

**CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE**

**Faculty of Tropical AgriSciences**



**A Systems Thinking Approach to Understand  
the Complexity of Occupational Mental Health  
Behind the SDGs' Workforce**

**BACHELOR'S THESIS**

Prague 2024

**Author:** Ginny James McAllister

**Supervisor:** Ing. Jana Mazancová, Ph.D.

## **Declaration**

I hereby declare that I have done this thesis entitled, “A Systems Thinking Approach to Understand the Complexity of Occupational Mental Health Behind the SDGs’ Workforce”, independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to Citation rules of the FTA.

In Prague

.....

Ginny McAllister

## **Acknowledgements**

I wish to express my sincere gratitude to my thesis supervisor, Jana Mazancová, for her willingness to explore this topic with me, and guidance in the process. I wish to acknowledge the Faculty of Tropical AgriSciences, Czech University of Life Sciences Prague for providing a reliable environment and framework for my studies.

I would also like to express my heartfelt gratitude to my parents, Lynn and Emlyn, for their unconditional support and for nurturing my passion for learning.

To my husband, whose patience and kindness has supported me in and outside of my studies, I am deeply grateful.

I am also grateful to my friends, whose encouragement has been a driving force behind my exploration of this topic.

Finally, I express my gratitude to the anonymous experts who generously shared their time and expertise, providing invaluable insights and guidance on this complex topic.

The process of writing this thesis has been a profound learning experience, echoing the sentiment captured in the saying:

*you cannot pour from an empty cup...*

## **Abstract**

Aid workers, dedicated to serving beneficiaries and advancing Sustainable Development Goals (SDGs) initiatives, face significant risks of burnout and mental health challenges. Despite their pivotal role in realising SDGs targets, research on the mental well-being of aid workers remains understudied compared to other helping professions. This thesis aims to address this gap by employing a Systems Thinking approach to delve into the complexities of occupational mental health within the humanitarian and development aid sector. Utilising a systematic quantitative literature review, this study developed a preliminary Causal Loop Diagram (CLD) and Stakeholder Analysis Matrix (SAM), subsequently qualitatively validated through consultations with five experts from diverse backgrounds including mental health, humanitarian aid, and development aid. With the collaboration of both the author and experts, 34 variables were identified and integrated into the final CLD. The findings from the CLD highlighted a reinforcing feedback loop between burnout, achieving SDGs targets, and mental health stigma, underscoring the imperative to address aid worker burnout. Furthermore, psychosocial interventions were observed to mitigate burnout within a reinforcing loop, yet their efficacy is largely contingent upon supportive organisational policies and donor funding requirements. The SAM findings reveal 12 stakeholders as pivotal in addressing burnout and enhancing mental well-being within the sector, with supervisors and donors emerging as particularly influential stakeholders. The CLD lays the groundwork for quantitative systems science approaches, which can compare and optimise psychosocial interventions, leading to a more resilient workforce within the aid sector.

**Keywords: Mental Well-being, Resilience, Systems Science Approach, Effort Reward Imbalance, Occupational Stress, Development Cooperation**

# Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Literature Review .....</b>	<b>4</b>
2.1. Mental Health at the Sectoral Level .....	4
2.1.1. Masculinised Aid-Culture .....	5
2.1.2. Donor Funding and Stigma .....	6
2.2. Mental Health at the Organisational Level .....	7
2.2.1. Development vs. Humanitarian Aid Mental Health Research .....	7
2.2.2. Fieldwork and Research Professions .....	8
2.2.3. Dysfunctional Staff Turnover .....	9
2.2.4. Pre-deployment Screening .....	9
2.3. Mental Health at the Individual Employee Level .....	10
2.3.1. Burnout Amongst Aid Workers .....	10
2.3.2. Secondary Traumatic Stress .....	12
2.3.3. Disparities Between International and National Staff .....	13
2.3.4. Coping Strategies for Psychological Distress .....	13
2.3.5. Organisational and Psychosocial Support .....	14
<b>3. Aims .....</b>	<b>16</b>
3.1. Research Questions .....	16
3.2. Objectives of the study .....	17
<b>4. Methodology .....</b>	<b>18</b>
4.1. Systems Thinking and System Dynamics .....	20
4.2. Causal Loop Diagrams .....	20
4.3. Systematic Quantitative Literature Review .....	21
4.4. Table of Variables and CLD Creation .....	25
4.5. Stakeholder Analysis Matrix .....	25
4.6. Expert consultations .....	26
<b>5. Results .....</b>	<b>27</b>
5.1. Key identified variables of occupational mental health in the aid sector	

5.2.	Influencing Linkages .....	29
5.3.	Causal Loop Diagram .....	35
5.3.1.	Exclusions from CLD Scope .....	35
5.3.2.	Analysis of Feedback Loops in CLD.....	37
5.3.3.	Feedback Loops R1, R4, R5: Burnout, SDGs and Stigma .....	37
5.3.4.	Feedback Loops B1, R2, R3: Workplace stressors, psychosocial training and support .....	39
5.4.	Stakeholder Analysis .....	41
<b>6.</b>	<b>Discussion .....</b>	<b>45</b>
<b>7.</b>	<b>Limitations .....</b>	<b>48</b>
<b>8.</b>	<b>Conclusions.....</b>	<b>49</b>
<b>9.</b>	<b>References.....</b>	<b>51</b>

## List of Tables

Table 1. A two-step methodology for the formation of Causal Loop Diagrams and Stakeholder Analysis Matrix using published literature.....	19
Table 2. Key identified variables of occupational mental health in the aid sector.....	28
Table 3. Variables affecting aid worker mental health with influencing links.....	30
Table 4. Key identified stakeholders of occupational mental health in the aid sector ...	41
Table 5. Stakeholder Analysis Matrix .....	42

## List of Figures

Figure 1. Process of the systematic quantitative literature review used in this thesis. ....	24
Figure 2. Causal Loop Diagram for occupational mental health of aid workers system	36
Figure 3. Loops influencing burnout, stigma and SDGs .....	37
Figure 4. Loops influencing effects of workplace stressors .....	39

## **List of the abbreviations used in the thesis**

CLD	Causal Loop Diagrams
ERI	Effort Reward Imbalance
HAW	Humanitarian Aid Worker
IGOs	Intergovernmental Organisations
LDC	Least Developed Countries
MBI	Maslach's Burnout Index
NGOs	Non-Governmental Organisations
OMH	Occupational Mental Health
PTSD	Post-Traumatic Stress Disorder
PTSI	Post-Traumatic Stress Injuries
SAM	Stakeholder Analysis Matrix
SDGs	Sustainable Development Goals
SQLR	Systematic Quantitative Literature Review
STS	Secondary Traumatic Stress
UN	United Nations
WHO	World Health Organization



# 1. Introduction

The Sustainable Development Goals (SDGs) were created by the United Nations (UN) and adopted by UN Member States in 2015 to collectivise efforts towards a more equal, responsible, and safe world for all living beings and the environment they inhabit. The UN relies on aid workers<sup>1</sup>, employed by agencies, institutions, organisations and private companies, to undertake the groundwork required for achieving the goals they have set. These dedicated individuals implement initiatives and deliver assistance in areas such as humanitarian relief, development cooperation and peacebuilding efforts; translating the UN's objectives into tangible actions that can positively impact vulnerable communities around the globe. However, their efforts are compounded by a three-fold nature of stress they experience while working in this sector. Firstly, they encounter typical workplace stressors inherent in any job. Secondly, they endure psychological distress due to direct and indirect exposure (vicarious trauma) to adversities that are specific to the aid sector such as conflict zones, severe human circumstances, and natural disasters. Lastly, they face additional workplace stressors which are more specific to the aid sector, including long hours, high turnover, unclear organisation, and compounded living (on mission). Despite these unique stressors, unfortunately, aid workers have often been overlooked in Occupational Mental Health (OMH) research and its implications for preventative policies.

Aid workers are exposed to potentially traumatic and extreme conditions with minimal training, highlighting a stark contrast to the extensive training received by military professionals and other public safety personnel. For example, a report by Ashdown (2011) revealed that while military professionals spend up to 95% of their time training and 5% in action, the figure is reversed for aid workers, with minimal training opportunities. In addition to military professionals, other public safety personnel such as police, firefighters, and nurses are encompassed within the extensively researched domain of occupational mental health, including recent investigations into Post-Traumatic Stress

---

<sup>1</sup> Aid workers encompass a diverse range of individuals engaged in humanitarian and development efforts. This includes humanitarian aid workers, who provide assistance during acute disasters and conflicts in specific regions, as well as development aid workers, who collaborate on the long-term developmental needs of developing countries, implementing social, economic, and environmental improvements (Alonso & Glennie 2015; Audet 2015).

Injuries (PTSI) and the potential prevention of Post-Traumatic Stress Disorder (PTSD) and other trauma-related disorders (Carleton et al. 2022). While there is a growing recognition of the global mental health crisis, the mental well-being of aid professionals remains understudied compared to other helping professions. From the available research, it is evident that poor mental health not only affects the individual aid worker, but also has detrimental effects on the aid organisations (Loquercio et al. 2006) and to the beneficiaries they serve (Webster & Walker 2009). The research gap in this area lies in the absence of a comprehensive identification of stakeholders<sup>2</sup> who influence or are influenced by poor mental health within the aid sector. As a result, there is a limited understanding on the full spectrum of stakeholders and their various roles in addressing or exacerbating mental health outcomes, such as burnout, among aid workers.

Furthermore, a significant observation of the available research is the primary focus on international staff<sup>3</sup> (Strohmeier & Scholte 2015; Cunningham & Sesay 2017; De Fouchier & Kedia 2018), despite national staff making up 90% of the humanitarian workforce (Obrecht et al. 2022; Humanitarian Outcomes 2022). Additionally, there has also been an emphasis on humanitarian aid workers, despite development aid workers often being exposed to the same chronic workplace stressors which have a *higher impact on mental health* than direct exposure to adversities, as highlighted by studies from John (2003) and Young et al. (2018).

Thus, this thesis underscores the equal importance in addressing mental health challenges of *both* humanitarian and development aid workers. Those working in the aid sector make up a crucial component of the workforce involved with facing the short and long-term problems that the UN's SDGs aim to address (Besiou et al. 2021). In a demographical study outlining the risk and protective factors pertaining to the mental health of aid workers by Young et al. (2020), found that there was no significant difference in risk factors between humanitarian aid and development workers, which suggests that *direct* exposure to adverse conditions is not the only predictive risk factor

---

<sup>2</sup> In this thesis, the term “**stakeholders**” is used in accordance with the definition recognised by the UN, which includes any person or group who has a legitimate stake in a given project or issue and would likely be affected by or influence it.

<sup>3</sup> “**International staff**” is often used to describe employees or volunteers who are working, short or long term, in a country they are not native to; “**expatriate staff**” is also commonly used interchangeably with the former, in literature regarding mental health in the aid sector. Similarly, terms “**local**” and “**national**” staff are used interchangeably in literature. The author chose to use “international staff” as opposed to “expatriate staff” as recommended by two experts from this thesis.

for mental health (Williamson et al. 2020; Tessitore et al. 2023). This is in line with the research by Foo et al. (2023a), who found that workplace stressors unique to the aid sector were greater drivers of burnout<sup>4</sup> than exposure to adversities. In an earlier study, Foo et al. (2021) find that chronic organisational psychosocial stressors also have a significant impact on the mental health, wellbeing, and job-related outcomes for aid workers. It is important to note that not every person that is exposed to a traumatic event will develop PTSD and other Trauma-related disorders. In fact, amongst the research in the novel mental health in the aid sector, there are several studies that have begun to characterise the coping mechanisms of international and national aid workers and best practices for processing the various adversities and chronic workplace stressors they are exposed to (Eriksson et al. 2009, 2015; Lopes Cardozo et al. 2012; Greene-Cramer et al. 2021). There have also been several studies on the implementation of training programs (Chemali et al. 2017, 2018; Berdondini & Alhakim 2022; Bahattab et al. 2022; Kivlehan et al. 2022; Carleton et al. 2022).

Existing research provides significant evidence on the various causes and effects of aid worker mental health but does not fully capture the structure of the system and its various feedback loops<sup>5</sup>. Furthermore, this thesis embarks on a comprehensive exploration of the OMH system within the aid sector, as conceptualized by Young et al. (2018), across three levels: the sectoral, organizational, and individual employee. Building upon this framework, the thesis aims to highlight the nuanced challenges faced by individuals dedicated to supporting vulnerable beneficiaries and advancing SDGs targets within the aid sector. Through this exploration, efforts are made to uncover insights that could inform more effective strategies for achieving SDGs targets while addressing the mental well-being of aid workers.

---

<sup>4</sup> **Burnout** is understood in this thesis from the perspective of Maslach and Jackson (1981), who operationalised occupational burnout into three dimensions of exhaustion, cynicism and inefficiency, which make up the Maslach Burnout Inventory (MBI).

<sup>5</sup> **‘Feedback loops’** in this thesis are referring to system structure whereby if one variable changes output, it cycles back to influence that same variable’s input. See ‘causal loop diagrams’ in methodology section for more details.

## 2. Literature Review

This literature review is separated into three main chapters that pertain to the three levels of the aid sector that the author focused on in this thesis, namely: sectoral, organisational, and individual. The three levels are proposed in past thematic analysis research of aid workers' stressors and coping strategies by Young et al. (2018). Each chapter will commence with a brief introduction identifying sequentially how burnout arises, affects the level and efforts of mitigation (if any), within the respective levels of sectoral, organisational, and individual. The first chapter relates to the sectoral level, which the author has defined as donors and intergovernmental organisations (IGOs), which can influence non-governmental organisations (NGOs) through policies and (or) funding requirements. The following chapter relates to the organisational level which the author defined as NGOs, research institutions and private companies which employ aid workers as their staff. The final chapter relates to the individual employee, which the author defined as any person employed or volunteering for a development and (or) humanitarian aid organisation.

### 2.1. Mental Health at the Sectoral Level

Within the sector of humanitarian and development aid, burnout emerges as a pervasive mental health challenge, obscuring the well-being of aid workers and the effectiveness of aid organisations. Burnout<sup>6</sup> is a pervasive, sector-wide phenomena, arising due to workplace stress and an imbalance between an employee's exerted effort and the supplementary rewards they receive. Particularly in the aid sector, this is perpetuated by unavoidable stress, which Antares Foundation (2012:7) calls for action from the sector as a whole, "Although stress<sup>7</sup> among humanitarian workers is unavoidable, some stress can be prevented or reduced and the effects of stress on individual staff members, on their team, and on their agency can be lessened. This

---

<sup>6</sup> World Health Organization (WHO) (2021) defines 'Burnout' as "a syndrome conceptualised as resulting from chronic workplace stress that has not been successfully managed... it is characterised by three dimensions: 1) feelings of energy depletion or exhaustion; 2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and 3) a sense of ineffectiveness and lack of accomplishment. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life."

<sup>7</sup> 'Stress' is used interchangeably with 'psychological distress' in many texts in this field.

requires actions undertaken by individual staff members, by managers and supervisors, by teams, or by the agency as a whole”. In terms of so-called “unavoidable stress”, the masculinised culture of aid work is a starting point for understanding the gendered framework that may be leading to avoidable adversities.

### **2.1.1. Masculinised Aid-Culture**

Within the sectoral level, burnout often linked to what has been called a ‘masculinised aid-culture’ (Houldey 2019). Employing a gender-lens<sup>8</sup> on the topic of occupational mental health goes beyond simply analysing the ratio of male to female trauma survivors or perpetrators. A gender-lens considers the framework of gendered power-imbalance and the various adversities that may be perpetuated by political, social and economic inequalities. Horn (2020), emphasises that psychosocial support being separated from the discussions of justice and activism in order to change the power relations that lead to conflict, forced migration and violence against women, are the current shortcomings in the development and humanitarian sector. They also suggest that vicarious trauma (secondary trauma) should be approached with caution in this sector as it can imply that dealing with traumatised people will intrinsically lead to vicarious trauma. In Houldey’s (2019) research, they find that there are certain implications that the masculinised culture of aid work (i.e. emphasising risk, danger and ‘bunkerisation’ of the accommodation compounds) can have on female humanitarian workers; the female workers may modify their behaviour in a certain way to meet the gendered expectations of this occupational culture. Gender and gender discrimination influences the burnout of employees and perpetuates the stigmatisation within the whole sector. In a mixed methods inquiry, Cockcroft-McKay & Eiroa-Orosa (2021) studied aid staff barriers to seeking support and found that 82% of respondents (62 national and international staff) felt there was a sectoral culture of suppressing emotional issues, named ‘macho/martyr’ attitude, and 58% felt they needed to be tougher than they actually felt. This suggests sectoral denial and subsequent stigmatisation of stress-related outcomes, which culminates, leaving the employee powerless (eventually burnout) and unable to relax or cope.

---

<sup>8</sup> In this thesis, gender-lens is understood as analysing the broad socio-cultural influences upon mental health of aid workers, with consideration that males and females are exposed to and respond to adversities different.

### 2.1.2. Donor Funding and Stigma

Within the aid sector, the masculinised culture of aid, perpetuated by stigma, intersect with the challenges of inadequate donor funding for staff well-being. In their commentary outlining crucial steps for staff well-being in the aid sector, MacPherson & Burkle (2021:112) highlight existing shortcomings: “Presently, assistance is mostly insufficient, stigma in organisations is still significant, and donor funding for staff wellness is inadequate, especially for national staff”. Due to budget constraints and a predominant focus on maximising donor funding allocated for beneficiaries, the attention towards staff well-being, particularly mental health, is inadequate. Stakeholders at the sectoral level have a specific role in influencing smaller organisations to ensure employee mental well-being, although the extent of their influence remains largely unexplored in the literature. There’s limited research on how employee burnout is influenced by and affects sectoral-level stakeholders directly. However, a policy paper titled “*Can you get sued? Legal liability of international humanitarian aid organisations towards their staff*” (Kemp & Merkelbach 2011) emphasises organisational and sectoral level effects. The paper demonstrates that international aid organisations are obliged to conform to the legal standards in relation to their duty-of-care concerning well-being, safety *and* security of their staff. Donor funding requirements are one method to ensure duty-of-care towards staff is upheld by sectoral and organisational level stakeholders. Donor funding requirements, similar to those implemented for staff security in the past, offer a promising framework for ensuring organisations prioritise and implement psychosocial support for employees (MacPherson & Burkle 2021). As was the case for staff security and safety two decades ago, support was incremental until it became monitored and evaluated by donors (MacPherson & Burkle 2013). Furthermore, systems and structures for aid worker mental well-being and support exist (MacPherson & Burkle 2021), although they are only at the level of recommended guidelines by institutions such as the Inter-Agency Standing Committee (IASC) (2007), Antares (Antares Foundation 2012) and Centers for Disease Control and Prevention (CDC). By leveraging donor funding requirements as a viable model, there’s an opportunity to move beyond the current linear approach to aid worker mental health to a more holistic understanding of the interconnected dynamics across sectoral, organisational, and individual levels.

## 2.2. Mental Health at the Organisational Level

*“Agencies’ duty to provide humanitarian aid to those in need  
extends to their own workers.”*

-Antares Foundation (2012:34)

At this level, the thesis author considers organisations<sup>9</sup> as stakeholders with a significant influence on the risk of burnout of their employees. When employees are working efficiently, organisations can support the beneficiaries, align with the SDGs targets and meet donor requirements effectively. Organisations play a key role in both the humanitarian and development aid efforts.

