EE) for both males and females. The results also suggested that, even after adjusting for STS and PTSD covariates, both these components of the ERI model still maintained a significant and strong relationship to EE. There were mixed and gender-specific findings for depersonalisation and personal achievement. Certain components of the ERI model were found to exert differential impact on health outcomes by gender, and these noteworthy gender patterns that emerged may usefully inform interventions and further research. Development of more specific measures for the humanitarian sector may yield greater sensitivity and specificity. Future burnout research may be aided by the development and validation of profession-specific measures of effort and reward, including factors influencing the effectiveness of rewards (e.g. predictability). Those at risk for burnout would benefit from changes to the workplace that contribute to their impaired health status and work performance. Organisations (e.g. human resource managers) can and should play a central role in the prevention and reduction of burnout, simultaneously paying attention to the work context and the personal motivations, coping strategies, and needs of the individual employee.

In the second part of Study 1, the associations between ERI model components and heavy alcohol consumption were investigated. Results showed that high ERI was significantly associated with a tripling of risk of heavy alcohol consumption, but only among women. Over-commitment was not significantly associated with heavy drinking in either males or females. The associations of heavy drinking and ERI highlight the potential role played by harmful elements in the work process in the etiology of drinking behaviours. An argument for evidence-based changes in the

psycho-social work environment can be made based on this evidence and the high prevalence of hazardous drinking among female employees calls attention to its future burden. Additional health observation efforts are required, as well as efficient interventions. The introduction of such efforts should be considered by managers and policymakers when establishing priority groups for prevention, early identification, and treatment of heavy drinking.

The results also showed socio-demographic differences in the proportions at risk for both burnout and heavy alcohol consumption. More specifically, females were at a significantly increased risk for the burnout dimension EE and heavy alcohol consumption, compared to males. Among the participant sample based in Switzerland, respondents were significantly more at risk for burnout (dimensions EE and PA) and heavy alcohol consumption than other regions. Compared to national workers, expatriates experienced a significantly higher level of EE, diminished PA, and higher alcohol consumption. Describing and investigating different demographic groups and their risks for burnout or heavy drinking can increase knowledge about the factors that influence these outcomes and related problems more generally. What needs further clarification, for example, is how gender and gender roles (i.e. social expectations about how women and men should behave) influence the drinking behaviour of both women and men in this occupational group. Researchers have found value in paying attention to the alcohol culture of particular occupations (e.g. hospitality management and policing) (Ames, Duke, Moore, & Cunradi, 2009; Davey, Obst & Sheehan, 2001).

The findings from Study 1 have therefore provided useful preliminary insights into the relationships between stress-related working conditions as defined by the ERI model and the two health outcomes under investigation. The highly specific information on which ERI model components are significant for risk estimation for particular health outcomes could help managers develop effort- and reward-based interventions that are health outcome and gender (or another significant socio-demographic variable) specific. The following section will summarise the results

from Study 2 by examining the relationships between stress-related working conditions defined by both the ERI and DCS models and psychological distress.

7.1.2 What is the individual and combined contribution of the DCS and ERI models in the risk estimation of psychological distress? (Study 2)

The conceptual and methodological understanding of stress at work is crucial to adequately address employees' adverse health issues. To study work-related health, the DCS model employs exclusively extrinsic characteristics (e.g. work environment and employment conditions) (Karasek & Theorell, 1990), and by contrast, the ERI model employs both intrinsic (e.g. personality traits and coping behaviours) and extrinsic factors (Siegrist, 1996). The ERI and DCS models are therefore different, yet complementary in their insights concerning the factors involved in work-related stress (Siegrist & Marmot, 2004). In view of theoretical (and, consequently, measurement-based) differences, a novel approach to combining the DCS and ERI models to improve the risk estimation of psychological distress was demonstrated. In this approach, the occupational factors from the two stress models were combined to form different composite scores. In this way, combinations of occupational components, derived from either model or both models, were systematically tested to predict psychological distress.

