

Understanding the relationship between Empathy, Compassion Fatigue in Oncologists and
Health Professionals in Cancer Care

Executive Summary

The compassion and behavioral aspects of oncologists and healthcare professionals significantly influence the capacity of the healthcare workers to understand and support the emotional and health status of patients within contemporary medical care settings. Multiple factors influence compassion satisfaction, fatigue and empathy levels of healthcare professionals, which ultimately affects the quality of medical care. While assessing a survey population of oncologists and healthcare professionals in Cyprus, the current research explores the self-reported levels of compassion fatigue as mediated by burnout and traumatic stress within the healthcare environments. In essence, the study explored the influence of compassion fatigue on compassion satisfaction and empathy levels among oncologists and healthcare professionals across Cyprus. Through collection of extensive survey data from the sample population, the research methodology applied coding within SPSS for both descriptive and inferential statistics. Results established from the analysis of data indicate the positive associations manifesting between empathy and compassion fatigue, based on the incremental nature of positive beta values. Based on direct proportionality, it implied that a one-unit increase in empathetic inclinations of oncologists and healthcare professionals in caring for the cancer patients also attracted an increase in the variations that linked to compassion fatigue.

Although low levels of fatigue are desired within healthcare settings, the levels of self-reported compassion fatigue were portrayed to be moderately high, which affects the provision of empathic support to cancer and general patients. From a broader perspective, there is a significant relationship and the same was confirmed on the mediating roles of distress and emotional regulation. Therefore, a healthcare model that considers mitigation policies to eradicate distress and optimization of emotional regulation was reported to hold the capacity to

build empathetic tendencies that lower compassion fatigue while increasing compassion satisfaction.

Keywords: Empathy, Cancer, Oncologists, Distress, Trauma, Compassion Fatigue

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Declaration

I take a declaration that the completed dissertation is solely my original analysis and never has it been published at any other time for the award of a university degree whatsoever.



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Dedication

I dedicate this work to my father for instilling in me his work ethic and values, and for inspiring me to be a valuable member in society. Furthermore, I dedicate this work to my colleagues and all oncologists and Healthcare professionals that are working extra hard to care for cancer patients in Cyprus. Considering this study, I can affirm that the task is difficult but with your positive empathy and personal resolve to overcome compassion fatigue, you will continue lighting hope in cancer patients and their families.



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Chapter One: Literature Review

Introduction and Background

Empathy and emotional support from healthcare professionals remain important for appraising the state of patients, thereby significantly facilitating the outcomes of medical care and treatment within healthcare settings. Multiple research works indicate the influence of empathy and behavioral attributes on the effectiveness of medical care and support provided to patients within the contemporary healthcare systems. Fundamentally, empathy has been associated with increased patient satisfaction and improved patient outcomes leading to increased reimbursement, as well as higher healthcare professional's compassion satisfaction that can significantly contribute to increased nursing satisfaction and decreased nurse turnover (Bayne, 2011; Chewning, Marchang, & Scheder, 2011; Hojat, 2007; Hunsaker et al., 2015; Mercer & Reynolds, 2002; Wood, 2014). Although medical research and clinical explorations focus on practices and techniques applicable for improving the quality of medical care and treatment interventions offered to patients, there is minimal information and literature pertaining to the influence of empathy and emotional support within oncology practice. Healthcare professionals within the medical field of oncology have been identified to report low levels of empathy and compassion support to their cancer patients, which significantly affects the treatment and care outcomes (Bourgault et al., 2015; Kuo et al., 2012; Yoder, 2010). The positive relationship between empathy and patient outcomes has been empirically demonstrated. In addition, the literature on the complications of compassion fatigue upon levels of empathy of oncology healthcare professionals is limited.

Through effective applications of empathy and behavioral practice, healthcare professionals hold the capacity to understand the emotional states and feelings of patients

receiving care within medical settings. In essence, nurse-patient interactions and communication of feelings are integral for the facilitation of the medical care and general healing process (Reynolds & Scott, 2000). Hojat (2007) asserted that the presence of human connections can serve to promote healthy behavior and prevent unhealthy behavior. Further, the empathic relationship between a patient and clinician function manifests as a special form of emotional support that significantly facilitates the treatment and healing process. Limited interactions between the patients and healthcare professions affects the emotional domains of patients where patients lack the satisfaction of that human connection, feel less cared for by their clinicians, and may not achieve the best clinical outcomes. Fundamentally, healthcare professionals are required to effectively communicate empathy to their patients if those patients are to reap the objective and subjective benefits of the professional empathic relationship described by Hojat (2007). However, a study by Wittenberg-Lyle et al. (2012) found that healthcare professions are not effectively communicating empathy to their patients. Empathy manifests as a foundational construct within the healthcare profession, where the healthcare professionals may demonstrate empathy in several ways, such as providing direct physical care or emotional support to a client. A healthcare professional must choose the way he or she completes healthcare obligations; a healthcare professional determines how his or her empathy or caring is conveyed to the client (Adams, 2016). The satisfaction of helping others is a great benefit for many healthcare professionals; however, healthcare professionals may experience emotional exhaustion if the energy required to express caring in an empathetic manner exceeds their personal reserves.

For professional caregivers who work with traumatized or suffering individuals, especially where therapeutic effects require empathic connections like cancer patients, there is a generally recognized cost to empathy or caring (Austin, Goble, Leier, & Byne, 2009; Birck,

2002; Deighton, Gurris, & Traue, 2007; Figley, 1995a, 2002a; Najjar, Davis, Beck-Coon, & Doebling, 2009; Stamm, 2010). Empirical and anecdotal evidence suggest a high prevalence of burnout in the healthcare professions, as well as among oncology service providers (Barnard et al., 2006; Oyefeso, Clancy, & Farmer, 2008; Potter et al., 2010; Ribeiro et al., 2014). Within the frameworks of practitioners and researchers, they seek to account for its elements, limit those elements to the presence of the cost of caring, and avoid unduly stigmatizing the affected practitioners (Figley, 1995a; Norcross & Guy, 2007). Burnout, compassion fatigue, counter transference, secondary traumatic stress, and vicarious traumatization are among the most common conceptualizations of this cost, but other names exist (Figley, 1995a; Thomas & Wilson, 2004), and the list continues to grow.

As argued by Joinson (1992), among these concepts, compassion fatigue (CF) is the most popular phenomena in the healthcare literature. Compassion fatigue is a phenomenon that may occur when secondary exposure to the trauma and suffering of a victim results in stress and tension within a caregiver. Members of the helping service professions, like healthcare workers and nursing, are at high risk of experiencing compassion fatigue. Compassion fatigue can result in a diminished ability of healthcare professionals to provide care or may yield ineffectual care. In 1992, Joinson introduced the term compassion fatigue while describing the possible negative consequences that healthcare professionals may experience as a result of providing care to others (Joinson, 1992). Figley (1995a) and Stamm (1995) further developed the concept of compassion fatigue. Figley conceptualized vicarious traumatization as a contributing factor to the development of compassion fatigue, the “cost of caring.” The negative residual of exposure to the trauma of a victim may lead to the preoccupation of a caregiver with a victim’s experience. Professionals that work in the category of healthcare, social services, mental health, and

community services are perceived to be subjected to a high risk of compassion fatigue and vicarious trauma (Figley, 1995). Vicarious trauma refers to the change in the world view which takes place in assisting professionals at the time of working with clients that have undergone trauma (Figley, 1995). Stamm (2010) breaks the concept of compassion fatigue into two components: burnout and secondary traumatic stress. Burnout is characterized by an insidious onset of anger with feelings of hopelessness and frustration. Secondary traumatic stress, characterized by an abrupt onset, is accompanied by sleep disturbances, fear, and a tendency to avoid the client. Compassion fatigue, according to Figley (1982), leaves the individual with erosion on his emotional and physical realms, thus rendering the professional helpers have difficulties in refueling and regenerating.

Closely associated with burnout (Jenkins & Baird, 2002; Stamm, 2010), CF is a caregiver's reaction to another's suffering and trauma, whereas burnout is an individual's reaction to workplace stressors (Maslach, Schaufeli & Leiter, 2001; McHolm, 2006). During instances that require help based on an empathetic relationship, the helper's undefended exposure to another's suffering and trauma may overwhelm the helper's coping resources producing trauma type symptoms (Figley, 1995a, 2002; Joinson, 1992; Najjar et al., 2009; Sabo, 2006). CF may arise from relatively discrete events (Figley, 1995a; McHolm, 2006) or an accumulation of exposure to suffering, caregiving stress, grief, or negative outcomes (Figley, 1995a; McHolm, 2006; Stamm, 2010). The symptoms of CF may be comparable to those of posttraumatic stress disorder (American Psychiatric Association, 2013; Figley, 1995a), burnout (Jenkins & Baird, 2002; Stamm, 2010), or some combination of both (Pfifferling & Gilley, 2000; Portnoy, n.d.; Radziewicz, 2001).

From a broad perspective, CF has been associated with rising turnover rates of healthcare professionals. The turnover rate for bedside healthcare professionals has steadily increased from 11.2% in 2011 to 16.4% in 2015. In essence, the evidence indicates the significant impact of the turnover of healthcare professionals on the already diminishing hospital margin. However, a great portion of hospitals (83%) does not track this cost (Neurobehavioral Symptom Inventory (NSI), 2015). A 2015 study conducted by Nursing Solutions Incorporated (NSI) surveyed 468,706 healthcare workers, including 113,622 Registered Nurses (RNs), at 141 facilities in 37 states to explore the incidence, costs, and causes of nurse turnover in the United States. The researchers reported that the average cost of turnover for one bedside RN ranges from \$36,900 to \$57,300 yearly. As per the contemporary levels, RN turnover will cost a hospital from \$4.9 million dollars to \$7.6 million dollars each year, with each percentage change in RN turnover.

While Compassion fatigue remains identified to significantly influence the nurse turnover within the healthcare sector, the literature indicates that nurses working with special care patients are vulnerable to developing compassion fatigue due to being affected by working with patients who suffer from chronic conditions because of having to deal with the patients' families (Henry, 2014, Hesselgrave, 2014, Moody et al., 2013). Further, research provides extensive evidence on compassion fatigue and burnout in pediatric oncology nurses by indicating that around 40% to 60% of them working with cancer patients experience some degree of CF and burnout in their work (Henry, 2014, Hesselgrave, 2014, Moody et al., 2013, Potter et al., 2013). Moody et al. (2013) reported that pediatric oncology nurses face stressful situations based on the care demands of this unique population including assisting with painful medical procedures, delivering medications and monitoring for noxious side effects, and providing emotional support for families and children during their ongoing medical treatments. Zander, Hutton, and King

(2010) highlight the fact that pediatric oncology nursing is a professionally and personally demanding specialty-based on unique stressors. The common stressors include; complex treatment regimens, the influence of clinical trials, ethical dilemmas related to treatment decisions, grief, loss, bereavement, and managing professional boundaries. In essence, nurses with limited ability to self-regulate their empathy remain at high risk of failing at offering sympathy and emotional support to patients, which can result to compassion fatigue. Foremost, empathetic drive is the inclination an individual has towards improving the welfare of other persons (Maibom, 2014). Empathy involves an individual experiencing the feelings of someone while sympathy is when one understands the feelings someone else is going through (Mehta, 2012). Healthcare professionals, particularly nurses, are increasingly aware of the dangers of CF and its resultant disruptive behavior, productivity loss, absenteeism, and turnover (Figley, 2002; Pfifferling & Gilley, 2000; Radziewicz, 2001). Challenged with an increasing demand for services and a decreasing supply of nurses, healthcare organizations seek to retain both experienced and novice nurses (Albaugh, 2003; Buerhaus, Auerbach, & Staiger, 2009; Hatcher et al., 2006; Jones & Gates, 2007). As organizations seek to create effective working environments, industrial/ organizational psychologists and other experts can help managers to understand CF, develop workers' coping resources, and implement organizationally based prevention strategies.

Therefore, the research focuses on exploring the association present between empathy, compassion satisfaction (i.e., the emotional rewards of caring for others in a healthcare context), and compassion fatigue among healthcare professionals in oncology. The current research intends to explore and describe empathy in healthcare professionals in oncology and explore the existing relationship between empathy, compassion satisfaction and compassion fatigue scores of healthcare professionals in oncology. In addition, the current research also intends to examine

the mediating influence of emotional regulation and distress tolerance on the associations manifesting between empathy and compassion fatigue.

Literature Review

Empathy within the medical practice and techniques of the healthcare provider-patient relationship is beneficial to patient clinical outcomes, compliance, and satisfaction. However, empathy can come at a high personal and professional cost to the healthcare professionals. Broadly, the current research purposed to evaluate the levels of empathy in healthcare professionals in oncology and explore the negative components of compassion fatigue (burnout and secondary traumatic stress) and the positive components (compassion satisfaction) encountered by healthcare professionals in oncology caring for patients in the oncology department. Specifically, the current study is conducted to determine if there are, and the extent of, relationships among the factors of oncology healthcare professionals' empathy, including perspective-taking, compassionate care, and standing in the patient's shoes and burnout, secondary traumatic stress, and compassion satisfaction in healthcare professionals in oncology.

Although the concept of empathy in healthcare has been explored through multiple theoretical and conceptual lenses, however, within the literature base, empathy was not exclusively utilized within a professional caregiving framework. Empathy, as a concept, has been researched within a wide variety of professional milieus, including the professions of Nursing, Nursing Education, Medicine, Medical Education, Allied Health (Occupational Health, Physical Therapy, etc.), Psychology, and Social Service. A search of the literature was undertaken with special attention to the nurse-patient relationship.

Empathy in Healthcare

According to the definition of Travelbee (1964), empathy encapsulates the ability to identify and understand the mental and emotional state of other individuals. In essence, the capacity to understand people remains imperative considering its positive influence on the ability of the healthcare professionals to understand the emotional state and feelings of the patient within medical care settings. Travelbee (1964) conceptualized empathy as a precursor to sympathy in the sense that the former achieved an understanding of the situation of the other as to identify with the experiences. Recent research conducted on nursing and empathy entailed the description and measurement of the phenomenon, where empathy is regarded as an important dimension of the therapeutic relationship (Polat, Alemdar, & Gurol, 2013). Lee, Song, Cho, Lee, and Daly (2003) asserted that the inability to properly communicate and empathize with patients and their families is one fundamental factor of exhaustion.

Empirical Research on Empathy

Empathy encompasses the ability to adopt another's psychological frame of reference to understand the other's thoughts, feelings, and behavior (Campbell, 1989). The ability to appreciate patients' perspectives, to understand their emotions, and to reflect this comprehension is core to the nursing profession (Lombardo & Eyre, 2011). The perception of healthcare provider as empathetic is identified to reflect an increasing trend for patient satisfaction, improved patient outcomes, and increase compassion satisfaction among professionals (Bayne, 2011; Chewning, Marchand, & Scheder, 2011; Hojat, 2007; Hunsaker et al., 2015; Mercer & Reynolds, 2002; Wood, 2015). Baillie (1993) used a phenomenological lens and convenience sample to explore through semi-structured interviews how nurses perceive and experience empathy. Nine predominantly female surgical staff nurses of varying ages, backgrounds, and

over a year's experience on a general surgical unit at a district general hospital in England participated in the interviews. Data addressing the research question on the nature and extent of empathy for the nurses that are registered were transcribed from audio recordings and supported by the experiences of the participants.

Qualitative data analysis, using Colaizzi's method, revealed the emergence of seven themes. A process enabling feedback and clarification by participants validated the themes. The seven themes were: (a) the conceptual definition of empathy (b) interconnected indulgence in empathy (c) assessment on activeness and therapeutic nature of empathy (d) individual and personal experiences of empathy (e) development of the capacity to show empathy (f) extending empathetic feelings to individual patients and (g) difficulties in empathy (Ballie, 1993, p.53). The research findings were consistent with other explorations of empathy and provided resourceful information on empathy, from a nursing perspective. However, the report of this research lacked information substantiating its credibility, auditability, saturation, and sample demographics.

After the development of the earliest version of the "Jefferson Scale of Physician Empathy (JSPE)", Hojat et al. (2004) conducted a study of 125 (56% of the total class) "medical students at the beginning and the end of their third year of medical school" (p.934). 4 men and 61 women completed the JSPE at the commencement of pretest and the culmination of the post – test at the third grade of the medical school (p.934). Year 3 was chosen by the researchers for the study as it is the year during which most clinical patient contact is experienced by students in most medical schools in the US. The JSPE was later revised to include all healthcare providers and is known today as the Jefferson Scale of Empathy – Healthcare Provider (JSE-HP).

The researchers conducted t-tests for repeated measures to assess the statistical significance of established differences.

Based on outcomes of the results, it was depicted that emotion does not have any significant role in the treatment of medical and patient illness, whereas affectional ties of the physicians with the patients do not relate with the treatments above. However, effective treatment requires the physicians to be attentive to the personal experiences of the patient. A non-statistically significant association was confirmed in the case of changes in the scores of empathy levels and demographic factors such as age, gender and performance; hence, variations in empathy scores showed no relationship to demographic or performance variables (Hojat et al., 2004). The researchers noted that their findings are not in agreement with their own prior research, which found insignificant declines in the mean JSPE scores of internal medicine residents using the JSPE and other studies by researchers using different empathy measures. The researchers theorized that the findings of their study suggest that empathy may decline within the conditions of limited, targeted educational programs in medical schools (Hojat et al., 2004). There are gaps in research regarding the declining effects of empathy scores among medical students and others health professionals. Findings from scholars have also depicted that self-reported empathy does not reflect the way students practice their empathy feelings (Hojat et al., 2004).

A longitudinal study conducted by Ward, Cody, Schaal, and Hojat (2011) examined changes in empathy of nursing students in various stages of their education at the beginning and end of one academic year using the Jefferson Scale of Empathy. Two hundred and fourteen primarily female undergraduate nursing students at Jefferson University, who were enrolled in three different types of nursing programs and completed pretest-posttest data were available,

were included in this convenience sample. The analyses revealed a statistically significant decline in empathy for nursing students who were exposed more than others to patient encounters during the academic year or in prior healthcare roles. In essence, these findings are consistent with other research with medical students (Bellini & Shea, 2005; Hojat et al., 2004). Although the homogeneity of the sample and the limitations inherent in a one-site study limit the generalizability of the findings, further research is necessary to explore the factors influencing this documented decline in empathy as students' progress through their education and interact more personally with patients. How this decline in nursing empathy impacts patient outcomes and nursing career satisfaction, and intent-to-stay are other areas where further research is warranted.

Wittenberg-Lyles, Oliver, Demiris, Rankin, Shaunfield, and Kruse (2012) conducted a well-constructed, descriptive study to determine if a multidisciplinary hospice team used empathy in congress with patient caregivers by auditing 68 recorded discussions between team members and patient caregivers. The researchers used the Empathic Communication Coding System (ECCS) to capture thematic patterns within and among the coded data. The validation of ECCS has been achieved by approving reliable inter-coders as well as evaluation on both levels of patient and empathic aspects. The researchers coded three types of caregiver statements: "statements of emotion, statements of decline, and statements of challenge". Twenty percent of the caregiver statements were statements of challenge, which depicted direct efforts of obtaining empathy within an interdisciplinary inter-subjective environment. These statements referred to sentiments around the coordination of management of pain, medication, coordination of care, and detailed/substantiated feedback on the information. The hospice team responses were assigned values on a 0-4 level scale. Levels are interpreted as 0 (no empathetic response), 1 (an

obligatory, scripted response), 2 (an “implicit” response of biomedical or procedural talk), 3 (an “explicit” recognition of or a repeating of an empathic opportunity) and 4 (a confirmation of an empathic opportunity and/or an offer of a positive remark to the caregiver) (Wittenberg-Lyles et al., 2012). The researchers reported that a sizable portion of the hospice team feedback were inherent appreciation of the caregiver statements while a small portion of the team responses served as outwards recognitions of opportunities attributable to the caregiver empathic expressions (Wittenberg-Lyles et al., 2012, p.53). The Kruskal–Wallis H-Test was used to capture the meaningful relationship in the case of the median team responses for each of the three statement types as mentioned above (Wittenberg-Lyles et al., 2012). The researchers concluded that the study demonstrated the importance of effective empathic communication between caregivers and team members over care planning. They further suggested that it was vital to have clinical education to support sound communication with caregivers with the aim to enhance suitable interventions (Wittenberg-Lyles et al., 2012). The study was well designed with strong sample size and reliable instrumentation. The findings underscore the need for healthcare provider education to improve the communication of empathy to patients and caregivers. Using a cross-sectional, correlational design, Kuo, Cheng, Chen, Livneh, and Tsai (2012) developed a seemingly highly credible Chinese translation of the Jefferson Scale of Empathy for Healthcare Providers (JSE-HP) to survey 660 Taiwanese hospital nurses. These nurses scored somewhat lower than other nurses evaluated by this scale (range = 112-124). The researchers suggested that the subtle and restrained style of the Asian culture could explain some of the differences in empathy scores. Study nurses who were older, married, more educated, and had higher household income, religious beliefs, and children had significantly higher empathy scores than nurses with lower levels of these variables. Nurses with more nursing experience, empathy in-

service training, working in psychiatry, or a higher nursing educational level, also had significantly higher empathy levels. These four variables contributed 22% of the variance in empathy in this sample. When compared by type of work unit, emergency nurses scored lowest, followed by medical surgical nurses. Psychiatric nurses scored the highest. The study was well designed, and the sample size was strong. However, the current results remain limited by the homogeneity status of the study sample where the inclusion processes apply the rationale that older, more experienced nurses, units could best model empathy in patient care. Further, the same is inconsistent with other studies that find that older, more clinically experienced nurses and residents have lower empathy scores than newer nurses (Lin et al., 2012; Ward et al., 2011). These contradictions underscore the need for further exploration of empathy in emergency nursing.

Polat, Alemdar, and Gurol (2013) conducted a descriptive, analytic study using “the State-Trait Anxiety Inventory (STAI)” and “the Empathic Tendency Scale (ETS)” to explore “the effect of empathic tendency on the anxiety levels” of 58 nurses who had experienced a death of a patient in a pediatric intensive care unit in Turkey. The STAI measures both “state” anxiety (anxiety occurring during “the moment”) reported as the STAI-S and “trait” anxiety (anxiety levels “in general”) reported as the STAI-T. The scales were considered reliable for fulfilling Cronbach’s Alpha threshold. Lower scores indicated lower levels of anxiety and empathy, and higher scores indicate higher levels of anxiety and empathy with ranges for the ETS of 20-100, STAI-T of 20-80 and STAI-S of 20-80.

The participants also completed a short questionnaire regarding previous death experiences, feelings when faced with death, and the frequency of thoughts about their own deaths. The STAIs, ETS, and questionnaire were administered to 58 female nurses of different

backgrounds at their first interview and promptly after they had experienced the loss of a patient (Polat, Alemdar, & Gurol, 2013). A negative association was established between the mean scores of ETS of nurses and their mean scores on the STAI-T and the STAI-S before being faced with patient death. The anxiety levels of nurses rose from mild to moderate with the experience of death and decreased as their empathic tendency increased; however, the relationship was not statistically significant. Nurses with higher levels of education and more children had significantly higher ETS means, and nurses who were married with children had significantly higher STAI-S means than single or childless nurses (Polat et al., 2013).

The findings' usefulness and generalizability remain affected sample's homogeneity and the convenience sampling plan. Though the researchers described having evaluated their own questionnaire as having "face validity," there was no evidence to support the claim. Still, the study's finding of an inverse relationship between empathic tendency and anxiety levels, though not statistically significant, has the potential of expanding the understanding of the relationship between empathy and compassion fatigue in nurses (Polat et al., 2013). A cross-sectional, descriptive, correlational study by Bourgault, Lavoie, Paul-Savoie, Gregoire, Michaud, Gosselin, and Johnston (2015) uncovered associations between empathy, psychological distress, and well-being in nurses in Quebec, Canada. Thirty, predominately female and young (< 36 years) emergency nurses, most of which had worked in the ED for 1 to 5 years, completed the Jefferson Scale of Physician Empathy (JSPE), the Psychological Distress Manifestation Scale, and the Psychological Well-Being Manifestation Scale. The emergency nurses scored a mean of 92.88 ($SD = 6.99$) on the JSPE (possible range 20-140), a mean of 24.03 ($SD = 6.78$) on the Psychological Distress Scale (possible range 0-129) and 77.99 ($SD = 9.34$) on the Psychological Well-being Scale (possible range 47-188). The findings indicated that there existed no

statistically significant correlations between trends for empathy and psychological distress, although a negative correlation involving age and psychological distress was affirmed. The results meant younger nurses suffered much psychological distress when compared to the older ones. Other findings suggested that a moderate association existed between empathy level and psychological wellbeing. Alternately, psychological well-being was significant to the empathy of nurses (Bourgalt et al., 2015).

The ability to generalize the current results remains significantly limited by the homogeneity and small size of the sample and the convenience-sampling plan. Joinson (1992), McHolm (2006), Riggio and Taylor (2000), and Thomas and Wilson (2004) suggest that only those in the care-giving professions are vulnerable to CF because of the empathetic connections required for their work. CF appears as the antithesis of empathy (Austin, Goble, Leier, & Byrne, 2009). Larson and Bush (2006) view empathy as a double-edged sword of a simultaneous nobility and vulnerability. Watson (1997), a nursing theorist, categorizes empathy and interpersonal skills as integral elements within the nursing practice. Each nurse has a distinctive, personal style for empathizing with patients, and the profession itself is considered empathetic (Sinclair & Hamill, 2007). Using empathy may put nurses and other care providers at risk for STS (Figley, 1995a; Najjar, Davis, Beck-Coon, & Doebbeling, 2009). Those individuals with the greatest empathy may be the most vulnerable to CF (Adams et al., 2006; Figley, 2002b). Despite this risk, empathy is foundational to the therapeutic nurse-patient relationship (Sabo, 2006). Consequently, excessive use of empathy within the medical care settings may lead to blurred boundaries. In their composite model that accounted for 91 % of their sample's variance, Abendroth and Flannery (2006) found that empathy that led to blurred boundaries was a principal factor in the risk of CF. Care providers who perceive themselves as rescuers or saviors

are most vulnerable to STS (Figley, 1998). Nurses with stronger tendencies to sacrifice their needs to meet their patients' needs reported five times higher risk for CF than nurses with lower tendencies (Abendroth & Flannery, 2006).

Summary of Empathy Literature

Despite the significantly large and varied body of literature exploring empathy. However, most of the empathy literature within the helping professions pertains to the arenas of medicine, psychology, psychiatry, and social services. Most of the empathy literature as it pertains to nursing in the United States tends to focus on conceptual analysis, definition, and the empirical referents to measure and compare empathy in a variety of healthcare professions. In health professions education, the research is conflicted with some researchers finding that empathy levels decline in medical and nursing students as clinical exposure to patients' increases. The available research on empathy in healthcare has uncovered relationships with anxiety, well-being, years of service, level of education, and personal attributes. However, some of the findings of this research are inconsistent. Significantly, however, the available literature indicates that nurses have the lowest empathy scores. Nonetheless, the empathy literature as it pertains to nurses is lacking especially in areas of compassion fatigue and how the two can be leveraged to improve the productivity of Oncologists and Health Professionals Grief on Compassion Fatigue.

Compassion Fatigue in Healthcare

Research performed by Joinson (1992) explored the experiences of caregiver's stress, beyond the concept of burnout. Compassion fatigue is the outgrowth of sustained stress when providing care for individuals. In essence, it remains imperative to make healthcare professional informed and aware of the potential for compassion fatigue. As such, awareness helps to ensure that boundaries between patient and nurse are strong and that the nurse will seek to attain and

maintain balance between his or her personal and professional life (Joinson, 1992). When the boundaries between the client and the caregiver blur, the caregiver may focus on the suffering of the client and become emotionally exhausted. Further, Figley (2002) developed the concept of compassion fatigue. Figley viewed the concept of compassion fatigue as the “cost of caring”; his work in the 1990s was an extension of his interest in the phenomenon of post-traumatic stress in military personnel. Figley (2002) considered compassion fatigue to be a demonstration of secondary traumatic stress, which is similar to post-traumatic stress. Secondary traumatic stress may be evidenced in changes in emotional responses and behaviors that occur when witnessing or hearing of trauma suffered by another person, as the caregiver provides care for the victim (Figley, 2002). The person suffering from compassion fatigue may experience a desire to avoid the stress of caring for a client or may place an emotional distance between the stressor (client’s trauma) and his or herself.

Figley (2002) outlines the development of compassion fatigue as the progression from the empathic response of a caregiver to the suffering of the client to either compassion satisfaction in providing care or the beginning of compassion fatigue, if the caregiver tries to diminish the stress of providing care to a suffering client. If compassion fatigue develops, the caregiver may become disengaged. If the caregiver does not take measures to interrupt the cycle of stress and negative feelings experienced while providing care to the client, the caregiver may experience feelings of anxiety and spillover of the stress into his or her personal life. Figley initially created the compassion fatigue self-test in 1995, and subsequently, Figley and Stamm worked together in the late 1990s to create the compassion satisfaction and fatigue test, which also includes positive responses on the test and addresses the concept of compassion satisfaction (Stamm, 2002). Stamm (2002) appraised and improved the tests for the compassion satisfaction and fatigue into

the professional quality of life scale (ProQOL), which includes three separate sub-scales: compassion satisfaction, burnout, and secondary traumatic stress (Stamm, 2010). While the initial tools focused on the negative aspects of providing care to others, the researchers identified the need to include the positive aspects of providing care to others in the form of compassion satisfaction. Compassion satisfaction may mitigate the extent of compassion fatigue. For Figley and Stamm, CF comprises two components: “burnout (BO) and secondary traumatic stress (STS)”. Compassion Satisfaction (CS) is the term applied to the positive aspects of providing care. It is a pleasure derived from the formal caregiver’s perception over the subjective perception of having the ability to undertake one’s work in an effective manner (Stamm, 2010) and may mitigate the effects of BO and STS. Although some researchers apply the terminologies; compassion fatigue, secondary traumatic stress, and vicarious traumatization interchangeably, Stamm does not. Compassion fatigue is differentiated from burnout, which has a chronic onset and is manifested by feelings of emotional exhaustion or hopelessness, frustration, irritability, and anger or secondary traumatic stress, which has a more acute onset, and is accompanied by feelings of fear, anxiety, and sleep disturbances. Caregivers suffering from burnout are more likely to perform poorly or apathetically, whereas the caregiver suffering from secondary traumatic stress may deliberately withdraw from or avoid the suffering client. When the negative costs associated with providing care for a suffering client are greater than the positive benefits associated with caring for a suffering client, the potential for the development of compassion fatigue is present (Stamm, 2010).

Burnout was conceptualized by Pines (1993) as a situation of exhaustion in the physical, emotional, and mental realm due to long-term indulgence in demanding and emotionally draining situations. In essence, it comprises the negative effects arising from the work climate as

well as situations that are characterized by anger, depression, exhaustion, and frustrations. Secondary Traumatic Stress (STS), as it pertains to nurses, is a type of work-related stress that results from secondary exposure to trauma through professionally driven interactions with individuals that have undergone extreme or traumatic stressful outcomes (Stamm, 2010). Stamm (2010) perceived the negative outcomes of STS as comprising difficulties in sleep, trauma, and intrusive images. Further, the effects of CF encompass the problem attributed to ineffective judgment, weak concentration, harmful and risk-oriented behavior, social paranoia, and lack of care by the healthcare practitioners. As a result, these symptoms lead to impaired performance abilities, like in the case of errors in medication and lack of attention to detail, increased absenteeism, high turnover intentions, or healthcare professional's attrition (Phenning, 2013).

Symptoms of Compassion Fatigue

The symptoms of CF are comparable to those of STS (Figley, 1995a), of burnout (Jenkins & Baird, 2002; Stamm, 2010), or some combination of both (Pfifferling & Gilley, 2000; Portnoy, 2011; Radziewicz, 2001). The symptoms of CF, like those of STS, cluster into three categories (Baird & Jenkins, 2003; Figley, 1995a, 1995b; Gates & Gillespie, 2008; Meadors & Lamson, 2008; Sexton, 1999). In intrusive cognitions or imagery, the care provider re-experiences the client's traumatic event (Austin, Goble, Leier, & Byrne, 2009; Benoit, Veach, & LeRoy, 2007; Figley, 1995a, 2002). In some cases, nurses may be unable to discern their own pain from the vicarious pain of the patient (Bush, 2009). In a phenomenological study of Swedish ambulance nurses and technicians, respondents describe feelings of guilt and shame accompanying the intrusive memories (Jonsson & Segesten, 2003). Avoidance symptoms may be understood as self-protection. Affected individuals seek to minimize contact with the people, places, objects, and situations that trigger memories of the patients' trauma (Benoit, Veach, & LeRoy, 2007;

Figley, 1995a, 2002). Symptoms of hyperarousal may be similarly understood. These symptoms include hypervigilance, exaggerated startle reflexes, and sleep disturbances (Austin, Goble, Leier, & Byrne, 2009; Benoit, Veach, & LeRoy, 2007; Figley, 1995a, 2002).

Physical symptoms. CF's physical symptoms include exhaustion (Figley, 1995a; Thomas & Wilson, 2004), physical fatigue (Austin, Goble, Leier, & Byrne, 2009; Coetzee & Klopper, 2010; Perry, Toffner, Merrick, & Dalton, 2011; Thomas & Wilson, 2004), loss of strength (Coetzee & Klopper, 2010; Thomas & Wilson, 2004), and loss of endurance (Coetzee & Klopper, 2010; Thomas & Wilson, 2004). Somatization (Austin, Goble, Leier, & Byrne, 2009; Coetzee & Klopper, 2010; Thomas & Wilson, 2004) is frequent, as are headaches (Abendroth & Flannery, 2006; Figley, 1995a), stomachaches (Figley, 1995a), and hypertension (Radziewicz, 2001). Individuals experience general malaise (Thomas & Wilson, 2004) and a higher propensity toward being ill (Figley, 1995a).

Cognitive symptoms. Intrusive thoughts and recollections (Austin, Goble, Leier, & Byrne, 2009; Coetzee & Klopper, 2010) are possibly the symptoms most identified with CF, although they are not always the most common. They may occur as thoughts, feelings, dreams, or even kinesthetic sensations. Other cognitive symptoms include mental fatigue (Perry, Toffner, Merrick, & Dalton, 2011; Thomas & Wilson, 2004), disordered thinking (Slatten, Carson, & Carson, 2011), concentration and attention difficulties (Figley, 1995a), and short-term forgetfulness (Figley, 1995a). CF may disrupt a provider's cognitive schema (Fillion, Dupuis, Tremblay, DeGrace, & Breitbart, 2006; Jenkins & Baird 2002). This disruption may adversely affect providers' beliefs about themselves, their interpersonal relationships, their spirituality, and their view of the world (Jenkins & Baird 2002). These shifts may become permanent (Perry, Pollard, Blakley, Baker, & Vigilante, 1996). The providers may lose their sense of self (Bush,

2009). Showalter (2010) explains that when nurses use their role as a care provider to define who they are, the professional/personal boundaries blur. Then they may suffer personal injury to their sense of self-worth when a professional outcome fails to materialize (Showalter, 2010).

Affective symptoms. Care providers suffering CF may feel they lost their compassion or their ability to feel compassion (Figley, 1995a; Joinson, 1992; McHolm, 2006; Sabo, 2011; Thomas & Wilson, 2004). Nurses may feel overwhelmed by the workload, the needs of the patients, or the intensity of the suffering (Abendroth & Flannery, 2006; Austin, Goble, Leier, & Byrne, 2009; Benoit, Veach, & LeRoy, 2007; Coetzee & Klopper, 2010; Mendenhall, 2006) and hopeless (Austin, Goble, Leier, & Byrne, 2009). They may experience feelings of boredom (Figley, 1995a; Maytum, Heiman, & Garwick, 2004); indifference (Figley, 1995a; Valent 2002), discouragement (Coetzee & Klopper, 2010; Figley, 1995a; Jackson, 2004), and apathy (Baranowsky, 2002; Benoit, Veach, & LeRoy, 2007; Coetzee & Klopper, 2010; Valent, 2002). The providers may feel callousness (Benoit, Veach, & LeRoy, 2007; Mendenhall, 2006; Pfifferling & Gilley, 2000), become easily irritated (Coetzee & Klopper, 2010; Mendenhall, 2006; Pfifferling & Gilley, 2000), and feel anger reactions disproportional to the cuing event (Figley, 1995a; Joinson, 1992; Simon, Pryce, Roff, & Klemmack, 2005). They may experience anxiety (Coetzee & Klopper, 2010; Figley, 1995a) and fear (Fillion, Dupuis, Tremblay, DeGrace, & Breitbart, 2006; Herman, 1992; Saakvitne & Pearlman, 1996). Nurses with CF frequently report depression (Coetzee & Klopper, 2010; Figley, 1995a; Jackson, 2004; Joinson, 1992), dysphoria (Thomas & Wilson, 2004), and anhedonia (Austin, Goble, Leier, & Byrne, 2009). Nurses may become cynical (Figley, 1995a), especially when they perceive dissidence between the organization's stated values and the actual practice (Austin, Goble, Leier, & Byrne, 2009). They may experience feelings of self-reproach (Komachi, Kamibeppu, Nishi, & Matsuoka,

2012) and impotence (Austin, Goble, Leier, & Byrne, 2009) at not being the kind of nurse they wanted to be or not delivering the quality of care they envisioned (Austin, Goble, Leier, & Byrne, 2009). If these feelings continue unaddressed, they may lose the meaning and purpose of their calling (Bush, 2009).