### 2.2.1. Development vs. Humanitarian Aid Mental Health Research

Current research on the occupational mental health in the aid sector is vastly focused on aid workers in an emergency context (Lopes Cardozo et al. 2012; Eriksson et al. 2013; Young et al. 2020). Given that development workers make up a majority of the professionals in the aid sector, this is an alarming finding. Development workers are profiled as often working over a long period of time in non-conflict and non-disaster settings as a part of international assistance (Pepall 2014). Despite the inherent lack of emergency in the description, development workers are exposed to organisational stressors and at risk of burnout (Young et al. 2020). In terms of workplace stressors, Young et al. (2018) found no significant difference between humanitarian and development workers, suggesting that emergency or high-risk contexts are not the greatest stressor for aid workers. Self-perception of being a trauma survivor is another hindrance in mental health of the development aid sector. This is due to the stigmatisation that “*I cannot complain since they [beneficiaries] have it so much worse*”. In one of the few studies focusing on specifically development worker mental health, Jones et al. (2006) found the association between rejection as a victim of trauma and PTSD severity amongst development aid workers. The authors discuss this as a possible starting point to address PTSD prevention, specific to development professionals. Contrarywise, since the

---

<sup>9</sup> The author has used the term ‘**organisations**’ to encompass local and international NGOs, agencies, private companies and research institutions, who employ their own staff and receive funding from IGOs, governments and private donors.

publication of this study, it has been cited in studies pertaining to first responders, humanitarian aid workers, crisis survivors and occupational mental health of teachers, although there have been no further studies addressing *development* aid workers.

### **2.2.2. Fieldwork and Research Professions**

Fieldwork<sup>10</sup> in particular, whether in an emergency context or not, has the potential to expose professionals in that field to Secondary Traumatic Stress (STS). Van der Merwe & Hunt (2019) found that the mere *process of fieldworkers listening*, despite the content, to survivors of trauma, could result in trauma-by-proxy (also known as STS). Albeit the exposure, the thesis author found no articles that included occupational mental health of fieldworkers or researchers in the context of aid organisations. Similarly, there were not any articles published in English that focused on the occupational mental health of researchers in the sector of rural development nor agricultural development. There was, however, a body of literature from the occupational mental health of political scientist field-researchers. Political science field-researchers are often exposed to adversities (potentially traumatising incidents) or are interviewing and listening to stories of people who have experienced life-threatening situations themselves. Similarly, rural development researchers are engaging with and collecting data from people who may be currently experiencing hardship or have witnessed a tragic event(s). This exposes them to secondary trauma and puts them at a risk of developing traumatic stress (van der Merwe & Hunt 2019). In a world mental health survey, it was documented that the largest treatment gap (those who were assessed and those who received adequate treatment) was amongst low-income countries (Alonso et al. 2018). This is relevant in the field of rural development as researchers doing their fieldwork in low-income countries may not be trained to process the difficult stories of injustices, food insecurities, natural or political crisis. Conclusively, fieldworkers and researchers in the aid sector are equally at risk of burnout as humanitarian and development staff are. Burnout emerges in response to unmet psychosocial needs and stigmatisation of aid worker mental health, often resulting in dysfunctional staff turnover.

---

<sup>10</sup> The author defines ‘**fieldwork**’ as a portion of a researcher’s job which entails collecting data or implementing a project in the development aid sector.



### **2.2.3. Dysfunctional Staff Turnover**

Dysfunctional staff turnover not only erodes institutional knowledge, but also effectiveness of humanitarian and development efforts, revealing systemic challenges that hinder progress towards achieving SDGs. National staff make up the majority of aid workforce, and they typically have a lower rate of turnover compared with international staff (Loquercio et al. 2006). This may be explained by a higher dependency on their employment and through facing similar adversities as their beneficiaries; thus, staff may stay longer with an organisation, despite the psychological distress. Even so, any dysfunctional turnover creates disruptions at all levels in an organisation. Loquercio et al. (2006) stress the multifaceted impacts of turnover within the aid sector. At the individual level, aid professionals must carry the burden of colleague turnover, and the resulting increase in workload. At the agency or organisational level, they are caught in perpetual cycles of hiring and deploying and suffer from financial costs and loss of productivity. At the sectoral level, the aid sector faces shortages of mid-level and senior managers, contributing to diminished productivity. In another study, Korff et al. (2015) found that 60% of field staff in one aid organisation leave after their first mission with personal reasons being a significant factor for choosing not to reenlist. This strain can significantly impact the effectiveness of aid organisations, as turnover poses numerous additional (and arguably avoidable) costs. Organisations and research institutions have used several measures to assess burnout and mental health of employees which can help them to identify profiles and provide adequate support. The majority of aid worker research used either Maslach's Burnout Index (MBI) or Effort-Reward Imbalance (ERI) to operationalise burnout (see chapter 2.3.1. for more details). Both MBI and ERI are responsive measures, so they lack the pre-emptive indication of burnout. Several studies have focused on organisations' use of pre-deployment and pre-employment screening as pre-emptive indicators.

### **2.2.4. Pre-deployment Screening**

Psychological screening for mental resilience of potential employees, during the pre-employment process, or for potential staff to deploy during pre-deployment phase, is a common practice in the aid sector. In the widely referenced report by Antares Foundation (2012:16), *Managing Stress in Humanitarian Workers - Guidelines for Good*

*Practice*, they mention in their second principle, “Screening of all staff is recommended prior to hiring to ensure that they have the appropriate skills and personal capacities needed for work with the organization”. Despite the widespread practice, Opie et al. (2020), identified in a systematic literature review that at best, psychological screening can only *weakly* suggest vulnerability of the aid professional, and at the worst it could result in discrimination (psychological), thus they advise against this practice until further evidence suggests otherwise. Moreover, comprehensive pre-deployment or employment mental health screening can be a costly method for organisations (especially smaller) as they would need a mental health professional(s) to ensure the credibility of the assessment. Organisations are often constrained by their budget and donor requirements. Especially in the humanitarian context, personal security often takes precedence over mental health considerations, leading to the latter being side-lined or overlooked entirely. However, there is a growing recognition of the need to adopt a broader perspective within the aid sector, possibly through integrating mental health training into personal security training.

### **2.3. Mental Health at the Individual Employee Level**

This level considers aid work employees as stakeholders who are directly at risk of occupational burnout and related ill-health, both mental and physical. When national and international staff are in good health, they may continue to work in various SDGs-related projects. MacPherson and Burkle (2021) coined the term “the forgotten first responders” in their call for formalisation of the support systems for staff mental health in the aid sector. The stigmatisation around aid professionals asking for mental support is a pronounced barrier to overcome in the aid and development sector, that by its very nature, is focused on supporting the needs of others. Fechter (2012), highlights that the aforementioned drawback could stem from an emphasis on addressing the essential needs of vulnerable beneficiaries, resulting in constrained resources and capacity for employee well-being and support, along with a stigma associated with seeking such support.

#### **2.3.1. Burnout Amongst Aid Workers**

Burnout is a workplace phenomenon that is possible in any occupation and is increasingly found in the aid sector literature. The organisational concept of ‘burnout’

was first described by (Freudenberger 1974), and was then operationalised by Maslach and Jackson (1981) into three dimensions that could be assessed using a survey.

There are three dimensions that have evolved from decades of research on the phenomenon: exhaustion; cynicism; and inefficacy (Maslach et al. 2001; Maslach & Leiter 2016; WHO 2021). The exhaustion dimension can also be described as fatigue, depletion, wearing out and emotional exhaustion. The second dimension, cynicism, was originally called depersonalisation (due to the nature of occupations in human services), and is also described as irritability, negative or inappropriate attitudes towards clients, and withdrawal. The last dimension, inefficacy was originally called reduced personal accomplishment, and is described as an inability to cope, lowered productivity and capability.

In the context of the aid sector, burnout has been assessed using two main measures: Maslach's Burnout Inventory (MBI) and Effort Reward Imbalance (ERI). MBI can be used to create a psychosocial model or to understand influencing factors of the dimensions of burnout. In a recent study, Foo et al. (2023a) modelled burnout amongst national and international humanitarian workers in Bangladesh using MBI. They identified clear pathways from exposure to adversities and workplace stressors to burnout, with significant intervening variables being negative emotion-focused coping and psychological distress. Eriksson et al. (2009) used the MBI to test for the significance of the relationship of three types of support (social, organisational and God support) with the three domains<sup>11</sup> of MBI.

Occupational Burnout has been on the forefront of research in organisational psychology for over 40 years (Maslach et al. 2001). The Effort Reward Imbalance (ERI) model is used to understand job stress by focusing on the effort expended at work and the occupational rewards received in return (i.e. salary, respect/praise, incentives, promotion etc.). The model assumes that with a lack of reciprocation between "gains and costs", the individual may enter a state of chronic emotional distress which can lead to an increased risk of ill health, such as cardiovascular diseases (Siegrist 1996; Van Vegchel et al. 2005) and lower immunity (Eddy et al. 2016). In the context of aid workers' burnout, Jachens

---

<sup>11</sup> Note that this study took place when the three dimensions were called Emotional Exhaustion (EE), Depersonalization (DP) and reduced Personal Accomplishment (PA). The thesis author found majority of burnout in aid sector literature are still using the EE,DP,PA dimension names for MBI.

et al. (2019) found, in a large sample (n=1980) of international aid workers, high ERI was associated with significantly increased odds of high exhaustion from MBI. This suggests that burnout amongst aid workers is related to high effort and low rewards. This is an important finding as it provides a point of mediation for organisations to intervene and support the mental well-being (and physical) of their staff through rewards measures. Rewards measures for aid staff may include opportunities for skills training, promotion prospects, fair treatment and salary and improving promotion prospects (Jachens et al. 2019). Moreover, research shows significant associations between occupational burnout, STS and Post Traumatic Stress Disorder (PTSD) (Birinci & Erden 2016; Tessitore et al. 2023).

### **2.3.2. Secondary Traumatic Stress**

Focusing on the needs of others can also put aid workers at risk of STS. STS was first introduced by Figley (1995) as a reconceptualisation of the rigid description of PTSD<sup>12</sup> to include those who are traumatised indirectly (i.e. acquiring the knowledge of someone else's experience), in what they define as 'compassion fatigue'. Figley (1995) also bridged the gap between burnout and occupational stress, pointing out that secondary traumatic stress is the missing link between these occupational phenomena. This is relevant to the aid sector because aid professionals are working *both* directly and indirectly with vulnerable populations, which if they are not given sufficient support and training, can affect their self-efficacy and their productivity on the job. The occupational stress may be exacerbated especially if the staff are national as they can face a similar hardship as the communities they are supporting. National staff face the added factor of directly identifying with the local population, which can deepen the emotional attachment and (or) strain. In 2005, a study was conducted by Lopes Cardozo et al. with both international and national Kosovar Albanian aid staff, they found that the national staff had significantly higher rates of PTSD than their international counterparts. In addition, national staff also do not typically receive the same benefits and training as international staff, and have less access to adequate psychological support (Foo et al. 2021). This

---

<sup>12</sup> The author used the definition of 'PTSD' from the World Health Organization (WHO) (2021), "Post traumatic stress disorder (PTSD) may develop following exposure to an extremely threatening or horrific event or series of events"

discrepancy puts them at a significant disadvantage, as untreated PTSD and other comorbid illnesses can be debilitating (Putman et al. 2009).

### **2.3.3. Disparities Between International and National Staff**

National staff make up approximately 90% of the global aid workforce (Global Database of Humanitarian Organisations 2022; Obrecht et al. 2022). Houldey (2019), found that the policies and working conditions in the sector are likely to favour men and have a particularly negative impact on national staff. National staff often have a lower salary, support and security than their international counterparts, rendering whistleblowing on organisational injustices unfeasible. Ager et al. (2012) identified over 59% of national staff reported moderate to extreme stress arising from inequality of treatment between international and national staff. This is an organisational concern, as national staff make up a majority of the aid workforce and tensions between them and international staff are an *avoidable* social-cohesion dilemma.

National staff in the aid sector are gravely exposed to the adversities in *and* out of the workplace. In a study to determine mental health factors in Sri Lankan aid staff, Cardozo et al. (2013) found that the prevalence of anxiety, depression and PTSD were significantly higher in national aid staff in comparison to the local population. This shows how despite the local staff facing similar hardships to the local people, there are other organisational factors that can affect mental health. Cardozo et al. (2013) also found that the aid staff participants who received support from their organisation suffered significantly less from depression and PTSD symptoms than those who did not receive organisational support. These findings also support other research of both national and international staff (Eriksson et al. 2009; Strohmeier & Scholte 2015; De Fouchier & Kedia 2018; Young et al. 2020). Nevertheless, both national and international staff mental health research converge at the juncture of coping strategies.

### **2.3.4. Coping Strategies for Psychological Distress**

Research indicates that aid workers, regardless of nationality, may resort to negative or ineffective coping strategies, ultimately leading to burnout, thus impairing the effectiveness of the development and humanitarian aid sector. These ineffective coping strategies, identified among aid workers (including development, humanitarian, national

and international staff), encompass overworking, isolation, alcohol and substance abuse, over-eating, avoidance and complaining (Jachens et al. 2016; Young et al. 2018). In addition, a study conducted by Strohmeier et al. (2018) investigated the coping styles prevalent among aid workers in South Sudan and their association with mental health issues. The research highlighted that dysfunctional coping style was associated with a higher risk for mental disorders, whereas there were no significant associations for emotion focused and problem-focused coping styles. Further research outlining coping strategies and styles may help to model the precarious and varied nature of aid work. Recent attention has been directed towards the hazardous consumption of non-medical drugs within the realm of research on aid worker coping strategies. In a mental well-being survey conducted internally within the UN (United Nations Secretariat 2017), hazardous drinking was one of the four mental health variables that the staff were screened for. The report showed that amongst the staff that participated (n=17 363), the prevalence of hazardous drinking was 23.15%, compared to that of the general population of 1.8% (Management of Substance Abuse Unit of the World Health Organization 2014). This report points to a significant reliance on the coping strategy of alcohol consumption which can exacerbate pre-existing mental and physical illness of the employee and lead to burnout. In a study of nearly two thousand international and national aid workers, Jachens et al. (2016), reported a significant correlation amongst female staff with intermediate to high ERI and heavy alcohol consumption; the female staff were at risk of heavy alcohol consumption three times more than their male colleagues. Furthermore, Ager et al. (2012) found that gender was a major predictor of mental health outcomes in a study of national aid workers in Uganda. So not only are female staff at a higher risk than male staff of poor mental health, but they are also at a higher risk of developing negative coping strategies such as heavy alcohol consumption. Women are at a higher risk of poor mental health, which is an organisational concern for protecting the well-being of all staff, regardless of gender. Nevertheless, ineffective coping strategies leading to burnout can be mitigated by the adoption of positive coping strategies, as taught in support groups and (or) psychosocial training.

### **2.3.5. Organisational and Psychosocial Support**

Support groups for aid workers are a crucial form of social support that help mitigate psychological distress and validate the aid workers experience. Support groups

can be informal, usually arising from bottom-up, or formal, typically top-down. Eriksson et al. (2009) proposed three types of support: social, organisational and God, in relation to burnout among international aid staff in a faith-based organisation. They found social and organisational support significantly contributed to mitigating the emotional exhaustion and depersonalisation factors of MBI, whereas God support showed a more complex relationship with burnout (as age had a significant interaction with God support). In a recent study, Dewar et al. (2023) focused on PTSD profiling among aid workers and found social and organisational support crucial in mitigating PTSD symptoms and severity. Though exact modalities of support have not been clearly defined in this field of aid worker mental health, the terminology of “adequate support” and “perceived support” are typically used in surveys. Notably, in the aforementioned UN employee mental well-being survey, a significant gap in support is highlighted: while 49% of total respondents screened positive for *at least one* mental health issue, less than 7% are utilising mental health services, and of those who are, only 1.7% are utilising the services provided within the UN (United Nations Secretariat 2017). This discrepancy is concerning, especially considering the UN’s pivotal role in shaping policy frameworks, funding, and funding requirements within the aid sector.

The existent literature is limited by a linear approach to understanding mental health outcomes of aid workers, relying on assessing contributing factors *or* outcomes of burnout, and a focus on one or two levels out of sectoral, organisational, and individual levels. Consequently, there is a disconnection and a challenge in illustrating the interconnectedness among donors, SDGs, policies, organisations, beneficiaries, and the individual burnout experienced by employees. This study employs a systems thinking approach for understanding the complexity behind mental well-being at all three levels of the aid sector. By employing systems thinking, it transcends the assumption that organisations alone must implement better mental well-being practices for their staff, and plainly acknowledges the pathways in which donors, staff *and* organisations influence or are influenced by the feedback structures of the entire system. Further research, that includes all three levels, is crucial for outlining the areas of mental health support and intervention for the workforce behind achieving the SDGs targets.

### **3. Aims**

With only 6 years remaining until the 2030 SDGs deadline, it is paramount that the stakeholders involved in sustainable development are being supported by the right policies and practices that promote emotional resilience. Unlike many other sectors involved in public safety and community development, the humanitarian and development aid sector lack a comprehensive model that addresses burnout, secondary traumatic stress *and* its effect on beneficiaries. For these reasons, the thesis aims to provide a starting point for quantitative systems science approaches in the field of occupational mental health in humanitarian and development aid, which can compare and predict the effects of possible interventions. To achieve the aims of this thesis, systems models were developed for sensemaking of mental well-being in occupations related to the SDGs, using a systems thinking approach and the associated tools of causal loop diagrams and stakeholder analysis matrix. These mapping tools and matrix demonstrated the application to effectively address the mental well-being amongst the different stakeholders in the complex system of international humanitarian and development aid.

#### **3.1. Research Questions**

This thesis addresses the following problems:

1. What are the dynamics between individual burnout, achieving SDGs targets and mental health stigma?
2. Are psychosocial training and support programs viable areas of intervention to mitigate the effects of workplace stressors?
3. Who are the specific stakeholders related to occupational mental health of humanitarian and development aid workers, who are working to achieve the SDGs?



### **3.2. Objectives of the study**

By addressing the aforementioned research questions, the objectives were formulated as follows:

1. To provide an in-depth literature review on the various causes and effects of aid worker mental well-being at the sectoral, organisational, and individual levels.
2. To reveal the interconnectedness of the variables affecting the mental well-being of professionals working in humanitarian and development aid. To highlight key areas for intervention that would promote mental well-being and maximise progress of SDGs targets.
3. To map and analyse stakeholders who are influenced by and have the power to influence the mental well-being of aid workers.

## **4. Methodology**

A multi-methodology approach was undertaken for the development of causal loop diagrams, adopted by the proposed methodology from Dhirasasna & Sahin (2019). This multi-methodology approach combined quantitative and qualitative approaches sequentially, as depicted in Table 1. The quantitative results provided pre-conceptual knowledge to the modeller, which then supported them in the following step to consult with experts in the field. This methodology is in line with a systems thinking approach, as described in chapter 4.1., as it allows for the comprehensive exploration of interrelated factors within the aid worker mental health context.