The results of Study 2 broadly suggest that, both individually and in combination, occupational components from the ERI and DCS models were significantly associated with psychological distress, although social support was non-significant for females. For males, this study demonstrated that the composite score for the DCS model is more powerful than the composite score for the ERI model. For females, the results demonstrated that the composite score for the ERI model is more powerful than the composite score for the DCS model. However, the combination of occupational components (composite scores) derived from *both* models showed stronger associations with psychological distress than either model composites or model components alone. For males at risk of psychological distress, the highest odds ratio (OR 18.24; CI: 5.69 – 38.46) was for the combined composite variable

“ERI, OC, JS and SS,” whereas for females the highest odds ratio (OR 12.34; CI: 4.50 – 33.81) was for the combined composite variable “ERI, OC, and JS”. Consideration of components from both models was therefore important in the risk estimation of psychological distress. The negative influence of job characteristics was strongest when multiple stressors were present. There is evidence to suggest that intervention approaches should be based on both models to reduce the risk of psychological distress. Using a flexible and broad approach to examining stressors, and examining both established and new combinations of risk factors, could be beneficial to the future study of work-related stress.

7.1.3 How do humanitarian aid workers perceive and experience the work-related stress process? Qualitative study (Study 3)

The qualitative study included in the present thesis (Study 3) sought to further develop insights on how stress is experienced by humanitarian workers. The results of this study offered rich and detailed information that might valuably inform human resource and staff welfare policies.

An emergency culture was found where most employees felt compelled to fulfil humanitarian needs. Work overload, constant change, and a stream of urgent demands in the humanitarian context resulted in perceived job stress. This culture of emergency could be described as workers experiencing high demands in a time-pressurised environment. Many workers expressed a strong need to meet targets with limited resources. Their motivation at work was primarily related to their strong identification with humanitarian goals. However, many employees reported descriptions akin to over-commitment. They reported an inability to withdraw from work and boundaries between work and home were difficult to manage. Therefore, much of how aid workers described their job stress seemed to match descriptions of the key components of the job stress models such as high efforts, high demands, and over-commitment.

The results of this study questioned whether the medical models of trauma and PTSD were useful descriptors of the experience of humanitarian workers. It is evident that the language of occupational stressors (such as exposure to trauma) did not capture the complexity of their work environment. Although humanitarian aid workers are exposed to, and experience, extreme environments and terrible tragedies, the interviews in this study reflect that ‘daily hassles’ or organisational stressors contributed importantly to the experience of stress and health outcomes. Further research and interventions should now be directed towards more modifiable, organisational stressors. For example, a recent study (Ellis, Casey & Krauss, 2017) showed the value of a supervisor-focused mental health training intervention. Supervisors were equipped with the knowledge and skills to become advocates for their own mental health, as well as serve as a resource for employees facing mental health challenges at work. Results showed participants’ domain specific well-being self-efficacy was positively impacted by participation in the training and positively associated with self-reported well-being behavior and supervisor well-being support.

Employees also spoke about positive aspects of their work. The altruistic rewards of humanitarian work were perceived as motivating and meaningful. The altruistic reward of helping, however, is not included in generic stress models. Altruism as a reward may also be experienced in other service professions, such as nursing, and further research should be conducted to investigate an adapted model for human service professionals.

Support from colleagues and managers was also listed as a positive aspect of work. Support was seen as an aid in buffering stress, work overload, and negative health outcomes. The interviewees reported feeling more valued, understood, and motivated, as well as less stressed and fearful, in contexts when supportive collegial relationships and leadership were in place. The existence of supportive relationships and collaboration within teams and with managers was therefore perceived as key to employee wellbeing. This confirms the DCS model component of support as a critical factor in the stress to strain process. The concept of ‘trust’ between people

was emphasised by employees as vital to supportive relationships. This could be quantitatively investigated as an important questionnaire item for future tools measuring supportive relationships.

Strengths and limitations of the present thesis

7.2.1 Contributions and strengths

The mixed-methods approach of this thesis affords a complementarity of insights available to both quantitative and qualitative methodologies. The qualitative research provided deeper insights into the stressors and buffers to the stress process. A combined methodological approach addresses different facets of a research issue, as a means of establishing the external validity of the research. Qualitative research can place quantitative survey data into real and relevant social contexts and thereby enhance the understanding of the stress to strain process. The research undertaken in this thesis therefore extends and adds to the literature on humanitarian aid workers' stress. At the same time, it may also contribute to the understanding of job stress in similar human service (e.g. police) occupational stress research. Discussed below are the practical and theoretical contributions of the thesis; which are in line with the benefits and aims of thesis presented in Chapter one.