Behavioral symptoms. Behavioral symptoms appear to be designed to shield the provider from or reduce stimuli that might elicit a stress response. Hypervigilance (Slatten, Carson, & Carson, 2011) and hyperstartle reflex (Austin, Goble, Leier, & Byrne, 2009) that may manifest as verbal aggression, heightened irritability, anger outbursts, etc., protect the provider from these unwanted stimuli. Avoiding small talk and social withdrawal (Austin, Goble, Leier, & Byrne, 2009; Baranowsky, 2002) may shield the affected provider, but interpersonal relationships suffer as a result (Collins & Long, 2003b; Figley, 1995a; Perry, Toffner, Merrick, & Dalton, 2011; Sexton, 1999) and so may family relationships (Austin, Goble, Leier, & Byrne, 2009).

Organizational symptomology. Overall loss in productivity defines the organizational symptomology. Turnover and absenteeism are the most dramatic symptoms associated with CF (Figley, 1995a; Hooper, Craig, Janvrin, Wetsel, & Reimels, 2010; Meadors & Lamson, 2008; Pfifferling & Gilley, 2000; Radziewicz, 2001; Sexton, 1999). Nurses may try different strategies to survive in the organization, such as transferring units to a less intense service, reducing work hours by going part time or per diem, or changing to jobs away from the bedside (Austin, Goble, Leier, & Byrne, 2009). Moving to the night shift or to shift work only seems to make things worse (Austin, Goble, Leier, & Byrne, 2009). If these fails, nurses are likely to leave (Austin, Goble, Leier, & Byrne, 2009; Perry, Toffner, Merrick, & Dalton, 2011). CF makes it difficult to recruit and retain staff (Hooper et al., 2010), even if they are tenured (Aycock & Boyle, 2009).

Less dramatic, but equally important, is CF's adverse effects on health care providers' effectiveness (Figley, 2002a, 2002b; McCann & Pearlman, 1990; Sabo, 2011; Sexton, 1999; Valent, 2002). The loss of care providers' compassion or empathic ability can impair their ability to deliver quality services while maintaining professional and personal relationships (Bush, 2009; Coetzee & Klopper, 2010; Collins & Long, 2003a).

Hooper et al. (2010) suggest to nurse leaders that CF may decrease quality of patient care and patient safety in emergency nurses. Affected providers may exhibit reduced staff engagement (Aycock & Boyle, 2009) and diminished endurance (Coetzee & Klopper, 2010). They may avoid conversation with a patient or truncate response to assessment questions to avoid overtaxing their internal resources (Austin, Goble, Leier, & Byrne, 2009; Baranowsky, 2002). They may also exhibit disruptive behavior (Figley, 1995a; Pfifferling & Gilley, 2000; Radziewicz, 2001) for the same reason.

Given CF's original conceptualization, history, and evolution, its symptomology simply reflects a compilation of the symptoms of related concepts. Published lists (Boyle, 2011; Figley, 2002b; Lombardo & Eyre, 2011; McHolm, 2006; Portnoy, n.d.; Radziewicz, 2001; Sabo, 2011) vary in symptoms, details, and degree of overlap with related concepts. Taken in sum, they appear to be symptoms associated with general stress (Seaward, 2015). While this supports the contention that the various related concepts describe part of a single concept, it does little to clarify the definition of CF.

Compassion Fatigue

In order to comprehend full, the dynamics of compassion fatigue, the Figley's Etiology Model is going to be examined next. Figley's (2002a, 2003) etiological model of compassion fatigue (CF) suggests a linear process where ten variables identified in the literature interact to

produce CF in a care provider. In essence, the model allows for the prediction of the onset of CF and may help in its mitigation and prevention (Figley, 2002a). While Figley (2003) acknowledges the model needs much research, it remains the dominant model (Sabo, 2011).

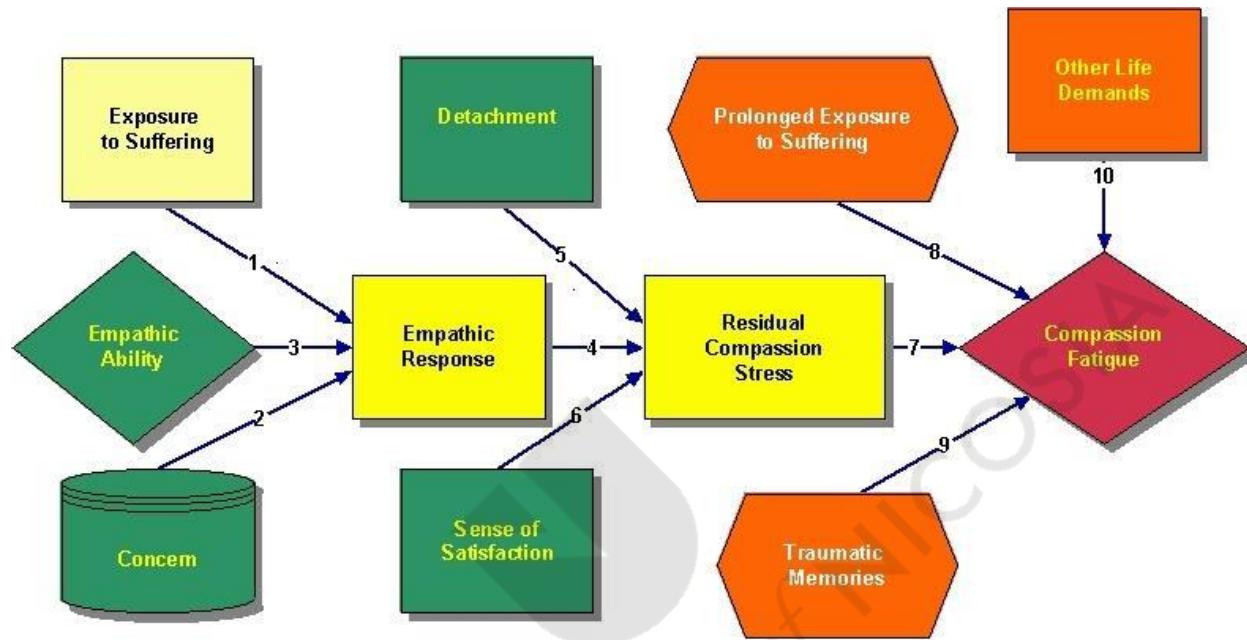


Figure 1. The Compassion Fatigue Process.

Source (Figley, 2001)

Three elements are essential for an empathetic response according to Figley's model. First is the ability to empathize, to understand the suffering of another. Next is exposure to another's suffering. Finally, concern by the potential provider is also required to make an empathetic response (Figley, 2003). The model assumes that empathy and emotional energy motivate professional care providers to work with the suffering individuals, form therapeutic alliances, and provide empathic and effective caring (Figley, 1995a, 2002a). Empathic ability serves as the capacity of the psychotherapist [or care provider] to understand and react

meaningfully to the pain experienced by others (Figley, 2002, p. 1436), is a two-edged sword. While it makes empathetic responses possible, it also makes care providers vulnerable to secondary trauma (Figley, 2002a).

Exposure to suffering serves as the connecting experience to the emotional energy that clients go through in their direct exposures (Figley, 2002a, p. 1437). Exposure to another's suffering is essential in the development of CF, and the effects of that exposure may be enhanced if the care provider uses empathetic connections with the receiver (Figley, 1995; McHolm, 2006; Riggio & Taylor, 2000; Stamm, 2010). Figley does not explain this concept further. Experiencing that emotional energy may be an unintended consequence accompanying the acquisition of knowledge of another's suffering in order to help. Figley (2002a) is clear that many providers move to occupational positions where they do not have to experience the suffering.

Empathetic concern is the motivation to help suffering individuals (Figley, 1995b, 2002a). Where empathic ability is about knowledge, empathetic concern is about action. An empathetic response is the care provider's efforts to reduce another's suffering through empathetic connections (Figley, 2002a). This therapeutic use of self is at the core of psychotherapy (Corey, 1986; Egan, 1990) and holistic nursing (Joinson, 1992; Lachman, 1983), but the same dynamics that make the therapeutic relationship possible may also place the care provider at greater risk for CF (Figley, 1995b, 2002a). Residual compassion stress is the emotional residue following the empathetic response and the persistent need for action to overcome the pain subjected to the client (Figley, 2002a). If unaddressed, it may adversely affect the provider physically and emotionally. Combined with other factors, it theoretically leads to CF (Figley, 2002a).

The model provides two means to cope with the residual stress detachment and satisfaction. Detachment is the psychological distancing of the care provider from the thoughts, feelings, and experiences of the client (Figley, 2002a). Part of self-care, detachment allows the provider to recharge and renew inner resources for the next engagement with the client. Successful detachment does not mean abandonment of the client, but rather the establishment of professional boundaries and work/life balance. Compassion satisfaction, the sense of satisfaction from a job well done, consists of the intangible rewards for providing care (Figley, 2002a, Stamm, 2010). Positive outcomes (Figley, 1995b; McHolm, 2006), signs of appreciation, a sense of achievement (Figley, 2002a, Stamm, 2010), and others (Perry, 2008) reduce compassion stress (Figley, 2002a) and give meaningful value to the caring responses. It is often acknowledged as the antidote to CF and burnout (Figley, 1995b; Jenkins & Baird, 2002; McHolm, 2006; Simon, Pryce, Roff, & Klemmack, 2005; Stamm, 2010).

Prolonged exposure to suffering is defined as the remote sense of responsibility towards taking care of the suffering across a given period of time without respite or relief (Figley, 2002a). Prolonged exposure to suffering taxes the care providers' inner resources, and as the care providers expend more effort, they lose objectivity and empathy (McHolm, 2006). Periods of respite that range from the time between sessions to vacations and sabbaticals work to reduce the provider's fatigue (Figley, 2002a).

Another factor in Figley's model refers to traumatic memories may be from the providers' own experience or may have been absorbed from clients' recounts of trauma (Figley, 2002a). When triggered, these memories produce an emotional reaction and may result in anxiety, depression, or PTSD symptoms (Figley, 1995b, 2002a; Nelson-Gardell & Harris, 2003;

Pearlman & Saakvitne, 1995). According to the model, compassion stress may activate traumatic memories that, in turn, contribute directly to CF (Figley, 2007).

Other life demands, unexpected changes and challenging situations, command attention and tax inner resources. Unable to renew those resources, the provider may simply exhaust their abilities to empathize or help the one suffering (Figley, 1995a; Joinson, 1992; McHolm, 2006) or even to address those other life demands. When acting in concert with the other factors, they increase vulnerability towards CF (Figley, 2002a; Perry, Toffner, Merrick, & Dalton, 2011). Figley's (2002a, 2007) model is not without criticism. The linear flow seems naïve given the complexities of human interaction (Sabo, 2011; Stamm, 2010). Another criticism is the all-or-none characteristic of CF (Sabo, 2011). It does not address clinically significant subclinical symptoms or different degrees of CF (Sabo, 2011). Valent (2002) notes that not every provider exposed to client trauma develops CF, yet the model is largely silent on the alleviation of CF (Sabo, 2011) and on spontaneous recovery.

Dominquez-Gomez and Rutledge (2009) conducted an “exploratory comparative study” to explore “the prevalence of secondary traumatic stress (STS)” among 67 nurses at a healthcare system in rural California. For these researchers, compassion fatigue (CF) was equated with STS. Bride's (1999) Secondary Traumatic Stress Scale (STSS), a 17-item instrument containing three subscales: intrusion (5 items), avoidance (7 items), and arousal (5 items), was used to measure STS. The convenience sample was predominately women (78%), mean aged 43 years ($SD = 10.5$ yrs.) who were associate-degree (58%) prepared nurses providing direct care to patients in the emergency department. These nurses had never sought outside assistance for work-related stress (92%). The mean STSS score for the sample was 37.4 ($SD = 11.0$) with a range from 17 to 74 with higher scores indicating higher likelihood of STS. Most concerning was that half of the

sample met the recommended cut off score of 38, which indicated the presence of STS. Almost 33% of participants met the three subscale criteria for STS. Caucasians had the highest scores; males, nurses with graduate degrees, and nurses who reported participating in stress-management activities had the lowest STS scores. The study was well constructed; however, generalizability is limited due to the geographic location, homogeneity of the sample, and lack of random selection inherent in the study design. The results underscore the necessity to increase awareness of STS among nurses and initiate early preventative and self-care measures. The researchers did not capture compassion fatigue in this study. Hooper, Craig, Janvri, Wetsel, and Reimels (2010) used an exploratory, cross-sectional design to study CS, BO, and CF among primarily female, diploma, or associate degree (62%) nurses in four specialty units at a 461-bed acute care health system in the southeastern U.S. utilizing the ProQOL 3 instrument. The researchers stated that they were using the ProQOL 3 instrument which uses the terms CF, BO, and CS. It is assumed that the term CF was ultimately changed to STS as the ProQOL 5 scale defines CF as a combination of STS and BO with the mitigating effects of CS. The convenience sample included 109 subjects in four specialties. ED nurses ($n = 49$) were compared with nurses in Intensive Care, Nephrology, and Oncology ($n = 12$) units.

Female respondents had a statistically significant higher incidence of CF than did males. Nurses reported lower rates of CS, moderate to high levels of BO, and moderate to high levels of CF. Higher compassion satisfaction was associated with lower burnout levels. The study was well designed but lacked information regarding the strength of the sample size (power analysis). The homogeneity of the sample and single-site setting limits the generalizability of the findings. The researchers often referred to the measurement of compassion fatigue (CF), burnout (BO) and compassion satisfaction (CS) though the ProQOL 5 measures secondary traumatic stress (STS),

BO, and CS. This leads to some confusion and the reader is left to assume that the researchers used the term CF synonymously with STS. Though the study findings did not reach statistical significance, the moderate-to-high levels of BO and CF along with lower levels of CS reported by nurses is corroborated by other studies (Dominguez-Gomez, 2009; Hooper et al., 2010; Yoder, 2010). The finding underscores the need for further research into the effects of the components of CF upon nurses' ability to optimally function professionally and patient outcomes.

Yoder (2010) conducted a research study to explore compassion fatigue in nurses in a convenience sample of 106 nurses in varying specialties from a Midwestern Magnet-designated, 123-bed community hospital using The Professional Quality of Life Scale 5 (ProQOL 5). Additional data were collected from 71 of those nurses via written responses to the following concerns: a description of the situation where the subjects underwent either compassion fatigue (STS) or Burn Out and the strategies utilized to handle the situation or getting over it (Yoder, 2010). Nurses in the ED, nearly 24% of the sample, had the lowest CS scores. CS was strongly negatively correlated with numerous items on the STS and BO subscales (Yoder, 2010). Nurses also had the second highest STS scores and the highest BO scores. Nurses with STS scores greater than 17 and BO scores greater than 27 are considered "at risk" The 71 responses comprising the second part of the study were analyzed using content analysis. An experienced qualitative researcher reviewed the coding and definitions; consensus was reached through discussion with the researchers (Yoder, 2010). Three types of trigger situations for STS and BO emerged from the narrative data. Forty-four (52%) responses were categorized as triggers involving "caring for patients" (associated with STS). Twenty-seven (32%) of responses involved "systems issues" (associated with BO) triggers. Thirteen responses (15%) involved "personal issues" triggers (Yoder, 2010, p. 194).

Seventy-eight (58%) of the responses involved using work related interventions (changing personal engagement, changing the nature of work involvement, informal debriefing, taking action to change or manage the situation, and developing rituals) to mitigate the effects of STS and BO. Fifty-seven (42%) of the responses reported using personal coping strategies (spiritual or religious coping mechanisms, introspection, and attitude modification) to mitigate the effects of STS and BO (Yoder, 2010).

The study lacked information regarding how the sample size was determined (power analysis). The qualitative part of the study had a strong sample size and presented thick data; the sampling style, site location, and Magnet© status of the hospital further limit the generalizability of the researcher's findings. The researcher also suggested that her status as a coworker of some of the participants might have had some effect on the quality and quantity of data (Yoder, 2010). However, the results are supportive of other studies that indicate low CS and higher STS and BO scores among nurses. These findings underscore the need for further research in this area to explore the causes, effects, and mitigating factors of STS, BO, and CS upon nurses towards the development of appropriate interventions and preventative strategies.

Smart, English, James, Wilsohn, Daratha, Childers, and Magera (2014) investigated CF among different healthcare professionals in a 250-bed, Magnet-designated community hospital in the northwestern United States to identify variables that may improve professional quality of life; a total of 139 subjects; registered nurses; certified nursing assistants; and “other” completed behavioral and environmental surveys along with the ProQOL 5 instrument (Smart et al., 2014). The environmental and behavioral items were chosen based on findings from the literature review to explore possible relationships that may predict CF subscale levels. Both questionnaires were available in paper and online format (Smart et al., 2013). Most of the participants were

registered nurses that were subjected to work for less than 40 hours in a week where the largest percentage of respondents had tasks in the ED including the resource pool of the nurses.

Multivariate regression found that of the variability in burnout was explained by hours of sleep per night and whether a worker was employed in a critical care unit No variables were identified in the regression models to predict CS (Smart et al., 2013).

Analysis of the ProQOL 5 scores showed no statistically significant differences between departments for any of the three subscales. Staff working on the general medical floors was found to have the highest BO scores and the highest STS scores. Those working in the ED had the highest CS scores and the lowest BO and STS scores. The researchers noted that the estimated degree of compassion satisfaction, secondary traumatic stress, and burnout for the selected sample fell into the average-to-more favorable range (Smart et al., 2013). These findings are inconsistent with those of Hooper et al. (2010) and Yoder (2010, p.5) which reported a sizable of participants being classified within the scale of high risk. The study was well constructed though information, such as power analysis and population description, however the strength of the sample size was lacking. The generalizability of the study results is limited by the convenience sampling, a homogeneous study sample, and the use of a single setting. All hospital departments and employee types (physicians, and other non-nursing groups) were not equally represented, so the usefulness of the findings to those groups is limited as well. The study's findings may also be limited by particulars of the setting. The researchers also noted that the availability of the online survey at work could have discouraged candid responses.

Hunsaker, Chen, Maughan, and Heaston (2015) explored the factors influencing the development of CF, BO, and CS in nurses in the United States with a total of 1000 randomly selected emergency nurses belonging to the Emergency Nurses Association (ENA) received an

invitation to participate in the study by mail. A final sample of 278 of those invited to participate met the inclusion criteria and returned the survey packets (Hunsaker et al., 2015). The researchers posed four research questions where one of them sought to explore the prevalence of CS, CF, and BO among ED nurses. The study recorded raw mean scores for the levels of CS, CF, and BO among the ED nurses (Hunsaker et al., 2015, p.1). The results depicted that about “56% of the ED nurses fell into the average level of CS (scores between 23-41), 65.9% were in the low level of CF (scores of 22 or less), and 54.1% of the participants were in the average level of BO (scores between 23-41)” (Hunsaker et al., 2015, p.1).

Question 2 explored relationships among demographics, CS, CF, and BO where the findings revealed that older nurses yielded higher levels of CS. Younger nurses reported higher BO scores as well as CF scores” (Hunsaker et al., 2015). No statistically significant differences were noted between genders (Hunsaker et al., 2015).

Question 3 sought to identify differences in CS, CF, and BO scores among nurses grouped by various characteristics. CS levels of nurses who held graduate and doctorate degrees were significantly higher than nurses of all other educational levels. These nurses were also found to have significantly lower BO levels (Hunsaker et al., 2015). More experienced ED nurses had higher CS levels and lower BO levels. Nursing professionals who worked 8 to 10-hour shifts reported more levels of CS and minimal levels of BO when compared to nurses that worked 12 hour or other shifts (Hunsaker et al., 2015, p.1). Nursing professionals with skills in managerial support reported significant increased levels of CS and lower levels of both CF, and BO compared to nurses that did not report skills in managerial support (Hunsaker et al., 2015,). Question 4 presented the demographic variables and work factors which projected the CS, CF, and BO among nurses. Managerial support served as the greater exogenous factor contributing to

the level of CS, level of CF, and level of BO. Age depicted positive and significant prediction of the level of CS and in inverse relationship to the level of BO (Hunsaker et al., 2015, p.1).

The generalizability of the study was limited using a single setting and including only nurses who held membership in their professional organization in the sample. The ProQOL 5 subscale titles that the researchers use is also somewhat confusing. The 2010 ProQOL 5 description titles the three subscales as burnout, compassion satisfaction, and secondary traumatic stress (not compassion fatigue). The 2005 ProQOL manual used BO, CS, and CF to describe the variables. It is assumed that the terminology of CF is the same as the ProQOL 5 terminology of STS. Regardless, the study was well designed. Experience, education, and managerial support appear to be supporting factors in the cultivation of CS and the prevention of BO and CF of nurses.

Further review analyzes the conditions of radiation technicians and doctors of nuclear Medicine and compassion fatigue. For instance, the study by Akroyd, Caison and Adams (2017) examined the trends in burnout considering the experiences of radiation therapists. The authors noted that given the conditions of cancer healthcare givers, radiation therapists undergo a number of stresses which turn into burnout; the implications are that such affects the care processes accorded to the patients, employees' health, and the effectiveness of the organization altogether.

The authors adopted a methodology which relied on both descriptive including inferential statistics with valid and credible instruments to estimate burnout, stress, and social support of the radiation technicians. The results indicated that regarding burnout, the caregivers reported increased levels of emotional exhaustion including depersonalization. The study recommended that initiatives to mitigate burnout experienced by radiation therapists would positively impact quality rendered through patient care, enhanced quality of life, increased levels in terms of

satisfaction in the job, high job-embeddedness and reduced turnover of the staff members. In harmony with the findings above, Sarra and Feuz (2017) evaluated the prevalence in lieu of compassion fatigue including burnout among radiation therapists entrusted with the care of palliative cancer patients. The authors applied the Professional Quality of Life Compassion Fatigue and Compassion Satisfaction survey to determine the levels of self-reported CF including burnout of the mentioned cohort.

The results indicated that radiation therapists reported high degree of compassion satisfaction including reduced levels of low burnout including secondary traumatic stress. Worth noting, the study asserted that potential stressors cited were the absence of resources expected to assist vulnerable and dying patients including their family members; also, the lack of sufficient education to cope with CF including burnout among the staff members i.e. radiation technicians. Sarra and Feuz (2017) have similar findings with Dempsey, Marignol and Craig (2016) who applied the ProQOL-v5 to assess the levels of self-reported compassion fatigue among radiation therapists located in Ireland. Foremost the findings established that compassion fatigue was real and in high levels within this cohort and the main triggers being the lack of skills to brave the healthcare environment and lack of resources to realign their professional commitment with the needs of the patients.

On the other hand, Potter et al., (2010) analyzed the trends associated to compassion fatigue including burnout in the case of Oncology Nurses relying on a cross-sectional survey and with a 30-factor Professional Quality of Life i.e. ProQOL scale aimed to estimate trends in CF, CS and burnout of the mentioned cohort. The results depicted that Oncology nurses faced high risk of burnout and increased levels of compassion fatigue. Further, the study found out that there was no statistically significant nexus between compassion satisfaction: especially when

compared to work setting of the healthcare givers. In terms of demographic effects, the establishment of the study was that years of Oncology experience of the nurses failed to show significant relationship to compassion fatigue, burnout and compassion satisfaction.

Summary of Compassion Fatigue Literature

Though the study of human reactions to traumatic events can be traced to the earliest medical writings published in 1900 BC in Egypt (Figley, 1995a), the field of traumatology has only become a dominant focus for mental health fields since the early 1980s (Figley, 1995a). STS, a component of CF, was first explored in modern times in relationship to the therapist/client relationship. Much of the early literature related to CF focused on the concept analysis and definition of the components of CF. Recent research has begun exploring the effects of CF upon patient care outcomes and personal health and welfare of the healthcare workers caring for trauma victims.

Nurses, particularly because of their integral role within the continuum of patient care services, remain at risk for the development of CF across the healthcare spectrum. The research has supported that there are some demographic and work-related variables that can predict the incidence CF and some self-care strategies that can mitigate the effects of CF (Hunsaker et al., 2015; Yoder, 2010). However, the sparseness and inconsistency of existing studies on the components of CF (BO, CS, and STS) in ED nurses underscores the need for further studies regarding CF and ED nurses.

Compassion Satisfaction

Compassion satisfaction is the sense of reward, enjoyment, and efficacy that helping professionals feel regarding their work with their clients (Figley, 1995; Jacobson, 2012; Stamm, 1999, 2010). Normally helping professionals begin their careers with a feeling of high

compassion satisfaction, responding to their clients genuinely, timely, and with consideration to the clients' needs. Compassion satisfaction is essential to rendering care to clients who depend on the professional in multiple ways to address their needs. Compassion satisfaction aligns with compassion fatigue because like secondary traumatic stress and burnout, it is another layer that solidifies the occurrence of compassion fatigue (Figley, 1995; Stamm, 1999). Research shows that compassion satisfaction is compromised when burnout in caregiving professionals is not addressed (Figley, 1999; Harr, 2013; Jacobson, 2012; Stamm, 1999, 2010). The two components tend to feed off of each other making compassion fatigue progressively worse, meaning that the more burned out a staff member feels the more his/her compassion satisfaction diminishes, and the more his/her compassion satisfaction diminishes, the more burned out they become.

Lack of compassion satisfaction affects how caregivers interact with their clients by giving their clients the bare minimum of professional care. This often results in helping professionals becoming careless or reckless with their clients, and/or avoiding or detaching as much as possible when interacting with the clients (Harr, 2013; Jacobson, 2012). Helping professionals find it difficult to work with their clients when there is a low sense of reward and the empathy that they once felt towards the clients out of genuine care and concern may become challenged. Caregivers may solely blame the way they feel directly onto the clients, thus becoming less empathetic towards the clients, and filtering their objectivity in order to effectively help the clients. Compassion satisfaction is a component of compassion fatigue that affects the quality of life for professionals. Stamm (2010) gives visualization that the lack of compassion satisfaction is a result of burnout and secondary traumatic stress which leads to compassion fatigue. Due to compassion fatigue, compassion satisfaction continually decreases, unless there is an intervention to stop or change the process. Lack of compassion satisfaction

may be altered in some way by staff's using other means to help cope that compromises their quality of life, such as drinking, using drugs, developing somatic symptoms, actual health problems, mental health problems, etc.

Compassion satisfaction in some way serves as the moderator between experiencing compassion fatigue (a composite of high burnout and stress with low compassion satisfaction), and the impact compassion fatigue may have on a professional's quality of life (Figley, 1995; Stamm, 1999, 2010). If compassion satisfaction is somewhat still high despite burnout or the exposure to secondary traumatic stress, then the quality of life for a professional may be better, or the professional may stand a better chance of improving his/her level of compassion fatigue. However, the more compassion satisfaction diminishes the less chance the professional has in countering compassion fatigue. In essence compassion satisfaction serves as a protective factor for caregiving professionals and is a mitigating factor in protecting staff from negative emotions, thinking, and reactions as a result of experiencing compassion fatigue (Adams et al., 2006; Figley, 1995; Harr, 2013; Mathieu, 2007; Slocum-Gori et al, 2011). If compassion satisfaction is nurtured by administrative staff, compassion fatigue is less likely to develop among staff, and compassion fatigue will be easier to counter (Newman, Guy, & Mastracci, 2009).

Gleichgerrcht and Decety (2013) conducted a study with a large sample size and examined the relationship between CF, CS, burnout, and empathy in physicians. The ProQOL (Stamm, 2002) was used to measure CS, CF, and burnout. In this study, a positive correlation between CF and burnout was found, but no significant correlation between CS and CF or CS and burnout was found. The researchers selected extreme cases of CF and CS and divided them into four groups for further analysis: participants with (1) high CS and low CF and burnout, (2) low CS and high CF and burnout, (3) high CS and high CF and burnout, and (4) low CS and low CF

and burnout. More than double the number of physicians was included in the group where participants exclusively reported high CF and burnout as compared to the group where participants exclusively experienced high CS, indicating high stress and low satisfaction experienced by the clinicians. The physicians who reported high CF and low CS reported higher discomfort in reaction to emotions displayed by others compared to clinicians in other groups. They also reported more difficulty describing their feelings, difficulty identifying emotions, a decreased ability in perspective taking, and lower feelings of warmth or compassion toward others, compared to other groups. On the other hand, regardless of the level of CF, the clinicians who reported high CS exhibited a tendency to have more empathic emotions for others in distress compared to those who did not report high CS.

Fujioka (2012) suggested another perspective of the relationship between CF and CS. Fujioka compared Japanese child welfare workers based on their reported levels of CF and CS, which revealed that clinicians with a moderate level of CF reported higher CS compared to those who had either low CF or high CF. He also found that clinicians with a moderate level of CF rated their competency as a clinician, satisfaction toward their colleagues, and overall life satisfaction higher than clinicians with very high or low CF. Based on the results, Fujoka argued that high CS is not necessarily an indicator of clinicians' well-being or professional effectiveness. He believed, instead, that a good balance of CF and CS can lead to a better functioning level of the clinician, and therefore it is important to assess both CS and CF when assessing clinicians' well-being and effectiveness. A study of Jo (2014) supported Fujioka's conclusion. Jo examined how the clinicians' approach to clients differs depending on the level of CF and CS. He recruited professionals who work with abused or neglected children in residential settings in Japan. The findings revealed that a group of clinicians who had high CF with low CS

communicated with children less frequently or were less likely to use a team approach, and engaged, instead, in more frightened or frightening behaviors toward children. Whereas a group of clinicians who reported low CF and high CS was more likely to use communication and team approach and less likely to ignore the children's maladaptive behaviors. In addition, a group of clinicians whose scores were high on both CF and CS was more likely to ignore clients' behaviors compared to a group where clinicians reported high CS and low CF, suggesting that high CS did not reduce clinicians' ignoring behaviors unless it was paired with low CF.

Summary of Compassion Satisfaction Literature

The literature on compassion satisfaction indicates that healthcare providers pursue opportunities that expose them to rewards, efficacy, and self-contentment. Therefore, it can be asserted that the healthcare work environment is crucial in enabling this cohort to achieve maximum compassion satisfaction. In the review, it is evidenced that creating a first instance of high compassion satisfaction enables healthcare professionals to increase productivity whilst responding to the needs of the clients more genuinely with timeliness and consideration. For this reason, the literature thus far presents a case whereby there is correlation between the work climate and compassion satisfaction of the healthcare providers where the two must always be leveraged.

Demographics and Other Risk Factors

Demographic reviews identify the significantly high exposure of females to the risk of compassion fatigue and occupational stress, as compared to their male counterparts. Multiple demographics of such as ethnicity, marital and income among others have not proven too significant to the development of CF (Roberts, Flannelly, Weaver, & Figley, 2003; Simon, Pryce, Roff, & Klemmack, 2005). Kassam-Adams (1995) found that gender was predictive of

therapists' level of PTSD. Female therapists reported experiencing more personal trauma than did male therapists (Kassam-Adams, 1995). Gender and STS were not significantly associated in a study of mental health workers by Creamer and Liddle (2005). Abendroth and Flannery (2006) reported no significant relationships between marital status and risk of CF or between ethnicity and risk of CF. Rossi et al. (2012) reported that female clinicians who provide mental health care in community-based settings reported higher CF than did male clinicians ($n = 83$). Sprang, Clark, and Whitt-Woosley (2007) also examined gender differences in a larger sample size and reported the same results; female mental health providers reported higher CF than male clinicians. Sprang et al. (2007) suggested that women may be more vulnerable to stress and indicated the need to examine personal history of trauma and gender differences in CF. They also speculated that women may be more prone to disclose symptomatology and urged further investigation. Gleichgerrcht and Decety (2013) studied CF among 7,584 physicians and reported that despite no statistically significant gender differences in CF, women were more likely to report that they were less valued by their patients, colleagues, and supervisors, and more likely to report negative impacts of their work on their personal lives.

Age appears to function largely as a confounding variable in CF. Creamer and Liddle (2005) found youth associated with elevated levels of STS. In Nelson-Gardell and Harris's (2003) study of child welfare workers, age proved a significant predictor of STS risk when personal trauma histories were controlled. In their survey of 89 sexual assault counselors, Ghahramanlou and Brodbeck (2000) found that young age predicted more psychological distress self-reports and higher intensities of secondary trauma. Conversely, Abendroth and Flannery (2006) and Potter et al. (2010) found little correlation between age and risk of CF in hospice nurses. Bush's (2009) review found no evidence of age contributing to CF. Quinal, Harford, and

Rutledge (2009) found only insignificant correlations between age and total STSS scores. Simon, Pryce, Roff, and Klemmack (2005) surveyed 21 oncology social workers from the Association of Oncology Social Workers using the Compassion Fatigue and Satisfaction Self-Test for Helpers and found age, length of time in oncology, and number of clients seen each month not significantly correlated to CF. At best, age appears to be a moderating variable.

Assessing 185 health care providers associated with a southeastern children's hospital using a CF instrument they developed, Meadors and Lamson (2008) found those with high levels of personal stress experienced higher levels of CF. Nurses who cared for hurricane victims showed less risk for CF if they had fewer life stressors, e.g. were not primary caregivers (Frank & Adkinson, 2007). Nurses with emotional and other issues reported them as making their CF worse (Perry, Toffner, Merrick, & Dalton, 2011). Nurses experiencing financial stress were found at higher risk for CF (Abendroth & Flannery, 2006). Using the Compassion Satisfaction/Fatigue Test to study of 13 healthcare workers from the 1998 Omagh bombing, Collins and Long (2003a) found mental health background made no significant difference in risk for CF. However, Komachi, Kamibepu, Nishi, and Matsuoka (2012) found neuroticism highly correlated with the risk of CF in general Japanese nurses. In Abendroth and Flannery's (2006) sample of 216 hospice nurses, 35% of nurses with a diagnosis of PTSD or depression were at high risk for CF while only 24% of those without a diagnosis were at high risk.

Collins and Long (2003a) reported that professional backgrounds and approaches to treatment made no significant difference in risk for CF. The level of social work licensure, while unrelated to burnout and STS, demonstrated a relationship with compassion satisfaction in an exploratory study of 21 oncology social workers (Simon, Pryce, Roff, & Klemmack, 2005). Norcross and Guy (2007) reviewed the utility of supervision for therapists and trainees. They

endorse continued supervision to counter distress arising from professional practice based on experience and review of the literature. Rudolph and Stamm (1999) argue for the benefits of supervision in terms of clinician development and support. They also argue for it from an administrative perspective, citing its effectiveness, the increase in organizational efficiency resulting from improved performance, and the acceptability of the costs involved (Rudolph & Stamm, 1999).

Figley (2002) stated that there is cost for providing direct service to traumatized patients, and prolonged exposure to such patients puts clinicians at greater risk of developing CF. Some studies suggest that prolonged exposure to patients or a high caseload of traumatized patients in significant distress may be a risk factor of CF. Slocum-Gori et al. (2011) conducted a web-based national survey, and 630 hospice and palliative care (HPC) workers completed the ProQOL (Stamm, 2002), which measured CF, CS, and burnout. In this study, the clinicians whose work involved assistance in relieving emotional distress among the patients reported higher levels of CF and burnout when compared with those who did not engage in such work. In addition, the HPC workers who provided psychological and emotional support for patients, families, or other team members reported significantly higher CF and burnout than those who did not. This type of care (providing emotional care for patients) was only associated with levels of CF and burnout, and did not predict CS. These findings suggested that exposure to significantly distressed patients and having to provide care to alleviate their emotional pain seemed to increase the risk of CF. The same study revealed that full-time HPC workers reported significantly higher CF compared to part-time workers, and Slocum-Gori et al. argued that high CF among full-time workers may be due to prolonged exposure to patients in distress. Thus, high exposure to suffering or traumatized patient could potentially be a risk factor of CF.