**Table 1. A two-step methodology for the formation of Causal Loop Diagrams and Stakeholder Analysis Matrix using published literature**

<b>Identification of Relevant Variables and Stakeholders<sup>13</sup></b>			
1.1 Identifying Relevant Variables	Modeller gathered variables using a systematic quantitative literature review (SQLR) and placed in “Key identified variables of occupational mental health in the aid sector” table (QT**) →	Variables were placed in “Variables with influencing links” table with causal linkages (using ‘+’ or ‘-’ symbols), based on <i>highly relevant</i> literature (QT**) →	Experts were consulted to review/amend “Key identifiable variables” table and “Variables with influencing links” table (QL*)
1.2 Identifying Stakeholders Involved	Modeller gathered stakeholders using a systematic quantitative literature review (SQLR) (QT**) →	Stakeholders were placed in “Key identified stakeholders of occupational mental health in the aid sector” table →	Experts were consulted to review/amend “Key identifiable stakeholders” table (QL*)
<b>Causal Loop Diagram and Stakeholder Analysis</b>			
2.1 System Structure Mapping Using CLD	Preliminary CLD was modelled using Vensim <sup>®</sup> PLE 8.2.1 software (QL* & QT**) →	Experts were consulted to review/amend Preliminary CLD (QL*) →	CLD was remodelled using Experts’ review (QL*)
2.2 Stakeholders Mapping Using “Stakeholder Analysis Matrix”	Stakeholders were then analysed in “Stakeholder Analysis Matrix” based on <i>highly relevant</i> literature (QT**) →	Experts were consulted to review/amend preliminary “Stakeholder analysis matrix” (QL*) →	“Stakeholder analysis matrix” was remodelled using Experts’ review (QL*)

\*QL= Qualitative approach, \*\*QT= Quantitative approach

<sup>13</sup> This table is adapted from Dhirasasna & Sahin (2019) multi-methodology approach for casual loop diagrams, where they also employ a MICMAC matrix, which the author of this thesis opted out due to it being out of the scope of this research. The author has also modified the section titles and several steps from the original.

## 4.1. Systems Thinking and System Dynamics

Systems thinking invites an interdisciplinary perspective in an attempt to accurately understand the complex structures and processes of the world. It is in contrast with linear thinking<sup>14</sup>, which has the assumption that a cause leads to an effect without feedback (cyclic consequences). Systems thinking is part of a science of *System Dynamics*<sup>15</sup>, which was developed by Jay Forrester at MIT in the 1950s. There are a variety of tools that can be used to model the systems thinking approach. These may include (though not limited to): Casual Loop Diagrams (CLD), Stock and Flow maps, Bayesian Belief Network Model (BBN) and Matrix Cross-Reference Multiplication Applied to a Classification (MICMAC). In this thesis, the author chose CLD as it reveals the interconnectedness of the variables and possible areas for intervention (Objective 2).

The author also chose a Stakeholder Analysis Matrix due to the possibility to analyse stakeholders who are influenced by and have the power to influence the mental well-being of aid workers (Objective 3). Sterman's (2000) textbook is widely used across sectors for understanding system dynamics theory and model creation. The author of this thesis used Sterman's (2000) textbook as a key resource in developing the CLD.

## 4.2. Causal Loop Diagrams

CLD are a diagramming tool that capture the feedback structures of systems (Sterman 2000). CLD are comprised of variables, and arrows, which represent the cause-effect linkages between the variables. Every causal linkage is assigned a polarity, either positive (+) or negative (-), which signifies how the dependent variable changes when the independent variable changes. Important loops are highlighted in the diagram using a loop

---

<sup>14</sup> An example of linear thinking approach to problem-solving would be the introduction of non-native cane toads to Australia in 1935 to "solve" the cane beetle infestation of the cane crop, because the entirety of the (eco)system was not considered, the cane toad, without native predators, quickly became an invasive species.

<sup>15</sup> In this thesis, the author uses the definition of '**system dynamics**' as proposed by Sterman (2000), "System dynamics is a perspective and set of conceptual tools that enable us to understand the structure and dynamics of complex systems. System dynamics is also a rigorous modeling method that enables us to build formal computer simulations of complex systems and use them to design more effective policies and organizations."

identifier which demonstrates either a reinforcing (R) or balancing (B) feedback loop. The loop identifier will include an arrow going in the same direction as the loop it is corresponding to. A positive link represents that if the cause increases, the effect also increases *above what it otherwise would have been*, and if the cause decreases, the effect also decreases *below what it otherwise would have been* (Sterman 2000). Concurrently, a negative link represents that if the cause increase, the effect decreases *below what it otherwise would have been*, and if the cause decreases, the effect increases *above what it otherwise would have been*. As Sterman (2000) describes, *link polarities* demonstrate the *structure of the system*, they *do not* describe the behaviour of the variables. In simple terms, they demonstrate what would occur *if* there were to be a change. Also, an important note is that a change (positive or negative) in a cause variable, does not necessarily mean the effect will also change. This is due to variables typically having more than one input and that CLD do not distinguish between stock and flows (Sterman 2000). However, CLD do include time delays between variables, which are denoted by a hash mark on the arrow.

The CLD was created using methodology adapted from Brereton & Jagals (2021) literature-derived mapping process and Sterman's (2000:137-190) CLD methodology and guidelines.

### **4.3. Systematic Quantitative Literature Review**

The first step to create the CLD and SAM was to identify the variables and stakeholders related to OMH of development workers and humanitarian aid workers, using a systematic quantitative literature review (SQLR) as proposed by Dhirasasna & Sahin, (2019). The following databases were searched for literature: Web-of-Science (WoS), Pubmed, Scopus, and Google Scholar. Internet searches were performed using Google Scholar, by screening for relevant studies from the first 50 results. The entirety of the searches was carried out from July 1<sup>st</sup> until the 30<sup>th</sup> of November 2023. The following keywords, combined with Boolean operators, were used as the composite primary search terms: "Mental Health" OR "Occupational Mental Health" OR "Secondary Trauma" OR "Organizational Trauma" OR "Emotional Wellbeing" OR "Emotional Resilience" OR "Mental Wellbeing" OR "Burnout". The composite primary search term was then used in combination with ("AND") the secondary search terms of: "Humanitarian Aid Workers", "Development Aid Workers", "Development

Professional”, “Aid workers”, “Agricultural Development Worker”, “Agriculture extension officer”, “Extension officer”, “Agricultural development researcher”, “World Food Programme”. Grey literature, i.e. studies from research institutions, government and other interested groups- was also screened for their relevancy using the same relevancy criteria below, which was adopted from a two-step relevancy check by Werner et al., (2015). References from the identified publications were also checked for relevancy, as some of these were not identified in the initial database searches. The initial pre-screening criteria included; 1) focused on the mental health of professionals (occupational mental health); 2) occupations pertaining to humanitarian aid, agricultural and development aid, and research in least developed<sup>16</sup> (LDC) and low-income countries; and 3) published in English.

Following the primary search and pre-screening, a relevancy check was then used to identify highly relevant literature using a relevancy assessment approach proposed by Werner et al. (2015) including the following relevancy categories:

- (i) *Highly relevant*: Evidence of mental health impacts or resiliency are presented based on primary and (or) secondary data that was collected and (or) assessed by the author(s). These studies showed strong or direct correlation between mental health outcomes and occupational adversities and (or) emotional resilience training programs and (or) secondary traumatic stress;
- (ii) *Relevant: Indirect* analysis of mental health impacts or resiliency based on primary and (or) secondary data that was collected. Indirect analysis would mean that the correlations between mental health impacts or resiliency and the occupational and organisational factors would mostly be inferred, such as, prevalence of post-deployment PTSD symptoms without a pre-deployment assessment of pre-existing mental health.
- (iii) *Not very relevant*: Implications of occupational mental health impacts were generally discussed without any clear evidence of impacts. Internal reports published by institutions for policy recommendations without any

---

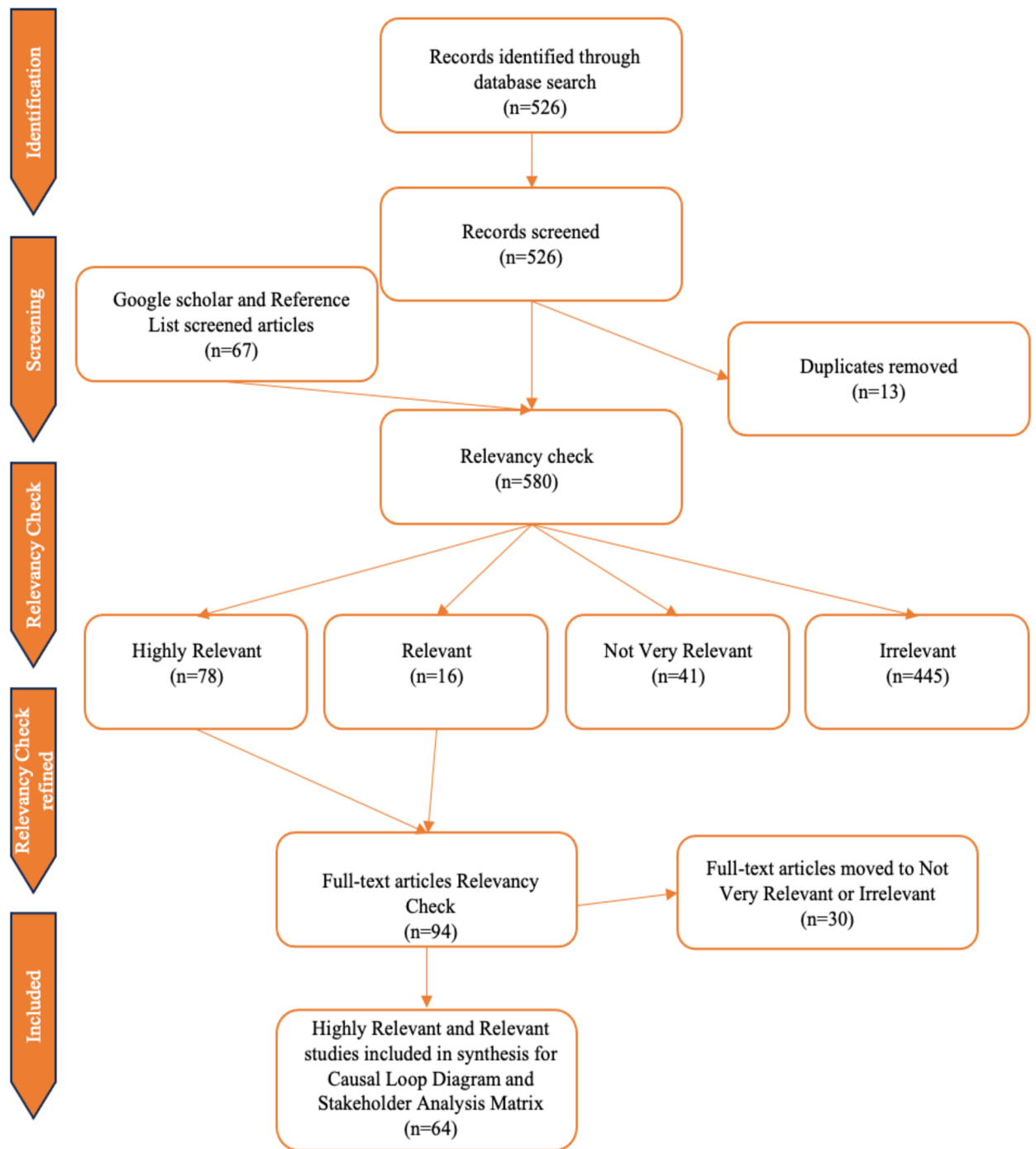
<sup>16</sup> Based on the definition by the United Nations (n.d.) of least developed countries as “countries that have low levels of income and face severe structural impediments to sustainable development.”

supporting evidence, such as, employee peer-support recommendations or general guidelines for management practices of distressed employees.

(iv) *Irrelevant*: Studies meeting any of the following criteria were considered irrelevant:

- Studies published not in English and prior to 1995;
- Webpages and blogs, conference proceedings, news articles;
- Studies that focused on occupational mental health of non-humanitarian/agriculture developmental/research professions;
- Studies on agricultural development professionals, such as extension officers and researchers, in *developed* countries, and;
- reported about training or administering Psychological First Aid (PFA) without any discussion of Secondary Traumatic Stress of those administering.

The initial search results (without pre-screening nor relevancy checks) across all databases yielded n=526 studies in total. In terms of total numbers, Scopus had the highest search results (n=422) and WoS had the lowest (n=18) of all the database searches. In terms of relevancy of the database searches, PubMed had the highest results of *highly relevant* articles (n=29) before the full-text relevancy check. The process of the SQLR is described graphically in Figure 1.



**Figure 1. Process of the systematic quantitative literature review used in this thesis.**

A total of 64 *highly relevant* research papers were identified. The following step was to identify the key variables from reviewing the *highly relevant* and *relevant* literature (see chapter 4.4.).



#### 4.4. Table of Variables and CLD Creation

During this process, each article was thoroughly read, and the author meticulously screened for factors that could potentially influence or be influenced by the mental health and/or burnout of aid workers. These factors were then noted using the “tag” function in Mendeley Reference Manager (Mendeley 2021). A total of 26 variables were identified. Then the variables were placed in Table 2 ‘Key identified variables of occupational mental health in the aid sector’, based on the various levels of the aid sector that was used for this study: sectoral, organisational, and individual.

The next step involved mapping each variable, to indicate variables that it directly influenced and variables that it was directly influenced by. The results of this mapping process are seen in the ‘Variables affecting aid worker mental health with influencing links’ Table (3), adapted from Brereton & Jagals (2021) CLD construction approach<sup>17</sup>, with descriptions of the variables. There were 6 exogenous variables (arising from outside the system) that were identified in the mapping process. There were 5 variables suggested by the author that were seen as important to the system although lacked significant research<sup>18</sup>, they were then verified by the experts during consultations. Then the experts identified new, and redefined, split and joined previously identified variables from Table 2 & 3, which resulted in 34 variables. Table 3 was used as the foundation for creating the CLD, which was constructed using Vensim PLE software (Ventana Systems Inc., Version 8.2.1). The CLD was reviewed and refined after consultation with the experts and thesis supervisor (see chapter 4.6.). Then, the loops which were related to the research questions and objectives of this thesis were investigated further (chapters 5.3.3 and 5.3.4).

#### 4.5. Stakeholder Analysis Matrix

Stakeholders were identified using the same approach and literature as the variable identification, as described in chapter 4.4. A total of 9 key stakeholders were identified

---

<sup>17</sup> Brereton & Jagals (2021) applied a systems science approach, using CLD, to understand the multiple influences within children’s environmental health in LDC. Their approach was a relevant resource for this thesis as it combined deriving variables from a literature review *and* the topic was concerned with understanding complexity of health.

<sup>18</sup> For instance, the variable "donor funding" frequently appeared in the discussion or conclusion sections of numerous articles, even though it was not the primary focus of research and lacked quantitative analysis.

(Table 4) separated into the three levels of the aid sector that was used for this study: sectoral, organisational, and individual levels. Then a Stakeholder Analysis Matrix was created (Table 5), informed by, *Aid Delivery Methods. Volume 1 – Project Cycle Management (Supporting Effective Implementation of EC External Assistance)* by the European Commission (2004). Tables 4 and 5 were revised after consultation with the experts and thesis supervisor. Stakeholders were redefined, split and joined by the experts, which resulted in 12 stakeholders.

#### **4.6. Expert consultations**

Experts have the possibility of representing different perspectives on stakeholders and variables (Müller et al. 2013), which is suitable for this intersectional topic. In this research, four humanitarian and development aid experts and one mental health expert were consulted to further validate and give feedback on the author's findings. Experts were chosen based on the author's previous contacts, due to convenience and the in-depth feedback process (a larger expert sample was beyond the authors capacity). Experts were contacted via email between 2-9 February 2024, and asked to provide the feedback within two weeks using the Expert Feedback Form (Appendix 1). All 5 experts responded and were willing to provide feedback. The initial feedback consultations were completed between the 3-15 February 2024 via face-to-face (n=2), video call (n=2) or email correspondence (n=1), which was based on the experts' suggestion and availability. For the face-to-face and video call consultations, the author offered to transcribe the expert's suggestions and feedback regarding variables and CLD feedback, all experts agreed to this offer. Several experts provided a follow up email to clarify or provide sources for information discussed on the call. The 5 experts provided feedback and revised the key identifiable variables in Table 2, influencing linkages and description of variables in Table 3, key stakeholders in Table 4, stakeholder analysis matrix in Table 5 and the preliminary CLD.

## **5. Results**

A total of 29 variables related to occupational mental health of aid workers were identified in the SQLR, and revised by experts, resulting in 34 variables. 1 psychologist and 4 development/humanitarian aid experts split or merged, deleted or renamed variables during the revision process (see Appendix 1 for pre-expert revision variables).

### **5.1. Key identified variables of occupational mental health in the aid sector**

The variables are categorised by individual, organisational and sectoral levels. The variables are in alphabetical order by each column.

**Table 2. Key identified variables of occupational mental health in the aid sector**

<b>Individual Employee Level Variables</b>	<b>Organizational Level Variables</b>	<b>Sectoral Level Variables</b>
Avoidant coping style**	<i>Concern for staff well-being</i>	Achieving SDGs targets
Burnout	Discrimination	<i>Concern for staff well-being</i>
Depression, Anxiety, PTSD	<i>Donor support</i>	<i>Donor support</i>
Effective coping strategies	<i>Effectiveness of organization</i>	Economic interests**
Emergency context**	<i>Organisational commitment</i>	<i>Effectiveness of organization</i>
Exposure to adversities	Psychosocial training	Exposure to altruistic media**
Ineffective coping strategies	<i>Productivity of employee</i>	Global instability**
Internalised shame	<i>Staff turnover</i>	Public support for aid sector
Mental well-being	Supportive organisational policies	Societal stigma**
<i>Organisational commitment</i>	Support programs	<i>Stigma</i>
<i>Productivity of employee</i>	Support to beneficiaries	<i>Tolerance of discrimination**</i>
Psychological distress	<i>Stigma</i>	
Secondary Traumatic Stress	<i>Tolerance of discrimination**</i>	
<i>Staff turnover</i>	<i>Workload</i>	
<i>Stigma</i>		
Support programs		
Support seeking coping style**		
<i>Workload</i>		
Workplace stressors		

\*\*Exogenous variables: arising from outside the system, otherwise they are arising within the system (endogenous)

*Variable in Italics* represent variables that appear on more than one level category

## 5.2. Influencing Linkages

The linkages of variables with their influencers and influences are evident from Table 3, showing the cause and health effect pathways (eg. Adversity exposure leads to Psychological distress) and the links between the variables such as burnout, productivity of employee, effectiveness of organisation, donor support, support programs, and burnout. The variables from Table 3 are then represented visually in the main CLD shown in Figure 2. Then the specific feedback loops are discussed in greater detail in the subsequent subchapters. The table and table notion are adapted from Brereton & Jagals (2021), and are as follows:

- Variables are organised in alphabetical order in the table;
- Variables are written in a shortened form, e.g., ‘stigma’ refers to ‘stigmatisation of mental health outcomes’, and ‘support programs’ refers to ‘various formal and informal forms of social or group support’;
- Polarities of the links are shown, e.g., supportive organisational policies increase support programs;
- From the column on the far-left, it gives a description of the variable, then its relationship between the variable and its various linkages from the “influenced by” and “influences” columns, then supporting references are given on the far-right;
- Exogenous variables are not included in this table, therefore all variables defined in this table are endogenous (arising from within the system);
- The variables marked with a single asterisk ‘\*’ were identified by the author in the SQLR, verified by the experts, though lacked direct evidence or research to support findings, thus the supporting references are limited.