Practical benefits:

The results of the thesis provide evidence that underscores the importance of work stress prevention. It provided information on role and occupational stressors to inform sector-specific intervention. It was the motivation and impetus to initiate changes in health policies and improving health insurance options. From the applied perspective, organisational interventions were based on the results of this research.

The results of the thesis were presented to key stakeholders in the form of conferences (Webster Humanitarian Conference, Geneva, 2015, 2016), a round table discussion "Stress management for a global workforce" (representation from

seven humanitarian organisations), and presentations to senior management. The results were also presented and integrated into employee training workshops. An organisational report, summarising the research, was either circulated to all members of the organisation via a staff newsletter or posted on the organisation's website.

Interventions, policies, and organisational culture shifts were developed as a result of this research. Relevant examples include an increase of employee medical insurance allowances for mental health; employment of an in-house counsellor; management training on "stress recognition," "managing boundaries at the work-home interface," "recognition and reward," and "supporting your employees". A policy of continued evaluation and monitoring of mental health was also implemented with the aim of creating a baseline and evaluating intervention success rates.

Theoretical benefits:

This investigation drew on two of the most influential contemporary theories of stress, adopting a multi-dimensional, flexible, and comprehensive approach to the study of job stress. The research supported the proposed relationships and mechanisms hypothesised in these two models, validating the application of occupational stress models for this context. The study also used established, valid, and reliable measurement instruments, and statistically controlled for several potential socio- and occupational-demographic determinants of wellbeing. Several potential biases were therefore limited.

Another contribution of the present thesis is that the results emphatically underscore the importance of organisational stressors (modifiable risk factors), as important determinants of employee health. Considering the huge costs of addressing stress-induced symptoms incurred by organisations and national economies (see, e.g., Milczarek et al., 2009; Sauter, Murphy, & Hurrell, 1990; Cynkar, 2007 for UK and US statistics), addressing stress interventions at both levels (individual and

organisational) is the best way forward. It was also important to identify the buffers to stress and healthy coping strategies employed by humanitarian aid workers to inform theory development.

7.2.2 Limitations

Alongside several important strengths outlined above, the present research has some limitations to be considered when interpreting the findings. The limitations specific to each study have already been presented (see sections 4.5, 5.5.1, 6.7). The recommendations below refer to broader limitations across the studies.

7.2.2.1 Complexity of stress

Despite the overall comprehensiveness of the approach used in the present study, it was not possible to measure all factors pertinent to the stress process. Personality factors, resilience, and survivor's guilt are just a few factors not examined in this thesis. Although it is important to understand all the processes, including individual personality and resilience factors that intervene between exposure to environmental conditions and eventual health outcomes, the research contained herein chose to focus on modifiable working conditions that trigger the stress to strain process. As one of the primary aims was to inform interventions, it was thought interventions should be based on psychosocial work environment characteristics (Ganster & Schaubroeck, 1991).

7.2.2.2 Self-report

A second potential weakness of the present research is over-reliance on self-report measures, both for independent and dependent variables. Although self-report measures have clear advantages, as they are quick, easy to distribute, and are considered reasonable methods of assessing beliefs, feelings and behaviours, they are also open to biases in reporting. For instance, the humanitarian aid workers who participated in the surveys may have under- or overestimated their perceptions in

response to the items. Also, although the participants were guaranteed confidentiality, they may not have answered the questions on sensitive topics (e.g. alcohol consumption) in a completely honest fashion, possibly because they may have feared that this information could be used against them or place them in an unfavourable light.

Although self-report measures reflect perceptions that can, to some extent, reflect objective features of jobs, future research may benefit from the inclusion of one or more objective measurement of critical variables. Such measures might include physiological markers of stress (e.g. salivary cortisol), sickness absence records, occupational accident/injury records, and more objective methods of assessing poor health outcomes, such as medical records. However, effective methods for objective measurement of psychosocial workplace stressors are also problematic as they can be less accurate measures of what was intended than are self-reports (Fried, Rowland, & Ferris, 1984). Objective measures may also be seen as more invasive and therefore difficult to collect, which could impair the response rate and by extension the extent to which the findings can be generalised from the sample to the population.

7.2.2.3 Cross-sectional studies

In the present thesis, two of the studies (Study 1 and Study 2) used a cross-sectional design to achieve the research objectives. In this respect, it should be noted that, while cross-sectional studies are effective and less time-consuming than longitudinal methods, the general limitation of cross-sectional designs is that it is difficult to draw reliable conclusions about causality.