One may wonder how professional knowledge or clinical experience would impact the likelihood of a practitioner to develop CF. Sprang et al. (2007) studied 1,121 mental health providers and explored the predictors of CF and CS. The findings revealed that female gender, young age, less clinical experience, and a higher percentage of clients with PTSD predicted higher levels of CF. Comparison of practitioners with different educational levels revealed that clinicians with an M.D. had greater CF than clinicians with master's degree or Ph.D. Age or practice settings were not related to the elevation of CF levels among psychiatrists, and the researchers speculated that large caseloads due to shortage of psychiatrists may be one of factors that increase CF among those professionals.

In Japan, Umezaki (2015) reported the study findings of social workers ($N = 110$) from the areas affected by the Tohoku Earthquake and tsunami in 2011. The findings suggested that social workers' CF was negatively correlated with one's satisfaction with own clinical competency and satisfaction with their relationships with patients. In addition, the same study revealed that clinician's CF level was positively correlated with exposure to patients' aggression toward providers only when the clinician did not receive supervision. In other words, exposure to patients' aggression did not significantly increase the level of CF when clinicians received supervision. Moreover, clinicians who received supervision reported lower CF when they had high satisfaction with their relationship with colleagues, but clinicians without supervision did not significantly reduce the level of CF even when they were satisfied with their relationships with colleagues. Umezaki argued the importance of both emotional and educational support for clinicians in order to maintain and promote their well-being. Fujioka (2011) studied CF's risk factors among professionals working in the child welfare field. Findings included a positive correlation between CS and years of work experience, but there was no significant relationship

between CF and length of work experience. Gleichgerrcht and Decety (2013) reported that more experienced physicians had higher CS and lower CF compared to less experienced physicians ($n = 3,891$). However, significantly more women were included in the less experienced physician group, and the average age of female participants was significantly younger than male participants' average age in this study. After controlling for age and gender, years of experience no longer predicted CF and CS. Therefore, researchers concluded that the years of experience do not independently predict CF or CS, and other risk factors need to be explored.

In a related vein, Kim (2013) examined the relationship between CF, CS, burnout, and education level among 14 liver-and-kidney-transplant nurse coordinators, and found that education level was only associated with burnout but not with CF and CS. Sprang et al. (2007) who conducted a quantitative study with 1,121 mental health providers focused on the effects of specialized training in trauma rather than general education levels on CF and CS. The participants were asked whether they had received specialized training in trauma work. Clinicians who received specialized training reported higher CS and lower CF than those who were without such training. Sprang et al. discussed that training may enhance the clinicians' self-efficacy, which is an individual's belief in their capacity to deal with challenges, or result in superior treatment outcome, contributing to increased resilience. Craig and Sprang (2010) studied CF among clinicians who worked with individuals with PTSD, and reported that the lack of use of evidence-based practices was associated with increased prevalence of higher CF. Thus, lack of knowledge, skills, and training opportunities to learn effective practices could be potential risk factors of CF. By contrast, training that enhances clinical skills and knowledge about care of traumatized patients may reduce CF risk. According to Figley (2002), clinicians who have lifetime traumatic experience or recent life disturbance (e.g., lifestyle change, personal

and professional responsibilities) are at greater risk of developing CF. Previous studies have examined the impact of recent negative life experiences and history of traumatic experience on CF. For example, Adam et al. (2008) examined the impact of negative life events on well-being among social workers in New York City. The participants of this study completed the 30-item Compassion Fatigue Scale-Revised (Gentry et al., 2002), which was developed based on the CF scale by Figley (1995a), and the GHQ-12 questionnaire (Goldberg & Williams, 1988). Sixteen questions from Freedy, Kilpatrick, and Resnick (1993) were used to measure the presence of recent negative life events (e.g., divorce, family conflicts) and lifetime traumatic events (e.g., childhood trauma, victimization of violence, natural disaster), in addition to 19 original items to measure the clinicians' exposure to the September 11 World Trade Center Disaster (WTCD) and exposure to traumatized individuals after the WTCD. In addition, work environment, social support, and sense of mastery were assessed. The results indicated that 31% of the social workers experienced at least two negative life events in the past two years, 34% reported three or more lifetime traumatic events, and 18% were heavily involved in the WTCD recovery efforts. Social workers who had more recent negative life events as well as those who were heavily involved in the care after the WTDC reported significantly higher CF compared to social workers with fewer recent negative life events or less involvement in the care following the WTCD. In addition, the participants who reported higher CF reported higher burnout and poorer psychological well-being. On the other hand, lifetime trauma experience was not significantly associated with CF or psychological well-being. Rossi et al. (2012) also examined the association between CF and recent negative life events and lifetime traumatic events among community-based mental health providers by using the same questions from Freedy et al. (1993). The results were consistent with Adam et al. (2008) in terms of the relationship between recent negative life events and CF;

clinicians who reported more negative life events in the past 12 months were likely to report higher CF. However, unlike Adam et al. (2008), Rossi et al. (2012) found a significant relationship between CF and lifetime traumatic events. The participants who experienced more traumatic life events at some point of their lives were at greater risk of having CF compared to those with fewer or no personal traumatic experiences. These results suggest the significant impact of proximal stressors as well as distal stressors on CF among practitioners who work with traumatized individuals.

Distress Tolerance

While clinical psychology places great importance on empathy as a mechanism for interpersonal connection, healing, and caregiving, there has been little input from the clinical perspective on the current conceptual models of empathy. There is some theoretical work that suggests emotion regulation and distress tolerance play an important role in the process of empathy (Decety & Jackson, 2004), however, there has been no empirical research on the nature of this association. Most research on empathy conceptualizes empathic connection and personal distress as mutually exclusive phenomena, asserting that one's ability to engage in empathy successfully can be impinged by personal feelings of distress and self-focused thoughts (Decety & Lamm, 2006). Acceptance and kindness towards one's experience can soften one's reaction to potentially distressing and overwhelming experiences in one's awareness, whereas judgment and self-criticism can increase distress (Sayers, Creswell, & Taren, 2013).

When the emotions evoked in empathy become overwhelming for the empathizer, they can lead to self-focused concern, rather than attention to the suffering of the other individual (Cheetham et al., 2009; Joireman et al., 2002), and can lead to feeling paralyzed (Batson, Fultz, & Schoenrade, 1987). Research has demonstrated that the ability to modulate attention and

emotion can determine whether the affective experience arising in affective sharing can be tolerated and the empathic connection maintained, or whether it leads to emotional dysregulation and personal distress (Eisenberg & Eggum, 2009; Stanger et al., 2012). However, personal distress and empathic concern may not be mutually exclusive phenomena and may instead be momentary experiences that are likely to come and go in empathy. Awareness of one's own emotional experience, noticing when attention has moved away from the other person, and flexible values-driven responding in the presence of these experiences may maintain "good enough" empathy, whereas inflexible responding in the presence of emotional dysregulation and inability to tolerate distress may lead to a shift in attention away from the other person that is not conducive to empathy. It may be that inflexibility in responding in the presence of intense emotions precipitates the paralyzing and burn-out effects of personal distress that have been observed in research (Birnie et al., 2010). Mindfulness may serve a supportive function in empathy by increasing the ability to tolerate greater intensity and duration of negative affect (Wachs & Cordova, 2007) and promoting flexible, values-driven responses in the presence of difficult emotion (Roemer & Orsillo, 2002). Mindfulness meditation encourages individuals to be present with difficult emotions, which can make the felt experience more intense without the relief of distraction or avoidance. With practice, the mindfulness practitioner learns to be present with these difficult emotions and to turn towards them with kindness, acceptance, and curiosity (Erisman & Roemer, 2010). The assertion above links to the objectives of the study whereby self-reported empathy is perceived to have significant contribution to compassion satisfaction of the oncologists and healthcare professionals. Thus, this variable provides more understanding on the state of mindfulness as an antecedent of self-reported empathy among the cohort of the study.

Emotional Regulation

The choice to address the matter of emotion regulation rests on the fact that it was a mediating variable in this dissertation. In chapter four, one of the focuses was to establish the mediating influence of emotional regulation (DERS) on the relationship involved between empathy (JSEHP), compassion satisfaction and compassion fatigue (ProQOL). Therefore, the researcher deemed it appropriate to foremost provide a detailed explanation of the meaning of emotional regulation including its key components that can be leveraged in the debate on empathy and effects to compassion fatigue. Furthermore, the section provides past outcomes of empirical studies that examined the role of emotional regulation in compassion fatigue as an outcome of reported empathy among oncologists.

Thus far, it has been shown that compassion fatigue inhibits the capacity of the professional healthcare to extend empathetic feelings to their clients; thus, creating tension between themselves and those that need compassion for healing from various traumatic conditions. Based on these specific conditions, the professional healthcare requires to have inbuilt capacity to regulate their emotions in order to be more effective and helpful to the patients that need their assistance. In this regard, emotional regulation is one of the factors to enable professional healthcare to overcome the risks drawing from compassion fatigue. Some authors have proposed that the most important features of emotion regulation lie in behaviors that alter how emotions are experienced. One proposed definition refers to the theoretical understanding of processes related to the physiological, behavioral, and cognitive aspects that enable individuals to manage experiences and outcomes of positive and negative emotions (Bridges et al., 2004). A person who is grieving for a loved one may not be able to alter their emotions of sadness and may have difficulty expressing them. However, there remains minimal evidence of poor

regulatory abilities if they are able to function despite their grief. The significant understanding is on whether the traumatized persons have suicidal thoughts than what they feel inside.

Therefore, it is possible that this definition captures part of emotion regulation, but perhaps there are other features to be considered.

Another possible factor to examine is the timing of emotion regulation. The same is important because the term emotion regulation itself refers to two phenomena. The first one points to the protocols that link to emotion generation while the second involves different protocols that emerge after the emotion response including the control or mismanagement of the same (Campos et al., 2004). Essentially, there are two separate processes that we postulate when we imagine a person experiencing and regulating their emotions. The version of emotion regulation, however, runs into difficulty when one considers that “cortical inhibition can precede emotion elicitation.” (Campos et al., 2004, p. 380) Thus, this suggests that the regulation of emotions is at least partially overlapping with the experience of emotions, which makes isolating regulation far more difficult than it first appears. To some extent, it may be that emotions are part of a regulatory network that is engaged before we are even consciously aware of our reactions. Even more strikingly, it has been argued that due to the model of appraisal and action readiness changes the experience and conduct of the self and others, hence rendering emotions to be inherently regulatory (Cole & Dennis, 2004). While it does seem plausible that emotions serve as self-regulatory behaviors, given the biological factors at play, it would be helpful to have a way to measure the effectiveness of regulation. This would be useful because there are some frameworks which postulate that all behaviors are emotion regulatory; the principle of hedonism was interpreted in a liberal manner meaning that the mission of all conduct is affect regulation

(Clore & Robinson, 2000). The same would imply that the only meaningful measurement to assess a behavior's regulatory abilities is how effectively those behaviors achieve their purposes.

The work by Tronick (1989) addressed the phenomenon of emotions and emotional communication factors in infants. The author evaluated the emotional communication that existed between infants and adults; the author further asserted that emotions and emotional communications in the case of infants when compared to adults are much organised since the latter depict a much discrete affective disposition. In addition, Tronick in his paper stated that expressions of emotions by the infants and their guardians' function to enable them to have a mutual regulation of their interactions. Therefore, development of the infants is dependent upon the operations and functions of the communication system. On this note, another major train of thought suggests that emotion regulation can be determined based on the intent of actions which a person takes. For example, emotion regulatory in pursuance of a goal meant to impact on a remote or projected emotion (e.g., hiding one's pride at winning an award): In the case the goal of an emotion regulation goal is always the emotion-generative process (Gross & Urry, 2011). The definition allows us to include goal directed behaviors into emotion regulation. The same also begins to access the objective territory of how effectively those goals are reached. The sentiment is expanded on by others who suggest that emotion regulation incorporates the efforts to control emotion regulation process. Conceptualizations of emotion regulation include both intrinsic and extrinsic processes to accomplish goals or function adaptively (Campos et al. 2013). This last definition adds the feature of functioning adaptively to emotion regulation. This seems valuable because functioning and intention are more directly observable than experience. Moreover, it also addresses the previously stated concern that some emotional states can be well regulated, despite persistent negative states and an inability to communicate about them. Others

support this model as well, offering definitions such as a person's capability to propel and manage responses in emotions and emotionally-driven behavioral conduct to attain major goals (Boyer, 2012). The emphasis on working toward goals allows us to measure emotion regulation more objectively. A person could report a feeling or experience of sadness that is much more intense than another person may report, and this information may have descriptive value. Nonetheless, it seems more salient that emotion regulation be able to predict behaviors, such as suicidality or aggression, than to be able to describe subjective states. Indeed, the usefulness of this construct will depend on its ability to be related to observable and predictable behaviors.

Raymond Bergner (2003) argued in his article "Emotions: A Relational View and Its Clinical Applications" that the standard view of emotions is inadequate. Specifically, the idea that emotions are can be observed directly by persons that have experiences of the emotions does not bear scrutiny. Focusing on the internal experience of emotion may mislead us, because a person who is reporting that they are afraid may not be describing the same state as someone else claiming the same thing.

Empathy and emotional attributes among individuals remain linked with the physiological and neural processes manifesting within the brain activities of the specific individuals. While multiple psychological and emotional mechanisms are involved within the development of an individual's empathic and compassion attributes, the state of these mental actions greatly influences the behavioral actions and dynamics of the affected individuals. In principle, the mental processes among individuals emanates from the emotional and physical response to the stimuli from the immediate environment. Contemporary literature identifies the integral role of the limbic system in the regulation of emotional states based on the control action on physiological and emotional response to stimuli (Blackford & Pine, 2012). The system

functions through identification of the multiple neurochemicals including dopamine, noradrenaline, and serotonin which are increased and decreased accordingly, for achieving certain states. The engagement of neurochemicals triggers significant changes in the brain activity where the emotions and physiological aspects are affected. However, focusing on physiological changes does not solve the conundrum as this does not eradicate the shortcoming of matched feelings due to the failure to recognize and relate to others (Bergner, 2003). Furthermore, it is the case that feeling states are not necessary to engender behaviors based in emotional stimuli. Indeed, individuals can opt to lock themselves and distance from social realities where all these constitute fear-driven course of action aimed to overcome or evade dangers (Bergner, 2003) and yet such a person may not state that they are feeling fear in those moments.

Bergner suggests that it is more accurate to examine emotions through the lens of relationships with other objects. In this case, the term objects refer to a wide category which includes anything which we can consider a person in relation to. It could be a physical entity, or a feared possibility, or even a sense of emptiness. Bergner proposes that emotions refer to the perceptions of individuals in terms of their relationship of themselves and other subjects; and the appraisal of which interlinks logically to motivational significance; and the tendency of the person to undertake a course of action without appropriate. A person can be described as frightened when they perceive and appraise something as a threat, and then take actions toward an object consistent with our definitions of fear behavior. Fleeing from a tiger due to its ability to harm is enough to establish fear, regardless of the internal experience of the person. A person may not always actually flee from a feared object of course, for a variety of reasons. One may find their escape paths blocked or be willing to endure danger for a monetary reward. But the

natural desire, before being checked by other factors, is indicative of fear. Rather than using a subjective experience to define the emotion, the emotion defines the subjective experience; an emotion is “what you feel like--whatever that might be--when you stand in a certain relationship to the world.” (Bergner, 2003, p. 11) When you feel that something is a danger to you and you wish to avoid it, the feeling that you feel is fear. This is true regardless of how your experience of fear differs from another person’s. The same allows one to examine a person’s emotional regulation ability by determining whether someone perceives their relationships with objects accurately, and what actions they take as a result of their perception of those relationships.

Essentially, emotional actions are not inherently good or bad, they are either effective or ineffective. Emotional competency refers to a state in which one can take effective actions in response to emotional stimuli. Identified patterns in relation to emotional behavior have much likelihood to generate positive results when compared to others (Schwartz, 2013). In many cases this action will occur instantaneously. For instance, “when I recognize immediate danger, I act fearfully; when suddenly provoked, I act with hostility.” (Schwartz, 2013) To pause for deliberation in these times would be ineffective behavior. It is also important, of course, to be able to stop and think when one is presented with a situation that calls for such caution. Context is another major factor, as it can greatly alter the outcomes of our actions. For example, an individual’s expression of sympathetic feelings in relation to others may lead to multifaceted reactions within the community (Schwartz, 2013). Thus, judging a person’s ability to regulate their emotions will require careful observation of the context and outcome of their actions.

Taking these factors into account, it seems prudent to create a more complete definition of emotional regulation, one which encompasses all the salient pieces of these interpretations. One possibility put forth is that Emotion regulation refers to the processes by which individuals

influence which emotions they have, when they have them, and how they experience and express these emotions. Emotion regulatory processes may be automatic or controlled, conscious or unconscious, and may have their effects at one or more points in the emotion generative process (Gross, 1998, p. 275).

From a broader perspective, emotion regulation is the process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological, attentional processes, motivational states, and/or the behavioral concomitants of emotion in the service of accomplishing affect-related biological or social adaptation or achieving individual goals (Eisenberg & Spinrad, 2004). During the process of emotional regulation, the response to external and internal stimuli among individuals can be categorized as either pleasant or unpleasant emotional state. Based on the categorization of pleasant and unpleasant emotions among individuals, physiological and neural processes are initiated for the regulation of the states of emotions among affected people (Goosens & Maren, 2002; Maren, Phan, & Liberzon, 2013). Various neurochemical released during physiological and neural process serve to regulate the dynamics of emotional state based on the unique needs of each individual.

The definition seems to truly encompass the large variety of functions that emotion regulation affects and the large number of sources which feed into that regulation. All of these authors have contributed to the growing consensus on emotion regulation, which seems to be that it is comprised of all behaviors, internal and external, which are targeted at the modulation of emotional states or at suppressing reactions to emotional states. This is not necessarily correlated with high levels of positive emotions or low levels of negative emotions; it is primarily about the ability to act in an intentional manner despite emotional influence. Moreover, this inclusive type

of definition has been embraced by a particularly popular measure of emotion regulation known as the Difficulties in Emotion Regulation Scale. The scale remains tailored to mitigate the significant limitations during the process, thereby improving the quality and outcomes of the measurement.

The relationship between emotional regulation and empathy, compassion fatigue and compassion satisfaction has been addressed by several scholars. For instance, the study by Finlay-Jones, Rees and Kane (2015) indicated that healthcare professionals report high degree of occupational stress that in turn has adverse effects to themselves and the clients. In applying structural equation modeling (SEM) analysis the authors found that emotional regulation has significant negative predictive effects towards self-compassion and stress in the case of healthcare professionals. However, further results indicated that self-regulation had significant mediating effects in the relationship between stress and self-compassion of healthcare professionals in Oncology settings i.e., cancer care. Similarly, Pangilinan (2018) found a significant mediatory effect from emotional regulation towards the relationship between empathy and compassion fatigue among skilled nursing professionals in cancer healthcare setting. In agreement with the study assertions studies above, Diedrich et al., (2015) evaluated the mediating effects of emotion regulation over the relationship between empathy and compassion fatigue of oncologists in Australia. The authors relied on hierarchical regression analysis where the results indicated that significant mediating effect derived from emotional regulation difficulties of the oncologists between empathy and compassion fatigue. The same results have been proven in the study by Weilenmann et al., (2018) who established that Emotional Regulation has significant interventions over the empathy related process of the healthcare givers i.e. within the case of the interactions between cancer physicians and the patients and association

to physician compassion satisfaction. Therefore, the authors in examining their theoretical model asserted that a significant intervention derived from the Emotional Regulation capacities of the physicians and to a large extent linked such outcomes to their wellbeing. The study by Amir, Betty and Kenneth (2019) aligns to the studies above over the significant mediating effects of Emotional Regulation on the association existing between empathy and compassion fatigue of healthcare givers. For instance, the authors asserted that emotional regulation foremost predicted compassion fatigue of the healthcare givers and apart from that it served as an integral facet of empathy and compassion fatigue of the healthcare practitioners towards management of their compassion fatigue when dealing with welfare of mental and cancer patients. Barnett, Hays and Cantu (2019) established the significant association manifesting between emotional regulation, compassion fatigue and empathy among healthcare givers. Due to the significant mediating effects of emotional regulation established in this study, the authors stated that such points to the need for interventions and policies that enhance support of emotional regulation of healthcare givers towards reducing compassion fatigue.

Impact of Event Scale

In this section, the meaning of “Impact of Event Scale” has been developed in detail to comprehend its main components and application to the relationship between empathy and compassion fatigue. In fact, in the ongoing study the trends under IES scale i.e. distress linked to a specific event have been used as a mediating variable meant to establish the relationship between empathy of oncologists and healthcare professionals and compassion fatigue. Due to this, it would be imperative to foremost understand its meaning in detail and then evaluate past studies that have discussed its application to the issues mentioned and the extent of its mediating

effects i.e. the mediating influence between empathy and compassion fatigue of oncologists and healthcare professionals working with cancer community in Cyprus.

The Impact of Event Scale (IES) serves as among the most widely applied self-reported measures relating to trauma or distress of a situation. The assertions of this kind were held in the study by Weiss and Marmar (2017) and that they ground on the Horowitz's model in lieu of processing of emotions following a traumatic event. The model further asserts that upon psychological assimilation of traumatic experiences, the individual seeks to alternate experiences generated from intrusive thoughts as well as feelings at a given moment and adopts avoidance strategies in the next (See Also Sudin and Horowitz, 2015). Thus, on basis of the mentioned model, the IES scale was developed consisting of two subscales: (a) trapping intrusions which refers to repeated thoughts regarding the trauma and (b) tapping avoidance which refers to effortful avoidance in regard to situations that act as reminders of a traumatic event (Larsson, 2017).

In the study's hypothesis it has been sought whether distress has mediating influence on the relationship between empathy and compassion fatigue. Therefore, the Impact of Event Scale (IES) is going to be used to measure the degree of distress among the oncologists and Healthcare professionals working with cancer patients in Cyprus. The Impact of Event Scale measures recent degree of distress due to traumatic events (Weiss, 2007; Weiss & Marmar, 1996). The IES and its later version, the Impact of Event Scale-Revised, are the most widely used measures of traumatic stress symptomatology (Weiss, 2004) and have been used to study STS (Cornille & Meyers, 1999). The questionnaire's 15 items are based on the criteria for PTSD in the third edition of the "Diagnostic and Statistical Manual of Mental Disorders" (American Psychiatric Association, 1980). Respondents indicate how distressing each symptom has been for the last

seven days on a five-point Likert scale (0 = not at all to 4 = extremely) (Weiss, 2004, 2007). The IES yields a composite score and three subscale scores. The Intrusion subscale measures intrusive cognitions, disturbing feelings, and repetitive behavior (Weiss, 2007; Weiss & Marmar, 1997). The Avoidance subscale measures denial, emotional numbing, and other inhibition (Weiss, 2007; Weiss & Marmar, 1997). The Hyperarousal subscale measures hypervigilance, insomnia, and exaggerated startle responses (Weiss, 2007). In a similar study by Hayuni et al., (2019) the authors assessed the mediating effects of secondary trauma in the case of empathy and compassion fatigue of oncologists. The authors stated that oncologists are subjected to situations involving loss, suffering, and death which can trigger more grief; and that such grief is linked to the long-term relationship between the oncologist and the patient hence creating more events for compassion fatigue. As a result, the authors sought to establish the mediating effects of secondary traumatic stress between empathy and compassion fatigue affecting oncologists. The results indicated that oncologists recorded elevated extents of traumatic stress as well as personal distress. In particular, the mediating effects of secondary traumatic stress were confirmed between empathy and compassion fatigue among the oncologists in the context of Israel case study. In agreement to the assertions above, Kleiner and Wallace (2017) evaluated the case of oncologists' empathy, burnout and compassion fatigue, and the mediating effects of distress emanating from work pressure. The distress scale i.e., IES in the study acted as the mediating variable. The results concluded that distress related to conflict on work-family imbalances had mediating effects on the relationship between empathy and compassion fatigue of oncologists. The significant mediating effects of traumatic outcomes among oncologists' empathy and compassion fatigue were proved in the study by Bridger et al., (2020); the case setting was in United Kingdom among cancer caregivers. In this study, the mediating effects of secondary

traumatic stress were assessed, and the authors found that it had significant effects towards empathy, burnout and compassion fatigue of the cancer caregivers in UK. Similar findings were evident in the studies by Knight (2017) and Sprang et al., (2015) since traumatic outcomes of oncologists had mediating effects between the relationship of their empathy measured using and compassion fatigue i.e. ProQOL.

Summary

The concept of empathy as used by caring professions has been researched since the 1950s. Empathy is acknowledged as a critical component within the helping professions. In essence, the concept relates to the development of patient satisfaction and clinical outcomes (Bayne, 2011; Chewning et al., 2011; Hojat, 2007; MacKay et al., 1990; Mercer & Reynolds, 2002; Steinhause et al., 2014). Despite recent attempts to explore empathy and its effects on both patients and care providers, researchers differ on their interpretations of empathy. Hojat et al. (2010) noted that limited empirical studies and information regarding the link of empathic engagement with patient outcomes and therefore, developed the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPE) to measure patient perceptions of empathy. However, minimal research exploration have been performed to examine how patients perceive and interpret empathy from their caregivers.

Research results on the conceptualizations of secondary trauma are evolving, often confusing, and sometimes contradictory (Aycock & Boyle, 2009; Najjar, Davis, BeckCoon, & Doebling, 2009). Methodological issues such as variations in the definitions of the variables explored, sample sizes and composition, and the use of different psychological instruments appear the most like explanations. The result is a laundry list of symptoms, risk factors, and interventions (Pfifferling & Gilley, 2000; Portnoy, n.d.; Radziewicz, 2001) that in their entirety

mirror those of severe, general stress responses (Seaward, 2015). CF and the different related concepts need clarification.

In the discussion of empathy in nursing, Baillie (1996) found that each nurse's active utilization of empathy in a therapeutic relationship was reflective of the nurses' own experiences and personal disposition and could be influenced by multiple factors. Other researchers found that the economic and family status of the nurse, the number of years of experience in nursing, the level of education, and the type of nursing were other correlating factors with the level of empathy reported by nurses (Kuo et al., 2012; Lin et al., 2012).

Psychiatric nurses were found to have the highest level of empathy while emergency nurses reported the lowest level of empathy (Kuo et al., 2012). Lin et al. (2012) noted an inverse relationship between empathy and avoidance levels in healthcare providers of HIV patients while Polat et al. (2013) noted an inverse relationship between empathy and anxiety levels in pediatric critical care nurses. The chaotic nature of the emergency department and the anxiety, trauma, and uncertainty experienced by nurses could be influencing factors for the low levels of empathy reported by the nurses in the study by Kuo et al. (2012).

Other effects of CF (STS accompanied by BO) also have included “poor judgment, impaired concentration, accident-prone behavior, social indifference, and avoidance of intense patient situations by nurses. These symptoms link to diminished performance abilities, such as medication errors and inattentiveness, as well as higher absenteeism, desire to leave work, and overall increase in staff turnover” (Phenning, 2013, p.10). Early identification and treatment of the factors that influence CF in nurses will support and preserve the relationships of nurses and the patients they care for across the healthcare continuum. The integration of factors that support and improve CS among emergency nurses can mitigate the incidence of CF. Such knowledge

may also empower nurse educators to cognitively and emotionally prepare and educate experienced and new nurses about the potential benefits and costs of caring.

In the literature analysis, the researcher presented a review of currently relevant research literature regarding empathy and CF with special emphasis on the profession of nursing. Empirical research revealed that nurses are among the nursing specialties with the lowest empathy levels. The review of the research was synthesized to present an explanation of the importance of the preservation of the empathic response of the healthcare professionals and the effect that STS, BO, and CS may have on that empathic response. Because healthcare professionals' empathy has been correlated with both patient satisfaction and outcomes and nurse satisfaction and performance, the researcher asserted that factors that influence healthcare professionals' empathy, such as the causes and effects of STS and BO and the mitigating factor of CS, require further exploration.

Statement of the Problem

The communication of empathy from healthcare professionals is beneficial to both healthcare professionals and patient. The research supports that empathy has been associated with increased patient satisfaction and improved patient outcomes leading to increased reimbursement, as well as higher healthcare professionals compassion satisfaction which may lead to increased healthcare professionals' satisfaction and decreased healthcare professionals' turnover (Bayne, 2011; Chewning, Marchang, & Scheder, 2011; Hojat, 2007; Hunsaker et al., 2015; Mercer & Reynolds, 2002; Wood, 2014). There is very little in the literature regarding the empathy of healthcare professionals and particularly in oncology but the current literature shows that healthcare professionals including nurses in oncology are among the healthcare service providers who report low empathy for patients in cancer care (Bourgault et al., 2015; Kuo et al.,

2012; Yoder, 2010). In addition, the literature on the complications of compassion fatigue upon the empathy of emergency nurses is limited. There is some theoretical work that suggests emotion regulation and distress tolerance play an important role in the process of empathy and compassion fatigue (Decety & Jackson, 2004), however, there has been no empirical research on the nature of this association. Therefore, this research also intends to explore the mediating influence of emotion regulation and distress on the relationship between empathy and compassion fatigue among oncologists and health care professionals in oncology.

Purpose of the Study

The research study intends to explore and describe empathy in healthcare professionals i.e. oncologists and nurses in oncology and determine if there is a relationship between empathy, compassion satisfaction (the emotional rewards of caring for others in a health care context), and compassion fatigue among healthcare professionals in oncology. In addition, the current research also intends to examine the mediating influence of emotional regulating and distress tolerance on relationship between empathy and compassion fatigue.

Assumptions of the Study

The current study on empathy and the components of compassion fatigue (BO and STS) and compassion satisfaction (CS) is based on the following assumptions:

1. Empathy is a subjective experience and can be evaluated at one point of time.
2. The repeated exposure of healthcare professionals in oncology to other people's distress and suffering may lead to emotional withdrawal, a lack of empathy, or other symptoms associated with the components of compassion fatigue (BO & STS) (Gentry, Baggerly, & Baranowsky, 2010).

3. The components of compassion fatigue (BO & STS) are subjective experiences and can be evaluated at one point of time.
4. The components of compassion satisfaction (CS) are subjective experiences and can be evaluated at one point of time, and
5. Healthcare professionals in oncology department will answer questions honestly given that the survey will be administered to them in an anonymous manner

Significance of the Study

CF has been empirically studied in a number of helping professions, such as mental health (Bride, Radey, & Figley, 2007; Fahy, 2007; Jenkins & Baird, 2002), chaplaincy (Flannelly, Roberts, & Weaver, 2005; Roberts, Flannelly, Weaver, & Figley, 2003), child protective services workers (Conrad & Kellar-Guenther, 2006; Bride, Jones, & MacMaster, 2007), social work (Adams, Boscarino, & Figley, 2006; Alkema, Linton, & Davies, 2008; Cunningham, 2003), and in various types of first responders (Beaton, Murphy, Johnson, & Nemuth, 2004; Violanti, Castellano, O'Rourke, & Paton, 2006). Potter et al., (2010), Bush (2009), and Sabo (2006) noted scant empirical research on CF in the nursing literature. Methodological issues (Aycock & Boyle, 2009; Abendroth & Flannery, 2006; Quinal et al., 2009; Potter et al., 2010) limited generalizability and contradictory results (Abendroth & Flannery, 2006; Boscarino, Figley, & Adams, 2004; Potter et al., 2010; Simon, Pryce, Roff, & Klemmack, 2005). Beck (2011) and Najjar et al., (2009) noted that personal trauma histories were not explored.

Greater understanding of healthcare professionals' empathy, compassion fatigue, and compassion satisfaction can help researchers improve patient care by helping healthcare professionals understand how to avoid the experience of sympathy and associated compassion

fatigue. Gruen and Mendelson (1986) differentiate between empathy and sympathy by describing the former as an intellectual attribute whereas and the latter manifests as an emotional state of being. Hojat (2007) asserts that “the goal of empathy is to know another person’s concerns better while the aim of sympathy is to feel another person’s emotions better” (p. 11). He further asserts that “joining the patient’s emotions (a feature of sympathy) can actually impede clinical outcomes” (p. 14) and empathy is an “enabling factor while sympathy in excess is a disabling factor” (p. 15). This research has important implications for nursing science, nursing research, nursing education, and nursing practice.

The understanding of oncologists’ empathy and ability to communicate that empathy may improve patient care by helping researchers explore the depth of empathy in oncologists and devise methods by which oncologists can communicate that empathy to their patients (Mercer & Reynolds, 2002; Hojat, 2007; Bayne, 2011; MacKay et al., 1990, Chewning et al., 2011). In addition, the study explores the correlations between empathy and compassion fatigue within the cancer care community i.e. the cancer care community. This research may generate a beginning practice theory for oncologists.

The implications of this new knowledge of empathy may assist nursing research by opening a new trajectory of study toward the effective management of the empathic feelings of emergency nurses and methods to improve the communication of empathy to patients. This understanding may lead to further research regarding empathy cultivation and regulation as well as compassion fatigue avoidance. To that end, a conceptual framework of the empathy of oncologists is presented and this research expands its use.

The study will further augment the expanding validity and reliability data for the instruments utilized for this research. The JSE-HP, ProQOL 5, IES, and DERS instruments have

been utilized extensively in the past with reported positive validity and reliability data. This study may further assist researchers in making the case for continued utilization of these instruments to measure empathy of oncologists and compassion fatigue of oncologists.

The outcomes of the current research significantly contribute to existing knowledge and conceptualization of Figley's (2002a, 2003) etiological model of compassion fatigue to oncologists. Figley's theory relates to the ability to empathize combined with the motivation to alleviate patients' pain. The utilization of this theory in relation to the exchanges between oncologists and patients may demonstrate the usefulness of the theory within cancer care

Nurse educators are challenged to offer support and information for effective comprehension of varied patients within the hospital settings (Williams & Stickley, 2010). Multiple stakeholders in the process and outcomes of education have supported the inclusion of empathy and compassionate care within the nursing curriculum. The results of this study could generate data that might support the inclusion of empathy and the promotion of self-regulation and CF avoidance strategies in pre-and-post licensure education.

Compassion fatigue in nurses has been linked to an increase in nurse turnover rates. Nurses, and nursing students, who are unable to "self-regulate" or conserve their empathic feelings are at risk for experiencing compassion fatigue. Lee, Song, Cho, Lee, and Daly (2003) asserted that the inability to properly communicate and empathize with patients and their families is one fundamental factor of exhaustion. Administrators can have a direct impact on the development of compassion fatigue of oncologists. Nurses who do not address compassion fatigue may become depersonalized which in turn contributes to decreased job satisfaction, poorer performance, and lower patient satisfaction (Potter et al., 2010). Ultimately, this may lead to high turnover rates, which can be costly for a healthcare organization. Hospitals spend nearly

\$800,000 annually in training and retaining nurses (Nursing Solutions, 2016). On average, it costs a hospital \$10,000 each time a nurse position turns over (AFSCME, 2018). A new graduate nurse train for six to 12 weeks, and during this time, the hospital does not get any benefit from the new hire and it costs around \$50,000 to teach and retain a new graduate nurse (AFSCME, 2018). Research on compassion fatigue as a source of nurse turnover is limited, however research suggests the management of compassion fatigue can decrease burnout and nurse turnover (Maytum, Heiman, & Garwick, 2004).

Definitions of Terms

Throughout the development of the research process, the following terminologies are actively used;

Compassion fatigue (CF) is defined by Figley (2002) as “a healthcare provider’s reduced ability or interest in being empathetic or bearing the suffering of clients” (p.1433). CF comprises the “natural consequent behaviors and emotions resulting from knowing about a traumatizing event experienced or suffered by another person” (Figley, 2002, p. 1433). CF will be measured through the application of Professional Quality of Life (Pro-QOL 5). The instrument separates CF into two components: “Burnout (BO) and Secondary Traumatic Stress (STS)” (p. 1433).

Burnout. Burnout (BO) is defined by Stamm (2010) as being “associated with feelings of hopelessness and difficulties in dealing with one’s work or in doing one’s job effectively” (p.12). “These feelings generally have a gradual onset and can reflect the feeling that one’s efforts make no difference, or they can be associated with a very high workload or a non-supportive work environment” (Stamm, 2010, p.12). BO comprises the negative effects arising from the work

environment and includes experiences of exhaustion, frustration, anger, and depression. Burnout will be measured by the score on the BO subscale of the ProQOL 5.