**Table 3. Variables affecting aid worker mental health with influencing links**

<b>Variable</b>	<b>Influenced-by</b>	<b>+ / -</b>	<b>Influences</b>	<b>+ / -</b>	<b>Source</b>
<b>Achieving SDGs targets*-</b> <ul style="list-style-type: none"> <li>• SDGs: 17 goals, 169 targets, and indicators</li> <li>• Member states made time-bound commitments to SDGs in 2023, relying on aid organisations for project realisation</li> <li>• Achieving and sustaining SDGs commitments fosters public support for the aid sector, engaging both recipients and donors</li> </ul>	Support to beneficiaries	+	Public support for aid sector	+	(United Nations Department of Economic and Social Affairs 2023)
<b>Burnout-</b> <ul style="list-style-type: none"> <li>• Stemming from poorly managed chronic workplace stress: exhaustion, cynicism, reduced effectiveness</li> <li>• Burnout can coexist with depression, anxiety, PTSD, worsening mental health challenges</li> </ul>	Ineffective coping strategies Depression Anxiety and PTSD Mental well-being	+ + -	Organizational commitment Depression Anxiety PTSD	- +	(Eriksson et al. 2009; Antares Foundation 2012; Jachens et al. 2019; Young et al. 2020; Foo et al. 2023a)
<b>Concern for staff well-being-</b> <ul style="list-style-type: none"> <li>• Often overlooked by employers despite being fundamental duty-of-care</li> <li>• Mental health stigma inhibits concern among donors, organisations</li> </ul>	Stigma	-	Supportive organisational policies	+	(Kemp & Merkelbach 2011; Antares Foundation 2012)
<b>Depression, Anxiety and PTSD-</b> <ul style="list-style-type: none"> <li>• Commonly cited mental health conditions in occupational mental health</li> <li>• May exist before, during, or after deployment, influenced by ineffective coping</li> <li>• Psychological distress and ineffective coping strategies both exacerbate these conditions, leading to burnout</li> </ul>	Burnout Psychological distress Stigma Support programs	+ + + -	Burnout Productivity of employee	+ -	(Jones et al. 2006; Putman et al. 2009; Beck et al. 2011; Eriksson et al. 2013; Cardozo et al. 2013; United Nations Secretariat 2017)
<b>Discrimination-</b> <ul style="list-style-type: none"> <li>• Unjust treatment based on stigma, prejudice factors</li> <li>• Increases workplace stressors</li> <li>• Men, women may struggle differently, seeking support</li> </ul>	Stigma Tolerance of discrimination	+ +	Workplace stressors	+	(Antares Foundation 2012; Houldey 2019; Horn 2020; Opie et al. 2020)

<p><b>Donor support*-</b></p> <ul style="list-style-type: none"> <li>• General interest to support financially in humanitarian, development efforts</li> <li>• Donor requirements influence supportive policies, staff well-being</li> <li>• Influenced by economic interests, global instability, public perception</li> </ul>	<p>Effectiveness of organisation Economic interests Global instability Public support for aid sector</p>	<p>+ + + +</p>	<p>Supportive organisational policies</p>	<p>+ (Antares Foundation 2012; Wood &amp; Hoy 2022)</p>
<p><b>Effective coping strategies-</b></p> <ul style="list-style-type: none"> <li>• Manage distress through social connections, exercise, hobbies, support seeking</li> <li>• Improve physical, mental well-being, reduce burnout risk</li> <li>• Positive organisational factors promote positive coping</li> </ul>	<p>Psychological distress Psychosocial training Internalized shame</p>	<p>+ + -</p>	<p>Mental well-being Psychological distress</p>	<p>+ (Ager et al. 2012; Young et al. 2018; Cockcroft-McKay &amp; Eiroa-Orosa 2021; Brooks et al. 2023) -</p>
<p><b>Effectiveness of organisation*-</b></p> <ul style="list-style-type: none"> <li>• Determined by aid professionals' productivity, staff turnover</li> <li>• Measured by efficient donor budget utilisation, supporting beneficiaries</li> <li>• Effective organisations better support beneficiaries, achieve SDGs targets</li> </ul>	<p>Productivity of employee Staff turnover</p>	<p>+ -</p>	<p>Support to beneficiaries Donor support</p>	<p>+ (Cockcroft-McKay &amp; Eiroa-Orosa 2021) +</p>
<p><b>Exposure to adversities-</b></p> <ul style="list-style-type: none"> <li>• Includes trauma, acute stress experienced or witnessed by aid professionals</li> <li>• Directly impacts psychological distress</li> <li>• Global instability increases adversity frequency</li> </ul>	<p>Emergency context Global instability</p>	<p>+ +</p>	<p>Psychological distress Secondary Traumatic Stress</p>	<p>+ (Lopes Cardozo et al. 2005, 2012; Putman et al. 2009; Antares Foundation 2012; Okanoya et al. 2015; United Nations Secretariat 2017; Abikova 2023; Foo et al. 2023a) +</p>
<p><b>Ineffective coping strategies-</b></p> <ul style="list-style-type: none"> <li>• Aid workers resort to working longer hours, avoidance, isolation, poor diet, alcohol</li> <li>• Limited access to effective strategies due to deployment conditions, personality traits</li> <li>• "Negative" sometimes used interchangeably with "ineffective"</li> </ul>	<p>Psychological distress</p>	<p>+</p>	<p>Burnout Depression, Anxiety, PTSD Mental well-being</p>	<p>+ (Lopes Cardozo et al. 2012; Ager et al. 2012; Eriksson et al. 2013; Cardozo et al. 2013; Jachens et al. 2016; United Nations Secretariat 2017; Young et al. 2018; Brooks et al. 2023; Foo et al. 2023a) -</p>
<p><b>Internalised shame*-</b></p> <ul style="list-style-type: none"> <li>• Hinders support seeking, influenced by "macho/martyr" culture</li> <li>• Impedes effective coping, perpetuates suppression, denial</li> <li>• Aid workers compare own needs to vulnerable populations served</li> </ul>	<p>Stigma</p>	<p>+</p>	<p>Effective coping strategies</p>	<p>- (Cockcroft-McKay &amp; Eiroa-Orosa 2021)</p>

<b>Mental well-being-</b> <ul style="list-style-type: none"> <li>Realising one's abilities, not just the absence of illness</li> <li>Influenced by coping strategies, support seeking, organisational factors</li> <li>Support programs positively influence staff mental well-being</li> </ul>	Effective coping strategies Support programs Ineffective coping strategies	+ + -	Burnout Psychological distress	- -	(Fechter 2012; Solanki 2015; United Nations Secretariat 2017; Rizkalla & Segal 2019; Young et al. 2021)
<b>Organisational commitment-</b> <ul style="list-style-type: none"> <li>Emotional attachment, duty, risks associated with employment</li> <li>Influences motivation, productivity, staff turnover</li> <li>Impacted by burnout, commitment decreases</li> </ul>	Burnout	-	Productivity of employee Staff turnover	+ -	(Loquercio et al. 2006; Basami et al. 2013)
<b>Productivity of employee*-</b> <ul style="list-style-type: none"> <li>Influenced by mental well-being, commitment, mental health conditions</li> <li>Directly impacts organisational effectiveness</li> <li>Inversely related to workload</li> </ul>	Mental well-being Organisational commitment Depression, Anxiety and PTSD	+ + -	Effectivity of organisation Workload	+ -	(Antares Foundation 2012; Cockcroft-McKay & Eiroa-Orosa 2021)
<b>Psychological distress-</b> <ul style="list-style-type: none"> <li>Arises from workplace and/or external stressors</li> <li>Direct, indirect exposure (vicariously) amplifies distress</li> <li>Influences usage of both effective and ineffective coping, due to individuals employing both types of strategies, in varying proportions</li> </ul>	Workplace stressors Secondary Traumatic Stress Exposure to adversities Effective coping strategies	+ + + -	Effective coping strategies Ineffective coping strategies	+ +	(Lopes Cardozo et al. 2012; Eriksson et al. 2015; Young et al. 2021; Foo et al. 2023b)
<b>Psychosocial training-</b> <ul style="list-style-type: none"> <li>Formalised training for aid professionals to recognise and cope with adversities</li> <li>May be provided before, during, or after exposure to adversities.</li> <li>Inversely influenced by stigma</li> <li>Promotes effective coping strategies, mental well-being</li> </ul>	Supportive Organizational policies	+	Effective coping strategies	+	(IASC 2007; Antares Foundation 2012; Okanoya et al. 2015; Chemali et al. 2017; De Fouchier & Kedia 2018; Young et al. 2020; Cockcroft-McKay & Eiroa-Orosa 2021; Kivlehan et al. 2022; Brooks et al. 2023)
<b>Public support for aid sector *-</b> <ul style="list-style-type: none"> <li>Collective views, attitudes towards humanitarian, development efforts</li> <li>Influences donor support, societal attitudes</li> <li>Mirrors societal perceptions of foreign aid</li> <li>SDGs targets provide a quantitative benchmark for sharing outcomes of donor support</li> </ul>	Achieving SDGs targets	+	Donor support	+	(Milner & Tingley 2010; Wood & Hoy 2022)



<p><b>Secondary Traumatic Stress-</b></p> <ul style="list-style-type: none"> <li>• Vicarious trauma exposure through exposure to stories of individuals affected by poverty, hunger, conflict, disasters etc.</li> <li>• Researchers and consultants also at risk due to documenting and working with data of vulnerable beneficiaries</li> <li>• Influences psychological distress, intimacy</li> <li>• Psychosocial training and support programs reduce distress caused by Secondary Traumatic Stress</li> </ul>	<p>Exposure to adversities Psychosocial training and support</p>	<p>+ -</p>	<p>Psychological distress</p>	<p>+ (Birinci &amp; Erden 2016; Rizkalla &amp; Segal 2019; van der Merwe &amp; Hunt 2019; Williamson et al. 2020; Ebre et al. 2022; Tessitore et al. 2023)</p>
<p><b>Staff turnover-</b></p> <ul style="list-style-type: none"> <li>• Departure of employees, influenced by their organisational commitment</li> <li>• Incurs recruitment, training, effectiveness loss costs</li> <li>• Impacts organisational productivity, effectiveness</li> <li>• Workload increases for remaining staff</li> </ul>	<p>Organisational commitment</p>	<p>-</p>	<p>Workload Effectivity of organisation</p>	<p>+ (Loquercio et al. 2006; Antares Foundation 2012)</p>
<p><b>Stigma-</b></p> <ul style="list-style-type: none"> <li>• Societal belief, stereotype, or prejudice about a particular condition or characteristic, leading to discriminatory behaviour</li> <li>• Influences discrimination, internalised shame, mental health conditions and concern for the well-being of the staff</li> <li>• Influenced by policies addressing mental well-being, and societal stigma</li> </ul>	<p>Supportive Organizational policies</p>	<p>-</p>	<p>Discrimination Internalised shame Concern for staff-well being</p>	<p>+ (Jones et al. 2006; MacPherson &amp; Burkle 2013, 2021; Cockcroft-McKay &amp; Eiroa-Orosa 2021)</p>
<p><b>Support programs-</b></p> <ul style="list-style-type: none"> <li>• Formal and informal social assistance for employees, validating their experiences, providing next steps or resources</li> <li>• Includes peer support groups, Rest and Recuperation time (R&amp;R), supervisor check-ins, and informal social gatherings</li> <li>• Decrease mental health conditions, increase organisational commitment and mental well-being, minimising burnout dimensions.</li> <li>• Stigma negatively impacts existence and availability of support programs, while supportive organisational policies positively influences them</li> </ul>	<p>Supportive Organizational policies Stigma</p>	<p>+ -</p>	<p>Mental well-being Organisational commitment Depression, Anxiety and PTSD</p>	<p>+ (Jones et al. 2006; Curling &amp; Simmons 2010; Eriksson et al. 2013; MacPherson &amp; Burkle 2013, 2021; Cardozo et al. 2013; Hummel &amp; El Kurd 2021; Brooks et al. 2023)</p>
<p><b>Support to beneficiaries-</b></p> <ul style="list-style-type: none"> <li>• Organisations' ability to provide services to their intended beneficiaries</li> <li>• Influenced by organisational effectiveness</li> <li>• Positively influences the achievement of SDG targets</li> </ul>	<p>Effectiveness of organisation</p>	<p>+</p>	<p>Public support for aid sector</p>	<p>+ (IASC 2007; Antares Foundation 2012)</p>

<p><b>Supportive Organisational Policies-</b></p> <ul style="list-style-type: none"> <li>• Enhance staff well-being, such as the length of working days, well-being and mental health programs, and organisational structure</li> <li>• Influenced by donor requirements, funding</li> <li>• Decrease stigma and increase support programs and psychosocial training</li> </ul>	<p>Donor Support Concern for staff well-being</p>	<p>+</p>	<p>Psychosocial training Support programs Stigma</p>	<p>+</p>	<p>(Eriksson et al. 2009; Kemp &amp; Merkelbach 2011; Antares Foundation 2012; Strohmeier et al. 2019; Jachens 2019; Foo et al. 2021; Josam et al. 2022)</p>
<p><b>Workload-</b></p> <ul style="list-style-type: none"> <li>• actual and perceived amount of work assigned to individual employee and remains unfinished</li> <li>• Influenced by productivity of the employee and supportive organisational policies</li> <li>• Influences workplace stressors for aid workers</li> </ul>	<p>Staff turnover Supportive organisational policies Productivity of employee</p>	<p>+</p>	<p>Workplace stressors</p>	<p>+</p>	<p>(Loquercio et al. 2006; Antares Foundation 2012; Young et al. 2018; Cockcroft-McKay &amp; Eiroa-Orosa 2021; Foo et al. 2023a)</p>
<p><b>Workplace stressors-</b></p> <ul style="list-style-type: none"> <li>• chronic stress experienced by staff, from organisational practices</li> <li>• working culture, entailing workload, long working hours without breaks, ambiguity of tasks, tolerated discrimination and inadequate training all influence workplace stressors</li> <li>• Influence psychological distress and mental well-being</li> </ul>	<p>Discrimination Workload</p>	<p>+</p>	<p>Psychological distress</p>	<p>+</p>	<p>(Curling &amp; Simmons 2010; Ager et al. 2012; Jachens et al. 2018; Young et al. 2018, 2020; De Jong et al. 2021, 2022; Foo et al. 2023a)</p>

\*variables that were suggested or confirmed by at least three experts from this study, although did not yield sufficient evidence in highly relevant literature. Author recommends these as areas of research for further validation.

### **5.3. Causal Loop Diagram**

The CLD shown in Figure 2 represents the non-linear causal relationships in the occupational mental health of aid workers' system, based on the relationships that were identified in the systematic quantitative literature review and consultations with four development and humanitarian aid experts and one mental health expert. The variables were arranged to reflect the three levels discussed in the literature review— sectoral, organisational, and individual —highlighted with background colours: blue for sectoral, green for organisational, and purple representing individual.

#### **5.3.1. Exclusions from CLD Scope**

Effort-Reward Imbalance, despite its frequency in literature, was excluded by the thesis author due to its similarities with the dimensions of burnout. In the context of intersectionality, gender-specific variables, while prevalent in the literature, were omitted due to their potential inclusion within broader structural variables related to stigma and discrimination, which align with the scope of this CLD research. Variables relating to age and past experience were found in the literature and with experts, although they did not yield sufficient evidence for significant and consistent correlation between burnout dimensions. Personality trait variables affecting coping styles and strategies were suggested by the mental health expert, though the SQLR did not yield sufficient evidence in the aid sector research and the variables were out of the scope of this research to warrant their inclusion in the CLD. This was also the case for the following variables suggested by the humanitarian and development aid experts: domineering behaviour, SDGs commitments, emergency plans and training, low involvement of stakeholders, cultural differences, vested interests, and favouritism. The aforementioned variables could be areas for further research.

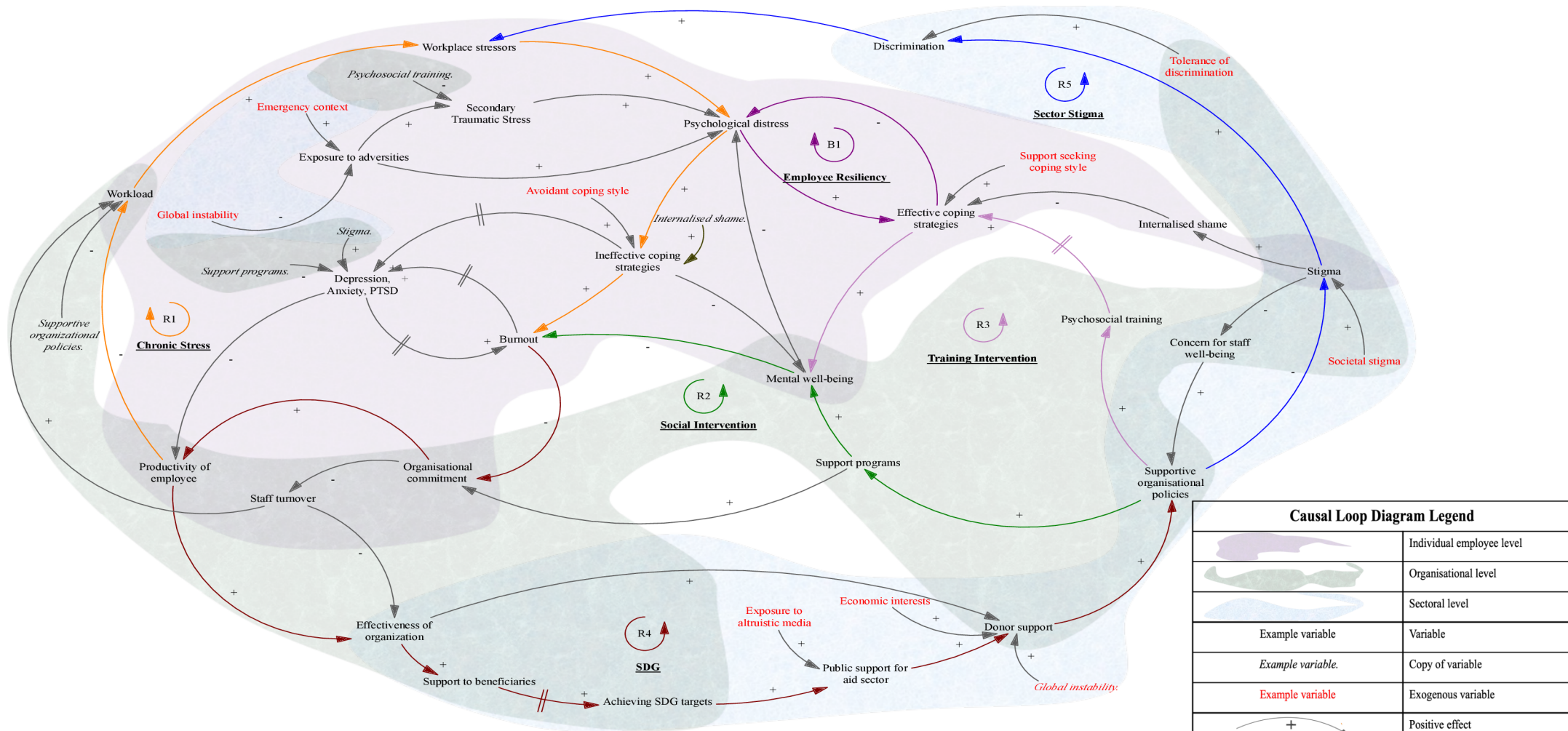


Figure 2. Causal Loop Diagram for occupational mental health of aid workers system

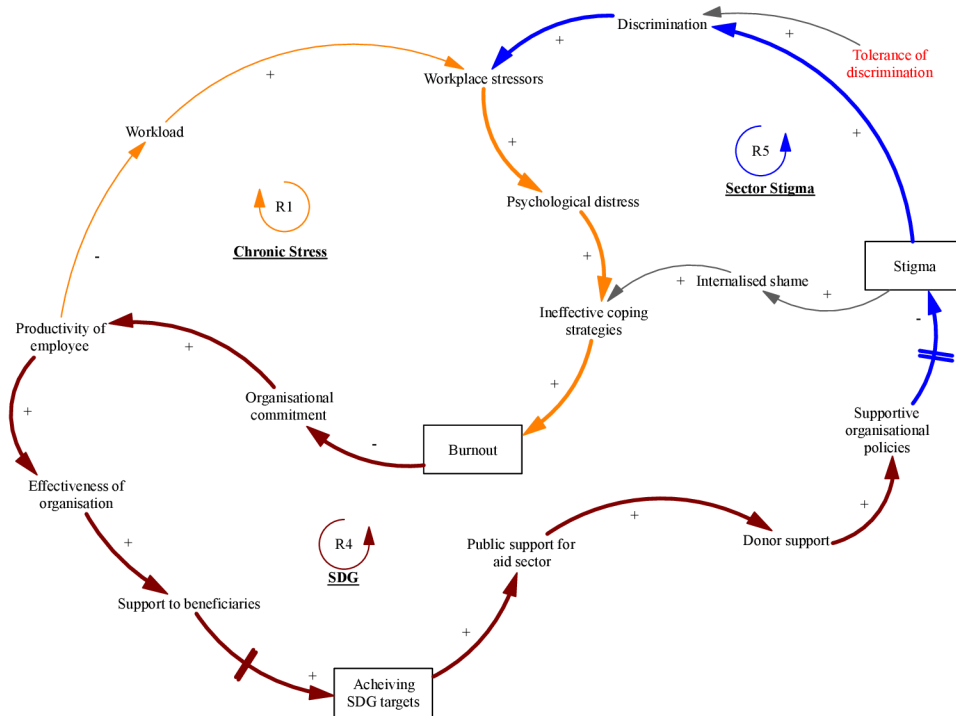
Causal Loop Diagram Legend	
	Individual employee level
	Organisational level
	Sectoral level
Example variable	Variable
Example variable.	Copy of variable
Example variable	Exogenous variable
	Positive effect
	Negative effect
	Delayed effect (+ or -)
*Coloured arrow*	Feedback loops discussed in results
	Balancing feedback loop
	Reinforcing feedback loop
Example loop title	Feedback loop title

### 5.3.2. Analysis of Feedback Loops in CLD

The balancing (B) and reinforcing (R) loops that are considered most relevant for answering the research questions of this thesis are discussed in greater detail below. Please note, the loops originate from the main CLD in Figure 2, although some positions and variables have been removed for greater simplification and comprehensibility.