As a cross-sectional study is located at one point in time only, it is difficult to come to understand the process or time line on how the stress to strain processes unfold. However, the assumptions about time lags are usually implicit in job stress models and the premise is that stressors take their toll over periods of chronic exposure (Ganster, 2008).

Suggestions for future research

Aid workers are part of an important service delivery system, helping millions of people in need every year. However, there is little research that has addressed the impact of aid work activities on the workers themselves, and research on employing organisations is even more limited. Therefore, more studies are needed to identify sources, consequences, and impact of occupational and organisational stressors expected to emerge through engaging in humanitarian action. There is a critical need to identify, develop, and assess interventions that are successful in reducing these stressors for better health, productivity, and economic outcomes. There are several further specific research needs identified for this occupational sector discussed below.

7.3.1 Gender differences

The findings of this thesis expand and develop the evidence from previous research on the role of psychosocial work stressors in the development of negative health and behavioural outcomes, such as burnout and heavy drinking. The gender differences in the effect of work stressors, repeatedly observed in the literature and confirmed also by the present research, should be further investigated by analyses specifically aiming at clarifying gender differences in the pathways from work stressors to health outcomes. As gender differences were apparent in the results, it may suggest female and male aid workers face different/specific stressors in their working relationships or context. A gendered approach may also be useful in the provision of relevant psychosocial support for employees in humanitarian aid work.

An example of a gendered approach to research is an investigation examining gender differences in biological responses, such as psycho-neuroendocrine activation during the working day by measuring biomarkers of psychosocial stress (e.g. cortisol). Further research in this vein may help to explain gender differences in disease risk. Alternatively, future studies could focus on the psycho-social environment and the role of culture in the stressor-strain relationship, as gender roles

and perceptions are socially constructed and change over time (Fausto-Sterling, 2012). Overall, gender differences in health outcomes should be understood as an intricate interaction between sociocultural factors and neurobiological sex differences (Becker, McClellan, & Reed, 2017). To find explanatory causes, new methodological approaches, such as experimental methods, a much-underutilised methodology in occupational health research, are desirable.

7.3.2 Contribution of stressors to business aligned goals

In view of the fact that mainstream job stress research has mostly focused on the relationship between working conditions and health outcomes (Hausser et al., 2010), there is generally a shortage of evidence on how stressors contribute to measures of more business-aligned goals, such as employee or organisational performance and company productivity (Edwards, Guppy, & Cockerton, 2007). Furthermore, available studies that have investigated stressors and their relationship to performance as an outcome have yielded conflicting results (Schreurs, Van Emmerik, Gunter, & Germeys, 2012), with most obvious contradictions between laboratory-based and field studies. This may have hampered the enthusiasm for this type of investigation, but it is an important research area to develop, as senior managers are strongly motivated to improve working conditions if worker performance is affected.

7.3.3 Reciprocal causation

The ERI and DCS models propose straightforward unidirectional causal relations among effort-reward imbalance, job strain, and health outcomes. However, some longitudinal studies demonstrate reciprocal causation, particularly regarding motivational processes (Llorens, Schaufeli, Bakker, & Salanova, 2007; Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010). This suggests the existence of gain or loss cycles where variables mutually influence each other. For such a spiral to exist, there should not only be reciprocal causation, but also one variable (e.g. a specific job demand) should also increase the level of another variable (work engagement),

and vice versa (Salanova et al., 2010). Assuming a linear causation is overly simplistic, meaning that future research should more systematically focus on the dynamic relations among concepts in the model. For example, the experience of social reward deficiency has been hypothesised to act as one of several triggers activating the brain's dopaminergic reward system involved in addictive behaviour. Medical studies have shown that alcoholics find it particularly difficult to focus on conventional reward cues and engage in alternative rewarding activities compared to the rewards of drinking alcohol. However, very few or no studies have examined the overlap between social and biological explanations of reward processing. Furthermore, this indicates that ERI model research needs to explore reciprocity with respect to rewards and addiction behavior. This could be achieved in experimental and longitudinal research methodologies where the direction of causality is more easily viewed.