Secondary Traumatic Stress. Secondary Traumatic Stress (STS), as it pertains to nurses, is a type of work-related stress that is a result of “secondary exposure to trauma through the professional interaction with people who have experienced extremely or traumatically stressful events” (Stamm, 2010, p.12). The negative effects of STS can be described as possibly including “fear-sleep difficulties, intrusive images, or avoiding reminders of the person’s traumatic experiences” (p.12). Secondary traumatic stress will be measured by scores of the STS subscale of the ProQOL 5.

Compassion Satisfaction (CS). Stamm (2010) defined CS as “the pleasure derived from being able to do one’s work well” (p.12). High levels of CS are associated with lower risks of developing BO and STS (Stamm, 2010). Compassion satisfaction will be measured by the CS subscale of the ProQOL 5 instrument.

Empathy. Empathy is “a predominantly cognitive (rather than an emotional) attribute that involves an understanding (rather than feeling) of experiences, concerns, and perspectives of the patient combined with a capacity to communicate this understanding” (Hojat, 2007, p. 80). Thus, such will be measured by total scores of the three subscale scores of the Jefferson Scale of Empathy for Health Professionals (JSEHP) (Hojat, 2007) for research questions 1, 2, and 3 depicted in due course of the study. The JSE-HP measures empathy as a combination of three subscales which were used for the measurement to answer research question 4. These are compassionate care, perspective taking, and standing in the patient’s shoes.

Compassionate Care “symbolizes the human connectedness that transpires in practice as the patient–healthcare provider relationship” (Ward et al., 2009, p.73).

Perspective Taking is the grand factor of the JSE-HP and reflects “the cognitive nature of empathy underscored in its definition. In a therapeutic relationship, it is this factor that enables the healthcare provider to remain objective, while actively listening to the patients’ concerns and providing an empathic response to the patient” (Ward et al., 2009, p.73).

Standing in Patient’s Shoes. Hojat (2007) describes this factor as “the ability in the healthcare provider-patient relationship to stand in a patient’s shoes without leaving one’s own personal space and to view the world from the patient’s perspective without losing sight of one’s own personal role and professional responsibility” (pp. 82-83). This speaks to “understanding” (as opposed to “feeling”) the patient’s perspective.

Conclusion

The capacity of the healthcare professionals in oncology to communicate empathy to cancer patients is of utmost importance to the clinical outcomes of the patient and the financial stability of the acute care arena. However, the physiological and psychological costs of unregulated empathy can be professionally and personally debilitating to the healthcare professional and costly to the organization. The research problems addressed within the next chapter of the study were designed to determine healthcare professionals’ perceptions of their empathy for cancer patients. Additionally, the research questions explored healthcare professionals’ self-reported compassion fatigue and compassion satisfaction scores. Lastly, the relationships among compassion fatigue and compassion satisfaction and healthcare professionals’ perceptions of their empathy for cancer patients were investigated. The research also investigates the emotional regulation and distress tolerance role in the relationship between empathy and compassion fatigue. Theoretical and operational definitions of empathy and other research variables as well as the study’s assumptions were also included.

The main model addressed in the study can be conceptualized as follows:

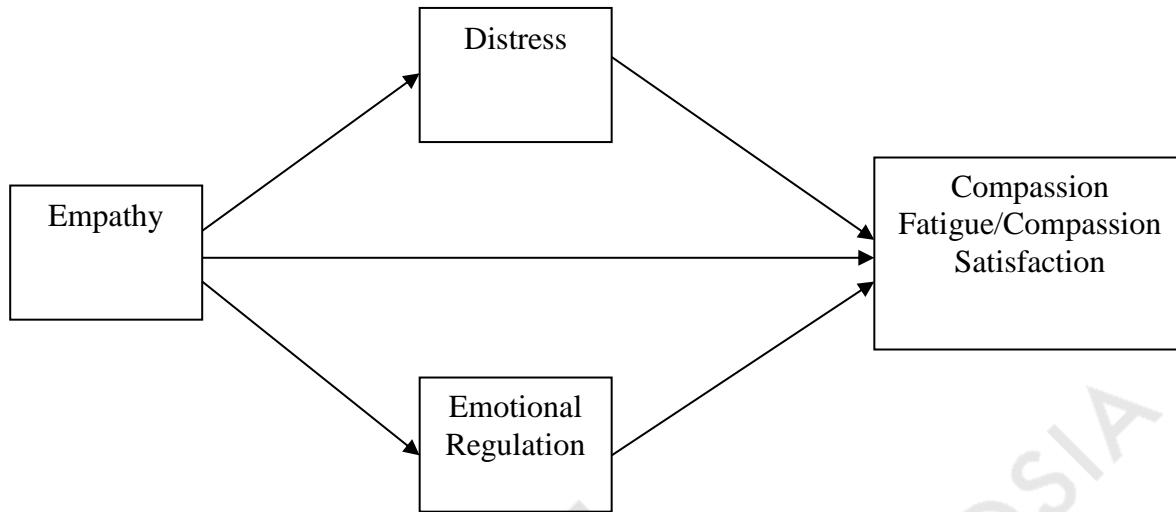


Figure 2: Interconnections between the concepts of empathy, CF and customer satisfaction

Source: (Author, 2019)

The model shown above is the keynote of this dissertation's investigation hence covers the main parameters. The assertion is that there are three paths to be considered namely: (a) the direct relationship for empathy and compassion fatigue (b) the nexus involving empathy and compassion fatigue impacted by distress and (c) the association manifesting between empathy and compassion fatigue impacted by emotional regulation. Now, the study relied on scales that have been approved by other scholars just as the DERS (distress caused by trauma), compassion fatigue (ProQOL), empathy (JSE), and emotional regulation (IES). Therefore, the results in each of these scales enabled the study to formulate continuous data that facilitated all other analysis using statistical parameters. In due course, the discussion of the findings is meant to illustrate the validity and reliability of the above model and whether it can be used by oncologists and Health professionals offering cancer care in Cyprus to improve the condition for compassion fatigue. In

fact, the researcher holds the opinion that the findings of this study are starting points to decipher the important pathways that need to be undertaken to enhance personal and professional development of oncologists and Health professionals offering cancer care.



Chapter Two: Research Methodology

Overview

The current chapter remains focused on developing the methodological framework to be used in enabling the study to further analyze the issues in question i.e., impact of oncologists and Healthcare professional's empathy on Compassion Fatigue. The study took place in Cyprus and participants were caregivers with cancer patients. In this regard, the philosophical paradigm of the study has been presented in the research design, sampling technique, population/sample, instrumentation, data collection, data analysis, and ethical aspects. In general, the proposed methodology is such that it will enable the researcher to test the hypotheses identified throughout the study.

Research Questions and Hypotheses

The focus of the study is to examine the relationship between empathy and compassion fatigue on oncologists and Health Professionals in cancer care.

The following primary research questions will be investigated:

- 1.** What are the self-reported levels of Compassion Fatigue (Stress and Burnout) and Compassion Satisfaction in a sample of oncologists and health care professionals in Cyprus?

The Professional Quality of Life (ProQOL) version 5 scale (Stamm, 2010) will be used to assess levels of secondary traumatic stress, burnout, and compassion satisfaction in the study population.

- 2.** What are the self-reported levels of empathy in a sample of oncologists and health care professionals in oncology in Cyprus?

The Jefferson Scale of Physician Empathy (JSPE) scale (Hojat, 2016) will be used to assess levels of empathy in the sample population.

Research questions 1 and 2 are descriptive questions; therefore, no hypotheses are warranted.

Research Question 3

Is there a relationship between empathy, compassion fatigue and compassion satisfaction?

Research Question 4

Is there any mediating influence of emotion regulation on the relationship between empathy and compassion fatigue?

Research Question 5

Is there any mediating influence of distress on the relationship between Empathy and Compassion fatigue?

Research Question 6

What are the potential predictors for the development of compassion fatigue?

Research Question 7

Are there any differences in secondary traumatic stress, burnout and compassion satisfaction across the different specialties in oncology?

Hypotheses Development

The main hypotheses of the study include the following:

H1: There exists a significant association among the variables of empathy (perspective taking, compassionate care, and standing in the patient's shoes) and variables of compassion fatigue (secondary traumatic stress, burnout, and compassion satisfaction) in oncologists and health professionals in oncology.

Prediction: There is an expected positive association in relation to empathy towards compassion fatigue among health professionals and oncologists in Cyprus cancer care

H2: There is mediating influence of emotional regulation on the association manifesting between overall empathy and compassion fatigue scales of oncologists and Healthcare Professionals in oncology

Prediction: Greater capacity in emotional regulation is expected to decrease compassion fatigue due to its positive effects on empathy of oncologists and Healthcare Professionals in Cyprus cancer care

H3: There is mediating influence of distress tolerance on the relationship between overall empathy and compassion fatigue scales of oncologists and Healthcare Professionals in oncology

Prediction: The prediction is that high distress tolerance is going to strengthen empathy of the healthcare professionals and oncologists thus reducing the degree of compassion fatigue

H4: There is significant difference in subscales of the ProQOL/variables of compassion fatigue (burnout, secondary traumatic stress, and compassion satisfaction) across the different specialties of oncologists and health professionals in oncology

Prediction: Compassion fatigue is not the same at any point in time due to the varying or changing experiences of the healthcare professionals and oncologists; thus, it is expected that the outcomes of subscales of compassion fatigue are going to be statistically significantly different.

Design of Research

The approach to be used in this study will be a quantitative descriptive and multivariate correlational research design. For instance, in the ongoing dissertation one of the sought outcomes was to justify the supported nexus in the case of empathy and compassion fatigue and along which the mediating effects of distress and emotional regulation and the moderating

effects of the demographic factors were considered. In that regard, it was anticipatory that a quantitative review was imperative and to a larger extent, the development of both correlational and multivariate research. The approaches as mentioned above were pivotal towards testing the research hypotheses as proposed in the study. The cross sectional setting of the study, therefore, enabled the researcher to gather feedback from the respondents in one-time framework from a sample characterized by similar characteristics. Thus, in such a design process the subjects considered appropriate in the study are classified in a manner meant that makes their feedback meaningful and easy to interpret. According to Creswell and Creswell (2017) the adoption of a cross-sectional design is more relevant when observational and confirmatory investigation is involved. The current dissertation is mainly based on confirmatory processes and the review of past studies linked more to the causal establishments between trends in empathy of caregivers and compassion fatigue not to mention even compassion satisfaction. On the other hand, Hemed and Tanzania (2015) noted that in a design involving cross-sectional investigation the focus is on illustrating the qualities of the population, but consequently, without manipulating the variables of research. In the study, the design i.e., cross sectional review enabled to generate quantitative data and it further guaranteed reduction of bias since the selected participants were engaged on one-time basis while the same increased the degree of reliability by virtue of gathering information from the most suitable sample of oncologists and Healthcare professionals working amidst cancer patients in Cyprus.

Procedure

In the procedure, the main issues covered include the sampling process, type of population, instrumentation, data collection tools, recruitment strategy and details of the participants. The details of the mentioned issues explained below. Creswell and Creswell (2017)

asserted that in each study a population consists of the subjects/individuals that possess the same characteristics. For instance, in the ongoing dissertation the population sought was characterized by similar characteristics in that they worked amidst cancer patients in Cyprus. On the other hand, a population in each study serves as the aggregate number of subjects required to generate data and proceed to generalize the research outcomes. In the study, the outcomes sought were those that addressed the supported nexus between empathy and compassion fatigue of healthcare givers. In application, the ongoing research was on oncologists and Healthcare professionals i.e. nurses working with cancer patients in Cyprus. Further, to understanding the sample the questionnaire survey was conducted with the oncology healthcare professionals in Cyprus working in the Bank of Cyprus Oncology Center(BOCOC), the German Oncology Center (GOC), the General Hospital in Limassol and Nicosia, private clinics, Arodaphnousa Hospice, Saint George Hospice, Anticancer Society of Cyprus (ACS), and the Pancyprian Association of Cancer Patients (PASYKAF).

Participants. Notably, there are potentially 239 participants between BOCOC, GOC, Gen. Hospital, Private clinics, hospices, ACS and PASYKAF. Out of which there are confirmed 184 nurses, 55 doctors (oncologists, hematologists, palliative care physicians, and primary physicians, nurses, home care nurses, doctors in nuclear medicine, and diagnostic radiologist) dealing with cancer patients. The utility of this study depended on sample size. A larger sample increases the chance of identifying significant relationships among the variables. Using Soper's (2012) a pre-established calculator for estimating sample size for multiple regression, the required sample size for this study should be $N = 56$, anticipating a large effect size ($f^2 = 0.30$) by convention, using the conventional statistical power level of 0.80, selecting a probability level of 0.05, and having seven predictors.

The researcher contacted the potential oncology clinicians to participate in the questionnaire by handing out the questionnaires herself. The researcher therefore was confident to achieve the sample size of at least 100 oncology healthcare professionals in Cyprus to cover the minimum target of 56 participants. The minimum stated was because the researcher had anticipated that most of the healthcare professionals may lack enough time to respond to the survey but not below the least target. The researcher herself is a registered psychologist in Cyprus and has been working in the cancer setting for the past 13 years. Therefore, she has access to both public and private hospitals in Cyprus. The researcher contacted oncology clinicians to participate in the questionnaire. Therefore, the researcher was confident to achieve the sample size of at least 100 oncology healthcare professionals in Cyprus to cover the minimum target of 56 participants.

Sample and Technique of Sampling

As held by Castillo (2009) sampling serves as a process whereby the target persons or organization are identified from the accessible population; however, based on the insights from the target unit a study then generalizes by applying it to the population. For instance, in this research it was not possible to include all oncologists and healthcare professionals in the survey hence requiring to pick a representative group of the same cohort; the findings that were generated from their feedback to the survey was examined and reported in universalistic parameters that defined the wider population. In this regard, the relationship established between empathy and compassion fatigue in the study was applicable to the wider population serving as oncologists and Healthcare professionals working in cancer care in Cyprus. In support of the above, Saunders, Lewis and Thornhill (2012) indicated that a sample included in a study serves as a statistical unit of population whose characteristics are evaluated in order to acquire

information regarding the whole i.e., population. In this study, the choice was to apply the Krejcie and Morgan matrix in the quest to determine the sample size from this estimation protocol a choice of 200 oncologists and Healthcare professionals were settled upon as the suitable number to generate representative outcomes.

Measures and Data Collection Apparatus

As per Smith (2017) the preference for the use of closed-ended questionnaires was because they provided relevant information which addressed both the research questions and objectives in this dissertation. In addition, the questionnaires were chosen because they simplified the issues sought at the same time rendering the participants to have a good glimpse of the topic. The researcher held that with ease of understanding the main issues and parameters of the study, the respondents were capable to relate to the issues in question with their own experience as oncologists and Healthcare professionals performing oncology duties within medical care environments. For instance, the use of the various scales and clear statements enabled the participants to respond with certainty about matters relating to their empathy as healthcare givers working with cancer patients. Five surveys including one demographics questionnaire was utilized for this study. The surveys included: 1) Demographic Survey, 2) Jefferson Scale of Physician Empathy (JSPE) developed by Hojat (2007), 3) the Professional Quality of Life Scale (PROQOL-5) developed by Stamm (2005), 4) Difficulties in Emotion Regulation Scale (DERS) developed by Gratz & Roemer (2004), and the 5) Impact of event scale (IES) developed by Horowitz, Wilner, and Alvarez (1979). The researcher used all the questionnaires in Greek language. Both English and Greek language questions were provided. Permissions of these instruments were also obtained from the respective authors of the instrument. The preferred psychometric scales for each of the scales is as follows: (1) JSPE

based on 2-component of perspective taking and compassionate care driven by 11-item factor (2) Proqol 5 based on compassion satisfaction measures (3) DERS scale based on 6-factor component and (4) Impact of Event Scale with minor consideration for subscales of avoidance, intrusion, and hyperarousal. Marija et al., (2016) evaluated the psychometric properties of the JSPE and established that it had a solution of two-component namely: (a) perspective taking and (b) compassionate care. The Procrustes review manifested that the eleven-item factor consisted of an excellent model-fit. Hemsworth et al., (2018) explored the psychometric property in relation to Proqol 5 and stated that it was satisfactory on basis of the construct for compassion satisfaction. However, the authors noted on inconsistencies with the aspect of secondary trauma stress and burnout scales which required much validation through appropriate coding and choice of specific measuring items. According to Ritschel et al., (2019) DERS Scale manifests much validity on the original 6-factor solution which is reliably applicable to the participants in different demographic settings. Creamer et al., (2018) assessed the psychometric properties in lieu of the Impact of Event Scale and established that a 2-factor solution aligned to three subscales i.e., avoidance, intrusion, and hyperarousal would not yield valid results. Instead, a positive relationship in the case of IES-R as well as the PTSD Checklist was considered much reliable and with the high capacity to provide the most optimum diagnostic accuracy.

Variables of the Study

Sekaran and Bougie (2016) stated that the establishment of variables is a critical way to understand the relationship of key issues in the study; further, the author noted that variables enable the investigator to envisage the scope and parameters of the research. For instance, in this ongoing dissertation the key variables included the following: (a) Empathy was operationalized as the independent variable or criterion variable or predictor variable (b) Distress and Emotional

Regulation were operationalized as the mediator variables (c) Professional Quality of Life was considered as the dependent variable or predicted variable or explained variable.

Pilot Study

Tendolkar (2011) stated that the quest to have a pilot study was to estimate its feasibility, difficulties or barriers, and costs involved to provide mitigations that would render the actual study successful. In the same spirit, the pilot study process was implemented prior to beginning the actual dissertation to ensure that the questionnaire tools had no ambiguity problems, complexities and unclear notes. Thus, the testing of the questionnaire using 25 samples enabled the researcher to detect possibility for inconsistencies. Upon the identification of such errors and omissions, the questionnaire details were edited, proofread and corrected. Furthermore, the pilot analysis was meant to anticipate any costs incurred during gathering of data,, where minimal costs were involved. The entire research i.e., data collection and engagement with the participants came at no cost and the researcher is grateful to the oncologists and Healthcare professionals in Cyprus for their positive cooperation.

Reliability and Validity

As illustrated by Cooper and Schindler (2011), construct validity is the capacity of an item such as a survey tool to measure what it is intended to measure. Bryman and Bell (2016) also held that construct validity seeks to address the parameters of the research such as the study's investigation questions. For instance, the use of the scales was hoped that they would estimate actual trends in empathy, compassion fatigue, compassion satisfaction, burnout, traumatic stress, and emotional regulation of oncologists and Healthcare professionals. In essence, the establishment of the validity of the survey tools was through the computation of the Principal Component Matrix via SPSS with the hope to obtain a metric above 0.4 in each of the

factor loadings. Later, especially in the actual data analysis the PCM analysis has been reported for each of the factors used in the scales. Further, in using the SPSS software reliability of the questionnaire tool was checked with the hope to obtain a metric of 0.7 in each of the factor. Bryman (2016) noted that the use of Cronbach's Alpha serves to verify whether the questionnaire tool is consistent with objectives including being free of any bias that may significantly hinder proper assessment of the variables. According to authors of the instrument (Hojat et al., 2001), JSPE and ProQOL are found to have very good reliability scores ranging from .76 to .89. The authors originally administered the survey on medical students and found the reliability of JSPE highly reliable for sample of medical students. Later, the authors also found reliability among sample of physicians (Hojat et al., 2002), and sample of nurse practitioners (Hojat et al., 2003). In the sample of physicians, the authors reported test-retest reliability of .65 at approximately 3 to 4-month intervals of administrating the survey. Further, the study conducted by Ward et al. (2009) reported that all three factors of JSPE ("Perspective Taking, Compassionate Care, and Standing in the Patient's shoes") have high reliability coefficients of .78, .83, and .72 respectively. An acceptable Cronbach's alpha reliability coefficient is at least .70. The subscale coefficients of JSPE approached acceptable levels in previous studies. The current study also expects to get the reliability scores above .70. However, one must cautiously interpret the statistical results obtained from the subscales of this instrument.

Data Collection

The participants were required to complete a total of five pen-and-paper questionnaires in the survey packet – one on demographic/profession-related questions, one on the levels of empathy of healthcare professionals, one on the levels of compassion fatigue and compassion satisfaction, one on the levels of emotional regulation, and one on the psychological distress and

trauma due to the daily occupational stressors of working in the oncology. The participants answered demographic questions about their age, education, household income, and their work schedule. These answers were compared with those of other healthcare professionals in oncology from various hospitals around the Cyprus who also participated in similar studies.

Data Analysis

The researcher used both descriptive and inferential statistics for analyzing the data to meet the study objectives. All data was reviewed for normalcy. Descriptive statistics will be computed on demographic variables and scores on all three instruments. Frequencies and ranges were computed based on the established categorical variables. Measures of central tendency (mean, median, and mode), variability (range and standard deviations), and the shape and distribution of the score (skewness and kurtosis of the curve) were calculated for all continuous variables (Burns & Grove, 2009). All data that was collected from oncology healthcare professionals at the hospitals will be analyzed as aggregate group data. Hypotheses testing were first to be addressed through descriptive statistics. Since descriptive statistics was utilized in the data cleaning process, which took place before analysis could begin; the information to address the study's hypotheses was available first.

Below is a schedule showing how each of the hypotheses was measured:

Table 1: Hypothesis and corresponding statistical test procedure

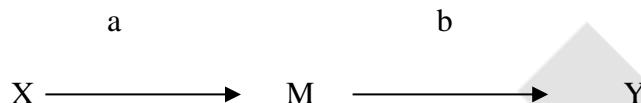
Hypothesis	Statistical test procedure
There is significant association among the variables of empathy (perspective taking, compassionate care, and standing in the patient's shoes) and variables of compassion	Spearman rank-order correlation

fatigue (burnout, secondary traumatic stress, and compassion satisfaction) in oncologists and health professionals in oncology	
There is mediating influence of emotional regulation on the relationship between overall empathy and compassion fatigue scales of oncologists and healthcare professionals in oncology	OLS Regression Analysis with Mediating Effects
There is mediating influence of distress tolerance on the relationship between overall empathy and compassion fatigue scales of oncologists and health professionals in oncology	OLS Regression Analysis with Mediating Effects
There is significant difference in subscales of the ProQOL and variables of compassion fatigue (burnout, secondary traumatic stress, and compassion satisfaction) across the different specialties of oncologists and health professionals in oncology	MANOVA Test

The choice for Spearman rank-order correlation to test H1 was first justified by the fact that all the variable outcomes derived from the Jefferson Scale of Physician Empathy did not follow a normal distribution as stipulated later in the analysis in chapter four. The Spearman's correlation serves as a non-parametric measure relating to the strength and direction of the

association of variables and estimated based on an ordinal scale (Gibbons and Gibbons, 2013).

Hence, given the non-normality distribution of the dataset for empathy of the oncologists and the intended deliverable in **H1** the Spearman correlation was considered to be the most suitable. The analysis of **H2** and **H3** was effectively addressed by the use of an OLS regression with mediating effects. As held by Preacher and Hayes (2004) testing the mediation via a regression analysis presents a causal chain whereby one variable has an effect on a second variable and subsequently impacting on a third variable; the intervening variable denoted as M serves as the mediator. For instance, it extends mediation over the relationship between an explanatory variable x and a given outcome, as demonstrated below (See MacKinnon et al., 2012).



As demonstrated above paths *a* and *b* serve as the direct effects while the mediational effect whereby X leads to Y via M is what can be termed as the indirect effect. Moreover, the indirect effect manifests a portion of the connection between X and Y which is mediated by M.

H4 will be effectively addressed using MANOVA given that the hypotheses details reveal the need to address multiple dependent variables i.e., ProQOL variables i.e., extents of secondary traumatic stress, burnout, and compassion satisfaction in the study population. Thus, one-way ANOVA focuses on establishing the presence of any statistically significant differences across the means of two or more unrelated or independent groups (Illowsky and Dean, 2017).

Ethical Considerations

Upon approval of the study by the University's Ethics Committee, the researcher actively engaged with the health professionals at the oncology department staff of each hospital identified and informed the participants about the study and the goals of the questionnaires. The researcher

provided the detailed informed consent form to participants describing the issues sought in the research, purpose of the questionnaire, and other details related to their participation in the study. The consent form also described the rights of the study respondents. Recruitment and reminder flyers and all study materials were distributed to oncology healthcare professionals. After collecting the informed consent and putting it in a separate envelope, the researcher provided a secured box at a private location in the hospital or clinic, where their secretaries could drop off their completed questionnaires for the safeguarding of confidentiality. The health care professionals were able to drop the same by themselves. A recruitment/reminder flyer was sent out one week before the completion of data collection. Participation in this study was strictly involved in a voluntary manner. As noted, there were no costs for conducting this research hence minimal direct costs were encountered by participants throughout the research process. However, the information received would help oncology educators and oncology administrators to improve education and support for staff. The researcher was also not expecting to incur any costs for this research, apart from the paper that would be needed to be printed along with the questionnaires distributed to the participants. The informed consent for this study is in the appendix. Now, in terms of storage of data the researcher ensured to have a password protected external drive to store all information gathered from the participants and coded in the SPSS program; both SPSS and the flash disk were locked using a password to ensure the information is accessible only to the researcher. Moreover, all virtual data was also secured using passwords to avoid possible access by unauthorized persons.

Summary of Chapter

The scope of the methodology to be used in the study has been explored and explained. The preferred design is to rely on a cross-sectional review which means the participants are

going to be targeted on a one-time basis without any attempts for remote follow-ups. In terms of research philosophy, the study has shown that positivism was used hence enabling the researcher to execute objective assessment of the relationship of the variables i.e., empathy and compassion fatigue. The study adopted relevant research methods and statistical tools for the generation of resourceful information for answering the study problems. Various statistical measures and tests remain conducted for understanding the dynamics of compassion, fatigue and satisfaction among healthcare professionals. However, measures of central tendency and dispersion rates have also been justified as essential to measure the relationship between the variables in question. The cohort is a sample of oncologists and Healthcare professionals working in Cyprus among Cancer patients.

Chapter Three: Findings and Analysis

Within the current chapter, the findings have been analyzed and key issues identified to support the ongoing investigation on the nexus in the case of empathy and compassion fatigue in oncologists and Health professionals in Cancer Care. The questionnaire captured trends and indicators of empathy and compassion among the healthcare professionals incuding; (a) Difficulties in emotion regulation Scale (DERS) (b) Jefferson Scale of Empathy (JSE) (c) Professional Quality of life (ProQOL) (d) Impact of Event Scale (IES).

Data Screening

While the adopted data screening procedures focused on establishing the excluded cases throughout the dataset, the findings reflect the significantly exclusion of cases from the total of 76 cases, as shown in table 2. In essence, 65.0% of the cases were valid while 35.0% were excluded in the dataset generated from the various scales.

Table 2: Screening tests results

Data screening test results: Case Processing Summary

		N	%
Cases	Valid	141	65.0
	Excluded	76	35.0
	Total	217	100.0

Note: List's deletion based on all variables in the procedure

Table 3: Reliability statistics

Reliability Statistics

Cronbach's	
Alpha	N of Items
.728	118

Further, based on Table 3 above the Cronbach Alpha has a score metric of .728 meaning the all the cases used in the study met the recommended threshold of 0.7; the same can be interpreted to mean that there is consistency and stability in the feedback results achieved from each of the scales. The results for Cronbach's Alpha are strong enough to assert that the questionnaire used to examine the relationship between empathy and compassion fatigue on oncologists and health professionals in cancer care was reliable at 72.8%.

Table 4: ANOVA with Tukey's Test for Non-additivity

		Sum of Squares	df	Mean Square	F	Sig
Between People		1109.550	179	6.199		
Within People	Between Items	6521.006	19	343.211	128.933	.000
	Residua	8.107 ^a	1	8.107	3.047	.081
	1	additivity				
		Balance	3400	2.660		
		Total	3401	2.662		
	Total	15574.200	3420	4.554		
Total		16683.750	3599	4.636		

Note: Grand Mean = 4.3750

a. Tukey's estimate of power to which observations must be raised to achieve additivity = 1.278.

Based on findings presented under table 4, the Tukey's Test of Non-additivity were meant to establish whether data supporting the variables for empathy and fatigue hold a significant effect and link to the expected value in terms of the response variable. In practice, the test was meant to establish whether the factors for empathy and fatigue were additive or non-additive. Considering the significant probability value at .000 as illustrated in table 4 above, the established value below 5% margin of error such serves as enough evidence to confirm hypothesis and accept the alternate hypothesis i.e., the additivity assumption is, therefore, violated.

Table 5: *Hoteling's T-Squared Test*

Hoteling's				
T-Squared	F	df1	df2	Sig.
1283.180	60.744	19	161	.000

The results presented in Table 5 above provide outcomes for Hoteling's T-Squared Test which was targeted on the multivariate nature of the variables used to address empathy and fatigue of the sample. Moreover, the data variables were multivariate in the sense in which over one parameter was used to address each variable. As illustrated in table 5, the Hoteling's T squared test, helps to control for the Type 1 error and ascertaining of the nexus across the multiple variables. From the results, it can be seen that $F = 43.504$, $p\text{-value} < 0.05$ which confirms the hypothesis; it leads to the conclusion that the samples used to address empathy and compassion fatigue in the study were from different multivariate means i.e., a supported relationship has been ascertained, which further appraises the reliability of the survey.

Validity of Data Variables Using Principal Component Matrix

In the current section, the analysis on validity initiated using the Principal Component Matrix (PCM) has been reported in each of the cases. In general, the focus was to examine the most felt factors using limit check of 0.4; it means the extraction values above 0.4 were all considered as valid cases to address the variable in question.

Table 6: *Principal Components Matrix for JSEHP: Communalities*

	Initial	Extraction
JSEHP_1	1.000	.639
JSEHP_2	1.000	.541
JSEHP_3	1.000	.529
JSEHP_4	1.000	.580

JSEHP_5	1.000	.730
JSEHP_6	1.000	.627
JSEHP_7	1.000	.586
JSEHP_8	1.000	.671
JSEHP_9	1.000	.706
JSEHP_10	1.000	.580
JSEHP_11	1.000	.557
JSEHP_12	1.000	.492
JSEHP_13	1.000	.383
JSEHP_14	1.000	.552
JSEHP_15	1.000	.686
JSEHP_16	1.000	.723
JSEHP_17	1.000	.712
JSEHP_18	1.000	.340
JSEHP_19	1.000	.750
JSEHP_20	1.000	.568

Note. Extraction Method:

^a Principal Component Analysis.

As shown in Table 6 above, the scale for JSEHP had twenty items, where each was used to estimate the extent of empathy among health professionals. The results from table 6 indicate that JSHEP_13 (.383) and JSEHP_18 (.340) was the least in extraction while depicting a and they are threshold below the standard value of 0.4. In that case, they were dropped from the modeling itself especially when running the regression analysis due to their low score in validity. Further, the two are the only factors that to the participants did not have much meaning to their experiences and circumstances as oncologists and Health Professionals.

Table 7: *Principal Component Matrix for ProQOL: Communalities*

	Initial	Extraction
ProQOL_1	1.000	.560
ProQOL_2	1.000	.475
ProQOL_3	1.000	.655
ProQOL_4	1.000	.603

ProQOL_5	1.000	.666
ProQOL_6	1.000	.593
ProQOL_7	1.000	.551
ProQOL_8	1.000	.456
ProQOL_9	1.000	.670
ProQOL_10	1.000	.639
ProQOL_11	1.000	.589
ProQOL_12	1.000	.653
ProQOL_13	1.000	.617
ProQOL_14	1.000	.689
ProQOL_15	1.000	.632
ProQOL_16	1.000	.686
ProQOL_17	1.000	.584
ProQOL_18	1.000	.764
ProQOL_19	1.000	.662
ProQOL_20	1.000	.653
ProQOL_21	1.000	.679
ProQOL_22	1.000	.641
ProQOL_23	1.000	.545
ProQOL_24	1.000	.705
ProQOL_25	1.000	.647
ProQOL_26	1.000	.570
ProQOL_27	1.000	.512
ProQOL_28	1.000	.393
ProQOL_29	1.000	.530
ProQOL_30	1.000	.644

Note. Extraction Method:

Principal Component Analysis.

Table 7 above depicts the PCM test results for scale used under ProQOL which estimated the positive and negative impact of the experience of working with individuals that suffered from extreme stressful events. As can be seen, the measure was based on a 30-item scale and from this it can be observed that only ProQOL_28 (.393) failed to meet the threshold for 0.4 metric. In that regard, it was dropped during further analysis especially in regression modeling and hypotheses testing as it were the least felt experience among the participants. Overall, the PCM analysis

affirms that majority i.e., 29 out of 30 cases of the ProQOL instrument were valid to be used in the study.

Table 8: *Principal Component Matrix for IES: Communalities*

	Initial	Extraction
Revised IES_1	1.000	.549
Revised IES_2	1.000	.626
Revised IES_3	1.000	.653
Revised IES_4	1.000	.561
Revised IES_5	1.000	.664
Revised IES_6	1.000	.726
Revised IES_7	1.000	.494
Revised IES_8	1.000	.785
Revised IES_9	1.000	.712
Revised IES_10	1.000	.738
IES_11		
Revised IES_11	1.000	.741
IES_12		
Revised IES_12	1.000	.664
IES_13		
Revised IES_13	1.000	.654
IES_14		
Revised IES_14	1.000	.719
IES_15		
Revised IES_15	1.000	.786
IES_16		
Revised IES_16	1.000	.770
IES_17		
Revised IES_17	1.000	.721
IES_18		
Revised IES_18	1.000	.727
IES_19		
Revised IES_19	1.000	.676
IES_20		
Revised IES_20	1.000	.674
IES_21		
Revised IES_21	1.000	.629

Revised 1.000 .571
IES_22

Note. Extraction Method: Principal Component Analysis.

Table 8 above further illustrates the principal component matrix for IES (Impact of Event Scale) meant to estimate the distress faced by the participants following traumatic events based on a 22-item factor. The results presented within table 8 indicate that in all the cases all the extractions are above 0.4 which means there is validity in each of them and they could all be used throughout the analysis.

Table 9: *Principal Component Matrix for DERS: Communalities*

	Initial	Extraction
Greek DERS_1	1.000	.753
Greek DERS_2	1.000	.639
Greek DERS_3	1.000	.591
Greek DERS_4	1.000	.723
Greek DERS_5	1.000	.543
Greek DERS_6	1.000	.629
Greek DERS_7	1.000	.587
Greek DERS_8	1.000	.559
Greek DERS_9	1.000	.585
Greek	1.000	.707
DERS_10		
Greek	1.000	.631
DERS_11		
Greek	1.000	.579
DERS_12		
Greek	1.000	.813
DERS_13		
Greek	1.000	.819
DERS_14		
Greek	1.000	.507
DERS_15		

Greek	1.000	.658
<u>DERS_16</u>		
Greek	1.000	.628
<u>DERS_17</u>		
Greek	1.000	.744
<u>DERS_18</u>		
Greek	1.000	.678
<u>DERS_19</u>		
Greek	1.000	.596
<u>DERS_20</u>		
Greek	1.000	.586
<u>DERS_21</u>		
Greek	1.000	.676
<u>DERS_22</u>		
Greek	1.000	.605
<u>DERS_23</u>		
Greek	1.000	.659
<u>DERS_24</u>		
Greek	1.000	.667
<u>DERS_25</u>		
Greek	1.000	.679
<u>DERS_26</u>		
Greek	1.000	.601
<u>DERS_27</u>		
Greek	1.000	.652
<u>DERS_28</u>		
Greek	1.000	.503
<u>DERS_29</u>		
Greek	1.000	.659
<u>DERS_30</u>		

Note. Extraction Method: Principal Component Analysis.

As shown in Table 9 above, the trend results for the difficulties in emotional regulation illustrated in table 9 above shows that all the extractions are over 0.4 making all factors significant to the study; in that case, none of the variables representing the DERS scale was dropped in further analysis especially in the test of significance. Moreover, it means that all the

variables used to address difficulties in emotional regulation and the supporting feedback was valid.

Demographic Information of the Participants

Within the present section, the demographic information of the respondents has been examined and summary results reported. Based on the exploratory data analysis (EDA) on the study data, it was noted that 39.6% of the total sampled group representing oncologists and Health Professionals i.e., 207 were males while 58.5% were females. The same results are as captured in Figure 3 below, whereby female gender is ranked at the highest while preferred position not to answer the least.

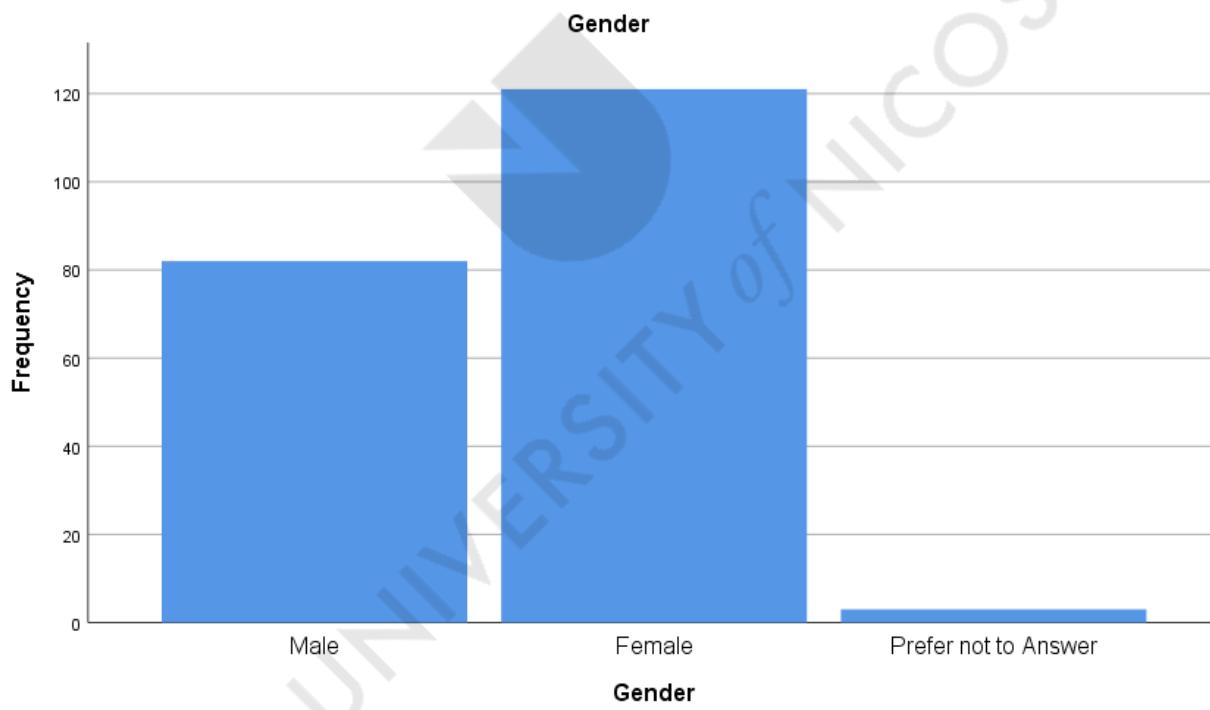


Figure 3: *Gender of the participants*

In terms of marital status, established evidence indicates that out of the total 207 sampled groups, 30.9% of the participants were single, never married, while 64.7% reported to be married

or in a committed partnership; then 2.9% indicated to be separated while 1.4% reported that they were divorced.

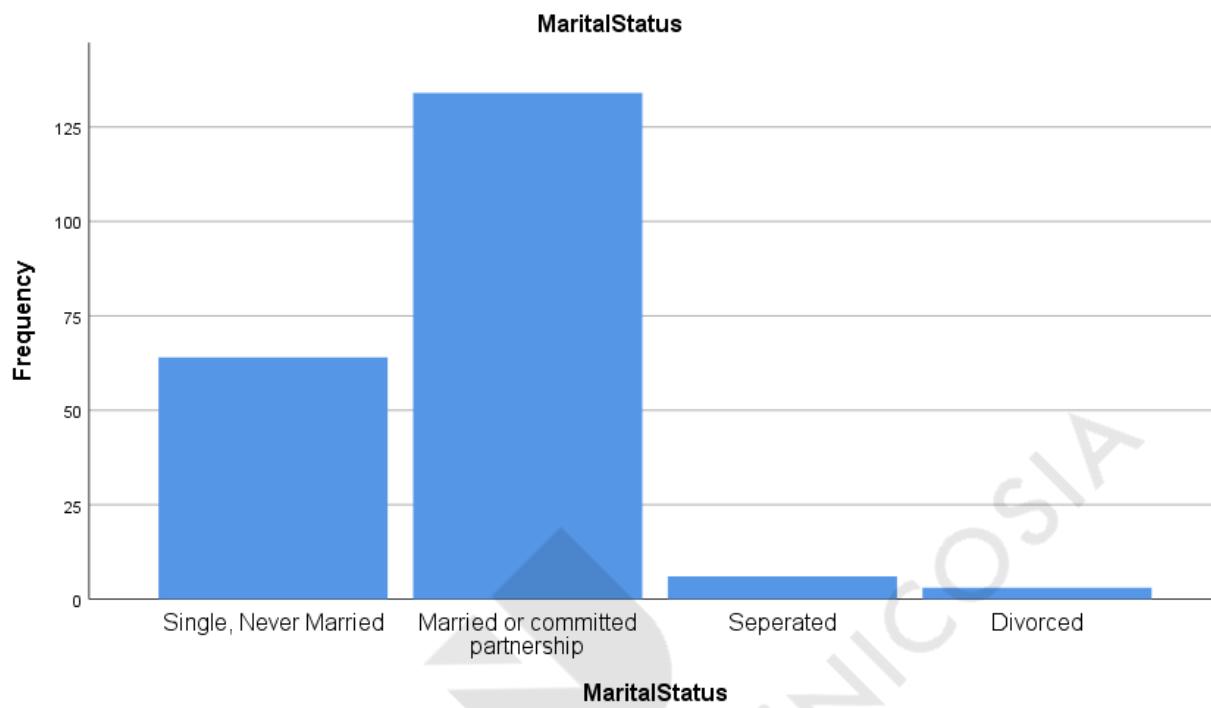


Figure 4: *Marital status of the participants*

Figure 4 above illustrates the distribution trend of the same and it is evident that the highest trend was that majority of the participants were married while the least indicating a divorced state. In terms of the number of children the participants had, the indications from the feedback are that 44% reported to have none while 16.9% had 1 child; 27.1% of the participants indicated to have two children and 10.1% three children and lastly 1.9% is the group that had 4 children.

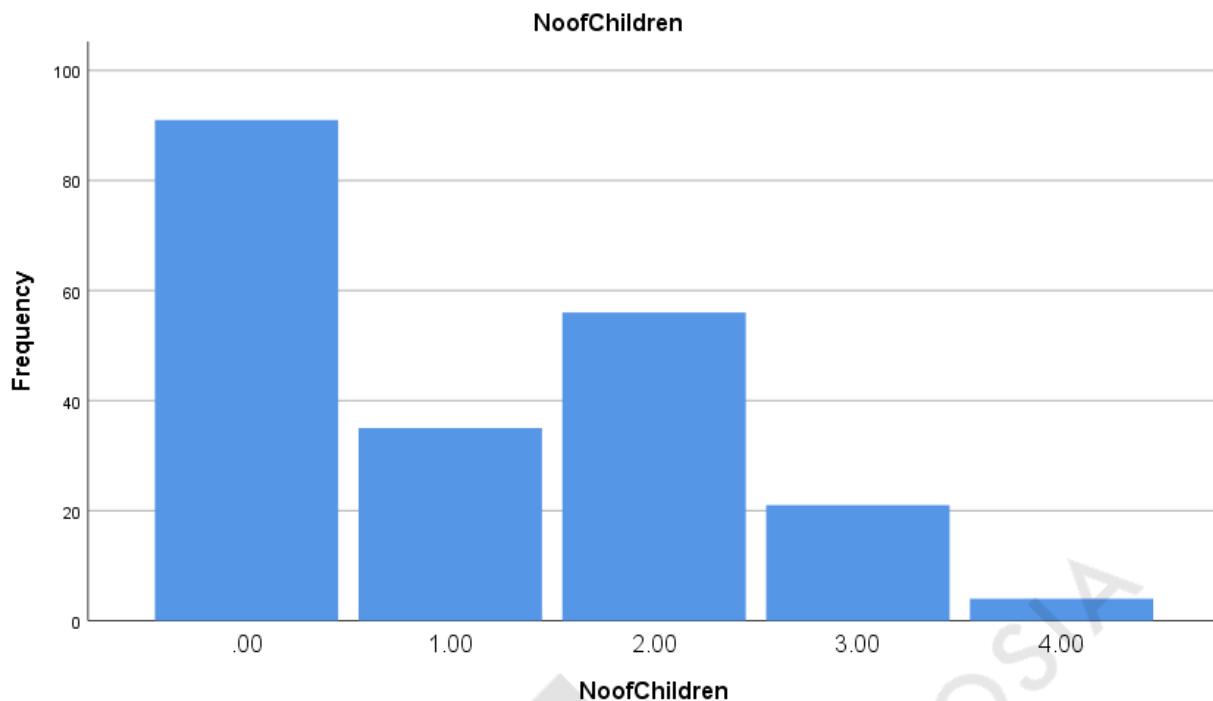


Figure 5: *Number of children*

The results shown in Figure 5 indicate that majority of the participants reported to have nil children while the least indicating to have 4 children. Further, the respondents taking part in the study were asked whether they held to a set of religious beliefs and 78.3% reported while 17.9% indicated a no-answer. In essence, the figure 5 illustrates the general distribution of the participants as reflected by the number of children and demographic attributes.

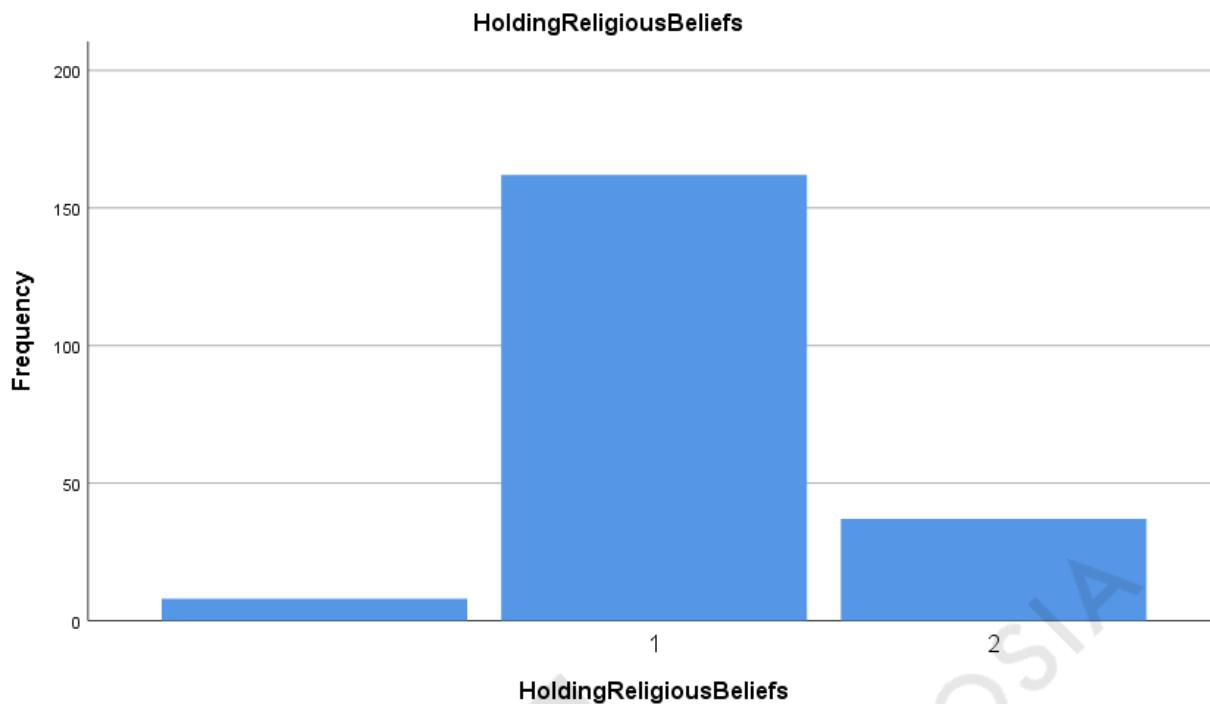


Figure 6: *Feedback trend on holding a set of religious beliefs*

Figure 6 above illustrates the same results and in the coding process 1.00 represent yes-answer and 2.00 no answer. The demographic survey further aimed to establish the ethnicity of the participants i.e., racial and ethnic background. As per figure 6, the results indicated that 14.5% was Greek while 0.5% reporting to have an ethnic background of Greek-cypriot and 84.1% being Greek-Cypriot.

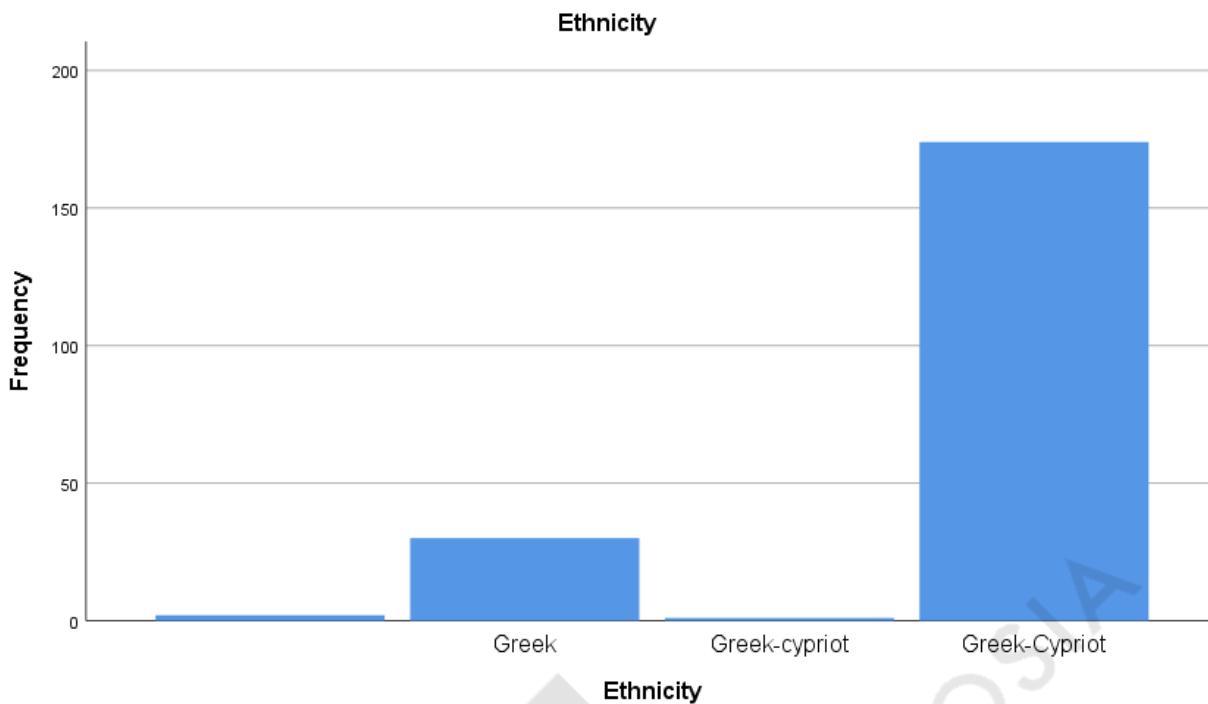


Figure 7: Racial/ethnic background of the participants

Figure 7 illustrates the same information and Greek-Cypriot emerges as the largest ethnic background of the respondents. In terms of income, results reveal that 5.3% of the participants earned a range of €100,000-€149.9 while 1.9% in the margin of €150,000-€199.9 and then 1% indicated to earn €200,000 or more. Additionally, 17.4% was the size that earned €25,000-€34,999 while 13.5% being the category of 35,000-€49,999 and 7.7% earning €50,000-€74,999.

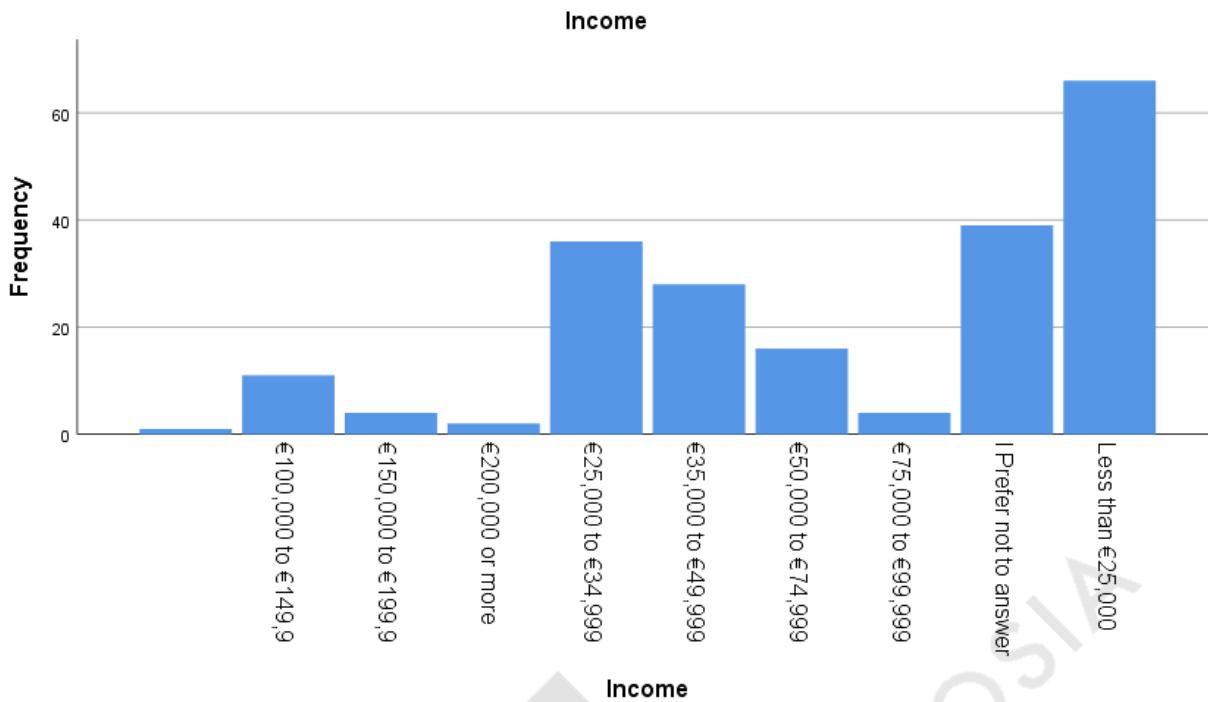


Figure 8: Total household income (in Euros)

As illustrated by figure 8, 1.9% of the participants indicated that they earned a range of €75,000-€99,999 and 31.9% reporting an income of less than €25,000. However, 18.8% was the group of participants that preferred not to answer. As per Figure 8 above, the largest group of the participants consisted of those that earned less than €25,000 and the least group showing an income of €75,000-€99,999.

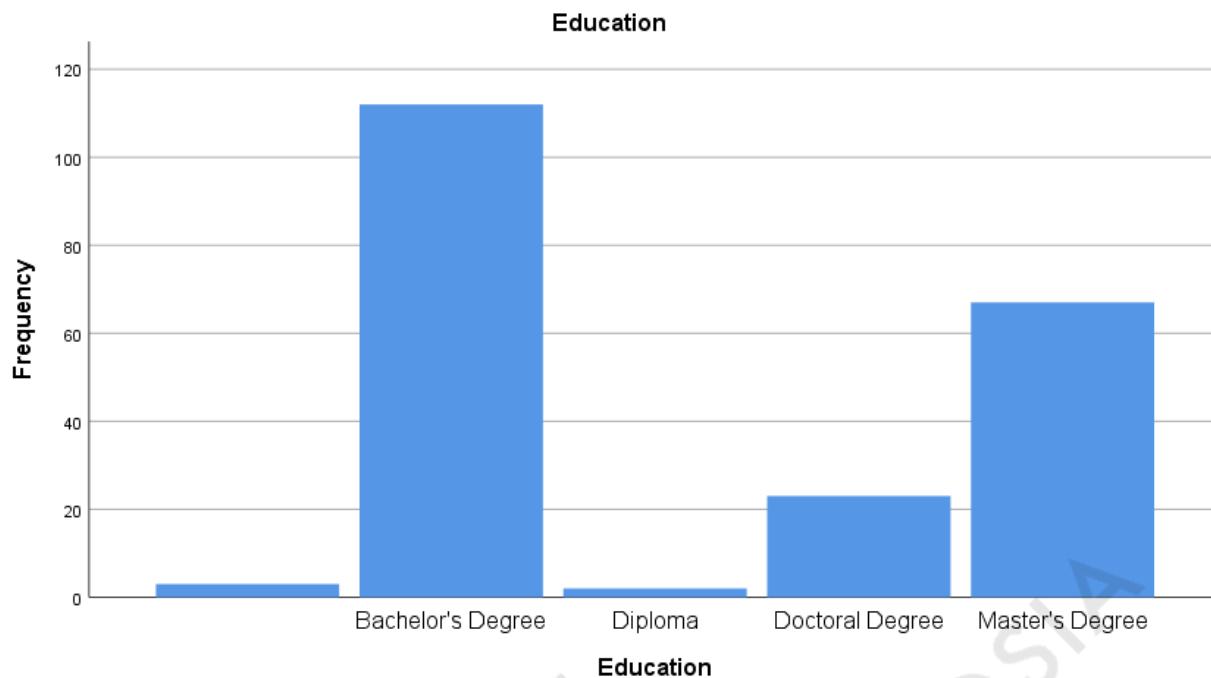


Figure 9: *Highest education attained*

Based on figure 9, the participants were questioned regarding their highest level of education where, 51.1% reported to have attained a Bachelor's Degree and 32.4% Master's Degree while 11.1% had a Doctoral Degree; however, the least sample reported they had only attained a Diploma in terms of education qualification. The general trend distribution in the same results is as shown in Figure 9 above.

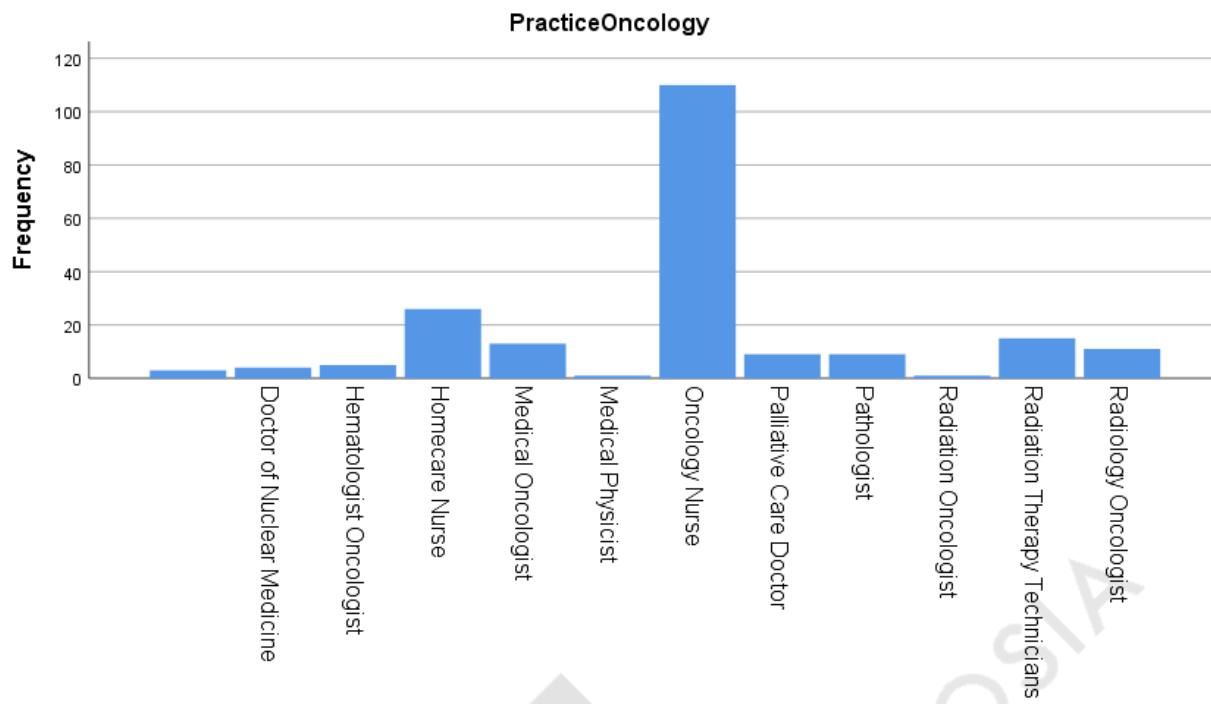


Figure 10: *Participants' current practice in Oncology*

Further establishments on the information of the participants linked to what best defined their role as oncology healthcare professional. As per the figure 10, the respondents were invited to state what best described their roles in the current practice in oncology. As the results demonstrated, majority at 53.1% reported they were Oncology Nurse and the least at 0.5% stating to be Medical Physicist. Figure 10 below illustrates the entire distribution on current practice in oncology.

Based on the general demographic characteristics of the study population, there were 82 males and 121 females while 3 preferred not to answer. The largest number of the participants with the highest age at 29 was 18 and the least age being 23 years with only 1 participant. 134 participants reported to be married or being in a committed partnership while 64 were single or never married. 6 participants indicated to have been separated while 3 reported they had been divorced. 91 participants reported to have no children while 56 reported they cared for two while

35 respondents affirmed to have one child. Then, 21 participants indicated to have three children and 4 have four children. In terms of holding religious beliefs, 162 respondents agreed to the matter by saying yes while 37 reported no. In line with the above, 30 participants reported they were of Greek ethnicity and 1 being Greek-cypriot, and 174 as Greek-Cypriot. For income, 66 of the participants reported to earn less than €25,000 and the minority group at 4 reporting to earn €200,000 or more. In addition, majority of the participants at 112 depicted to have achieved a Bachelor's Degree while 67 were Master's Degree graduates, 23 had a Doctoral Degree, and Diploma holders being 2. Further results shown in Appendix M indicate that majority of the participants at 110 reported to work as Oncology Nurses while the least i.e., 1 practicing as a Medical Physicist and another 1 as a Radio Oncologist. Similarly, a great number of the participants i.e., 133 reported they handled all types of cancer in their clinical practice.

Descriptive Statistics on ProQOL Scale

The descriptive statistics results in table 10 manifest the feedback results on perceived professional quality of life by the oncologists and Health Professionals that took part in the study.

Table 10: Descriptive statistics on trends on compassion fatigue of oncologists and healthcare professionals

	Minimu		Maximu		Std. Deviation
	N	m	m	Mean	
ProQOL_1	206	1.00	5.00	3.9660	.80475
ProQOL_2	205	1.00	5.00	3.6098	.93615
ProQOL_3	205	1.00	5.00	4.2976	.79474
ProQOL_4	205	1.00	5.00	3.4439	1.03518
ProQOL_5	205	1.00	5.00	2.3805	1.00567
ProQOL_6	204	1.00	5.00	3.5441	.96898
ProQOL_7	205	1.00	5.00	2.1463	1.01366
ProQOL_8	205	1.00	5.00	1.6293	.72702

ProQOL_9	205	1.00	5.00	1.9268	.87979
ProQOL_10	205	1.00	5.00	2.1073	1.12380
ProQOL_11	204	1.00	5.00	2.7745	1.16100
ProQOL_12	204	1.00	5.00	4.3922	.82039
ProQOL_13	205	1.00	5.00	2.1366	.96552
ProQOL_14	205	1.00	5.00	2.0049	.96252
ProQOL_15	204	1.00	5.00	3.8235	.94595
ProQOL_16	204	1.00	5.00	3.9657	.87313
ProQOL_17	203	1.00	5.00	3.8571	.84096
ProQOL_18	203	1.00	5.00	3.9951	.93076
ProQOL_19	202	1.00	5.00	3.1683	1.05160
ProQOL_20	201	1.00	5.00	3.9303	.85154
ProQOL_21	203	1.00	5.00	3.0148	1.14528
ProQOL_22	203	1.00	5.00	3.7389	.97280
ProQOL_23	201	1.00	5.00	1.9204	1.05529
ProQOL_24	203	1.00	5.00	4.1626	.88897
ProQOL_25	203	1.00	5.00	1.7783	.95187
ProQOL_26	199	1.00	5.00	2.7538	1.29282
ProQOL_27	201	1.00	5.00	3.6070	1.02944
ProQOL_28	194	1.00	5.00	2.2010	1.01072
ProQOL_29	203	1.00	5.00	4.2906	.70308
ProQOL_30	203	1.00	5.00	4.1182	1.01270
Valid N (listwise)	185				

Considering the feedback results under Table 10 above the average trend depicts an often occurrence with the issues presented using the ProQOL scale i.e., professional quality of life of the participants in their experiences and circumstances. The same can be an indicator that for most of the respondents serving as oncologists and Health Professionals, they considered each of the ProQOL issues as often occurring to them “sometimes”. Later in the discussions, such was an optimistic outlook in lieu of professional quality of life of the participants in dealing with cancer patients. However, the above is the general impression of the feedback since table 9 above further illustrates that there are variations in the mean values for the individual cases with even some having 4–7-point score meaning there are variations in lieu of the experiences linked to

professional quality of life. The standard deviations in all the cases indicated to be below the mean values which further affirmed that the results generated from the participants' feedback were consistent and stable in context of the general trend.

Descriptive Statistics on Jefferson Scale of Empathy Scale

The summary statistics on feedback results based on the JSEHP have been reported in this section of the study, as shown in Table 11 below:

Table 11: Descriptive statistics on trends in empathy of oncologists and healthcare professionals

		Minimu N	Maximu m	Mean	Std. Deviation
JSEHP_1	191	1.00	7.00	4.4974	2.00493
JSEHP_2	194	1.00	7.00	6.2732	1.18829
JSEHP_3	194	1.00	7.00	2.5515	1.56381
JSEHP_4	194	2.00	7.00	6.1959	1.10711
JSEHP_5	194	1.00	7.00	5.8093	1.33882
JSEHP_6	193	1.00	7.00	2.8912	1.69361
JSEHP_7	192	1.00	7.00	2.9844	2.03497
JSEHP_8	191	1.00	7.00	4.4660	2.04879
JSEHP_9	192	1.00	7.00	4.4740	2.02325
JSEHP_10	191	1.00	7.00	5.3141	1.57806
JSEHP_11	190	1.00	7.00	2.7105	1.76845
JSEHP_12	191	1.00	7.00	2.9634	1.88448
JSEHP_13	190	1.00	7.00	5.4526	1.49969
JSEHP_14	191	1.00	7.00	2.4817	1.86334
JSEHP_15	188	1.00	7.00	5.1330	1.80859
JSEHP_16	191	1.00	7.00	5.7330	1.31666
JSEHP_17	192	1.00	7.00	5.0625	1.75346
JSEHP_18	191	1.00	7.00	5.1204	1.59972
JSEHP_19	192	1.00	7.00	2.0833	1.53266
JSEHP_20	188	1.00	7.00	5.4255	1.50215
Valid N (listwise)	180				

Table 11 above depicts the full results on central tendency and dispersion trends for the JSEHP 20-item factors feedback results. In the questionnaire JSEHP used a scale for strong disagreement to strong agreement where the respondents were invited to rate each of the issues therein. Foremost, all the test results for the standard deviation were below the mean value which implied that there was consistency throughout the feedback. In other words, each of the reported response was consistent to the average feedback. The average trend indicated that the participants “fairly agreed” with the issues presented about their empathy in the lenses of Jefferson scale of empathy. However, this was considered to also have variations since from the individual scales there were ranges from 2-6 which were a manifestation of both disagree and agree responses on issues touching on empathy.

Descriptive Statistics on Impact of Event Scale

The descriptive statistics captured in Table 12 below portray the trends on participants responses on issues addressed guided by the IES scale i.e., experiences of distress or trauma.

Table 12: Descriptive statistics on traumatic or distressful events by oncologists and healthcare professionals

	N	Minimu m	Maximu m	Mean	Std. Deviation
Revised IES_1	205	.00	4.00	1.3854	1.17689
Revised IES_2	205	.00	4.00	.8049	1.08057
Revised IES_3	205	.00	4.00	1.1512	1.09882
Revised IES_4	205	.00	4.00	1.4976	1.18249
Revised IES_5	205	.00	4.00	1.4537	1.23433
Revised IES_6	205	.00	4.00	1.1415	1.17343
Revised IES_7	204	.00	4.00	.8529	1.00145
Revised IES_8	205	.00	4.00	1.1463	1.22796
Revised IES_9	205	.00	4.00	1.1610	1.18340
Revised IES_10	205	.00	4.00	.7512	1.04860
Revised IES_11	205	.00	4.00	1.4049	1.30120
Revised IES_12	204	.00	4.00	1.1029	1.17200
Revised IES_13	204	.00	4.00	.8922	1.10891
Revised IES_14	200	.00	4.00	.7600	1.01368
Revised IES_15	200	.00	4.00	.7300	1.05483
Revised IES_16	199	.00	4.00	.9648	1.17369
Revised IES_17	200	.00	4.00	1.2300	1.35880
Revised IES_18	200	.00	4.00	.8850	1.10811
Revised IES_19	200	.00	4.00	.6650	1.04318
Revised IES_20	200	.00	4.00	.6550	1.08715
Revised IES_21	200	.00	4.00	.7650	1.13411

Revised IES_22	199	.00	4.00	1.0905	1.30727
Valid N (listwise)	197				

As can be deduced from Table 12 above, the average performance trend shows a situation where the participants attributed a “not at all” response towards issues rose using the impact of event scale. Thus, the trend depicts the experiences regarding the issues on traumatic impact i.e., with respect to oncology healthcare professionals and the degree to which the participants experienced distressful moments. In this regard, a strong indication of “not at all or rarely” was be considered as the average performance. However, a closer look on each of the feedback results indicates there were instances when the standard deviation was more than the average scores to imply that there might have not been consistency in the general outlook. In other words, the expressed average trend on traumatic events of the oncologist and healthcare professionals in dealing with cancer patients in Cyprus may not have been stable through this survey process.

Descriptive Statistics on DERS Scale

Table 13 below captures the descriptive statistics on feedback pertaining to difficulties in emotion regulation of the participants.

Table 13: Descriptive statistics on distress or trauma experiences of oncologists and healthcare professionals

	N	Minimu	Maximu	Std.	
		m	m	Mean	Deviation
Greek DERS_1	200	1.00	4.00	1.6150	.81245
Greek DERS_2	198	1.00	5.00	2.2828	1.00799
Greek DERS_3	199	1.00	5.00	3.8040	.93029
Greek DERS_4	199	1.00	5.00	1.7286	.85087
Greek DERS_5	198	1.00	5.00	2.6010	1.06031
Greek DERS_6	198	1.00	5.00	3.8889	1.06049

Greek DERS_7	199	1.00	5.00	2.3467	1.02759
Greek DERS_8	198	1.00	5.00	1.9697	.99189
Greek DERS_9	198	1.00	5.00	1.5000	.87695
Greek DERS_10	198	1.00	5.00	3.3535	1.22008
Greek DERS_11	198	1.00	5.00	2.1212	1.04975
Greek DERS_12	197	1.00	5.00	3.2589	1.14240
Greek DERS_13	196	1.00	5.00	3.4286	1.10477
Greek DERS_14	198	1.00	5.00	3.3788	1.11881
Greek DERS_15	198	1.00	5.00	2.2828	.94563
Greek DERS_16	197	1.00	5.00	3.4569	1.10399
Greek DERS_17	202	1.00	4.00	1.9802	.82233
Greek DERS_18	202	1.00	5.00	3.4752	1.12497
Greek DERS_19	202	1.00	5.00	3.2822	1.12616
Greek DERS_20	202	1.00	4.00	1.6782	.80448
Greek DERS_21	202	1.00	5.00	3.5743	1.02065
Greek DERS_22	202	1.00	5.00	3.6485	1.07907
Greek DERS_23	201	1.00	5.00	2.4080	.96059
Greek DERS_24	202	1.00	5.00	1.8119	1.01445
Greek DERS_25	201	1.00	5.00	1.8159	.89496
Greek DERS_26	201	1.00	5.00	2.0647	.89487
Greek DERS_27	202	1.00	5.00	1.7228	.81794

Greek DERS_28	201	1.00	5.00	1.8259	.95107
Greek DERS_29	202	.00	5.00	2.0891	.87074
Greek DERS_30	202	.00	5.00	2.2327	.94122
Valid N (listwise)	188				

DERS scale sought to measure the difficulties in emotion regulation where summary of the results is as shown in appendix D. As reported in Table 13 above, on average the respondents presented an impression of “sometimes” in respect to the experiences around difficulties in emotion regulation. Moreover, the outlook for each of the factors depicted a standard deviation trend that is lower than the mean performance to imply there was consistency throughout the answers from the participants. In that case, the results on DERS scale had a stable impact which ascertains its reliability of application in this dissertation.

All the above reported descriptive statistics can be summarized below by creating average variables in each of the cases. See Table 1 below:

Table 14: Summary descriptive statistics for the MEAN VARIABLES

	N	Minimum	Maximum	Mean	Std. Deviation
Average_JSEHP	203	3.00	6.00	4.2808	.65625
Average_ProQOL	215	.00	2.00	1.0465	.28625
Average_DERS	212	1.00	4.00	2.5330	.52776
Average_IES	214	.00	4.00	1.0794	1.01086
Valid N (listwise)	200				

Note. Mean Variables

The results under Table 14 indicate that Average_JSEHP (Mean = 4.2808, S.D = .6563) which can be interpreted to mean on average the participants fairly agreed with the matters relating to empathy factors or inclinations of the oncologists and health professionals surveyed.

On the other hand, Average_ProQOL (Mean = 3.1684, S.D = .3584) meant the participants perceived the issues around their professional quality of life to have “often” occurred to them. Moreover, Average_DERS (Mean = 1.0465, S.D = .28625) was interpreted that an average degree of the respondents was of the opinion of “almost never” when addressed to issues of their difficulties in emotional regulation. Finally, AverageIES (Mean = 1.0794, S.D = 1.01086) was indication that an average of the participants stated “not at all” when addressed to the issues of impact of events i.e., subjective distress triggered by varying traumatic events in their professional activities as oncologists and or health professionals.

Normality Analysis

The current section is critical in this ongoing dissertation since the main investigation and hypotheses have been examined in detail. The first approach was to check the normality distribution of the data using histograms fitted with normality plots for each of the variables.

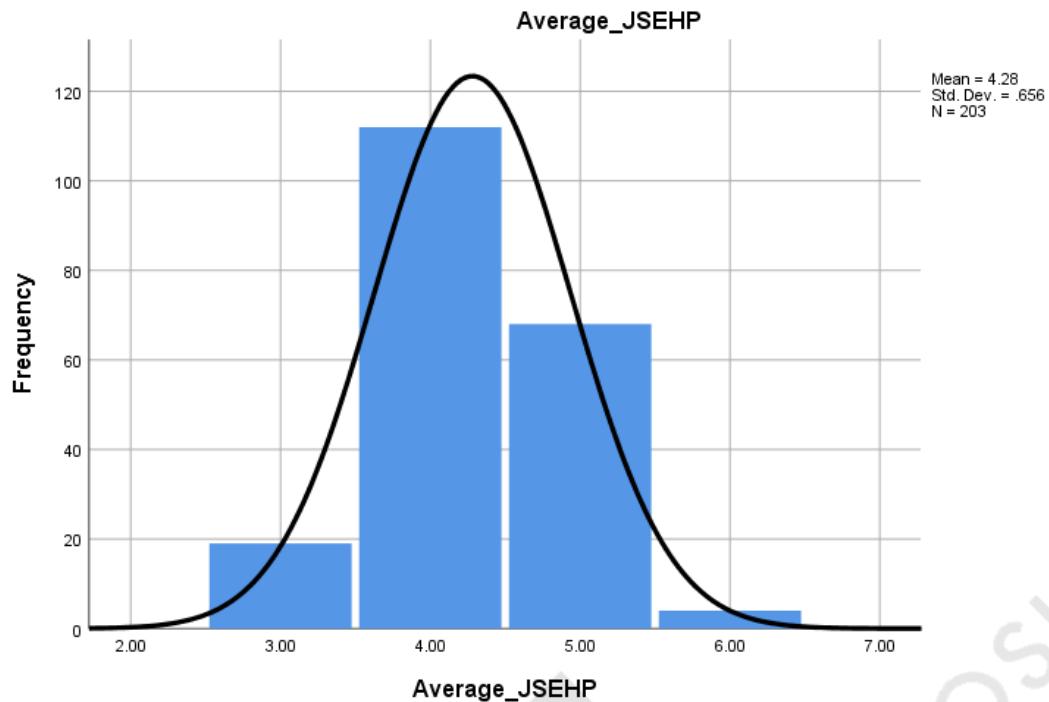


Figure 11: *Histogram on trend on JSEHP*

The results indicate that there are sections in the normal curve that fall outside although a larger part is within. Based on the findings illustrated by figure 11, the researcher holds that normality distribution is not fully guaranteed but there are cogent indications that a large part of the data variations is within the normal curve. In this regard, the variable result can be used as one of the predictors in the regression analysis.

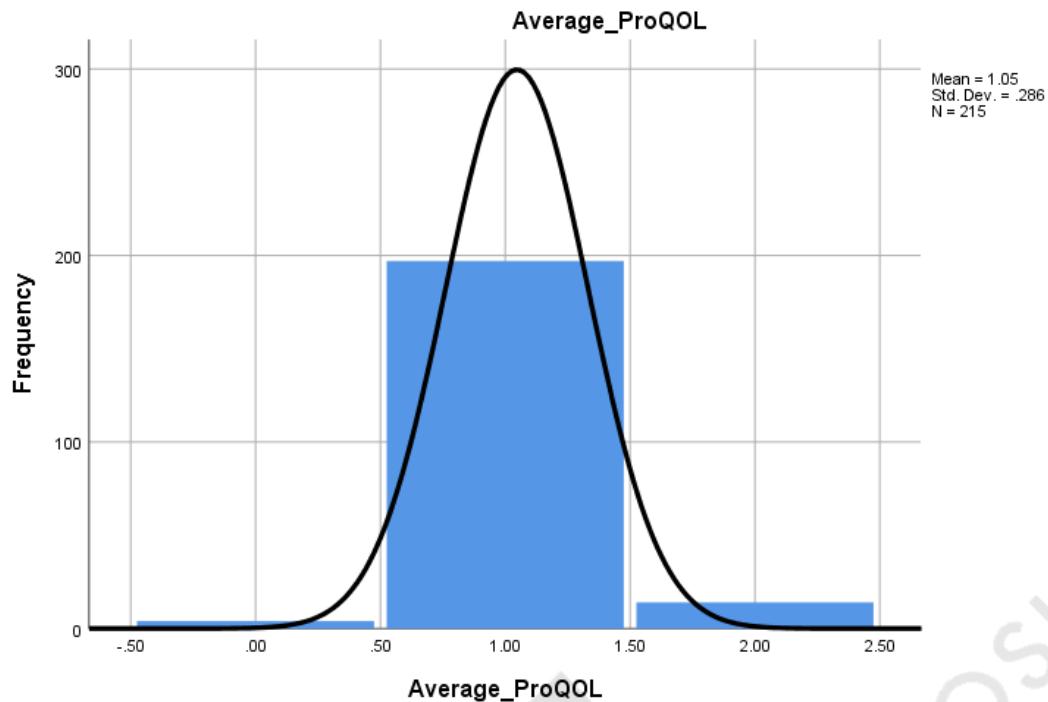


Figure 12: *Histogram on trend on ProQOL*

The trend in Figure 12 shows that a significant level of the feedback variation on ProQOL survey falls within the normal curve and there is also a degree of the data outside the same; on this basis the researcher affirms that normality distribution trend in this feedback is not fully guaranteed but since there is not much skewness to the right or left, it was not much a problem.

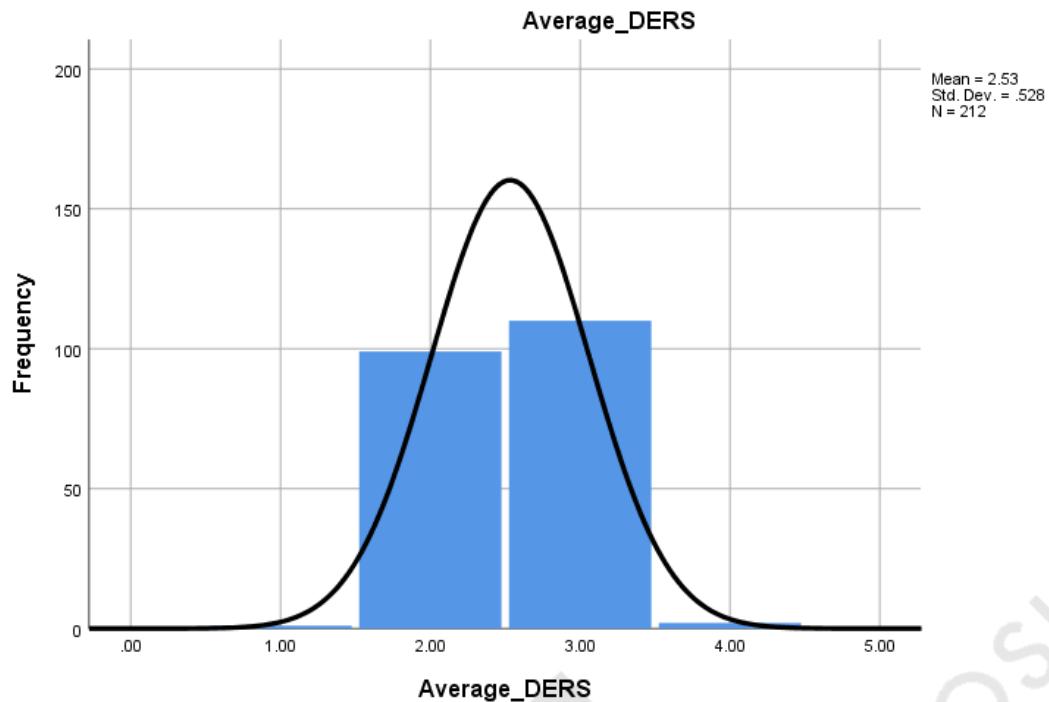


Figure 13: *Histogram on trend on DERS*

From the trend outlook under Figure 13 above, a greater part of the feedback variation generated using DERS scale does not illustrate much worry for non-normality distribution. In that regard, DERS variable was fitting to be used as a criterion variable in the model regression.

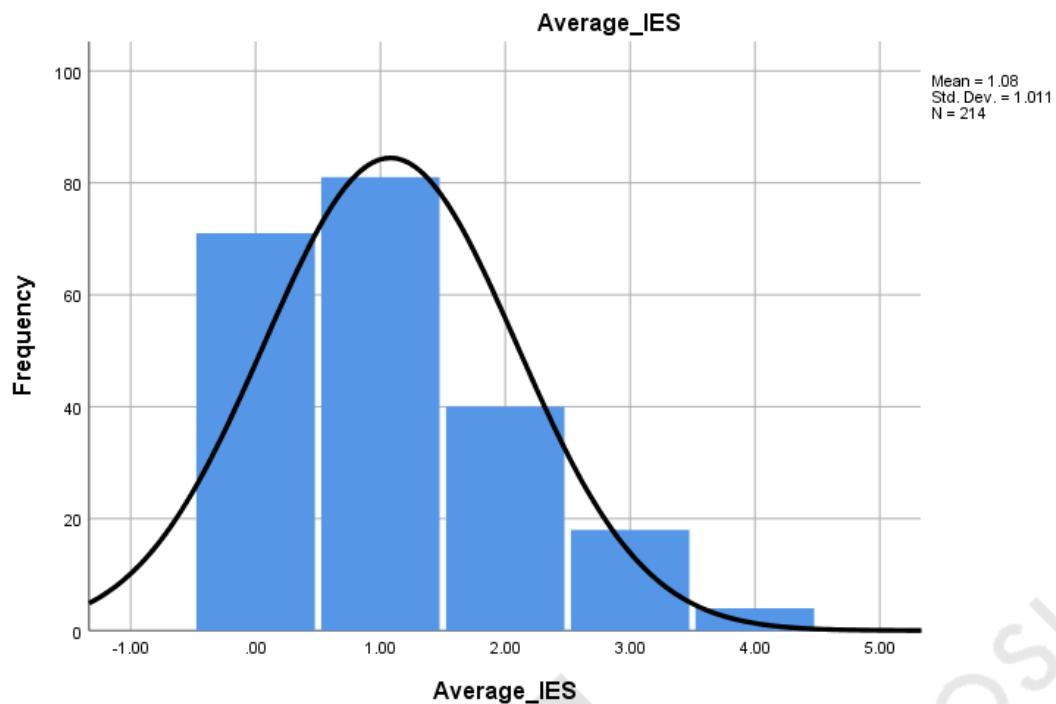


Figure 14: *Histogram on trend on IES*

The results in Figure 14 above indicate that a significant degree of the feedback variations in the survey generated using EIS Scale fits within the normal curve; due to this, the assertion is that there is not much problem on lack of normality in the distribution which makes the entire scenario befitting to be used as a criterion variable.

Linearity Trend Analysis

Further, Table 15 below captured the correlation trends for all the MEAN variables i.e., DERS, IES, JSHEP, and ProQOL.

Table 15: Linearity analysis test results

Correlations

	Average_JS EHP	Average_Pro QOL	Average_DE RS	Average_IE S
Average_JSEH	Pearson Correlation	1	.051	.052
P	Sig. (2-tailed)		.473	.467
				.445

	N	203	203	200	202
Average_ProQOL	Pearson Correlation	.051	1	-.059	-.249**
	Sig. (2-tailed)	.473		.391	.000
	N	203	215	211	213
Average_DER_S	Pearson Correlation	.052	-.059	1	.350**
	Sig. (2-tailed)	.467	.391		.000
	N	200	211	212	211
AverageIES	Pearson Correlation	-.054	-.249**	.350**	1
	Sig. (2-tailed)	.445	.000	.000	
	N	202	213	211	214

Note. Correlation is significant at the 0.01 level (2-tailed).

The correlation results under Table 15 above indicate that Average_DERS (Sig. = .000) has significant moderate and positive linearity to AverageIES; however, Average_ProQOL (Sig. = .000) has a significantly weak and negative linearity to AverageIES. On the other hand, Average_ProQOL (Sig. = .473, n.s.) depicts to have no significant correlation to Average_JSEHP; similarly Average_JSEHP has no significant linearity to Average_DERS since = .467, n.s., and same for AverageIES where p = .445, n.s.

Levels of Self-Reported Compassion Fatigue and Compassion Satisfaction

Earlier, the trend variations on feedback generated using the ProQOL scale to make an assessment of the levels of self-reported compassion fatigue (Stress and Burnout) and compassion satisfaction were debated. Table 12 had featured the average trend on the same i.e. ProQOL feedback where it was noted that the participants perceived the issues around their professional quality of life to have “never” occurred to them.

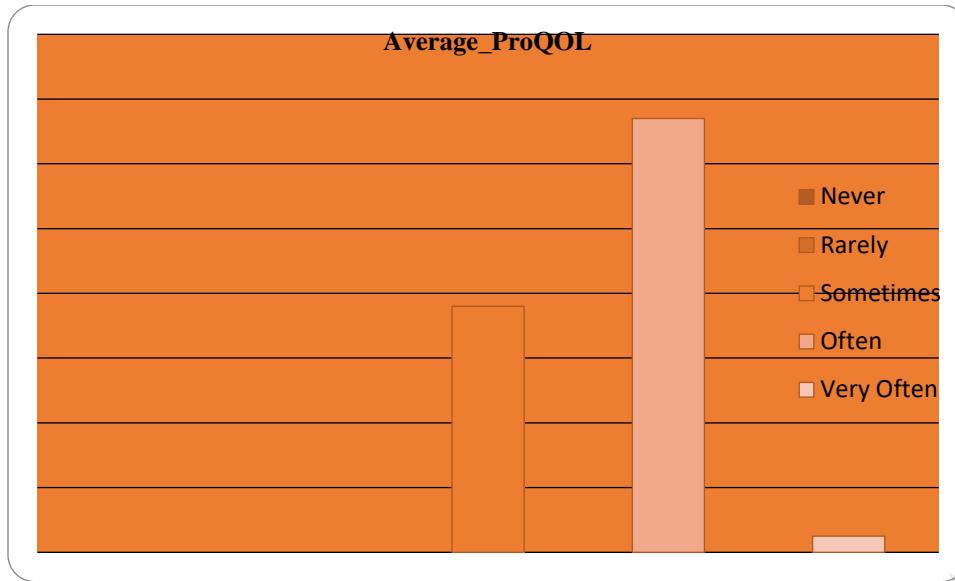


Figure 15: *Variations on ProQOL average feedback*

Figure 15 is an added visualization to capture the nature of the results under levels of self-reported compassion fatigue (Stress and Burnout) and compassion satisfaction. As shown in Figure 15, the use of a bar chart indicated that on average the participants often experienced the issues raised under the professional quality of life. However, this is mainly an average outlook and it would be important to consider the degree of other responses across the scale i.e., never, rarely, sometimes, often, and very often as depicted in appendix B. Moreover, the trend for the fact that the participants felt that sometimes they experience the issues stated in the ProQOL scale cannot be taken for granted in that a sizeable number of the participants had such opinion regarding their professional quality of life.

Levels of Self-Reported Empathy among Oncologists and Health Care Professionals

In this section the focus aimed to make an examination of the trend variations on the scope of the self-reported empathetic inclinations in a sample of oncologists and health care professionals in oncology in Cyprus. In the previous analysis, the same review had been achieved considering the results reported in Appendix A and those under table 11 where it was

evidenced that the participants fairly agreed with the matters relating to empathy factors or inclinations. Further, visualization on this feedback is as shown in Figure 16 below.

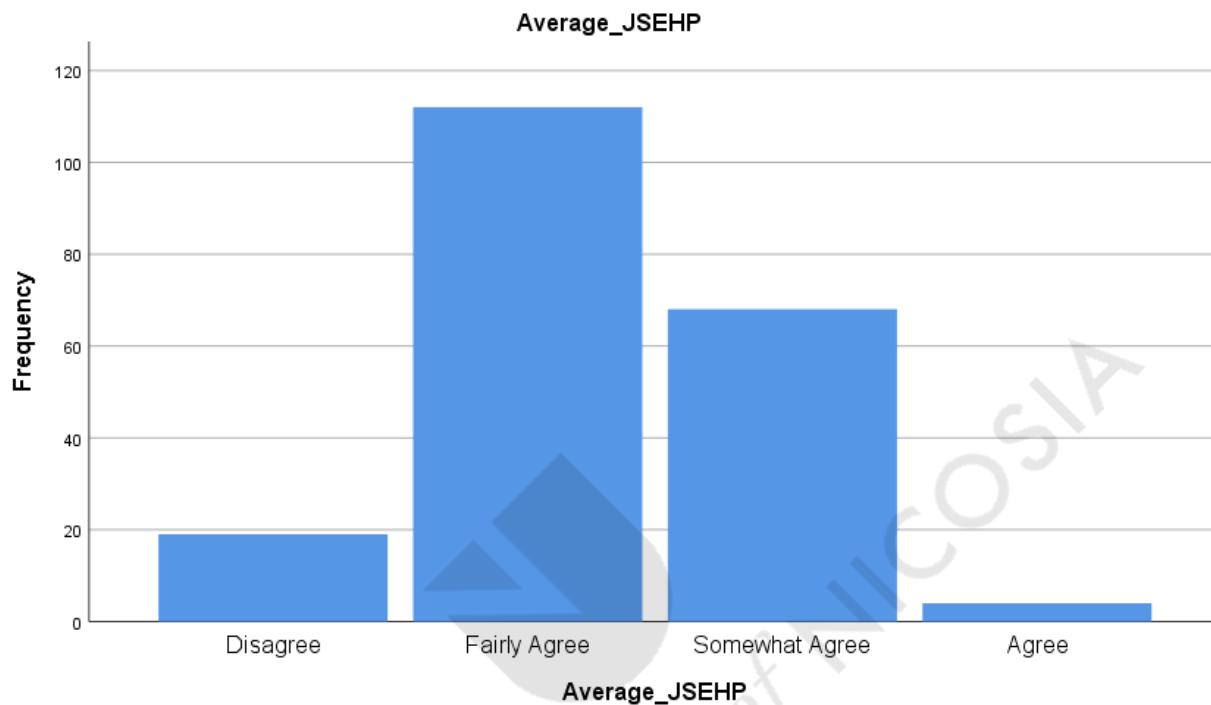


Figure 16: Variations on JSEHP average feedback

The indications are supported once again using a bar chart under Figure 16 and it means a greater part of the participants fairly agreed with the issues above and even a sizeable number somewhat agreeing. The best way researcher perceived was that the participants agreed with the issues addressed to them based on the JSEHP scale survey. The first concern would be to establish whether fair agreement with the issues of empathy among oncologists and Healthcare Professionals have predictive significant relationship to the dimensions of professional quality of life which the participants seemed to never experience. The relationship can be modeled as shown below.

$$\text{ProQOL} = \alpha + \beta_1 \text{JSEHP} + \varepsilon \dots \dots \dots \quad (1)$$

Empathy, Compassion Fatigue and Compassion Satisfaction Nexus

Within the current section, the analysis echoes what has been mentioned in the immediate context regarding the formulation of a hierarchical regression model. The researcher has already created a model (equation 1) meant to establish the nexus in the case of empathy and compassion fatigue and compassion satisfaction. See the results below under Table 16.

Table 16: Hierarchical Regression Model Results: Model Summary

Mode	R Square	Adjusted R Square	of the Estimate	R Square Change	Change Statistics			Sig. F Change	
					F Change	df1	df2		
1	.051 ^a	.1246	.1205	.28531	.003	.516	1	201	.003

Note. Predictors: (Constant), Average_JSEHP

ANOVA^a

Model	Sum of Squares	df	Mean Square		
			F	Sig.	
1	Regression n	.042	1	.042	30.6 .000 ^b
					34
	Residual	16.362	201	.081	
	Total	16.404	202		

Note. Predictors: (Constant), Average_JSEHP

Coefficients^a

Model	B	Standardize			Collinearity		
		Unstandardized		d	Statistics		
		Coefficients	Coefficients		Toleranc	e	VIF
1	(Constant)	.960	.132		7.248	.000	
	Average_JSE HP	.022	.031	1.376	.718	.000	1.000 1.000

Note. Dependent Variable: Average_ProQOL

The results indicate that a weak fit exists in empathy, compassion fatigue and compassion satisfaction given the R squared at .1246; in fact, it meant that only 12.46% of the variations on empathy explain variations in compassion fatigue. In addition, a non-spurious condition can be interpreted from the Anova ($F = 30.6034$, Sig. = .000) which means there can be found significant relationship in the variables for compassion fatigue and empathy. In other words, any claimed effects from empathy variations of the oncologists and Healthcare professionals have meaningful significance in real life on compassion fatigue. Thus, it can be stated that variations in empathy inclinations JSEPH ($\beta = 1.376$, Sig. = .000) of the surveyed participants significantly increased variations in compassion fatigue of the oncologists and Healthcare professionals offering care to Cancer patients in Cyprus. Furthermore, the regression model has a VIF =1.000 which means the entire model was free from multicollinearity problem.

Influence of Emotion Regulation

In this part of the study the focus was to establish the influence of emotion regulation on the relationship between empathy, compassion satisfaction and compassion fatigue. Thus, it required a newly adjusted model as shown below under Table 16:

$$\text{ProQOL} = \alpha + \beta_1 \text{JSEHP} + \beta_2 \text{DERS} + \varepsilon \dots \quad (2)$$

The results are captured in table 18 below.

Table 17: Mediator regression model over the influence of emotional regulation: Model

Summary

			Std. Error			Change Statistics			
Mode	R	Adjusted R	of the	R Square		F		Sig. F	
1	R	Square	Square	Estimate	Change	Change	df1	df2	Change
1	.047 ^a	.125	.120	.27749	.002	.437	1	198	0.012

2	.096 ^b	.171	.133	.27723	.007	1.378	1	197	0.009
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Note. Predictors: (Constant), Average_JSEHP, Norm_DERS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.034	1	.034	.437	.009 ^b
	n					
	Residual	15.246	198	.077		
	Total	15.280	199			
2	Regression	.140	2	.070	.908	.005 ^c
	n					
	Residual	15.140	197	.077		
	Total	15.280	199			

Note. Predictors: (Constant), Average_JSEHP, Norm_DERS

Coefficients^a

Model		Standardize d Coefficients			Collinearity Statistics			Toleranc e	VIF
		Unstandardized Coefficients							
		B	Std. Error	Beta	t	Sig.			
1	(Constant)	.975	.130		7.531	.000			
	Average_JSE HP	.020	.030	.047	.661	.509	1.000	1.000	
2	(Constant)	1.029	.137		7.498	.000			
	Average_JSE HP	.022	.030	.1279	.729	.007	.997	1.003	
	Average_DE RS	-.124	.105	.1864	-1.174	.000	.997	1.003	

Note. Dependent Variable: Average_ProQOL

The results in Table 17 above indicate that a model fit at 0.171 upon the influence of the effects of the emotional regulation on the interaction between empathy and compassion fatigue. The interpretation, therefore, was that 17.1% of the cases for empathy variations when influenced by emotional regulation explained compassion fatigue. Further, ANOVA results ($F = .908$, $\text{Sig.} = .009$) depicted the existence of a statistically significant association among the

reviewed items. In that regard, the mediating effects of emotional regulation were upheld as significant in influencing the relationship involving empathy and compassion fatigue. The standardized significant beta for emotional regulation ($\beta = .1864$, Sig. = .000) and empathy ($\beta = .1279$, Sig. = .007) proved that the mediating influence of DERS was incremental towards compassion fatigue; the influence led to incremental effects of empathy towards compassion fatigue considering the positive beta.

Influence of Distress

In this evaluation, the focus was to determine whether there is any influence of distress on Empathy and Compassion fatigue nexus. The results further led to the establishment of an adjusted model as shown below.

$$\text{ProQOL} = \alpha + \beta_1\text{JSEHP} + \beta_2\text{IES} + \varepsilon \dots \dots \dots \quad (3)$$

See Table 17 below for hierarchical regression analysis.

Table 18: *Mediating regression model on influence of distress: Model Summary*

Mode				Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
	R Square	Adjusted R Square	F			df1	df2		
1	.044 ^a	.122	-.003	.27620	.002	.393	1	200	.532
2	.267 ^b	.196	.062	.26709	.069	14.870	1	199	.000

Note. Predictors: (Constant), Average_JSEHP, AverageIES

ANOVA^a

Model	Sum of Squares		df	Mean Square	F	Sig.
	Regression	Error				
1	.030	15.257	1	.030	.393	.532 ^b
	n					
	Residual	15.287	200	.076		
	Total	15.287	201			
2	1.091	14.196	2	.545	7.645	.001 ^c
	n					
	Residual	15.287	199	.071		
	Total	15.287	201			

Note. Predictors: (Constant), Average_JSEHP, AverageIES

Coefficients^a

Model	B	Std. Error	Standardize Coefficients		Collinearity Statistics			Toleranc
			Unstandardized Coefficients		d			
			Coefficients					
1	(Constant)	.980	.128			7.635	.000	
	Average_JSE	.019	.030	.044		.627	.532	1.000
	HP							1.000
2	(Constant)	1.083	.127			8.529	.000	
	Average_JSE	.013	.029	.039		.439	.000	.997
	HP							1.003
	AverageIES	.1091	.019	.138		-3.856	.000	.997
								1.003

Note. Dependent Variable: Average_ProQOL

The test results under Table 18 above indicate that considering the effects of distress the model fit is at .196 meant that empathy shows to explain the variations in compassion fatigue of the participants by 19.6%. In addition, the results of the Anova ($F = 7.645$, $\text{Sig.} = .001$) indicate that the model relationship is statistically significant which means the predictors have real-life effects to the dependent variable i.e., compassion fatigue. Further, empathy ($\beta = .039$, $\text{Sig.} = .000$) have significant predictive effects to compassion fatigue of the participants; with the effects the actual interpretation was that empathy increased the dependent variable by 13.72%. However, the mediator itself, distress ($\beta = .1377$, $\text{Sig.} = .000$) evidenced a significant beta, meaning it had significant incremental effects to compassion fatigue by 13.77%. Overall, the model involving the mediating effects of distress is enough for decision making considering there were no multicollinearity problems since VIF at 1.003 on both cases is a good sign.

Secondary Traumatic Stress, Burnout and Compassion Satisfaction Differences

The results were captured using MANOVA test results as shown below under Table 19:

Table 19: *MANOVA test results: Multivariate Tests^a*

Effect		Value	F	Hypothesis		
				df	Error df	Sig.
Intercept	Pillai's Trace	.981	235.281 ^b	30.000	139.000	.000
	Wilks' Lambda	.019	235.281 ^b	30.000	139.000	.000
	Hotelling's Trace	50.780	235.281 ^b	30.000	139.000	.000
	Roy's Largest Root	50.780	235.281 ^b	30.000	139.000	.000
Average_JSEH	Pillai's Trace	.512	.967	90.000	423.000	.566
	Wilks' Lambda	.565	.973	90.000	416.863	.000
	Hotelling's Trace	.640	.979	90.000	413.000	.038
	Roy's Largest Root	.325	1.527 ^c	30.000	141.000	.054

Note. Design: Intercept + Average_JSEHP. The statistic is an upper bound on F that yields a lower bound on the significance level.

The MANOVA results under Table 19 above portray the mean differences among secondary traumatic stress, burnout and compassion satisfaction across the different specialties in oncology as noted in research question 7 as stated earlier in the dissertation. The major metric is that of Pillai's Trace which has been used in the model to ascertain whether the empathy factors have multifaceted significant effects to the model i.e., compassion satisfaction and burnout accompanied by emotional regulation and traumatic distress of the participants. For that reason, there exists significant differences in the variations of both the dependent and independent variables i.e., empathy and those of compassion satisfaction and burnout, distress and emotional regulation since the Pillai's Trace has a probability value at .000. Further, a significant Pillai's Trace probability for the intercept at .000 is visible which by itself confirms the significant mean differences in the dependent variables considered in the MANOVA model i.e. in subscales of the ProQOL/variables of compassion fatigue (burnout, secondary traumatic stress, and compassion satisfaction) across the different specialties of oncologists and health professionals in oncology.

The other investigation was to establish whether demographic factors of the participants had relational moderating effects within empathy, distress, emotional regulation and compassion fatigue and compassion satisfaction. The relationship is as shown in model equation 4.

$$\text{ProQOL} = \alpha + \beta_1\text{JSEHP} + \beta_2\text{IES} + \beta_3\text{DERS} + \gamma\text{Demographics} + \varepsilon \dots \dots \dots \quad (4)$$

Table 20 captures the actual results.

Table 20: *Moderated Regression Analysis via the demographic factors of age, gender, and marital status: Model Summary*

Mode 1	R Square			Adjusted R Square .446	Std. Error of the Estimate .27344	R Square Change .077	Change Statistics			
	R	Square	df				F Change	df1	df2	Sig. F Change
1	.278 ^a	.566					2.471	6	177	.025

Note. Predictors: (Constant), Moderator_Marital_Status, Moderator_Gender, Average_DERS,

Average_JSEHP, AverageIES, Moderator_Age

ANOVA^a

Model	Sum of Squares		df	Mean Square	F	Sig.
	Regression	n				
1	1.109		6	.185	2.471	.025 ^b
	Residual	13.234		177	.075	
	Total	14.342		183		

Note. Predictors: (Constant), Moderator_Marital_Status, Moderator_Gender, Average_DERS, Average_JSEHP, AverageIES, Moderator_Age

Coefficients^a

Model	B	Std. Error	Beta	Standardize d Coefficients		Collinearity Statistics	
				Unstandardized Coefficients	Tolerance	VIF	
1	(Constant)	1.080	.165		6.544	.000	
	Average_JSE HP	.008	.032	.019	.253	.801	.950
	Average_DE RS	.009	.041	.017	.219	.827	.864
	AverageIES	-.073	.022	-.262	-3.328	.001	.842
	Moderator_G ender	.001	.005	.014	.193	.848	.960
	Moderator_A ge	-.005	.026	-.016	-.185	.853	.695

Moderator_M	-.020	.024	-.073	-.857	.393	.725	1.380
arital_Status							

a. Dependent Variable: Average_ProQOL

As per the results under Table 20 above, considering the moderating effects of the demographic aspects of the participants a significant R square change at 56.6% is evident meaning this rate of the moderating effects of the demographic factors explain professional quality of life of the participants. Further, the Analysis of Variance upon the moderating effects of the demographic factors was significant ($F = 2.471$, $Sig. = .025$) meaning they have significant effects on ProQOL. Moreover, it shows that the relationship between empathy, distress, and emotional regulation are statistically significant. In that regard, demographic factors have moderating influence on the relationship among distress, emotional regulation, and empathy and compassion fatigue. Worth noting, is that in the model before moderating influence of the demographic factors interesting results emerge in that the combined mediating aspects of emotional regulation and distress on the nexus between empathy and compassion fatigue can be confirmed. The actual model illustrates that empathy, distress and emotional regulation environment would cause an existence of compassion fatigue even prior to moderating influence of the demographic factors; the assertion is derived from the intercept results ($\beta = 1.180$, $Sig. = .000$). Then, from the actual model, the effects of emotional regulation captured using IES shows to have significant negative predictive effects ($\beta = -.262$, $Sig. = .001$) towards compassion fatigue. As mentioned, the moderating effects of the demographic factors of oncologists and Healthcare professionals working with Cancer patients in Cyprus was not significant hence did not have any meaningful effects to the entire model relationship.

Structural Equation Modeling

Using structural equation modeling, the relationship of the variables can further be modeled as show below:

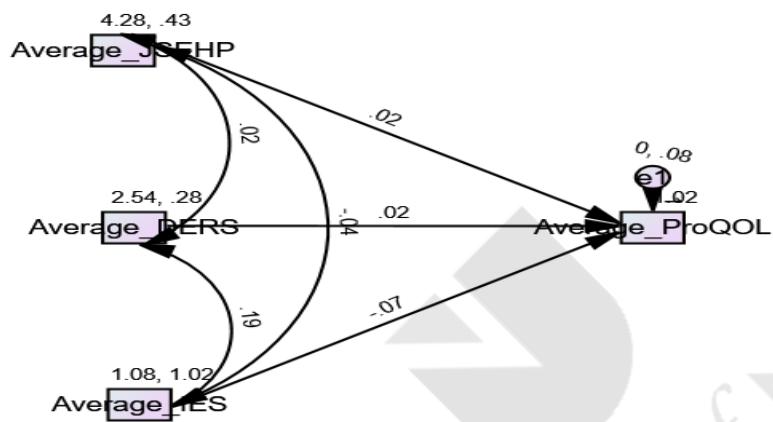


Figure 17: Structural modeling results on the variables

The output results can also be summarized below:

Table 21: output results

			Estimate	S.E.	C.R.	P	Label
Average_ProQOL	<---	Average_JSEHP	.015	.030	.520	.603	
Average_ProQOL	<---	Average_DERS	.016	.039	.425	.671	
Average_ProQOL	<---	Average_IES	-.074	.020	-3.701	***	

The SEM model indicates that the path for IES (emotional regulation) to ProQOL is significant but the one involving JSHEP (empathy) and DERS (distress caused by trauma) are not significant meaning they do not have any contributory effects towards compassion fatigue.

Table 21 below captures a t-test i.e. Paired sample t-test in order to establish the mean differences across the study's variables.

Table 22: Paired sample t-test

Paired T-Test and CI: Average_JSEHP, AverageIES, Average_DERS & Average_ProQOL

Estimation for Paired Difference [JSEHP]

	SE	95% CI for
Mean	StDev	Mean μ difference
0.9677	1.1956	0.0812 (0.8078, 1.1277)

μ _difference: mean of (Average_JSEHP - Average_ProQOL)

Test

Null hypothesis	$H_0: \mu$ _difference = 0
Alternative hypothesis	$H_1: \mu$ _difference $\neq 0$
T-Value	P-Value
11.92	0.000

Estimation for Paired Difference [DERS]

	SE	95% CI for
Mean	StDev	Mean μ difference
- 0.7477	0.0508	(-0.7590, - 0.6590 0.5589)

μ _difference: mean of (Average_DERS - Average_ProQOL)

Test

Null hypothesis	$H_0: \mu$ _difference = 0
Alternative hypothesis	$H_1: \mu$ _difference $\neq 0$
T-Value	P-Value
-12.98	0.000

Estimation for Paired Difference [IES]

		SE	95% CI for
Mean	StDev	Mean	$\mu_{\text{difference}}$
- 1.0137	0.0688	(-2.2048, -	
2.0691		1.9335)	
$\mu_{\text{difference}}: \text{mean of} (\text{Average_IES} - \text{Average_ProQOL})$			
Test			
Null hypothesis		$H_0: \mu_{\text{difference}}$	
		= 0	
Alternative hypothesis		$H_1: \mu_{\text{difference}}$	
		≠ 0	
T-	P-		
Value	Value		
-30.07	0.000		

From the results each of the alternate hypotheses for the mean differences not being equal to zero has been confirmed at 95% confidence interval. As illustrated by table 22, difficulties in emotional regulation, traumatic or distressful experiences, and empathy of the oncologists and healthcare professionals in Cyprus working with cancer patients have statistically significant mean differences with compassion fatigue. Thus, the effects of the former towards compassion fatigue are real-life outcomes.

Another structural equation modeling is as shown below under Figure 17.

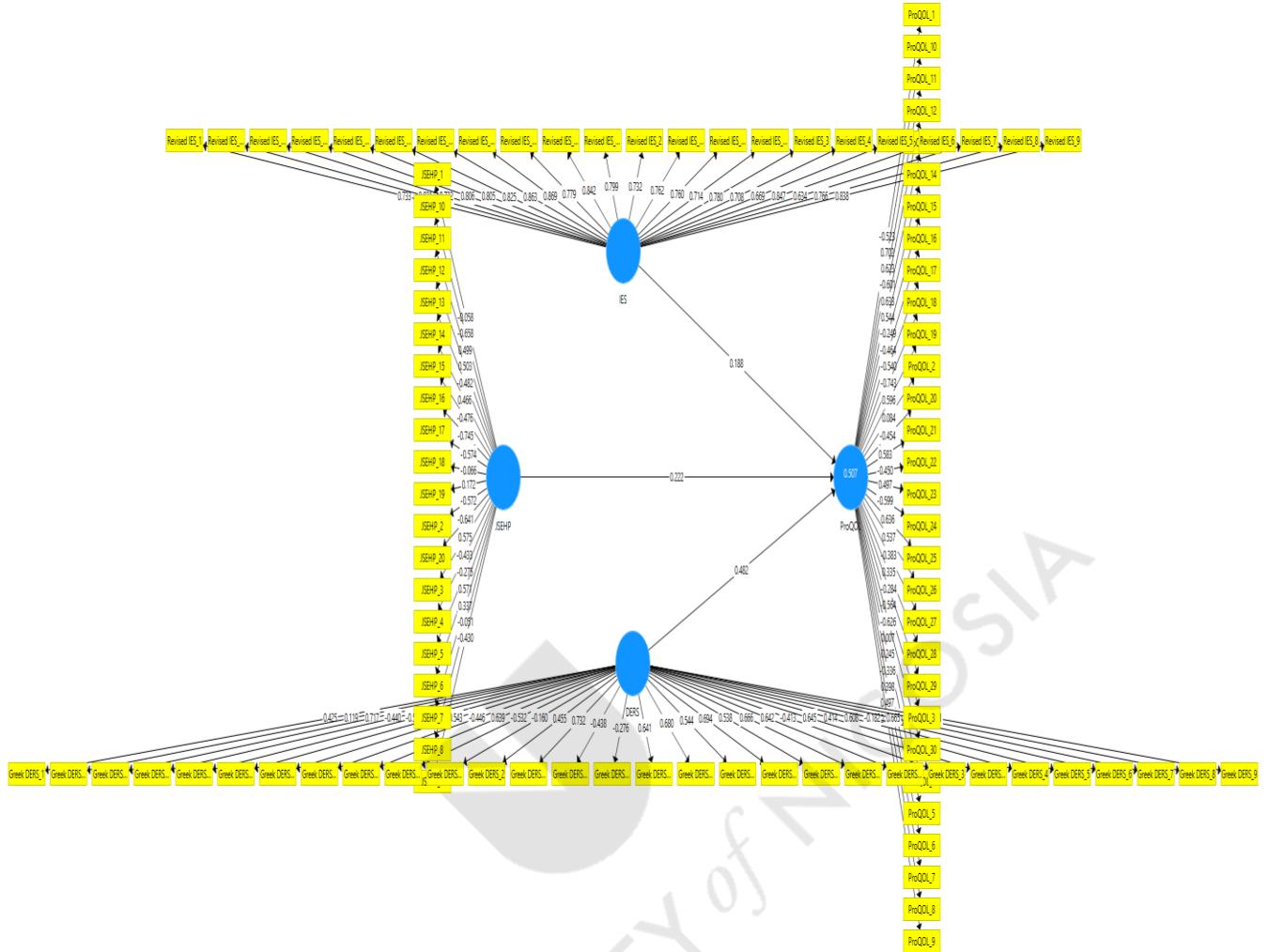


Figure 18: SEM Analysis on relationship across ProQOL, IES, DERS, and **JSHEP**

The SEM model generated above under Figure 22 manifests an R² of .507 meaning empathy feelings (JSHEP), distress and emotional regulation (DERS), and Impact of Event (IES) have a goodness of fit when linked to the Professional quality of life; thus the former explain ProQOL by 50.7%. In addition, the correlation coefficients depict that IES (.188), DERS (.482), and JSHEP (.222) have both positive linearity; and that difficulties in emotion regulation of the oncologists have a higher impact relationship towards ProQOL than the rest of the control variables. Nonetheless, it is arguable that due to the strong goodness of fit manifested by the R² of the model there exist cogent grounds to uphold H1 just as affirmed earlier in the analysis.

Moreover, in support of the results under Figure 18 above, a bootstrapping of the path coefficients for the same relationship is as shown below under Table 23.

Table 23: *Path coefficients on ProQOL, IES, DERS, and JSEHP*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
DERS -> ProQOL	0.482	0.484	0.069	7.032	0.000
IES -> ProQOL	0.188	0.172	0.083	2.268	0.024
JSEHP -> ProQOL	0.222	0.156	0.215	1.036	0.301

The results affirm that distress n emotional regulation (Sig. = .000) and distress tolerance (.024) have direct and meaningful significant relationship towards compassion fatigue of the oncologists and health professionals in oncology; however, empathy (P = .301, n.s.) does not reveal to have individual significant effects on compassion fatigue.

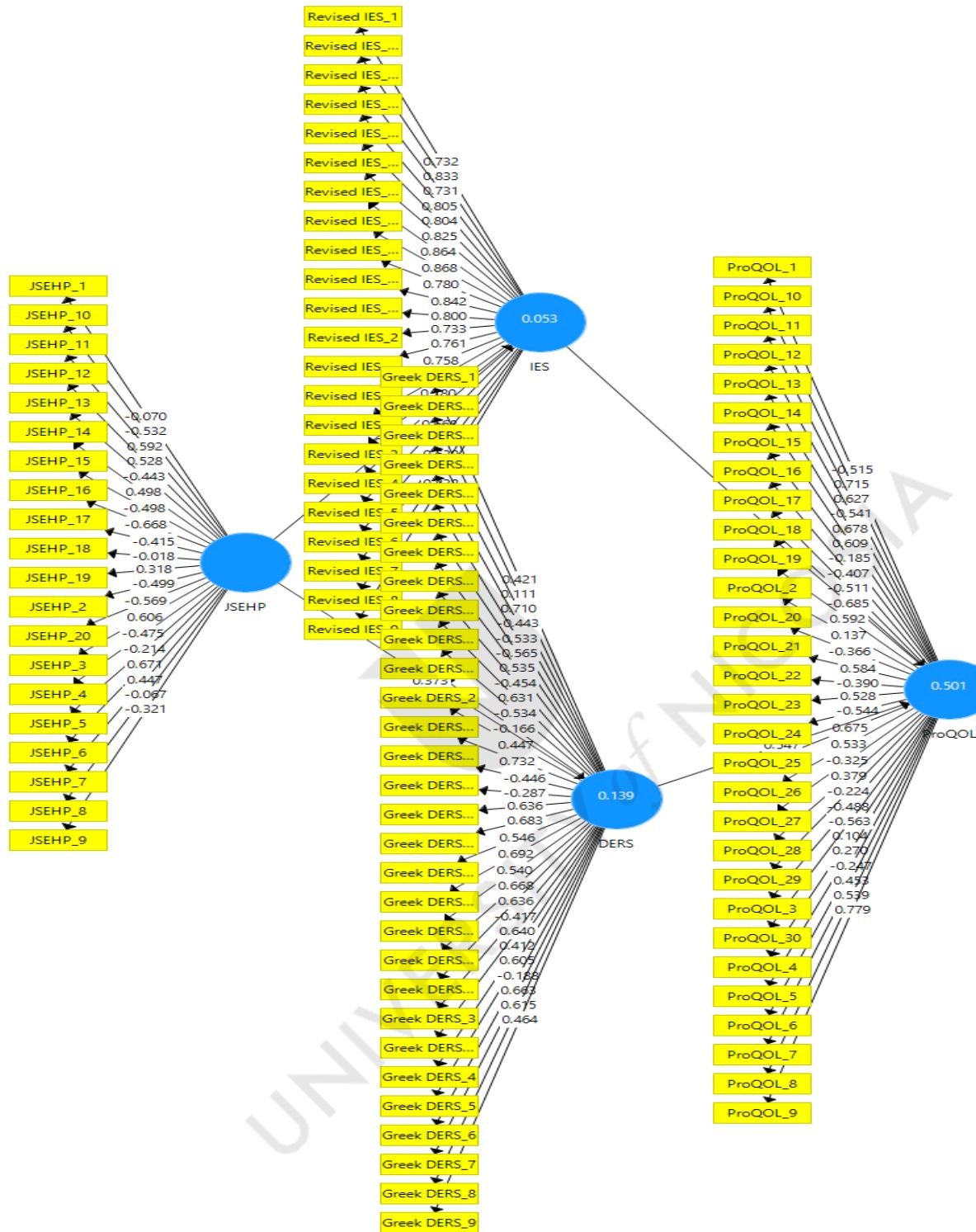


Figure 19: SEM Analysis on relationship across ProQOL and JSEHP mediated by IES and DERS

The SEM analysis as depicted in Figure 19 above captures the relationship between Empathy feelings mediated by both difficulties in emotion regulation and impact of event i.e., distress tolerance towards on compassion fatigue among oncologists and health professionals in oncology as reflected by secondary traumatic stress, workplace burnout and compassion satisfaction. In essence, the path coefficients represented in Figure 19 above depict the mediating effects of both DERS and IES in the relationship between Empathy Feelings (JSHEP) and Compassion Fatigue. For instance, the R2 rests at .501 meaning a goodness of fit is present in the relationship of JSHEP and ProQOL when mediated by the two variables. Thus, the same results can be used to support the position held for H2 and H3 whereby the two hypotheses were upheld.

Table 24 below further presents the path coefficients for the SEM analysis above upon the execution of the bootstrapping to validate the model relationship.

Table 24: Path coefficients on ProQOL and JSHEP and the mediating effects of IES and DERS

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
DERS -> ProQOL	0.547	0.555	0.068	8.024	0.000
IES -> ProQOL	0.228	0.234	0.080	2.838	0.005
JSHEP -> DERS	0.373	0.127	0.407	0.918	0.359
JSHEP -> IES	0.231	0.076	0.286	0.807	0.420

The results presented in Table 24 above are proving that the mediating paths between DERS and ProQOL and IES and ProQOL are significant at 95% confidence interval hence affirming the upholding of H2 and H3; therefore, the mediating effects of IES and DERS on empathy and compassion fatigue are real and meaningful.

Summary Judgment on Hypotheses

Based on the findings, the position taken on each of the study's hypotheses is as shown in table 25 below:

Table 25: Summary review on the study's hypotheses

Hypotheses Details	Outcome
There is significant relationship among the variables of empathy (perspective taking, compassionate care, and standing in the patient's shoes) and variables of compassion fatigue (burnout, secondary traumatic stress, and compassion satisfaction) in oncologists and health professionals in oncology	Not rejected
There is mediating influence of emotional regulation on the relationship between overall empathy and compassion fatigue scales of oncologists and healthcare professionals in oncology	Not rejected
There is mediating influence of distress tolerance on the relationship between overall empathy and compassion fatigue scales of oncologists and health professionals in oncology	Not rejected
There is significant difference in subscales of the ProQOL variables of compassion fatigue (burnout, secondary traumatic stress, and compassion satisfaction) across the different specialties of oncologists and health professionals in oncology	Not rejected

Chapter Four: Discussion of Findings

The current chapter provides a comprehensive evaluation and discussion of the results established from the research analysis that remains guided by the posed research problems.

Fundamentally, the study sought to present a critical analysis of the impact of oncologists and Health Professionals Grief on Compassion Fatigue.

Levels of Self-Reported Compassion Fatigue/Compassion Satisfaction

Compassion fatigue among healthcare professionals is majorly characterized by physical and emotional exhaustion and burnout which significantly impairs the full capacity of care providers to offer empathy or compassion to patients within the contemporary healthcare settings (Coetzee & Klopper, 2010). While the current results indicate a high degree of self-reported compassion fatigue among nurses and healthcare professionals, as established from the ProQOL scale, the quality of medical care provided to patients is highly affected considering the increased reports of traumatic stress burnout and compassion issues amongst the oncologists and Healthcare professionals in Cyprus healthcare. The subjection of oncologist and healthcare workers to compassion fatigue contributes to the development of feelings of detachment, dissociation, grief and stress, which account for the self-reported compassion fatigue among the healthcare professionals. The current results are consistent with the review of system Portnoy, (2011) and Phenning (2013) where the normal empathic attitudes and behavioral attributes of the healthcare workers are significantly affected by their levels of self-reported compassion fatigue. The findings support the review of literature by Phenning (2013) while illustrating the effect of high degrees of compassion fatigue on reducing the oncologist's compassion satisfaction where minimal pleasure, productivity and satisfaction is acquired from the active provision of medical assistance and care (Phenning, 2013). From a broad perspective, the emotional and physical

exhaustion associated with compassion fatigue primarily accounts for the diminished capacity to offer compassion and care among oncologist and healthcare professionals due to their subjection to traumatic stress, burnout, and poor compassion satisfaction.

While the Professional Quality of Life (ProQOL) is applied for the assessment of the influence of secondary traumatic stress, burnout, and compassion satisfaction on compassion fatigue, the trends established indicate the associated impacts on engagement and performance of healthcare professional during medical care operations (Dominquez-Gomez and Rutledge, 2009). High and resourceful levels of compassion are acquired from the healthcare professional during experiences of low extents of burnout or trauma within the medical workplace settings. In essence, the explicit exposure of the healthcare professional's workplace stressors, including burnout and secondary traumatic stress, significantly affects the capacity of the healthcare workers to comprehend the emotional feelings and states of the patients (Harr, 2013). Healthcare environments where the stressors are reduced, the levels of compassion are significantly elevated, as well as compassion satisfaction. The cohort of nursing professionals are identified to encounter low workplace stressors thereby, hold elevated levels of compassion satisfaction (Hooper et al., 2010). Further, the self-reported levels of compassion significantly vary among nurses based on their educational background where the healthcare professional with degrees and doctorate certificates holds a greater extent of compassion as compared to their less-educated counterparts (Hunsaker et al., 2015). The contemporary findings support the review of literature by Harr (2013) where the compassion problems and issues identified within the modern healthcare workplace settings affect the ability to understand and facilitate emotional support. However, the compassion satisfaction among oncologists and other healthcare professionals is highly affected by the burnout, workplace fatigue and traumatic stress regardless of their

education, skill or medical practice. In essence, the healthcare professionals acquire emotional and psychological rewards for the effective provision of medical service to patients within contemporary medical settings.

The current results remain aligned with the arguments of Slocum-Gori et al. (2011) and Mathieu (2007), where the situation can be orchestrated by the consistent improvement in the professional life of the healthcare givers. Fundamentally, levels of self-reported compassion satisfaction and compassion fatigue varied among experienced physicians; for instance, physicians with much experience-reported increased compassion satisfaction and reduced compassion fatigue Gleichgerrcht and Decety (2013). In essence, there are significant variations in the levels of self-reported compassion fatigue and compassion satisfaction of the oncologists and Healthcare professionals in Cyprus.

Inference I: Summarily, the participants i.e. oncologists and healthcare professionals in Cyprus indicated medium aspects of compassion fatigue and compassion satisfaction

Extent of Self-Reported Empathy

Empathy among oncologists and healthcare professional reflects the ability of the care providers to comprehend and share emotional states and feelings with patients receiving medical intervention and treatment within the contemporary healthcare settings (Lombardo & Eyre, 2011). Measured through the JHSEP scale, findings indicate average self-reported levels of empathy among oncologist and healthcare professionals throughout various medical operations. While representing a broad spectrum of emotional states, empathy among oncologists and healthcare professionals plays an integral role in comprehending the experience and feelings of patients (Bayne, 2011), thereby allowing for an appraised understanding of the patient's health development and status. Affective (emotional), cognitive, somatic and spiritual empathy

significantly shape the capacity of the oncologists and healthcare professionals to offer emotional and psychological support to patients receiving cancer treatment. The outcomes from the current research process remain consistent with the review of Lombardo & Eyre, (2011) and Bayne, (2011) where the empathic behavior and attitudes affect the system-wide practices and actions adopted by healthcare professional for giving compassion and emotional support to patients. From a broader perspective, empathic behavior and attitudes influence the capacity to understand the cognitive thought process and emotional experience of other individuals, thereby allowing the healthcare professionals to establish the emotional and mental status of patients (Hunsaker et al., 2015). In essence, the empathic attributes and aspects of professional practice are geared at understanding the mental perspective, emotional status and somatic reaction of patients to various stimuli manifesting within their physical, emotional and social domains.

The results established from the current research process are consistent with Baillie (1993) where the empathy levels among nurses varied based on the understanding, involvement, and personal experiences. Similar variations were evidenced by Hojat et al. (2004) regarding empathy inclinations of the medical trainees, and the same findings emerged in the review by Wittenberg-Lyles et al. (2012). From a general perspective, the empathic characteristics and attributes of various healthcare professionals significantly vary, which influences the medical care and treatment offered to cancer patients within the healthcare settings. Outcomes from the current research process indicated that the levels of self-reported aspects of empathy demonstrated variations in how much the respondents strongly agreed or strongly disagreed with the issues addressed to them through the JSEHP scale.

Inference II: From a general understanding, it is worth stating that the participants i.e., oncologists and Healthcare professionals in Cyprus experienced a positive outlook of their empathy levels within their frontier to extend care to cancer patients in Cyprus

Empathy, Compassion Fatigue and Compassion Satisfaction Nexus

The interconnections manifesting between Empathy, Compassion Fatigue and Compassion Satisfaction highly influence the nature of medical care, emotional support and treatment service offered to cancer patients (Wood, 2015; Ward, Cody, Schaal, and Hojat, 2011). The emotional experience and dynamics of patients significantly vary, which require different empathic attitudes and support from the healthcare professions within the medical environments. The nexus established among the concepts of empathy, Compassion Fatigue and Compassion Satisfaction are grounded on the influence of the behavioral and emotional aspects of the healthcare professionals tasked with offering medical care (Wittenberg-Lyles, Oliver, Demiris, Rankin, Shaunfield, and Kruse, 2012). A high degree of emotional and physical exhaustion among healthcare professional workers contributes to a reduced ability to offer effective and resourceful emotional support to the patients receiving medical care. Considering the high workloads given to oncologists including surgical, radiation and medical care tasks, fatigue and burnout affect empathy and emotional engagement with the patients (Wood, 2015). Established via the hierarchical regression model, the nexus between the concepts reflects a chain effect where compassion fatigue affects empathy levels and ultimately the compassion satisfaction.

Compassion fatigue and poor compassion satisfaction among healthcare professionals hold an adverse effect on the empathic attitudes and behaviors of medical workers, thereby ultimately affecting the delivery and quality of medical care. The results are consistent with the findings by McHolm (2006), Riggio and Taylor (2000), and Thomas and Wilson (2004) that

depicted that caregivers experienced variations on their compassion fatigue following the emphatic connections expected in their work. Broadly, the empathic attitudes and emotional status of the healthcare professionals hold the capacity to shape the provision of compassion and compassion satisfaction among the healthcare professionals (Abendroth & Flannery, 2006). The decreased compassion satisfaction among healthcare workers significantly affects the manner in which caregivers interact with the patient-clients, thus according the subjects a bare minimum of professional care (Jacobson, 2012; Harr, 2013). However, individuals identified with the highest levels of empathy may report a high propensity in terms of vulnerable compassion fatigue. In essence, the attributes of compassion and empathy among healthcare professionals greatly shapes the delivery of emotional support and care to the patients receiving treatment within the contemporary medical care settings.

Influence of Emotional Regulation

Emotional self-regulation among healthcare professionals' function to control the varied emotional states and feelings that can significantly affect their ability to offer medical and emotional support to patients (Campos et al., 2004). The emotional regulation action influences the empathic attitudes and compassion satisfaction, thereby shaping the engagement and appraisal of the emotional domains of patients throughout the treatment process (Bridges et al., 2004). While the results indicate significant beta values for empathy outcomes, the general empathy inclinations of the oncologists and Healthcare professionals remains geared towards cancer patients influenced their empathy as well to a level that the latter increased outcomes for the professional quality of life. Thus, the significant effect of emotional regulation, therefore, was established to increase variations in compassion fatigue/compassion satisfaction. The current results are consistent with the review of Bayne (2011); Hunsaker et al. (2015); Mercer &

Reynolds (2002); Wood (2015), where empathy for healthcare providers increases compassion satisfaction. The results established from the current research process are consistent with the review of Decety & Moriguchi (2007), where the emotional regulation abilities and empathy influence the delivery of compassion and emotional support to patients within the healthcare settings. Broadly, the ability to self-regulate emotions based on contemporary demands and experiences enhances the capacity of healthcare professions to tolerate and understand varied emotional states among patients. In essence, the effective emotional appraises the flexibility and performance of healthcare professionals while dealing with varying emotional reactions and experiences of the patients receiving care within the medical care settings (Campos et al., 2004). Based on the unique needs of patients and medical situations, the emotional regulation among healthcare professional improves the empathic attitudes and practices geared at appraising medical care and treatment outcomes.

Influence of Distress

The elongated subjection of healthcare professional to distress within the medical settings affects the development of empathy and compassion, thereby limiting the full capacity of the medical specialists to offer emotional support and care to the patients. In essence, the experiences of distress caused by trauma among oncologists and Healthcare professionals working in Cyprus among cancer patients had an influence on empathy inclinations; therefore, it implies that in real life, distress must be taken into consideration when seeking to improve the climate for the professional quality of life of such health professionals. Results established from the current research process remain contradictory to findings of Bourgalt et al. (2015), where an insignificant association manifesting between the level of empathy and distress of health practitioners', i.e. emergency nurses, was established.

The decrease interactive effects of distress from trauma among healthcare professionals improve the ability of the workforce to offer compassion and empathic actions that facilitate the medical care service. Further, the influence of distress affects the degree of compassion satisfaction and fatigue among the healthcare professionals, where high levels of distress affect compassion attributes and actions of the workers (Hooper et al., 2010). The findings established from the current research align with the review outcomes of Rossi et al. (2012) and Umezaki (2015) where the subjection to distress affects the compassion cues and practices of healthcare professionals while providing medical care. Distressed attitudes and emphatic conditions contribute to diminished capacity of the healthcare professionals to deliver emotional support and care to cancer and general patients in medical care environments. From a broader perspective, oncologists subjected to distress may experience inconsistent emphatic attitudes and further compassion satisfaction among the professionals during the cancer treatment and medical care provision (Umezaki, 2015). In essence, distress affects the normal orientation and behavioral conditions of the healthcare professionals, thereby ultimately impeding the achievement of proximal outcomes from medical care and support actions.

Differences in Secondary Traumatic Stress, Burnout and Compassion Satisfaction

Secondary traumatic stress manifests as a consequence of prior burnout or stressful conditions subjected to the healthcare professional within the workplace settings. In essence, burnout among workers contributes to compassion fatigue and distress, which affects the overall orientation and capacity of the individuals to offer medical care and emotional support to patients receiving treatment (Stamm, 2010).

While the current analysis applies the MANOVA model, which was significant given the significant probability value of Pillai's Trace, the aspects of traumatic stress, burnout and

compassion satisfaction hold unique effects on the engagement of healthcare workers in medical care delivery and emotional support (Yoder, 2010). Healthcare professionals subjected to secondary traumatic stress hold low levels of work engagement and poor empathic attitudes that affect their quality of medical service and care within hospital settings (Yoder, 2010). Contrary to the dynamics of secondary traumatic stress, burnout emerges from overworking and workplace fatigue which influences the capacity of the workers to provide effective medical care service. However, burnout among healthcare professional imparts lower emotional and empathic effects on the workers as compared to secondary traumatic stress. The study results support the outcomes of Stamm, (2010) where the negative phycological and emotional orientation of the medical care workers affects the quality of emotional support and care offered to patients within the medical care environments. Fundamentally, the elongated exposure of individuals to burnout and secondary traumatic stress affects the dynamics of compassion satisfaction among the healthcare workers where the low compassion and rewards are acquired from supporting patients. The results are inconsistent with Wilsohn, Daratha, Childers, and Magera (2014) where insignificant mean differences in compassion satisfaction, burnout, and secondary traumatic stress; thus, such failed to align to the present dissertation outcomes in that compassion satisfaction, burnout, and secondary traumatic stress (distress) affirmed being statistically significant.

Influence of the Demographic Factors

The significant mediating influence of demographic factors on the association manifesting between empathy and compassion fatigue was confirmed since the aspects of age, marital status, and age had significant beta values. In that regard, for the case of oncologists and Healthcare professionals working with cancer patients in Cyprus, would have the mentioned

personal factors have contributory effects on their levels of empathy and compassion fatigue. In essence, the current findings align with the research findings established by Bourgalt et al. (2015) since demographic factors such as age and psychological distress were confirmed to have a significant negative correlation to compassion satisfaction of the health practitioners. Further, the significant effects of demographic factors indicated that nurses that reported higher achievement in education, including more children, had higher empathetic tendency (Polat et al., 2013).

The present findings support the establishments of Weaver and Figley (2003) and Simon, Pryce, Roff, and Klemmack (2005) while illustrating the insignificant influence of demographic characteristics on the empathic attitudes and practices during the treatment and support processes within the healthcare settings. The age and primary demographic elements hold a moderating influence on the empathy and support offered to patients receiving medical treatment and care. In essence, the fact that the moderating effects of each of the demographic factors constituted of a significant f-statistic meant any association to empathetic tendencies of the participants was meaningful and enforceable in real-life. However, the findings of the study remain inconsistent with establishments of Hunsaker et al. (2015) as the latter confirmed that demographics of the caregivers failed to show meaningful interaction with either compassion fatigue or compassion satisfaction or burnout especially the aspect of gender.

Implications for Clinical Practice

Outcomes from the current research provide resourceful information and insights regarding the effective approaches for offering emotional support and care. The findings present important considerations regarding the way knowledge from the dissertation can improve the psychological services provided to Cypriots both with and without cancer-related challenges

among other issues. For instance, the anticipated implications of the study stretch to the improvement of psychological services and issues of work and life of psychologists. The current study established that a positive effect exists between empathy and compassion fatigue of oncologists and healthcare professionals in cancer care. Throughout the conducted parametric tests, a statistically significant difference was confirmed, which was interpreted to mean that changes and variations taking place on grief have real-life effects on compassion fatigue. Therefore, oncologists and healthcare professionals are required to work in an environment that supports their capabilities for emotional regulation, empathy and abilities to deal with trauma. In essence, the workplace environments are required to cultivate and promote conditions that improve empathic attitudes and compassion satisfaction among healthcare professionals. The study assumes the position that reduced compassion fatigue is the quality that should be sought among oncologists and healthcare professionals to ensure they execute their mandate to the maximum. The other consideration is to create onsite mentorship programs to enable oncologists and healthcare professionals to attain self-awareness on emotional regulation, empathetic orientation and how to manage distress from trauma. From a broader perspective, the study proposes a constant and radical mentorship and training of the cohort to ensure they have excellent individual management of the three aspects important to their healthcare career towards cancer patients in Cyprus. In this context, it will create personnel in the healthcare sector that will be able to cope with compassion fatigue from an individual point of view whenever it becomes a threat to giving benevolent and altruistic attention to those that need care, founded on empathy and regulation emotions. On similar account, work and life balance can be drawn by creating self-management strategies of oncologists and healthcare professionals working with cancer patients in Cyprus. The anticipation is that with self-driven indulgence of the cohort and

that which is volitional i.e. initiative to regulation emotions, overcome distress from trauma and nurturing empathetic feelings is what is needed to have a work-life balance. In the event the above implications are executed, oncologists and healthcare professionals are going to play their role in a more productive way at the same time reporting a low degree of compassion fatigue, thus increasing the professional quality of life of the individuals and medical care productivity.



Chapter Five: Conclusion, Limitations and Recommendations

While the current research remains guided by distinctive research questions and problems, the study outcomes are established from the comprehensive analysis of a representative sample of oncologists and Healthcare professionals working amidst cancer patients in Cyprus. It can be considered as a foundation for the formulation of a healthcare model that would achieve the following: (a) increased compassion satisfaction (b) reduced compassion fatigue (c) optimization of emotional regulation to enhance compassion satisfaction and alleviate compassion fatigue (d) decrease distress to reduce self-reported compassion fatigue. The mentioned parameters are among the significant touchpoints that can be considered a suitable healthcare model meant to achieve both personal and professional development of the caregivers working for the welfare of cancer patients in Cyprus and indeed in the world at large. The researcher holds the position that the findings of this dissertation are not only meaningful to the case study for Cyprus but also that they are applicable at a global scale; whereas the derivations and results of the tested hypotheses should inform study across many healthcare sectors in the world that dedicate to the wellbeing of cancer patients. Personal and professional development of oncologists and Healthcare professionals is vital, and the need to increase their empathetic inclinations. The main assertions the researcher holds given the findings of the study are that empathy influenced by emotional regulation and controlled distress of the healthcare givers creates better experiences in terms of their professional quality of life. In this regard, the more it can be enhanced i.e. professional life quality, the more the healthcare givers would become productive, dedicated and fulfilled in their career. Further analysis indicated that the questionnaire used in this dissertation and its constituent drivers i.e. DERS, IES, JSEHP, and ProQOL were confirmed to have validity and reliability; this rendered the outcomes and

judgment made throughout the analysis to have accuracy and consistency. In one instance, the findings of the dissertation were reported to reject previous studies, and in other instance, corroboration of findings was affirmed. Therefore, the capacity to have established corroborating findings with previous scholars also increased validity of the research, while any contradictions can be used as a basis for more in-depth research on issues in question in the future. Foremost, the dissertation as it stands has depicted the significant variations in the levels of self-reported compassion fatigue, compassion satisfaction and empathy. One of the inference-judgment in the discussion of the findings was that oncologists and healthcare professionals in Cyprus reported in a moderate manner high levels of compassion fatigue and compassion satisfaction. From this outlook it was accentuated that there was not a perfect position that would lead to the belief that all the healthcare givers surveyed in Cyprus had maximum compassion satisfaction or zero compassion fatigue; both were experienced in significant measures which means there is more improvement towards personal and professional development of the cohort. In other words, the professional quality of life for oncologists and healthcare professionals in Cyprus indeed depict that policy makers ought to ensure the appropriate environment is provided to see to it that empathetic inclinations of such cohort is improved; in the end ensure such positively and productively contribute to the healing process of cancer patients in the region. Overall, the study has confirmed all hypotheses meaning that the healthcare model cited under Figure 17 is an adequate pathway to optimize mitigations on distress and emotional regulation as boosters of empathetic intentions of the oncologists and healthcare professionals in Cyprus. In this way, create more positive empathy of the caregivers to encounter compassion satisfaction at best, while reducing the risks paused by compassion fatigue.

Recommendations

The present dissertation was based on quantitative analysis which was imperative due to the need to test the hypotheses. However, in future it would be value-adding to have a sequential exploratory strategy considered in order to document more on the emotions of the caregivers around their professional quality of life, empathy, distress and emotional regulation. Thus, a qualitative study would render the resolutions achieved in this dissertation more grounded on social constructivism considering the dynamics taking place in the healthcare practice in Cyprus. The justification being that the mindset and expectations of the oncologists and Health professionals i.e., nursing professionals in Cyprus will keep changing or varying hence the need to have more qualitative discussions with the caregivers.

At policy level, healthcare policies designed to enhance professional quality of life of oncologists and healthcare professionals in Cyprus working with cancer patients should be such that they provide mitigation for increased distress at the same time bring more emotional regulation among the caregivers. The study confirms that with mediating roles of distress and emotional regulation, empathetic inclinations of the caregivers significantly influence compassion fatigue and compassion satisfaction. Therefore, a model just for edifying the empathetic aspects of the oncologists and healthcare professionals in Cyprus is a viable way to create better mitigations for professional quality of life but then not entirely adequate. The position is that with more investment in helping the healthcare givers to experience less trauma including providing resources to overcome traumatic stress or conditions, would solidify compassion satisfaction and reduce compassion fatigue. The same effects are expected to occur whenever the caregivers report advanced emotional regulation in their personality and professional development.

Therefore, there needs to be improvement in the psychological services on the issues of work and life of oncologists and healthcare professionals in cancer care. Oncologists, and healthcare professionals need to work in an environment that supports their capabilities for emotional regulation, empathy and ability to deal with trauma. In order to achieve that it is imperative to create on site mentorship programs to enable healthcare professionals to attain self-awareness on emotion regulation, empathic orientation, and how to manage distress from the trauma they experience in their daily work with cancer patients. Radical training and mentorship of the cohort is highly suggested as well as self-management and self-care strategies.

The study established that administrative staff has a direct role towards nurturing compassion satisfaction; therefore, it is something that can be considered in cancer healthcare facilities in Cyprus through creating an administrative environment that has both a competent personnel and resources that can be used to counter compassion fatigue of oncologists and healthcare givers. Moreover, based on the findings of the study cancer healthcare centers and facilities should create effective supervision by enrolling highly qualified personnel that will assist in countering compassion fatigue of the caregivers. Through an effective supervisory framework, it shall be possible for cancer centers in Cyprus to increase efficiency at the same time develop oncologists and healthcare givers helping them to overcome compassion fatigue. Therefore, training is one of the significant ways that cancer centers in Cyprus can opt for in enhancing the skills of the clinicians especially in building their self-efficacy.

Limitations

The study's findings were compared to those developed in other regions, yet the researcher believed that due to differences in culture of healthcare providers, the hermeneutic dispositions of the scholars may differ. For instance, professional quality of life in Cyprus may

be castigated by unique factors that differ from those of continents such as Europe, Asia or Africa. Thus, a majority of scholars may not have taken into consideration the cultural dimensions that influence the practice of caregivers other than the demographic factors that have been majorly considered. In this regard, the comparison of findings may have suffered the lack of proper understanding of the different environmental and circumstantial factors or rather forces that influence oncologists and healthcare professionals in Cyprus, for instance, to hold the views they did in regard to the matters in question.

Furthermore, due to the fact that Cyprus is a small island, and oncologists are a small group, it might have inhibited oncologists and health care professionals to answer all questions truthfully, out of concern that certain demographic questions might compromise their confidentiality.

Take-Home Message

Based on the established outcomes, the study has confirmed that there exists a symbiotic relationship over levels of empathy and compassion satisfaction on oncologists and health professionals' experience of compassion fatigue which means they should be used strategically to deliver quality healthcare experience to the patients that currently seek care for cancer complications. At the policy level, any government through the ministry of health should ensure to provide incentives meant to stimulate compassion satisfaction to provide the healthcare providers with a better environment to care for the cancer patients. In essence, there should be intransitive incentives to support the healthcare providers to have compassion satisfaction despite the frustrations that derive from the care of the patients; hence, there should be a preset mentality by the healthcare providers that propels them to show compassion regardless of the

circumstances that draw from the reactions and attitudes of the patients. The relevance of the findings on personal and professional development of the participants can be justified on the grounds that empathy and commitment to care for others is fundamental in healthcare profession. In fact, the duty to care for cancer patients would require the professionals to elicit much empathy. Thus, empathy as a fundamental attitude of the healthcare professionals will have other effects that may render the healthcare professional useful or non-useful to the target subjects i.e., cancer patients. Professional caregivers who are subjected to traumatize and/or suffering victims i.e. cancer patients require to strengthen empathic relationships. On the other hand, compassion fatigue has been revealed in the findings of this study as another fundamental quality of healthcare professionals especially those working with cancer patients. Compassion fatigue as addressed in this study was deemed to be a condition where the caregiver experiences stress and tension due to trauma and suffering of a victim. In addition, compassion fatigue was quoted as constituting both burnout and traumatic stress: and that burnout consists of anger, hopelessness, and frustration while traumatic stresses encompassing sleep disturbances, fear and tendency to avoid the client. Based on the established understanding, the essential aspect of the investigation has been to establish that empathy by healthcare givers has positive impact on burnout and traumatic stress and all these in turn suppress personal and professional development of the practitioners.

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Appendices

APPENDIX A: ETHICS FORM

B. Ethics Information	
1. Risks to, and safety of participants	
Could the research induce any psychological stress or discomfort?	Yes/No
Does the research involve any physically invasive or potentially physically harmful procedures?	Yes/No
1. Data protection	
Will any part of the research involve audio, film or video recording of individuals?	Yes/No
Will the confidentiality of data, including the identity of participants (whether specifically recruited for the research or not) be ensured?	Yes/No
Will feedback of findings be given to participants?	Yes/No
Will the data be destroyed after use?	Yes/No
Is any information likely to be passed on to external companies or organizations in the course of the research?	Yes/No
3. Research design	
Will participants be informed in writing about the purpose of the study and the use of the results?	Yes/No
Do participants have a right to withdraw from the study at any time?	Yes/No
Are any of the participants likely to be particularly vulnerable, such as elderly or disabled people, adults with incapacity, your own students, members of ethnic minorities, or in a professional or client relationship with the researcher?	Yes/No
Will any of the participants be under 16 years of age?	Yes/No

Will any of the participants be interviewed in situations, which will compromise their ability to give informed consent, such as in prison, residential care, or the care of the local authority?	Yes/No
Will participants receive any financial or other benefit from their participation?	Yes/No
Will it be necessary for participants to take part in the study without their knowledge and consent? (e.g. covert observation of people in non-public places)	Yes/No

C. Informed Consent Form

Please attach the informed consent form for participants

APPENDIX B: CONSENT FORM**Consent Form for Research Participants (Oncologists and Health Professionals in Oncology)****STUDY TITLE: Understanding the Relationship between Empathy and Compassion****Fatigue in Oncologists and Health Professionals Working in Oncology****PURPOSE OF THE STUDY**

The purpose of this research study is to gain knowledge regarding the relationships between empathy and compassion fatigue in oncologists and Healthcare professionals working in oncology. This information may be used to develop educational activities for oncologists and other healthcare professionals, like hematologists, pathologists, palliative care physicians, nurses etc., working in this setting, and as a basis for future research.

DESCRIPTION OF THE STUDY

I am invited to take part in this study because I am an oncologist or other healthcare professional working in oncology at a public or private hospital in Cyprus. As a participant in the study, I will be required to complete a total of five pen-and-paper questionnaires – one on demographic/profession-related questions, one on the empathy of healthcare professionals, one on compassion fatigue and compassion satisfaction, one on emotional regulation, and one on the psychological distress and trauma related to the daily occupational stressors of working in the oncology. I will answer questions about myself including my age, my education, my household income, and my work schedule. These answers will be compared with the answers of other healthcare professionals working in oncology from various hospitals around Cyprus who have also participated in this study.

The amount of time required to participate in the study is approximately 20-25 minutes for completing all four questionnaires. There will be no cost to me for participating.

When I have completed the study, I will place the questionnaires in an envelope, seal it, and place it in the secured box myself or ask my secretary to do so. The secured box will be situated in the Staff lounge.

STUDY RISKS

There are no expected risks from taking part in this study. All responses are anonymous. Some of the questions may make me uncomfortable. If I am uncomfortable answering any question, I have the option to not answer it. If I become uncomfortable during the study, I can stop at any time. If I encounter any psychological distress or discomfort, then I can also contact the researcher of the study for their support.

STUDY BENEFITS

There may be no direct benefits for participating in this study. However, the information received may help oncology educators and oncology administrators improve education and support for staff.

CONFIDENTIALITY

The information collected during my participation in this study will be kept in perpetuity. Data from the study will be stored by the main investigator Andrea Kkoufou (researcher of this study). Paper data will be stored in a secured box while in the hospital for no more than 7 days. Data will be transcribed from paper form to electronic form for analysis purposes. All original paper surveys will be kept in a locked file in the researcher's office until the data is transferred to electronic form. Then they will be shredded. My privacy and confidentiality will be protected.

Study data will be entered into a file on the researcher's personal, password-protected computer and kept in perpetuity.

All documents and information pertaining to this research study will be kept confidential in accordance with all applicable laws and regulations. I understand that data generated by the study may be reviewed by the University of Nicosia (UNIC)'s Department Research Ethics Committee. The research ethics committee is a committee responsible for ensuring my welfare and rights as a research participant and to assure proper conduct of the study and compliance with university regulations. If any presentations or publication results from this research, are presented, and/or published, it will not be identified by name.

TERMINATION OF PARTICIPATION

I may choose to withdraw from this study at any time and for any reason. My choice to terminate will not cause any jeopardy to my status as an oncologist or other healthcare professional working in the oncology department. If I choose to drop out of the study, before submitting my completed survey, I will contact the investigator and my research records will be destroyed. Since this is an anonymous survey, research records cannot be destroyed following submission of the survey.

The researcher may terminate my participation in the study if indicated by exclusion criteria.

COMPENSATION

Participation in this study is strictly voluntary. There will be no cost to me for participating in this research.

QUESTIONS

All my questions have been answered to my satisfaction and if I have further questions about this study, I may contact the researcher at. I may also call the researcher at or the main supervisor of this study at

If I have any concerns or complaints, regarding my participation in the study, I can contact the Social Sciences Ethics Review Board (SSERB) chair,

VOLUNTARY PARTICIPATION

I understand that my participation in this study is voluntary, and that refusal to participate will involve no penalty or loss of benefits to me. My supervisor at work will not know whether or not I have participated or have access to the data. I am free to withdraw or refuse consent, or to discontinue my participation in this study at any time without penalty or consequence.

By completing these questionnaires and returning them to the researcher, I voluntarily give my consent to participate in this research study. I understand that I will be given a copy of this consent form.

Thank you for considering participating in this study!

Your Name: _____

Your Email Address: _____

Your Contact Number: _____

Signature:		Date:	
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APPENDIX C: BOCOC REMINDER EMAIL**Andrea Kkoufou**

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 18 September 2019 12:51
To: yiola.marcou@bococ.org.cy
Subject: Questionnaires

Dear Dr. Marcou,

Just wanted to send you a friendly reminder regarding the questionnaire I handed out to you a few weeks back regarding my PhD dissertation on compassion fatigue and empathy. I have a timeframe until next week to collect the questionnaires so that I can start analyzing the data. Even though your participation to this research is voluntary, a bigger sample gives better reliability and validity to the findings. I would be very grateful if you can take some time out of your busy schedule to answer the questionnaire, and I can pass by your secretary to pick it up beginning of next week.

If you have any questions or concerns, you can call me at 97782001.

Thanking you in advance,

Regards,
A.

Andrea Kkoufou
Psychologist
PhD Candidate in Clinical Psychology
UNIC

The Cyprus Anticancer Society
62 Nimodimou Milona Street, 3095 Limassol CY
Tel.Office: 25372992 Mobile: +357 99686301



"Nothing Works Unless you Do"
Maya Angelou

**APPENDIX D: PERMISSION REQUEST TO THE MEDICAL DIRECTOR OF THE
HERMATOLOGY DEPARTMENT**

Andrea Kkoufou

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 26 June 2019 14:33
To: 'kmelanth@gmail.com'
Subject: Άδεια για διεξαγωγή έρευνας στον Αιματολογικό θάλαμο του Γενικού Νοσοκομείου Λευκωσίας

Δρ. Μελανθίου καλησπέρα,

ονομάζομαι Άντρεα Κκούφου, είμαι ψυχολόγος του Αντικαρκινικού Συνδέσμου Κύπρου τα τελευταία έντεκα χρόνια, καθώς επίσης και υποψήφια διδάκτωρ στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας. Διεξάγω έρευνα, που αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλοεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία. Η έρευνα αυτή έχει πάρει έγκριση από την Επιτροπή Βιοιατρικής Ήθικής και Δεοντολογίας, του τμήματος κοινωνικών επιστημών του Πανεπιστημίου Λευκωσίας, με αριθμό έγκρισης SSERB 43, και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@unic.ac.cy).

Η έρευνα αποσκοπεί στο να διερευνηθούν καλύτερα οι ανάγκες και οι δυσκολίες των επαγγελματιών υγείας στην ογκολογία έτσι ώστε να τους παραχωρηθεί καλύτερη ψυχολογική και συναισθηματική υποστήριξη, συμβάλλοντας με αυτό τον τρόπο στη βελτίωση της ποιότητας επαγγελματικής ζωής. Θα ήθελα να σας διαβεβαιώσω ότι οι πληροφορίες που θα συλλεχθούν θα είναι εμπιστευτικές και απόρρητες.

Θα ήθελα να ζητήσω άδεια να απευθυνθώ στους αιματολόγους, και νοσηλευτές του Αιματολογικού Θαλάμου του Γενικού Νοσοκομείου Λευκωσίας για να συμμετάσχουν στην έρευνα. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν. **Η συμμετοχή όλων θα είναι εμπιστευτική, και ο χρόνος συμπλήρωσης των ερωτηματολογίων δεν θα ξεπεράσει τα 20 λεπτά.**

Αν θα ήταν χρήσιμο, θα μπορούσα να βρεθούμε από κοντά για να σας δώσω περισσότερες λεπτομέρειες καθώς επίσης και να σας δώσω δείγμα του ερωτηματολογίου. Το τηλέφωνο επικοινωνίας μου είναι 97-782001.

Ευχαριστώ εκ των προτέρων για τον χρόνο σας.

Με εκτίμηση,
Άντρεα Κκούφου

Andrea Kkoufou
Psychologist
PhD Candidate in Clinical Psychology

APPENDIX E: PERMISSION REQUESTING EMAIL TO THE MEDICAL DIRECTOR

Andrea Kkoufou

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 01 July 2019 09:02
To: 'kyriakos@pasykaf.org'
Cc: 'Tina Rossidou'
Subject: Άδεια για διεξαγωγή έρευνας
Attachments: ΔΕΛΤΙΟ ΣΥΓΚΑΤΑΘΕΣΗΣ ΓΙΑ ΠΑΡΑΛΑΒΗ ΕΡΩΤΗΜΑΤΟΛΟΠΟΥ ΕΡΕΥΝΑΣ.docx; ενημέρωση για την έρευνα.docx

Κυριάκο μου καλημέρα,

Συνέχεια της τηλεφωνικής μας επικοινωνίας σου στέλνω λεπτομέρειες για την έρευνα που διεξάγω για το διδακτορικό μου στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας.

Η έρευνα που διεξάγω αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλοεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία. Η έρευνα αυτή έχει πάρει έγκριση από την Επιτροπή Βιοηθικής και Δεοντολογίας, του τμήματος κοινωνικών επιστημών του Πανεπιστημίου Λευκωσίας, με αριθμό έγκρισης SSERB 43, και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@unic.ac.cy).

Η έρευνα αποσκοπεί στο να διερευνηθούν καλύτερα οι ανάγκες και οι δυσκολίες των επαγγελματιών υγείας στην ογκολογία έτσι ώστε να τους παραχωρηθεί καλύτερη ψυχολογική και συναισθηματική υποστήριξη, συμβάλλοντας με αυτό τον τρόπο στη βελτίωση της ποιότητας επαγγελματικής ζωής. Θα ήθελα να σας διαβεβαιώσω ότι οι πληροφορίες που θα συλλεχθούν θα είναι εμπιστευτικές και απόδορητες.

Θα ήθελα να ζητήσω άδεια να απευθυνθώ στους γιατρούς ανακουφιστικής φροντίδας του ΠΑΣΥΚΑΦ καθώς επίσης και στους νοσηλευτές/τρίες της κατοίκου φροντίδας του Συνδέσμου, για να συμμετάσχουν στην έρευνα. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν. **Η συμμετοχή όλων θα είναι εμπιστευτική, και ο χρόνος συμπλήρωσης των ερωτηματολογίων δεν θα ξεπεράσει τα 20 λεπτά.**

Σου επισυνάπτω το δελτίο συγκατάθεσης και ενημέρωση για έρευνα.

Ευχαριστώ εκ των προτέρων.

Φιλικά,

Με εκτίμηση,
Αντρέα Κκούφου

APPENDIX F: PERMISSION REQUEST EMAIL TO THE CLINICAL RESEARCH COMMITTEE DIRECTOR

To: University Clinic GOC <university.clinic@goc.com.cy>

Cc:

Subject: Άδεια για διεξαγωγή έρευνας

Κύριε Καζαμία,

ονομάζομαι Άντρεα Κκουφου, είμαι ψυχολόγος του Αντικαρκινικού Συνδέσμου Κύπρου τα τελευταία έντεκα χρόνια, καθώς επίσης και υποψήφια διδάκτωρ στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας. Διεξάγω έρευνα, που αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλοεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία. Η έρευνα αυτή έχει πάρει έγκριση από την Επιτροπή Βιοιατρικής Ηθικής και Δεοντολογίας, του τμήματος κοινωνικών επιστημών του Πανεπιστημίου Λευκωσίας, με αριθμό έγκρισης SSERB 43, και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@anticancersociety.org.cy).

Η έρευνα αποσκοπεί στο να διερευνηθούν καλύτερα οι ανάγκες και οι δυσκολίες των επαγγελματιών υγείας στην ογκολογία έτσι ώστε να τους παραχωρηθεί καλύτερη ψυχολογική και συναισθηματική υποστήριξη, συμβάλλοντας με αυτό τον τρόπο στη βελτίωση της ποιότητας επαγγελματικής ζωής. Θα ήθελα να σας διαβεβαιώσω ότι οι πληροφορίες που θα συλλεχθούν θα είναι εμπιστευτικές και απόρρητες.

Είχαμε μιλήσει και πριν 2 μήνες περόπου σχετικά με τους αριθμούς που σας ζήτησα για τους γιατρούς και επαγγελματίες υγείας που εργάζονται στον χώρο, και ανταποκριθήκατε πολύ άμεσα.

Θα ήθελα αυτή την φορά να ζητήσω άδεια να απευθυνθώ στους ογκολόγους, παθολόγους και νοσηλευτές του Γερμανικού Ογκολογικού Κέντρου για να συμμετάσχουν στην έρευνα. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν. Η συμμετοχή όλων θα είναι εμπιστευτική, και ο χρόνος συμπλήρωσης των ερωτηματολογίων δεν θα ξεπεράσει τα 20 λεπτά.

Θα ήταν χρήσιμο, όποτε έχετε χρόνο, να διευθετούσαμε ένα ραντεβού για να σας δείξω τα ερωτηματολόγια και να σας δώσω περισσότερες λεπτομέρειες για την διεξαγωγή της έρευνας.

Ευχαριστώ εκ των προτέρων για τον χρόνο σας.

Με εκτίμηση,
Άντρεα Κκουφου

Andrea Kkoufou
Psychologist
PhD Candidate in Clinical Psychology
UNIC

APPENDIX G: RECRUITMENT EMAIL TO ONCOLOGISTS**Andrea Kkoufou**

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 07 June 2019 11:33
To: 'g.marcoullis@hippocrateon.com'
Subject: Διεξαγωγή Έρευνας

Δρ. Μαρκουλή καλημέρα,

ονομάζομαι Άντρεα Κκουύφου, είμαι ψυχολόγος του **Αντικαρκινικού Συνδέσμου Κύπρου** τα τελευταία έντεκα χρόνια, καθώς επίσης και υποψήφια διδάκτωρ στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας. Διεξάγω έρευνα, που αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλοεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία.

Η έρευνα αυτή έχει πάρει έγκριση από την Επιτροπή Βιοιατρικής Ηθικής και Δεοντολογίας, του τμήματος κοινωνικών επιστημών του Πανεπιστημίου Λευκωσίας, με αριθμό έγκρισης SSERB 43, και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@unic.ac.cy).

Η έρευνα αποσκοπεί στο να διερευνηθούν καλύτερα οι ανάγκες και οι δυσκολίες των επαγγελματιών υγείας στην ογκολογία έτσι ώστε να τους παραχωρηθεί καλύτερη ψυχολογική και συναισθηματική υποστήριξη, συμβάλλοντας με αυτό τον τρόπο στη βελτίωση της ποιότητας επαγγελματικής ζωής. Θα ήθελα να σας διαβεβαιώσω ότι οι πληροφορίες που θα συλλεχθούν θα είναι εμπιστευτικές και απόρρητες.

Θα ήθελα να σας παρακαλέσω να συμμετάσχετε σε αυτή την έρευνα καθώς επίσης και να ζητήσω άδεια να απευθυνθώ στους νοσηλευτές που συνεργάζονται μαζί σας στην κλινική και έρχονται σε επαφή με καρκινοπαθείς, για να συμμετάσχουν και αυτοί στην έρευνα. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν. **Η συμμετοχή όλων θα είναι εμπιστευτική, και ο χρόνος συμπλήρωσης των ερωτηματολογίων δεν θα ξεπεράσει τα 20 λεπτά.**

Θα μπορούσα να περάσω από το γραφείο σας την ερχόμενη Τρίτη που θα βρίσκομαι Λευκωσία το πρωινό, για να σας δώσω περισσότερες πληροφορίες καθώς επίσης να φέρω τα ερωτηματολόγια.

Ευχαριστώ εκ των προτέρων για τον χρόνο σας.

Andrea Kkoufou
Psychologist
PhD Candidate in Clinical Psychology
UNIC

APPENDIX H: RECRUITMENT EMAIL TO BOCOC HEALTH PROFESSIONALS

Andrea Kkoufou

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 19 August 2019 13:06
To: Demetris Papamichael (demetris.papamichael@BOCOC.org.cy); Pantelis Kountourakis (pantelis.kountourakis@bococ.org.cy); Haris Charalambous (haris.charalambous@bococ.org.cy); 'zoe.kordatou@bococ.org.cy'; Flora Kyriacou (Flora.kyriacou@bococ.org.cy); Dr. Panos Papanastasopoulos (Panos.Papanastasopoulos@bococ.org.cy); 'anastasia.constantinidou@bococ.org.cy'; yiola.marcou@bococ.org.cy; Agathocles Agathocleous (agathocles.agathocleous@bococ.org.cy); demetris.andreopoulos@BOCOC.org.cy; Vasilis Vasiliou (Vasilis.vasiliou@bococ.org.cy); Maria Daniel (maria.daniel@bococ.org.cy); marilena.theodorou@bococ.org.cy; Panayiotis Papadopoulos (papadopoulos@bococ.org.cy); 'nicos.katodritis@bococ.org.cy'; Demetrios Vomvas (dimitrios.vomvas@bococ.org.cy); Savvas Frangos (savvas.frangos@bococ.org.cy); Evgenia Koukounidou (evgenia.koukounidou@bococ.org.cy); Dr. Eleni Fotiou (Eleni.Fotiou@bococ.org.cy); 'maria.constantinou@bococ.org.cy'; 'morfo.georgiou@bococ.org.cy'; 'rodoula.trappelou@bococ.org.cy'; 'ifigenia.konstantinou@bococ.org.cy'; 'eleni.xenophontos@bococ.org.cy'; Vasiliki Koliopoulou (vasiliki.koliopoulou@bococ.org.cy); 'elpida.kokkofiti@bococ.org.cy'; 'amanda.lorimer@bococ.org.cy'; Artemis Tsivitanidou (artemis.tsivitanidou@bococ.org.cy)
Cc: Zoe Giannousi (Zoe.Giannousi@bococ.org.cy); 'Tina Rossidou'
Subject: Διεξαγωγή Έρευνας για ολοκλήρωση διδακτορικής διατριβής

Αγαπητοί,

ονομάζομαι Άντρεα Κκουφου, είμαι ψυχολόγος του Αντικαρκινικού Συνδέσμου Κύπρου στο Εναγόρειο στην Λεμεσό, τα τελευταία έντεκα χρόνια, καθώς επίσης και υποψήφια διδάκτωρ στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας. Διεξάγω έρευνα, που αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία. Η έρευνα αυτή έχει πάρει έγκριση από την Εθνική Επιτροπή Βιοηθικής Κύπρου, (ΕΕΒΚ ΕΠ 2019.01.128), και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@unic.ac.cy). Έκτος αυτού, μετά από επικοινωνία που είχα με τον Δρ. Παπαναστασόπουλο, και την Δρ. Ελισάβετ Παπαγεωργίου, η συγκεκριμένη έρευνα έχει πάρει έγκριση από την Επιτροπή Κλινικών Ερευνών του Ογκολογικού Κέντρου της Τράπεζας Κύπρου, για να διεξαχθεί η έρευνα στο κέντρο.

Η έρευνα αποσκοπεί στο να διερευνηθούν καλύτερα οι ανάγκες και οι δυσκολίες των επαγγελματιών υγείας στην ογκολογία έτσι ώστε να τους παραχωρηθεί καλύτερη ψυχολογική και συναισθηματική υποστήριξη, συμβάλλοντας με αυτό τον τρόπο στη βελτίωση της ποιότητας επαγγελματικής ζωής. Θα ήθελα να σας διαβεβαιώσω ότι οι πληροφορίες που θα συλλεχθούν θα είναι εμπιστευτικές και απόρρητες.

Θα ήθελα να σας παρακαλέσω να αφιερώσετε λίγα λεπτά από τον πολύτιμο χρόνο σας για να συμμετέχετε στην έρευνα αυτή. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν.

APPENDIX I: RECRUITMENT EMAIL TO MEDICAL TEAM**Main Office Tel:+357-22100945****Main Office Fax:+357-22100947****Mob:+357-99457262****Attention:**

This e-mail and any attachment is for authorized use by the intended recipient(s) only. It may contain proprietary, confidential and/or privileged information and should not be copied, disclosed, distributed, retained or used by any other party. If you are not an intended recipient please notify the sender immediately and delete this e-mail (including attachments and copies). The statements and opinions expressed in this e-mail are those of the author in his capacity as a medical professional.

On Thu, 6 Jun 2019 at 14:12, Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy> wrote:

Δρ. Αστρα καλησπέρα,

ονομάζομαι Άντρεα Κκούφου, είμαι ψυχολόγος του Αντικαρκινικού Συνδέσμου Κύπρου τα τελευταία έντεκα χρόνια, καθώς επίσης και υποψήφια διδάκτωρ στο Τμήμα Κλινικής Ψυχολογίας του Πανεπιστημίου Λευκωσίας. Διεξάγω έρευνα, που αποτελεί τμήμα της διδακτορικής μου διατριβής και αφορά την αλληλεπίδραση της ενσυναίσθησης και της συμπόνιας σε ογκολόγους και άλλους επαγγελματίες υγείας που εργάζονται στην ογκολογία.

Η έρευνα αυτή έχει πάρει έγκριση από την Επιτροπή Βιολογικής Ηθικής και Δεοντολογίας, του τμήματος κοινωνικών επιστημών του Πανεπιστημίου Λευκωσίας, με αριθμό έγκρισης SSERB 43, και ο Επιστημονικός Υπεύθυνος είναι ο Δρ. Ανδρέας Αναστασίου (Anastasiou.a@anticancersociety.org.cy).

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Θα ήθελα να σας παρακαλέσω να συμμετάσχετε σε αυτή την έρευνα καθώς επίσης και να ζητήσω άδεια να απευθυνθώ στους νοσηλευτές που εργάζονται με καρκινοπαθείς ασθενείς στο American Medical Center για να συμμετάσχουν και αυτοί στην έρευνα. Τα προσωπικά δεδομένα των συμμετεχόντων θα διασφαλιστούν καθώς επίσης τα ονόματα δεν θα χρησιμοποιηθούν και δε θα κοινοποιηθούν. **Η συμμετοχή όλων θα είναι εμπιστευτική, και ο χρόνος συμπλήρωσης των ερωτηματολογίων δεν θα ξεπεράσει τα 20 λεπτά.**

APPENDIX J: PERMISSION REQUESTING EMAIL TO BANK**Andrea Kkoufou**

From: Andrea Kkoufou <andrea.kkoufou@anticancersociety.org.cy>
Sent: 22 July 2019 07:55
To: 'Elisavet Papageorgiou'
Cc: 'Tina Rossidou'; 'Zoe Giannousi'; 'Dr. Panos Papanastasopoulos'
Subject: RE: "Έγκριση αίτησης για διεξαγωγή έρευνας από Εθνική Επιτροπή Βιοηθικής Κύπρου"

Dear Dr. Papageorgiou,

Thank you very much. Looking forward to the committee's decision.

Have a nice week.

Regards,
Andrea K.

Andrea Kkoufou
Psychologist
PhD Candidate in Clinical Psychology
UNIC

The Cyprus Anticancer Society
62 Nimodimou Milona Street, 3095 Limassol CY
Tel. Office: 25372992 Mobile: +357 99686301

"Nothing Works Unless you Do"
Maya Angelou

-----Original Message-----

From: Elisavet Papageorgiou [mailto:Elisavet.Papageorgiou@bococ.org.cy]
Sent: Friday, July 19, 2019 2:56 PM
To: Andrea Kkoufou
Cc: 'Tina Rossidou'; 'Zoe Giannousi'; 'Dr. Panos Papanastasopoulos'
Subject: RE: "Έγκριση αίτησης για διεξαγωγή έρευνας από Εθνική Επιτροπή Βιοηθικής Κύπρου"

Dear Andrea,

Thank you very much for your email and the information provided. This looks very good thank you for proceeding with the necessary actions.

We will inform you asap following the Research Committee meeting on the 23rd of July.

Kind regards,
Eliza

Elisavet Papageorgiou, PhD
Clinical Trials Coordinator

APPENDIX K: PARTICIPANTS RECRUITMENT

Once the ethics committee approval was received, the researcher contacted the different settings relevant to the research in order to request permission to access each setting to discuss the research study with potential participants.

The researcher first contacted the Medical Director of Arodaphnousa Hospice in Nicosia, as well as the Medical Directors of the Friends of Life Hospice and the Archangel Hospice in Paphos.

Furthermore, the researcher made an appointment with the Clinical Trials Research Committee of the German Oncology Center (GOC) and the Bank of Cyprus Oncology Center, as well as the directors of the Oncology and Hematology Departments at the General Hospital of Nicosia and Limassol.

The researcher had also contacted all oncologists and hematologists in the private sector, as well as the medical director of the Pancyprian Organization of Cancer Patients and Friends, as well as the medical director of The Cyprus Anticancer Society in order to recruit their homecare nursing staff to participate in the study.

After permission from the aforementioned committees and directors was granted, the researcher send an email to all oncologists and hematologists, as well as the matrons at each setting in order to inform oncologists, hematologists, and health professionals about the study and set an appointment in order to meet with them so as to distribute the questionnaires.

The researcher met with each oncologist, hematologist and health professional in person, were the survey packet was handed out, together with a detailed informed consent form, describing the purpose of the study, purpose of the questionnaire, and other details related to their participation in the study.

A secured collection box was placed in the reception area of all the recruitment settings so that participants or their secretaries could drop off their completed questionnaires in order to safeguard confidentiality.

Two reminder emails were sent to all participants: the first one two weeks after the first meeting, and the second one, a week prior to the completion of data collection.

Data collection begun in June 2019 and ended end of September 2019.

All participants were required to complete a total of 5 pen-and-paper questionnaires in the survey packet – one on demographic/profession-related questions, one on empathy of healthcare professionals, one on compassion fatigue and compassion satisfaction, one on emotional regulation and one on traumatic stress symptomatology. The participants also answered questions about their age, education, household income, and their work schedule.

**APPENDIX L: INTRODUCTORY PARAGRAPH TO THE RESEARCH CUM
QUESTIONNAIRE**

Survey Questionnaire Packet

Dear Colleague,

This is a request for your participation in my doctoral research study: **Understanding the Relationship between Empathy and Compassion Fatigue in Oncologists and Health Professionals in Oncology.**

The purpose of this research study is to gain knowledge regarding the relationships between empathy and compassion fatigue in Oncologists and Health Professionals in Oncology.

This information may be used to develop educational activities for Oncologists and other health professionals in Oncology like nurses, hematologists, pathologists in oncology settings, palliative care physicians, radiologists etc. and as a basis for future research.

As a participant in the study, you will be required to complete a total of four pen-and-paper questionnaires – i) one on demographic/profession-related questions, ii) one on the empathy of healthcare professionals, iii) one on compassion fatigue and compassion satisfaction, and iv) one on the psychological distress and trauma due to the daily occupational stressors of working in the oncology.

The survey should take only 20-25 minutes of your time.

Thank you for your participation!

A. Demographic and Profession Data Questionnaire

Instructions: Please circle the choice or fill in the answer that best describes you. You do not have to answer every question if you become uncomfortable.

About you as a person:**A1. Gender**

Male

Female

Prefer not to answer

A2. What is your age? _____**A3. What is your marital status?**

Single, never married

Married or committed partnership

Separated

Divorced

Widowed

A4. How many children do you have? _____**A5. Do you hold to a set of religious beliefs?**

Yes

No

A6. Racial/Ethnic Background

Greeks

Turks

Armenians

Maronites

Other _____ (please specify)

Prefer not to answer or unsure

A7. What was your total household income (in Euros) before taxes during the past 12 months?

Less than €25,000

€25,000 to €34,999

€35,000 to €49,999

€50,000 to €74,999

€75,000 to €99,999

€100,000 to €149,999

€150,000 to €199,999

€200,000 or more

I prefer not to answer

A8. Have you ever received a traumatic stress diagnosis or experienced symptoms that would meet the diagnostic criteria for PTSD? _____ Yes _____ No

If you answered “yes” how long ago? _____ Years _____ Months _____ Days

About you as an Oncology Healthcare Professional:

A9. Highest Level of Education in Healthcare

Diploma

Associate Degree

Bachelor's Degree

Master's Degree

Doctoral Degree

A10. Which among the following best defines you as the oncology healthcare professional?

(Select only one that best describes your current practice in oncology)

Medical Oncologist (treats cancer using chemotherapy)

Surgical Oncologist (removes the tumor and nearby tissue during surgery)

Radiation Oncologist (treats cancer using radiation therapy)

Gynecologic Oncologist (treats gynecologic cancers, such as uterine, ovarian, and cervical cancers)

Pediatric Oncologist (treats cancer in children)

Hematologist Oncologist (diagnoses and treats blood cancers, such as leukemia, lymphoma, and myeloma)

Oncology nurse

Oncology nurse practitioner (NP)

Patient navigator

Palliative care doctor or nurse

Physician assistant (PA)

Oncology social worker

Pathologist

Registered dietitian (RD)

Diagnostic radiologist

Rehabilitation therapist

A11. On average, how many hours/week do you work? _____

A12. On average, which shift do you work? _____

A13. Years employed as a professional healthcare professional: _____

A14. Years in oncology: _____

A15. Years at current hospital: _____

B. Jefferson Scale of Empathy: Healthcare Provider Version

**Jefferson Scale of Empathy**

Physician/Health Professions (HP - version)

Instructions: Using a ball-point pen, please indicate the extent of your agreement or disagreement with each of the following statements by circling the appropriate number below each statement.

Please use the following 7-point scale (*a higher number on the scale indicates more agreement*). Circle one and only one response to each statement.

1. Health care providers' understanding of their patients' feelings and the feelings of their patients' families do not influence treatment outcomes.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

2. Patients feel better when their health care providers understand their feelings.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

3. It is difficult for a health care provider to view things from patients' perspectives.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

4. Understanding body language is as important as verbal communication in health care provider-patient relationships.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

5. A health care provider's sense of humor contributes to a better clinical outcome.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

6. Because people are different, it is difficult to see things from patients' perspectives.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

7. Attention to patients' emotions is not important in patient interview.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

8. Attentiveness to patients' personal experiences does not influence treatment outcomes.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

9. Health care providers should try to stand in their patients' shoes when providing care to them.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

10. Patients value a health care provider's understanding of their feelings which is therapeutic in its own right.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

11. Patients' illnesses can be cured only by targeted treatment; therefore, health care providers' emotional ties with their patients do not have a significant influence in treatment outcomes.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

12. Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

13. Health care providers should try to understand what is going on in their patients' minds by paying attention to their non-verbal cues and body language.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

14. I believe that emotion has no place in the treatment of medical illness.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

15. Empathy is a therapeutic skill without which a health care provider's success is limited.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

16. Health care providers' understanding of the emotional status of their patients including that of their families is one important component of the health care provider-patient relationship.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

17. Health care providers should try to think like their patients in order to render better care.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

18. Health care providers should not allow themselves to be influenced by strong personal bonds between their patients and their family members.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

19. I do not enjoy reading non-medical literature or the arts.

1-----2-----3-----4-----5-----6-----7

*Strongly Disagree**Strongly Agree*

20. I believe that empathy is an important factor in patients' treatment.

1-----2-----3-----4-----5-----6-----7

Strongly Disagree

Strongly Agree

C. Professional Quality of Life Questionnaire (ProQOL-Version 5)

Instructions: When you help people, you have direct contact with their lives. As you may have found, your compassion for those you help can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as an oncology healthcare professional. Consider each of the following questions about you and your current work situation. Circle the number that honestly reflects how frequently you experienced these things in the last 30 days.

1. I am happy.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

2. I am preoccupied with more than one person I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

3. I get satisfaction from being able to help people.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

4. I feel connected to others.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

5. I jump or am startled by unexpected sounds.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

6. I feel invigorated after working with those I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

7. I find it difficult to separate my personal life from my life as an oncology healthcare professional.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

9. I think that I might have been affected by the traumatic stress of those I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

10. I feel trapped by my job as an oncology healthcare professional.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

11. Because of my oncology healthcare profession, I have felt "on edge" about various things.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

12. I like my work as an oncology healthcare professional.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

13. I feel depressed because of the traumatic experiences of the people I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

14. I feel as though I am experiencing the trauma of someone I have helped.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

15. I have beliefs that sustain me.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

16. I am pleased with how I am able to keep up with oncology profession techniques and protocols.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

17. I am the person I always wanted to be.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

18. My work makes me feel satisfied.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

19. I feel worn out because of my work as an oncology healthcare professional.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

20. I have happy thoughts and feelings about those I help and how I could help them.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

21. I feel overwhelmed because my workload seems endless.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

22. I believe I can make a difference through my work.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

23. I avoid certain activities or situations because they remind me of frightening experiences of the people I help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

24. I am proud of what I can do to help.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

25. As a result of my oncology healthcare profession, I have intrusive, frightening thoughts.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

26. I feel "bogged down" by the system.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

27. I have thoughts that I am a "success" as an oncology healthcare professional.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

28. I can't recall important parts of my work with trauma victims.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

29. I am a very caring person.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

30. I am happy that I chose to do this work.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

D. Impact of Event Scale (IES)

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you DURING THE PAST SEVEN DAYS with respect to you as an oncology healthcare professional, how much were you distressed or bothered by these difficulties? If they did not occur during that time, please mark the “not at all” column

	Not At All = 0	Rarely = 1	Sometime = 3	Often = 5
1. I thought about it when I didn't mean to	0	1	3	5
2. I avoided letting myself get upset when I thought about it or was reminded of it	0	1	3	5
3. I tried to remove it from memory	0	1	3	5
4. I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind	0	1	3	5
5. I had waves of strong feelings about it	0	1	3	5
6. I had dreams about it	0	1	3	5
7. I stayed away from reminders of it	0	1	3	5
8. I felt as if it hadn't happened or it wasn't real	0	1	3	5

9. I tried not to talk about it	0	1	3	5
10. Pictures about it popped into my mind	0	1	3	5
11. Other things kept making me think about it	0	1	3	5
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them	0	1	3	5
13. I tried not to think about it	0	1	3	5
14. Any reminder brought back feelings about it	0	1	3	5
15. My feelings about it were kind of numb	0	1	3	5

Gender		Age		Marital Status		No of Children		Holding Religious Beliefs	Ethnicity		Income		How Long		Education		Practice Onc	
	COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT	
Male	82	23.00	1	Single, Never Married	64	.00	91	1	162		12	€100,000 to €149,9	11	.00	182		13	
Female	121	24.00	9	Married or committed partnership	134	1.00	35	2	37	Greek	30	€150,000 to €199,9	4	20.00	1	Bachelor's Degree	112	Doctor of Nuclear Medicine
Prefer not to Answer	3	25.00	8	Seperated	6	2.00	56			Greek-cypriot	1	€200,000 or more	2	60.00	2	Diploma	2	Hematologist Oncologist
		26.00	6	Divorced	3	3.00	21			Greek-Cypriot	174	€25,000 to €34,999	36	162.00	1	Doctoral Degree	23	Homecare Nurse
		27.00	11			4.00	4					€35,000 to €49,999	28	200.00	4	Master's Degree	67	Medical Oncologist
		28.00	11									€50,000 to €74,999	16	400.00	1	Total	217	Medical Physicist
		29.00	18									€75,000 to €99,999	4	410.00	1			Oncology Nurse
		30.00	8							I Prefer not to answer	39	500.00	1					Palliative Care Doctor

Appendix L: Demographic summary statistics