### 5.3.3. Feedback Loops R1, R4, R5: Burnout, SDGs and Stigma

Related to the first research question, it was found that there is a reinforcing feedback loop between individual employee burnout, achieving SDGs targets and sector stigma. This reinforcing feedback loop is made up of various other reinforcing and balancing loops, hence the core structure was extracted from the main CLD (Figure 2) and is demonstrated by the bolded, colour linkages in Figure 3.



**Figure 3. Loops influencing burnout, stigma and SDGs**

Loop R1 (orange and dark red arrows) in Figure 3. depicts the reinforcing loop between workplace stressors and burnout. If workplace stressors increase, it leads to greater psychological distress. The employee may then use ineffective coping strategies (such as hazardous drinking, denial, and other destructive habits) to manage the increased stress. This leads to an increase in the burnout dimensions (cynicism, exhaustion and

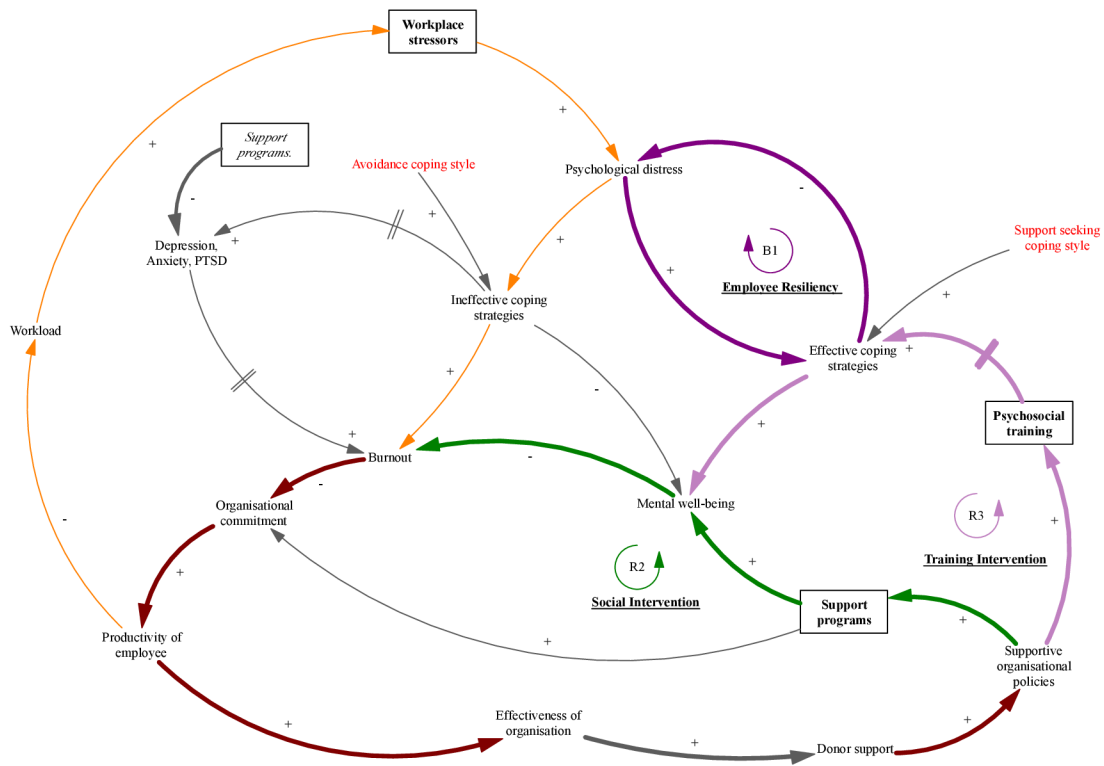
inefficacy) of the employee. Loop R1 then follows the dark red loop; when an employee is burning out, they are less motivated and committed to their organisation. This lowered motivation leads to a decrease in productivity, which increases the remaining workload, due to the work piling-up. The loop is then completed by workload reinforcing workplace stressors.

Loop R4 (dark red joining blue and orange) demonstrates the reinforcing feedback loop between burnout and achieving the SDGs targets. As burnout increases, the productivity of the employee goes down, which leads to a decrease in the effectiveness of the organisation's functioning. A less effective organisation decreases the quality and (or) quantity of services provided to beneficiaries, which then decreases the project's outputs related to the SDGs targets. The SDGs targets are a specifiable means of conveying outcomes of foreign aid spending, which has an influence on the opinions of public stakeholders. If public stakeholders' (general public, ministers, members of parliament) support for the aid sector decreases, the budget for foreign aid decreases as it typically reflects the views of donor-country public. With a lowered budget, there is less available funds for organisations to implement staff mental well-being policies and procedures. This loop continues to join the blue loop and finally follows the orange loop down until burnout again.

Loop R5 (blue joining orange and dark red) shows the linkages between stigma and workplace stressors. Stigma, particularly around mental health and support-seeking, influences discrimination in aid organisations and the sector as a whole, and also contributes to internalised shame of individual employees. A commonly reported form of internalised shame is when individual employees compare their mental suffering to their beneficiaries and co-workers, which acts as a barrier to effective coping such as seeking support. Discrimination manifests in many forms of behaviour including (but not limited to): slurs, teasing, neglect, nepotism, ignoring, or violence; based on mental health conditions and (or) addiction, contract type, sexism, xenophobia, ageism. If an employee experiences an increase in discrimination, this increases their exposure to workplace stressors which eventually reinforces distress and burnout. Leverage points are in reducing the tolerance of discrimination and supportive organisational policies.

### 5.3.4. Feedback Loops B1, R2, R3: Workplace stressors, psychosocial training and support

A reinforcing feedback loop was found between the effects of workplace stressors and psychosocial training and support, which relates to the second research question. This reinforcing feedback loop is made up of various other reinforcing and balancing loops, hence the core structure was extracted from the main CLD (Figure 2) and is demonstrated by the bolded, colour linkages in Figure 4.



**Figure 4. Loops influencing effects of workplace stressors**

Loop R2 (green joining dark red and then grey) demonstrates the linkages between support programs, burnout and donor support. If donor support (funding and requirements) for staff mental well-being increase, a virtuous cycle of mental well-being improvement is created; if they decrease, the reverse occurs. Similarly, Loop R3 (pink joining green then dark red) shows how psychosocial training increases the available effective coping strategies, which in turn increases mental well-being in a virtuous cycle. Conversely, if there is a decrease in psychosocial training offered to employees, they may decrease their use of effective strategies (particularly support seeking behaviour) and resort to ineffective strategies due to pressure from internalised shame. Loop B1 (dark purple) is a small balancing loop which directly connects psychological distress and

effective coping strategies. When an aid worker is faced with increased psychological distress, they employ various effective and ineffective coping strategies. Effective coping strategies help to mitigate psychological distress and bring the worker back to a state of equilibrium. Further analysis on coping styles and personality variables are beyond the scope of this research, so the author has limited the CLD to two main opposing coping styles (written in red), support seeking and avoidant coping styles. This loop influences directly or indirectly the various effects of workplace stressors; increasing effective coping strategies through psychosocial training is a leverage point.



## 5.4. Stakeholder Analysis

Stakeholders, whom either influence or are influenced by the mental health of aid workers, were identified in a SQLR of *highly relevant* and *relevant* literature and expert consultations, and are displayed in Table 4.

**Table 4. Key identified stakeholders of occupational mental health in the aid sector**

Individual employee level	Organisational level	Sectoral level
Managers/supervisors	NGOs	IGOs
National Staff	Private companies	Donors
International Staff	Training Organisations	Governments
Researchers/Evaluators	Research/Educational Institutions	
Beneficiaries		

Basic characteristics of each stakeholder, their capacity to influence and be influenced by aid worker mental health, along with the respective sources are displayed in the SAM in Table 5. Contractors were also identified as key stakeholders by two experts; however, the author opted not to include this group as they fell outside the scope of this paper, potentially aligning with either international, national or researchers staff categories. Despite potentially heightened vulnerability due to their lack of protection under similar labour laws and increased job instability compared to full-time staff, this group remains significantly under-researched.

The SAM was organised based on the levels of influence and interest each stakeholder has in addressing burnout among aid workers. Those with high influence and high interest were prioritised, followed by those with high influence but moderate to low interest, and finally stakeholders with moderate to low influence and high interest. Supervisors emerged as pivotal stakeholders in the analysis, given their direct influence on aid workers' well-being and performance, and their own personal risk of burnout. Additionally, donors were identified as having one of the highest levels of influence; however, their lack of interest in staff mental well-being poses a significant threat to addressing burnout effectively.

**Table 5. Stakeholder Analysis Matrix**

Stakeholder and basic characteristics	Interests in aid worker mental health and how they are affected by burnout	Capacity and motivation to bring about change	Source
<p><b>Managers/supervisors:</b></p> <ul style="list-style-type: none"> <li>• Oversee teams and projects</li> <li>• <i>Typically</i> have more experience in the aid sector than their team members</li> <li>• Can provide mental health support <i>or</i> perpetuate stigma</li> <li>• Responsible for duty-of-care towards their staff</li> </ul>	<ul style="list-style-type: none"> <li>• At risk of burnout themselves</li> <li>• Burnout of any employee affects the functioning of their organisation</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Want to lead efforts in supporting beneficiaries</li> <li>• Want their team members to perform to their highest potential</li> <li>• Limited by organisational policies procedures and donor funding requirements</li> <li>• High influence at individual level</li> </ul>	<p>(Eriksson et al. 2009; Strohmeier et al. 2019; Foo et al. 2021; Josam et al. 2022)</p>
<p><b>Intergovernmental organisations (IGOs):</b></p> <ul style="list-style-type: none"> <li>• Refer to entities involving two or more nations to bring about common good in their own best interest</li> <li>• Including, but not limited to: UN, NATO, African Union</li> <li>• Employ their own staff in targeted countries or fund local NGOs based on a criterion of common interests</li> <li>• Are funded based on governmental budgets and private donors</li> </ul>	<ul style="list-style-type: none"> <li>• Employ international and national staff who face similar burnout risks as NGOs' staff</li> <li>• Moderate interest</li> </ul>	<ul style="list-style-type: none"> <li>• Large influence on the aid sector</li> <li>• Internally through occupational mental health policies</li> <li>• External through lobbying donors for mental health requirements</li> <li>• Motivated to improve effectivity of aid</li> <li>• High influence within sector</li> </ul>	<p>(Antares Foundation 2012; United Nations Secretariat 2017; Foo et al. 2021; Heitner &amp; Anthony Brown 2023)</p>
<p><b>Donors:</b></p> <ul style="list-style-type: none"> <li>• Provide funding to NGOs and others to carry out various projects and services aligned with their interests</li> <li>• May be public (governments and associated ministries) or private (private foundations)</li> <li>• US, Germany and EU make up the largest share of assistance from governments</li> </ul>	<ul style="list-style-type: none"> <li>• Concern about effective use of funding and additional costs related to burnout outcomes</li> <li>• Low interest</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to set funding requirements in favour of occupational mental health</li> <li>• Limited motivation in favour of mental health of employees</li> <li>• Lack of research regarding the effects of mental well-being, burnout and its effects on SDGs</li> <li>• High influence within the sector</li> </ul>	<p>(Kemp &amp; Merkelbach 2011; Antares Foundation 2012; MacPherson &amp; Burkle 2021)</p>

<p><b>Non-Governmental Organization (NGOs):</b></p> <ul style="list-style-type: none"> <li>• Employ staff and volunteers and provide aid</li> <li>• Responsible for well-being policies and duty-of-care for their staff</li> </ul>	<ul style="list-style-type: none"> <li>• Burnout increases absenteeism, effectivity of the organisation and dysfunctional turnover, resulting in unbudgeted costs</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Want to provide care for beneficiaries and staff</li> <li>• Capacity to change internal policies and procedures to support staff</li> <li>• Limited by donor requirements and stigma</li> <li>• Moderate influence</li> </ul>	<p>(World Health Organization. et al. 2011; Chemali et al. 2018; Hummel &amp; El Kurd 2021; Tessitore et al. 2023)</p>
<p><b>Training organisations:</b></p> <ul style="list-style-type: none"> <li>• Provide consultancy, training, research and support for aid staff and organisations eg. Antares Foundation</li> </ul>	<ul style="list-style-type: none"> <li>• Improve support systems for national and international aid workers</li> <li>• Motivated to improve quality of aid and protect/support workers</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Keen interest in improving conditions for aid employees</li> <li>• Some potential to lobby donors or IGOs</li> <li>• Moderate influence</li> </ul>	<p>(Antares Foundation 2012; MacPherson &amp; Burkle 2021)</p>
<p><b>Private companies:</b></p> <ul style="list-style-type: none"> <li>• Carry out projects, employ staff</li> <li>• Possess greater autonomy than NGOs in implementing staff well-being policies and procedures, independent of donor influence</li> </ul>	<ul style="list-style-type: none"> <li>• Face similar burnout risks of staff as NGOs</li> <li>• Want to maintain productivity and reduce staff turnover</li> <li>• Moderate interest</li> </ul>	<ul style="list-style-type: none"> <li>• Want their company to be efficient</li> <li>• Potential to set staff mental well-being policies and training and allocate funds accordingly</li> <li>• Limited by stigma and short-term profit concerns</li> <li>• Moderate influence</li> </ul>	<p>(Antares Foundation 2012; Chemali et al. 2017; Berdondini &amp; Alhakim 2022; Bahattab et al. 2022; Kivlehan et al. 2022)</p>
<p><b>Research/educational institutions:</b></p> <ul style="list-style-type: none"> <li>• Employ researchers and are funded by various private and (or) public donors</li> <li>• Carry out projects and collaborate with NGOs</li> </ul>	<ul style="list-style-type: none"> <li>• Have concern about public image and costs related to burnout of their employees</li> <li>• Moderate interest</li> </ul>	<ul style="list-style-type: none"> <li>• Incorporate mental well-being into research and training of staff</li> <li>• Potential to inform donors about risks of staff burnout</li> <li>• Limited by interest and funding requirements</li> <li>• Moderate influence</li> </ul>	<p>(Hummel &amp; El Kurd 2021)</p>
<p><b>Governments:</b></p> <ul style="list-style-type: none"> <li>• Local and national governments from donor and partner nations set and enforce labour laws which includes duty-of-care</li> </ul>	<ul style="list-style-type: none"> <li>• Interested in improving conditions of beneficiaries when it is aligned with their economic interests and foreign policy goals</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to enforce labour laws regarding duty-of-care</li> <li>• Limited by willingness to address mental well-being, stigma</li> </ul>	<p>(Kemp &amp; Merkelbach 2011; Antares Foundation 2012)</p>

	<ul style="list-style-type: none"> <li>• Interest in reducing inefficiencies caused by burnout outcomes</li> <li>• Low interest</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate influence</li> </ul>	
<b>National staff:</b> <ul style="list-style-type: none"> <li>• Reside or are citizens of the country where they work</li> <li>• Used interchangeably with “local staff”</li> <li>• Struggle with stress related to organisation, personal security, adversity exposure and tensions with international staff</li> <li>• Comprise over 90% of aid workforce</li> </ul>	<ul style="list-style-type: none"> <li>• At risk of burnout themselves</li> <li>• Report higher levels of stress than international counterparts</li> <li>• Burnout affects their job security, physical and mental health</li> <li>• Female staff face a higher risk of mental health outcomes</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Motivated to continue to support the needs of their fellow citizens</li> <li>• Want to receive proper training and benefits for their efforts</li> <li>• Limited influence on sector or organisation</li> <li>• Low influence within the sector</li> </ul>	(Lopes Cardozo et al. 2005; Ager et al. 2012; Cardozo et al. 2013)
<b>International staff:</b> <ul style="list-style-type: none"> <li>• Working in a different country than where they typically reside or are a citizen of</li> <li>• Used interchangeably with “expatriate staff”</li> <li>• Struggle with stress related to organisation, cultural differences, alienation from friends/family, limited coping strategy availability</li> </ul>	<ul style="list-style-type: none"> <li>• At risk of burnout themselves</li> <li>• Burnout affects their job security, physical and mental health</li> <li>• Female staff face a higher risk of burnout</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Want to continue to support the needs of their beneficiaries</li> <li>• Want to receive proper training and benefits for their efforts</li> <li>• Limited influence on sector or organisation</li> <li>• Low influence within the sector</li> </ul>	(Lopes Cardozo et al. 2012; Eriksson et al. 2013; Greene-Cramer et al. 2021)
<b>Researchers/Academic staff:</b> <ul style="list-style-type: none"> <li>• Collect, evaluate and report data</li> <li>• Employed internally or externally in organisations, institutions and private companies</li> </ul>	<ul style="list-style-type: none"> <li>• Vulnerable to burnout, impedes on their mental and physical health</li> <li>• Minimal training in coping with adversity exposure</li> <li>• High interest</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to integrate mental health concern and intersectionality into research design</li> <li>• Limited by policies and programmes of their employer</li> <li>• Low influence</li> </ul>	(Antares Foundation 2012; MacPherson & Burkle 2013; Chemali et al. 2018; Hummel & El Kurd 2021; Heitner & Anthony Brown 2023)
<b>Beneficiaries:</b> <ul style="list-style-type: none"> <li>• Direct recipients of aid projects</li> <li>• Consists of communities, minorities and (or) affected populations</li> </ul>	<ul style="list-style-type: none"> <li>• Supported directly by national and international staff</li> <li>• Burnt-out aid employees have a lowered capacity to serve beneficiaries</li> <li>• Low interest</li> </ul>	<ul style="list-style-type: none"> <li>• Interest in maintaining consistent support from NGOs</li> <li>• Limited influence to bring about change</li> <li>• Low influence</li> </ul>	(Jones et al. 2006; Eriksson et al. 2009; Young et al. 2018; Strohmeier et al. 2019; Foo et al. 2021)

## 6. Discussion

The CLD exhibited in this thesis is a systems model that explains the current behaviours of occupational mental health in the aid sector through interaction of various endogenous variables (Sterman 2000), from three different levels: sectoral, organisational, and individual. As Brereton & Jagals (2021) points out in their applications of systems science research, it is not common to build a CLD primarily from literature-derived variables, what is more common is to collaboratively build or modify the CLD with various stakeholders or actors on a given issue. The collaboration with experts in this research provided qualitative insight on the variables and stakeholders that were identified in the SQLR. Powell et al. (2017) stresses that if done collaboratively, CLD become a more powerful strategy for integrating cultural understanding into policy implementation. Moreover, this thesis improves the understanding of the linkages between the different levels in the aid sector that influence employee mental well-being and possible areas for intervening.