7.3.4 Pre- and post-deployment

Considering that studies on the mental health of aid workers focus on those serving in the field, little is known about their transition back to normal life. Anecdotal reports indicate that workers are not tracked after service, which makes it difficult to assess their status and needs. This topic warrants further research (Connorton et al., 2011). Future research on aid workers could adopt a longitudinal approach, with repeat surveys to obtain a more comprehensive view of stress and coping before, during, and after service in the field. A pre-deployment baseline survey could assess for trauma history and mental health status (Connorton et al., 2012).

7.3.5 Shift to potentially positive effects of work

Most models on occupational health and wellbeing focus exclusively on job stress and the resulting strain, thereby neglecting the potentially positive effects of work, such as engagement. However, there is a shift in the emergence of positive psychology, and managers in organisations are now paying more attention to the positive organisational behaviour of employees. One relevant example of this recent

trend is in the burnout literature that rephrases or reconceptualises burnout as an erosion of engagement. Seen from this perspective, the future of burnout may be in the realisation that it constitutes the negative pole of a continuum of employee wellbeing, of which work engagement constitutes the opposite, positive pole. The challenge for future research will be to discover the role, overlap, or differences in the psychological processes and work factors responsible for producing burnout and work engagement (Tippet & Kluvers, 2009). The revised Job Demands- Resources model (JD-R) (Schaufeli & Bakker, 2004), is one example of a model that has sought to not only explain a negative psychological state (i.e., burnout) but also its positive counterpart (work engagement). The JD-R model emphasizes the inherently motivational qualities of job resources that can stimulate a positive work-related state of mind (i.e., work engagement), either through the achievement of work goals or the satisfaction of basic needs.

In considering the ERI model, it is useful to examine not only the lack of or lower level of defined rewards, but also to explore, in a more comprehensive fashion, the types of rewards that are likely to foster motivation. In a human services context, the nature of the task is not trivial and, in all likelihood, is the reason for the employee being in the sector (Schepers et al., 2005). The fact that an individual is working in a humanitarian organisation is indicative of a set of values in which extrinsic rewards may not be the first consideration. Values are considered to be important in the development of an individual's commitment to an organisation (Etzioni, 1988). The importance of altruistic values in relation to employment in the human services sector has been highlighted by Jobome (2006) who, in his study of management pay in "not for profit organisations", has found that intrinsic rewards dominate over extrinsic ones. The qualitative study in this thesis (Study 3) supports the finding of strong values attached to the stated missions of organisations, and altruism as an important reward. Further research could explore the usefulness of expanding theoretical models to include relevant rewards for the human services sector, such as altruism, that could be shown to be linked to employee motivation or engagement.

Intervention recommendations and research

There is a lack of current research evaluating interventions based on key occupational stress models. In a keynote address at the EAOHP conference in Athens, 2016, Christina Maslach emphasised the crucial need for this type of research. A review of the literature finds some evidence for the efficacy of interventions, although designs are typically weak. Unless the scientific evidence is strong for interventions, organisations are likely to be more hesitant in committing to projects of this nature. The suggestions described below for improving the work environment are based on the premises of the ERI and DCS models, supplemented by the results of Study 3 (qualitative study).

In ERI model interventions, the key to stress reduction is restoring the balance between effort and reward in the work environment. The even distribution of workload among employees may help preserve a sense of fairness, and the reduction of long hours of overtime work could reduce their efforts and workload. Frequent overtime work, particularly if it is unpaid, may damage the employees' perception of occupational reward. It could also be beneficial to secure sufficient rest and days off.

To improve rewards, managers should be encouraging praise for good work to raise employee morale. An additional wage system, with non-monetary gratification, could be emphasised more. Rewards and benefits, such as nurseries and recreational facilities, can be used as a part of the compensation package. Vacation and retirement benefits are other examples. To promote self-esteem, employers could clarify the steps for promotion, and provide vocational training to ensure employees are skilled in a variety of tasks. This may reduce the feeling of vulnerability resulting from job insecurity.

Proponents of the DCS model may suggest lowering demands and giving employees more control in how they manage their work. One example may be allowing employees more control of when and how often they work from home.

