Evaluation of Burnout, Coping Strategies and Resilience in Paediatric Oncology Health Care Workers in Cape Town

By

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DECLARATION

I, AZEEZAT JIMOH, hereby declare that the work on which this dissertation is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work or part thereof has been, is being, or is to be submitted for another degree in this or any other University.

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DEDICATION

This project is dedicated to Allah, my creator, and my Family. Special gratitude goes to my husband, Sikiru Adekunle for being my number one supporter and critic. Thank you for holding my hands and guiding me throughout this journey. I love you. My children, Amal and Jubril taught me how to concentrate amidst unavoidable chaos. I cherish you both. My deep appreciation goes to my mom and seven siblings for always being my unshakeable bedrock of support.

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ABBREVIATIONS

APA-	American Psychiatric Association
BRS-	Brief Resilience Scale
Brief COPE-	Brief Coping Orientation to Problems Experienced
CDRISC-	Connor - Davidson Resilience Scale
CF-	Compassion Fatigue
DoH, RSA -	Department of Health, Republic of South Africa
DP-	Depersonalisation/ cynicism/ Emotional distancing
DSM-	The Diagnostic and Statistical Manual of Mental Disorders
EE-	Emotional Exhaustion
HCP-	Health Care Professional
HCW-	Health Care Worker
ICAS-	Independent Counselling and Advisory Services
MBI-	Maslach Burnout Inventory
MBI-HSS-	Maslach Burnout Inventory Human Services Survey
PA-	Personal Accomplishment
rPA-	reduced Personal Accomplishment
POU-	Paediatric Oncology Unit
RCWMCH-	Red Cross War Memorial Children’s Hospital
REDCap-	Research Electronic Data Capture
RSA-	Resilience Scale for Adults
SS-	Sample size
TMSC-	Transactional Model of Stress and Coping
UCT-	University of Cape Town
VT-	Vicarious Traumatisation
WCS-	Ways of Coping Scale
WHO-	World Health Organisation

DEFINITION OF TERMS

Burnout- A condition characterised by emotional exhaustion (EE), emotional distancing/ depersonalisation/cynicism (DP), and reduced personal accomplishment (PA) experienced by services oriented professionals (Maslach & Goldberg, 1998).

Compassion fatigue- A state characterised by exhaustion and a biological, psychological and social dysfunction resulting from prolonged compassion stress in carers who display immense empathic abilities (Figley, 1995).

Coping- A response intended to diminish the physical, emotional, and psychological burdens that are related to stressful life events and daily hassles (Snyder, 1999:5).

Depersonalisation/ Cynicism/Emotional distancing- An extreme detached response to various aspects of one's job (Maslach, Schaufeli & Leiter, 2001).

Emotional Exhaustion- The feelings of being overstretched and depleted of one's emotional and physical resources (Maslach, Schaufeli & Leiter, 2001).

Exquisite empathy- This refers to empathy that involves being: *highly present* by way of mindfulness meditation; *sensitively attuned* by acquiring both self-knowledge and dual-awareness (awareness of self and client) in a highly empathic way; *well boundaried* by acknowledging the limits of one's ability (including legal and ethical boundaries); and having *heartfelt* interactions by learning to allow some illumination into one's emotional core without losing oneself (Harrison & Westwood, 2009).

Mindfulness- This is a skill that enhances adaptive coping to stressful events by the self-regulation of attention towards the immediate experience, and an open and accepting orientation towards one's experience of the present (Bishop *et al.*, 2004).

Reduced Personal Accomplishment- Feelings of incompetence and a lack of accomplishment and efficiency at work (Maslach, Schaufeli & Leiter, 2001).

Resilience- The ability to return to a previous functioning capacity after experiencing significant challenges; that is to ‘bounce back’. (Smith *et al.,* 2008).

Vicarious traumatisation- A situation where crisis workers experience a disruption of their beliefs about self and others by being engaged empathically with their clients’ trauma material (McCann & Pearlman, 1990). This feeling can then lead to profound changes in their sense of meaning, identity, and worldview.

ABSTRACT

Background: Burnout is a work-related condition with a significant footprint in the medical profession. It is characterised by emotional exhaustion (EE), depersonalisation (DP), and a low sense of personal accomplishment (PA) at one's job. Depending on situational and individual factors, the prevalence of burnout among healthcare workers (HCWs) has shown an upward trajectory with peaks in certain medical specialities. Paediatric oncology unit (POU) HCWs are at a high risk of developing burnout because of the immense physical and emotional involvement that can be associated with caring for children with cancer. The burnout process can, however, be influenced by adopted coping strategies and resilience. Research into the phenomenon of burnout and associated factors in POU HCWs is low in South Africa in spite of the global attention it has commanded. Because of the need to institute appropriate and acceptable intervention strategies and to avoid erroneous conclusions often associated with burnout, it is imperative to understand the local prevalence and the possible associated factors. This study, therefore, seeks to establish the prevalence of *burnout* in POU HCWs and to understand how the adopted *coping* strategies and level of *resilience* influence the burnout process in a defined setting. Acknowledging and understanding how these psychosocial factors affect HCWs is fundamental to designing interventions to reduce work-related stress conditions.

Objectives: This study seeks to determine the following: prevalence of burnout among POU HCWs in Red Cross War Memorial Children's Hospital, Cape Town; identify adopted coping strategies by the HCWs; evaluate the level of resilience in the HCWs; and make recommendations that may help reduce burnout in paediatric oncology care and, probably, other fields of health care in South Africa.

Methodology: This research used a mixed method approach (quantitative and qualitative) to explore burnout, coping and resilience amongst POU HCWs. A questionnaire consisting of validated instruments (Maslach Burnout Inventory-Human Services Survey [MBI- HSS], Brief Resilience Scale [BRS], the Brief COPE and researcher-designed questions) was used to conduct a survey after obtaining ethical clearance (HREC REF: 051/2017). Depending on preference, electronic or paper-based questionnaires were distributed to POU staff. Data analysis was performed using Microsoft EXCEL (2010 version).

Results: The response rate was 50% (n= 25). Five out of the total respondents were dropped due to gross omissions in responses to the survey questions. The majority of the respondents were females (95%), and by profession, nurses had the highest representation (80%). Eighty-five per cent (85%) of the respondents have worked in the POU for more than a year.

The burnout prevalence was 15% – 45% across the three dimensions of burnout - high EE (20%), high DP (15%) and reduced PA (45%). The majority (70%) of the respondents were moderately resilient. The coping styles predominantly used by the respondents in this study were positive reframing, religion, acceptance, planning, self-distraction and active coping. The least used coping styles were substance use, denial and behavioural disengagement, which are all maladaptive coping strategies. There was no statistically significant association between burnout and demographic characteristics. However, with a high prevalence of 45%, reduced personal accomplishment (rPA) was also associated with most demographic characteristics. rPA was high in females; age groups 25-25 and 46-60; single and married; respondents with number of children >1; respondents with a graduate level of education; POU professionals that are nurses and administrators; respondents with work experience in medicine and work experience in oncology for less than 10 years.

Respondents with low levels of resilience experienced average levels of burnout as evidenced by average EE and DP scores, while those with moderate levels of resilience experienced low burnout as evidenced by low EE and DP scores ($P < 0.05$). Furthermore, EE and DP correlated negatively with the BRS while PA correlated positively with the BRS. Concerning coping strategies, EE and DP correlated positively with denial, substance use, behavioural disengagement, venting and self-blame. PA correlated positively with emotional support, positive reframing and religion but negatively correlated with active coping. Generally, the respondents expressed the desire for better goal-focused teamwork in the POU as well as the implementation of effective intervention strategies.

Conclusion: The prevalence of burnout in this study is between 15% - 45%. The particularly high prevalence of reduced personal accomplishment (45%) is of interest because it cuts across most demographic features. This is suggestive of a stronger influence of situation-specific factors, common to all respondents, contributing to burnout. The predominant use of emotion and problem-focused coping methods, and the moderate level of resilience in the majority of the staff appear to be protective against burnout. There is, however, the need and desire for implementation of effective group and institutional intervention programmes for burnout in the POU staff in terms of availability, awareness and accessibility.

CHAPTER 1: INTRODUCTION

1.1 Background

One of the most fulfilling and humbling experiences, as a medical professional, is having the opportunity to save lives or at least improve the quality of life of vulnerable children and adults. While the focus of patient management is often to achieve a cure, the experience of situations where management interventions are unsuccessful can be distressing for the healthcare worker (HCW). When HCWs routinely deliver care to people who are unlikely to recover from illness, the cumulative effect of such experiences could ultimately have an effect on their emotional, mental, and even physical well-being (Sanchez-Reilly *et al.*, 2013).

A few years ago, while working as a young intern doctor, I was involved with the management of children with various types of cancers. Besides the HCW-patient therapeutic relationship, very often, HCWs developed emotional and physical attachments to the children (and their families) in their care. Invariably HCWs developed the kind of bond that made the children feel excited when they entered their ward. They would play with the children in their care and more than once the children would cry when it was time for the HCWs to leave. Witnessing the suffering and eventual deaths of these children on a regular basis can be stressful and made many HCWs question the effectiveness of this type of care. Many HCWs felt powerless in the face of such challenges and often questioned their role in the treatment of these children. Others questioned the value of their involvement in the lives of the children they were caring for. The fear that they are not making a difference and are failing the children is very real amongst HCW working in an oncology unit. Many shared the opinion that there is no or little fulfilment in treating very ill children while others transfer the experiences of their patients and their own fears onto their families. *Questions often asked include; are we making any difference at all? Is this not a failure on our part? Where is the* *sense of fulfilment as a health professional? Will my family or I suffer similar experience? And so on.*

Absent from the work experience is formal preparation or staff orientation as to what to expect when exposed to very sick children and their families. No recognition was given to the possible onset of compassion fatigue or burnout. There was no formal preparation of staff or orientation about what should be expected, neither was there a forum to express the overwhelming hidden thoughts and questions. In addition, there was no institutional intervention strategy in place to maintain the 'tempo' of our enthusiastic morale. We just carried on as if it was forbidden to have these thoughts or feelings. At the individual level, a number of HCWs coped by talking to someone or by drawing on their spiritual beliefs and practices. As a group, cases were mechanically discussed, at times with a tinge of humour. On the other hand, some just unconsciously created two illusory worlds for self-protection, the '*sick world*' for their patient and their own '*healthy world*'. The experience was quite disturbing.

As an intern doing a temporary rotation in the Paediatric Oncology Unit (POU), I wondered if permanent-HCWs working in the POU experience burnout and how they cope with a never-ending cycle of bond making and bond breaking mixed with hope and despair. Driven by an interest in the mental health of HCWs in paediatric medicine, the question of burnout, its consequences, and the association with coping strategies and resilience among POU staff often occupy my thoughts. I thought that understanding these concepts could potentially lead to the development of interventions that would help HCWs to manage their mainly unacknowledged emotional and mental responses to caring for ill children who often may not recover.

1.2 Introduction

Burnout is a psychological construct widely explored as a major problem among work-related stress disorders. It represents a considerable portion of occupational illness cases (Lastovkova *et al.*, 2018; Portoghese *et al.*, 2014). This is particularly important in the health service sector because of its potential adverse effect on health care efficiency (Matteia *et al.*, 2017). Usually seen in service-oriented professionals, burnout is a condition that affects the person, the profession and the quality of service provided (Granek *et al.*, 2015). It is a clinical syndrome characterised by loss of enthusiasm for work (emotional exhaustion), feelings of cynicism (depersonalisation), as well as a low sense of personal accomplishment (and failure) at one's job (Maslach & Goldberg, 1998).

Burnout often develops because of prolonged service or therapeutic relationships between providers (like HCWs) and the beneficiaries of their service or care (patients) that requires a continuous and intense level of personal and emotional contact (Maslach & Leiter, 2016). While health provider-patient relationships can be engaging, rewarding and satisfying, they can be stressful for HCWs, with the potential for developing burnout. Although burnout is more common in health professionals (Dyrbye, *et al.*, 2017; Maslach & Leiter, 2016; Lloyd, Streiner & Shannon, 1994; Spickard, Gabbe, & Christensen, 2002), it is not limited to the medical profession and affects other service-oriented professions as well. For instance, burnout affects professionals in education (Mérida-López & Extremera, 2017; Evers, Brouwers & Tomic, 2002), sports (Lundkvist *et al.*, 2018; Wagstaff, Hings, Larner & Fletcher, 2018; Fender, 1989) and business management **(**Hoffarth, 2016; Cahoon & Rowney, 1984). Understanding the prevalence and factors associated with burnout are important in order to develop strategies that could potentially mitigate its effects.

1.2.1 Prevalence of burnout

The prevalence of burnout has increased significantly over the last few decades. In the past 35 years burnout has affected up to 19% – 30% of employees in the general working population globally (Finney *et al.,* 2013; Portoghese *et al.,* 2014). Several studies indicate that HCWs have the highest prevalence of burnout when compared to the general population (Dyrbye, *et al.,* 2017; Maslach & Leiter, 2016; Lloyd, Streiner & Shannon, 1994; Spickard, Gabbe, & Christensen, 2002). Prevalence rates can reach between 25% and 75% in some clinical specialities (Martini *et al.,* 2003). In South Africa (SA), burnout prevalence rates range between 20% and 58% across different health professionals (Du Plessis, Visagie & Mji, 2014; De Klerk, 2004; Van der Walt, Scribante, & Perrie, 2015). Unfortunately, increasing prevalence also signifies increasing associated consequences of burnout that affects the individual and patient management.

1.2.2 Consequences of burnout

The consequences of burnout in medical practice are multi-layered. At the individual level, the personal well-being and quality of life are affected. It is associated with an increased prevalence of suicide/suicidal ideation, divorce, substance abuse and psychological distress (De Paiva *et al.,* 2017; Doolittle, Windish & Seelig, 2013). Collectively, it leads to low productivity and decreases in team morale, increases in absenteeism, health care costs, personnel turnover and decreases in self-reported quality of care (Cordes & Dougherty, 1993; Parker & Kulik, 1995; Lake, 1998; Clarke, Sloane & Aiken, 2002; Morita *et al.,* 2002).

Burnout also affects the quality of patient care. Several cross-sectional studies conducted mostly in the U.S. and Europe examined the relationship between HCW burnout and different patient outcomes. The reports suggest that burnout in HCWs is associated with poorer quality of service, increased medical errors and lawsuits as well as lower patient satisfaction (Dyrbye, *et al.,* 2017; Leiter, Harvie & Frizzell, 1998; Vahey *et al.,* 2004). Furthermore, the financial implications of burnout for healthcare organisations are enormous. For instance, healthcare systems can accrue losses that run into millions of dollars because of early retirement, reduced clinical hours and increased referrals due to burnout (Dewa, Jacobs, Than & Loong, 2014; Dyrbye, *et al.*, 2017). Understandably, the consequences of burnout depend on the severity of burnout in affected persons. The severity and prevalence of burnout, however, vary across medical specialities (Dyrbye, *et al.*, 2017). In a systematic review that examined the prevalence of burnout and its associated factors among healthcare professionals (HCP) in Arab countries (Elbarazi, Loney, Yousef & Elias, 2017), wide-ranging prevalence rates that varied across countries, professions and specialities were observed among the HCPs. Similarly, in a survey that compared burnout prevalence in two groups of HCWs in the ICU, there was variation in the prevalence rates even though the rates were high in both groups (Guntupalli, Wachtel, Mallampalli & Surani, 2014).

Besides inter-professional differences in the prevalence of burnout, intra-professional variations also exist. This is understandable because its occurrence is dependent on situational (work) and individual factors (Maslach, Schaufeli & Leiter, 2001). One implication of the variation is that health institutions need to invest in understanding the dynamics of burnout in their departments in order to avoid erroneous conclusions and maximise intervention strategies. Specialities where HCWs witness a substantial degree of patient suffering and deaths have been shown to have higher risks of burnout such as in palliative care, oncology and emergency medicine (Grunfeld *et al.*, 2000; Dyrbye, *et al.*, 2017). More specifically, some studies have reported a particularly high risk of burnout in paediatric oncology unit (POU) HCWs. Granek *et al*., (2015) in a qualitative study, explored the impact of frequent patient deaths on POU staff. The study reported higher grief reactions in POU staff compared to adult oncologists, owing largely to the intense and long-term therapeutic relationship that develops between HCWs and their patients (and families). In a review of literature on burnout and other associated factors in POU staff, Mukherjee, Beresford, Glaser, and Sloper (2009) reported that paediatric oncology nurses experienced distinct stressors not encountered by colleagues working in adult oncology.

1.2.3 Burnout in Health Professionals in Paediatric Oncology

Although childhood cancer is uncommon, it contributes between one to ten per cent of all cancers reported globally (Ferlay *et al.,* 2008). Between 2001 and 2010, childhood cancer was found to be 13% more common than it was in the 1980s. The annual cancer incidence in children is 140 per million children aged 0 to 14 years worldwide (Steliarova-Foucher *et al.,* 2017), constituting a significant cause of morbidity and mortality. Unpredictable treatment outcome is a common challenge and the need for routine invasive procedures in the diagnostic and therapeutic aspects of care can be equally distressing for patients, their families, as well as HCWs who often have to deliver care to critically ill and dying children (Sherman, Edwards, Simonton & Mehta, 2006). Invasive procedures and exposure to rapid disease progression are identified as potential sources of emotional tension associated with caring for the children (Rourke, 2007; Baranowski, n.d.). Furthermore, family-centred care is essential in this context; hence, POU staff also have to address the concerns of the patient's family and loved ones. In this situation, forming emotional attachments to children are not easily avoided (Granek *et al*., 2015). HCWs in the POU are, on a regular basis, confronted with these tensions (Sherman *et al.,* 2006; Naj Jar, Davis, Beck-Coon & Doebbeling, 2009), and have to invest a substantial amount of physical and emotional energy into the care of their patients (Conte, 2014; Mukherjee *et al.,* 2009). Besides managing these tensions, HCWs have also to manage their own emotional responses while providing support to child-patients and their families. These and other similar situations double the risk of HCWs developing a sense of failure and frustration (Granek *et al*., 2015).

In low resource settings like South Africa, childhood cancer survival is often poor. Reports on the general survival rates for childhood cancers show lower figures in Africa when compared to better-resourced countries. In South Africa, childhood survival rate (1, 3 and 5-year survival rates combined) is about 52.1% (Stones, de Bruin, Esterhuizen & Stefan, 2014) compared to 3-year survival rate of 81% in Europe (Gatta *et al.,* 2014) and 5-year survival rate close to 80% in the U.S. (Ribeiro, 2012). Factors contributing to the stark contrast in survival rates include limited resources and late presentation of disease (Magnani *et al.,* 2006) as well as co-morbid conditions such as malnutrition (Stones *et al*., 2014) and HIV (Davidson *et al.,* 2014). This implies that HCWs in South Africa who care for children with cancer have to contend with the factors contributing to poor survival rates in addition to the rigours of treatment. The Combination of these factors increases the likelihood of experiencing burnout in POU staff in South Africa.