Beginning with the sectoral level, feedback structures of individual employee burnout, effectiveness of aid organisations and donor support were mapped, showing their interconnectivity. Illustrated in Figure 3, Loops R1, R4 and R5 closely depict the casual relationship, in reinforcing feedback loops, between workplace stressors > burnout > productivity of employee > effectiveness of organisations > achieving SDGs targets. This addresses the research question, *What are the dynamics between individual employee burnout and the effectiveness of aid organisations in achieving SDGs targets?*. To date, there is no literature that includes occupational mental health of aid workers and the causal links affecting the SDGs, so further research is suggested to deepen the understanding in this field. Possible methods of operationalisation could be conducting impact assessments of various development projects and comparing their respective internal staff-support frameworks. Further longitudinal research on occupational mental health could deepen the current understanding on the topic, which is generally limited to snapshots of *current* conditions of aid professionals.

Secondly, in the organisational level, the variables mapped show how psychosocial training and support programs can reduce the burnout of aid employees. The CLD loops in Figures 2 and 3 demonstrate how psychosocial training improves positive

coping strategies and support programs increase the mental well-being which makes them viable areas of intervention. This ultimately answered the research question of, *are psychosocial training and support programs viable areas of intervention to mitigate the effects of workplace stressors?* The CLD also explains how the organisation's effectiveness is affected by burnout of staff through dysfunctional staff turnover and productivity of the employee. This is consistent with research on turnover in the aid sector by Loquercio et al. (2006) and loss of efficiency by Ramalingam & Knox Clarke (2008). MacPherson & Burkle (2021) suggest that organisational frameworks for staff mental well-being exist, though the *practical implementation is missing*, due to stigma and normalisation of trauma. The findings in this thesis invites further discussion on the importance of addressing the stigma at the organisational level, which ultimately influences both the sectoral and individual employee levels. It is suggested that further research be done on the possible hindrances of implementation of aid worker mental well-being organisational frameworks.

Finally, at the individual employee level, the results from the CLD in Figure 2 realise the second objective of this thesis, which was to *reveal the interconnectedness of the variables that affect aid worker mental health*. The finding that workplace stressors is a more significant influence of mental well-being (in a reinforcing feedback loop) of aid staff, compared to exposure to adversities (exogenous variable), is consistent with Foo et al. (2023a) and Curling & Simmons (2010). Unlike work from Eriksson et al. (2013) and Young et al. (2021), factors of resilience were not found suitable to use in this CLD model as the causes of resilience are exogenous (arising from outside the feedback loop). Instead, the thesis author decided to include avoidant and support-seeking coping styles, as discussed with the mental health expert. The author recommends a resilient-specific CLD to improve the understanding of the feedback structure. To date, this is the first research that graphically demonstrates the feedback structure of variables affecting aid worker mental health and well-being. The state of the art is that of focus on exacerbation of mental health conditions (Connorton et al. 2012; Lopes Cardozo et al. 2012; Greene-Cramer et al. 2021; Dewar et al. 2023) and secondary trauma or vicarious trauma (Birinci & Erden 2016; Ebrein et al. 2022; Tessitore et al. 2023). Employing a systems science approach in further research to delineate coping strategies, resiliency, mental health outcomes and personality traits could better illustrate the complex dynamics inherent in aid work.

This thesis outlines the various stakeholders across the humanitarian and development aid sector involved in aid worker mental well-being. The stakeholder analysis matrix in Table 5 provided the necessary information to answer the third research question, *Who are the specific stakeholders related to occupational mental health of humanitarian and development aid workers working to achieve the SDGs?* A total of twelve stakeholders were identified and their influencing factors were explored. National and international staff were separated as two separate stakeholders, despite representing the same individual employee level. This was carried out due to the emphasis the literature places on organisational support (Eriksson et al. 2009; Strohmeier et al. 2019; Parvin et al. 2022) and perceived variation of it between national and international staff (Cockcroft-McKay & Eiroa-Orosa 2021; Parvin et al. 2022). Contrarywise, Lopes Cardozo et al. (2005) reported that despite national (Kosovar Albanian) aid workers not having access to any of the organisational supports, it was not associated with adverse mental health outcomes (likely due to regular access to family and friends). Further research comparing organisational support for mental well-being of national and international staff is recommended. Following national and international staff, donors and supervisors represent important stakeholders regarding aid worker burnout and mental health. Donors are affected by inefficacy of organisations, and they have a large influence on funding requirements, which can neglect or be in favour of staff mental well-being. This is concurrent with research and guidelines from Antares Foundation (2012); and MacPherson & Burkle (2021) argues that these structures exist, though stigma hinders the implementation of them, especially for national staff. It was found that managers are a key stakeholder in linking the individual and organisational level and can act as a protective factor *or* perpetuate stigma (Cockcroft-McKay & Eiroa-Orosa 2021) and stress within the humanitarian and development sector (Young et al. 2018). In addition, further study involving participatory CLD and focus group discussions with stakeholders could validate the key identified variables obtained through literature review and expert consultations in this study.

## 7. Limitations

It should be noted that due to the infancy of this field, there has not been a standardisation in the field of occupational mental health of aid workers (Connorton et al. 2012; Strohmeier & Scholte 2015). Thus, studies collected from the SQLR lack consistency in terms of methods and outcomes. Nevertheless, aid workers suffer more from depression, PTSD and anxiety than the general population (Connorton et al. 2012), and the importance of addressing this organisational hindrance is apparent to the sustainability of the sector's workforce (both national and international). In addition, most literature collected take snapshots of the aid professionals using survey and interview methodology, which lacks the contextual information that longitudinal research provides. Due to the lack of longitudinal literature available, causality is still difficult to reveal and so is the direction thereof. Thus, the CLD created in this study serves merely as a visual demonstration of the feedback loops that may or may not exist structurally. Moreover, this thesis is limited to a qualitative conceptualization. In addition, in order to assess the polarity of linkages in the CLD, one needs to assume that all other variables are constant, which is not representative of reality. Variables also have many other inputs, so one would need to know how all the inputs are changing to determine what actually happens.

There are limitations related to the homogeneity of nationalities of the experts; for this study, there were three Czech and two Slovak (donor country nationalities). Meaning that there was no representative of national staff from an international aid recipient country. In addition, there was one mental health expert, who did not have direct experience of humanitarian or development work; meaning there are limitations in the validity of the psychological pathways, specific to humanitarian and development aid, outlined by the CLD. The author recommends future research to include at least one occupational mental health expert (in the field of humanitarian and development aid), and at least one national staff expert.



## 8. Conclusions

The first part of this thesis was focused on a literature review of relevant themes related to occupational mental health in the aid sector. It was separated into the three levels which reflect the current understanding in this novel field, namely: sectoral, organisational and individual employee. The second part of the thesis was a systems thinking, multi-methodology approach to understand the dynamics between these levels and variables related to achieving SDGs targets and burnout of staff. The author employed a SQLR to provide them pre-conceptual knowledge to create preliminary tables of variables and stakeholders. Five experts were then consulted via face-to-face, video call and (or) email correspondence to verify, review and provide feedback on the preliminary variables and stakeholders and CLD and SAM. Using the experts feedback, the author remodelled the CLD, updated and edited variables, and reanalysed the SAM. This was the first creation of a CLD and SAM in the field of occupational mental health in the aid sector. The findings from the CLD model show that burnout, achieving SDGs targets and mental health stigma are connected in a reinforcing feedback loop; the structure follows that if burnout of staff increases, achieving SDGs targets decreases, stigma increases, and again burnout is reinforced in a vicious cycle. It was also found that psychosocial training and support programs are viable areas of intervention to mitigate the effects of workplace stressors as they target key variables that simultaneously influence and are influenced by burnout. However, it should be noted that these forms of intervention are still dependent on supportive organisational policies and donor support (funding *and* funding requirements for mental well-being). Therefore, simply recommending an increase in psychosocial trainings and support programs is inadequate without acknowledging the dependency on donor funding, requirements, and supportive organisational policies. In addition, twelve stakeholders related to mental health of aid workers were identified, and subsequently analysed in a SAM. Supervisors were seen as a pivotal group as they are at risk of burnout themselves, can contest or perpetuate stigma and have a duty-of-care towards their team members. Donors play a key role in setting the funding requirements that support implementation of staff mental well-being policies. The CLD in this thesis is a visual representation of the various feedback structures that exist in the aid sector, it can ultimately be used for disseminating information with donors, IGOs, NGOs and private sector, to spread awareness on the impacts and influences of burnout and other mental

health outcomes in the humanitarian and development aid sector. The CLD could be used as a starting point for building a formal computer simulation to design more effective policies and organisations that support *both* beneficiaries *and* the workers employed to achieve the SDGs. Policy makers should prioritise mental well-being initiatives by establishing donor funding requirements and integrating mental health considerations into project proposals. Additionally, they should mandate supervisor training programs and address stigma through mental health awareness. Further research is needed to investigate the systemic factors contributing to burnout and mental health challenges among aid workers, in order to foster a healthier and more resilient workforce within the humanitarian and development aid sector.

## 9. References

- Abikova J. 2023. Mental Health and Trauma Exposure in the Humanitarian Sector: A Case of Humanitarian Logisticians. *Traumatology* (advance online publication) DOI: 10.1037/trm0000458.
- Ager A, Pasha E, Yu G, Duke T, Eriksson C, Cardozo BL. 2012. Stress, Mental Health, and Burnout in National Humanitarian Aid Workers in Gulu, Northern Uganda. *Journal of Traumatic Stress* **25**:713–720.
- AIR: African Institute for Integrated Responses to Violence Against Women & Girls and HIV/AIDS. 2014. (Re)conceptualising Trauma: An AIR Convening. AIR, Kigali.
- Alonso J et al. 2018. Treatment gap for anxiety disorders is global: Results of the World Mental Health Surveys in 21 countries. *Depression and anxiety* **35**:195–208.
- Alonso JA, Glennie J. 2015. What is Development Cooperation? 2016 Development Cooperation Forum Policy Briefs. UN Secretariat, New York.
- Antares Foundation. 2012. Managing stress in humanitarian workers-Guidelines for good practice. Antares Foundation, Amsterdam.
- Ashdown, Lord. 2011. Humanitarian Emergency Response Review. UK Department for International Development (DFID), London.
- Audet F. 2015. From disaster relief to development assistance: Why simple solutions don't work. *International Journal* **70**:110–118.
- Bahattab AAS, Linty M, Trentin M, Truppa C, Hubloue I, Della Corte F, Ragazzoni L. 2022. Availability and Characteristics of Humanitarian Health Education and Training Programs: A Web-Based Review. *Prehospital and Disaster Medicine* **37**:132–138.
- Basami A, Chizari M, Abbasi E. 2013. Investigating Relationship between Job Burnout and Organizational Commitment among Extension Workers in Kurdistan Province, Iran. *International Journal of Humanities and Social Science Invention* **2**:63–67.
- Beck A, Lauren Crain A, Solberg LI, Unützer J, Glasgow RE, Maciosek M V., Whitebird R. 2011. Severity of Depression and Magnitude of Productivity Loss. *Annals of Family Medicine* **9**:305–311.

- Berdondini L, Alhakim J. 2022. Humanitarian interventions and psychosocial training programs. *International Review of Psychiatry* **34**:632–639.
- Besiou M, Pedraza-Martinez AJ, Van Wassenhove LN. 2021. Humanitarian Operations and the UN Sustainable Development Goals. *Production and Operations Management* **30**:4343–4355.
- Birinci GG, Erden G. 2016. Evaluation of Vicarious Trauma, Secondary Traumatic Stress and Burnout in Aid Workers. *Turk Psikoloji Dergisi* **31**:10–30.
- Brereton CF, Jagals P. 2021. Applications of Systems Science to Understand and Manage Multiple Influences within Children’s Environmental Health in Least Developed Countries: A Causal Loop Diagram Approach. *International Journal of Environmental Research and Public Health* (e3010) **18**.
- Brooks L, Shaheen I, Dobrzykowski D. 2023. The influence of trauma on internal integration: An approach-avoidance analysis in disaster relief operations. *Production and Operations Management* **32**:4135–4153.
- Cardozo BL, Sivilli TI, Crawford C, Scholte WF, Petit P, Ghitis F, Ager A, Eriksson C. 2013. Factors affecting mental health of local staff working in the Vanni region, Sri Lanka. *Psychological Trauma: Theory, Research, Practice, and Policy* **5**:581–590.
- Carleton RN et al. 2022. Assessing the impact of the Royal Canadian Mounted Police (RCMP) protocol and Emotional Resilience Skills Training (ERST) among diverse public safety personnel. *BMC Psychology* **10**:1–14.
- Chemali Z, Borba CPC, Johnson K, Hock RS, Parnarouskis L, Henderson DC, Fricchione GL. 2017. Humanitarian space and well-being: effectiveness of training on a psychosocial intervention for host community-refugee interaction. *Medicine, Conflict and Survival* **33**:141–161.
- Chemali Z, Smati H, Johnson K, Borba CPC, Fricchione GL. 2018. Reflections from the Lebanese field: “First, heal thyself.” *Conflict and health* **12**.
- Cockcroft-McKay C, Eiroa-Orosa FJ. 2021. Barriers to accessing psychosocial support for humanitarian aid workers: a mixed methods inquiry. *Disasters* **45**:762–796.
- Connorton E, Perry MJ, Hemenway D, Miller M. 2012. Humanitarian relief workers and trauma-related mental illness. *Epidemiologic Reviews* **34**:145–155.

- Cunningham T, Sesay A. 2017. The Triple Menace in Volunteer International Aid Work: Three Harmful Pitfalls. *Journal of Emergency Nursing* **43**:478–481.
- Curling P, Simmons KB. 2010. Stress and staff support strategies for international aid work *Intervention* **8**:93–105.
- De Fouchier C, Kedia M. 2018. Trauma-related mental health problems and effectiveness of a stress management group in national humanitarian workers in the Central African Republic. *Intervention* **16**:103–109.
- De Jong K, Martinmäki S, Brake H Te, Kleber R, Haagen J, Komproe I. 2022. How do international humanitarian aid workers stay healthy in the face of adversity? *PLOS ONE* (e0276727) **17**.
- De Jong K, Martinmäki SE, Te Brake H, Haagen JFG, Kleber RJ. 2021. Mental and physical health of international humanitarian aid workers on short-term assignments: Findings from a prospective cohort study. *Social Science and Medicine* (e114268) **285**.
- Dentoni D, Cucchi C, Roglic M, Lubberink R, Bender-Salazar R, Manyise T. 2022. Systems Thinking, Mapping and Change in Food and Agriculture. *Bio-based and Applied Economics* **11**:277–301.
- Dewar M, Paradis A, Brillon P. 2023. Posttraumatic Stress Symptom Profiles of Aid Workers: Identifying Risk and Protective Factors. *Psychological Trauma: Theory, Research, Practice, and Policy* **15**:418–426.
- Dhirasasna N, Sahin O. 2019. A Multi-Methodology Approach to Creating a Causal Loop Diagram. *Systems* **7** (e42) DOI: 10.3390/SYSTEMS7030042.
- Ebren G, Demircioğlu M, Çırakoğlu OC. 2022. A neglected aspect of refugee relief works: Secondary and vicarious traumatic stress. *Journal of Traumatic Stress* **35**:891–900.
- Eddy P, Heckenberg R, Wertheim EH, Kent S, Wright BJ. 2016. A systematic review and meta-analysis of the effort-reward imbalance model of workplace stress with indicators of immune function. *Journal of Psychosomatic Research* **91**:1-8.

- Eriksson CB et al. 2013. Predeployment Mental Health and Trauma Exposure of Expatriate Humanitarian Aid Workers: Risk and Resilience Factors. *Traumatology* **19**:41–48.
- Eriksson CB, Bjorck JP, Larson LC, Walling SM, Trice GA, Fawcett J, Abernethy AD, Foy DW. 2009. Social support, organisational support, and religious support in relation to burnout in expatriate humanitarian aid workers. *Mental Health, Religion and Culture* **12**:671–686.
- Eriksson CB, Holland JM, Currier JM, Snider LM, Ager AK, Kaiser RER, Simon WS. 2015. Trajectories of spiritual change among expatriate humanitarian aid workers: A prospective longitudinal study. *Psychology of Religion and Spirituality* **7**:13–23.
- European Commission. 2004. *Aid Delivery Methods- Project Cycle Management- Supporting Effective Implementation of EC External Assistance*. European Commission, Brussels.
- Fechter AM. 2012. ‘Living Well’ while ‘Doing Good’? (Missing) debates on altruism and professionalism in aid work. *Third World Quarterly* **33**:1475–1491.
- Figley C. 1995. *Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized*. Taylor & Francis Group, New York.
- Foo CYS, Tay AK, Yang Y, Verdeli H. 2023a. Psychosocial model of burnout among humanitarian aid workers in Bangladesh: role of workplace stressors and emotion coping. *Conflict and Health* **17**:1–12.
- Foo CYS, Verdeli H, Tay AK. 2021. Humanizing Work: Occupational Mental Health of Humanitarian Aid Workers. Pages 318–338 in Wall T, Cooper C, Brough P, editors. *The SAGE Handbook of Organizational Wellbeing*. SAGE Publications Ltd, London.
- Foo CYS, Verdeli H, Tay AK. 2023b. Psychosocial interventions for occupational stress and psychological disorders in humanitarian aid and disaster responders: A critical review. Pages 245–263 in Martin C, Patel V, Preedy V, editors. *Handbook of Cognitive Behavioral Therapy by Disorder: Case Studies and Application for Adults*. Academic Press, London.
- Freudenberger HJ. 1974. Staff Burn-Out. *Journal of Social Issues* **30**:159–165.