Humanitarian aid workers expressed a constant need to meet urgent demands (Study 3) in a culture of emergency. Managers could improve the planning and management of workloads and tasks to reduce this emergency culture. Employees could be helped to better manage their work-life boundaries through new policies and encouragement from management. To improve social support (a key component of the DCS model and a main theme in Study 3), interpersonal training and social skill development in supervisors' leadership behaviour may be a good strategy. Adequate feedback on employee performance and how to provide support are desirable skills. Since trust between employees was highly valued by humanitarian workers (Study 3), managers could demonstrate and encourage honest and open communication. An organisational culture that fosters a supportive attitude and environment towards employees was seen as important in approaching the mental health of employees.

To improve interventions at the individual level, it may be helpful for employees and their managers to better understand their respective perceptions of stress and to encourage employees to seek professional treatment for mental health issues (Gillispie, Britt, Burnette, & McFadden, 2016). As a result of the stigma frequently associated with seeking treatment for stress-related symptoms, research findings report that individuals avoid seeking mental health treatment (Gillispie et al., 2016). Therefore, managers need to be aware of, and try to reduce, these barriers to seeking help so that employees feel safer and more supported.

Researcher reflections on the the research process

The research was from very early on (definition of the research problem) a result of the combinations of expertise from practitioners (e.g. Ombudsman, Human resources professionals, Chief of staff welfare) embedded in the humanitarian system and the researcher. Thus, similar to participatory research, the problem was initially identified by community experts whose expertise was in the context and nature of the problem. All practitioners were recognized for the legitimate knowledge they brought to the research process. Practitioners' organisational

knowledge of obstacles, informal networks and formal processes was highly valued as it facilitated the process of obtaining support and permission for the research project.

For the practitioners, the main goal and primary benefit of participation in the research was to gain valuable knowledge to improve a problematic situation. The research was also intended to support and empower them to make changes for the resolution of health-related problems and provided the opportunity to systematically reflect upon and improve their health promotion and prevention strategies. They were therefore highly motivated to resolve a problem that was rooted in their everyday work experience. Practitioners brought the ability to access supportive administrations, funding, information, personnel, and perspectives on the organisational climate and culture. They were key to administering the survey and sourcing employee lists for the interviews. The practitioners could also help guide questionnaire development, making sure the measurement tools selected were appropriate for their workforce.

It was important that both the researcher and the organisation representatives documented their roles and responsibilities. This was done by writing a memorandum of understanding. Issues such as: data ownership, publishing rights, authorship and data storage were discussed and agreed upon. This was a political process for both the researcher and the practitioners involved. Participation and collaboration required negotiation at the outset. A very clear understanding on the motivations from each party for the project facilitated the descriptions of the different roles, duties and responsibilities. There was a minor tension between theoretical and academic interests and the needs of the organisation. Different organisations had slightly different needs, and compromises had to be sought in terms of measurement instruments and aims of the research project.

As stakeholders were engaged from the outset, the research was well received and the results published and used effectively. The research results held more value for them, as their needs and motivations were taken into account in the research design

phase. The results were also able to support not only additions to the academic literature but were also used to facilitate changes in organisational policies and provide evidence for the need of health interventions. Using the results to initiate change was considered an ethical necessity. Ongoing monitoring of health outcomes is planned in both organisations, to develop a baseline over time and to monitor the influence of interventions.

Towards a humanitarian model

The job stress phenomenon involves complicated interactions between person and environment. A model may be useful for understanding and investigating the conceptual dimensions underlying a set of variables. It is important to specify all the facets relevant to the stress domain for humanitarian workers for future research and interventions. Below a preliminary model is suggested for the humanitarian sector in order to conceptualise the most important facets of humanitarian work stress (see Figure 3).

As both the ERI model and the DCS model were found to be useful, a combined model is proposed. The qualitative study results were used to expand this combined model to capture unique variables relevant to the humanitarian sector.

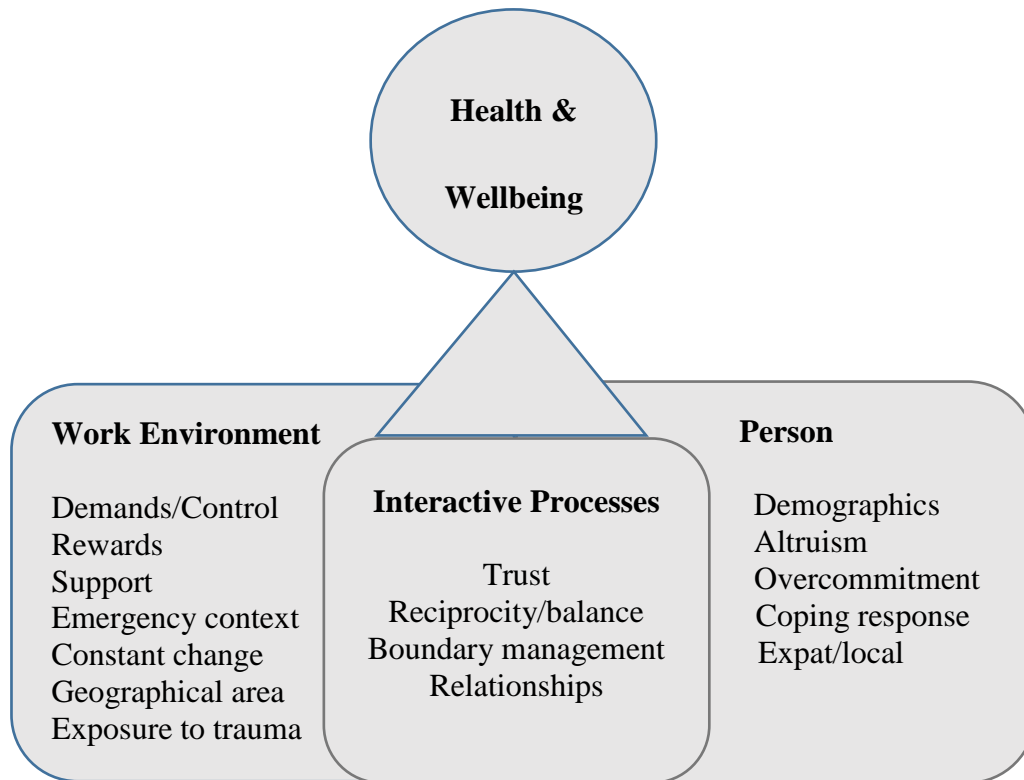


Figure 3. A preliminary humanitarian job stress model

The work environment facet contains elements of the employee’s work environment that are likely to be involved in job-related stress. Characteristics of the task, the role, and the organization, are included in this facet. The environment is primarily the work environment, but it includes aspects of environments outside of the organization such as the geographical area of work, and the environment’s challenges and constraints for the organization such as dealing with complex emergencies. Key variables are from both the ERI and DCS models, known to influence job stress.

The person facet indicates that many characteristics of the person are likely to affect susceptibility to stress and reaction to stress. For humanitarian workers, their values are based in helping people (altruism), which seems to drive high engagement and dedication to their work. Excessive commitment to their roles can lead to overcommitment and an inability to manage boundaries between work and home life.

The elements of the interactive processes facet represent the psychological processes that may link the environment and person facets to each other and to health consequences. Important processes in buffering stress are good relationships at work, trust, managing work/life boundaries, and maintaining a fair social contract (reciprocity) between the worker and the organisation (represented for example by a balance between effort and reward).

A range of work features which are specific for a particular occupation should be considered for a full comprehension of the relation between the psychosocial work environment and health. Many work dimensions are required to capture the psychosocial work environment adequately. It is hoped a fuller model will prevent work features that may influence health and wellbeing in this occupation not being overlooked in future occupational stress research and practice in the humanitarian sector. However, it is difficult to address and measure all relevant factors in any one study, as several measurement instruments are needed, and this may result in participants experiencing questionnaire fatigue. Future research could work on developing a new instrument that combines several psychosocial hazards into one single measurement instrument.

Concluding remarks

The conclusions from this research serve as a benchmark for future interventions and research to improve the work experience and health outcomes of humanitarian aid workers. The results were able to highlight the main sources of job stress with significant associations to burnout, heavy drinking, and psychological distress. As the work environment has proved to play an important role in the outcomes of adult mental and physical health, an investigation such as this is critical for a global workforce.

As the research was the first to examine and find support for theoretical job stress models in the humanitarian field, the results demonstrated a new viewpoint that holds promise for further research and practice on the management of stress among

humanitarian aid workers. It is hoped that this thesis may provide further impetus for organisations to build on the evidence base whereby the effectiveness of organisational interventions can be planned, improved, and delivered. Similarly, it can be said that the effectiveness of any intervention will depend on accurate assessment, frequent monitoring, and re-evaluation over time.