1.2.4 Coping with Burnout

Burnout, as a process, is affected by factors such as coping and resilience (Rushton, Batcheller, Schroeder & Donohue, 2015). According to Snyder (1999:5), coping refers to "a response intended to diminish the physical, emotional, and psychological burdens that are related to stressful life events and daily hassles". In the face of challenges associated with working in a unit such as POUs, coping strategies are essential to maintaining personal and professional harmony (Ribeiro, Pompeo, Pinto & Ribeiro, 2014; Folkman & Lazarus, 1985). People use different coping styles to manage stressful situations some of which include self-distraction, religion/spirituality, seeking emotional/social support and substance use (Carver, 1997; Folkman & Lazarus, 1985). In some instances, these coping styles can be further combined and grouped under major coping strategies; however, there is no consensus on how this should be done (Skinner, Edge, Altman & Sherwood, 2003). One broad method classifies coping styles into problem-focused, emotion-focused, adaptive and maladaptive coping

(Lopez, 2014:18-20; Carver, Scheier & Weintraub, 1989), (*see Appendix I*). Depending on the situation and individual personality, HCWs have been shown to use different coping methods (Rodrigues & Chaves, 2008; Isikhan, Comez & Danis, 2004). It is important to understand that there are no perfect coping methods; instead, it can be either effective or ineffective depending on person and situation (Isikhan, Comez & Danis, 2004; Lazarus & Folkman, 1984).

Resilience, according to Smith *et al*. (2008), is a psychological characteristic that refers to the ability to bounce back from the experience of difficult situations. Specifically, it looks at the ability of affected individuals to return to positive functioning capacity after experiencing challenges. Resilience is associated with reduced symptoms of burnout syndrome (Guo *et al.*, 2018; Mealer, 2016; Rushton, *et al.*, 2015). It is suggested that resilience equips individuals to better cope with negative situations and increase their adaptation and achievement abilities (Kutluturkan, Sozeri, Uysal & Bay, 2016; Mealer, 2016). Furthermore, resilience is considered a crucial factor for maintaining optimal functioning, physical health, psychological health as well as the prevention of the development of psychopathology in the face of stressful life circumstances (Ryff & Singer, 2003). Although individuals can intrinsically have resilient personalities, characteristics of resilience can be learned by developing positive coping skills, attention to physical well-being, and positive support systems (Mealer, 2016).

1.3 Rationale for the study

Studies have suggested that the immense emotional and physical requirements of managing children with cancer pose a high risk for burnout development among HCWs (Mukherjee, Beresford, Glaser, & Sloper, 2009; Granek *et al.*, 2015). Besides these, POU HCWs in low resource settings such as in South Africa have to navigate additional challenges related to limited resources as well as co-morbid conditions, which contribute to lower patient survival rates (Magnani *et al.*, 2006; Stones *et al*., 2014; Davidson *et al.*, 2014). Consequently, it could be inferred that HCWs in low resource settings are at a higher risk of developing burnout.

Despite these challenges and associated risk factors, burnout and other mental health issues, in general, are often neglected or receive low priority in the case of HCWs (Feteh *et al.*, 2017; Balch, Freischlag & Shanafelt, 2009). Reasons for this may be linked to the traditional training of HCWs that compels them to stifle their feelings so that services they provide are not affected (Gaufberg, Batalden, Sands & Bell, 2010; Papadatou, 2000:60). Similarly, health institutions may constitute bureaucratic bottleneck towards burnout researches because of a perceived burden of these studies and their implications on cost and organisational requirements. In South Africa, this concern is genuine considering the already strained public health care system (Mayosi & Benatar, 2014). However, the early management of burnout through the application of prevention and promotion activities can be a cost-saving process compared to burnout-induced losses due to early retirement, reduced clinical hours and increased referrals (Dewa, *et al*., 2014).

Whatever the reason, the well-being and coping of HCWs have a direct effect on the quality of care they provide (World Health Organisation [WHO], 2016). As such, investigations on burnout and other mental health issues in HCWs are imperative. Globally, several studies have reported on burnout and particularly burnout in POU HCWs (Mukherjee, Beresford, Glaser, & Sloper, 2009; Granek *et al*., 2015). However, there is still a dearth of South African literature on burnout in paediatric oncology care and oncology care generally.

The consequences of burnout on the healthcare system are multi-layered but this burden can be reduced through prevention and awareness activities directed at addressing the condition. Acknowledging and understanding how psychosocial factors such as burnout, coping strategies and resilience affect HCWs is important and it is the goal of this research. This study sought to understand these factors in the POU staff of a major paediatric hospital in Cape Town, South Africa. The study will give a comprehensive understanding of the psychosocial dynamics that come into play among staff when caring for the children. This approach, in addition to contributing to existing knowledge, will allow practical recommendations to be made with regards to reducing burnout in oncology care and other fields of health care in South Africa.

This study hypothesised that immense emotional and physical requirements in managing children with cancer (Mukherjee, Beresford, Glaser, & Sloper, 2009; Granek *et al*., 2015) as well as low resource settings (Magnani *et al.*, 2006) and co-morbid conditions (Stones *et al*., 2014, Davidson *et al.*, 2014) put POU staff in South Africa at a higher risk of developing burnout. This study, therefore, seeks to explore the prevalence of burnout among health professionals delivering care in the context of a paediatric oncology ward and to identify the coping strategies and level of resilience among POU staff of Red Cross War Memorial Children's Hospital [RCWMCH] in Cape Town. The results will be described and compared with other reports in the literature. To the best of our knowledge, there is no previous report of this type of study.

1.4 Research questions

The following questions were addressed in this research:

1. What is the prevalence of burnout amongst paediatric oncology health care workers in Cape Town?
2. What are the coping strategies adopted by HCWs in the paediatric oncology unit?
3. What is the level of resilience in HCWs in the paediatric oncology unit?

1.5 Study aim and objectives

The aim of this study was to investigate burnout, coping strategies and resilience in paediatric oncology HCWs in Cape Town using validated questionnaires. Specific objectives of the study were:

1. To determine the prevalence of burnout in paediatric oncology HCWs at a tertiary institution in Cape Town, South Africa

2. To identify coping strategies adopted by HCWs working in the paediatric oncology unit at a tertiary institution in Cape Town

3. To evaluate the level of resilience in the HCWs working in the paediatric oncology unit at a tertiary institution in Cape Town

4. To make recommendations that may help to reduce burnout in paediatric oncology care and other fields of health care in South Africa.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review on burnout syndrome, coping and resilience using recent and historically relevant literature. Relationships between these concepts and how they affect HCWs, especially those in oncology, are discussed. Materials pertaining to global and local mental health in health workers were meticulously selected and studied. Some emphasis was placed on classical literature focusing on the history of burnout in order to highlight that it is not a new concept, as it is commonly misconstrued. This served to demystify the condition and create a significant foundation for my study in order for it to fit into the recent work on burnout in oncology care, which is quite few in South Africa. In addition, the discussion of similar, but different, concepts to burnout, such as compassion fatigue (CF) and vicarious traumatisation (VT) was limited to their definitions and differentiation from burnout to avoid any confusion.

2.1.1 Literature Search Methods

Search engines used for online sourcing of materials and information include PubMed and Google Scholar. Available materials on the University of Cape Town (UCT) database such as books, peer-reviewed journals and newspapers were also consulted. Additional materials were collected from the University of Pretoria and Stellenbosch University libraries through the UCT Interlibrary Loan.

Search words and phrases used on the web include:

- Burnout (HCW burnout, burnout in oncology care)
- Paediatric oncology (childhood cancer)
- Job stress
- Coping
- Coping strategies/methods
- Resilience

- Compassion fatigue
- Mindfulness
- Exquisite empathy
- Vicarious traumatisation
- Burnout and coping
- Burnout, coping and resilience

Related citations suggested by the search engines as well as references cited in journal articles were used to further broaden the search. Only articles cited in the English language were used.

2.2 Defining Burnout

Burnout is a condition that develops as a response to the chronic emotional strain of dealing extensively with other human beings especially when they are in distress or having problems (Maslach, 1982:2). It is described as a syndrome characterised by *emotional exhaustion, depersonalisation* and *reduced personal accomplishment* (Maslach & Goldberg, 1998). These three attributes, according to Maslach (1982:3-8), develop in stages as follow:

2.2.1 Stages of burnout

The first stage of burnout is emotional exhaustion. This stage sees individuals get too emotionally involved, overextend themselves, and eventually become overwhelmed by the requirements of others. Deprived of emotional and physical resources, affected individuals are exhausted and feel they are no longer able to give of themselves at a psychological level. Inappropriate management of emotional exhaustion leads to the second stage, depersonalisation. This stage of burnout is characterised by emotional detachment, dehumanised response and having a cynical and negative attitude towards others. Reduced personal accomplishment, described as a negative evaluation of oneself concerning working with clients/ patients, is the third and final stage of burnout. This stage is characterised by feelings of inadequacy, personal failure and feelings of poor professional self-esteem.

Burnout is a broad-based concept that requires a thorough and clear understanding. This understanding can be achieved through retrospective analysis of its history and conceptual framework.

2.2.2 History of Burnout

Burnout as a phenomenon was initially described in the context of social problems without a well-defined conceptual framework. Gradually, it gained scholarly interest and became a subject of systematic researches with particular emphasis on its assessment. By the mid-1970s, a few articles on burnout started to emerge. Much of these early publications were based on the work of Freudenberger (1974, 1975) and Maslach (1976). These publications highlighted the underreported condition by providing the initial description of burnout; giving it a name and showing that it was not a bizarre response by a few abnormal people but was actually more common (Maslach & Shaufeli, 1993:2). Though burnout obviously existed earlier, the attention gathered in the mid-1970's was due to a host of economic, social and historical factors. Farber (1983) reckoned that workers became increasingly isolated from their communities and focused on attaining personal fulfilment and gratification from work. These two factors led to a state of increasing higher expectations of job fulfilment but with less recourse to cope with frustrations, thus resulting in burnout. In the course of time, human services changed from being community-based to become highly professionalised, credential*ised* and isolated. This transition coupled with government interference and increasing client's demands to services made it more difficult for workers to achieve professional fulfilment in human services jobs. An interaction of these factors consequently led to increased disillusionment and burnout cases. In a similar view to Farber, Cherniss (1980) explained that burnout developed because of a disintegration of the traditional social fabric; frustration resulting from unmet, high (unrealistic) job expectations of young professionals; and increasing workload on human services workers. Maslach and Shaufeli

(1993:9-16) expanded the conceptual understanding of burnout by examining its three features (distinctiveness, occupational/professional limitations and diagnostic criteria) as presented below.

A Distinctiveness

Distinguishing burnout from other similar constructs such as job stress, depression and job satisfaction are central to its understanding. Burnout can be distinguished from these constructs based on its process and multidimensionality (Maslach & Shaufeli, 1993:9). The distinction of burnout from job stress is based on time while distinction from depression and job satisfaction is based on the domain. According to Brill (1984) and Etzion (1987), burnout is considered a form of prolonged stress. Using a general adaptation model by Seyle (1967) who described the phases of stress as alarm, resistance and exhaustion, Etzion (1987) considered burnout to be a latent process of psychological exhaustion resulting from prolonged job stress. In which case, the last stage of phases of stress i.e. exhaustion is reached before the individual has noticed the preliminary phases of alarm and resistance. Similarly, Brill (1984) argued that while stress is a temporary adaptation process that is accompanied by mental and physical symptoms, burnout is a breakdown in adaptation that is accompanied by chronic malfunctioning. Based on these two viewpoints that time is the differentiating factor between job stress and burnout, it can then be considered that burnout is a process that develops over time and not simply a state (Maslach & Shaufeli, 1993:10).

In distinguishing burnout from depression, some areas of overlap are noticed because of some similarity in symptoms. Depression is “context-free” while burnout is “job-related” (Warr, 1987). Oswin (1978) described a form of “professional depression” in nurses that had a striking resemblance to burnout. The symptoms described include overtiredness, becoming hardened and accepting one’s ineffectuality at work. Therefore, the conclusion on a conceptual basis is that burnout is a job-related syndrome that is characterised by dysphoric symptoms that are similar to those of depression (Maslach & Shaufeli, 1993:11). Although job dissatisfaction has been shown to be clearly linked to the dimensions of burnout (i.e. emotional exhaustion, depersonalisation and personal accomplishment), it is still considered to be a different construct (Zedeck, Maslach, Mosier, & Skitka, 1988). The link between the two constructs is believed to either be from job dissatisfaction being an affective outcome of burnout or job dissatisfaction being a cause for burnout. A third possibility is that both burnout and job dissatisfaction may be caused by poor working conditions.

Compassion fatigue (CF) and vicarious traumatisation (VT) are two other closely related but different conditions associated with burnout. Secondary traumatic stress or compassion stress may develop naturally in individuals when they are caring or desire to care for traumatised people (Figley, 1995). This feeling can develop suddenly and is commoner among those carers who display immense empathic abilities. When this sudden state is however prolonged without necessary intervention, the carers may then experience a state characterised by exhaustion and a biological, psychological and social dysfunction termed secondary traumatic stress disorder or CF (Figley, 1995). Some researchers believe that CF can lead to burnout (Elkonin & Van der Vyver, 2011). On the other hand, VT refers to a situation where crisis workers experience a disruption of their beliefs about self and others by being engaged empathically with their clients' trauma material (McCann & Pearlman, 1990). This feeling can then lead to profound changes in their sense of meaning, identity, and worldview.

B Occupational/Professional Limitation

Although most of the work that has been done on burnout has been limited to human services professions, the concept has moved beyond these borders. Since burnout is primarily job-related, it can also be seen in other types of occupations. For instance, there are reports on business and corporate/ managerial burnout (Cahoon & Rowney, 1984; Etzion, Kafry & Pines, 1982; Ginsburg, 1974; Levinson, 1981). In sports, burnout has been described in coaches (Caccese & Mayerberg, 1984; Capel, Sisley & Desertrain, 1987) and athletes (Fender, 1989; Smith, 1986). The concept of burnout has further been applied to non- job situations such as voluntary activities like political activism (Gomes & Maslach, 1991) and family issues such as parent and marriage burnout (Pelsma, Roland, Tollefson & Wigington, 1989; Procaccini & Kiefaber, 1983; Pines, 1988). The interpretation of burnout in these situations, however, has to be done with caution so that it is not replaced with basic entities like unhappiness or frustration. The application of burnout to non-occupational contexts will require that the various burnout dimensions be appropriately translated into these contexts (Maslach & Shaufeli, 1993:13).

C Diagnostic criteria for burnout

Various definitions of burnout exist with most having a similar theme of a process related to job factors. Besides the widely accepted definition by Maslach (Maslach & Goldberg, 1998), another definition that gives a succinct operational definition of burnout is that by Brill (1984:14):

> "Burnout is an exceptionally mediated, job- related, dysphoric and dysfunctional state in an individual without major psychopathology. The affected person has (1) functioned for a time at adequate performance and affective levels in the same job situation and (2) will not recover to previous levels without outside help or environmental rearrangement".

Bibeau *et al.* (1989) argue that though burnout should not be categorised as a psychiatric condition, it can be assessed in psychiatric terms. For instance, it can be included in the subcategory of adjustment disorders with work of the DSM 111 (American psychiatric association [APA], 1980). An adjustment disorder, according to DSM- 111 (APA, 1980:299), is characterised by "a maladaptive reaction to an identifiable psychosocial stressor that occurs within three months after the onset of the stressor. The maladaptive nature of the reaction is indicated by either impairment in social or occupational functioning or symptoms that are in excess of a normal and expected reaction to the stressor”. On the other hand, Maslach and Shaufeli (1993:16) were of the opinion that describing burnout in psychiatric terms could negatively label sufferers as being mentally ill and as such, should be reconsidered. Though there is still need for clinically validated cut off points, the Maslach burnout inventory (MBI) is seen to have the potential to be used in the individual assessment of burnout because it covers the main aspects of the condition and it has good psychometric properties (Maslach & Shaufeli, 1993:16).

2.3 International research on burnout

The phenomenon of burnout, over the years, has sustained international research interest. Many of the studies in the last two and a half decades have focused on human service-oriented professions (healthcare services and education sector). Reports from different parts of the world have shown an increased prevalence of burnout and its association with other constructs. Soler *et al.* (2008) reported a high prevalence of burnout in doctors across Europe. In the US, Rushton, *et al.* (2015) described the inverse relationship that occurred between burnout and resilience. Langade *et al.* (2016) reported the high prevalence of burnout in India. In Iran, Ashtari, Farhady and Khodaee (2009) described a significant correlation between job burnout and reduced job performance. Particular interests of burnout research have been on the identification of factors associated with the occurrence of burnout as well as its management.

2.3.1 Factors associated with Burnout

It is established that burnout develops over time and is directly related to the nature of the job. The factors that are associated with burnout can be broadly classified as situational and individual factors (Maslach, Schaufeli & Leiter, 2001) as explained below.

2.3.1.1 Situational factors

Situational factors are factors that are directly related to the work context such as job, occupational and organisational characteristics. With regards to **job** characteristics, situational factors have two components namely quantitative and qualitative. The quantitative component describes jobs generally characterised by high workloads. This aspect of situational factors is reported to be strongly associated with burnout. The qualitative component describes job features such as the severity of the patient's problems, role conflict, role ambiguity and lack of social support, which are ultimately linked to burnout (Maslach, Schaufeli & Leiter, 2001).

In the context of **occupation**, Zapf, Seifert, Schmutte and Mertini (2001) found that occupations that often require the service provider to be emotionally empathic towards their client or to suppress/display emotions increased the likelihood of burnout amongst the workers. Interestingly, this finding by Zapf *et al.* (2001) can be likened to the traditional teaching of the health profession that expects HCWs to suppress their feelings in order to give necessary assistance to their patients (Gaufberg *et al.*, 2010; Papadatou, 2000:60). In a study comparing the prevalence of burnout for five different occupations (teaching, social services, mental health, medicine and law enforcement) in the United States and Holland, medicine scored lower levels of exhaustion (EE) and cynicism (DP) but slightly higher levels in inefficacy (rPA) (Schaufeli & Enzmann, 1998). While this study shows an important variation of burnout in these professions, the heterogeneity of the medical profession may require that burnout in more specialities that are specific are evaluated because job demands may vary and give different results. **Organisational characteristics** can predispose to burnout in situations where the employers do not meet employee expectations of a job. The unmet expectation can create a sense of "violation of psychological contract" (Maslach, Schaufeli & Leiter, 2001: 409) which increases the chances of burnout in the employee.

Unlike individual factors, situational factors are more employer/organisational structure dependent and as such, most interventions at this level are targeted at the employer/organisation (Michie, 2002).