- Global Database of Humanitarian Organisations. 2022. Humanitarian Outcomes. Available from <https://www.humanitarianoutcomes.org/gdho/search/results> (accessed October 16, 2023).
- Greene-Cramer BJ, Hulland EN, Russell SP, Eriksson CB, Lopes-Cardozo B. 2021. Patterns of Posttraumatic Stress Symptoms Among International Humanitarian Aid Workers. *Traumatology* **27**:177–184.
- Heitner KL, Anthony Brown B. 2023. Organizational transformation: The way to sustainability. Pages 34–75 in De Moraes A, editor. *Strategic Management and International Business Policies for Maintaining Competitive Advantage*. IGI Global, Hershey.
- Horn J. 2020. Decolonising emotional well-being and mental health in development: African feminist innovations. *Gender & Development* **28**:85–98.
- Houldey G. 2019. Humanitarian response and stress in Kenya: gendered problems and their implications. *Gender & Development* **27**:337–353.
- Hummel C, El Kurd D. 2021. Mental Health and Fieldwork. *PS - Political Science and Politics* **54**:121–125.
- Inter-Agency Standing Committee (IASC). 2007. *Guidelines for Mental Health and Psychosocial Support in Emergency Settings*. IASC, Geneva.
- Jachens L. 2019. Humanitarian Aid Workers' Mental Health and Duty of Care. *Europe's Journal of Psychology* **15**:650–655.
- 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**:904-913.
- Jachens L, Houdmont J, Thomas R. 2018. Work-related stress in a humanitarian context: a qualitative investigation. *DISASTERS* **42**:619–634.
- Jachens L, Houdmont J, Thomas R. 2019. Effort–reward imbalance and burnout among humanitarian aid workers. *Disasters* **43**:67–87.
- John F. 2003. *Stress and Trauma Handbook: Strategies for Flourishing in Demanding Environment*. Word Vision International, Monrovia.

- Jones B, Müller J, Maercker A. 2006. Trauma and posttraumatic reactions in German development aid workers: prevalences and relationship to social acknowledgement. *The International Journal of Social Psychiatry* **52**:91–100.
- Josam I, Grothe S, Lüdecke D, Vonneilich N, von dem Knesebeck O. 2022. Burdening and Protective Organisational Factors among International Volunteers in Greek Refugee Camps—A Qualitative Study. *International Journal of Environmental Research and Public Health* **19** (e8599) DOI: 10.3390/ijerph19148599.
- Kemp E, Merkelbach M. 2011. Can you get sued? Legal liability of international humanitarian aid organizations towards their staff. Security Management Initiative (SMI) & Geneva Centre for Security Policy (GCSP). Available from <https://www.gisf.ngo/resource/can-you-get-sued-legal-liability-of-international-humanitarian-aid-organisations-towards-their-staff/> (accessed November 15, 2023).
- Kiš AD. 2018. *The Development Trap: How Thinking Big Fails the Poor*. Routledge, New York.
- Kivlehan SM, Tenney K, Plasmati S, Bollettino V, Farineau K, Nilles EJ, Gottlieb G, Kayden SR. 2022. Humanitarian Training With Virtual Simulation During a Pandemic. *Disaster Medicine and Public Health Preparedness* **16**:2103–2107.
- Korff VP, Balbo N, Mills M, Heyse L, Wittek R. 2015. The impact of humanitarian context conditions and individual characteristics on aid worker retention. *Disasters* **39**:522–545.
- Lopes Cardozo B et al. 2012. Psychological Distress, Depression, Anxiety, and Burnout among International Humanitarian Aid Workers: A Longitudinal Study. *PLoS ONE* **7** (e44948).
- Lopes Cardozo B, Holtz TH, Kaiser R, Gotway CA, Ghitis F, Toomey E, Salama P. 2005. The mental health of expatriate and Kosovar Albanian humanitarian aid workers. *Disasters* **29**:152–170.
- Loquercio D, Hammersley M, Emmens B. 2006. Understanding and addressing staff turnover in humanitarian agencies. The Humanitarian Practice Network at the Overseas Development Institute, London, UK.



- MacPherson R, Burkle FM. 2013. Neglect and failures of human security in humanitarian settings: challenges and recommendations. *Prehospital and Disaster Medicine* **28**:174–178.
- MacPherson RIS, Burkle FM. 2021. Humanitarian Aid Workers: The Forgotten First Responders. *Prehospital and Disaster Medicine* **36**:111–114.
- Management of Substance Abuse Unit of the World Health Organization. 2014. Global Status Report on Alcohol and Health 2014. Geneva. Available from <https://www.who.int/publications/i/item/global-status-report-on-alcohol-and-health-2014> (accessed December 11, 2023).
- Maslach C, Jackson SE. 1981. The measurement of experienced burnout. *Journal of Organizational Behavior* **2**:99–113.
- Maslach C, Leiter MP. 2016. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry* **15**:103-111.
- Maslach C, Schaufeli WB, Leiter MP. 2001. Job burnout. *Annual review of psychology* **52**:397–422.
- Mendeley. 2021. Mendeley Reference Manager. Elsevier publishing group.
- Milner H V, Tingley DH. 2010. The Political Economy of U.S. Foreign Aid: American Legislators and the Domestic Politics of Aid. *Economics And Politics* **22**:200–228.
- Müller MO, Groesser SN, Ulli-Beer S. 2013. How Do We Know Who to Include in Collaborative Research? Toward a Method for the Identification of Experts. *European Journal of Operational Research* **216**:495–502.
- Obrecht A, Swithern S, Doherty J. 2022. *The State of the Humanitarian System*. ALNAP, London.
- Okanoya J, Kimura R, Mori M, Nakamura S, Somemura H, Sasaki N, Ito Y, Tanaka K. 2015. Psychoeducational intervention to prevent critical incident stress among disaster volunteers. *Kitasato Medical Journal* **45**:62–68.
- Opie E, Brooks S, Greenberg N, Rubin GJ. 2020. The usefulness of pre-employment and pre-deployment psychological screening for disaster relief workers: A systematic review. *BMC Psychiatry* **20**:1–13.

- Parvin T, Rosenbaum S, Ozen S, Ewagata L, Ventevogel P. 2022. Mental Health and Perceived Social Support of Humanitarian Workers in Bangladesh During the COVID-19 Pandemic. *Intervention* **20**:151–160.
- Pepall EC. 2014. Strengthening Family Resilience during Accompanied Humanitarian Assignments [PhD Thesis]. Curtin University, Perth.
- Powell BJ, Beidas RS, Lewis CC, Aarons GA, McMillen JC, Proctor EK, Mandell DS. 2017. Methods to Improve the Selection and Tailoring of Implementation Strategies. *The Journal of Behavioral Health Services & Research* **44**:177–194.
- Putman KM, Lantz JI, Townsend CL, Gallegos AM, Potts AA, Roberts RC, Cree ER, de Villagrán M, Eriksson CB, Foy DW. 2009. Exposure to violence, support needs, adjustment, and motivators among Guatemalan humanitarian aid workers. *American Journal of Community Psychology* **44**:109–115.
- Ramalingam B, Knox Clarke P. 2008. Organisational change in the humanitarian sector. Pages 21–82 in Mitchell J, editor. *ALNAP Review of Humanitarian Action*. ALNAP/ODI, London.
- Rizkalla N, Segal SP. 2019. Trauma during humanitarian work: the effects on intimacy, wellbeing and PTSD-symptoms. *European Journal of Psychotraumatology* **10** (e1679065) DOI: 10.1080/20008198.2019.1679065.
- Siegrist J. 1996. Adverse health effects of high-effort/low-reward conditions. *Journal of occupational health psychology* **1**:27–41.
- Solanki H. 2015. Mindfulness and Wellbeing Mental Health and Humanitarian Aid Workers: A Shift of Emphasis from Treatment to Prevention. CHS Alliance. Available from <https://www.gisf.ngo/resource/mindfulness-and-wellbeing-mental-health-and-humanitarian-aid-workers-a-shift-of-emphasis-from-treatment-to-prevention/> (accessed September 12, 2023).
- Sterman J. 2000. *Business Dynamics, System Thinking and Modeling for a Complex World*. Irwin McGraw-Hill, Boston.
- Strohmeier H, Scholte WF. 2015. Trauma-related mental health problems among national humanitarian staff: a systematic review of the literature. *Journal of Psychotraumatology* **6** (e28541) DOI: 10.3402/ejpt.v6.28541.

- Strohmeier H, Scholte WF, Ager A. 2019. How to improve organisational staff support Suggestions from humanitarian workers in South Sudan. *Intervention- International journal of mental health psychosocial work and counselling in areas of armed conflict* **17**:40–49.
- Tessitore F, Caffieri A, Parola A, Cozzolino M, Margherita G. 2023. The Role of Emotion Regulation as a Potential Mediator between Secondary Traumatic Stress, Burnout, and Compassion Satisfaction in Professionals Working in the Forced Migration Field. *International Journal of Environmental Research and Public Health* **20** (e2266) DOI: 10.3390/IJERPH20032266.
- United Nations. (n.d.). LDC Category. Available from <https://www.un.org/ohrlls/content/lde-category> (accessed February 7, 2024).
- United Nations Department of Economic and Social Affairs. 2023. National Commitments to SDG Transformation. Available from <https://sdgs.un.org/SDGSummitActions/National> (accessed March 2, 2024).
- United Nations Secretariat. 2017. Staff Well-Being Survey Data Report. United Nations Secretariat, New York.
- van der Merwe A, Hunt X. 2019. Secondary trauma among trauma researchers: Lessons from the field. *Psychological Trauma: Theory, Research, Practice and Policy* **11**:10–18.
- Van Vegchel N, De Jonge J, Bosma H, Schaufeli W. 2005. Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies. *Social Science & Medicine* **60**:1117–1131.
- Ventana Systems Inc. 2006. Vensim PLE Software 8.2.1. Ventana Systems Inc., Harvard, MA.
- Webster M, Walker P. 2009. One For All and All For One: Intra-Organizational Dynamics in Humanitarian Action. Feinstein International Center, Medford.
- Werner AK, Vink S, Watt K, Jagals P. 2015. Environmental health impacts of unconventional natural gas development: A review of the current strength of evidence. *Science of The Total Environment* **505**:1127–1141.

- Williamson E, Gregory A, Abrahams H, Aghtaie N, Walker SJ, Hester M. 2020. Secondary Trauma: Emotional Safety in Sensitive Research. *Journal of Academic Ethics* **18**:55–70.
- Wood T, Hoy C. 2022. Helping Us or Helping Them? What Makes Foreign Aid Popular with Donor Publics? *Economic Development and Cultural Change* **70**:567–586.
- World Health Organization, War Trauma Foundation, World Vision International. 2011. *Psychological First Aid: Guide for Field Workers*. WHO, Geneva.
- World Health Organization (WHO). 2021. *International Classification of Diseases, Eleventh Revision (ICD-11)*. Available from <https://icd.who.int/browse/2024-01/mms/en#129180281> (accessed February 11, 2024).
- Young T, Candidate P, Pakenham KI. 2020. The mental health of aid workers: risk and protective factors in relation to job context, working conditions, and demographics. *Disasters* **45**:501–526.
- Young T, Pakenham K, Chapman C, Edwards M. 2021. Predictors of mental health in aid workers: meaning, resilience, and psychological flexibility as personal resources for increased well-being and reduced distress. *Disasters* **46**:974–1006.
- Young T, Pakenham K, Norwood M. 2018. Thematic analysis of aid workers' stressors and coping strategies: work, psychological, lifestyle and social dimensions. *Journal of International Humanitarian Action* **3**:1–16.

# Appendices

## List of the Appendices:

Appendix 1: Expert Feedback Form.....	I
---------------------------------------	---

## Appendix 1: Expert Feedback Form- Editable Document

Dear Expert in the field of humanitarian aid, development aid, agricultural development, or mental health,

Thank you for your willingness to provide feedback on my thesis. I have provided some brief steps so I can compile your comments and make the changes from our various experts (between 3-5 experts for this study). It will likely take around 15 min. for a basic read-through and comments, and up to an hour for a more thorough feedback, so whatever you have time for is greatly appreciated. Please use the Microsoft word “comment” function to add/correct/edit anything in the tables by clicking “Insert”>”Comment ”> type in the comment>”enter/send”.

1. Please read-through Table 1. and see if you would add/edit/remove any variables to one of the columns. Note that there are duplicates due to the variables relating to more than one dimension (e.g. “Dysfunctional staff turnover” is a variable that relates to individual employees, aid organizations and the sector as a whole, thus it is in all three columns). Table 4. has the definitions, sources and influencing links for the most important variables, **if you have time**, I would appreciate any comments on how comprehensible Table 4 is.
2. Please read-through Table 2. And see if you would add/edit/remove any key stakeholders that would be *influenced by* or have the *power to influence mental health in the aid sector*.
3. **If you have time**, please read-through Table 3. and provide feedback if any arises.
4. **If you have time**, please provide any feedback on the **Causal Loop Diagram** Figure 1. in the comments on the last page.
5. Please **fill-out whatever you are comfortable with** in the demographics table below, the information from the table may be included in the thesis (although **your name will remain anonymous**).

Job Title (s) in the field of humanitarian/development aid, agricultural development or mental health	Years in the field of humanitarian/development aid, agricultural development or mental health	Gender	Age	Nationality

6. **When you have completed reading through the document, please send it back to me via email. Your cooperation is greatly appreciated!**

**Table 1. Key identified variables of occupational mental health in the aid sector**

Individual employee dimension	Organizational dimension	Governing bodies dimension
Workplace Stressors	Workplace Stressors	Gender-Based Disadvantages
Adversity Exposure	Burnout	Supportive Organizational Policies
Burnout	Gender-Based Disadvantages	Psycho-Social Training
Negative/Ineffective Coping Strategies	Support Program	Dysfunctional Staff Turnover
Positive/Effective Coping Strategies	Supportive Organizational Policies	Emergency Context
Gender-Based Disadvantages	Psycho-Social Training	Discrimination
Effort Reward Imbalance	Dysfunctional Staff Turnover	Workload
Support Program	Emergency Context	Effort Reward Imbalance
Depression, Anxiety, PTSD	Discrimination	Stigma
Psycho-Social Training	Workload	Productivity of Employee
Supportive Organizational Policies	Effort Reward Imbalance	Organizational Commitment
Age	Productivity of Employee	Mental Well-Being
Dysfunctional Staff Turnover	Organizational Commitment	
Emergency Context	Mental Well-Being	
Discrimination		
Workload		
Secondary Traumatic Stress		
Psychological Distress		
Mental Well-Being		
Fieldworker/Researcher		
Depersonalization		
Emotional Exhaustion		
Difficulty Seeking Support		
Productivity of Employee		
Organizational Commitment		

**Table 2. Key identified stakeholders of occupational mental health in the aid sector**

Individual employee dimension	Organizational dimension	Governing bodies dimension
National Staff	NGOs	Donors
Expatriate Staff	Research Institutions	IGOs
Beneficiaries		
Researchers		
Supervisors		

**Table 3. Stakeholder Analysis Matrix**

Stakeholder and basic characteristics	Interests and how they are affected by aid workers' burnout	Capacity and motivation to bring about change	Source
<b>National Staff:</b> working in the same country they reside in or are a citizen of. National staff can be part of the community that the development or relief project is supporting. National staff make up over 90% of the humanitarian and development aid workforce and are crucial members in all aspects of aid work.	National staff are at risk of burnout themselves; they typically report higher levels of stress than expatriate counterparts due to decreased safety and benefits, this is exacerbated if the region is facing an on-going crisis. Burnout not only affects their job security, but also their physical and mental health which is pervasive in all aspects of life.	Want to continue to support the needs of their fellow citizens. Want to receive proper training and benefits for their efforts. Limited influence of sector or organization	(Lopes Cardozo et al. 2005; Ager et al. 2012; Cardozo et al. 2013)
<b>Expatriate Staff:</b> working in a different country than where they typically reside or are a citizen of. They typically face stress related to separation from their social circles, culture and families on top of the organizational stress and exposure to adversities.	Expatriate Staff are at risk of burnout and face difficulties due to their coping strategies being disturbed from the new environment. Female staff face a higher risk of burnout. Burnout not only affects their job security, but also their physical and mental health which is pervasive in all aspects of life.	Want to continue to support the needs of their beneficiaries. Want to receive proper training and benefits for their efforts. Limited influence of sector or organization	(Lopes Cardozo et al. 2012; Eriksson et al. 2013; Greene-Cramer et al. 2021)
<b>Non-Governmental Organization (NGOs):</b> non-governmental organizations involved in humanitarian and development aid who employ and deploy national and (or) expatriate staff in efforts to provide crisis relief, monitor human rights, carry-out development projects etc.	Burnout increases absenteeism of employees and can lead to dysfunctional staff turnover, both of which have high costs for the already tight-budgeted NGOs. Concern about costs associated with aid worker mental health requirements (psychosocial support, training, support groups etc.)	Want to provide care for beneficiaries and staff. Capacity to change internal policies and procedures to support staff. Limited by requirements of donors and allocation of funding.	(Eriksson et al. 2009; Strohmeier et al. 2019; Foo et al. 2021; Josam et al. 2022)
<b>Supervisors:</b> or managers that oversee a team of staff members. Typically have more experience in the aid sector than subordinates, thus they can inform staff about occupational mental health stigma or support.	Supervisors are at risk of burnout themselves in addition to playing a key role in supporting their various team members of national and (or) expatriate staff. Burnout of themselves or their employees heavily affects the functioning of NGOs.	Want to support their team and provide results for their efforts towards beneficiaries. Want their team members to perform to their highest potential. Limited by organizational policies procedures and donor funding requirements.	(Jones et al. 2006; Eriksson et al. 2009; Young et al. 2018; Strohmeier et al. 2019; Foo et al. 2021)