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APPENDICES

Appendix A: Participant information sheet (study 3)

Participant Information Sheet

1. What is the purpose of the study? This research builds on the already completed staff wellbeing study. It aims to advance knowledge about how various factors at work impact wellbeing. Suggestions on how to reduce or eliminate factors linked to poor health outcomes will be sought so as to support employees.

2. Why have I been asked to participate in this study? This qualitative study needs the participation of a select number of employees from various departments. Your participation is voluntary and there is no consequence for declining this invitation.

3. What will I be asked to do? This research requires a one-on-one, face-to-face, semi-structured interview between you and the researcher (we can organize a private room at [REDACTED] or a meeting at Webster University in a private office). The interview will last approximately 30-45 minutes, will be audio recorded on a handheld recording device and transcribed.

4. Are there any possible benefits from participating in this study? Results from this research may inform policies and practices at work, ultimately leading to improved wellbeing of the workforce.

5. Are there any possible risks from participation in this study? We do not foresee any risks from participation in this study. However, if for any reason you become distressed, you are free to withdraw your consent to participate at any time, and can do so without providing an explanation.

6. How will the results of this study be published? Organisational and academic reports identifying themes and trends will be provided.

7. How will my confidentiality and anonymity be maintained? To ensure the confidentiality and anonymity of individual participants no demographic information that might be able to identify individuals will be used.

Sign:

Date:

Appendix B: Consent form (interview, study 3)

CONSENT FORM – INTERVIEW

Multi-site Staff Wellbeing Interview

My name is _____. I am a researcher from the psychology department at Webster University. I would like to invite you to take part in our research study, which concerns understanding the wellbeing of workers in humanitarian organisations. It is hoped that the research will help provide recommendations on how to address employee needs.

If you agree to participate in this research, we will conduct an interview with you at a time and location of your choice. The interview will involve questions about your wellbeing. It should last about one hour. With your permission, the interview will be audiotaped. The recording is to accurately record the information you provide, and will be used for transcription purposes. If you choose not to be audiotaped, notes will be taken instead. If you agree to being audiotaped but feel uncomfortable at any time during the interview, the recorder will be turned off at your request. Or if you don't wish to continue, you can stop the interview at any time.

Some of the research questions may make you uncomfortable or upset. You are free to decline to answer any questions you don't wish to, or to stop the interview at any time. If you feel concerned about confidentiality and possible risk to your job we would like to assure you we are taking all precautions to prevent this. Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual *names and other personally identifiable information will not be used*. Furthermore, we will *remove all identifying information from the transcripts*. The *interviewer will sign a written confidentiality agreement*. When the research is completed, *the recordings will be deleted*.

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and are free to stop taking part in the project at any time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

CONSENT

I agree to audio recording at _____ on _____

Signature _____ Date _____

I have been told that I have the right to hear the audio recording before they are used. I have decided that I:

_____ want to hear the recording

_____ do not want to hear the recording

Sign below if you do not want to hear the tapes. If you want to hear the tapes, you will be asked to sign after hearing them.

The transcripts of the interview (anonymous) may be used for (check all that apply):

_____ this research project

_____ publications

_____ presentations

Signature

Date

Address

If you want to know more about this research project, please contact Liza Jachens, jachens@webster.ch This project has been approved by the Institutional Review Board at Webster University. Information on Webster University policies and procedures for research involving humans can be obtained from Barbara Wehling, Chair of the Institutional Review Board, email wehlinba@webster.edu

Sincerely,

Liza Jachens

Roslyn Thomas

Appendix C: Interview schedule (study 3)

Interview Questions

1. Tell me what led you to work for the [REDACTED]?
2. What aspects of your work are most rewarding? (Give example)
3. What aspects of your work are most demanding? (Give example)
4. How is the effort you put into your work matched by your job satisfaction?
5. How do you manage your workload and job requirements? (Give example)
6. How do you find meaning in your work that you do? (Give example)
7. Who do you turn to in the [REDACTED] if you have any work-related concerns (colleagues/supervisors)?
8. How comfortable are you with accessing organisational support?
9. As an employee how well do you feel the organisation responds to your needs for support?
10. What are the aspects of the working culture (way of life) at the [REDACTED] that affect your wellbeing, performance or stress levels?
11. What suggestions do you have for how the [REDACTED] can better support your wellbeing as an employee?
12. Is there anything else that you would like to raise about your experiences at [REDACTED]?