2.3.1.2 Individual factors

The uniqueness of individuals in the work environment either predisposes or protects them from job burnout. This has been attributed to factors such as demographic features, personality characteristics and job attitudes (Maslach, Schaufeli & Leiter, 2001: 409-411). In relation to **demographic features**, burnout tends to be higher in younger individuals and it is closely linked to lesser work experience. Gender has been a controversial variable with different researchers reporting varying results. However, men have been consistently reported to have higher scores in DP while women scored higher in EE. Being unmarried has been linked to higher scores of burnout, especially unmarried men. A higher level of education was also associated with an increased risk for burnout. The association with the educational level was explained as being perhaps linked to greater job responsibilities or higher expectations for their jobs. **Personality characteristics** are another individual factor that can lead to burnout. Personality features that have been linked to higher levels of burnout include individuals with low levels of hardiness, those who attribute events to external forces rather than to their own effort and people with neuroticism personality dimension. Excessive unmet high expectations on a job, described as **job attitudes**, predisposes to higher levels of burnout. For example, having the expectation of curing patients but disappointed by non-response to treatment or death. A possible explanation for this is that high job expectations can make people work hard excessively and may become exhausted (EE) and overtime, emotionally distant (DP).

Generally, situational and individual factors contribute to the risk of HCWs developing burnout. Although the severity and prevalence vary in different specialities, predisposing factors to burnout are inherently associated with the health profession. These factors include high job demand, job expectation, emotional attachment during management, and job-related emotional suppression due to loss of patients or unresponsiveness to treatments.

2.3.2 Management of burnout

Burnout is an occupational health problem categorised under work-related stress conditions that affect the psychosocial/mental health of workers (WHO, 2005:17). It is the responsibility of the government to develop and implement policies and legislation for mental health (WHO, 2005:32). Likewise, employers have the duty of implementing these policies by ensuring the availability and accessibility of structures that promote the mental health of their employees (ECRI Institute, 2017; Garton, 2017). The management of burnout entails the proper identification of signs/symptoms related to burnout, its evaluation, prevention and treatment.

2.3.3 Signs and symptoms of burnout

Burnout does not occur suddenly but develops in an insidious manner. There are no specific signs and symptoms of burnout, however, signs associated with the stages of burnout (EE, DP, rPA) can serve as indicators to burnout before it is fully developed (Carter, 2013). Just as the stages of burnout overlap, so do the signs. Maslach and Leiter (2016) and Carter (2013) have summarised these signs to include the following: (a) E*motional exhaustion* can be characterised by chronic fatigue**,** insomnia, forgetfulness / impaired concentration and attention**,** increased illness**,** loss of appetite**,** anxiety, depression, anger and physical symptoms such as chest pain, heart palpitations, shortness of breath, gastrointestinal pain, dizziness, headaches, fainting. (b) *Depersonalisation* can cause loss of enjoyment, pessimism, isolation and detachment (c) *Ineffectiveness and reduced personal accomplishment* are characterised by feelings of apathy and hopelessness, increased irritability, lack of productivity and poor performance.

Besides these signs, another potential early indicator of burnout is the appearance of a high score on at least one of the MBI dimensions i.e. EE, DP, and rPA (Maslach& Leiter, 2008). While this does not imply that the individual will necessarily develop burnout, it could serve as an early sign of a potential problem.

2.3.4 Evaluation of burnout

Burnout can be evaluated both qualitatively and quantitatively. The advantage of using quantitative methods by way of measuring tools is that respondents are able to objectify their source of stress i.e. the tools offer reasonable reference points that can show the pattern of burnout in the individuals and thus suggest the focus for intervention (Arthur, 1990).

The MBI is an instrument widely used for the quantitative evaluation of burnout. Developed in the early 80s, the MBI is considered as a valid, reliable and easy to use tool for measuring the dimensions of burnout (Maslach & Jackson, 1981). There are different versions of the instrument but the version commonly used in health professionals and other human services is the Maslach Burnout Inventory-Human Services Survey (MBI- HSS). The MBI-HSS is a self-administered questionnaire comprising of 22 questions. The questions are designed to measure the three stages of burnout; emotional exhaustion (EE); depersonalisation (DP) and reduced Personal accomplishment (rPA) (Maslach, Schaufelia & Leiter, 2001). There are other tools besides the MBI, developed to measure burnout. For example, Shirom-Melamed Burnout Measure [SMBM] (Shiron & Melamed, 2006); Copenhagen Burnout Inventory [CBI] (Kristensen *et al.,* 2005); Oldenburg Burnout Inventory [OLBI] (Halbesleben & Demerouti, 2005) and Bergen Burnout Inventory [BBI] (Feldt *et al*., 2014). In contrast to the MBI, most of these tools either measure one dimension of burnout (exhaustion) or have a different conceptualisation of burnout (Maslach & Leiter, 2016)

The MBI consists of a separate subscale that measures the three stages of burnout. The subscales consist of nine questions measuring EE, five questions measuring DP and eight questions measuring rPA. All the questions are scored on a Likert scale ranging from zero (never) to six (every day). The scores in each subscale are added separately and interpreted. High scores for EE and DP and a low score for rPA indicate a high level of burnout. An average score for all three stages indicates an average degree of burnout while low scores for EE and DP with a high score in rPA indicates a low level of burnout. The scores are said to be high if they are in the upper third of the normative distribution, average if they are in the middle third and low if they are in the lower third (Maslach, Jackson, & Leiter, 1996: 5-9). The MBI has been validated in different parts of the world including in South Africa (Naudé & Rothmann, 2004) and has been found to be consistent in its measure. The MBI Manual suggests that administration of the MBI- HSS does not require any special procedure or qualification but stresses the importance of ensuring confidentiality of the participants (Maslach, Jackson, & Leiter, 1996: 5-7).

2.3.5 Prevention and treatment of burnout

The huge personal and organisational costs of burnout are indicators that the prevention of burnout is more reasonable and cost-effective than its treatment. The application of intervention strategies is effective to prevent and treat burnout. These strategies can be implemented at the level of the individual, workgroup or an entire organisation/institution.

2.3.6 Individual intervention strategies

Individuals should be aware of the early signs of burnout and they should be able to assess burnout levels in themselves regularly. According to Maslach and Leiter (2016) and Michie (2002), individuals can prevent burnout by observing the following: a) modify their work patterns by working less, taking more breaks, avoiding overtime work; b) develop coping skills through methods like cognitive restructuring, conflict resolution and time management;

c) obtain social support from colleagues, family and other social groups; d) apply relaxation techniques such as meditation, and religion; e) promote good health and fitness through proper nutrition, sleep, exercise; and f) develop a better self-understanding (via various self-analytic techniques, counselling, or therapy).

2.3.7 Group intervention strategies

Intervention at the group level is important because the majority of work support can be derived from peers and work colleagues (Barnard, Street & Love, 2006). Collective sharing and improving work engagement are two examples of methods that can be used to prevent burnout. Papadatou (2000) describes collective sharing in HCWs as a situation in which work units or departments create an environment for acknowledgement, validation and expression of grief when a colleague witnesses disturbing situations like the dying process or death of a patient. This is done by asking questions and discussing the situation in order to create support for the HCW, give meaning to a patient's condition and provide a sense of closure. Work engagement, on the other hand refers to a situation where employees have a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption (Schaufeli & Bakker, 2004). This state is achievable through social support from co-workers, superiors/supervisors as well as personal effort. Specifically, engaging leaders/employees can improve the level of work engagement in their colleagues by delegating appropriately, use encouraging voice in communication, be inspiring and creating avenues for social bonding (Schaufeli, 2017).

2.3.8 Organisational intervention strategies

Intervention at the organisational level generally requires institutions to be willing and be proactive in preventing burnout. Similar to group intervention strategies, the concept of work engagement can be applied at the organisational level. Besides this, organisational factors can be modified to reduce stress levels and prevent burnout in employees (Michie, 2002). This will require a shift in organisational structures (staffing levels, the work physical environment) and maintaining psychological balance at the workplace by, for example, creating social support. Furthermore, institutions can create avenues for regular assessment of burnout (and related conditions) in their employees and provide professional support that can be utilised by these employees.

2.3.9 Burnout in oncology care

Oncology HCWs are particularly at risk of experiencing burnout because of the nature of their work. HCWs in this speciality witness a substantial degree of patient suffering and deaths. According to literature (Grunfeld *et al.,* 2000; Dyrbye, *et al.,* 2017), HCWs in oncology are more prone to experiencing significant burnout. This vulnerability further increases in paediatric oncology care because of the propensity to have immense physical and emotional attachment with the ill children and their families (Granek *et al*., 2015; Mukherjee *et al.* 2009). Most of the studies on burnout in oncology care staff, including POU staff, show an increasing pattern of burnout in oncology health workers globally.

Trufelli *et al.* (2008), in a systematic review of articles that used the MBI to evaluate burnout among cancer care providers, observed that the prevalence of burnout was higher (25-36%) in cancer professionals worldwide. In Turkey, Demirci *et al.* (2010) used the MBI to evaluate the level of burnout amongst oncology employees in a teaching hospital. The study revealed that among the participants in the study, 42%, 20% and 35% of the workers exhibited high levels of burnout in the EE, DP and rPA sub-stages respectively. Sociodemographic and occupational factors found to be associated with higher levels of burnout were employees less than 35 years, those unmarried, those working more than 40 hours per week, being childless, working night shifts and having less than 10 years working experience in the medicine/oncology field. The researchers were able to eliminate confounding factors such as occupational environment and salary because the participants were a homogenous group, working in the same environment with similar exposures. In Belgium, Eelen *et al.* (2014) showed that professionals working in oncology experienced a significantly increased level of burnout components, especially medical oncologists. Similarly, a random survey of a thousand oncologists in America by Whippen and Canellos (1991), reported that 56% of the respondents experienced burnout. Blanchard *et al.* (2010) showed a burnout (specifically those with a severely abnormal level of either emotional exhaustion or depersonalisation) prevalence rate of 44% in French oncology residents. More specifically, Mukherjee *et al.* (2009) found that paediatric oncology nurses experienced a unique, additional set of stressors not encountered by their colleagues in adult oncology.

2.4 Burnout research in South Africa

Most studies on burnout in South Africa have been centred on the investigation of its prevalence among different groups of professionals. The importance of these studies is that they highlight the significance of mental health balance in service-oriented professionals. Among health professionals, burnout prevalence rates have ranged between 20% and 58% across specialities. Van der Walt, Scribante, and Perrie (2015) identified high levels of burnout among anaesthetists working in teaching hospitals. Similarly, Du Plessis, Visagie and Mji (2014) reported a high prevalence of burnout amongst therapists working in private physical rehabilitation centres. On a different perspective, Stodel and Stewart-Smith (2011) reported an association between the presence of burnout and low skills retention of doctors in a teaching hospital. The MBI was also validated in South Africa and found to be consistent in its measure (Naudé & Rothmann, 2004).

2.4.1 Burnout Intervention Strategies in South Africa

Very few studies reported investigations on the effectiveness of burnout intervention strategies in South Africa. This is indicative of a lack of information on intervention strategies or the unavailability of these strategies in organisations/institutions in South Africa. A few studies have researched on individual (Mostert, 2005) and group (Van der Colff & Rothmann, 2009) interventions but information is scarce on organisational intervention programmes. Some organisations/ institutions have wellness programmes to cater for the mental health of their staff, for example, The Organisational Health and Wellness Department (for UCT staff). Some other institutions employ the services of independent support institutions to care for their staff such as the Independent Counselling and Advisory Services (ICAS). The effectiveness of these facilities is however largely unknown. This suggests that there is a need for the scope of organisational intervention strategies to include their evaluation in terms of effectiveness, for example, through empirical studies, considering the independent role of situational factors on the experience of burnout.

2.4.2 Burnout in oncology care in South Africa

In South Africa, research into burnout among oncology HCWs has not been extensive as evidenced by a dearth of literature. However, the study by De Klerk (2004) evaluated the incidence of burnout amongst oncology workers in Pretoria using the MBI. The study revealed that 24.65% - 32 .87% of those who took part in the study experienced a high degree of burnout. This level of measured burnout in Pretoria falls within the average value when compared to other parts of the world with a reported value of 22.1% - 53.3% (De Klerk, 2004).

While a group of individuals may have the same exposure to the risk factors that predispose them to burnout, not all of them will necessarily develop the condition. This is because the experience of burnout can be modified by factors such as coping strategies used by individuals and the level of their resilience. The type of coping strategy adopted by an individual in difficult situations can increase or reduce their risk of burnout (Kao & Craigie, 2013).

2.5 Coping and Coping strategies

Coping is a natural response expressed by individuals in order to diminish the physical, emotional, and psychological burdens that are related to stressful life events and daily disturbances (Snyder, 1999:5). Coping styles enable HCWs to maintain a balance between their professional and personal lives (Ribeiro, Pompeo, Pinto & Ribeiro, 2014; Folkman & Lazarus, 1985). Depending on the situation and individual personality, people use different coping styles to manage stressful situations such as emotional support, venting or religion. Although there is no universal method of classifying coping styles (Skinner, Edge, Altman & Sherwood, 2003), however, common classification is into problem-focused, emotion-focused and others (depending on the assessment instrument used). For example, coping style~~s~~ in the Brief COPE scale can be classified into problem-focused (PFC), emotional-focused (EFC), adaptive (AC) and maladaptive coping (MC) strategies (Lopez, 2014:18-20; Carver, Scheier & Weintraub, 1989), *Appendix I*. Whereas, the Ways of Coping Scale [WCS] broadly classifies coping styles into problem and emotion-focused coping strategies (Folkman *et al.*, 1986), *Appendix I*. Each of these coping strategies is different and according to Lopez (2014) can be defined as follows: Emotion-Focused strategy refers to an individual’s attempt to reduce or manage the emotional distress by acting and thinking. Problem-Focused strategy refers to an action or problem solving geared towards altering the source of the stress. Adaptive coping strategy refers to positive strategies that were used by individuals but that did not meet the criteria to be categorised as either emotion-focused coping or problem-focused coping. Maladaptive coping strategy includes unhealthy coping strategies and the degree to which the participants were unable to cope.

Although most stressors elicit both problem-focused and emotion-focused coping, problem-focused coping tends to predominate when people feel that the source of stress can be modified, whereas emotion-focused coping tends to predominate when people feel that the stressor is something that must be endured (Folkman & Lazarus, 1980). Overall, how a stressor is perceived is central to the type of coping strategy employed. This interaction is described as the Transactional Model of Stress and Coping [TMSC] (Lazarus and Folkman, 1984)

2.5.1 TMSC: A Conceptual framework

The TMSC remains a dominant theoretical perspective on stress and coping because of its emphasis on the significant role of stress appraisals (Johnstone & Feeney, 2015). Appraisal refers to an assessment of the significance of a situation for one's well-being as well as the meaning-making of an encounter. Developed by Lazarus and Folkman (1984), the TMSC classifies appraisal into primary and secondary (Fig. 1).

Figure 1: Illustration of the Transactional Model of Stress and Coping

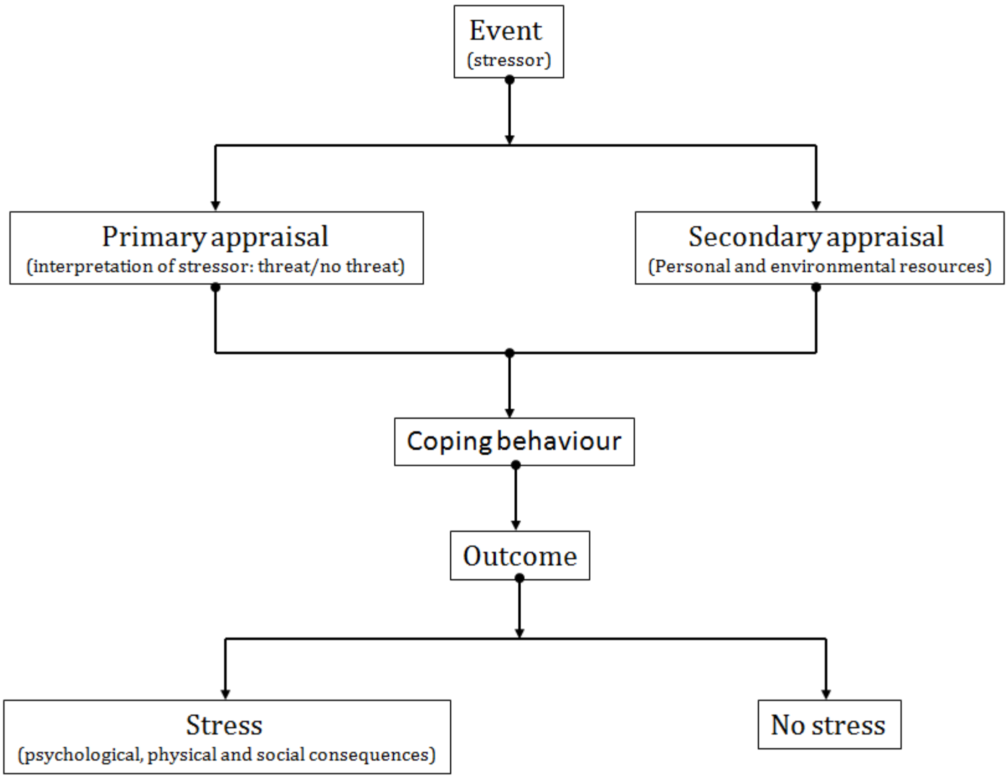


Illustration of the Transactional Model of Stress and Coping (adapted from Lazarus and Folkman, 1984)

Primary appraisal is the individual's initial rapid assessment. In which case, the person evaluates a situation as threatening or assesses the degree of perceived negativity. Secondary appraisal focuses on the individual's perceptions of coping resources and options, which can either reduce or increase the initial perceptions of situations. These coping resources are broadly classified into two groups namely; personal and environmental resources. Personal resources involve the use of personality or cognitive qualities to shape the coping process while environmental resources refer to the important contribution of the physical and social environment. The primary and secondary appraisals are what determines the choice of coping strategy (Folkman & Lazarus, 1985; Lazarus & Folkman, 1984) and influence the coping behaviours. The theory of TMSC shares a close connection with mindfulness (a predictor of resilience). In mindfulness, an individual acknowledges challenging situations and constructively deals with them by using objective and flexible responses rather than eroding reactions (Keng, Smoski & Robins, 2011). TMSC theory explains that psychological distress does not reside in either the person or the situation but in the transaction between the two. That is, stress is experienced when a person perceives that the demands exceed the personal and social resources the individual is able to mobilise. This means that the understanding of stressors and its interpretation, as well as responses to it, will vary in people (Kao & Craigie, 2013). Perceiving a stressor as a challenge instead of as a threat and possessing adequate coping resources, according to TMSC theory, can prevent the development of distress (Addonizio, 2011).