<p><b>Donors:</b> provide funding to national or international NGOs or IGOs to carry out various projects and services aligned with their interest. US, Germany and EU make up the largest share of assistance from governments.</p>	<p>Donors have some concern about public image. Concern about funding allocation if requirements about aid worker mental health are enforced.</p>	<p>Potential to set funding requirements in favour of occupational mental health. Limited current motivation in favour of mental health of employees.</p>	<p>(Antares Foundation 2012; Chemali et al. 2018; MacPherson &amp; Burkle 2021; Heitner &amp; Anthony Brown 2023)</p>
<p><b>Researchers in the aid sector:</b> employed internally or externally from NGOs to collect data and report on impact of projects and possible interventions. May also research internally in organizations to report how they function.</p>	<p>Researchers are at risk of burnout themselves which impedes on their mental and physical health. They may rely on negative coping strategies to deal with psychological distress, especially if there is a lack of training.</p>	<p>Potential to incorporate mental health concern into research design and preparation. For internal researchers, potential to include intersectionality into their research for an inclusive understanding of burnout.</p>	<p>(World Health Organization. et al. 2011; Chemali et al. 2018; Hummel &amp; El Kurd 2021; Tessitore et al. 2023)</p>
<p><b>Research institutions:</b> employ researchers and are funded by various private and (or) public donors.</p>	<p>Have some concern about public image, and costs related to burnout of their employees. Concern about costs associated with aid worker mental health requirements (psychosocial support, training, support groups etc.)</p>	<p>Can encourage staff to incorporate mental health concern into their research design. Provide psychosocial training for staff. Potential to lobby donors for mental health requirements more effectively.</p>	<p>(Hummel &amp; El Kurd 2021)</p>
<p><b>Beneficiaries:</b> include the recipients of development and humanitarian projects. Typically spoken in terms of communities, minorities and (or) affected populations.</p>	<p>Supported directly by national and expatriate staff. Less experienced (due to burnout turnover) and emotionally exhausted staff have a lower capacity to support beneficiaries emotionally and physically.</p>	<p>Interest in maintaining consistent support from NGOs. Limited influence to bring about change.</p>	<p>(Webster &amp; Walker 2009; AIR 2014; Birinci &amp; Erden 2016; Kiş 2018; Strohmeier et al. 2019; MacPherson &amp; Burkle 2021)</p>
<p><b>Intergovernmental organizations (IGOs):</b> refer to entities involving two or more nations to bring about common good in their own best interest. Including, but not limited to: UN, NATO, African Union. These entities may employ their own staff in targeted countries or fund local NGOs based on a criterion of common interests. These IGOs are funded based on governmental budgets and private donors.</p>	<p>IGOs employ expatriate and national staff who are susceptible to burnout which increases absenteeism of employees and can lead to dysfunctional staff turnover, both of which have high costs for the IGO.</p>	<p>Large influence on the aid sector, both internally through occupational mental health policies, and external through lobbying donors for mental health requirements. Keen interest in improving dysfunctional turnover of staff.</p>	<p>(Antares Foundation 2012; United Nations Secretariat 2017; Foo et al. 2021; Heitner &amp; Anthony Brown 2023)</p>
<p><b>Training organizations:</b> include non-profit organizations such as Antares, who provide consultancy, research, training and support for individuals and organizations in the aid sector.</p>	<p>Improve support systems for national and expatriate workers. They are motivated by the problem to provide a service-based solution.</p>	<p>Keen interest in improving conditions for aid employees. Some potential to lobby donors or IGOs.</p>	<p>(Antares Foundation 2012; Chemali et al. 2017; Berdondini &amp; Alhakim 2022; Bahattab et al. 2022; Kivlehan et al. 2022)</p>

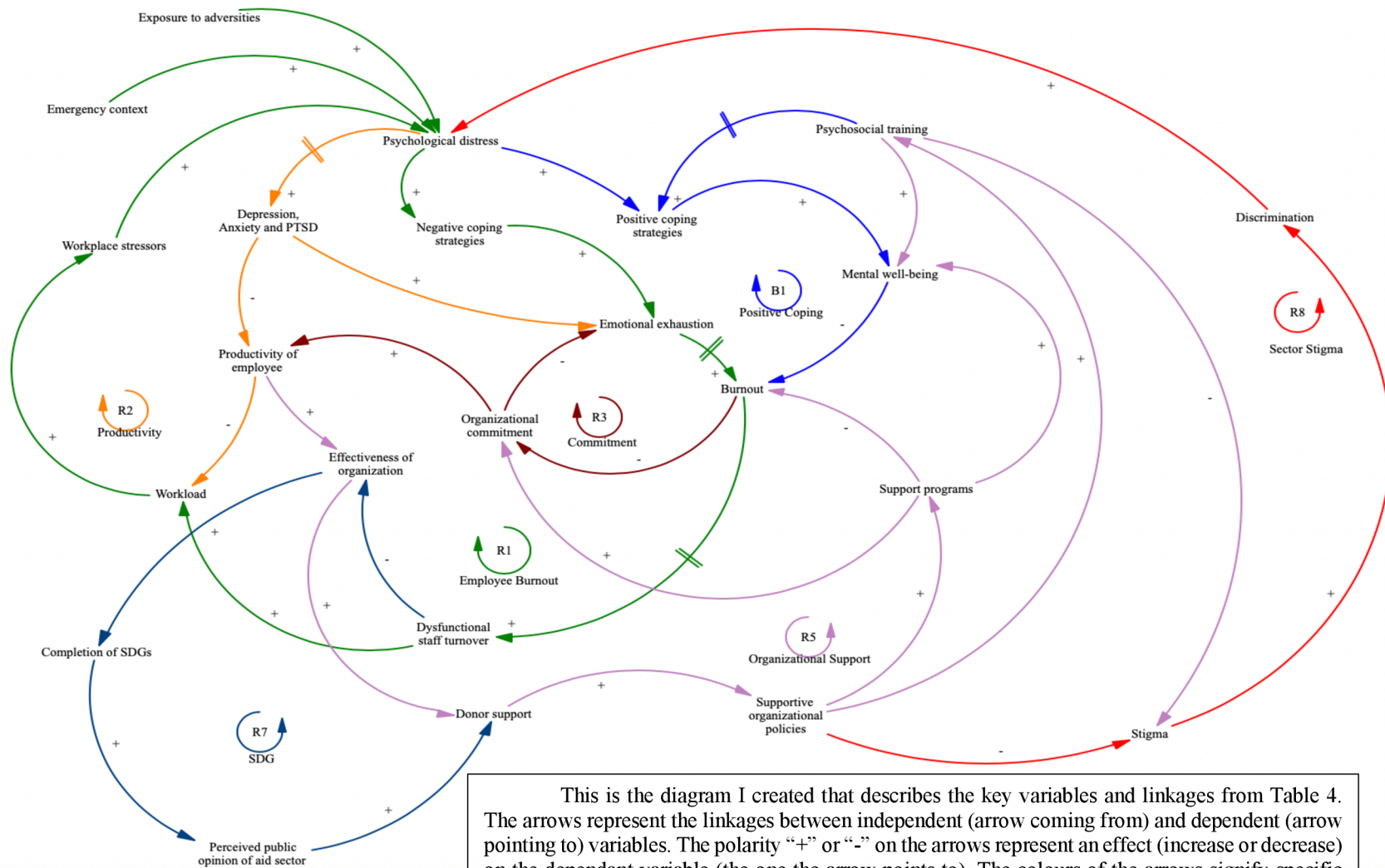
**Table 4. Variables affecting aid worker mental health with influencing links**

Variable	Influenced by	+ / -	Influences	+/-	Source
<b>Workplace stressors-</b> includes chronic stress of staff and the cause is within the organization. Organizational policies and procedures gravely influence the so-called “working culture” which may be formal or informal i.e. long-working hours without proper break, lack of clarity about task, tolerated discrimination, lack of training. It contributes to the overall psychological distress of the aid professional and influences the mental well-being.	Discrimination	+	Psychological distress	+	(Foo et al. 2023a)(Curling & Simmons 2010) (De Jong et al. 2022)(Young et al. 2018)(Ager et al. 2012)(Jachens et al. 2018)(Antares Foundation 2012)
	Workload	+	Mental well-being	-	
	Supportive Organizational Policies	-			
<b>Adversity exposure**-</b> such as trauma and (or) acute stress, experienced or witnessed by the aid professional. Life-threatening situations or diseases experienced by one’s self, a colleague or a bystander. Being in an emergency context and (or) working directly with aid recipients positively influences the number of incidents. Exposure to adversities is a direct cause of psychological distress and also a trigger for pre-existing mental health conditions such as depression, anxiety and PTSD.	Emergency context	+	Psychological distress	+	(Foo et al. 2023a)(Lopes Cardozo et al. 2012)(Okanoya et al. 2015)(Ager et al. 2012)(Lopes Cardozo et al. 2005)(Putman et al. 2009)(Antares Foundation 2012; Abikova 2023)
	Researcher/ fieldworker	+	Depression	+	
			Anxiety	+	
<b>Burnout-</b> is a prolonged state of occupational exhaustion caused by depersonalization, emotional exhaustion and low personal accomplishment. Psychosocial training, support programs and supportive organizational policies can help to provide appropriate services and education to preventatively help staff before they reach this state. Burnout reduces the capacity of the employee, lowering their efficiency and can also lead to them quitting.	Adversity exposure	+	Productivity of employee	-	(Foo et al. 2023a)(Young et al. 2020)(Eriksson et al. 2009; Ager et al. 2012)(Jachens et al. 2019)(Antares Foundation 2012)
	Workplace stressors	+	Organizational commitment	-	
	Depersonalization	+	Dysfunctional staff turnover	+	
	Emotional exhaustion support program	+			
	Psychosocial training	-			
	Supportive Organizational policies	-			
<b>Negative coping strategies-</b> are ineffective means of dealing with psychological distress i.e. alcohol, unhealthy eating habits, workaholism, avoidance/ ‘wait and see’ coping style. These strategies often directly or indirectly exacerbate the distress and decrease physical and mental well-being. Various organizational practices and training has proven to support aid professionals in minimizing their usage of ineffective strategies.	Effort Reward Imbalance	+			
	Psychological distress	+	Mental well-being	-	(Foo et al. 2023a)
	Support program	+	Physical well-being	-	(Young et al. 2018)(Jachens et al. 2016)(Cockcroft-McKay & Eiroa-Orosa 2021)(De Jong et al. 2021)(Lopes Cardozo et al. 2005)(Brooks et al. 2023)
	Psychosocial training	-	Depression	-	
	Supportive organizational policies	-	Anxiety	+	
	Stigma	-	PTSD	+	
		-	Depersonalization	+	
	+	Emotional exhaustion	+		
<b>Positive coping strategies-</b> are effective means of dealing with psychological distress i.e. social connections, exercise, hobbies, support seeking. These strategies lead to improved physical and mental well-being which minimizes the risk of burnout for the aid professional. Various organizational factors can positively influence the use of positive coping strategies such as support groups, psychosocial training and supportive organizational policies. Stigma can decrease the use of positive coping strategies, especially support seeking behaviour.	Psychological distress	+	Psychological distress	-	(Young et al. 2018)(Cockcroft-McKay & Eiroa-Orosa 2021)(Ager et al. 2012)(Brooks et al. 2023)
	Support program	+	Burnout	-	
	Psychosocial training	+	Mental well-being	+	
	Supportive organizational policies	+	Difficulty support seeking	-	
	Stigma	+			
<b>Gender-based disadvantages-</b> includes gendered hindrances for aid professionals in their workplace. It is increased by a masculinized aid culture, discrimination, difficulty seeking support. Conversely, these disadvantages are offset by supportive organizational policies and support programs (with a gender-	Gender-based training	-	Workload	+	(Curling & Simmons 2010)(Young et al. 2020)(Horn 2020) (Houldley 2019)(Josam et al. 2022)(De Jong et
	Masculinized aid culture	+	Psychological distress	+	
	Discrimination	+			

sensitive lens). Gender-based disadvantages have proven to cause psychological distress, emotional exhaustion, dependency on negative coping strategies, decreased mental well-being and difficulty seeking support.	Difficulty seeking support Supportive organizational policies Support programs <b>Psycho-social training</b>	+ - - -	Emotional exhaustion Negative coping strategies Mental well-being Difficulty support seeking	+ + - +	al. 2021)(Ager et al. 2012)(Antares Foundation 2012)
<b>Effort Reward Imbalance-</b> refers to the disproportion of energy input and perceived benefits of working as an aid professional. Workplace stressors significantly impact the effort an employee needs to put in to complete a task, and discrimination can also be a cause for the imbalance. Support programs and supportive organizational policies cause a decrease in such imbalance. Qualitative factors such as altruistic rewards, sense of purpose and meaning are main sources of rewards for aid professionals as the income benefits are not noteworthy. If the aid professional has a decrease in the ERI, it leads to a greater organizational commitment because there is a motivation to continue working. Conversely, when there is an increased imbalance, the employee becomes emotionally exhausted and depersonalized which instigates burnout.	Workplace stressors Supportive Organizational policies Support programs Discrimination	- + + -	Burnout Emotional exhaustion Depersonalization Organizational commitment	+ + + -	(Curling & Simmons 2010) (Jachens et al. 2018)(Brooks et al. 2023)
<b>Support programs-</b> include various formal and informal forms of social assistance for employees to validate their experience and provide resources or next steps to ensure help. Peer support groups, supervisor check-ins and informal social gatherings cause a decrease in burnout, mental health conditions (depression, anxiety and PTSD) and an increase in organizational commitment and mental well-being. Stigma negatively influences the existence and availability of these forms of support whereas supportive organizational policies can positively influence them.	Supportive Organizational policies Stigma	+ -	Burnout Mental well-being Depression, anxiety and PTSD ERI Gender-based disadvantages	- + - - -	(Curling & Simmons 2010)(Eriksson et al. 2013)(Hummel & El Kurd 2021)(Lopes Cardozo et al. 2012) (Jones et al. 2006) (Cardozo et al. 2013)(Brooks et al. 2023)
<b>Depression, Anxiety and PTSD-</b> these are the most commonly cited mental health conditions in occupational mental health of aid professionals. They can be pre-existing, undiagnosed and (or) develop during/after deployment. Being exposed to adversities and psychological distress can trigger such conditions. Stigma in the aid sector around disapproval of being a trauma survivor (especially when the communities you are serving are facing severe difficulties) also increases these mental health conditions through suppression and denial. These mental health conditions increase emotional exhaustion, depersonalization and burnout, and they have a negative impact on the productivity of aid professional as their capacity to work and efficiency decreases.	Exposure to adversities Psychological distress Support program Stigma	+ + - +	Depersonalization Emotional exhaustion Burnout Productivity of employee	+ + + -	(Eriksson et al. 2013) (Jones et al. 2006) (Cardozo et al. 2013)(Ager et al. 2012)(Putman et al. 2009)(Beck et al. 2011)
<b>Psychosocial training-</b> Includes formalized training for the aid professional to learn how to recognize and cope with various adversities related to occupational, gender discrimination, emergency and (or) secondary traumatic stress. Organizations may provide this type of training before, during or after exposure to adversities, although stigma around mental health may prevent some organizations from providing such training. Psychosocial training positively affects mental-wellbeing and minimizes psychological distress and various mental health conditions (depression, anxiety and PTSD). There is no evidence of psychosocial training reducing discrimination or gender-based disadvantages in this sector, although the effects of it (psychological distress) can be reduced.	Supportive Organizational policies Stigma	+ -	Mental well being Psychological distress Anxiety Depression PTSD <b>Physical well being</b>	+ - - - -	(Young et al. 2020)(Chemali et al. 2017)(Okanoya et al. 2015)(De Fouchier & Kedia 2018)(Cockcroft-McKay & Eiroa-Orosa 2021)
<b>Supportive Organizational Policies-</b> Includes the various policies and procedures in place to contribute to staff members' well-being such as length of working days, well-being and mental health policies, structure of the organization, contract type. The requirements of the donors influence whether or not there is an emphasis and funding for this policies to be established and upheld. Supportive organizational policies increase employee mental well-being and support programs. They also decrease the workplace stressors, burnout and stigma around mental health in the workplace.	Donor Support	+	Burnout Workplace stressors Support programs Mental well being Stigma	- - + + -	(Eriksson et al. 2009)(Antares Foundation 2012; Jachens et al. 2019; Josam et al. 2022)

<b>Age**</b> - younger staff are typically less experienced and less likely to navigate the support structures or ask for help from peers and supervisors)			Workplace stressors Psychological distress	+ +	(Dewar et al. 2023)(Cardozo et al. 2013)
<b>Dysfunctional Staff turnover</b> - is generally dependant on an Effort reward imbalance and burnout among employees. When a staff member leaves their position, their workload is displaced to remaining staff until a replacement is found. This comes with various direct and indirect costs of the interview process, training the incoming staff, lowered effectiveness of organization, paying compensation or severance pay to leaving staff (depending on situation).	Burnout Effort Reward Imbalance Supportive organizational policies	+ -	Direct and indirect costs for organization Workload	+ +	(Loquercio et al. 2006)(Antares Foundation 2012)
<b>Secondary Traumatic Stress</b> - includes vicarious exposure to trauma through listening to stories of victims of poverty, hunger, conflict, disasters etc. Working on the ground in humanitarian and development projects expose employees to communities who have or are experiencing hardships and (or) adversities. Researchers are also at risk as they are documenting and working with data of individuals experiencing hardships. Psychosocial training can reduce the stress caused by vicarious exposure to such adversities as staff learn skilful means to cope with what is called "compassion fatigue". Secondary traumatic stress influences the psychical and mental well-being of the aid worker. It can increase psychological distress and dependency on negative coping strategies. It has also been proven to have a negative effect on intimacy of the aid worker.	Psychosocial training and support Exposure to victims of trauma	- +	Intimacy Negative coping strategies Physical Well-being Psychological distress Mental well-being	- + - - -	(Rizkalla & Segal 2019)
<b>Discrimination</b> - in the humanitarian and development workplace is generally dependant on stigma and a masculinized working culture. Discriminatory factors include gender, age, sexuality, national vs. expat staff, ethnicity and mental and physical health condition. Psychosocial training, support programs and supportive organizational policies can reduce the permissible discrimination that occurs and take action to hold those accountable. Discrimination can generally increase gender-based disadvantages and psychological distress as men or women may struggle to feel comfortable and ask for support from their co-workers or supervisors.	Stigma Masculinized working culture Psychosocial training Support program Supportive Organizational Policies		Gender-based disadvantages Psychological distress Mental well-being	+ + -	(Houldey 2019; Horn 2020; Opie et al. 2020)(Antares Foundation 2012)
<b>*Productivity of employee</b> - can lead to high effectivity of the aid organization as employees are able to complete their tasks in a timely and effective manner. This is influenced by the mental and physical health of the employee and whether they have any mental health condition that they may be dealing with. An employee suffering from a mental illness may for some time have a lower productivity, resulting in discrimination from fellow employees if not mitigated by supportive organizational policies and programs.			Discrimination Effectiveness of the organization	- +	
<b>*Effectiveness of organization</b> - is influenced by the productivity of aid professionals employed in the organization, dysfunctional staff turnover and donor support. The more effective the aid organization is, the more effective they can be at completing humanitarian and development aid projects involved in achieving the SDG by 2030.					
<b>*Completion of SDG projects</b> - Humanitarian and development projects involved in achieving the SDG by 2030 are dependent on various aid organizations, local NGOs, donors and all their respective staff, to carry out the projects in an effective manner. The completion of SDG projects is beneficial for the public opinion of the aid sector as a whole, including both recipients and donors.					
<b>*Perceived public opinion of aid sector</b> - includes the collective aggregate of views, attitudes and beliefs based on the implementation and completion of humanitarian and development aid projects. An increase in perceived public opinion can positively influence donor support as they typically reflect the attitudes of the society.					
<b>*Donor support</b> - Refers to the general interest of the donor to support the organization monetarily in their humanitarian and (or) development efforts. Donors may create requirements to aid organizations and other local NGOs to guarantee that the organization has implemented supportive organizational policies and training for the well-being of their staff.					
*Marked in orange are areas for envisioning system change, either through research or directly through implementation, based on Dentoni et al. (2022) presentation of mapping systems and envisioning systems change.					
**exogenous variable (arising from outside the system)					

**Figure 1. Causal Loop Diagram of mental health in the aid sector**



This is the diagram I created that describes the key variables and linkages from Table 4. The arrows represent the linkages between independent (arrow coming from) and dependent (arrow pointing to) variables. The polarity “+” or “-” on the arrows represent an effect (increase or decrease) on the dependant variable (the one the arrow points to). The colours of the arrows signify specific loops that will be discussed in greater detail, and they have a corresponding “R” or “B” and name of the loop beneath it. The “R” represents a reinforcing feedback loop and the “B” represents a balancing feedback loop. If you would have any comments about the diagram, I would appreciate it in the comments section on the following page, thank you!

Comments and feedback for the Causal Loop Diagram and other tables: