HOW DO THEY DO IT? A PHENEMONOLOGICAL DESCRIPTION OF STRESS AND COPING IN RADIATION THERAPISTS

by

Cheryl Shadrick Turner

Liberty University

A Dissertation Presented in Partial Fulfillment of

the Requirements for the Degree

Doctor of Education

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ABSTRACT

This study aimed to better understand and describe the lived experiences of job-related stressors and associated coping mechanisms of radiation therapists (RTTs). The study employed a phenomenological qualitative method as to explore the experiences of 11 radiation therapists in select regional cancer centers in the Southeastern United States. The following questions were explored: (a) How do radiation therapists describe job-related stress? (b) What factors do radiation therapists identify as contributing to job-related stress? (c) What mechanisms do radiation therapists employ to cope with job-related stress they described? and (d) How do radiation therapists find motivation to continue in their chosen field in light of job-related stress? The data collection process included individual interviews, online focus groups, and personal journaling by the participants, whom were chosen through purposeful sampling. Data analysis was conducted via a hermeneutic interpretive approach following a systematic analytical guide as detailed by previous qualitative researchers. Findings suggested that the radiation therapists experience substantial stress in their work situations, which they most often attributed to uncontrollable situations, and they struggled with methods of coping, likely choosing to work through stressful situations in lieu of coping. The radiation therapists found intense motivation in their relationships with their patients, crediting them with the reasons for continuation in their careers.

Keywords: burnout, coping, job burnout, oncology, radiation therapist, radiation therapy, stress

Dedication/Acknowledgments

"Each time he said, "My grace is all you need. My power works best in weakness." So now I am glad to boast about my weaknesses, so that the power of Christ can work through me," (2 Corinthians 12:9, New Living Translation). All glory, honor, praise, and thanksgiving for the words in this work go to my Lord.

I graciously thank Him for placing very special people alongside me on this journey: Bryan, Claire, Eryn, and Sam, my parents and Andi, Dr. Kimberly Brown, Robert and Melissa, and Caeli. An overwhelming sense of gratitude and hope is held for the participants in this study.

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List of Abbreviations

American Cancer Society (ACS)

American Registry of Radiologic Technologists (ARRT)

American Society of Radiologic Technologists (ASRT)

Computerized Tomography (CT)

Intensity Modulated Radiation Therapy (IMRT)

Position Emission Tomography (PET)

Stereotactic Radiosurgery (SRS)

Radiation Therapists (RTTs)

Joint Review Committee on Education in Radiologic Technology (JRCERT)

Stereotactic Radiosurgery (SRS)

CHAPTER ONE: INTRODUCTION

Overview

Research has documented the adverse effects of job-related stress on radiation therapists (RTTS), notably: poor performance, physical illness, and chronic absenteeism (Akroyd & Adams, 2000; Akroyd, Caison, & Adams, 2002a; Akroyd, Caison, & Adams, 2002b; French, 2004). Job-related stress oftentimes leads to job burnout, which is characterized by feelings of emotional exhaustion, depersonalization, and reduced personal accomplishment (Akroyd et al., 2002a, 2002b; Probst, Griffiths, Adams, & Hill, 2012). Many of the previous studies investigating this sample were conducted utilizing quantitative methodology (Akroyd & Adams, 2000; Akroyd et al., 2002a; Diggens & Chesson, 2014; Jasperse, Herst, & Dungey, 2014; Probst et al., 2012). While only one previous study was achieved through a qualitative phenomenological method, it was completed in the United Kingdom (French, 2004). This identified the gap in the literature, in that there have been no current studies done in the United States which investigate this topic and those that were previously carried out utilized quantitative methodology. The purpose of this study was to richly describe the experiences of job-related stressors and their associated coping mechanisms as perceived by RTTs working in the United States; this was accomplished through a qualitative phenomenological approach. The following research questions were explored: (a) How do radiation therapists describe job-related stress? (b) What factors do radiation therapists identify as contributing to job-related stress? (c) What mechanisms do radiation therapists employ to cope with job-related stress they described? and (d) How do radiation therapists find motivation to continue in their chosen field in light of job-related stress? Limitations and delimitations have been recognized and discussed.

Background

The American Cancer Society (ACS) estimates that 1.6 million new cases of cancer will be diagnosed in 2015 and that there are nearly 14.5 million Americans who have a history of cancer, either presently undergoing treatment or having been successfully treated many years ago (ACS, 2015). Five-year relative survival rates for all different types of cancers diagnosed in 2004-2010 was 58%, which showed a dramatic increase from just three decades ago when the survival rate was 49% in 1975-1977 (ACS, 2015; National Cancer Institute, n.d.). This improvement in survival may reflect earlier cancer detection techniques and advancements in technologies and treatments, including radiation therapy (ACS, 2015; Barker, Chang, Beal, & Chan, 2014; Chung & Harris, 2007; Lee, Yang, Huang, Lee, Chan, & Lui, 2014; Schefter & Kavanagh, 2011).

According to the American Society of Radiologic Technologists (ASRT, 2015), RTTs are highly educated, distinctively qualified medical personnel who are responsible for "the delivery of high doses of radiation to treat cancer and other diseases" (para 15). Poulsen, Poulsen, Baumann, McQuitty, and Sharpley (2014) noted that radiation therapists make up one of the two largest professional patient care groups in the cancer workforce. Daily interactions with oncology patients may have an impact on the job stressors experienced by RTTs, in that they provide not only technically sophisticated radiation treatments but also emotional support and comfort (Diggens & Chesson, 2012, Poulsen et al., 2014).

Research related to the stressors experienced by oncology workers (Demirci et al., 2010; Grunfeld et al., 2000; Pierce et al., 2007), specifically RTTs (Akroyd & Adams, 2000; Akroyd et al., 2002a; Diggens & Chesson, 2014; French, 2004; Jasperse et al., 2014; Probst et al., 2012) and their use of coping mechanisms (French, 2004; Jasperse et al., 2014; Poulsen et al., 2014),

has suggested that oncology workers demonstrate high levels of stress related to their jobs and would benefit from enhanced coping strategies. However, Poulsen et al. (2014) reported that the "proportion of RTs [radiation therapists] experiencing stressors was significantly higher than ONs [oncology nurses] . . ." (p. 231). Radiation therapists often exhibit very high levels of stress as related to organizational or administrative concerns, but they report very high levels of job satisfaction from working with their patients, despite the associated stressors (Akroyd et al., 2002a; Diggens & Chesson, 2014).

Situation to Self

Noting my ontological philosophy and my constructivist beliefs, I will approach this study with the awareness that I am engaged in the phenomenon job-related stressors of RTTs and the related subject matter. As described by Milacci (personal communication, June 17, 2015) ontology, the study of being, is likened to a patient experiencing a cancer diagnosis. Whereas, epistemology is 'knowing' about cancer, ontology embraces 'being' in cancer once the patient has been diagnosed and enters into the reality. Having been a radiation therapist for 28 years and an educator of future RTTs for 14 years, this explanation validates my ontological mindfulness of the cancer care realm. My constructivist worldview denotes that I search for understanding in life's experiences and that meaning can be created as a result of these experiences. The interpretation of these events is shaped by my own personal, cultural, and historical viewpoints, in addition to those of the participants in this research study. As a devoted cancer care provider and educator, I am invested in the well-being and emotional health of my colleagues. Through sound and solid research, I aim for improvements in my profession, for fellow RTTs, and ultimately for our patients.

Problem Statement

Much of the previous research has focused on job burnout, with job stressors being antecedents to the crises (Akroyd & Adams, 2000; Akroyd et. al., 2002a; Demirci et al., 2010; Grunfeld et al., 2000; Jasperse et al., 2014; Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007). Studies have found that coping mechanisms employed by RTTs play positive roles in combating work-related stressors (Akroyd et. al., 2002a; French, 2004; Jasperse et al., 2014). Stress management and coping strategies curriculum, programs, and interventions have been developed, to differing levels of success, by hospitals and cancer care centers (Back, Deignan, & Potter, 2014; Pierce et al., 2007; Poulsen et al., 2014). Akroyd and Adams (2000) and Sale and Smoke (2007) noted that ultimately, it is the quality of patient care that could suffer from the compounding of job-related stressors on RTTs. Therefore, it is imperative to better appreciate the perceived stressors experienced by RTTs and to recognize valuable coping mechanisms so that effective educational and training tools can be implemented (Akroyd & Adams, 2000; French, 2004; Gillies et al., 2014). The problem lies in that no significant research has been performed in the United States on radiation therapists' stress and coping since the early 2000s; there have been no qualitative U.S. studies on this topic. Although research has been accomplished internationally, these results cannot be generalized to a U.S. population due to educational and workplace standards differences.

Purpose Statement

The purpose of this phenomenological study was to describe occupational stressors and related coping mechanisms of radiation therapists at select cancer treatment centers. The perception of RTTs' occupational stressors was understood to be those experiences in which the "demands of the situation exceeds the person[s'] resources and some type of harm or loss is

anticipated" (Poulsen et. al., 2014, p. 225). French (2004) cited Patrick (1981) in acknowledging coping as the "ability to draw on the emotional, physical and social resources that allow one to avoid the adverse impact of stress" (p. 14). The foundational theory which guided this research study is Vygotsky's (1980) Social Constructivism Theory in that I wished to explore the experiences of RTTs and how they go about learning to cope with perceived occupational stressors.

Significance of the Study

In the foundational study on this topic, Adams (1999) wrote that "the highest levels of burnout were reported by RTTs who also reported high levels of individual stress, interpersonal stress, and organizational stress" (p. 61). This research led to three subsequent papers on the effects of stress on radiological sciences workers, each reporting high levels of job-related stress, employee pressure, and personnel burnout (Akroyd & Adams, 2000; Akroyd et al., 2002a, 2002b). French (2004) conducted a qualitative study on RTTs in the United Kingdom, seeking to better understand their occupational stressors and coping mechanisms. The results of this study pointed to high job stressors and, oftentimes inadequate coping methods (French, 2004). A finding acknowledged in this study that had not been reported in previous research was the "stress caused by an acute awareness of the potential damage to a patient resulting from errors in treatment" (French, 2004, p. 20).

More recent studies, although similar in results to Akroyd et al. (2002a), were quantitative in methodology and were carried out in Australia, Canada, or the United Kingdom (Diggens & Chesson, 2014; Gillies et al., 2014; Grunfeld et al., 2000; Probst et al., 2012). Many other studies were conducted on oncology care providers other than RTTs (i.e. medical oncologists and oncology nurses) (Back et al., 2014; Demirci et al., 2010; Lim,

Bogossian, & Ahern, 2010). Therefore, it was essential to qualitatively study RTTs in the United States so that their lived experiences with job-related stressors and related coping strategies could be conveyed through their own words and stories.

Research Questions

French (2004) found that the stressors encountered by RTTs led to the "experience[s] of physiological and/or psychological responses" including "crying, anger, troubled thoughts, and distress" (p. 21) and that RTTs who suffered from job-related stressors relied on a variety of individual and organizational coping mechanisms (Akroyd et al., 2002a; Jasperse et al., 2014; Poulsen et al., 2014). The research studies regarding the efficacy of coping mechanisms had reported mixed results (Akroyd et al., 2002a; Jasperse et al., 2014; Poulsen et al., 2014). Consequently, the primary research questions for this study were as follows:

1. How do radiation therapists describe job-related stress?

French (2004) found that stress, an individual experience, in situations of over- or under-stimulation can lead to ill health. The actual or perceived development of poor health is a consequence of the stress process in which one is unable to adequately cope with the demands of the stressors under which he is placed. RTTs in French's study (2004) described stressful effects which manifested into physical and mental symptoms, as well as emotional instability.

2. What factors do radiation therapists identify as contributing to job-related stress?

Mazur el al. (2011) recorded observed stressors in a cancer treatment center as part of their study on RTTs' workload and patient safety. These sources of stress included: (a) technical or software/hardware malfunctions; (b) environmental stressors (i.e. noise); (c) teamwork stressors caused by delays in information and/or in physical presence of necessary personnel; (d)

time stressors caused by the need to expedite work; (e) patient stressors due to unexpected patient needs; (f) interruption stressors (i.e. phone calls or pagers). (p. e573)

3. What mechanisms do radiation therapists employ to cope with job-related stress?

Poulsen et al. (2014) described active coping mechanisms utilized by cancer care givers to be "seeking help from mental health professionals, talking with work colleagues or doing extra work" (p. 226). In the same study, participants reported passive coping approaches which included acceptance of the situation and withdrawal from occupational troubles.

4. How do radiation therapists find motivation to continue in their chosen field in light of job-related stress?

Slocum-Gori et al. (2011) found that health care providers gain emotional motivation through the acts of caring for others; the authors referred to this concept as compassion satisfaction. Additionally, Gillies et al. (2014) reported that Canadian RTTs exhibited tremendous resiliency, noting their positive and vast support systems which allow them to "demonstrate high levels of compassion satisfaction in their daily practice" (p. 391).

Research Plan

This qualitative phenomenological study was conducted utilizing a hermeneutic interpretive approach, described by Moustakas (1994) as the "direct conscious description of experience and the underlying dynamics or structures that account for the experience" (p. 9). The participants were selected through purposeful sampling, utilizing maximum variation, in order to better achieve vivid descriptions of the phenomenon and to obtain "variation on the concepts of interest" (Schwandt, 2015, p. 279). A total of 11 participants were chosen from five different clinical sites, operational cancer centers, in the Southeastern United States (Alabama & Tennessee). Data was collected in the forms of individual interviews, online

focus groups, and personal journaling. Data analysis followed a hermeneutic interpretive method, noting the process used by Crist and Tanner (2003). I realized that the development of the interpretations of the phenomenon was an iterative process, but one that should follow a systematic approach as to provide scholarly depth and clarity (Crist & Tanner, 2003).

Delimitations and Limitations

A delimitation, or defined boundary, of this study was noted in that participants were chosen by purposeful sampling, through the technique of maximum variation. A purposeful strategy, which employs maximum variation sampling, suggests "selecting a wide range of cases or incidents to get variation on the concepts of interest (Schwandt, 2015, p. 279). By utilizing this technique, I could select RTTs with varying backgrounds, years of clinical experience, and educational credentials; this broad base added to the data pool and allowed for a wider view of the phenomenon to be expressed.

Potential limitations of this study included the geographical constraints of the study group, the ages and genders of the selected RTTs, and the ideas and values held by the participants. The study was limited to RTTs with current occupational experience at cancer treatment centers in Alabama and Tennessee. The participants were chosen as best fits for the phenomenon under study; they were not chosen to fulfill equitable demographic sampling. The percentage of female RTTs is greater than 70% (ASRT, 2004, p. 38). With this limitation in mind, the participant pool consisted of a higher percentage of females than males (64% female/36% male). Additionally, the study was limited to the ideas and values of the RTTs who were chosen as participants. The study focused on their experiences with job-related stressors and associated coping mechanisms. Their truthful accounts of occupational habits and enduring beliefs were expressed as a result of this project.

Definitions

Definitions pertinent to this study include:

1. *Burnout* – "A reaction to chronic, job-related stress, characterized by physical emotional, and defensive coping" (Gillespie, as cited by Akroyd et al., 2002a, p. 215).
2. *Caring* – "Everything we do directly to help others to meet their basic needs, develop or sustain their basic capabilities, and alleviate or avoid pain or suffering, in an *attentive, responsive and respectful manner*" (Engster, 2005, p. 55).
3. *Coping* – "Refers to cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" (Folkman, 1984, p. 845)
4. *Motivation* – "The extent to which [participants] emphasize the ideal of service to clients and public as their primary goal and as part of their ideology" (Ekmekci, & Turley, 2012, p. 121).
5. *Stress* – "A 'demand-perception-response;' an individual's perception of the demands being made on [him] and to [his] perception of [his] capability to meet those demands" (McVicar, 2003, p. 633).

Summary

The high rate of occurrence and significant impact of job-related stressors in RTTs have been well documented in previous research (Akroyd & Adams, 2000; Akroyd et. al., 2002a; Demirci et al., 2010; Gillies et al., 2014; Jasperse et al., 2014; Le Blanc, 2007); however, many of the current studies have been carried out internationally or on oncology workers in other patient care fields (i.e. oncology nursing) (Barnard, Love, & Street, 2006; Diggens & Chesson, 2014; Grunfeld et al., 2000; Probst et al., 2012). Only French (2004) investigated the job-

related stressors and coping mechanisms of RTTs using qualitative methodology, but this study was conducted in the United Kingdom. There have been no current, qualitative studies conducted to explore the job-related stressors and coping mechanisms of RTTs in the United States. The present study aimed to take a hermeneutic interpretive approach as to describe the lived experiences of RTTs and the phenomenon of job-related stress.

CHAPTER TWO: LITERATURE REVIEW

Overview

The phenomenon of stress was previously investigated in research; however, often in conjunction with job burnout of oncology workers. Back et al. (2014) examined the "cost of caring" as related to cancer care providers and the "deleterious effects [that] chronic stress" have on their personal and professional well-being (pp. 454-457). In a 2012 United Kingdom study, Probst et al. (2012) reported that there was a risk for job burnout among RTTs, although lower than the rates reported in the studies involving RTTs in the United States and Canada (Akryod et al., 2002a, Sale & Smoke, 2007). Notably, Probst et al. (2012) acknowledged that "minimal research . . . [had] . . . attempted to determine the predictive values of stressors or burnout" (p. e764). Lawrence, Poggenpoel, and Myburgh (2011) suggested in their qualitative study of South African radiotherapists that preceding literature on the study of stress and burn-out had been focused on recognizing the problem without "any constructive attempt to identify positive aspects that could assist therapy radiographers to achieve personal fulfilment" (p. 1). Designed to better help RTTs cope with their occupational stressors, preventative measures, interventional programs, and educational solutions have been suggested by previous researchers and were examined in this study (Adams, 1999; Akroyd et al., 2002a; Le Blanc et al., 2007; Jasperse, 2014).

The literature review section of this study will show the theoretical context and the philosophy on which the research is based. Prominent theories that will guide this research study and provide the foundational framework include Vygotsky's Social Constructivism Theory and Folkman and Lazarus' Coping Theory. A look into Noddings (2013) work with Care Theory and Gagne and Deci's (2005) thoughts on Self-determination Theory and Work Motivation will add

to the body of literature established for this project. An overview of these theories and how they relate specifically to this qualitative research study concerning the job-related stressors and associated coping mechanisms in RTTs will be provided.

A comprehensive review of research literature related to the role of radiation therapists, the job-related stressors of RTTs, and the coping mechanisms employed by RTTs will be discussed. As a final point, the nominal evidence linked to the efficacy of coping strategies or predictive qualities of job stressors on RTTs will be addressed. Suggestions for educational and training curricula or proposals will be investigated, as will be the value of previously utilized designs.

A literature search from 1998 to 2015 was conducted using the key words *burnout, coping, job burnout, oncology, radiation therapy, radiation therapists, and stress* to identify pertinent research on sources of job-related stress and associated coping mechanisms in RTTs. Included in the literature search were dissertations, peer-reviewed journal publications, and literature reviews conducted on the topics.

Theoretical Framework

This study will be conducted through a social constructivist framework, while being regarded with an ontological assumption. Ontology, as described by van Manen (2007), "establishes and shapes our understanding of being," thus allowing me as the researcher to better capture and appreciate the lived experiences of RTTs as they describe them (p. 19). By the nature of my history in the field of radiation therapy, I will portray personal "values and biases," while gathering rich and "value-laden" information from the participants in the field (Creswell, 2013, p. 20). I will include personal reflections on the phenomenon in "conjunction with the interpretations of [the] participants" (Creswell, 2013, p. 21). This

qualitative phenomenological study will be achieved utilizing a hermeneutic interpretive approach, concurrently following a systematic technique of summary and interpretation (Crist & Tanner, 2003; Moustakas, 1994). Noting Schutz's phenomenological perspective, Overgaard and Zahavi (2009) remarked that the emphasis of this perspective should not be "institutions . . . social classes or structures of power, but *human beings*, that is, acting and experiencing individuals, considered in their myriad relations to others, but also with an eye to their own, meaning-constituting subjective lives" (p.101).

The social constructivist theory assumes that knowledge is socially constructed by the participants during the learning and research process. The theory is dependent on interactions of social culture and requires that the researcher develop an understanding of the participants' lived experiences through "more informed and sophisticated reconstruction" (Creswell, 2013; Guba & Lincoln, 1994, p. 112). As the author, I will embrace the role of "passionate participant" (p. 115) as described by Lincoln to better facilitate active engagement and reconstructive interpretation with the participants (1991, as cited by Guba & Lincoln, 1994). Converse (2012) proposed that "interpretation takes place with the understanding that the researcher is part of their historical, social, and political world" (p. 29).

Vygotsky's Social Constructivism Theory

Sivan (1986) described social constructivism as "socialization, a process of acquisition of skills, knowledge, and dispositions that enables the individual to participate in his or her group or society" (p. 211). This socialization, or learning, process involves cooperative communication and exchange, thereby leading to mutual engagement in building new ideas by both the participant and others in the group setting. "When considered in this larger frame, social constructivism becomes the means of cognitive development, as well as the means

whereby an individual learns the needs and motives underlying human relations and the modes of action necessary to interact with people, objects, and ideas in the environment" (Sivan, 1986, p. 211).

Vygotsky (1979), in identifying social settings and developments as a means for learning, suggested "the social dimension of consciousness is primary in time and in fact. The individual dimension of consciousness is derivative and secondary" (p. 30, as cited by Wertsch, 1985). Wertsch (1985), noting the interdependence between self and social processes, referred to Vygotsky's "general genetic law of cultural development."

> This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. We may consider this position as a law in the full sense of the word, but it goes without saying that internalization transforms the process itself and changes its structure and function. Social relations or relations among people genetically underlie all higher functions and their relationships. (p. 61)

Palincsar (1998) stated that "mental functioning of the individual is not simply derived from social interaction; rather, the specific structures and processes revealed by individuals can be traced to their interactions with others" (p. 351). Vygotsky (1997) posited that, for contemporary man, the social environment, was paramount in that no other relationships nor associations could exist outside of the social context. One's social environment is so organized that its "conditions . . . form all our experience" (p. 158). As learners work together in a broad variety of activities and internalize the effects of this cooperative effort, they grow in knowledge and experience of their world and culture (Palincsar, 1998).

Anyone or anything directly interacting with the learner can influence the social world of the learner and, thusly, it is believed that external factors affect learning in the social-

constructivist environment (Liu & Chen, 2010). Referring to Vygotsky's assumptions concerning active individuals, Liu and Chen (2010) posited that both an active individual and an active environment are necessary to develop co-constructionism. Along with the essential element of surrounding culture, learners will "mediate their actions" (p. 65) and appropriately organize their learning according to personal need and ability (Liu & Chen, 2010). Social constructivism, from Vygotsky's perspective, is learning that is actively constructed from reality, not passively acquired inside the learning environment. "Therefore, constructivism means that learning involves constructing, creating, inventing, and developing one's own knowledge and meaning" (Lui & Chen, 2010, p. 65).

Folkman and Lazarus' Coping Theory

Somerfield and McCrae (2000) credited Freud (1894/1962) with the conceptualization of defense as a "set of psychological mechanisms by which individuals distort reality to manage distressing feelings, especially anxiety" (p. 620). This idea was further advanced as it was noted that individuals managed stressors through definitive styles and that some of the defensive mechanisms could be linked to psychopathology (Somerfield & McCrae, 2000). Folkman (1984) theorized that the "cognitive theory of stress and coping . . . is relational and process oriented" (p. 840). There appears to be a relationship between the person experiencing stress and the environment in which the stressor is occurring; the person evaluates the environment as "taxing or exceeding his or her resources and as endangering his or her well-being" (Folkman, 1984, p. 840). Stress is not, therefore, the particular event occurring in the environment; it is the dynamic relationship between the participant and the surroundings (Folkman, 1984).

The concept of coping, as defined by Folkman and Lazarus (1980) is the "cognitive

and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" (Folkman, 1984, p. 843). Coping is seen as a management process, whether the methods prove to be successful or not. "The effectiveness of any given coping strategy is not inherent in the strategy" (Folkman, 1984, p. 843).

Lazarus, in a 1993 report, detailed five metatheoretical principles which were believed to be representative of the process of coping. Firstly, Lazarus (1993) stated that coping activities under stress must be considered "separately from their outcomes" (p. 235) in order to best determine their effectiveness or ineffectiveness. The example of 'denial' was provided in that this coping mechanism is maladaptive in some circumstances (i.e. a life threatening medical condition such as a heart attack), while conversely providing effective adaptational outcomes in an instance where a patient may overcome anxiety (i.e. surgery recovery) (Lazarus, 1993). "There may be no universally good or bad coping processes, though some might more often be better or worse than others" (Lazarus, 1993, p. 235).

Principle two, of Lazarus' 1993 report, noted that many psychological stressors are made up of complex issues and, therefore, the processes of coping may vary with the diverse, multifaceted concerns. Folkman reiterated in a 2004 manuscript that the coping mechanism is a "complex, multidimensional process that is sensitive both to the environment, and its demands and resources, and to personality dispositions that influence the appraisal of stress and resources for coping" (p. 747). These multiplicities should be recognized and treated independently rather than viewing the stressor as a whole, or focusing attention to the overall crisis.

As a researcher, Lazarus (1993) noted in principle three that the most needed facet of coping measurement was to "describe" what a person is "thinking and doing" in an effort to

cope with stressful situations (p. 236). The inference of this coping behavior and subsequent description is made by the researcher, not by the person being observed. Additionally, this type of measurement should be made over time and across different types of stressful encounters. Lazarus (1993) referred to this as "*intraindividual* as well as *interindividual* . . . enabl[ing] the researcher to examine both consistencies and inconsistencies in the way individuals cope over time and across stressful encounters" (p. 236).

In short, *coping* is expressed as the "cognitive and behavioral efforts to manage psychological stress" (Lazarus, 1993, p. 237). In principle four, Lazarus (1993) noted this while also emphasizing that "coping *effort* is independent of the *outcome* so that the role in influencing adaptational outcomes can be independently assessed" (p. 237). The overarching term 'coping' is utilized for strategies whether they are adaptive or maladaptive, successful or unsuccessful, stable (consolidated) or unstable (fluctuating). *Adaptive* indicates the effectiveness of the coping process in improving one's adaptational outcomes. The measure of *success* is determined by the degree of belief held by the coper upon assessment of the outcome. *Consolidation* indicates that the coper has achieved a stable means of coping, or dealing with the stressors, under varying circumstances (Lazarus, 1993).

> Most coping processes, including defenses, are probably the result of a fluid, contextually sensitive struggle to appraise what is happening in a way that is responsive to the realities of a situation yet is also hopeful or even optimistic about how things are going. (Lazarus, 1993, p. 238)

Folkman and Lazarus (1980) recognized two major functions of coping: emotion-focused coping and problem-focused coping. Emotion-focused coping may be utilized to shift the focus of the situation or to alter the person's sense of control over the environment. Folkman

(1984) recalled examples such as: “devaluing the stakes . . . at risk,” “focusing on the positive aspects of negative outcomes,” and “engaging in positive comparisons” (p. 844). Problem-focused coping is more often used in an environment where a person seeks to control the situation through “problem-solving, decision making, and/or direct action” (Folkman, 1984, p. 845). Folkman (1984) noted that the effectiveness of problem-focused coping usually lies in the person’s success in managing his or her own emotions. “The importance of having at least some control over one’s emotions when trying to manage or alter a troubling situation is one reason . . . that problem-focused coping will be accompanied by emotion-focused coping in most stressful encounters” (Folkman & Lazarus, 1980, as cited by Folkman, 1984, p. 845).

In principle five, Lazarus (1993) reiterated the two major functions of coping, problem-focused coping and emotion-focused coping, while emphasizing the importance of the relational meaning of both strategies. In circumstances of stress, the recipient may be able to reappraise the situation and regulate emotion through a “healthy form of repression or denial” (Lazarus, 1993, p. 238). It is in these instances that the threat has been reexamined and found to be no longer relevant, thus the emotional coping response to the ordeal is deemed healthy and powerful. Lazarus continued by noting that under “certain conditions—particularly, those in which nothing useful can be done to change the situation—rational problem-solving efforts can be counterproductive, even likely to result in chronic distress when they fail; then emotion-focused efforts would offer the best coping choice” (p. 238).

Additionally, Folkman and Muskowitz (2004) identified meaning-focused coping as an alternative approach in which “cognitive strategies are used to manage the meaning of a situation” (p. 752). By this method, the coper draws from his own beliefs, morals, values, or goals to find meaning or modify the significance of a stressful encounter; this is especially

relevant in cases of chronic stress that have not been resolved through problem-focused coping efforts.

Although beyond of the scope of this paper, Folkman (2004) detailed developments in coping research which are worthy of mention: (a) *proactive coping*—in which the coper builds a reserve of resources anticipating future stressors; (b) *dual-process coping*—in which a bereaved person fluctuates between loss and restoration; (c) *communal coping*—in which a social group works together to deal with a situation; and, (d) *religious coping*—in which one uses religion specifically to help find the strength to "endure and to find purpose and meaning in circumstances that can challenge the most fundamental beliefs" (p. 759).

Lazarus (1993) posited that stressful conditions are individual and are viewed through personal lenses, indicating that when the environment is seen as "refractory to change," emotion-focused coping strategies are best suited; however, when the environment is perceived as "controllable by action," participants are more likely to lean on problem-based coping mechanisms (p. 239). However, broad categories of coping strategies, such as those presented, do not sufficiently describe or clarify personal and individual variations of the ways that stressors are managed considering specific circumstances. Folkman (2004) noted that while applying nomenclature to coping strategies is pertinent to research, it also "runs the risk of masking important differences within categories" (p. 752). Lazarus (1993) contended that the classifications are constricting, noting that they cannot fully encompass the "complex adaptational struggles to have much utility in explaining and predicting what people do when confronted with the many forms of harm, threat, and challenge to which all persons are exposed" (p. 241).

Ntoumanis, Edmunds, and Duda (2009) referred to the "goodness of fit" (p. 251)

model in which one chooses the most effective method of coping after appraising each situation individually; assuming coping strategies do not inherently work under all circumstances. Although some coping mechanisms prove to be effective for one individual, they may serve ineffectual for others. However, Ntoumanis et al. (2009) reported that individuals prefer coping styles, which they utilize throughout different circumstances and which are determined to great extent by their personality characteristics.

Ntoumanis et al. (2009) documented that coping efforts can "result in a variety of health-related, affective, and behavioural [sic] outcomes" (p. 251). Realizing that there are no coping strategies that are universally right or wrong, it was determined that "successful coping has been related to better quality of life, mental health, and illness remission" (Aldwin, 2000, as cited by Ntoumanis et al., 2009, p. 251). Finally, Ntoumanis et al. (2009) recognized that successful coping endeavors may result in positive modifications to stressors including caregiving responsibilities.

Noddings' Care Theory

Noddings (2012) described care ethics as a relational ethic, in that its genesis—as human life itself—is in relation. "Right from the start, we are concerned with the *caring relation*—from the briefest encounters to long-term associations, and we describe the roles of both carer and cared-for in establishing and maintaining that relation" (Noddings, 2012, p. 53). In a description of a caring encounter, Noddings (2012) portrayed the carer as attentive, observant, receptive, and responsive to the needs of the cared-for. The response of the cared-for, perhaps simple, is essential to symbolize that the relation is complete. The cared-for responds in such a way as to show that the caring has been received and acknowledged. "Without this response, there is no caring *relation* no matter how hard the carer has worked at

it" (Noddings, 2012, p. 53). Noddings (2012) noted the exception in reciprocity being that in which the cared-for was unable to respond in a way that completed the caring relation, as might be the case for healthcare providers. At this point, the work of the carers becomes more demanding and those "in this position need the support of a caring community to sustain them" (Noddings 1984, as cited by Noddings, 2012, p. 54).

Noddings, in a 2010 paper, explained and expanded upon the role of empathy in care theory. Contrasting it with sympathy, which was related to "contagious understanding," Noddings (2010) cited Stueber (2006) in defining empathy as a form of "inner or mental imitation for the purpose of gaining knowledge of other minds" (p. 7). Empathy precedes caring; attention precedes empathy. In a relational situation, the carer listens to or pays attention to the cared-for and begins to identify with the feelings that are being expressed. An understanding of another's circumstances and experiences leads to the feelings of empathy. This occurrence results in *motivational displacement*, in which one puts aside his "own goals and purposes temporarily in order to assist in satisfying the expressed needs of the other; [his] motive energy flows toward[s] the purposes or needs of the other" (Noddings, 2010, p. 9). This series of events is described as the basic pattern in which caring evolves.

Noddings (2010) cautioned that the need for completion of the caring cycle, the need for a response from the cared-for, can bring about feelings of hopelessness if left unmet or incomplete. If the carer is moved to an emotional and psychological place of feeling motivational displacement, the carer is pressed to help. If the burden becomes too great, either by physical distance or by magnitude, the carer may succumb to feelings of resignation in that he simply cannot accomplish all that is asked. As the feelings of hopelessness overcome the carer, helplessness becomes inevitable and the carer may suffer "empathetic

exhaustion" (Noddings, 2010, p. 12). In both reports, Noddings (2010, 2012) stressed the need for reciprocity and/or completion in the relationship between carer and cared-for, as to fully demonstrate understanding, motivation, and empathy, while making note of healthcare providers who may find themselves in demanding situations where this conclusion is unattainable.

Gagne and Deci Self-determination Theory and Work Motivation

Self-determination theory, developed by Ryan and Deci (2000), relies on the distinction between "autonomous motivation" and "controlled motivation" (Gagne & Deci, 2005, p. 333). "Autonomy involves acting with a sense of volition and having the experience of choice" (Gagne & Deci, 2012, p. 333). Such as is intrinsic motivation, the way in which one chooses to participate in activities of personal interest; it can be said that the person is acting completely volitionally. Intrinsic motivation, which shows to be the most self-determined type of motivation, involves participating in activities for the purpose of enjoyment, knowledge attainment, or goal achievement. By contrast, a person being controlled is felt to be forced or pressured into participating in actions. Self-determination theory regards that "autonomous and controlled motivations differ in terms of both their underlying regulatory processes and their accompanying experiences, and it further suggests that behaviors can be characterized in terms of the degree to which they are autonomous versus controlled" (Gagne & Deci, 2012, p. 334). Both aspects of this theory are intentionally contrived, and represent juxtaposition to amotivation, which signifies a "lack of intention and motivation" (Gagne & Deci, 2012, p. 334).

The concepts of autonomous motivation, controlled motivation, and amotivation are related to the ways in which a person goes about completing activities. Gagne and Deci

(2012) stated that these motivational variables are predicted from:

> (1) aspects of the social environment, including both aspects of the job and the work climate, that can be characterized as autonomy supportive, controlling, or amotivating; and (2) individual differences in causality orientations, namely, the autonomous orientation, the controlled orientation, and the impersonal orientation, which are more trait-like concepts. (p. 340)

People respond to actions in their workplace environments based on intrinsic or extrinsic motivators, both in their work contexts and in their personal autonomous orientations.

Bandura (1989) noted in his own 1986 Social Cognitive Theory that people make "causal contribution to their own motivation" (p. 1175). "Because judgments and actions are partly self-determined, people can effect change in themselves and their situations through their own efforts" (Bandura, 1989, p. 1175). Situationally, people are faced with events, uncertainties, and judgments throughout the courses of their days and their lives. Discernment as they make decisions regarding these factors tests their strength of efficacy against past successes and failures. "People's self-efficacy beliefs determine their level of motivation, as reflected in how much effort they will exert in an endeavor and how long they will persevere in the face of obstacles" (Bandura, 1989, p. 1176). Bandura (1989) proposed that "human attainments and positive well-being requires an optimistic sense of personal efficacy . . . [because] . . . social realities are strewn with difficulties" (p. 1176). Hardiness sustains perseverance, whereas self-doubt can be intensified by failures. "It is the resilience of self-belief that counts" (Bandura, 1989, p. 1176).

One's intrinsic motivation displays this resiliency and, consequently, thrives under supportive and enriched conditions (Ryan & Deci, 2000). "Perhaps no single phenomenon

reflects the positive potential of human nature as much as intrinsic motivation, the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (Ryan & Deci, 2000, p. 70). However, it was noted that uncooperative or unhelpful conditions could cause a disruption in one's state of intrinsic motivation. Research found that positive feedback, best-fit challenges, and freedom from demoralizing evaluations, when combined with autonomy and a sense of relatedness, fostered intrinsic motivation; whereas, "extrinsic rewards can undermine intrinsic motivation" (Ryan & Deci, 2000, p. 70). External rewards have been associated with causality or diminished autonomy and include not only tangible rewards, but also threats, deadlines, mandated goals, or pressured evaluations. "Extrinsic motivation reflects behaviours [sic] which are undertaken not because they are interesting but because they result in important outcomes" (Ntoumanis et al., 2009, p. 253).

Ntoumanis et al. (2009) contended that self-determination theory proposes "three fundamental and universal human needs, the satisfaction of which is essential for individuals' efforts for personal growth and development" (p. 252). These essentials are the needs for autonomy, competence, and relatedness. *Autonomy* suggests one's desire to engage in activities of personal choice and to be the source of one's own deeds and activities. *Competence* refers to one's need to interrelate effectively within his environment and to own a sense of efficiency in the production of desired outcomes, while simultaneously preventing undesired events. The need of *relatedness* comes from the feelings of connectedness and acceptance by others in social surroundings. Ntoumanis et al. (2009) reported that when the social environment satisfactorily met psychological needs, behavior became self-determined and well-being was experienced. However, in contrast, when the social environment

"undermine[d] the three psychological needs, behaviour [sic] often has low or no self-determination and ill being [was] reported" (Ntoumanis et al., 2009, p. 252).

Ryan and Deci (2000) indicated that the "basic needs for competence, autonomy, and relatedness must be satisfied across the life span for an individual to experience an ongoing sense of integrity and well-being or 'eudaimonia'" (p. 75). The attainment of intrinsic aspirations and intrinsic goals were shown to enhance positivity and well-being; however, the successful fulfilment of goals that did not meet basic psychological needs oftentimes resulted in sub-optimal well-being. Baard, Deci, and Ryan (1998) reported that "employees' experiences of satisfaction of the needs for autonomy, competence, and relatedness in the workplace predicted their performance and well-being at work" (as cited by Ryan & Deci, 2000, p. 75).

Related Literature

It has been well documented that oncology professionals, inclusive of RTTs, experience job-related stressors, to the point of job burnout (Akroyd & Adams, 2000; Akroyd et al., 2002a; Demirci et al., 2010; Diggens & Chesson, 2014; French, 2004; Grunfeld et al., 2000; Jasperse et al., 2014; Pierce et al., 2007; Probst et al., 2012). Job burnout has often been the endpoint of earlier studies, with a broad, somewhat generalized, understanding of causative factors but only a nominal view of preventative measures. The efficacy of coping techniques has been reported, to varying degrees, dependent on the extent and origin of the method utilized to combat acknowledged occupational stressors (Dougherty et al., 2009; Gillies et al., 2014; French, 2004). Suggestions for further research regarding the implementation of educational and training opportunities for the realization of job-related stressors and utilization of coping strategies (Akroyd & Adams, 2000; Akroyd et al., 2002a;

2002b, French, 2004) have been noted, and will be investigated and addressed in this study.

Role of Radiation Therapists

In their 2011 annual report, the American Registry of Radiologic Technologists (ARRT) reported that more than 16,500 jobs were held by nationally registered RTTs (Ekmekci & Turley, 2012). These healthcare professionals, with over 19,000 being registered by the ARRT, were employed by hospitals, private cancer care facilities, higher education institutions, and other health care organizations (Ekmekci & Turley, 2012). Forty-four percent of radiological sciences professionals, of which RTTs represent a sample, have worked in their fields for greater than 16 years with 13.4% having dedicated more than 31 years to their careers (ASRT, 2013). The *2014 Radiation Therapy Staffing and Workplace Survey* conducted by the American Society of Radiological Technologist (ASRT) documented that the mean age of retirement for RTTs was 65; however, it also revealed that RTTs left their positions for 'personal reasons' or 'to work in another profession' at approximately the same rate as retirees.

Highly educated, RTTs have proven mastery in physics, radiation safety, clinical oncology, patient anatomy, and patient care (ASRT, 2015). RTTs are cancer care specialists, who, in the radiation oncology spectrum, hold the primary responsibility for the accurate preparation, replication, and delivery of radiation therapy to patients diagnosed with cancer (Engel-Hills, 2007). Alongside the magnitude of advanced technological equipment and meticulous application, RTTs face emotional fatigue from the demands of their occupation (Akroyd & Adams, 2000; French, 2004; Jasperse et al., 2014; Poulsen et al., 2014). It was reported in a 1998 study on professional satisfaction that RTTs' jobs include stressful demands such as: "the challenges of working with cancer patients, the characteristics of cancer patients, specific aspects of the work setting, and coping mechanisms of the [RTT] staff" (Johnson,

Roberts, Trotti, & Greenberg, 1998, p. 76).

Bolderston acknowledged in a 2004 report that RTTs were "pushing the boundaries of their profession" (p. 57). The rapidly changing developments in the fight against cancer have resulted in technologically complex machinery, highly advanced treatment planning, and increased radiation dose delivery. RTTs may also be required to have effectual knowledge and skills of computerized tomography (CT) and positron emission tomography (PET), as both modalities play crucial roles in the diagnoses of patients' disease and the planning of patients' radiation therapy treatments. Lee et al. (2014) documented that in the last decade radiotherapy has advanced with innovative delivery forms of conformal treatment planning including intensity modulated radiation therapy (IMRT) and stereotactic radiosurgery (SRS) and radiotherapy (SRT). Delivery of the radiotherapy dose can be accomplished through three distinct methods: heavy charged particles (i.e. protons), gamma irradiation (emitted from Co-60), and high energy irradiation originating from linear accelerators (Lee et al., 2014). Although the desired outcomes are consistent, the technologies utilized, knowledge required, and preparation needed are vastly diverse; RTTs may be obligated to have working-experience of a multitude of treatment variables. Egestad (2013) called for RTTs to serve not only as technical experts, noting "technical expertise and accuracy are of utmost importance," (p. 581) but also to act in ethical and responsible support of cancer patients. Bolderston (2004) noted that, additionally, RTTs assume patient care roles in that they take part in weekly chart reviews, patient education, and palliative care.

As carers, RTTs rely on the development of relationships with their patients through shared interests and thoughtful conversations (Sandberg, 1990). Lawrence et al. (2011) found that RTTs appreciate a shared, dependent relationship with patients in that the "care that they gave to

the patients was ultimately reciprocated with patient[s] starting to care for the therapy radiographer" (p. 4). Halkett and Kristjanson (2007) addressed these relationships, using the term "symbolic interactionism" to describe the actions and meanings of both parties.

> The interactions that patients and RTTs had when radiation therapists took the time to get to know the patients not only assisted the patients to feel emotionally comfortable, they were also functional, in that, the radiation therapists were able to provide the patients with the treatment that they required. (Halkett & Kristjanson, 2007, p. 81)

The phrase *supportive care* has been associated with the role filled by RTTs as related to patients' physical, psychosocial, and spiritual issues (Faithfull & Wells, 2003). Diggens and Chesson (2014) indicated that RTTs maintain lower confidence in their abilities to communicate with patients concerning psychosocial issues; consequently, work-related stress may be affected by their capabilities to handle these emotion-focused encounters. In the art of practice, supportive care may also signify relaying information, such as providing patient education on side effects management and treatment details, or offering appropriate referrals to other oncology team members, nurses, social workers, or nutritionists.

Radiation therapy professional societies have endorsed in their standards of practice the capacity to display caring professional behavior towards patients (Bolderston, Lewis, & Chai, 2010). However, these caring relationships are not without sacrifice; Gillies et al. (2014) noted that these close patient-therapist relationships place substantial burdens on radiation therapy care-givers, noting that RTTs indicated that they "pay an emotional price for demonstrating empathy towards their patients and sometimes they have difficulty coping with these emotions" (Gillies, 2014, p. 390).

A 2010 qualitative study by Bolderston et al. indicated that RTTs serve in a unique role,

being set aside from other allied health professionals. "It was suggested that radiation therapists are fairly unusual because they 'choose cancer' when they enter the profession" (Bolderston, et al., 2010, p. 202). Unlike other medical professions, like nurses or physicians, who opt to further their primary educations by specializing in oncology, radiation therapists decide to "work with people living with cancer from the beginning of their career" (Bolderston, et al., 2010, p. 202). Gillies, et al. (2014) found that the decision to devote to a career in cancer care may prove to be costly to RTTs, with one respondent in the study having stated "I feel good about . . . what I do, but at a price" (p. 391). The results of the study indicated that job-related stressors could potentially initiate compassion fatigue, secondary traumatic stress, or occupational burnout in practicing RTTs (Gillies, et al., 2014).

Job-Related Stressors of Radiation Therapists

The job-related stressors of RTTs appear to fall into two categories, those related to organizational entities and those that are patient-specific. Jones, Wells, Gao, Cassidy, and Davie (2013) suggested that occupational stress in oncology workers was influenced by both the overall nature of the work and the organization and culture in which the workers operated. A 2009 study, done in conjunction with the German Society of Radiation Oncology, found that radiotherapists are challenged by progressively more complex treatment regimens, the growing population of cancer patients, restructuring and downsizing in public health services, and "stress by compassion" or the emotional distress of caring for dying patients (Sehlen et al., 2009, p. 2). Kash et al. (2000) reported in a study on oncology care-givers that the stressor most often contributing to burnout and demoralization was categorized as "negative work events . . . [recognizing] these issues, often with ethical overtones, are confronted on a daily basis and are intensely emotional and frustrating" (p.

1628).

Jasperse et al. (2014) documented high stress levels in RTTs in reporting "excessive workload, lack of professional recognition, and the lack of professional development" (p. 86). The stressor of unrecognized professionalism was mirrored in the 1998 report by Johnson et al. in which the authors noted that 62% of respondents felt that "most health care providers do not appreciate the role that RTTs play in patient care" (p. 80). Likewise, Savoy and Wood (2015) found that professional concerns including lack of recognition and opportunities for advancement were problematic for RTTs. "Advancement in the workplace was rated especially low, with nearly half of all respondents expressing advancement opportunities as lacking" (Savory & Wood, 2015, p. 19). These findings were very similar in nature to the lived experiences found in French's (2004) qualitative study in which respondents noted "unmanageable workload," "lack of cooperation," and "[indecisive] management positions" (p. 19). "Workload overload" was the most intensely reported stressor in a 2014 study by Poulsen et al. with other factors being "managing complex patient cases, having to carry the workloads and responsibilities of other staff, and the presence of rigid hierarchies in hospital administration . . ." (p. 228). These themes were also consistent with the findings of Diggens and Chesson (2014) while also adding that negative or inefficient therapists' team relationships compounded the problems. Lawrence, et al. (2011) reported stressors as indicated in international studies; those being: high stress levels, high vacancy rates, an unsatisfied workforce, high burn-out levels, role ambiguity, moderate levels of organizational commitment, and questionable levels of patient care. Additionally, Lawrence et al. (2011) stated that "any strategies to alleviate the problems identified tend to be vague and difficult to implement in practice" (p. 1).

Poulsen et al. (2014) and French (2004) highlighted an additional stressor in that RTTs work under the extreme pressure of having to deliver cancer treatments with great precision affording "no room for error," (p. 228) with the potential to cause physical harm or damage to patients. Probst and Griffiths (2008) revealed the potential emotional devastation experienced by RTTs if an error is made in the delivery of high dose radiation to a patient; a respondent in the study disclosed that "it affected me a lot. You start to doubt whether you're still fit professionally to carry on" (p. 154).

In their 2014 study, Gillies et al. noted that RTTs often build "dependent, intimate, close relationships" with patients and their families (p. 385) and that these relationships can create additional emotional responsibilities for RTTs. Johnson et al., (1998) reported that earlier studies alluded to the "close proximity to death" as an occupational stressor causing RTTs to leave their profession (p. 76). In the study of German and Austrian oncology workers by Sehlen et al. (2009), radiotherapists indicated that patient related stressors were perceived as the most significant: "against the conviction patients were kept alive by all means" (mean score 2.88), "stress due to patient's disease progression" (mean score 2.79), "high physical workload" (mean score 2.76) and "patients suffering of my therapy" (mean score 2.74)" (p. 4). Dougherty et al. (2009), in their study of oncology care-givers, found that a "high workload, lack of time to grieve the death of patients, insufficient resources to cope with stress, and not feeling supported by the hospital . . ." were factors that compounded the perceived stressors experienced by the healthcare providers (p. 110). Cancer care givers "tend to empathize with patients' losses, resulting in a personal sense of futility or failure in their care" (Potter et al., 2010, p. e57). French (2004) reported that RTTs confront their own fears through patient contact in "dealing with death and dying and having

to look at your own mortality on a daily basis" (p. 19). The cumulative demands which are common to oncology caregivers including repeated exposures to suffering patients and high levels of occupational stress, may result in compassion fatigue or job burnout (Potter et al., 2010).

Recognizing the intensified stress placed upon RTTs by increasingly complex technical requirements and ever-changing strenuous workloads, Mazur et al. conducted observational data collection as part of their 2012 quantitative study on workload and stressors. As a result, they generated six sources of stressors specific to the radiation therapy department. These included:

1. Technical stressors-such as computer hardware or software,
2. Environmental stressors-as in, noise,
3. Teamwork stressors-such as delays in information or waiting on physicians or staff,
4. Time stressors-the need to meet deadlines,
5. Patient stressors-from unexpected patient needs,
6. Interruption stressors caused by physical interruptions-such as phone calls or pages (messages).

Savoy and Wood (2015) reported similar results in that a majority of the RTTs in their study rated work distractions negatively. Over half of the respondents (56.1%) stated that they "were distracted by telephones while treating patients" (Savoy & Wood, 2015, p. 18).

However, when asked about personal accomplishment and job satisfaction and their responses to the stress of caring for oncology patients, RTTs rated that particular stressor as highly satisfactory (Akroyd & Adams, 2000; Diggens & Chesson, 2014; French, 2004;

Jasperse et al., 2014). In their 1998 study, Johnson et al., reported that 95% of RTTs entered the profession to "help people;" 97% believe without a "doubt their job is important;" and 97% "receive emotional satisfaction working with patients" (p. 79-80). RTTs in the 2014 study by Diggens and Chesson indicated that they derived great job satisfaction from "good working relationships with patients" and by "feeling [that] they are making difference in people's lives" (p. 13-14). This same effect was seen in oncology nurses, suggesting that "satisfaction [was] derived from patient care" and fulfillment was found in patient relationships (Le Blanc et al., 2007; Pierce et al., 2007, p. 109). It was concluded by Kash et al. (2000), that those oncology care givers who had served in the field for longer periods of time actually exhibited lower levels of distress and higher levels of job satisfaction, leading the authors to report that "most oncology professionals find satisfaction in a commitment to patients and their care, irrespective of their clinical outcome" (p. 1629). Slocum-Gori et al. (2011) referred to the concept of compassion satisfaction in which health care providers gain emotional motivation through the acts of caring for others. Identifying Stamm (2002), Slocum-Gori et al. (2011) posited that compassion satisfaction could possibly be the influence that "counterbalances the risks of Compassion Fatigue and . . . this may account for the 'resiliency of the human spirit'" (p. 173). Finally, Gillies et al. (2014) reported that "despite many psychological stressors, Canadian RTTs display amazing resiliency. They have a very positive and substantial social support network that allows them to demonstrate high levels of compassion satisfaction in their daily practice" (Gillies et al., 2014, p. 391).

Coping Mechanisms of Radiation Therapists

Gillies et al. (2014), referring to a 2004 study by Isikhan, Comez, and Daniz, reported that the ". . . strain and responsibility for the physical and emotional needs of caring in cancer

care emanates from the imbalance between the coping ability of the healthcare professional and the demands of the work place, which can lead to compassion fatigue and or burnout" (p. 385). Oncology practitioners have employed a multitude of coping mechanisms to combat the stressors encountered in their work environments. Active coping measures, those in which one seeks interventions to stressful situations, included both personal and organizational modalities (Akroyd & Adams, 2000; Back et al., 2014; Diggens & Chesson 2014; French 2004, Jasperse et al., 2014; Le Blanc et al., 2007; Poulsen et al., 2007). Personal coping mechanisms involved promoting a healthier lifestyle, time management, social support, relaxation, and physical activities (Akroyd et al., 2002a; French 2004, Jasperse et al., 2014; Umann, da Silva, Benavente, & Guido, 2014). Probst and Griffiths (2008) stressed the importance of social support, in which RTTs work in team settings, relaying the comments of one respondent who stated "I really enjoy my job and I think it's the support of my colleagues around me." (p. 154). Passive coping mechanisms, such as escape, avoidance, and continuation were reported, with mixed results (French, 2004; Poulsen et al., 2014; Umann et al., 2014). In her qualitative study of British RTTs, French (2004) determined that the most commonly utilized coping strategies were a combination of 'social support' (seeking informational, tangible, and emotional support), 'escape avoidance' (wishful thinking and efforts to escape or avoid the problem), and 'confrontive coping' (aggressive efforts to change the situation/risk taking). Poulsen et al. (2014) reported that avoidance and continuation (labeled "ignored it and got on with job") were utilized more often in administrative or organizational situations instead of in patient care cases; the overall success rate of "ignored it and got on with job" as a coping mechanism was 47.38%. Umann et al. (2014) suggested that avoidance "contributed to an increase of the nurses' stress" by

altering the workers' concepts of reality and the things with which they must cope (p 108). Koinis et al. (2015) documented that healthcare workers who had been employed for 10-30 years more often utilized wishful thinking and problem solving coping techniques; whereas newer employees with less than 10 years of experience turned to positive approaches strategies including positive reassessment. Kash et al. found in their 2000 study of oncology care providers, that those who identified as 'more religious' were able to report significantly lower levels of emotional exhaustion, depersonalization, and diminished patient empathy. These findings led the authors to suggest that intensely religious caregivers "may attach a different meaning to life and death, which provides them with greater satisfaction and reward from palliative care" (Kash et al., 2000, p. 1629).

Sardiwalla, VadnenBerg, and Esterhuyse (2007) cautioned, reminding of the negative consequences generated by ineffectual coping mechanisms. It was noted by Sardiwalla et al. (2007) that oftentimes healthcare providers of terminally ill patients hide their own feelings of "guilt, anxiety, and loss" (p. 490) by masking symptoms of personal depression. When caregivers do not face their own beliefs of loss and disappointment regarding their patients, their perceptions of job satisfaction are negatively affected. The authors pointed to another ineffectual coping mechanism in avoidance of personal feelings by incorporating increased busyness; this escape strategy was referred to as "behavioural [sic] disengagement" (Sardiwalla et al., 2007, p. 490). A report by Kasuya et al. (2002) claimed that healthcare participants who denied feelings of personal distress often negated self-care, potentially leading to isolation from their own support systems. Koinis et al. (2015) concluded in their study of Greek healthcare workers that the implementation of 'quitting' as a coping strategy may lead to symptoms of stress, depression, or physical illness. Koinis et al. (2015) pointed

to Lazarus and Folkman (1984) when they recognized that the use of inefficient coping mechanisms and failure to recognize the true source of personal issues could result in increased stress which can lead to a state of 'inability' characterized by chronic stress, depression, and fatigue.

Over half (58%) of the RTTs that participated in the 2014 study by Gillies et al. indicated that their employers did not assist them in coping with stressful work events. Organizational concepts have been adopted in light of research studies documenting the need for education and training; however, these programs have mainly been implemented and reported in oncology nursing, not in radiation therapy (Back et al., 2014; Le Blanc et al., 2007; Poulsen et al., 2014; Umann et al., 2014). Administrators able to report full compliance and execution of programs demonstrated significant improvement in oncology workers' perceptions of job demands, social support, and self-care (Back et al., 2014; Le Blanc et al., 2007). Pierce et al. (2007) noted the implementation of interventions aimed at stress reduction including social retreats, formal ethics dialogues, and mentorship programs. Dougherty et al. reported in their 2009 study that cancer care providers perceived inadequate coping resources, as such interventions were implemented; these stress reduction modalities included retreats, mentorships, and clinical rounds to discuss difficult topics.

In a single radiation therapy study, Diggens and Chesson (2014) conducted data analysis on participants who had attended a four-hour communication training workshop entitled 'Eliciting and Responding to Emotional Cues,' which was designed to better equip care-givers to communicate with patients who were "angry, anxious, distressed or depressed" (p. 7). The findings suggested that attendance to the seminar was significantly associated with higher burn-out levels in RTTs. Referring to earlier research, Diggens and Chesson

(2014) offered various suggestions for the results, noting that a causal relationship could not be inferred; these included: increased pressure on RTTs to show support, increased anxiety to interact with patients causing further emotional exhaustion, and unmet expectations from the workshop.

Poulsen et al. (2015) developed an interventional program designed to educate and equip RTTs and oncology nurses to better deal with occupational stressors. The one day workshop focused on recovery training, self-care practices, and sleep quality of the participants. The results of the study demonstrated that the intervention provided necessary tools for recovery from job stressors and, additionally, showed that the effects were viable at six weeks post training. The cancer care professionals in the experimental arm who took advantage of the opportunity to learn and experience "healthy self-care practices had significant higher scores on measures of recovery experiences, satisfaction with self-care and perceived sleep quality" (Poulsen et al., 2015, p. 496). It was noted by the authors that healthcare workers have a professional obligation to maintain their own personal health in order to better care for the health of their patients; however, coping and recovery interventions for cancer care workers are limited, at best, currently.

Akroyd and Adams (2000), French (2014), Gillies et al. (2014), and Jasperse et al. (2014) made suggestions for training and educational opportunities to better support RTTs, noting that organizations should respond to the stressors of their employees in a global manner. Diggens and Chesson (2014) especially noted the need for "improving staff skills or confidence, improving staff support, and ensuring staff have the time and privacy to communicate with patients who present with emotional concerns" (p. 15-16). Poulsen et al. (2014) suggested that future research be directed at measuring the effectiveness of

"interventions to improve the personal resources of workers to cope with the stressors of the oncology caseload" (p. 231). French (2004) reported that stress management programs have been shown to positively impact individuals; therefore, with curricular implementations, radiation therapy students could learn valuable stress intervention tools to utilize throughout their careers. Poulsen et al. (2015) echoed these thoughts in noting that "educational programmes [sic] may represent the first step towards introducing structured experiences that can enhance worker's understanding about the need for self-awareness about burnout, and improve knowledge about healthy lifestyle adjustments that can aid recovery at work and outside work" (p. 496). Whether through informal or formal assistance mechanisms, mentoring opportunities, professional development, or undergraduate educational programs, the stress and coping issues of RTTs merit affirmation and constructive support.

Motivation of Radiation Therapists

According to Akroyd, Legg, Jackowski, and Adams (2008) RTTs, despite other personal and professional commitments, are uniquely committed to the organizations in which they work. Referring to the concept proposed by Meyer and Allen in 1997, Akroyd et al. (2009) explained that organizational commitment is multidimensional and comprised of three features: affective commitment—the emotional or *want* to work for an organization; continuance commitment—recognition of the costs to leave or *need* to work for an organization; and, normative commitment—obligation to stay or *ought* to work for an organization. The results of the 2009 study by Akroyd et al. indicated that organizational support had the most significant impact on both affective and normative commitment in RTTs; consequently, those RTTs who feel supported by their employers may feel more emotionally attached and feel more obligated to continue working for the organization.

Akroyd et al. (2009) posited that the "sense of purpose, intense and unique patient interaction, and shared goals for patient treatment common in many oncology departments may influence RTTs' sense of normative commitment" (p. 119).

In a 2011 study of Italian nurses, Galletta, Portoghese, and Battistelli found that employees who had the opportunity for their own responsibilities and freedom to develop their own work activities (a perception of autonomy) fostered a sense of identification and connection (affective commitment) with their employers which led to a decrease in nurses' resignation rates. The authors reiterated that self-determination theory asserts that one's sense of autonomy is a basic psychological need which, if fulfilled, can initiate self-determined behaviors and that job autonomy correlates positively to both intrinsic motivation and affective commitment. The results of the study supported earlier research in that it was suggested when healthcare workers are "intrinsically motivated towards their own work [they] develop a sense of identification and attachment to their organization that in turn is negatively related to turnover intention" (Galletta et al., 2011, p. 12). The authors identified the association between job autonomy and positive work feeling and attitudes, noting the significance of affective commitment as the mediator of the relationship between the two variables and projected staff turnover. Referring to previous research, Galletta et al. (2011) noted that emotionally involved employees were "more satisfied and less inclined to leave the organization, he/she is motivated to propose work improvement and give a high value to his/her work" (p. 5).

Probst and Griffiths (2008) studied British RTTs in an attempt to better understand the correlation between their levels of job satisfaction and their intentions to leave their jobs. Describing the role of organizational commitment on employees' performance, Probst and

Griffiths (2008) referred to results of a 2006 research study by Makanjee, Hartzer, and Uys, in which it was found that the clear majority of respondents believed that promotions were unfairly applied (70%); that there were deficits in managers' abilities to accurately relay decisions made at higher levels (68%); and that they had no input into decision-making (64%) (p. 27). These results were reflected in the 2008 report by Akroyd et al. as it was stated that "all employees must be treated fairly, organizational policies should be fair and employees should be informed of the reasons behind policies" (p. 119). These thoughts mirrored those found in Probst and Griffiths' 2008 study in which British RTTs revealed that they were dissatisfied with the inequality of job promotions, the insufficiency of managerial support, and the lack of opportunities for professional development. Galleta et al. (2011) supported these conclusions by determining that an employee's desire to leave was influenced by opportunities for responsibility and job autonomy, which can in turn foster attachment (affective commitment) to one's organization.

A 2015 Greek study by Koinis et al., which investigated the impact of work environment on healthcare workers' mental-emotional well-being, found that there was a significant need to "encourage and morally reward" (p. 2) employees and to provide them with opportunities for continued professional development. Addressing work environment, one of the major results of this study indicated that healthcare professionals perceived stressful situations to be the most significant risk factor affecting their mental/emotional health. Koinis et al. (2015) reported that this finding supported earlier research which called for improved working conditions and noted that stressful and hazardous job settings may play a critical role in a care provider's decision to leave.

Summary

As shown through the preceding review of literature, RTTs exhibit job-related stressors including emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment, all of which may ultimately lead to job burnout. Numerous quantitative studies related to the topic of job burnout in the oncology professions have demonstrated that employee health and well-being and patient care and safety may ultimately suffer from these effects. Limited studies have indicated that there have been positive results reported as a result of the implementation of coping mechanisms in radiation therapy personnel and in other oncology staffs (i.e. oncology nurses or medical oncologists) whom also demonstrate high levels of job-related stressors. One paramount qualitative study was conducted to investigate the job-related stressors and utilized coping strategies of RTTs in the United Kingdom; this report confirmed the findings of the quantitative studies and added rich personal details of the experiences of RTTs. However, there have been no qualitative studies carried out in the United States that specifically explore and describe the lived experiences of RTTs' job-related stressors and their associated coping mechanisms.

Additionally, it has been noted that RTTs demonstrate high satisfaction and resiliency in their jobs as related to patient care, suggesting motivating factors. It was found that intrinsic motivation and affective commitment to one's organization were influenced by factors such as job autonomy, professional growth, and administrative support. The nominal evidence linked to the predictive qualities of job stressors of RTTs has been investigated. Importantly, suggestions for educational and training curricula or proposals were examined and the value and efficacy of formerly utilized programs were discussed.

RTTs demonstrate high levels of job-related stressors oftentimes unable to effectively

cope with the demands of their occupations, as the stressors lead to job burnout, emotional exhaustion, depersonalization, and feelings of loss of personal accomplishment. This review of literature showed through quantitative and qualitative research that oncology professionals, especially RTTs, could benefit from effective coping strategies, whether organizationally or personally originated.

CHAPTER THREE: METHODS

Overview

Per qualitative methodology, to better understand and describe the lived experiences of radiation therapists (RTTS) in the United States, this phenomenological study was conducted in a local setting so that I could "forge a common understanding" with the participants (Creswell, 2013, p. 83). The participants were chosen by purposeful selection, utilizing a method of maximum variation to best represent the phenomenon of study, occupational stressors and associated coping mechanisms. The project employed quantitative survey instruments prior to data collection for data appraisal; personal interviews, online focus groups, and personal journaling were utilized. The methods of Crist and Tanner (2003) guided the analysis of data, as theirs' was a process of collaboration, summary, revision, and interpretation. Trustworthiness in this study was determined by peer review, an audit trail, comprehensive detail of procedures, triangulation, and reflective appraisal. Ethical considerations were taken into account and were noted.

Design

Phenomenology was the method chosen for this study based on the intent to explore a common phenomenon (stressors) within a group of individuals (radiation therapists) and on the gap found in the literature. "Phenomenology is a philosophical perspective that helps researchers to explore and understand everyday experiences . . . [while remaining] . . . open to what presents itself during a phenomenon" (Converse, 2012, p. 29). The qualitative phenomenological method was utilized to discover meaning about the lived experiences of RTTs, with an aim to recognize and express the nature of the phenomenon occupational stressors, and associated coping mechanisms (French, 2004).

The hermeneutic phenomenological approach was relevant for this particular study in which I sought to richly investigate, clarify, understand, and interpret the sources of job stressors and the utilization of coping strategies in practicing RTTs. Van Manen (1977) defined hermeneutics as the "science of interpretation, or as the phenomenology of social understanding" (p. 213). Interestingly, van Manen (1990) noted that to "*do* hermeneutic phenomenology is to attempt to accomplish the impossible: to construct a full interpretive description of some aspect of the lifeworld, and . . . remain aware that lived life is always more complex than any explication of meaning can reveal" (p. 18). Crist and Tanner (2003) wrote that "hermeneutic interpretive phenomenology's philosophical framework acknowledges that people are inextricably situated in their worlds" (p. 203). Hermeneutical interpretation provides the theoretical framework for "understanding, or meaning, with special attention to context and original purpose" (Patton, 2015, p. 137). Referring to hermeneutical methodology and social constructivism, as is the foundational theory of this study, Guba and Lincoln (1994) contended that "the variable and personal (intramental) nature of social constructions suggests that individual constructions can be elicited and refined only through interaction *between and among* investigator and respondents" (p. 111).

Research Questions

1. How do radiation therapists describe job-related stress?
2. What factors do radiation therapists identify as contributing to job-related stress?
3. What mechanisms do radiation therapists employ to cope with job-related stress?
4. How do radiation therapists find motivation to continue in their chosen field in light of job-related stress?

Setting

The study was implemented with participants chosen from Regional Cancer Center Believe (pseudonym-privacy protected) located in Central Alabama and Regional Cancer Centers Dream, Faith, Hope, and Promise (pseudonyms-privacy protected) located in Eastern and Southeastern Tennessee. However, the study was neither conducted within the cancer treatment centers, nor did employment at the various centers have any bearing on participant selection, data collection, or analysis inclusion. The active centers contrast in architectural size, operational load, and technological advancements, thus allowing for diverse occupational experiences for the therapists employed at the respective facilities. Each cancer center employees between 4 and 15 RTTs, all registered by the American Registry of Radiologic Technologists (ARRT). The RTTs range in clinical experience from 2 to 33 years and hold differing educational backgrounds. In the 2004 *Environmental Scan of the Radiographer's Workplace*, the American Society of Radiologic Technologist (ASRT) reported that the comprehensive staff radiation therapist population (as documented by the ARRT), consisted of a majority of females (75.5%), who were married (67.5%), and stated a mean age of 39.0 years. The participants for this project represented a sample of this overall population.

Throughout my near thirty-year career as a radiation therapist, my role as an educator in a regional program, and service in numerous professional affiliations, I have been afforded the opportunity to develop relationships with hundreds of colleagues in the field of radiation therapy; it is from this population of professionals that I will identify the sample of potential participants for this study. I selected RTTs from sites within two southeastern states to provide maximum variation based on RTTs' years of clinical practice, age and gender, and educational qualifications. By using diverse locations, I received and, therefore elucidated, extensive

descriptions of the phenomenon.

Participants

The study consisted of 11 participants, selected through purposeful sampling because they can "purposefully inform an understanding of the research problem and central phenomenon in the study" (Creswell, 2013, p. 156). I employed the technique of maximum variation, in which I "determine[d] in advance some criteria that differentiate the sites or participants, and then [selected] sites or participants that are quite different on the criteria" (Creswell, 2913, p. 157). Through this method, I gained a better understanding and more robust portrayal of the phenomenon of job-related stressors in RTTs. Once the final participants were identified, they chose their own individual pseudonyms which were used throughout the duration of the study to maintain privacy and integrity.

The participants were both male and female, ranging in age, and were of diverse racial ethnicities. All of the participants were practicing RTTs who had graduated from accredited radiation therapy educational programs (Joint Review Committee on Education in Radiologic Technology, 2015) and are currently registered by the ARRT; they possess wide-ranging years of clinical experience. The RTTs hold differing job descriptions and titles within their respective cancer centers. Some work in administration, while others work as staff or senior-level therapists. The participants for this study were a sample of the demographic population as described by the ASRT (2004).

Procedures

Participants for this study were chosen through purposeful sampling, employing a maximum variation technique. Following Institutional Review Board (IRB) approval from Liberty University (see Appendix A), I instigated initial exploratory email communication

(see Appendix B) with 18 radiation therapists. From this pool, the final 11 participants were recognized. The selected RTTs received emails (see Appendix C) detailing instructions as to how to complete the informed consent (see Appendix D) and how to proceed with the study. Initially, the participants completed two quantitative assessments (Carver, 1997; Cohen, Kamarck, & Mermelstein, 1983), via online survey instruments (see Appendix E & F). At the completion of this first phase, I established convenient individual interview times and locations, so that the actual interview processes could take place. The valid interview questions were piloted with a content expert to test the question material, format, and layout prior to interviews (see Appendix G). During the interviews, dialogues were recorded for transcription; I ensured duplicates by providing dual recording devices. Post individual interviews, the RTTs participated in a one-week online focus group (see Appendix H); afterwards, they were expected to document their thoughts and ideas in personal journals at least once weekly for a period of three weeks (see Appendix I).

Following a hermeneutic phenomenological approach, I utilized the guide of Crist and Tanner (2013) and the philosophies of Moustakas (1994) and Schutz (1967) to collect, analyze, and interpret the data regarding the phenomenon.

The Researcher's Role

As a radiation therapist and an educator, I came into this project engaged and invested in the research topic. I acted as interviewer/investigator alongside colleagues and friends, while I maintained their best professional and personal interests. I chose the research method, qualitative phenomenology, so that I could richly describe RTTs' stories about job-related stressors and their use of coping mechanisms. I applied the philosophy of hermeneutics to convey their perspectives while striving to understand the wholeness of the

story of RTTs. I attempted to examine and analyze the data through the "*Weil-Motiv"* perception of Schutz (1967), in which I evoked "an event lying in my past which led me to project on this particular act" (p. xxiv), while simultaneously utilizing the systematic interpretation process of Crist and Tanner (2003).

Data Collection

Ranney et al. (2015) suggested that the majority of effort in the design phase of a qualitative study should be "spent developing a systematic, well-developed, data collection protocol" (p. 1103). By collecting data through a variety of data sources, I aimed to strengthen this study through triangulation using individual interviews, online focus groups, and personal journaling. Data triangulation, the process of utilizing several different data collection techniques, was incorporated. Swafford (2014) noted that employing "various collection methods allows the researcher to critique and compare the data attained from different sources, therefore adding credibility to the study" (p. 91). Patton (2015) suggested combining "measurement, design, and analysis" (p. 317) components into a study as another means of triangulation. Following Patton's (2015) recommendation, I identified 11 participants using a strategy of purposeful sampling, with maximum variation in mind. Patton (2015) wrote that "purposefully picking a wide range of cases to get variation on dimensions of interest [achieves] two purposes: (a) to document diversity and (b) to identify important common patterns that are common across the diversity" (p. 267).

Following IRB approval, the research portion of the study began in earnest (see Appendix A). The participants, having been recognized through professional relationships, were contacted via email. The telephone numbers and email addresses for each participant were previously provided by each radiation therapist as part of my comprehensive

professional and personal network, thusly allowing permission for preliminary contact. I instigated initial exploratory email communication (see Appendix B) with 18 RTTs and it is from this pool that the final 11 participants were recognized. Participants, chosen by decision based on maximum variation and availability, were sent an introductory email detailing the study and received a follow-up phone call finalizing their opportunity to contribute to the project. Noting the sensitive nature of the study, the participants chose their own personal pseudonyms at this point; the confidential names were utilized throughout the duration of project.

Once the final roster of participants was determined and individual voluntary consent was obtained, I forwarded data links to the first step in the study—the quantitative surveys, Perceived Stress Scale (Cohen et al., 1983) and the Brief COPE (Carver, 1997). These data appraisal instruments were used to assess RTTs' perceived levels of stress and their abilities to cope. The surveys also provided an opportunity for private reflection prior to the personal interviews. Following the quantitative questionnaires, I scheduled a time for a personal interview with each of the participants. Each semi-structured interview, with open-ended questions, was planned for 45-60 minutes and was conducted at a place of convenience and comfort for the participants. The sessions were recorded for transcription, with back-up provided by dual recording devices, and I memoed my own experiences of the interviews, as well as kept detailed researcher notes. After the final individual interview was complete, the participants collaborated in an online focus group over a period of one week. Moore, McKee, and McLoughlin (2015) suggested that the focus group forum provided participants the "space . . . to discuss issues they deem significant, emphasizing the role of group dynamics in shaping the knowledge that is produced" (p. 18). The participants were asked to keep

personal journals for a period of three weeks following their interviews. Hayman, Wilkes, and Jackson (2012) noted that "a journal . . . blends personal reflections, accounts of events and descriptions of experiences" (p. 28). By using multiple methods of data collection, I could "corroborat[e] different sources to shed light on a theme or perspective" (Creswell, 2013, p. 251).

Olsen (2004) posited that methodological pluralism is that which "enables the researcher to use different techniques to get access to different facets of the same social phenomenon" (p.6). By collecting data through both quantitative and qualitative means, the end results suggest that "multi-strategy research provides such a wealth of data that researchers discover uses of the ensuing findings that . . . had not [been] expected" (Bryman, 2006, p. 110). The use of quantitative surveys or questionnaires prior to qualitative data collection methods has been established for the purposes of gathering demographic information or measuring research criteria standards (Egestad, 2013, Hurt, 2014).

In the first stage of the research process, all participants completed the Perceived Stress Scale (Cohen et al., 1983) (see Appendix E). The scale was designed to measure the "degree to which situations in one's life are appraised as stressful" (Cohen et al., 1983, p. 385). The authors noted that this instrument is not for diagnostic purposes; it is hoped that the use of this tool will provide constructive data and offer a chance for the participants to reflect upon those things which they perceive as stressful. The measurement tool has been verified as reliable by earlier studies, in which the "coefficient alpha reliability for the PSS was .84, .85, and .86 in each of the three samples" (Cohen et al., 1983, p. 390).

The researcher provided permission for use of the scale by the following statement posted on the website: "Permission for use of scales is not necessary when use is for

nonprofit academic research or nonprofit educational purposes" (Cohen et al., n.d., para 2).

In addition to the Perceived Stress Scale, all participants were asked to complete the Brief COPE Inventory (Carver, 1997) (see Appendix F). The abbreviated version was created from the original COPE Inventory (Carver, Scheier, Weintraub, 1989) which is a multidimensional coping inventory designed to assess the different ways in which people respond to stress. The instrument incorporates 13 conceptually distinct theoretical and functional measurement scales, with internal consistencies determined by Cronbach's alpha reliability coefficients. The researchers reported "in general, these values were acceptably high, with only one falling below .6" (Carver et al., 1989, p. 271). This survey provided participants a chance to assess their own coping skills and strategies prior to beginning the research project. The results of the survey contributed valuable data pertaining to the RTTs engaged in the study.

The authors provided permission for the Brief COPE Inventory by the following statement posted on the website: "You are welcome to use all scales of the Brief COPE, or to choose selected scales for use. Feel free as well to adapt the language for whatever time scale you are interested in" (Carver, 2007, para. 3).

Both quantitative measurement tools were administered electronically through a secure online survey instrument (i.e. Google Forms). Participants received an invitational email which contained the survey link and directions to use their pseudonyms throughout the survey process. The results were evaluated via the accompanying commercial analytical software and were utilized to supplement the development of summaries in the final interpretation. As anticipated, the results of the Perceived Stress Scale and the Brief COPE alluded to all four of the research questions, in that every question asks about RTTs' personal

experiences with job-related stress and/or their abilities to cope and remain motivated despite that stress.

Interviews

Participant interviews were "loosely directed by a list of potential questions or themes for exploration" (Adams & Smith, 2003, p. 195). The semi-structured interviews were regarded as an "active process in which both parties, the interviewer and the participant, will take part in the co-construction of the content . . ." (Schwandt, 2015, p. 170). Balls (2009) described a phenomenological researcher's role in interviewing as that of a "facilitator to help respondents talk freely" (p. 31). The participants were given the chance to dynamically shape their stories and experiences and I was keenly aware that my behavior and biases did not cloud the interview, but rather added to the meaning of the event (Schwandt, 2015).

Jacob and Furgerson (2012) wrote "as qualitative researchers interested in the ethnographic and oral history traditions of the field, we collect people's life stories to study various aspects of the human experience and the primary way we gather stories is by interviewing people" (p. 1). Using "big, expansive questions" and an "interview protocol," Jacob and Furgerson (2012) suggested that interviews remain semi-structured as to not forget critical details, but to encourage openness so that the "materialization of unexpected data from your participants . . . allows the participant to take your question in several directions" (p. 4). Elliott (2005) recounted that "qualitative researchers are in general agreement that questions in interviews should be framed using everyday rather than sociological language" (p. 29); this recommendation was noted as I developed the interview questions for this study.

Participant interviews were conducted at places of participant comfort and convenience, with varying time limits of 45-60 minutes. The semi-structured interviews consisted of questions

that had been piloted with a content expert to test the question material, format, and layout. The exchanges were recorded on two separate recording devices, with one serving as a duplicate to the other. The recorded interviews were later transcribed by a contracted professional transcriptionist. I took notes as indicated during the interview, while remaining cognizant of the participant and engaged in the ongoing, mutual communicative process. "Throughout the interview process, vocal intonations, physical expressions, and gestures that might not be audible in the recorded interview are included in field notes and later incorporated into the transcribed narrative texts" (Crist & Tanner, 2013, p. 203). I practiced memoing by composing my thoughts and experiences immediately following each interview. In turn, these ideas became an additional source of data for the study (Schwandt, 2015).

Examples of open-ended interview questions are as follows (see Appendix G).

1. Tell me about the times or situations in your work experiences as a radiation therapist that have been sources of stress.
2. How would you describe the experiences which led to these times or situations of stress in your work as a radiation therapist?
3. What examples can you provide of things that you did during or after these situations to attempt to alleviate the stressful feelings?
4. How can you elaborate on your efforts to reduce stress or utilize coping mechanisms to deal with job related stressors?
5. Tell me about ways that the stressful experiences have affected or influenced you or your job performance?
6. Can you describe particular methods that you think would be most beneficial for your overall stress reduction in the workplace?

7. How would you explain your motivation to keep going during times of stress?
8. Please feel free to add anything else about this topic that you think would be valuable for this study.

Interview Questions One and Two were created to elicit rich textural data regarding the participants' experiences with job-related stress. Previous studies have documented that RTTs report high levels of occupational stressors due to ineffectual organizational and administrative support, patient-care challenges, and mental exhaustion (Gillies et al., 2014; Jasperse et al., 2014). In a 2013 Canadian study, Koo et al., reported that occupational stressors had a "significant impact on economic loss and health damage . . . [including] increased absenteeism and occupational injury" (p. 15). By data and interpretations gained through the first two questions, my hope was to build a deeper understanding of the stressors under which RTTs work.

The purposes of interview Questions Three and Four were to deeply explore the coping strategies of RTTs. Defined by Folkman and Lazarus (1985, as cited by Carver, Scheier, & Weintraub, 1989) as problem-focused coping and emotion-focused coping, the researchers explained that coping occurs in two general patterns. Problem-focused coping is "aimed at problem solving or doing something to alter the source of stress, . . . [while] emotion-focused coping is aimed at reducing or managing the emotional distress that is associated with. . . the situation" (Carver et al., 1989, p. 267). French (2004) noted that the most frequently used coping mechanisms by RTTs were "social support; talking about it, escape avoidance; distraction techniques with home life, television, socialising [sic] and confrontive coping such as actively saying 'no'" (p. 21). Through theory and previous literature, my hope was to illustrate and espouse RTTs' strategies of coping with occupational stressors. Supporting the Coping Theory of Folkman and Lazarus (1980) and Vygotsky's (1978) Social Constructivism Theory, while also

substantiating Research Question Three; Interview Questions Three and Four specifically address the nature of RTTs' coping mechanisms.

Question Five asks explicitly about job performance and the effects of stressors on the participants' abilities to complete their required duties; the question also speaks to the general well-being of RTTs. Most of the literature to date reports that RTTs are burned-out and emotionally-exhausted, while suffering from depersonalization and occupational stress (Akroyd & Adams, 2000; Akroyd et al., 2002a; Diggens & Chesson, 2014; French, 2004; Jasperse et al., 2014; Probst et al., 2012). The 2012 study by Probst et al. noted that due to a shortage in the workforce of U.K. RTTs, extended working hours were instituted to meet patient care demands without any increase in staffing. "The potential pressure this puts on staff delivering the service is unknown as is the impact on the retention of staff" (Probst, et al., 2012, p. e760). Occupational demands such as these may eventually take a toll on RTTs and the profession, especially when the workforce endures the stressors of burnout. It is essential that RTTs' general well-being be taken into consideration. Interview Question Five offered valuable information regarding Research Questions One and Two, as to how RTTs describe the effects of stress on their job performances and their overall well-being. This Question offered reference to both Noddings' Care Theory (2012) and Gagne and Deci Self-determination Theory and Work Motivation (2005).

Research has shown organizational efforts to combat work-related stress in RTTs to be largely disappointing. Gillies et al. (2014) reported that 58% of respondents disagreed with the statement "my work organization helps RTTs [radiation therapists] cope with stressful events associated with their work" (p. 390). Poulsen et al. (2014) suggested that there may not be a "universally successful coping strategy for all stressors, but that different coping responses might

work more or less effectively for different reasons" (p. 230). Individual interventions, focusing on stress reduction and the promotion of a healthy lifestyle through relaxation and awareness, have shown effectiveness in improving personal coping skills (Akroyd, et al., 2002a). Le Blanc et al. (2007) have shown that smaller team based approaches, such as peer-support groups, can be utilized successfully with oncology workers (oncologists, oncology nurses, and RTTs) in the Netherlands. Interview Questions Six aimed to search for RTTs' own ideas as to how they believe to best alleviate and cope with job-related stressors. This question also supplemented data collection strategies for Research Question Three and offered indication to Folkman and Lazarus' (1980) Coping Theory and Vygotsky's (1978) Social Constructivism Theory.

Gillies et al. (2014) stated that "despite many psychological stressors, Canadian RTTs [radiation therapists] display amazing resiliency" (p. 391). In a 2015 study, Savoy and Wood reported that the majority (86.2%) of RTTs in Louisiana "enjoyed the everyday duties and responsibilities of their jobs" (p. 17). RTTs, in choosing to help people, decide to pursue and sustain career in radiation therapy; this caring culture, for patients and for co-workers, has been found to be a part of the radiation therapist's professional identity (Lawrence et al., 2011). Question Seven was designed to provide U.S. RTTs the opportunity to describe what motivates them in the face of adversity and documented stressors. Additionally, Interview Question Seven directly related to Research Question Four and to Gagne and Deci's (2005) Self-determination Theory and Work Motivation in that it targets the motivation for career inspiration and continuation of RTTs.

Question Eight offered a chance for the participants to add anything to the topic and to the interview that they wish. This is their story to tell; I authored the script with their own words

and personal feelings. I sought to honor their professional work and to validate their experiences with job-related stressors and related coping mechanisms.

Prior to the actual interviews, I reviewed the interview questions with an expert and colleague in the field of radiation therapy who was asked to evaluate and validate the questions for appropriate subject matter and for data collection measures. After the interview questions had been finalized with the dissertation chair and the research consultant, I applied for Institutional Review Board (IRB) approval, following procedures as outlined by Liberty University. Once IRB approval had been granted, I conduct a small pilot interview with a radiation therapist participant who was not included in the final sample. This helped me to gauge the clarity of the questions for wording and for ease of interview flow.

At the conclusion of each actual research study interview, I referred to the pre-interview questions that I had prepared and to any notes that I had taken during the interview. By looking back over the information, I was reminded of any other questions that I would like to ask or I was prompted to provide my contact information; this was also the time that I validated contact information from the participant. Additionally, I informed the interviewee that there may be a follow-up session if there was a need for me to "clarify information, ask additional questions, or perform member checking or soliciting feedback from one's respondents on the inquirer's findings" (Jacob & Furgerson, 2012, p. 3). Crist and Tanner (2013) suggested "repeated" interviews or meetings with participants to "gain deeper insights through the informant's and the investigator's co-creation . . ." of the final interpretive narrative (p. 203).

Focus Groups

The second method of data collection comprised online focus groups. Murgado-Armenteros, Torres-Ruiz, and Vega-Zamora (2012) found that through the focus group "interaction, the underlying ideas of each individual flow together, giving rise to a group discourse that reflects the ideas shared by the members of the group" (p. 76). The focus group was created to act as a motivating environment in which individuals worked and collaborated, doing so in such a way that the approach encouraged members to participate (Murgado-Armenteros, et al., 2012). Abrams, Zongyuam, Song, and Galindo-Gonzalez et al. (2015) suggested that the online communication component associated with focus groups allowed some participants a "more comfortable space to express their opinions" (p. 83).

Abrams et al. (2015) discussed advantages of online focus groups and found that this medium provided greater opportunity for equal participation by all members (less chance of the conversation being dominated by one or a few members) and more robust participation by members of diversity, plus the added benefit of not having to be in one central physical location. The results of this same study pointed to the role of the moderator in being both an advantage and a disadvantage, noting that there was less control over discussion topics when compared to face-to-face formats. The authors determined that the participants in an online environment adapted to the absence and substituted for the role of the moderator.

Williams, Clausen, Robertson, Peacock, and McPherson (2012) have utilized asynchronous online focus groups and phenomenological methodology in their studies to better explore the everyday experiences of participants in health and social sciences settings. The authors noted that body language and nonverbal cues are of unique importance to qualitative researchers; however, they found that "written language (particularly in an asynchronous

context) has the capacity to allow respondents to give accounts of experiences that are rich with emotive detail, and this can cause strong emotional reactions in the reader" (p. 371). Abrams et al. (2015) contended that in "online text-only focus groups, participants tended to express themselves more" (p. 83).

The participants in this research study joined an asynchronous online focus group (i.e. Google Groups) for one week following the final individual interview. The group opened with a moderator prepared introduction, with discussion cues, (see Appendix H) and remained active for a period of seven days. The participants posted comments on the focus group site using the pseudonyms that were chosen at the beginning of the project so that confidentiality was protected. The RTTs were encouraged to join in the conversation as often as they wished, but were asked to respond to other members a minimum of one time during the week. "Asynchronicity is particularly advantageous when researching sensitive issues because it allows the participants to choose those aspects of their experience that they are comfortable disclosing" (Williams et al, 2012, p. 374). As the moderator of the group, I 'checked-in' periodically to ensure an interactive discussion based on the research questions [was taking place] by "maintaining a comfortable and conducive environment" (Williams et al., 2012, p. 375). Participation in the focus group was not as robust as was hoped. Some participants expressed unfamiliarity with discussion board formats which may have been a factor in the lower response rate; however, those RTTs who did share information were free with their thoughts and provided valuable data to the project. Sharing in an asynchronous online focus group, which facilitates collaborative discourse on stress and coping, should allude to all four research questions: (a) How do RTTs describe job-related stress? (b) What factors do participants identify as contributing to job related stress? (c) What mechanisms do participants employ to cope with job

stress? and (d) How do radiation therapists find motivation to continue in their chosen field in light of job related stress?

Journaling

Journaling was incorporated in the data collection and analysis process. Billings and Kowalski (2006) wrote that "journals are written documents used to stimulate . . . awareness of [one's] beliefs, values, and practices, as well as those of their patients and colleagues" (p. 104). Journaling, as a research practice, serves to "facilitate the development of research praxis" and "provides a forum for . . . reflect[ion] upon the immediate research process in relation to prior experiences and knowledge" (Banks-Wallace, 2008, p. 24). It has been shown that journaling "as a method of data collection" can be combined with other qualitative data collection procedures as to "enrich information gathered from interviews" (Hayman et al., 2012, p. 28). The researchers concluded their study with six strategies to increase engagement and participation in journaling. These ideas included:

- Coaching by offering guidance and clarity.
- Limiting the journaling period by setting an end date.
- Ensuring follow-up contact in case your participants need you.
- Promoting comfort; your participants may be anxious about opening up.
- Increasing safety, especially in an online environment.
- Promoting clarity of expectations; ensure that your participants stay on track.

(Hayman et al., 2012, p. 31)

Participants in this study were asked to incorporate journaling into their own reflective processes. I encouraged them to record events, perceptions, characteristics, and emotions that describe their experiences as RTTs, detailing those situations which cause stress and how they

went about coping (Adams & Smith, 2003). Hayman et al. (2012) suggested providing "explicit directions" (p. 29) such as asking focused questions and suggesting small, frequent journal entries; these guidelines have shown to increase participation in the journaling experience. Participants recorded their journal entries in a secure electronic application (i.e. Google Docs); this format ensured the safety and anonymity of the participants.

Following suggestions of previous researchers, I provided specific journaling prompts for the RTTs including: (see Appendix I)

- Can you describe the best part of your work week?
- How would you explain the hardest part of your work week?
- How would you relate to particular instance that led to difficult stress during the past week?
- Can you demonstrate how you dealt with or coped with the stressful situation that occurred?
- Who would you describe as being your most trusted source of support during stressful work situations and how does that person(s) fill that role for you?
- How do you feel that your supervisor or work administration helps you in managing or coping with work place stressors?
- Where or how do you believe that you find the strength and motivation to continue to work even though you are faced with stressors?

Participants were reminded that they did not have to address each question; they were to speak to the situations or emotions that had affected them in some way and/or that they believed impacted their workplace experiences or well-being. Personal journaling became to be an outlet of sorts for many of the participants; they wrote privately of issues that they did not have the

confidence to speak of in their interviews. There was a very vigorous response to the journaling aspect of this project, with some participants journaling excessively and extensively.

Journaling was introduced following the online focus group forum. The participants were asked to journal at least once weekly for a period of three weeks following the one-week online focus group interaction. Journaling was used as a follow-up to support participants in "ascrib[ing] meaning [to], and reflect[ing] on outcomes and consequences" (Billings & Kowalski, 2006, p. 104). Engaging in an activity, such as personal journaling, which encourages reflection on stress and coping helped to address all four research questions: (a) How do RTTs describe job-related stress? (b) What factors do participants identify as contributing to job related stress? (c) What mechanisms do participants employ to cope with job stress? and (d) How do RTTs find motivation to continue in their chosen field in light of job related stress?

Data Analysis

For this study, I employed a phenomenological assumption, emphasizing a hermeneutic interpretive approach. Patton (2015) recalled that "hermeneutics focuses on interpreting something of interest, traditionally a text or work of art" (p. 577); however, researchers in qualitative inquiry have come to utilize this perspective to interpret interviews and observations. "The hermeneutic viewpoint involves the belief that there is no such thing as a pure description; every communicative act involves interpretation, and therefore, when a social researcher writes about an experience, this is always an act of reconstruction" (Seale, as cited by Patton, 2015, p. 137). Following this philosophy, I assimilated interpretations of the participants' descriptions of the phenomenon of job-related stressors. Moustakas (1994) suggested that "interpretation unmasks what is hidden behind the objective phenomena" (p. 10). Lopez and Willis (2004) wrote that it is the "interpretation of the narrative provided by participants in relation to various

contexts that is foundational" (p. 729). I was aware that I would be constructing 'reality' from the interpretations of the participants' versions of their own stories.

Kneller (as cited by Patton, 2015) provided principles for hermeneutic inquiry, noting that these standards could serve as a guide for interpretation of qualitative data. Those principles are as follows:

1. Understanding a human act or product, and hence all learning, is like interpreting a text.
2. All interpretation occurs within a tradition.
3. Interpretation involves opening myself to a text (or any qualitative data) and questioning it.
4. I must interpret a text (or data of any kind) in the light of my situation. (p. 138)

Crist and Tanner (2003, citing Packer & Addison, 1989) suggested that the "evaluation of hermeneutic interpretive phenomenology research 'considers whether one's concern has been answered'" (p. 205). Throughout the interpretive process in their study, Crist and Tanner (2003) employed an "interpretive team" for the purpose of "debate, brainstorming, and discussion" (p. 203). I engaged the radiological sciences professionals on my committee, the content experts, to guide me as I reviewed data for interpretation. The philosophy of hermeneutic interpretive phenomenology acknowledges peoples' sense and significance of being in the world (Crist & Tanner, 2003). It was the responsibility of the interpretive team, the committee members and me, to recognize any assumptions that we brought into the interpretations of the participants' interviews, online focus group messages, journal entries, or transcriptions. However, unlike other phenomenological methodologies, hermeneutic interpretive phenomenology does not require that I bracket myself from the data collection or

analysis phases (Crist & Tanner, 2003). Kafle (2011) noted the differences from traditional phenomenology in that the hermeuntical researchers maintain personal opinions while focusing on interpretive narration in the final descriptions. "Recognizing assumptions made by the interpretive team has been described as the forward arc of the 'hermeneutic circle'; and the interpretation as the return arc—the 'movement of uncovering the circle'" (Packer & Addison, as cited by Crist & Tanner, 2003, p. 203). Kafle (2011) wrote that to "generate the best ever interpretation of a phenomenon it [is] propose[d] to use the hermeneutic cycle" (p. 187). Crist and Tanner (2003) recommended repeated interviews and observations to better gain more robust insights into the participants' histories, to expand upon specific issues that may have arisen in previous sessions, and to allow opportunities for reflection. I had the chance for follow-up communication with most of the participants, either face to face or via telephone. These encounters provided clarification of details or added depth to the participants lived experiences. In this study, the online focus group sessions and personal journaling exercises added to the body of data by allowing for rich expression in the participants' own words.

The five phases of interpretation, as outlined by Crist and Tanner (2003), began with precise transcription of the interviews, online focus groups messages, and journal entries. Once the transcripts were compared to their original forms to measure integrity, review and discussion of the transcripts began to take place. During discussions with the interpretive team, evaluations of interview transcriptions, online focus group messages, and participants' journal entries. We looked for any items that required further exploration, while simultaneously identifying evolving items of inquiry and interpretation. I worked through Phase Two, in which the summaries of the transcripts were written and "interpretations begin

to be formed" (Crist & Tanner, 2003, p. 204). I developed one page summaries of each participant's story, which were continuously referenced and studied throughout the project. Through the frequent revisions to the summaries developed in this stage, "central concerns" from the participants' stories led to emergent interpretations (Crist & Tanner, 2003, p. 204). Also, noted in this stage were 'exemplars' and/or 'paradigm cases'. Crist and Tanner (2003) defined exemplars as "salient excerpts that characterize specific common themes or meanings across informants" (p. 204). A paradigm case was one in which the researchers continuously returned due to the compelling nature of the participant's story (Crist & Tanner, 2003). During Phase Three, I became aware of participants' shared meanings by continued focus on the written summaries; patterns and connections were identified. Crist and Tanner (2003) noted that as the participants' "central concerns become clear, the investigator and team members observed shared meanings . . . [and] the written interpretive summary shows connections between meanings found within and across stories, or constitutive patterns" (p. 204). I completed Stage Four in which I developed "in-depth interpretations of excerpts, central concern summaries, and interpretive summaries" (Crist & Tanner, 2003, p. 204). A master summary chart of themes and categories was developed and distributed amongst the team members for interpretation and discussion. Detail for this stage was provided by interpretive notes and summaries. Lastly, in Stage Five, the final report of the interpretations of the data was compiled. Crist and Tanner (2003) suggested that this concluding stage of the interpretation is "iterative" and that it is "developed simultaneously with the "investigator's interviews, observations, and writing" (p. 205). Notes of the researcher's progress throughout the phases was documented as a portion of the audit trail; the details also proved useful in the final description (Crist & Tanner, 2003). Referring to hermeneutic interpretive

phenomenology as a circular method and not a linear one, Crist and Tanner (2003) advised that "within the circular process, narratives are examined simultaneously with the emerging interpretation, never losing sight of each informant's particular story and context" (p. 203).

Coding

The process of coding is one in which the researcher goes about ". . . aggregating the text or visual data into small categories of information, seeking evidence for the code . . . and then assigning a label to the code" (Creswell, 2013, p. 184). Coding attempts to "categorize, synthesize, explain, and formulate patterns and ideas from this collection of data" (Swafford, 2014, p. 91). Inquirers employ various analytical approaches whereby they sort and organize their data only to rearrange it for reinterpretation (Schwandt, 2015). Some researchers choose interpretation over analysis, in that they "emphasize that interpretation is an art of understanding (including re-presenting one's understanding in writing) that is not fully definable in terms of procedure" (Schwandt, 2015, p. 58). Crist and Tanner's (2003) method utilizes a refining process, like coding, in which interpretations are identified through "frequent written revisions" (p. 204).

Ranney et al. (2015) suggested that phenomenology is an inductive approach which allows for "codes, themes, and ideas to arise from the narrative; however, it has a starting point or beginning perspective" (p. 1108). The authors noted that inductive methods require repeated reading of the participants' transcripts and allowing for reflection prior to developing codes. As summaries of the interview transcripts were written, I searched for emerging codes in a "chunking" process; by this procedure, large passages were reviewed in context and numerous codes were identified (Ranney et al., 2015, p. 1109). Due to their smaller word counts and data sizes, the online focus group messages and journal entries were

analyzed using a split passage identification method. This process allowed for the participants' information to be divided into smaller sections and to be assigned "only a few or single codes" (Ranney et al., 2015, p. 1109). Split coding may involve line by line or word by word analysis; whereas 'chunking' is a broader method which will allow for the investigation of the participants' full interview transcript summaries. In order to fulfill the coding process, I led the research team as we (a) developed the data codes; (b) iteratively expanded upon and refined the coding structure; and (c) recorded detailed notes about the data analyzed during the coding procedure (Ranney et al., 2015).

To manage the massive amounts of data, Jones (2010a) suggested the use of colored highlighter pens for this process. I utilized a hands-on, visual approach to coding, as opposed to available computer software management; I felt that it was more beneficial to the study and to the participants that I immerse myself in the data. It was through this step of coding or summarizing that the researcher took the words of the participants and assembled descriptions, themes, summaries, and interpretations of lived experiences. It was at this stage the master summary chart of themes was developed; this chart provided the guiding template for narrative development.

The three data collection methods, having been analyzed, ultimately produced themes in such a manner noting that qualitative data is designed to be understood in context. Ranney et al. (2015) suggested that the method of developing themes consists of "identifying common threads between the pieces of the data, which have been artificially divided and categorized by codes" (p. 1109). During this process the investigative team reconsidered the codes, reviewed the participants' transcripts, and further illustrated or interpreted the themes found in the text (Ranney et al., 2015).

Significant Statements, Descriptions, and Interpretations

"By comparing data between coding categories, looking for differences in opinions between various types of participants, applying the researchers' own lived experiences and theoretical perspectives, and collating and refining themes in an iterative manner, a valid and reliable analysis can be achieved" (Ranney et al., 2015, p. 1109). Crist and Tanner (2003) referred to thematic development in terms of 'exemplars' and paradigm stories. Exemplars refer to relevant passages that are common across themes among the participants. Whereas, paradigm cases signify more vibrant stories which compel the research team to continuously reexamine them from different perspectives. These collaborative statements were recognized as directly pertaining to the phenomenon, job-related stressors in RTTs. "Results [will be] integrated into a thorough exhaustive description of the phenomenon under study" (French, 2004, p. 17). The composite description, or *essence,* of the phenomenon, job-related stressors, will be developed (Creswell, 2013). Creswell (2013) described this composite description in the data analysis process as the "passage [that] focuses on the common experiences of the participants" (p. 82).

"Central concerns, shared meanings, and final interpretations" are the terms given to the data analysis descriptions by Crist and Tanner (2003, p. 204). Theirs was an approach detailing the circular path I took from the first interview through the realization of the final interpretation of the phenomenon. Crist and Tanner (2003) referred to the method as "iterative," yet suggested to qualitative researchers that "approaching the interpretive process as systematically as possible within a nonlinear methodology streamlines and clarifies interpretations of the study" (p. 205). By utilizing steps of inquiry and interpretation, I followed a phenomenological approach which Moustakas (1994) referred to as a "logical,

systematic, and coherent resource for carrying out the analysis and synthesis needed to arrive at essential descriptions of experience" (p. 47). Ultimately, a master chart of themes and categories was created from the summaries that had been written based on each participant's transcript. This systematic approach led to the final interpretive narrative.

Narrative

Balls (2009) reminded researchers that they hold the "responsibility to remain true to participants' words and meanings and to represent their experiences" (p. 33). Lopez and Willis (2004) suggested that "it is not the pure content of human subjectivity that is the focus of a hermeneutic inquiry but, rather, what the individual's narratives imply about what he or she experiences every day" (p. 729). Kafle (2011) called this interpretive narrative an "attempt to unveil the world as experienced by the [participants] through their life world stories" (p. 186). Converse (2012) noted that the goal of phenomenological writing is not simply to describe the lived experiences of the participants. Whereas, van Manen (1990) added that the "aim is to construct an animating, evocative description (text) of human actions, behaviors, intentions, and experiences as we meet them in the lifeworld" (p. 19). I was reminded that, "the voices of the participants [should be] presented in abundance—deliberately so—in [this] study" (Sites, Garzon, Milacci, & Boothe., 2009, p. 31). Consequently, I developed and presented a deep, rich, and accurate narrative of the essence of the phenomenon, job-related stressors, in discussions and tables (Creswell, 2013).

Trustworthiness

Trustworthiness in qualitative research demonstrates the study's validity and reliability. Overgaard and Zahavi (2009) credited Schutz (1967) as they noted that "social sciences must satisfy the same sorts of requirements as other empirical sciences: scientific results must be

controllable and reproducible by other scientists working in the field, and scientific theories must be precise, consistent, and so on" (p. 100). Although not measurable through numerical means, researchers have defined four criteria on which to determine a qualitative project's soundness. Shenton, in a 2004 analysis, referred to Guba (1981) as he addressed the four constructs of qualitative trustworthiness: (a) credibility, (b) transferability, (c) dependability, (d) confirmability. I ensured trustworthiness in this study as I addressed each of the four criteria.

Credibility

Peer review was used to establish credibility, in that a faculty advisor or professional colleague reviewed the research study at regular intervals to engage and encourage me regarding "methods, meanings, and interpretations" (Creswell, 2013, p. 251). I chose to "recount ethical or political dilemmas encountered in the field and solicit colleagues' reactions or simply have colleagues serve as good listeners" (Schwandt, 2015, p. 230). Shenton (2004) added that the "fresh perspective that such individuals may be able to bring may allow them to challenge assumptions made by the investigator, whose closeness to the project frequently inhibits his or her ability to view it with real detachment" (p. 67).

Additionally, I solicited feedback from participants and they were given the opportunity to review the transcripts of their interviews for accuracy. Lincoln and Guba (1985) contended that member checking is "the most critical technique for establishing credibility" (p. 314). This important check provided participants the chance to verify that their thoughts and words are precisely conveyed into the written manuscript. Ng and White (2005) confirmed that the member checking technique was an important measure which could assure credibility and that it may prove beneficial to invite "several participants to review research materials such as the interview transcripts so as to verify the researcher's interpretation" (p. 224). Where appropriate,

I asked participants "if they can offer reasons for particular patterns" that I observed during the data collection or interpretation phases (Shenton, 2004, p. 68).

Transferability

Transferability, or external validity, refers to the extent that the results of one study can be applied to an external situation or another population (Shenton, 2004). Shenton (2004) noted that since the results of most qualitative studies are small and confined to one population, it is not possible to generalize the findings to different populations or settings. Additionally, Shenton (2004) reminded researchers of the importance of a "sufficient thick description of the phenomenon under investigation" to ensure "readers [have a] proper understanding of it, thereby enabling them to compare the instances of the phenomenon described in the research report with those that they have seen emerge in their situations" (p. 70).

An audit trail aims to confirm transferability of a qualitative study. I developed a comprehensive guide which details the research design and its implementation, along with the operational detail of data gathering. Jones (2010b) and Shenton (2004) noted that an audit trail provides the information necessary to prove the study reliable if it were to be repeated, in the same manner, under the same circumstances. As was suggested by Lopez and Willis (2004), I described that the theoretical framework used for data interpretation and analysis did not create bias in the words of the participants. I explained the procedures used throughout the course of the framework, noting the systematic approach to the hermeneutic interpretive phenomenological study.

Shenton (2004) provided the following guidelines to better help explain the boundaries and procedures of the research study; these should be referenced when considering transference:

1. The number of organisations [sic] taking part in the study and where they are based;

2. Any restrictions in the type of people who contributed data;
3. The number of participants involved in the fieldwork;
4. The data collection methods that were employed;
5. The number and length of the data collection sessions;
6. The time period over which the data was collected. (Shenton, 2004, p. 70)

Dependability

Ng and White (2005) indicated that dependability in a research study was that of "stability of data similar to reliability of quantitative research" (p. 218). The issue of dependability in a qualitative study can be addressed if the research process is reported in detail, thereby enabling future researchers or readers to gain a full understanding of the practices that were followed (Shenton, 2004). I clearly reported the research design and its application; I detailed the operational process of data collection and wrote a comprehensive interpretation of the participants' stories. I reflected on the "effectiveness of the process of inquiry undertaken" (Shenton, 2004, p. 72). Shenton (2004) provided three sections to be included in a research study which will better develop a more "thorough understanding of the methods and their effectiveness"

1. The research design and its implementation;
2. The operational detail of data gathering; and
3. Reflective appraisal of the project. (pp. 71-72)

Confirmability

To establish confirmability, or objectivity of data, I ensured that the findings were a product of the participants' experiences. I revealed researcher bias and recorded my thoughts and ideas as part of the study. "Bias, in the sense of undesirable or hidden skewness, is thus

accounted for, though not eliminated" (Malterud, 2001, p. 484). Lopez and Willis (2004) established that the interpretive approach found in hermeneutic phenomenology does not negate the use of a theoretical or conceptual framework, as other descriptive approaches might; however, if the researcher chooses to utilize an orienting framework, the study should "provide evidence that it does not have a biasing effect on the narratives of the participants" (p. 730). These expressions were found in my researcher notes and memos and became part of the final report.

Triangulation

Triangulation, to further ensure credibility, involved the use of multiple methods of data collection and analysis including individual participant interviews, online focus groups, and personal journaling, along with researcher notes and memos. Additionally, I incorporated triangulation by encompassing a "wide range of informants" and by including participants from several different clinical organizations as to "reduce the effect on the study of particular local factors peculiar to one institution" (Shenton, 2004, p. 66). Malterud (2001) regarded that the "aim of triangulation is to increase the understanding of complex phenomena, not criteria-based validation, in which agreement among different sources confirms validity" (p. 487).

Reflective Appraisal

Malterud noted in a 2001 series that "during all steps of the research process, the effect of the researcher should be assessed, and, later on, shared" (p. 484). A thorough review of my notes and memos, which I kept during the research development, revealed my thoughts and expressions, and indicated any potential biases or preferences. A notable documentation of these effects was presented in the final research study as the "frame of discussions of limitations and strengths of the study, and transferability of findings" (Malterud, 2001, p. 484).

The process of reflexivity begins by identifying those things that I brought into the project: beliefs about how things are, what is to be investigated, motivation and qualifications for this study, and perspectives and theoretical foundations related to this interest (Malterud, 2001). As part of a thorough reflective appraisal, I looked to engage the explanatory process while taking care not to "confuse knowledge intuitively present in advance, embedded in preconceptions, with knowledge emerging from inquiry of systematically obtained material" (Malterud, 2001, p. 484). Moustakas (1994) concluded that "things become clearer as they are considered again and again . . . illusion is undone through correction, through approaching something from a different vantage point, or with a different sense or meaning" (p. 93).

Schutz (1967) in describing the act of reflection while living life immersed in a continuum of experiential phases that flow in and out of one another, asserted:

> "By my act of reflection, I turn my attention to my living experience, I am no longer taking up my position within the pure stream of duration, I am no longer simply living within the flow. The experiences are apprehended, distinguished, brought into relief, marked out from one another; the experiences which were constituted as phases within the flow of duration now become objects of attention as constituted experiences . . . *For the Act of attention*—and this is of major importance for the study of meaning—presupposes an elapsed, passed-away experience—in short, one that is already in the past, regardless of whether the attention in question is reflective or reproductive." (Schutz, 1967, p. 51)

Ethical Considerations

A potential ethical issue was that of perceived stress if the RTTs feel that they will be identified by their interview statements. I carefully utilized fictitious names, pseudonyms, or

aliases and build composite stories to protect the identity of the participants and the associated sites (Creswell, 2013). I stored all data and information in locked cabinets and offices to ensure privacy protection. All electronic information was kept in password protected files on secure computers. I ensured participants' privacy and safety using secure online surveys and journaling tools.