2.5.2 Assessing coping strategies

Several scales have been developed to evaluate coping in individuals. Some of these scales have been classified as ‘broadly applicable’. That is, they can be used in different situations depending on the identified stressor OR ‘situation specific’ meaning that they can only be used in specific situations such as in chronic pain (Kato, 2015). The COPE scale (Carver, Scheier & Weintraub, 1989) and the Ways of Coping Scale (Folkman & Lazarus, 1988) are classical scales that are widely used for assessing coping in individuals (Kato, 2015). They are both broadly applicable scales that have been validated. The brief COPE (Carver, 1997; University of Miami, 2007) consists of 28 items and is a modification of the full COPE (60 items). It was designed to encourage cooperation of study participants by removing the time burden of completing the full COPE. The brief COPE scale was used in this study to assess coping strategies of POU HCWs.

The 28 items of the brief COPE are rated on a Likert scale of 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*). The 28 items measure 14 coping styles and each coping style is assessed by means of two items. Respondents have to indicate to what extent they make use of each coping response on the four-point Likert scale. Higher scores indicate the frequent use of a particular coping response.

There is no reverse coding in this scale and it is computed as follows:

Self-distraction, items 1 and 19.
Active coping, items 2 and 7.
Denial, items 3 and 8.
Substance use, items 4 and 11.
Use of emotional support, items 5 and 15.
Use of instrumental support, items 10 and 23.
Behavioural disengagement, items 6 and 16.
Venting, items 9 and 21.
Positive reframing, items 12 and 17.
Planning, items 14 and 25.
Humour, items 18 and 28.

Acceptance, items 20 and 24.

Religion, items 22 and 27 and,

Self-blame, items 13 and 26.

2.5.3 Coping Strategies in Health Care Workers

Depending on the situation and individual personality, HCWs have been shown to use different coping methods. Evidence from research shows that coping strategies radically influence the degree of stress that is perceived. For instance, Kao and Craigie (2013) explained that the use of problem-focused coping and emotion-focused coping with a reduction in the use of avoidance coping (a form of maladaptive coping (Gibbons, Dempster, & Moutray, 2011) may lead to a decline in stress. This means that considering burnout as a form of stress, the coping strategies employed by HCWs can increase or decrease their risk of experiencing burnout.

A study on oncology nurses in Portugal reported that planning, active coping, acceptance and self-distraction were mostly used to relieve stress (Gomes, Santos & Carolino, 2013). Papadatou (2000) showed how oncology nurses adopted coping strategies at individual, collective and organisational levels. Across the levels, emotion-focused strategies seemed to predominate followed by some maladaptive strategies. Elements of the other coping strategies were also noticed. A study on oncology HCWs in Turkey showed that the use of a self-confident approach, a form of problem-focused coping was predominant in dealing with job stress (Isikhan, Comez & Danis, 2004). Whereas, a similar study in Brazil showed that oncology care staff predominantly used emotion-focused methods to cope with job stress (Rodrigues & Chaves, 2008). In South Africa, nurses in a tertiary hospital reportedly used positive reappraisal, planful problem solving and seeking social support strategies to cope with work stress (Makie, 2006). A relationship between religiosity (spirituality) and burnout as reported in a study of a group of Iranian nurses showed increased job satisfaction and ability to tolerate problems (stressful situations) at work (Salaree, Zareiyan, Ebadi & Salaree, 2014). Similarly, Matteia *et al.,* (2017) observed that the presence of religiosity as an adaptive coping method in a group of Italian HCWs was negatively associated with burnout dimensions.

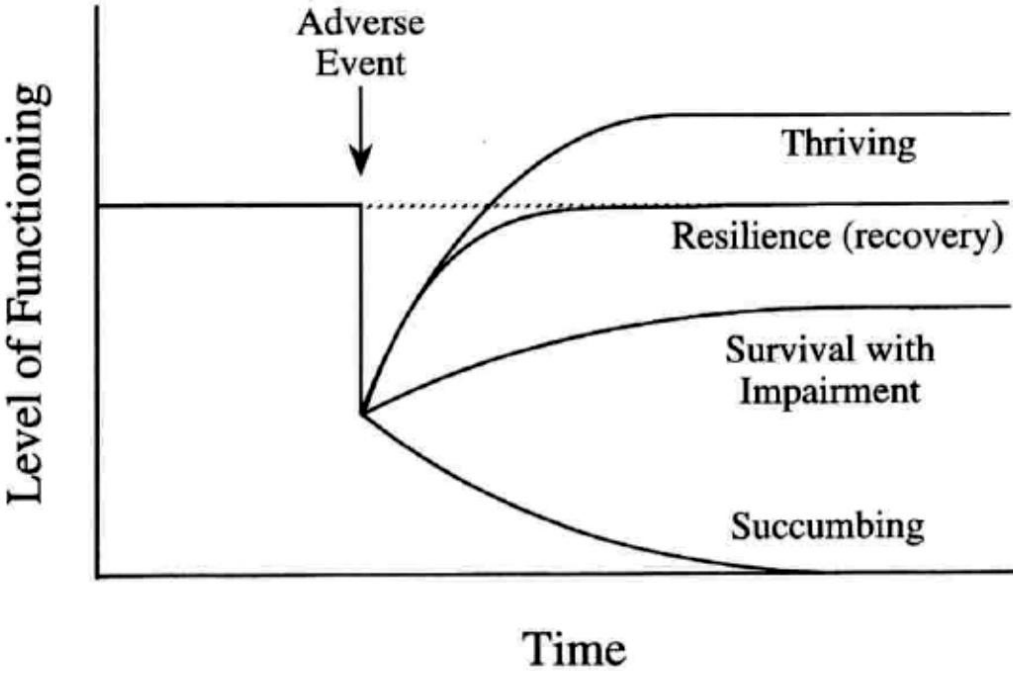
2.6 Resilience

While coping strategies can influence the experience of burnout, it also shares a strong connection with resilience. In secondary appraisal, personal resources (personality or cognitive qualities) available to an individual influence the coping process. A combination of these personal resources and environmental resources are what determines the level of resilience (Windle, Bennett& Noyes, 2011). The role of resilience in positive mental health has received growing research interest in the last decade (Lightsey, 2006). Resilience remains a key factor for maintaining optimal psychological and physical wellbeing amidst stressful life circumstances (Ryff & Singer, 2003). It is commonly described as the ability of an individual to return to a positive functioning capacity after experiencing challenges; that is to bounce back (Smith *et al.,* 2008). Resilience has been associated with less severe reactions to negative events, less aggression, and improved renewal of relationships (Cohrs, Christie, White, & Das, 2013). Individuals with a high resilient personality are observed to have personal qualities such as positive self-image, optimism, organisation and a sense of control (McAllister & McKinnon, 2008). With these qualities, they are able to build supportive structures with their family and friends, which are useful in distressing situations (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003). Similarly, with a high resilient personality, many individuals experience lower levels of generalised emotional distress, depression and anxiety as well as higher levels of positive affectivity, perceived well-being and acceptance of disability (Cohrs, Christie, White, & Das, 2013). The increasing focus on resilience has however been accompanied by a variety of controversies especially, about its definitions. As such, a basic understanding of the concept of resilience is important.

2.6.1 Conceptual Framework

Some of the definitions that have been used to explain resilience include the ability to bounce back or recover from stress; to not become ill despite significant adversity and; to adapt to stressful circumstances (Smith *et al.,* 2008; Carver, 1998; Tusaie & Dyer, 2004). A graphical representation of resilience (Fig. 2) describes the concept in relation to other conditions such as succumbing and thriving (Carver, 1998). Here, resilience is shown as the ability to return to a previous functioning capacity; that is to 'bounce back'.

Figure 2: Potential responses to trauma/challenge



Potential responses to trauma/challenge. A downturn (physical or psychological) in response to a traumatic or stressful event can be followed by a downward slide and eventual succumbing, by survival in an impaired condition, by recovery to the prior level of functioning, or by eventual attainment of a level of functioning superior to that displayed earlier- thriving. Adapted from "Resilience and thriving in response to challenge: an opportunity for a paradigm shift in women's health" by O'Leary, V. E. and Ickovics J.R. 1995 *Women's Health (Hillsdale, N.J.)* 1(2):121-142; In Carver (1998)

The ability to bounce back (resilience) is not necessarily a trait but a developmental process (Lightsey, 2006) that requires the strengthening of protective factors (Keye & Pidgeon, 2013) or resources. Resources for resilience can be found in the individual or its environment (Windle, Bennett& Noyes, 2011). These resources are closely associated with adopted coping strategies. Personal resources involve the use of personality or cognitive qualities to shape the coping process while environmental resources refer to the important contribution of the physical and social environment. Research has shown that effective coping strategies are associated with higher resilience (Portzky, Wagnild, De Bacquer, & Audenaert, 2010). Two other important concepts that have been linked to resilience are mindfulness and exquisite empathy.

2.6.2 Resilience, Mindfulness and Exquisite empathy

Mindfulness is a recognised predictor of resilience (Chavers, 2013). As described by Bishop *et al.* (2004), “Mindfulness is a skill, which enhances adaptive coping to stressful events by the self-regulation of attention towards the immediate experience, and an open and accepting orientation towards one’s experience of the present”. In other words, in the presence of stress or challenges, individuals learn to acknowledge the presence of negative thoughts and emotions rather than trying to control them forcibly. In so doing, there is a possibility that there will be a rise in the awareness to the transient nature of these negative thoughts, emotions, and body sensations, which will, in turn, lead to more flexible and objective responses rather than reactions (Keng, Smoski & Robins, 2011). The skill of mindfulness in care also becomes very important when applying the concept of exquisite empathy, which proposes that it is possible to be empathic towards clients in our clinical encounters in a way that could be enriching and healing for both patients and clinicians (Weininger & Kearney, 2011). Exquisite empathy, according to Harrison and Westwood (2009), refers to empathy that involves being:

a. *highly present* by way of mindfulness meditation;
b. *sensitively attuned* by acquiring both self-knowledge and dual- awareness (awareness of self and client) in a highly empathic way;
c. *well boundaried* by acknowledging the limits of one's ability (including legal and ethical boundaries);
d. and having *heartfelt* interactions by learning to allow some illumination into one's emotional core without losing oneself.

To achieve this level of empathy, however, requires developing the skill of self-awareness (Harrison and Westwood, 2009) which comprises of self-knowledge, self-empathy, preparing the mind through mindfulness practice and contemplative awareness (Weininger & Kearney, 2011). Thus, it can be inferred that the type of adopted coping style, as well as the practice of mindfulness and exquisite empathy, all contribute to the level of resilience in HCWs.

2.6.3 Evaluation of Resilience

Most of the scales developed for evaluation of resilience in individuals have been used successfully in different populations; however, there is no recognised 'gold-standard' for resilience measurement (Windle, Bennett& Noyes, 2011). In a review of 19 commonly used resilience scales, Windle, Bennett & Noyes (2011) reported that three measurement scales namely the Brief Resilience Scale (BRS), the Connor-Davidson Resilience scale (CDRISC) and the Resilience Scale for Adults (RSA) have the best psychometric ratings. The assessment was made using published quality assessment criteria to evaluate the psychometric properties of the nineteen scales. The set of criteria used to assess the psychometric properties of the scales include content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects and interpretability. The three scales (CDRISC, BRS and RSA) have also have been developed for use in adult populations.

The CDRISC (25 items) and the RSA (37 items) were designed to reveal the individual assets and resources that facilitate resilience (Ahern, Kiehl, Sole & Byers, 2006). As such, they may be better suited for studies that seek to determine the presence/ absence of resources or for evaluating the process leading to a resilient outcome. On the other hand, the BRS (six items) evaluates resilience as an outcome; explicitly meaning the ability to ‘bounce back.’ In this research, resilience was interpreted as an outcome so the BRS was well suited for the evaluation of resilience in POU employees.

2.6.4 BRS

The BRS, developed by Smith *et al.* (2008), contains six items and its answers are scored on a 5-point Likert-scale from 1= strongly disagree to 5= strongly agree. Three items were formulated negatively, for example, I tend to take a long time to get over setbacks in my life. Total scores are mean scores of all answers and thus range from one to five. Higher scores indicate a better and a well-developed ability of resilience. Smith *et al.* (2008) tested the BRS in different samples on its psychometric quality. A factor analysis showed that the BRS is unidimensional and 55% - 67% of the variance could be explained by this factor. The loadings on the factor were between 0.68 and 0.91. Cronbach’s alpha was between 0.80 and .91 and test-retest reliability was 0.69 for one month, 0.62 for three months.

2.6.5 Resilience in Health Care Workers

Being resilient has been found to be protective against burnout. Kutluturkan *et al.* (2016) reported that high resilience in a group of oncology nurses was negatively associated with emotional exhaustion and depersonalisation but positively associated with increasing personal accomplishments. The study also found that there was an association between increased level of resilience and improved ability of the participants to cope with negative conditions, adapt to situations and an increased sense of achievement. Similarly, a study on oncology staff in the US showed that despite encountering stressful situations, more resilient doctors were less likely to experience distress while the less resilient doctors experienced greater distress (McFarland & Roth, 2016).

2.7 Summary

Burnout in the medical field is a work-related stress condition that arises from prolonged therapeutic relationships between HCWs and patients; it is characterised by chronic exhaustion, cynicism and inefficacy. By virtue of their work, HCWs, particularly those working in critical units such as the POU, are exposed to a plethora of emotions that predisposes them to experiencing burnout. Part of these emotions includes the need to achieve cure in patient treatment, fear of developing similar diseases as patients or dying and feelings of failure due to patients' non-response to treatment (Meier, Back & Morrison, 2001). These emotions are intense and with repeated exposure increase the risk of experiencing burnout in the HCWs. However, not every exposure leads to burnout. Individual and situational factors contribute to the risk of experiencing burnout thus leading to a variation in burnout prevalence across individuals and specialities. The use of effective coping strategies and having an increased level of resilience both reduce the risk of experiencing burnout by way of strengthening personal and environmental resources.

This research addressed the three concepts- burnout, coping and resilience- and their interrelationship in a group of POU professionals. By so doing, the important role of mental health of HCWs on personal-professional harmony and overall health care efficiency is acknowledged and can be improved.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter outlines the study design, inclusion and exclusion criteria, measuring instruments, data collection and analysis.

3.2 Study design

This research utilised a mixed method (quantitative and qualitative) approach to explore burnout, coping and resilience amongst POU HCWs. The three components of burnout (emotional exhaustion, depersonalisation and reduced personal accomplishment) were investigated using the MBI-HSS tool. Resilience was measured with the BRS while the adopted coping strategies and opinions of individual HCWs were assessed using the brief COPE and researcher-designed questions respectively. The MBI-HSS, BRS and brief COPE measurements formed the quantitative aspect of the study while the researcher developed questions constituted the qualitative aspect.

3.3 Study setting

The research was conducted in Red Cross War Memorial Children’s Hospital (RCWMCH), Cape Town. RCWMCH is a tertiary and a teaching hospital located in the southern suburbs of Cape Town. It is the largest children’s hospital in Sub-Saharan Africa and it provides all levels of multidisciplinary care at an international level whilst taking into account the limitations of being located in a low resource country. Children from all the nine provinces of South Africa and from all over Africa are referred to this hospital by referral hospitals, clinics and smaller hospitals. It is one of two hospitals with a paediatric oncology unit (POU) in the whole of the Western Cape Province. The POU (RCWMCH) manages all childhood cancers (and haematology cases). Approximately 140 newly diagnosed cancer patients are treated annually in the unit. There is a 23- bed nursed facility for the patients when admission is needed. Approximately 30 primary POU staff (doctors, nurses and social workers) attend to the patients in the unit. Services are provided on the ward (inpatients) and in the clinics (outpatients). Consultations and opinions are sometimes given over the telephone and electronic media. On average, there are 5000 inpatient admissions and 5000 outpatient visits to the unit per year. The unit provides palliative care services to patients and works in conjunction with other units such as the transplant, radiation and neurosurgery units (personal communication with Red Cross POU staff). Academic activities for RCWMCH are primarily coordinated in conjunction with the University of Cape Town.

3.4 Study population

Health professionals enlisted for the study include primary POU ward staff and non- primary POU staff. The inclusion of participants across various disciplines was to ensure that all staff interacting with POU patients were considered regardless of the level of interaction. Non-primary POU staff were recruited via a direct link with the POU only. The combined total population of POU staff was approximately fifty people.

3.4.1 Definitions

Primary POU staff refers to those HCWs who principally admit and manage children with cancer at the hospital. They liaise with other departments and units in and outside the hospital to provide holistic care to their patients. In this study, primary POU staff include doctors, nurses, social workers, pharmacists, administrative staff and hospital-designated clerics dedicated to the POU ward at RCWMCH. Non-primary POU staff refers to HCWs in other departments in the hospital who work in conjunction with primary POU staff to manage paediatric oncology patients. They include occupational therapists, physiotherapists, radiation oncology/ radiotherapy, neuro-oncologists, palliative care team, clinical psychologists and surgeons.

3.4.2 Sample

Total sampling method was used because the POU in RCWMCH comprises of a well-defined population who share a common characteristic and are relatively small. Key persons in the POU were contacted about the intent to conduct the research and a neutral contact person was identified. Thereafter, meetings were organised with the unit where the research process was explained and information about the unit was obtained. After getting approval from the necessary authorities to conduct the research, the contact person distributed the paper questionnaires and the link to the electronic questionnaire was shared with POU staff that met the research criteria.

Inclusion criteria

Only employees of RCWMCH were invited to participate in the study. Primary POU staff that were recruited into the study included physicians, nurses, social workers and clerics. Only non-primary POU staff that were identified by POU administration (as collaborators) were recruited for participation. Non-employees of RCWMCH and undergraduate students were not included in the study because of absent documentation of the non-employees and frequent rotation of undergraduate students in the unit. This exclusion improved the ability to trace records and completed surveys.

3.5 Research tools

Included in the survey instrument were four standardised scales used to assess the degree of burnout, coping and resilience. The researcher acknowledges the salience of scientific and methodological rigour that should guide the choice of measures; however, several constraints must be noted. First, few psychological measures have been normed and validated for use in South Africa. Secondly, burnout in the health sector remains largely under-researched in the South African context. Hence, measures were selected on the basis of its suitability for inclusion in a self-administered, online survey. The MBI, brief COPE and the BRS scales were used to evaluate burnout, coping and resilience respectively. Researcher-developed open-ended questions were also used to provide additional insight into adopted coping methods and participants' suggestions. The three standard questionnaires are all validated research tools. The MBI's construct validity has been assessed with both exploratory factor analysis and confirmatory factor analysis (Maslach, Jackson, & Leiter, 1996: 9-13). The reliability coefficients for the MBI as reported by its authors are 0.90 for emotional exhaustion, 0.79 for depersonalisation and 0.71 for personal accomplishment. In South Africa, Naudé and Rothmann (2004) confirmed the three-factor structure of burnout (EE, DP, and PA) as well as the internal consistency of the subscales as contained in the MBI-HSS. Exploratory factor analysis and reliability analysis carried out on the brief COPE have also yielded satisfactory results (Carver, 1997). Studies in South Africa have used the brief COPE scale with reported Cronbach alpha ranging from 0.53 to 0.65 (Jordaan, Spangenberg, Watson & Fouchè, 2007). Smith *et al.* (2008) tested the psychometric quality of the BRS in different samples. A factor analysis showed that the BRS is unidimensional and 55% - 67% of the variance could be explained by this factor. The loadings on the factor were between 0.68 and 0.91. Cronbach's alpha was between 0.80 and 0.91 and test-retest reliability was 0.69 for one month, 0.62 for three months. In the South African context, Meintjies (2016) reported a Cronbach alpha of 0.72 for the BRS and demonstrated the reliability and high degree of consistency between multiple measurements of the scale. Before the commencement of formal data collection, a pilot study was conducted on all the research collection tools.

3.6 Pilot study

This is a preliminary version or trial run of a major study done in preparation for a full-scale research (Polit, Beck & Hungler, 2001: 467). This trial run also allows for pretesting of research instruments or procedures used in a study (Baker, 1994:182-183). Pilot study confers various advantages on a research process. According to Welman and Kruger (1999:146), pilot studies allow researchers to check the operationalisation of independent variables and to identify potential flaws in research processes such as in the adequacy of instructions and time limits. In addition, it enables the detection of unclear or ambiguous items in a questionnaire. Pilot studies also allow researchers to observe non-verbal behaviours of participants that may signify any discomfort experienced regarding the content or wording of items in a questionnaire. In the current research, the aims of the pilot study were fourfold:

1. To estimate the time required to complete the survey questionnaire.
2. To familiarise the researcher with the methodology and research instruments with a particular focus on the dynamics around conducting a survey in a tertiary health facility.
3. To determine whether the researcher developed questions were easy to understand and initiate an appropriate response.
4. To determine whether any changes to the methodology and/or research instruments were required.

The enrolment of about 10% -20% of the actual sample size into a pilot study is considered reasonable (Baker, 1994) and study surveys can be administered personally, electronically or through other means (Simon, 2011). For the purpose of this research, the pilot study included the administration of electronic and paper versions of the questionnaire to eight HCWs (16% of the actual sample size). The average time required for completing the questionnaire was satisfactory at 25 to 30 minutes. Based on the findings of the pilot studies, minor changes were made to the researcher-developed questions. Some insights were obtained into the constraints of data collection amidst a busy work environment and the logistics of retrieving completed questionnaires. Information gathered from the pilot study guided the final draft of the survey questionnaire.

3.7 Ensuring scientific rigour in qualitative research

Evaluating the worth of any research endeavour, regardless of the approach taken, is an integral part of the research process. In quantitative studies, the worth and measurable quality of such researches are usually expressed in terms of reliability and validity (Heale & Twycross, 2015). Qualitative studies, on the other hand, use different constructs and terminologies to judge the quality of the research, namely the rigour and trustworthiness of the research. The scientific rigour of a qualitative research is examined in terms of credibility, transferability, dependability and confirmability (Korstjens & Moser, 2018). The description of these concepts and how they were achieved in this study are discussed below.

3.7.1 Credibility

Credibility refers to how believable the research is, that is, the ability of the research findings to share a logical relationship with reality (Roberts and Priest, 2006). In this research, credibility was enhanced by adopting a host of strategies. The researchers ensured **prolonged engagement** by investing sufficient time to become familiar with the POU setting and context in order to build trust and obtain rich data. There was also **methodological coherence** between the research method and the research questions. Additionally, **reflexivity or self-description** that acknowledges and reduces researcher bias was applied. This took the form of a pre-study narrative about personal experiences that relate to the research. This narrative helps to “bracket” the researcher’s biases and assumptions (Barnard, 2009). Triangulation was also employed to enhance credibility in this study. **Triangulation** refers to a process where a research phenomenon has been thoroughly investigated by using multiple perspectives for mutual confirmation of data (Korstjens & Moser, 2018; Knafl & Breitmaye, 1989). In this study, there was triangulation of data sources by obtaining data from different health professionals at different times and through different means (online/paper surveys). Similarly, there was triangulation of investigators. The three principal investigators interacted and collected data from study participants at different times. Another strategy for maintaining credibility in this study is peer review. There were regular discussions about the study with supervisors and thorough scrutiny of the data analysis.

3.7.2 Transferability

Transferability is a concept that examines how generalisable a qualitative research is and how the findings can be applied to other settings with other respondents (Korstjens & Moser, 2018). However, not all qualitative studies can be transferable because of the situational uniqueness of each study that may not be the same in other settings (Krefting, 1990). In this study, information-rich data was obtained from responses to semi-structured questions and the findings are applicable to this particular study population until tested on other study populations. Nonetheless, the sample and methods of the research are transferable to other settings to generate similar findings.

3.7.3 Dependability

Dependability refers to how consistent and reproducible research findings are (Korstjens & Moser, 2018). In this study, the exact methods of data gathering, analysis, and interpretation were carefully described and documented. As a form of peer review, research supervisors carefully monitored the research process. The detailed description of how the data was analysed and how the results were achieved implies that another researcher can repeat the study.

3.7.4 Confirmability

This illustrates that research findings are accurate perspectives of the participants and not mainly the views or imaginations of the researcher (Korstjens & Moser, 2018). In this study, for the purpose of reflexivity, the researcher documented her bias and assumptions in a preresearch journal (background narrative). In addition, participants own words were used in the findings and discussion, thus making the data traceable. The research methodology and how themes were generated were documented to enhance confirmability.

3.8 Data collection methods (*see Appendices IIa - IIe*)

This study used a questionnaire comprising of five segments that include the MBI, brief COPE and BRS. The first segment was the consent page. The second segment documented the socio-demographic variables such as gender, age, and years of experience of the participants. The third segment was the MBI that evaluated the level of burnout. The fourth segment evaluated resilience using the BRS while the fifth segment assessed coping strategies using the brief COPE and open-ended questions. The MBI, brief COPE and BRS segments are the quantitative aspects of the study since they are structured to have quantifiable representation. The open-ended questions represented the qualitative aspect. The questions were intended to explore other self-reported coping mechanisms. All questionnaires were administered in English language (only) via paper and electronic media.

The data was collected and managed using the REDCap (Research Electronic Data Capture) tools hosted and managed by the University of Cape Town's eResearch Centre and the UCT Clinical Research Centre. REDCap is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages, and 4) procedures for importing data from external sources.

In situations where a participant preferred paper questionnaire, this was provided and the data re-entered into REDCap. The earlier identified contact persons at the POU distributed 50 questionnaires (paper and electronic link). Completed electronic questionnaires were automatically returned to the researcher while the paper versions were submitted in a one way sealed drop box in an office with key control and limited access to the contact person. The completed questionnaires were subsequently returned to the researcher. Confidentiality was maintained throughout the research process. Data was collected over a period of three months (mid-October 2017 to January 2018).

3.9 Data storage and analysis

Participants completed the questionnaire either electronically via the UCT based REDCap tool or on paper questionnaire depending on their preference. All the questionnaires were stored in a locked, safe place to which only the researcher and supervisors had access. Electronic copies were stored on a password-protected computer. All the information compiled from the questionnaires was extracted, interpreted, analysed and discussed. Captured data will be deleted after five years.

3.9.1 Quantitative data analysis

A. MBI

The MBI has separate subscales that measure the three stages of burnout with EE having nine questions; DP, five questions; and rPA, eight questions. All the questions were scored on a Likert scale ranging from 0 (never) to 6 (every day). The scores in each subscale were added separately and interpreted. The third Edition of the MBI manual (Maslach, Jackson, and Leiter, 1996:5) was used to interpret the results of the MBI-HSS. Burnout is not a rigid dichotomous variable, which is either present or absent. Rather, it is a degree of experienced feeling conceptualised as three-pronged variables. Burnout ranges from low to high with a moderate intermediate. High scores for EE and DP and a low score for rPA indicate a high level of burnout. An average score for all three stages indicates an average degree of burnout while low scores for EE and DP with a high score in rPA indicates a low level of burnout.

The completed MBI-HSS instrument of each participant was scored with a scoring key (Table 1) and then grouped as low, average or high. While there are different scoring keys for different professional groups, the overall scoring key that comprises of the combination of values of different professional groups was used in this study. This is to accommodate the different professionals represented in the study sample. Mean and standard deviation for each subscale was computed and compared to other variables. The association between the MBI-HSS scores and other information obtained from respondents (demographic data, resilience and coping methods) were further investigated. Kruskal Wallis test was used to investigate the relationship between burnout and the demographic data.

Table 1: Scoring key for burnout in the MBI-Human Services Survey

	Range of experienced burnout		
MBI Subscales	**Low**	**Average**	**High**
EE	≤16	17-26	≥27
DP	≤6	7 to 12	≥13
rPA	≥39	38-32	≤31

The categorization of MBI scores by Maslach, Jackson, and Leiter (1996:6). Scores for each MBI subscale is derived from answers to specific questions in the MBI. Ranging from 0-6, the responses are summed up to get the final score for each subscale.

B. Brief COPE

The brief COPE (Carver, 1997) is a 28-item abridged version of the full COPE. It includes items on 14 sub-scales (coping styles) namely: active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioural disengagement, and self-blame (*see Appendix I for explanation*). Each of the 14 sub-scales has two items. Respondents have to indicate to what extent they make use of each coping response on a four-point Likert scale from 1 (I usually don't do this at all) to 4 (I usually do this a lot). Scores for each coping style were derived from the sum of responses to its pair of items on the brief COPE. The higher the score for particular coping styles indicates the more frequent that style is used. The mean and standard deviation of the scores for each coping style were calculated in order to identify the predominant coping style of the respondents (maximum mean). The dimensions of the brief COPE scale were correlated with that of the MBI-HSS using Pearson product-moment correlation coefficients.

C. Brief Resilience scale (BRS)

The BRS consists of six items and its answers are scored on a 5-point Likert-scale from 1= strongly disagree to 5= strongly agree. Three items (2, 4 and 6) were formulated negatively, for example, I tend to take a long time to get over setbacks in my life. These negatively worded items were reversed scored before summing total scores. Total scores are mean scores of all answers and thus range from 1 (low resilience) to 5 (high resilience). The values so derived were subsequently interpreted according to the scoring key (Table 2). The relationship between burnout and resilience in the respondents was investigated with the Kruskal Wallis test and Pearson product-moment correlation coefficients.

Table 2: Classification of resilience scores in BRS

BRS score	Interpretation
1.00-2.99	Low resilience
3.00-4.30	Normal resilience
4.31-6.00	High resilience

Adapted from Smith *et al.* (2013: 177)

D. Statistical Analysis

Data analysis was done using Microsoft Office Excel (2010). Associations between variables were investigated using Kruskal Wallis test and Pearson product-moment correlation coefficients. For Pearson correlation, a cut-off point of 0.30 (medium effect) was set for the practical significance of correlation coefficients (Laerd statistics, 2013; Kloppers, 2002).

3.9.2 Qualitative data analysis

The data collected was analysed using an inductive approach, meaning that conclusions emerged from the data. The first step in the analytic process involved deducing emergent ideas from the open-ended responses of participants. Common meanings were grouped into categories and further into categories of description (conceptions). The logical interactions present between multiple categories of description (conceptions) were examined thoroughly. The result was subsequently presented based upon these interactions. In some instances, verbatim reports were presented to ensure that the language or essential meanings as expressed by respondents were preserved. This provided an insight into how findings and interpretations were derived from the data. The use of verbatim reports in qualitative research confers a host of other advantages. For example, it can strengthen the process of critical appraisal of situations or policies in order to provide evidence-based interventions; it presents spoken words to enable participants' voice; and it deepens readers' understanding (Corden & Sainsbury, 2006a; 2006b). A goal of this research is to improve awareness and understanding of issues around the mental health of HCWs and thus influence policy changes where necessary.

3.10 Feasibility and ethical considerations

The study was feasible in terms of cost and resources (i.e. human resources and financial considerations) needed to conduct the study. Ethical clearance for this study was obtained from the UCT and RCWMCH Clinical Research Ethics Committees before the commencement of the study (HREC REF: 051/2017). The study was conducted under standard ethical norms (Department of Health, Republic of South Africa [DoH,RSA], 2015) in accordance with the foundational principles of good clinical practice, namely autonomy, beneficence, non- maleficence and justice, as set out in the Declaration of Helsinki (World Medical Association Declaration of Helsinki, 2008) and the Nuremberg code (1948).

In accordance with the ethical codes, autonomy was maintained in this study by ensuring participants were recruited into the study on a voluntary basis. Participants could exit the study at any time they wished without any consequences. Informed consent was obtained from participants prior to the completion of the questionnaire. They were required to give their consent by appending their signature (or click ‘yes’ electronically) in the space provided at the bottom of the information and consent page. The benefits this study conferred on the participants were two-fold. One, the findings of the research and recommendations will be presented to the hospital management for awareness and implementation of appropriate intervention where necessary. Two, participants will gain insight into their own experiences and their adopted coping mechanisms. This has the tendency of creating a more reflective approach to patient care and as a result be of benefit to the health workers and the patients they care for.

Although no actual harm to participants was anticipated, the possibility that taking the survey could cause emotional or mental stress was mediated by providing immediate confidential professional assistance to participants as well as referral options (see below). Justice was maintained by ensuring that all staff (primary and non-primary POU staff) involved in POU care were invited to participate in the study. The researchers conducted the study with respect for the dignity of all the participants. Participants were informed about the research purpose and rationale for the study before they completed the questionnaire. All questionnaires and information were safely stored and will be destroyed after five years. Confidentiality was maintained in the study so that participants could fully express themselves without the worry of being identified. No personal identifiers were requested in the questionnaire (paper and electronic), such as the full date of birth, staff number or names. The electronic data-capturing programme allowed for non-exposure of personal identifiers when questionnaires were being completed and returned.

Respondents who realised that they were experiencing a high level of burnout or who self-identified as being stressed while filling the questionnaire and needed some form of assistance were advised to contact any of the following for assistance:

1. Di Burger. Paediatric Palliative Unit, Rondebosch Medical Centre, Cape Town, for private discussion or counselling.
2. Independent Counselling and Advisory Services (ICAS) of individual institutions, for support.
3. The Organisational Health and Wellness Department (UCT staff only).

   Tel: (021) 650 2154 E-mail: ashley.taylor@uct.ac.za
4. The researchers, for directions and information (contact details on consent form).

3.11 Strengths of the study

The use of a universally accepted inventory in the evaluation of burnout and coping strategies made the inference that was drawn from the generated data reliable. In addition, using questionnaires conferred some advantages in data collection and analysis (StatPac, 2014). First, it is cost effective and can be administered to many people at the same time. Second, the collection of data for each part of the study was synchronous in time and place without the need to organise separate face-to-face interviews or focus group discussions. This was an advantage considering the recognised time constraint of the HCWs. Third, the data for each person was easier to analyse since they were all collected in one document thus preventing errors or loss of data. Besides these, giving the participants the option to fill the questionnaire at their convenience removed any possible pressure on them.

Collecting data with the REDCap programme gave the study a robust and modern appeal. Data could be entered and assessed from any part of the world and it was safe and secure. Results from the study can be used to prepare a framework for addressing job-related stress/issues in paediatric oncology employees and by extension, other advanced care departments.

3.12 Limitations of the study

The generalisation of the findings in this study is quite limited because the research was confined to one setting in one city in South Africa. In addition, different results could be obtained if the study was conducted in another environment or with another group of participants (HCWs) in South Africa because of the significant diversity that exists in the country’s population, which is also reflected in the staff composition of the healthcare system. The healthcare teams of the study site comprise of people from different cultural, racial, socioeconomic and educational background; and a majority of these people have a contrasting history of either privilege or deprivation. The combination of these factors can contribute to the degree of variation in results that can occur in different study settings thus further limiting the generasibility of the results. While this research has brought to the fore the prevalence of burnout and the adopted coping strategies, a well-funded research with favourable time and logistics will generate data that can be applied in similar settings. Furthermore, the level of burnout and other variables were measured at a single time point, thus, the application of the results for future work should be done with caution due to changes that might have occurred. Another limitation that cannot be ruled out is non-response and volunteer bias. HCWs that refused to participate in the study may have been potential candidates for burnout while HCWs who volunteered to participate may have been those that were not experiencing burnout. Researcher bias could also have influenced the research reports, however, maintaining reflexivity, proper documentation of the research process and regular discussions with supervisors curbed this. In relation to certain demographic characteristics, the number of respondents was too small to make considerable comparisons. For example, only one male participated in the study. Finally, the link between the demographic data and the research findings could have provoked further discussions and recommendations. However, because the associations between these two variables were not statistically significant in this study, the discussion and recommendations in this regard were limited.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter outlines the results and analysis of the collected data. The first section provides an overview of the demographic profile of the respondents, burnout scores, resilience scores and coping methods. The second section presents the measures of association between burnout and the respondents' demographics, coping methods and resilience.

SECTION 1

This section presents the descriptive statistics of the study participants, their burnout score, resilience score, prominent coping strategies and responses to the researcher-generated questions.

4.2 Response rate

The survey was sent to 50 HCWs in the POU. Twenty-five people returned the survey, representing a 50% response rate. Five respondents signed the consent form but did not complete other aspects of the survey. These five were excluded from the data analysis. In total, 20 responses were analysed. Infrequently unanswered questions were taken into consideration during data analysis.

4.3 Demographics

Most of the responses were from females (95%) and from nurses (80%). Of the total respondents, 45% were between 36-45 years, while age groups 25-35years and 46-60years accounted for 20% each. The respondents who were married and those who were single constitute 45% each. Of the total number of respondents, 95% had at least one child. Those with postgraduate education represented 35%. The respondents who had worked in the POU for more than a year constitute 85%. Table 3 summarises the demographic characteristics of the respondents.

Table 3: Demographic data

Demographic characteristics		Frequency (N)	Percentage (%)
Gender	Male	1	5
	Female	19	95
Age	25- 35	4	20
	36-45	9	45
	46-60	4	20
	>60	1	5
	unknown	2	10
Marital status	single	9	45
	Married	9	45
	Divorced	1	5
	unknown	1	5
Number of Children	0	2	10
	1	8	40
	>1	9	45
	unknown	1	5
Level of Education	graduate	6	30
	Post grad	7	35
	unknown	7	35
Profession	POU physician	2	10
	POU nurse	16	80
	Pharmacist	1	5
	Administrator	1	5
Duration of work experience	1- 5mnths	1	5
	1-5 yrs	5	25
	6-10 yrs	4	20
	>10 yrs	7	35
	unknown	3	15
Duration of POU work experience	1- 5mnths	1	5
	1-5 yrs	6	30
	6-10 yrs	7	35
	>10 yrs	4	20
	unknown	2	10

4.4 Burnout

Scores for emotional exhaustion (EE), depersonalisation (DP) and reduced personal accomplishment (rPA) for each respondent were derived from the sum of values to specific questions on the MBI (Table 4). For each burnout subscale, the mean and standard deviation was calculated (Table 5). The mean score on EE was 16.9, on DP 7.55 and 30.55 on rPA. This shows that on average, the respondents experienced moderate to high levels of burnout as evidenced by average levels of EE and DP but high levels of rPA.[1]

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[1] Reminder: interpretation of scores for rPA/PA is opposite that of EE&DP. The higher the rPA/PA scores, the higher the level of personal accomplishment. The lower the rPA/PA scores, the lower the level of personal accomplishment.

Table 4: Derived scores for EE, DP and rPA for each respondent

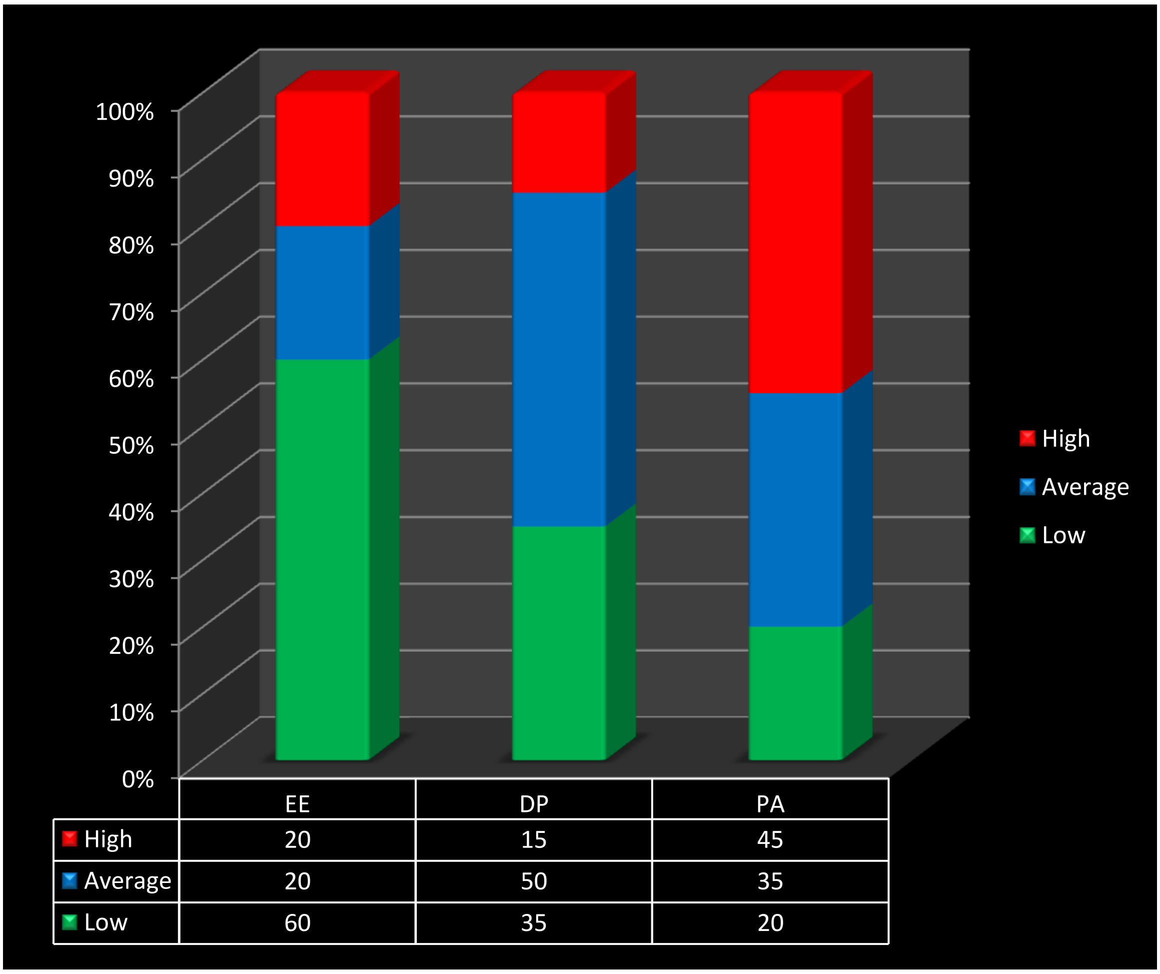
	Subscales (sum of responses to specific questions on the MBI)		
Respondents	**Emotional Exhaustion (Sum of Q1,2,3,6,8,13,14,16,20) =**	**Depersonalisation (Sum of Q5,10,11,,15,22) =**	**reduced Personal Accomplishment (Sum of Q 4,7,9,12,17,18,19,21) =**
R 1	15	8	43
R 2	46	9	35
R 3	20	7	27
R 4	35	11	34
R 5	22	16	35
R 6	19	10	17
R 7	23	9	31
R 8	6	0	40
R 9	7	1	28
R 10	10	5	42
R 11	15	0	32
R 12	28	24	29
R 13	11	2	30
R 14	13	7	41
R 15	15	10	16
R 16	4	7	20
R 17	32	16	33
R 18	3	2	32
R 19	11	7	14
R 20	3	0	32

Table 5: Summary of burnout subscales

Subscale	Frequency (N)	Mean	Median	SD	Range
EE score	20	16.9	15	11.506977	3-46
DP score	20	7.55	7	6.1769947	0-24
rPA score	20	30.55	32	8.4322376	14-43

The derived scores of the three burnout dimensions (EE, DP, rPA) of respondents were compared with the values in the scoring key (Table 1) and were subsequently grouped as Low, Average and High. In this study, 15%- 45% of respondents experienced a high degree of burnout, as presented in Figure 3.

Figure 3: Burnout experienced by POU HCWs



	EE	DP	PA
🟥 High	20	15	45
🟦 Average	20	50	35
🟩 Low	60	35	20

4.5 Resilience

Resilience scores were derived from the average of responses to each question in the BRS. The final scores were compared with the standard values (Table 2) and classified accordingly. On average, the respondents exhibited normal level of resilience as presented in Tables 6 and 7. Figure 4 shows that 70% of the respondents exhibited normal levels of resilience while 30% exhibited low resilience.

Table 6: Resilience scores for respondents

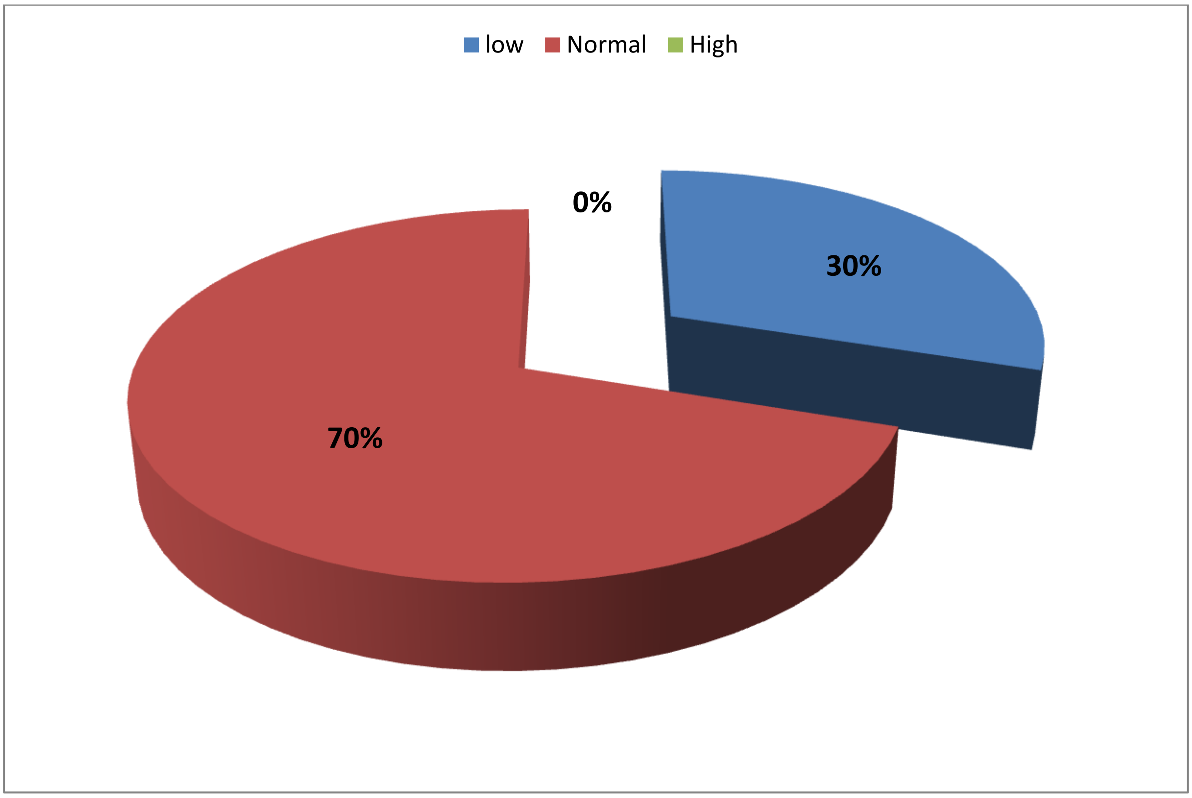
Respondents	Resilience score	level of resilience
1	4	Normal
2	2.33	low
3	3.67	normal
4	2.67	low
5	3.5	normal
6	2.5	low
7	2	low
8	4.17	Normal
9	3.5	Normal
10	3	Normal
11	4.17	Normal
12	1.67	Low
13	3	Normal
14	3.83	Normal
15	3.17	Normal
16	2.83	Low
17	3.17	Normal
18	3.17	Normal
19	3	Normal
20	3	Normal

Table 7: Summary of resilience scores

Frequency (N)	Min. score	Max. score	Mean score	Median score	SD	Range
20	1.666667	4.1666667	3.116667	3.0833333	0.679912	1.67-4.17

On average, the respondents exhibited normal level of resilience

Figure 4: Level of resilience in study respondents



4.6 Coping

To evaluate the predominantly used coping strategies, scores were constructed for the 14 dimensions of the brief COPE. The results showed that participants were not limited to using only one coping style. Values close to or higher than ‘5’ show a higher frequency of use of each one of the dimensions (Table 8). The coping styles predominantly used by the respondents were positive reframing, religion, acceptance, planning, self-distraction and active coping. The least used coping styles were substance use, denial and behavioural disengagement.

Table 8: Summary of coping styles (brief-COPE) used by respondents

Coping styles (responses summed on the Brief COPE)	Min	Max	Mean	Median	Mode	SD
Self-distraction (1&19)	**3**	7	**5.05**	5.5	6	1.234376
Active coping (2&7)	**2**	8	**5.1**	5	5	1.4832397
Denial (3&8)	**2**	6	3.35	3.5	2	1.3088766
Substance use (4&11)	**2**	4	2.1	2	2	0.4472136
Emotional support (5&15)	**2**	8	4.8	4.5	4	1.8806494
Instrumental support (10&23)	**2**	8	4.9	5	4	1.9166857
Behavioural disengagement (6&16)	**2**	8	3.4	3	2	1.6670175
Venting (9&21)	**2**	8	3.8	4	4	1.472556
Positive reframing (12&17)	**3**	8	**6.25**	6.5	8	1.6503588
Planning (14&25)	**2**	8	**5.25**	5	5	1.5517393
Humour (18&28)	**2**	8	3.8	3.5	4	1.8806494
Acceptance (20&24)	**4**	8	**5.75**	6	6	1.3717066
Religion (22&27)	**2**	8	**5.95**	6	8	1.8202082
Self-blame (13&26)	**2**	8	4	4	2	1.7471782

4.7 Qualitative data

Coping methods adopted by individual (respondents) not listed in the brief COPE scale; coping strategies implemented collectively in the unit/department and in the institution were explored using researcher-formulated questions. In some instances, verbatim reports are presented to preserve the essence of the message being passed. Table 9 shows a summary of the responses.

4.7.1 Other individual coping methods

Seven of the twenty respondents in this study mentioned that they used other specific coping methods in addition to or besides the ones listed in the brief COPE scale. These methods include engaging in extramural activities, YOGA, exercise, reflection, craft and spending time with family.

4.7.2 Coping at the unit/group level

Respondents were required to answer questions that explored their prior knowledge of the challenges of a POU, if they had a pre-employment briefing of what to expect in the unit and the possible support strategies that are available in the unit. Their responses are presented below.

Prior knowledge of POU challenges

On whether respondents were aware of the possible work-related challenges of caring for POU patients, five respondents reported that they were aware of the possible challenges and explained how this affected their understanding of the job. For example, two respondents, who both have more than 10 years experience of working in the POU, explained that:

> "*I still wanted to work in oncology and I am enjoying it, although stressful*" ($_{\text{Respondent}}$11)

> "*Oncology wards are not always well perceived if you are not in the situation. The place where a lot of patients die*" ($_{\text{Respondent}}$20)

Fifteen of the respondents reported that they were not aware of the possible challenges of the POU before they joined the unit and picked 'No'. The main challenge these respondents had to confront is frequent child deaths. This was captured in the comments of two respondents who both have between 1 and 5 years experience of working in the POU:

"*Dealing with patients and death, almost every day sometimes*" ($_{\text{Respondent}}$12)

"*Yes, but the level of involvement with patient's journey was not anticipated. It is more difficult than I thought when a patient dies*" ($_{\text{Respondent}}$2)

Some respondents, however, have accepted the challenges of the unit as a learning curve. One respondent with 6 to 10 years work experience in the POU wrote that:

"*... unaware that so many children are diagnosed. Normally would hear of adults*" ($_{\text{Respondent}}$9)

Another respondent with one to 5 months work experience in the POU also described the learning experience in the unit:

"*When I came in, I knew nothing about oncology, but now, I am learning.*" ($_{\text{Respondent}}$18)

Pre-employment/ resumption briefing

In eliciting staff pre-employment/resumption knowledge about POU, 18 respondents reported that they were not briefed about the possible ways of coping before joining the POU. Only one respondent reported that she was partially briefed.

Stress relief strategies

Respondents were asked if their unit/department organised social gatherings to relieve work-related stress to which six respondents answered affirmatively and picked ‘Yes’; two respondents felt these events were partially available; while 12 respondents felt these events were not present in the unit and picked ‘No’. Of those that picked ‘yes’, four of them agreed that these gatherings were helpful while two respondents did not think they were helpful. These two respondents explained that the situation remained unchanged after the social events ended. For example, one respondent with 1 to 5 years POU work experience explained that:

> “*Although it is nice to go out once in a while with colleagues, it doesn't relieve work-related stress*.” ($_{\text{Respondent}}$2)

Similarly, another respondent with more than 10 years of POU work experience commented:

> *“It appears that once the event is done, one gets back to work and the same problems persist*.” ($_{\text{Respondent}}$4)

Of the 12 respondents who felt that there was a lack of social gatherings in the unit, 10 expressed the desire for such events. One of these respondents, with 6 to 10 years of work experience in the POU, suggested that the forum should allow staff to share their views and emotions ($_{\text{Respondent}}$9).

4.7.3 Coping at the institutional level

Questions presented to respondents in this section were to elicit their knowledge of institutional intervention strategies available to staff to relieve work-related stress and burnout. In addition, respondents were asked to give suggestions on how staff at the POU could be supported to maintain professional and personal harmony.

Awareness and effectiveness of intervention strategies

To understand the availability and awareness of institutional intervention strategies, questions were asked about formal and informal approaches taken by the hospital to reduce job stress. Respondents were asked if their institution organised workshops/meetings to address any job-related stress they encountered at work. Six respondents agreed on the availability of such events and picked 'Yes'; two respondents felt that the events were partially available (picked 'Partially'); while 10 respondents felt these events were not available in the hospital and picked 'No'. All those that picked yes agreed that the events were helpful.

On whether the institution organised social events to relieve work stress, seven respondents were affirmative (picked 'Yes') while 13 respondents felt social events were absent and picked 'No'. Of those that picked 'Yes', three of them felt the events were helpful mainly because of the distraction from routine that the events offered. In support of this, two respondents, both with more than 10 years of POU work experience, commented:

"*Yes at most times, away from routine + business helps*" ($_{\text{Respondent}}$4)

"*...Fun walk, Heritage day, Christmas parade.*" ($_{\text{Respondent}}$20)

However, of those that agreed with the availability of social events, three respondents disagreed with the effectiveness of such events citing inconsistency. Of the 13 respondents who felt the institution did not organise social events, eight of them expressed the desire to have such events while two respondents disagreed because of reasons such as more serious demands on limited time.

Professional support and counselling

On the availability of debriefing sessions or professional counselling services when needed, eight of the respondents agreed on the availability of these services such as ICAS, eight respondents disagreed while four respondents felt the services were partially available. Six participants who were aware of the counselling services felt they were helpful. Seven respondents who were not aware of the counselling services expressed the desire to have such services.

Suggested strategies to promote personal- work-life balance

Respondents made suggestions on how HCWs could cope with POU work-related challenges. Common themes from the suggestions are that a POU should have: goal-oriented teamwork, fairness (everyone is heard), easily accessible professional support and occasional 'time-out'/break time to recoup (socialise, discuss non-work related issues, problem-solution sharing). Below are the suggestions from four respondents that described these emergent themes.

"*There are 4 main determinants of happiness at work i.e. less stress; safety (Am I safe at work?), equity (We are all heard), camaraderie and purpose. When any of those are missing, work becomes drudgery and is more stressful. Interventions should focus on building those 4 pillars*." ($_{\text{Respondent}}$1, with six to ten years POU work experience)

"...having a 20 minutes break during the day to sit with colleagues and talk about things outside of work would make things easier. This is what we did in a previous unit I worked in, and it made such a difference." ($_{\text{Respondent}}$2, with one to five years POU work experience)

“*I think we need to have counselling even if we have one session a month, or do anything to help us cope. It is not easy at all and we must just continue as if nothing has happened*.” ($_{\text{Respondent}}$12, with one to five years POU work experience)

“*We must work together as a team in dealing with difficulties that are happening in the ward and take things easy*.” ($_{\text{Respondent}}$16, with six to ten years POU work experience)

Table 9: Summary of responses to researcher- developed questions (Total respondents (N)= 20).

		Frequency (n)			
	Questions	Yes	Partially	No	Unknown
1	Do you have any other coping method(s) not listed above?	7	-	12	1
2	Were you aware of any possible work-related challenges of POU before joining?	2	3	15	-
3	Were you briefed about the possible ways of coping before resuming at the POU?	-	1	18	1
4	Does your unit/department organise social gatherings to relieve the workers from work-related?	6	2	12	-
	4a. does this help	Yes=4, No=2	Yes=2	-	-
	4b. Would you like to have such gatherings organised?	-	-	Yes=10	-
5	Does your institution organise workshops/meetings to address any job-related stress you encounter at work?	6	4	10	-
	5a. Are these meetings helpful?	Yes= 6	No=1	-	-
6	Does your institution organise social gatherings to relieve the workers from work-related?	7	-	13	-
	6a. Are the gatherings helpful	Yes= 3, No= 3	-	-	-
	6b. Would you like to have such gatherings organised?	-	-	Yes=8, No=2	-
7	Does your institution provide debriefing sessions or professional counselling services when needed?	8	4	8	-
	7a. Does this help?	No=1, Yes=6	Yes=2, No=1	-	-
	7b. Would you like to have such services	-	-	Yes=7	-

SECTION 2

This section presents the measures of association between burnout and the respondents' demographic data, coping methods and resilience.

4.8 Burnout and Demographic data

For each demographic characteristic of the respondents, a means (M) and standard deviations (SD) table was created for each of the three burnout subscales (EE, DP, rPA). None of the respondents scored high on all three scales combined. Most of the demographic characteristics were associated with low or average burnout dimensions; however, none of these associations was statistically significant. The results are presented in table 10.

High EE was observed in POU physicians and "unknown" age group. High DP was seen in "unknown" groups of age, marital status and number of children.

rPA was associated with the most demographic characteristics. rPA was high in females; age groups 25-25 and 46-60; single and married; number of children >1 child; a graduate level of education; profession (POU nurses& administrators); work experience and POU work experience less than 10 years; and unknown groups of level of education and duration of work experience.

On combination of the three subscales, low burnout levels were seen in respondents aged >60years, divorced, with no children, pharmacists, work experience 1-5months and >10years, POU work experience between 1-5months.

Table 10: Association between burnout and demographic characteristics (Kruskal Wallis)

			EE			DP			rPA		
		N	M	SD	*P* value	M	SD	*P* value	M	SD	*P* value
Gender	Male	1	🟩 15		0.730435	🟦 8		0.356286	🟩 43		0.161781
	Female	19	🟦 17	11.81		🟦 7.5	6.345		🟥 29.9	8.123	
Age	25- 35	4	🟩 11.5	9.256	0.415009	🟦 6.5	3.317	0.418315	🟥 24	6.782	0.211307
	36-45	9	🟦 16.9	9.636		🟦 8.1	6.864		🟦 33.8	9.217	
	46-60	4	🟩 14.3	12.84		🟦 6.8	7.632		🟥 27.3	7.805	
	>60	1	🟩 15			🟩 0			🟦 32		
	unknown	2	🟥 34	16.97		🟥 13	4.95		🟦 35	0	
Marital status	single	9	🟩 15.2	9.203	0.880682	🟦 6.8	3.528	0.266882	🟥 31.1	10.13	0.795912
	Married	9	🟦 18.2	14.86		🟦 8.2	7.807		🟥 29.3	7.842	
	Divorced	1	🟩 15			🟩 0			🟦 32		
	unknown	1	🟦 22			🟥 16			🟦 35		
Number of children	0	2	🟩 9	8.485	0.645245	🟩 4	5.657	0.458695	🟦 37.5	7.778	0.264853
	1	8	🟦 19.1	14.65		🟦 6.5	3.625		🟦 32	8.106	
	>1	9	🟩 16.1	9.649		🟦 8.3	7.826		🟥 27.2	8.643	
	unknown	1	🟦 22			🟥 16			🟦 35		
Level of education	graduate	6	🟩 14	10.94	0.72054	🟦 8.2	8.472	0.768147	🟥 29.8	6.555	0.693488
	Post grad	7	🟦 20.6	14.83		🟩 5.7	4.855		🟦 31.9	7.777	
	unknown	7	🟩 15.7	8.597		🟦 8.9	5.581		🟥 29.9	11.22	
Profession	POU physician	2	🟥 30.5	21.92	0.391454	🟦 8.5	0.707	0.24191	🟩 39	5.657	0.95437
	POU nurse	16	🟦 16.5	9.818		🟦 8.3	6.395		🟥 29.1	8.346	
	Pharmacist	1	🟩 6			🟩 0			🟩 40		
	Administrator	1	🟩 7			🟩 1			🟥 28		
Duration of Work experience	1- 5mnths	1	🟩 3		0.402813	🟩 2		0.522463	🟦 32		0.813068
	1-5 yrs	5	🟦 17.2	7.05		🟦 11	7.701		🟥 31	10.79	
	6-10 yrs	4	🟦 25.8	17.17		🟦 8.8	6.602		🟥 31.3	9.946	
	>10 yrs	7	🟩 15.6	10.69		🟩 4.4	4.721		🟦 32.9	4.845	
	unknown	3	🟩 12.3	9.074		🟦 10	6.364		🟥 23	10.82	
Duration of POU Work experience	1- 5mnths	1	🟩 3		0.121948	🟩 2		0.291025	🟦 32		0.518283
	1-5 yrs	6	🟦 25.2	13.03		🟦 12	7.026		🟥 30.3	8.756	
	6-10 yrs	7	🟩 10.4	5.287		🟩 5	3.916		🟥 27.4	11.19	
	>10 yrs	4	🟦 19	13.47		🟩 5	5.831		🟦 32.3	1.258	
	unknown	2	🟦 17.5	6.364		🟦 12	6.364		🟦 38	4.243	

Statistically significant if *P* <0.05

Burnout Key

🟩	Low
🟦	Average
🟥	High

4.9 Burnout and Resilience

There were statistically significant associations between EE, DP and resilience. Respondents who had low levels of resilience experienced average levels of EE and DP, while respondents who had normal (average) levels of resilience experienced low levels of EE and DP. Though not statistically significant, high rPA was associated with low level of resilience while average rPA was associated with normal levels of resilience. Table 11 presents these findings.

Table 11: Association between burnout and resilience (Kruskal Wallis)

			EE			DP			rPA		
		N	M	SD	*P* value	M	SD	*P* value	M	SD	*P* value
Level of resilience	low	6	25.8	13.07	*0.038769	12	5.786	*0.030842	27.7	31.79	0.385582
	Average	14	14.3	7.869		6.2	5.466		7.47	8.772	
	High	0	0	0		0	0		0	0	

*Statistically significant *P* values (*P* <0.05)

Burnout Key

🟩	Low
🟦	Average
🟥	High

4.9.1 Inter-scale correlation coefficients between MBI-HSS and BRS

There were significant correlations between the BRS and all the MBI dimensions. As presented in Table 12, EE and DP correlate negatively with the BRS while rPA correlates positively with the BRS. This means that as resilience levels increased, burnout levels reduced as evidenced by reducing EE and DP scores and increasing rPA scores.

Table 12: Pearson Correlation Coefficients (r) between MBI-HSS and BRS

	MBI		
	EE	DP	rPA
BRS	*-0.44207	*-0.53551	*0.336727

*Correlation is significant *r* > 0.30 (medium effect)

4.10 Burnout and Coping

The association between coping styles and the level of burnout was investigated with Pearson correlation test and the result is presented below.

4.10.1 Inter-scale correlation coefficients between MBI-HSS and Brief COPE

EE correlates positively with maladaptive coping strategies: denial, substance use, behavioural disengagement, venting and self-blame. Similarly, positive correlations exist between DP and maladaptive coping strategies: denial and behavioural disengagement. This infers that the more these maladaptive coping strategies are used, the higher the EE and DP scores, thus higher burnout. rPA correlates positively with emotional support, positive reframing and religion (emotional focused coping strategies) but negatively correlates with active coping (problem-focused coping strategy). This means that the more the emotional focused coping strategies are used, the higher the rPA scores, thus lower burnout, whereas, the more active coping is used, the lower the rPA scores, thus higher burnout. Table 13 presents the findings.

Table 13: Pearson Correlation Coefficients (r) between MBI-HSS and Brief COPE

	MBI		
Brief COPE dimensions	**EE**	**DP**	**rPA**
Self-distraction	0.0856	0.17567	-0.012894
Active coping	0.01295	0.25219	***-0.442278**
Denial	***0.46372**	***0.60639**	0.062709
Substance use	***0.37024**	0.13146	0.096303
Emotional support	-0.2077	-0.1667	***0.458674**
Instrumental support	-0.02911	0.22272	0.088251
Behavioural disengagement	***0.65521**	***0.62153**	-0.113825
Venting	***0.36217**	0.12845	0.195828
Positive reframing	0.04296	0.21297	***0.435879**
Planning	-0.03684	0.01785	0.101565
Humour	-0.10798	-0.1849	0.013939
Acceptance	-0.1984	-0.1755	-0.183151
Religion	-0.02538	0.28344	***0.361943**
Self-blame	***0.51572**	0.2731	0.139326

*Correlation is significant *r* > 0.30 (medium effect)

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter presents the discussion and interpretation of the results. The aim of this study was to evaluate the prevalence of burnout and levels of resilience experienced by oncology HCWs and identify the coping strategies used. In addition, it set out to assess the relationship between burnout and demographic features, resilience and coping in the oncology HCWs.

5.2 Response to the research

The response rate for this study was 50%. This represents an average response rate when compared to similar studies in the literature that reported between 35% - 65% response rate (Doolittle, Windish & Seelig, 2013; Brown, 2009; De Klerk, 2004). In this study, most respondents were females and POU nurses. This reflects the gender distribution of staff working in the POU. Though invitations and reminders were sent to earlier identified primary and non-primary POU staff, all the responses came from primary POU staff. Non-primary POU staff may have abstained from the research because they did not see the need to participate in the study since they had their own primary specialities and their engagement with the POU was often needs- based. Another possibility is that some HCWs may not want to be identified (individually or as a group) as having burnout, even though the questionnaires were designed to be completed anonymously. Some questions left unanswered in the demographic section (age, marital status, number of children and level of education) by some respondents might have been considered too sensitive or personal despite anonymity, confidentiality, and compliance with the principles of good clinical practice (World Medical Association Declaration of Helsinki, 2008; Nuremberg code, 1948). No data was collected to assess reasons for non-return of questionnaires or non-response to certain questions.

Findings

The result of the study objectives is discussed below.

5.3 Burnout

In this study, the prevalence rate for burnout was between 15% - 45% across the three stages. Explicitly, 15% experienced "high' levels of depersonalisation, 20% experienced "high" levels of emotional exhaustion and up to 45% experienced low personal accomplishment. These findings are similar to the results published in other reports. For example, in a meta-analysis, Trufelli *et al.* (2008) demonstrated that the prevalence rates for burnout in oncology HCWs are elevated and vary across the world. The study reported burnout prevalence rate of between 25% – 36% among oncology professionals–worldwide. Similarly, Demirci *et al.* (2010) reported a burnout prevalence rate of between 20% - 42% in oncology employees of a teaching hospital in Turkey and De Klerk (2004) reported 24.65%- 32.87% burnout prevalence in oncology employees in South Africa. Particularly striking in this study is the high prevalence of rPA (45%) and its association with most variables (though this association was not statistically significant with demographic features). Alacacioglu *et al.* (2009) made a similar observation, in which case rPA was relatively high among oncology physicians and nurses compared with previous studies. Reasons for this pattern will more likely be situation-specific and not necessarily limited to individual characteristics.

A strong association exists between socio-demographic factors and the experience of burnout. This study found that respondents in the 25-35 years age group experienced high rPA. This finding confirms previous reports that younger individuals are more prone to experiencing burnout due to lesser work experience (Van der Walt, Scribante, & Perrie, 2015; Demirci *et al.*, 2010; Maslach, Schaufeli & Leiter, 2001: 409). However, contrary to the usual observations, this study also found a high rPA in the 46-60 year (older) age group. This observation, again, may be due to the influence of situation specific factors.

Gender has maintained a rather inconsistent association with burnout due to different result patterns from researchers. The number of males that participated in this research was too small to make a comparison based on gender; however, the females in this study experienced average levels of EE and DP but high rPA. Previous studies have suggested that females tend to have higher EE experience while males usually have higher DP (Ozyurt, Hayran & Sur, 2006; Maslach, Schaufeli & Leiter, 2001: 410).

Persons who are married and those with children tend to have a lower risk of experiencing burnout (Demirci *et al.,* 2010; Liakopoulou *et al*., 2008; Castelo-Branco *et al*., 2007 Maslach, Schaufeli & Leiter, 2001: 410). Similar to these findings, this study found that respondents who were single experienced high rPA but had low and average scores on EE and DP respectively. In contrast, however, the married respondents also experienced high rPA. A possible explanation for this finding is marital burnout (Pamuk & Durmuş, 2015; Kebritchi & Mohammadkhani, 2016; Pines, 1988) which can occur independently and as such can become a confounding factor in job burnout. The respondents without children and those with at least one child both experienced low to moderate burnout stages whereas, respondents with more than one child experienced high rPA.

The risk of experiencing burnout is thought to increase with higher levels of education, possibly due to higher responsibilities and job expectations (Maslach, Schaufeli & Leiter, 2001: 410). This study, on the contrary, found that respondents with a graduate level of education experienced high rPA compared to their counterparts with a postgraduate level of education. Perhaps young age and less experience may explain this observation. While evidence in the literature on burnout among professionals have reported a high prevalence of burnout in oncology HCWs in general (Grunfeld *et al.,* 2000; Trufelli *et al.,* 2008), reports on inter-professional variation of burnout within the unit has been inconclusive (Sherman, Edwards, Simonton & Mehta, 2006). Besides nurses who constituted the majority of respondents, representation of other professionals was too small to make conclusive comparisons in this study. However, it was observed that POU nurses and administrators experienced higher rPA than other POU staff while POU physicians experienced higher EE compared to others. These findings are similar to other reports. For example, Grunfeld *et al.* (2000) demonstrated that oncology physicians experienced higher EE than other oncology staff whereas Kash *et al.* (2000) reported higher rPA in oncology nurses compared to other oncology professionals.

The duration of work experience in medicine/oncology is a strong predictor of burnout (Liakopoulou *et al.*, 2008; Campbell *et al.*, 2001). In this study, respondents with less than 10years of work experience in medicine and oncology experienced higher rPA compared to their colleagues who had greater than 10years of experience. This finding is similar to the observation of Demirci *et al.* (2010) who reported that employees who had less than 10 years work experience in medicine/oncology clinic exhibited higher levels of burnout.

5.4 Resilience

Resilience shares an association with reduced symptoms of burnout syndrome (Guo *et al.*, 2018; Mealer, 2016; Rushton, *et al.*, 2015). This study showed that respondents with normal levels of resilience experienced low EE, DP and moderate rPA, whereas, those with low resilience experienced average EE, DP and high rPA. Similarly, correlation studies revealed that with increasing resilience levels, burnout levels reduced as evidenced by reducing EE and DP scores and increasing rPA scores. These findings support the result of other studies. For instance, Kutluturkan, *et al.* (2016) reported that high resilience in a group of oncology nurses was associated with low emotional exhaustion, low depersonalisation and increasing personal accomplishments. Likewise, McFarland and Roth (2016) showed that resident doctors who were more resilient were less likely to experience distress.

5.5 Coping

The TMSC (Lazarus and Folkman, 1984) suggests that coping behaviours do influence the experience and expression of stressful conditions such as burnout. Studies have shown that HCWs use different coping methods to manage burnout and other job-related stress conditions (Makie, 2006; Rodrigues & Chaves, 2008). This research found that the coping styles predominantly used by respondents were positive reframing, religion, acceptance, planning, self-distraction and active coping. The least used coping styles were substance use, denial and behavioural disengagement. These findings are similar to the observation of Gomes, Santos and Carolino (2013) who reported that oncology HCWs mainly used planning, active coping, acceptance and self-distraction to relieve stress. On further classification of the predominantly used coping styles determined in this study, most were emotion-focused (positive reframing, religion) and problem-focused (planning, active coping) coping strategies. The least used coping styles were all maladaptive coping strategies. The predominant use of emotion-focused and problem-focused coping strategies in oncology care staff have been published in other reports (Rodrigues & Chaves, 2008; Isikhan, Comez & Danis, 2004). While most stressors can evoke both problem-focused and emotional-focused coping, the use of problem-focused coping tends to predominate when people feel that the source of stress can be modified, whereas emotion-focused coping tends to predominate when people feel that the stressor is something that must be endured (Folkman & Lazarus, 1980).

In relation to burnout, the correlation test suggests that with increased use of emotion-focused coping strategies (emotional support, positive reframing and religion), personal accomplishment improved. Whereas, with increased use of maladaptive coping strategies (denial, substance use, behavioural disengagement, venting and self-blame) emotional exhaustion and depersonalisation became worse. Other reports have implied a positive impact of emotion-focused coping strategies on stress and burnout. For example, religiosity, a form of emotion-focused coping, has been associated with an increase in job satisfaction, ability to tolerate problems and reduced burnout (Matteia *et al.,* 2017; Salaree, Zareiyan, Ebadi & Salaree, 2014).

5.5.1 Coping - Qualitative

Most of the other coping styles reportedly used by some respondents to prevent burnout could actually have fit into some of those in the brief COPE scale. However, the complex nature of some coping styles probably made it difficult for respondents to identify this. For example, YOGA has physical, mental and spiritual components so it can fit into self-distraction and religion dimensions of the brief COPE. It is also deducible from responses to questions on pre-employment briefing that individuals could benefit from prior information on challenges associated with working in a unit such as the POU as well as possible coping methods that can be used. Collectively, this may help develop the skills of mindfulness and exquisite empathy, both of which are necessary for a more engaging experience in patient management without being emotionally eroded (Bishop *et al.*, 2004; Harrison and Westwood, 2009).

Respondents expressed their desire for goal-oriented teamwork and camaraderie in work and non-work related matters at both the unit and institutional levels. In addition, the availability of effective social and formal events are mentioned as possible interventions that will help reduce the risk of developing burnout and job related-stress generally. These expressions highlight the importance of the concepts of collective sharing and work engagement, both of which put some degree of responsibility of employee wellness on colleagues and leaders (Schaufeli, 2017; Schaufeli & Bakker, 2004; Papadatou, 2000). Application of these concepts will include that employees be given the opportunity to have a voice; the employers/leaders have a listening ear to employees; and as impossible as it may seem, time should be created for break/relaxation and some fun. However, mitigating factors to this ideal such as staff strength, time, and finance will have to be combated.

The importance of debriefing or counselling services in a demanding unit such as the POU cannot be overemphasised. These services give individuals the opportunity to be managed effectively by a professional when the need arises. In the course of this study, it was gathered that counselling services are available (ICAS) but many of the respondents are not aware or do not know how to access them. This implies that effort has to be put in place by the institution to ensure availability, awareness, accessibility and effectiveness of counselling services for their staff.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study has supported the growing concern on HCW burnout by demonstrating that between 15%–45% of the staff of a paediatric oncology unit experienced a high level of burnout. Among the three dimensions of burnout, the prevalence of reduced personal accomplishment was the highest (45%) and it cuts across most demographic characteristics. This observation suggests a possible exposure of the respondents to common situation-specific factors that contribute to burnout. It is interesting that in spite of all the challenges associated with the unit, the majority (70%) of the health providers have maintained a normal level of resilience. This positive outlook may be related to the coping styles predominantly used by the HCWs which were emotion-focused (positive reframing, religion) and problem-focused (planning, active coping) coping strategies while the maladaptive coping strategies, such as substance use, denial and behavioural disengagement, were least used.

6.2 Recommendations

Based on the research experience and findings, the following recommendations have been formulated. The recommendations were made with reference to individual HCWs, departments and institutions as well as for future research.

a. Individual HCWs

It is important for individual HCWs in the POU to practise self-care, which, basically, revolves around nurturing one’s biological, psychological, social and spiritual wellbeing. Part of self-care is to voluntarily initiate and perform activities in order to maintain an overall state of health. This can be achieved through basic actions like regular exercise, eating healthy, meditation, self-reflection and taking necessary vacations. Engaging in these self-care activities have been associated with increased resilience in HCWs (Grafton & Coyne, 2012), which is much needed in POU staff. In addition, this study showed that the use of emotion-focused coping methods like positive reframing and religion in the respondents was associated with lower levels of burnout. Therefore, POU HCWs can invest in their personal spiritual development in order to discover greater meaning in personal and professional relationships. Equally important for POU HCWs is that they should be aware of the signs and symptoms of burnout and know when, where and how to seek help.

b. Departments and institutions

Actions taken at the level of the unit or institution represent one of the most important steps in curbing burnout. In this study, it emerged that there was a high level of reduced personal accomplishment in 45% of the respondents, and this cut across most of the demographic features. This observation suggests that there is a strong influence of situational factors, common to all the respondents, contributing to the level of burnout experienced. Since burnout tends to be cumulative, a good place to start might be to prepare health professionals, during the undergraduate period, to become self-aware, and to be aware of the potential of developing burnout in the context of health service delivery. Self-management skills could be strategically incorporated into the undergraduate curriculum of trainees in order to ensure that they are more prepared with the life skill that will build their resilience. In addition, orientation programmes for newly appointed staff could be beneficial in the sense that staff could be introduced into their role in the POU in a supportive manner, so that they are made aware of potential stressful experiences they are likely to experience. In this regard, the wisdom and support of senior staff members should not be underestimated. The potential benefits of such initiatives include employee retention, improved staff morale, job competency and patient satisfaction (Gesme, Towle & Wiseman, 2010). Similarly, mentorship and supervision for HCWs with a more senior staff member, for example in the first year of working in a POU, can prove to be of immense benefit in reducing burnout (ECRI Institute, 2017).

For existing POU employees, strategies need to be available to equip individuals to manage and respond adaptively to situations leading to burnout. The tendency in health service delivery models is that health providers are inclined to place emphasis on patients and their families, with less attention being given to their own needs. This might require a substantive shift in perspective throughout the health team. Creating spaces in which staff can discuss their responses, specifically challenging and difficult responses to routine care in the POU, are not typical strategies in public health service delivery but this can be improved. Firstly, it may be necessary to introduce structured programmes of debriefing and skills building in the paediatric oncology section of hospitals in South Africa in order to improve resilience and constructive adaption to the unit. For example, the introduction of debriefing and skills building sessions for a group of hospice and palliative care staff led to significant improvements in the relationship between members of the health care team and further improvement in patient care (Leff, 2016). Staff also reported that they experienced their work as being more meaningful. Secondly, an organisational culture that promotes constructive teamwork and camaraderie should continue to be encouraged. This approach was particularly emphasised by many of the respondents in this study. It will include creating and maintaining a work environment that is suitable for employees to communicate effectively and have occasional solution-focused meetings, without disturbing their job expectations. Ultimately, these activities promote a supportive and positive work environment (Beresford, Gibson, Bayliss, & Mukherjee, 2018; Schuman, 2015), which is necessary for managing burnout and thereby contributing to improved service delivery with the potential of improving patient outcomes**.**

Furthermore, the institution can improve the existing strategies that deal with the impact of burnout on HCWs in order to enable or support recovery. This will include the implementation and evaluation of social programmes, workshops and other necessary intervention strategies in terms of availability, awareness and accessibility. The institution where this study was conducted employed the services of an independent organisation (ICAS) to offer professional support to their staff. However, during the course of this research, it emerged that some of the respondents were not aware of the availability of this service, while some did not know how to access the service. This suggests that the institution is paying for a service that they are not sure is being utilised or giving the desired results. It is therefore imperative that evaluating existing programmes is as important as introducing new ones, and could be more cost effective. Measuring burnout before and after implementing intervention strategies is a way of evaluating the effectiveness of such programmes (Italia, Favara-Scacco, Di Cataldo & Russo, 2007). The organisational and perhaps cost implications of these strategies are acknowledged, it is, however, more cost-effective to prevent burnout in terms of reduction in extensive financial losses that can be accrued from low performance of affected HCWs (Dewa, Jacobs, Than & Loong, 2014).

c. Future research

This research highlighted the extent to which staff working in paediatric oncology experience burnout, and suggests that the phenomenon should receive more attention. This research had a relatively low response rate. A follow-up study could well elicit more interest and a more substantive response rate. It would be beneficial to conduct similar studies in other departments at the same hospital, to explore the general experience of burnout among staff delivering health care across the facility. Extending this survey in paediatric oncology units in other provinces in South Africa could also prove beneficial. Moreover, it may be very helpful to conduct a follow-up study after one or more interventions. In addition to researching the incidence of burnout, South African specific intervention strategies should also be reviewed. Literature focuses mostly on the incidence of burnout in a specific setting, or even the cause of burnout, but there is hardly any study that has looked into possible intervention strategies tailored specifically for South African health care professionals. Developing intervention strategies for a culturally diverse group of people might be a very interesting study topic.

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Appendix

Appendix I: Classification of Coping Styles

Appendix Ia: Classification of coping styles in the Brief COPE scale

Problem-Focused coping (3 subscales)	Emotion-Focused coping (3 subscales)	Adaptive coping (2 subscales)	Maladaptive coping (6 subscales)
Active coping: the process of taking active steps to get rid of the stressor or to reorganise its effects. **Planning**: thinking about how to confront the stressor and what steps to take to best cope with the problem **Use of instrumental support**: seeking help, information, or advice about what to do	**Use of emotional support**: getting sympathy, compassion or emotional support from someone **Positive reframing**: making the best of the situation by viewing it in a favorable light **Religion**: increased participation in religious activities	**Acceptance**: accepting that the stressful event has occurred and is real **Humor**: making jokes about the stressor	***Venting***: the tendency to express feelings of one's emotional distress ***Behavioral disengagement***: giving up any attempt to achieve the goal with which the stressor is interfering ***Self-Distraction***: psychological detachment from the goal which the stressor is interfering ***Self-blame***: criticising or blaming oneself for the stressor that has occurred ***Substance use***: turning to the use of alcohol or other drugs as a way to disassociate from the stressor ***Denial***: an attempt to reject the reality of the stressful event.

Adapted from **(**Lopez, 2014**)**

Appendix Ib: Classification of coping styles in Ways of coping scale

Problem focused coping methods	Emotion focused coping methods
Confrontative Coping Planful Problem-Solving Escape-Avoidance/Wishful Thinking Accepting Responsibility/Self Blame Seeking Social Support Positive Reappraisal*	Self-Controlling Distancing Positive Reappraisal*

Appendix II : SURVEY QUESTIONNAIRE

Appendix IIa: Informed Consent Form

General Information

Good morning/afternoon. My name is Dr Azeezat Jimoh and I am doing this as part of a master's degree in maternal and child Health (MPhil MCH) at the University of Cape Town, South Africa. I am interested in understanding the possible effects of working with paediatric oncology patients on health staff. I am especially interested in understanding how staff who work with children that have cancer cope with the work they do. It is my hope that through this research we will have a better understanding about what staff might experience as being stressful, and how they manage the stress responses. I would like to invite you to participate in this research study as you are currently caring for paediatric oncology patients at Red Cross War Memorial Children's hospital.

Procedures

In this study the researcher will use a questionnaire that includes some basic information about each participant, some questions about work-related stress and resilience, and then a section that is intended to assess the coping strategies that you use.

The questionnaire will be handed over to you or sent to your email. You may choose to either fill it at work or at home to return it at a later date (not later than 10 days). It will take you approximately 30 minutes to fill the questionnaire.

Filling in the questionnaire will be done privately. There will be no group discussions or sharing of information whilst completing the questionnaire. While there is the option of taking the questionnaire home to fill, you are kindly advised to keep it secure and fill privately.

Confidentiality

To protect your identity I will not be using any personal identifiers. Only I and my research supervisors will know who participated in the study. The questionnaires will be coded (numbered) and handed out in no particular order. The questionnaire will be returned to the researcher and the information will be entered into spreadsheet saved on a password-protected computer. The computer is kept in a locked room to which only the researcher and supervisor have access. All other notes and information related to this study will be handled securely. After the research, the data retrieved will be destroyed after 5years.

Benefits

This study will help participants gain insight into their own experiences and the coping mechanisms they have adopted. It is expected that this will create a more reflective approach to patient care and in the long run be of benefit to the health workers and the patients they care for.

Risks

The only risk that can be associated with this study is the possibility of you becoming emotionally troubled should you, while filling the questionnaire, realise that you are experiencing a high level of burnout, or self-identify as being stressed and need some form of assistance. If this occurs, you are advised to contact any of the following for assistance:

1. Di Burger. Paediatric Palliative Unit, Rondebosch Medical Centre, Cape Town. For private discussion or counselling
2. Independent Counselling and Advisory Services (ICAS) of individual institutions for support.
3. The Organisational Health and Wellness Department (UCT staff only)
   Tel: (021) 650 2154 E-mail: ashley.taylor@uct.ac.za
4. The researchers for more information and directions (contact details below)

Compensation, Costs and Reimbursement

There is no compensation or reimbursement for participating in this study. The only investment expected of you, if you agree to participate, is your cooperation and the time to be spent to completing the questionnaire – 30 minutes only.

Withdrawal from Study

Your participation is voluntary and you can withdraw from this study at any time. There will be no consequences if you decide to withdraw from participating in the research.

Contact Information

Should there be need for any questions or clarification, do not hesitate to contact me using the following details:

Azeezat Jimoh, *email address: azeezatal@yahoo.com, phone number: 0744106478*

Or my supervisors: Jawaya Shea, *email address: jawaya.shea@uct.ac.za, Tel: 021-658 5030* and Rene Albertyn, *email address:* rene.j.albertyn@gmail.com

Please note that this study was approved by the Faculty Research Ethics Committee. The research will be conducted in accordance with the principles of the Declaration of Helsinki (2013) and I (the researcher) will conduct the study with respect for the dignity of all the participants.
For further information, contact: Faculty of health sciences, Human Research Ethics Committee, E 52, Room 24, Old Main Building, Groote Schuur Hospital, Observatory; Telephone: 27 21 406 6492; Fax: 27 21 406 6411.

Participant declaration: I hereby declare that the researcher has explained the study to me and I understand all the information pertaining to this research I had the opportunity to ask questions and my questions have been adequately answered. I understand that my participation is voluntary and I have not been pressured into participating. Should I choose to withdraw from participating in this research I am free to do so at any time, and I will not be penalised in any way.

Declaration by researcher: I have explained the information in the consent form to the participant, encouraged him/her to ask questions, and I am satisfied that the participant understands all aspects of the research **[YES** ☐ **NO** ☐ **]**

The participant received a copy of the informed consent document **[YES** ☐ **NO** ☐ **]**

Signature of investigator…………………….. Date………………

Signature of participant ……………………… Date……………….

Appendix IIb: Socio Demographic Data

*Please, tick (✓) appropriately in the box that applies to you.

1. Sex:

Male	
Female	

2. Age in years:

< 25	
25 - 35	
36 - 45	
46 - 60	
> 60	

3. Marital status:

Single	
Married	
Divorced	
Widowed	

4. Number of children:

0	
1	
More than 1	

5. Level of education:

Graduate	
Postgraduate	

6. Profession:

Paediatric oncology unit physician	
Paediatric oncology unit nurse	
Occupational therapist	
Physiotherapist	
Radiation oncologist/radiotherapist	
Neuro-oncologist	
Palliative care team	
Clinical psychologist	
Social workers	
Cleric (specify)	
Others (specify)	

7. Duration of work experience:

< 6 months	
6 – 11 months	
1 – 5 years	
6 – 10 years	
> 10 years	

8. Duration of work experience in/with paediatric oncology unit:

< 6 months	
6 – 11 months	
1 – 5 years	
6 – 10 years	
> 10 years	

Appendix IIc: Human Services Survey

The purpose of this survey is to discover how various persons in the human services or helping professional view their job and the people with whom they work closely.

Because persons in a wide variety of occupations will answer this survey, it uses the term recipients to refer to the people for whom you provide your service, care, treatment, or instruction. When answering this survey please think of this people as recipients of the service you provide, even though you may use another term in your work.

On the following page are 22 statements of job related feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write the number "0" (zero) in the space before the statement. If you have had this feeling, indicate how often you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. An example is shown below.

Example

How often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

How Often **0 – 6**	**Statements:**
1. ____________	I feel depressed at work.

If you never feel depressed at work, you would write the number "0" (zero) under the heading "How Often." If you rarely depressed at work (a few times a year or less), you would write the number "1." If your feelings of depression are fairly frequent (a few times a week but not daily), you would write the number "5."

How often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

How Often

0 – 6 **Statements:**

1. ______ I feel emotional drained from my work.
2. ______ I feel used up at the end of the workday.
3. ______ I feel fatigued when I get up in the morning and have to face another day on the job.
4. ______ I can easily understand how my recipients feel about things.
5. ______ I feel I treat some recipients as if they were impersonal objects.
6. ______ Working with people all day is really a strain for me.
7. ______ I deal very effectively with the problems of my recipients.
8. ______ I feel burned out from my work.
9. ______ I feel I am positively influencing other people’s lives through my work.
10. ______ I have become more callous toward people since I took this job.
11. ______ I worry that this job is hardening me emotionally.
12. ______ I feel very energetic.
13. ______ I feel frustrated by my job.
14. ______ I feel I am working too hard on m y job.
15. ______ I don’t really care what happens to some recipients.
16. ______ Working with people directly puts too much stress on me.
17. ______ I can easily create a relaxed atmosphere with my recipients.
18. ______ I feel exhilarated after working closely with my recipients.
19. ______ I have accomplished many worthwhile things in this job.
20. ______ I feel I am at the end of my rope.
21. ______ In my work, I deal with emotional problems very calmly.
22. ______ I feel recipients blame me for some of their problems.

(Administrative use only)

EE: _____ _____ DP: _____ ______ PA: _____ _______

Appendix IId: Resilience Scale

Below are six questions that examine the level of resilience in persons facing challenging situations; in this instance, your ability to resist the challenges of caring for children with cancer.

Please respond to each item by circling one box per row to indicate how much you disagree or agree with each of the statements.

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
BRS 1	I tend to bounce back quickly after hard times	1	2	3	4	5
BRS 2	I have a hard time making it through stressful events. *	1	2	3	4	5
BRS 3	It does not take me long to recover from a stressful event.	1	2	3	4	5
BRS 4	It is hard for me to snap back when something bad happens. *	1	2	3	4	5
BRS 5	I usually come through difficult times with little trouble	1	2	3	4	5
BRS 6	I tend to take a long time to get over set-backs in my life. *	1	2	3	4	5

Appendix IIe: Assessment of Coping Strategies

A (*i*) *Individual*

These items deal with ways you've been coping with your job related stress since you started working in the paediatric oncology unit such as constantly witnessing the suffering or death of a child patient. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently? Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all
2 = I've been doing this a little bit
3 = I've been doing this a medium amount
4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.	1	2	3	4
2. I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
3. I've been saying to myself "this isn't real."	1	2	3	4
4. I've been using alcohol or other drugs to make myself feel better.	1	2	3	4
5. I've been getting emotional support from others.	1	2	3	4
6. I've been giving up trying to deal with it.	1	2	3	4
7. I've been taking action to try to make the situation better.	1	2	3	4
8. I've been refusing to believe that it has happened.	1	2	3	4
9. I've been saying things to let my unpleasant feelings escape.	1	2	3	4
10. I've been getting help and advice from other people.	1	2	3	4
11. I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12. I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4
13. I've been criticizing myself.	1	2	3	4
14. I've been trying to come up with a strategy about what to do.	1	2	3	4
15. I've been getting comfort and understanding from someone.	1	2	3	4
16. I've been giving up the attempt to cope.	1	2	3	4
17. I've been looking for something good in what is happening.	1	2	3	4
18. I've been making jokes about it.	1	2	3	4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20. I've been accepting the reality of the fact that it has happened.	1	2	3	4
21. I've been expressing my negative feelings.	1	2	3	4
22. I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
23. I've been trying to get advice or help from other people about what to do.	1	2	3	4
24. I've been learning to live with it.	1	2	3	4
25. I've been thinking hard about what steps to take.	1	2	3	4
26. I've been blaming myself for things that happened.	1	2	3	4
27. I've been praying or meditating.	1	2	3	4
28. I've been making fun of the situation.	1	2	3	4

A (*ii*) Do you have any other coping method(s) not listed above? **YES/NO**

If **yes**, *Please explain your response…….*

____
____
____

B *Collective/group level*

1. Were you aware of any possible **work related stress** of paediatric oncology unit before joining?

Yes	**No**	**Partially**

Please explain your response…….

____
____
____

2. Were you briefed about the possible **ways of coping** before resuming at the paediatric oncology unit?

Yes	**No**	**Partially**

Please explain your response…….

____
____
____

3. Does your **unit/department** organise social gatherings to relieve the workers from stress?

Yes	**No**	**Partially**

a. If yes, does this help?

Yes	**No**

Please explain your response…….

____
____
____

b. If no, would you like to have such gatherings organised?

Yes	**No**

Please explain your response…….

____

____

____

C. ***Institutional level***

4. Does your **institution** organise workshops/meetings to address any job related stress you encounter at work?

Yes	**No**	**Partially**

   a. If yes, are these meetings helpful?

Yes	**No**

Please explain …….

____

____

____

5. Does your institution organise social gatherings to relieve the workers from stress?

   a. If yes, are these gatherings helpful?

Please explain …….

____

____

____

   b. If no, *would you like to have such gatherings organised*?

Yes	**No**

Please explain …….

____

____

____

6. Does your institution provide debriefing sessions or professional counselling services when needed?

Yes	**No**	**Partially**

a. If yes, does this help?

Yes	No

Please explain …….

____
____
____

b. If no, would you like to have such services?

Yes	No

Please explain …….

____
____
____

7. What are your suggestions on how health care workers can cope with possible work related stress while working in paediatric oncology unit?

____
____
____
____
____
____
____
____
____

THANK YOU!