I did not begin data collection in the research project until I received Liberty University IRB approval and informed consent from the participants. I did inform the participants that they could voluntarily withdraw from the study at any time. I did disclose any conflicts of interest that I had with the study or with any participants.

Summary

The qualitative phenomenological study looking into the job-related stressors of RTTs employed various data collection methods to access information from the 11 participants selected for this project. The participants were chosen through purposeful sampling, by a technique of maximum variation to best achieve a greater diversity of data. The lived experiences of the RTTs were conveyed through quantitative instruments which measure levels of stress and abilities to cope, personal interviews, and participant journaling and researcher notes and memos. The data analysis procedures followed a hermeneutic interpretive approach as utilized by Crist and Tanner (2003). The verbatim transcripts were written into summaries, which were reviewed and reflected upon by my committee members and me. Through the interpretive process, patterns or themes were developed, and a final interpretation were composed. The narrative contained a reflective appraisal of the project. Trustworthiness was established through triangulation, peer review, member checks, an audit trail, and my reflection of the research. Ethical considerations were taken into account. A final interpretation of RTTs'

lived experiences of job-related stressors and associated coping mechanisms was thoughtfully and carefully portrayed through their own words and descriptions.

CHAPTER FOUR: FINDINGS

Overview

Data findings, having been collected and analyzed, are discussed in Chapter Four. Initially, a descriptive chart is provided to illustrate a summary of pseudonyms and locations for each participant. Participant introductions contain brief histories noting the radiation therapists' (RTTs) number of years in the profession, educational levels, and motivations for entering and/or remaining in the field of radiation therapy. The data results are presented utilizing extensive narratives and illustrative tables. Emerging themes and notable participant stories have been identified, while maintaining confidentiality. Each research question is addressed, making generous note of the related themes throughout the participants' accounts. Additionally, the purpose statement is revisited to allow for reflection.

The purpose of this phenomenological study was to describe occupational stressors and related coping mechanisms of RTTs at select cancer treatment centers. The perception of RTTs' occupational stressors was defined as those experiences in which the "demands of the situation exceeds the person[s'] resources and some type of harm or loss is anticipated" (Poulsen et. al., 2014, p. 225). French (2004) cited Patrick (1981) in acknowledging coping as the "ability to draw on the emotional, physical and social resources that allow one to avoid the adverse impact of stress" (p. 14). The foundational theory which guided this research study was Vygotsky's (1980) Social Constructivism Theory in that I chose to explore the experiences of RTTs and how they go about learning to cope with perceived occupational stressors.

Participants

Data was collected from five different operational cancer centers in Central Alabama and Eastern and Southeastern Tennessee. Eleven working RTTs participated in the study,

representing centers Believe, Dream, Faith, Hope, and Promise (pseudonyms). Three participants were recruited from the Believe cancer center, three from the Dream cancer center, two from the Faith facility, one worked at Hope cancer center, and two were from the Promise cancer center.

Barney, Nolan, and Sarah (pseudonyms) are employed at the Believe cancer center located in Central Alabama. Leia, Lila Jane, and Quinn (pseudonyms) are working RTTs at the Dream cancer center in Eastern/Southeastern Tennessee. Dory and Tonya (pseudonyms) are from Faith cancer center, Priscilla (pseudonym) from the Hope facility, and Minnie and Malecon (pseudonyms) come from Promise cancer care center, all located throughout Eastern/Southeastern Tennessee. Note that all participants' names (alphabetized) and facility identification were referenced utilizing pseudonyms to maintain confidentiality (see Table 1).

Table 1

Participants with Region and Facility

Participants, Regions, and Facilities (Pseudonym Protected)

Participant	Region	Facility
Barney	Central Alabama	Believe
Dory	Eastern/Southeastern Tennessee	Faith
Leia	Eastern/Southeastern Tennessee	Dream
Lila Jane	Eastern/Southeastern Tennessee	Dream
Malecon	Eastern/Southeastern Tennessee	Promise
Minnie	Eastern/Southeastern Tennessee	Promise
Nolan	Central Alabama	Believe
Priscilla	Eastern/Southeastern Tennessee	Hope
Quinn	Eastern/Southeastern Tennessee	Dream
Sarah	Central Alabama	Believe
Tonya	Eastern/Southeastern Tennessee	Faith

Barney

Barney is a manager/lead radiation therapist in a large, contemporary cancer center that cares for a very busy patient load on a daily basis. He has been in the field for over 30 years and received his educational preparation in a hospital based radiation therapy program. Barney felt that his longevity in the profession produced twofold emotions. He expressed sadness for the patients that he will likely outlive, stating, “It is sad right now because there are six patients under the age of 40 who are terminally ill and I feel guilty because I am older than them.” Conversely, he noted that it was the interaction with patients which fueled his resolve. Barney

recounted, “I can look back over my career and I’ve seen lots of advances happen and growth. I realized that the patients, as well as my co-workers, are what keep me going.”

Dory

After graduating 20 years ago from a certificate based radiation therapy program, Dory completed her Bachelor’s degree from a private institution. She is currently employed as a staff radiation therapist at a busy, multi-modality center which treats a large patient volume. Dory recalled personal association with her career choice, conveying the desire to help people and to save patients’ lives.

> That you are helping somebody. That you are saving lives. No matter. Whatever they are doing, you are doing what you have to do to save them. I mean, I couldn’t save my [family member], but you know, it’s still one of those things that is always in my head. But there are other people that I have to save.

Leia

Leia recently graduated from a Bachelor’s degree completion program with plans to further her career in an administrative capacity; she completed her radiation therapy education 16 years ago and has been working in the field since that time. She has moved through the professional ranks and is now a senior radiation therapist in a very large, university-supported facility which utilizes state-of-art technologies and extensive staffing. Leia said that “every person plays an important role in completing and delivering the highest level of care possible.” She has learned over the course of her career that it takes professionals from many modalities and career levels to successfully achieve quality patient care.

Lila Jane

A relatively new graduate, Lila Jane completed radiation therapy school from a certificate

program in 2014. She became immediately employed at the same facility in which she performed the clinical component of her education. Lila Jane trained and is now working in a contemporary, research-oriented cancer care facility; the department is operational, at times, 14 hours per day. With a fresh perspective on her career in radiation therapy, Lila Jane added:

> I really want to do this, you know. So I think that has a lot to do with how you [perform] in school. How you get through it and do you want it bad enough? Don't do it for the money because I don't think that is worth it. I don't think the money is worth all of the stress that you go through.

Malecon

The second radiation therapist in the study acting in a managerial or lead therapist role, Malecon has been in his current position for 16 years and admits to "wear[ing] a bunch of different hats." He graduated from a Bachelor's level radiation therapy program 20 years ago and successfully pursued higher professional positions. He is employed at a small, outpatient facility which handles a moderate patient load; however, the patient service area is considerably large and demanding. Malecon enjoys a supportive atmosphere with his immediate co-workers. He recalled that he believes, "everyone is very supportive here . . . [and] [he] think[s] everyone is willing."

Minnie

Minnie said that she "love[s] the decision [she] made to become a therapist." She has been a radiation therapist for 13 years, following completion of her education in a certificate program; she is currently working towards her Bachelor's degree so that she can "further [her] career options." Minnie has been employed since graduation in a small-sized cancer care center which serves a sizeable rural population. She noted that the therapists in the facility have

worked together for many years and have formed cooperative, helpful relationships.

Nolan

Nolan has been a registered radiation therapist for 13 years, having successfully graduated from a certificate educational program. He is employed in the same facility in which he completed the clinical rotations necessary for the educational curriculum. The cancer center is a significant, modern, multi-modality facility which manages a very heavy patient load on a daily basis. Nolan, when reflecting on his inspiration to continue working despite the stressors of the profession, suggested, "all I can do is be excited about being a therapist. And what motivates me is when people ask questions and they want help and you are able to help."

Quinn

With four years of post-graduation clinical work experience, Quinn is currently employed at a large, newly-built cancer care center which has a university association. The facility manages both substantial patient capacities and staffing potentials. Quinn holds a Bachelor's degree and an educational certificate, plus dual national registries in radiological sciences. He entered this profession to better realize personal beliefs of patient care and remains dedicated to those tenets, noting, "because it's more than that to me. Yes, I am a caregiver, yes I am somebody who is trying to help you [patients] go through this period in your life. I want to be something more than that though to you."

Priscilla

Priscilla works in a moderately-sized cancer center; she has been employed by the corporate unit since she graduated in 2013. She has an Associate's degree and completed a certificate program in radiation therapy education. Priscilla is confident in her choice to become a radiation therapist; she has always felt as if it is her calling. "Because I love what I do. It

brings, like I mean it literally is what I feel like God . . . I mean, that's my passion. I love my job," she said.

Sarah

Sarah graduated from a radiation therapy certificate program over 15 years ago; she has been employed at a large, high-volume, advanced-technology cancer care center since the completion of her education. Sarah possesses an attitude of self-awareness that comes with time in the profession, as she relates to patient interactions, "just to go home knowing every day that I did something to help somebody." She describes a rewarding day as one that, "you get to meet people and help them in the situation that they are going through and it's not all sad, you know."

Tonya

Tonya graduated from a certificate level radiation therapy educational program in 2010 and subsequently completed her Bachelor's and Master's degrees, which she has utilized to further her professional pursuits. She is employed in a relatively large cancer center that handles a fast-paced patient load, to whom she feels exceptionally dedicated. Tonya referenced her commitment to her patients when she claimed, "I want them to know that I'm there, giving them 100% of [my] attention and my time and I will be there for them and I'm not sure if others would do the same thing."

Results

Prior to data collection the participants completed two online quantitative surveys, Perceived Stress Scale (Cohen et al., 1983) and the Brief COPE (Carver, 1997). The appraisals were utilized to better determine the participants' levels of stress and abilities to cope preceding any actual research or data formulation. The surveys also provided reference topics for the online focus group and journaling features. Some results from the surveys will add to the

understanding of the experiences and descriptions of the phenomenon as presented in the study. As assessed by the statistical instrument in Google Forms, the following excerpts were found to be relevant to this research project.

Perceived Stress Scale

Eighty-two percent of participants completed the PSS (Cohen et al., 1983), with one radiation therapist noting that the scale provided a time for reflection. In the online focus group Leia recalled, "my thoughts after taking the surveys really made me more aware of how things that go on day to day while at work, carry over into our home and family life."

When participants were asked "in the last month, how often have you felt nervous and 'stressed'," 44.4% answered "sometimes"; 33.3% responded with "fairly often"; and nearly a quarter of the RTTs (22.2 %) admitted to owning these feelings in a "very often" capacity. Per the survey, 44% of working RTTs in this study felt as if they had been "angered because of things that happened that were outside of [their] control" and 33.3% felt as if they were almost never "on top of things." Participants noted in journal writings and focus group discussions that the surveys gave an opportunity to "really think about it from a daily standpoint" (Quinn) and that the exercise made them "realize how much or little [I] talk about things outside of work" (Leia).

Brief COPE

Ninety-one percent of the research contributors completed the Brief COPE (Carver, 1997) survey; the reason for the discrepancy in participation between the two surveys is unknown. Quinn believes that coping mechanisms differ "based on location," stating that "some individuals may act differently with a different group of people [because] they don't wish to be perceived in a certain manner."

According to the coping survey, participants have learned to "live with it." When responding to the statement, "I've been learning to live with it," 50% of the RTTs suggested that they do this a "medium amount" of time and 30% agreed that this action expends "a lot" of their time. As far as support systems go, the therapists didn't rate reliance on that coping mechanism highly. On the category of "I've been getting comfort and understanding from someone," 60% were at a "little bit" or less (40%-little bit; 20%-not at all). Seventy percent of the respondents turn prayer or meditation when seeking coping strategies; 30% reported practicing this method "a lot"; and 40% marked that they had been "doing this a medium amount." Quinn suggested that "laughing would be better fit for overall well-being, but then again, why would any of us be participating in this study?" When the survey asked participants about making jokes to better cope in their situations, 40% agreed to doing it a medium (20%) or lot (20%) of the time.

Stress and Coping in Radiation Therapists: Common Themes

The common themes were determined through analysis of data and further organized according to individual research questions. They are discussed based on their relevance to each research question and are outlined in corresponding tables. Participants' experiences and descriptions of the phenomenon are found throughout the thematic detail to better provide clarification of the subject matter.

Research Question One (*How do radiation therapists describe job-related stress?*)

It was noted in French's 2004 qualitative study that stressful effects could manifest into physical, mental, and emotional indicators. Participants in this research project were asked to describe their experiences with job-related stress; one main theme, *frustration*, developed and four associated categories came from the data acquisition (see Table 2).

Table 2

Research Question One: Common Theme and Associated Categories

RQ 1: How do radiation therapists describe job-related stress?
Common Theme: Frustration a) Lack of Autonomy b) Mixed Emotions c) Responsibilities d) Distrust

Common Theme: Frustration

Every radiation therapist, regardless of job role, years of experience, or type of working environment expressed intense *frustration* as a descriptor of job-related stress. Frustration seemed to be a general, cumulative identifier for different issues and was usually directed towards other persons; however, one participant, Lila Jane, when speaking about not being able to better influence the outcome of certain situations turned blame back on herself saying, "not at the patient, just in general. . . so I get frustrated at myself." Four categories seemed to be the sources of most frustration, those being: lack of autonomy, mixed emotions (described as hurt, anger, upset, or disrespect), responsibilities, and foundations of distrust.

Lack of autonomy. Considering lack of autonomy, Dory, in her interview, described frustration at physicians overriding the patient schedule to provide what is perceived as preferential treatment.

> One of my biggest pet peeves is when you have an 8-5 schedule and then 'oh, tomorrow we need to block out 1:00-2:00 for this patient coming in because you know'. . . and it's a

> pet peeve that we have to move that certain hour every time for that same doctor's patients. Just to be a little more respectful of that and somehow have a certain time that's not going to push away another patient . . . Just little things like that. No promises. Don't move other patients to benefit one. You know, just little things like that.

Priscilla and Quinn both pointed out their frustration with the lack of autonomy in coordinating daily patient treatment schedules. The topic of patient scheduling is a documented category under stress contributors (RQ #2), but the emotions relating to frustration were note-worthy in this section as well. At Quinn's facility, patient scheduling duties are maintained in an electronic medical records system by a select few RTTs. According to him, the common-sense issues that arise are due to lack of involvement by those who work most closely with the patients. "Use your head, but when we bring up [issues], no!; because the schedule does not look color coordinated and pretty," he declared. On a similar note, Priscilla said of those who make the schedule in her department, "you can look at a piece of paper all day and make it look good, but if it's not legit, you wasted the time."

Mixed emotions. The participants described mixed emotions when attempting to put words to their feelings on job-related stress; they used terms such as hurt, anger, upset, and disrespect. Barney demonstrated his thoughts on how stressful patient interactions left him feeling:

> I would say yes the stress has impacted . . . maybe it doesn't say affect my job as far as like moving on to the next patient. I'm not like, you know, this one patient made me mad or upset me or had the conversation, when it is time for the next patient, I'm not going to take it out or them or anything or not going to be curt or anything like that but, uh you know sometimes when you have the moment to reflect back you know you just have to

> go ahead and admit that it made you angry or you know, hacks you off or . . . it has an impact of some sort but then like I said you just have to let it go because it's not me. I'm doing the best I can. My performance is 100% and if I know that I had not been working at 100%, you know I would probably walk away with some guilt.

Adding to their frustration, some of the RTTs described feelings of disrespect; this compounded their overall stressful situations. "If everyone quit, I could have three monkeys in here tomorrow," that sentiment was relayed to Malecon by the office manager after repeatedly telling him that chimps could be trained to do the job of RTTs. This is likened to the findings of Johnson et al. (1998) in which 62% of respondents felt that other health care providers did not adequately appreciate the position of RTTs. Participants in the current study reported that they felt disrespected in their roles and equated this emotion to stressfulness.

In a follow-up correspondence, Malecon described a scenario between the physician and himself in which the doctor "passively aggressively tried to explain [basic] patient setups;" the physician further told him that the information being clarified was "radiation therapy 101." Malecon expressed that he was exceptionally insulted by the statement, noting that the doctor often fails to complete [his/her] own vocational duties, and claimed that had he not been obligated to his job, he pondered walking away from it on this occasion.

Leia, conveying thoughts on disrespectful personal name-calling and attacks, added that, "just that my word doesn't matter. I am just a worker bee, being put down by doctors . . . therapists are cheap. Personally, it makes me feel worthless to them, to those people." Tonya wishes that hospital administrators and doctors would view the RTTs through a different lens. She voiced this sentiment by saying,

> I think they should understand that we still are people and not just employees. That you

> know it is still hard on us and we have families. And we have lives . . . and they are booking [patients] and we can't leave and we miss out on our kids' softball practice or soccer practice because they don't care.

Responsibilities. The RTTs in this study explained that responsibilities, both job-related and patient-centered, added to their feelings of stress, frustration, and emotional heaviness. Perhaps no one described the weight of stress caused by job responsibilities quite like Malecon, possibly due to his overarching title.

> For me, it's being pulled away from what I'm currently doing and that happens a lot you know, because I do a lot. So, if I am in the middle of treating someone and someone has an issue with their computer or if [redacted] has a question about a physician that is on the phone or you know, the commode overflowed.

Sarah expressively described an aspect of patient care in which RTTs assume an intense emotional connection with their patients, therefore taking on a responsibility for their care which lies beyond the technical or standard aspects of radiation therapy.

> I mean, I think that the stressful situation, like different aspects of the radiation therapy job, you know the connection that you have with the patients, or not that it stresses you out, but you think about it more and you take it home with you. You know when the sadness of . . . what am I trying to say . . . I don't know, like if they are having a hard time getting here, or have some patients have more than others. Transportation, they are stressed out. You know it is just 30 minutes out of our day, but it is their whole life right now. And so sometimes, you know, you have a heart and you just sometimes, that's hard.

Minnie further expressed feelings of emotional responsibility and connection with the patients

when she called the profession “hard” and said that “you have to kind of tuck your heart away and not take everything so personally because of what you are dealing with. Not everyone is going to come back and see you the next day.”

Distrust. Feelings of distrust, for management and for co-workers, were mutual among some of the participants, with expressions ranging from indifference and obstruction to hostility. The RTTs felt as though they were not supported by the other patient care-givers who surrounded them, potentially leading to questionable patient quality outcomes.

RTTs in almost every working environment associated with this study described some level of distrust with the management of their departments, whether that be lead RTTs, administrators, or physicians. While those ‘sources’ of stress will be examined in another section, the feelings of distrust as sources of frustration are relevant for discussion at this time. The participants expressed that management did not understand or appreciate the everyday job duties, technical and patient related, of a radiation therapist; some even went as far to suggest that management didn’t care about RTTs or patients, only the monetary bottom line. Dory suggested to the prominent corporation that acquired the facility in which she works, “they are just wanting numbers and sometimes I would love for them to come down hang with us.”

Malecon questioned the trustworthiness of his physician, who also happens to operate in an upper administrative capacity, when he suggested that the actions often taken were challenging and divisive. He claimed that he believed, “[redacted] tells or kind of forms these fake alliances to kinda make people, you know.” Malecon expressed that he can’t have a “reasonable conversation” with [administrator] because [redacted] is always trying to “place blame or trying to dictate what you need to tell the patient.” He says that these action lead to stress and are a driving force behind the RTTs not being able to perform their jobs to the fullest.

Priscilla described her working situation as one in which she is very often working alone, with long days on a treatment machine. She claims that she has appealed to her immediate supervisor for help and describes the lead radiation therapist as an ineffectual manager.

> Just to say we need to work in a safe environment. We need our [treatment] partner with us. Like it doesn't make for a happy job when you feel like, first of all your company is putting you in a situation where you could make a mistake and harm the patient. You are there for the patient and that is what the company should . . . their main interest should be, not a dollar bill or how much money they are bringing in at the end of the month. Like let's get down to what is important.

Several of the RTTs in this current study shared feelings of distrust related to their co-workers. Considering the nature of RTTs' profession and the partnerships systems within which they work, this detail was especially difficult. Nolan said, "I feel like I am alone and I am doing it all myself and so you end up hurrying through the patient and there is less patient care, I think." Later in the interview when asked about team dynamics and support from other therapists, he added,

> Anytime there's somebody that will come and help. Just offer help, you know. Can I get you a time or do this or that and really when you are stressed, you don't want to have to tell somebody to do something. You want somebody to come back there and help without you having to tell them . . . and just fit in.

Lila Jane believes that some RTTs entered the profession for the wrong reasons. They've assumed a "so what's in it for me?" mentality, she noted. During a follow-up phone interview, Lila Jane described the details of a co-worker, whom she views as "lazy" and "reckless." She claims that the co-worker does not closely monitor patients on visual monitoring devices, nor

does [co-worker] pay attention to details in treatment set-up instructions. Lila Jane disclosed that the co-worker "makes substantial patient mistakes." Despite this level of distrust in her co-worker, Lila Jane feels wary to report because "you should take responsibility for yourself. I shouldn't tattle tale. . . [because] admin uses people as spies."

Research Question Two (*What factors do radiation therapists identify as contributing to job-related stress?*)

As was suggested by Jones et al. (2011) the occupational stressors in oncology workers were affected by both the overall nature of their professions and the environments in which they operated; this finding was substantiated in the current study. A myriad of factors was identified as contributing to job-related stress during the present research study, but perhaps none more so than the category of schedules or scheduling, both patient and staff. The category of management received a great deal of blame in that the RTTs felt as if a whole host of stress could potentially be alleviated with more effectively supervised teams and departments. There appeared to be significant overlap in areas of 'stress,' consistent with the nature of the field in which a multitude of persons are involved in various aspects of treatment delivery and patient care. Through the iterative refinement of the participants' experiences, it was determined that the greatest job-related stressor for RTTs was that of *uncontrollable situations*. The RTTs collectively expressed that they were the persons most directly involved in patient care, but were repeatedly ignored, misused, or overextended. They found themselves in life-saving patient treatment situations, unheard and unable to control the processes or the outcomes. In the section related to Research Question Two, one main common theme and five related categories developed from the interactions with the participants (see Table 3).

Table 3

Research Question Two: Common Theme and Associated Categories

RQ 2: What factors do radiation therapists identify as contributing to job-related stress?
Common Theme: Uncontrollable Situations
a) Schedules
b) Management
c) Co-Workers
d) Patients
e) Doctors/Physics

Common Theme: Uncontrollable Situations

When asked what causes stress, the participants answered loud and long. One collective theme arose, uncontrollable situations. The RTTs emphatically described the inability to control their own workdays and patient care circumstances as the biggest contributor to job-related stress. The feelings of powerlessness were attributed to issues such as a general lack of common sense, underlying deceitfulness, administrative game-playing, uncooperative co-workers, and a wide-ranging work overload while being understaffed. Quinn called it an, "uncontrollable cycle. . . [of] stress, disparity, [with] effect[s] on healthcare workers and their patients." The nature of these overwhelming "vicious" (Quinn) situations will become more apparent in this study as the participants' experiences are detailed in the following five emergent categories: schedules, management, co-workers, patients, doctors/physicists.

Schedules. No source of job-related stressors seemed to resonate so piercingly as did that of schedules, both patient and staffing schedules. The participants felt as if they were

constantly fighting an uphill battle to maintain a nearly impossible task which, oftentimes, was completely out of their control. This speaks to keeping voluminous patient loads on tight schedules with, at times, limited staffing availability. To add to the challenge, the RTTs in this study described being tasked with expanding job responsibilities, which was also documented by Mazur et al. (2012), in increasingly hostile work environments.

The participants painstakingly detailed the stressor of patient scheduling in that 'it' (the schedule) could make or break an entire work day. Issues with patient scheduling ran the gamut from not having ample treatment time spots for the number of patients under treatment to machine outages causing backups or physicians demanding time be made when there was simply none available. Occasionally, patients perceived that they were free to come and go according to their own schedules, not one that was predetermined by the RTTs. This caused for a great deal of wait time and exasperation on all parties.

It was repeated by several of the RTTs that they felt as if they spend a part of the day lying or making excuses to patients about schedules or treatment issues. They believed that, although specific circumstances had become unmanageable, the RTTs were still in positions of responsibility for their patients and their care. Barney explained it this way,

> [I] have go tell a patient, um, make an excuse why there is a delay and make it sound like a professional delay and not just like you know somebody goofed up . . . You feel like you are not telling the patient the truth . . . also you are upset with somebody in the back or dosimetry area. It's not a common or everyday thing, but it happens, but like I said at other times it doesn't bother me to tell them, because like I said sometimes a patient will be scheduled at 4:00 and they chose to arrive at 9:00 so you just have to be truthful and say there's nothing I can do, it is out of my power I'm sorry or like I said even if the

> machine is down, I'm sorry I can't fix the machine. Your plan is specifically for the machine and your treatment is not transferable to another treatment machine.

Expressing his feelings of responsibility to his patients, Quinn described how he explains to his patients that the machine is backed up due to poor scheduling, something that he referenced as a "frustration" due to "lack of control" earlier in this study. He remarked that the "flow of the machine" is mismanaged when therapists who don't actually work with those particular patients are the ones coordinating the schedule. Quinn says that he must ultimately admit that its "his fault and then [he] ends up looking like an idiot" when apologizing to his patients for the tardiness. Quinn expanded on those thoughts as he described a potential culminating patient interaction,

> Because it makes me feel bad because sometimes I have to lie to these people. I can't, like say . . . I am so sorry that this happened to you. And some people just don't take that so sometimes I say that we had to work in an emergency patient that has taken us a few minutes, which some days, we do have to. There's an inpatient that had to come down immediately for scan and start, and I feel terrible about it. Having to tell them this some days, because some days they are more understanding of that than they are when I come out and say well somebody put a double book or whatever in your schedule and you are all the way down here at this time. Well why did somebody do that? Well I don't know. Well who did it? Well, I can't tell you that. Because then it's not only hostile in the work environment that you are on the back, it is also hostile for the patient environment out in the lobby.

Minnie explained it this way when discussing how the RTTs handle delivering sensitive scheduling information to patients, "I do feel like that sometimes in certain situations when

there's things we need [them] to know, the way that we are told to word things is almost as if we are lying to them."

Tonya, describing how over-booked patient treatment schedules can lead to overwhelming stress, detailed a somewhat typical work event in this manner:

> Any time that you have a large patient schedule and the [treatment] plans are not ready in dosimetry and you're waiting on your machine, you know patients get backed up and the machine goes down . . . that leads to stress, you get behind . . . stressed and you feel like, almost like you are to blame for the patient to have to wait even though it's not your fault. The scheduling is what it is. You have to fit patients in for chemo and you've got patients going back every 10 minutes. Well how much longer? How much longer? And you feel responsible because they are having to sit out there waiting on you.

During her interview, Dory expressed two different concerns with patient scheduling, doctor demands and patient appointment inconsistency. Dory feels as if physicians single-mindedly control aspects of the patient schedule without thought to the RTTs or other patients who might be affected by the decisions. Dory had this to say about the how one ill-timed 'add-on' could throw off the entire day:

> The doctors say that they have to get that patient in today and there's no room for it. We make room of course, but it's just the fact that you know you are going to be behind and you know it is going to be stressful. I know that's a lot of our main problems that we have.

Dory also suggested that patients appear to be less committed than the RTTs are to treatment schedules. She added that patients coming for treatment at inconsistent appointment times cause the teams to have, "harder time[s] because we are trying to do our best to try to save them, but

they [patients] see it sometimes I think like we are trying to be difficult or want you to be here on time." Dory articulated how patient scheduling is a personal stressor in the following statement:

> Especially lately it seems like patients come when they want making their own schedules even though they know that we have a schedule to go by. I don't know, I just feel like sometimes, you know we are doing everything we can . . . you know, this is for you [the patient], we're doing this for you and sometimes I don't feel like that's the case for them.

For as much stress as the inability to control and maintain efficient and safe patient schedules brought to the RTTs, staffing schedules introduced an entirely different level of chaos. Staffing schedules, a concern which overlapped woefully with ineffective management and frightfully with patient treatment mistakes, was a subject of most every participants' interview and journaling experience. It was also a source of conversation in many follow-up phone conversations and communications. The participants were extremely concerned with whom was by their sides when patient treatments were taking place; whom could they depend on in times when patients were depending on them? The RTTs were also painfully aware that they generally had no authority over their own working conditions.

Priscilla appeared to be in most dire straits in her current situation. She lamented about her working environment in which she often works all day without a team member, treating a heavy volume of patients alone.

> One patient that doesn't go as planned will throw your schedule down the tubes and it will. The machine, just something easy tearing up that takes a 30-minute fix throws your day off because they jam pack our schedule. One of our machines goes down at 12:00 because we don't have any staff and that [other machine] staff will leave.

Leia stated that one of her major job stressors was the schedule and she had been relegated to the

duty of a 'closer.' She claimed that she "always closed and that was just whenever the last patient and sometimes that was 7:00 at night. Sometimes it was 8:00 at night." The RTTs in her department initiated a 12-hour shift to better accommodate patients and workers; conceptually, it would be doable. But, Leia says, the schedule is difficult, especially when you bear in mind all the aspects of radiation therapy; you must take all things into consideration. A 12-hour shift should be measured as a sum of all the parts, not just the hours worked.

> Twelve hours is a lot and I know I am up and going and I'm not tired but I think the whole mental stress and what goes through a therapist's head all day long on all the patients and the number of patients just increases. I mean your load increases, you know you want to remember everybody that you treated and when you are on that machine for 12 hours. When you come in in the morning you have some of the people who leave at 3:00 don't care what the end is going to be like. But when you come in and being a therapist on that machine all day, you want your day to go smoothly and so you are just kind looking at your whole day and trying to see how is this going to flow. How is this going to work?

Quinn offered that he too works long days, having reluctantly worked night shift for three years. He said that he was currently, "doing 12's and I am there at sun up until it's over, which the other night I worked 14 1/2 hours." When questioned on the length of his work day, Quinn replied, "because nobody knows how to schedule."

Malecon, admitting his working environment is unique from the other participants, experienced staff scheduling issues in different ways. He stated that, "another thing for [him] [wa]s staff scheduling in the terms of who is here and who isn't here." Due to the smaller size of the department in which Malecon works, a reduced staff of RTTs is required; however small

changes make a very big impact. He told of one therapist who had a dental appointment while another was on vacation. This conflict left only Malecon to cover both the early morning, warm-up shift and the last-patient, closing duties. "And so that puts me in a situation that you know I got up at 5:30, left my house at 6:00 to get to [redacted] by 7:00 to warm up and was here before anybody and now I've got to stay after everybody."

Management. The participants expressed a wide range of emotions concerning the stressors brought forth in response to those in managerial or administrative positions; they felt that their governing bodies were ineffective, were disrespectful and unsupportive, or demonstrated bullying tendencies. The RTTs also illustrated situations in which they felt as if they had no voice and no influence over those things which were at the very heart of their profession. For the purpose of this study, management roles were inclusive of lead RTTs, department managers, and hospital administrators.

The RTTs questioned the effectiveness of their managers in that things so very often were chaotic and disorganized in the cancer centers. They felt that with adequate guidance and administration, daily treatment interactions could change drastically and positively.

Priscilla, discussing the stressors of her work environment, was asked if the manager was aware of her circumstances; she replied, "I feel like my manager is very unapproachable. So, um, there is no need to discuss the situation at hand." Priscilla also added that the lead therapist, who would be the next in line administratively, contributes significantly to the stress by not acting as an advocate for the therapists.

> I feel like they know what is going on and I feel like they don't address the situation, which . . . you are the lead and you should address it. I feel like the lead therapist . . . doesn't like confrontation so, therefore, [redacted] will not do anything either.

Leia specifically pointed to a "lack of leadership and management in [the] department" as a repeated cause of stress and Tonya quickly answered "poor management" as the response to the question of potential stressors in her everyday work. Lila Jane commented that the RTTs were not consulted on substantive changes in department; she noted that there appears to be a divisive lack of communication between management or doctors and the RTTs. "I feel like they should get more of our input since we do this every day and there's a lot of things that we know will work or won't work right off the bat," Lila Jane revealed, noting her inability to contribute.

In a second interview, Lila Jane conveyed that her manager stresses her out by sending her text messages at night to change her regular schedule. Lila Jane had to forfeit hours one day, therefore loosing pay, while other staff therapists came to work at their routine hours. The manager told her that there was 'nothing for her to do'; Lila Jane's cancer center runs 8, 10, and 12 hours shifts daily and the machine she was assigned to work had a full patient load. Lila Jane wondered if she would have to worry about this type of behavior in the future and objected, "[we] work a million hours a week when patient load is high but cut our hours when patient load is down . . . [they] never change nurses' hours."

The RTTs discovered that they were in adverse, unmanageable situations when they fell under the disrespectful or unsupportive actions and words of their supervisors; they associated their perceptions of these harsh situations with great sources of stress. Leia struggled with the subject of disrespect, calling it "hard to explain" and believed that she did "probably take some of it personally and [realized] that some of it [words or actions] is directed personally." Leia continued by reflecting on the considerable vastness of the stressor in saying, "but I do take it personally and it bothers me and makes me question am I still doing what I want to do or am I still doing what I am supposed to be doing?"

Dory contended that since her unit had fallen under corporate ownership, things had gotten "worse." She wondered if the administration even knew what RTTs were? "Do you actually know? I don't think they really know what we do," she questioned. Dory lamented that all the meetings within the department were about productivity now, that there was no understanding.

Sarah, though generally optimistic and positive about her experiences, expressed a desire for her management to focus on the "good things that you do and not always focusing on you know", meaning that it was perceived as if the main focus was on numbers productivity. Sarah felt as if the emphasis lay on the ability to stay on schedule and to efficiently keep the waiting room patients satisfied.

Malecon, while traveling to learn a new piece of equipment that was being installed at his facility, was not provided with per diem expense reimbursement. He was informed by his office manager that he would've had [food] expenses 'anyway' even if he had been at home; the company didn't believe it owed him any extra compensation. Malecon relayed that he, "was working for the company and felt that [he] deserved per diem for the time that [he] was training on company equipment." He described the experience as one of a "lack of respect and support."

Priscila journaled about an exceptionally difficult week in which she worked 11 hours per day, didn't get a lunch break on two days, and had simulated 14 patients, without assistance. She claimed that by the end of the week she was, "on the verge of tears" and that her "stress level [was] out the roof." Priscilla described an episode in which she began "shaking, breaking out in a sweat. . . while [she] was trying to treat [her] mammosite [patient]." The "best part," she cynically added, "[was] when I went to heat my lunch to eat and [continue to] work and my boss was eating with her two buds in the breakroom." This type of managerial behavior demonstrated

both disrespectful and unsupportive characteristics which a number of the RTTs expressed contributed to considerable job-related stressors. Priscilla said her weariness boiled down to needing support; "I want somebody who's there that's going to be supportive and I feel like they are there for their people."

Bullying, as demonstrated by Johnson and Trad (2014), is prevalent among staffs in radiation therapy clinical settings. Leia spoke to this issue in saying, "I've been in situations the past couple of years where I have felt bullied or felt . . . knocked down by leadership, not respected to the point of my years of experience or years that I have been at our facility." She added that, "it made me realize that I couldn't let one person come in and take away what I had worked for all my life, and where I was supposed to be." Tonya revealed, in a follow-up correspondence, that she regularly feels that her manager, "just tr[ies] to make her life hard." Johnson and Trad (2014) reported that 83% of respondents in their study were either "somewhat or frequently micromanaged." (p. 128). The authors continued by explaining that micromanaging may indicate a, "lack of trust, autonomy, and recognition for the years RTTs spend obtaining specific clinical and didactic training" (p. 128). Several the participants in the current study felt as though they could not change the outcomes of inequitable work circumstances.

Malecon, too, disclosed the story of insult and humiliation as cast upon him by his physician when alluding that he did not grasp the basic concepts of 'radiation therapy 101." Johnson and Trad (2014) documented that "the most common bullying behavior was humiliation" (p. 128). Considering that the doctor in his facility serves as the highest administrator, this instance could be considered as managerial bullying. In a follow-up meeting, Malecon communicated another story of what he called "bullying behavior," in that the

physician had, on numerous occasions, threatened the RTTs with closure of the facility if they didn't "perform" to certain standards. This leadership tactic, he says, does not come from an attitude of strength; it comes from a state of intimidation and control, leaving him and his staff feeling powerless.

Quinn recalled that he, also, felt threatened by administration when he questioned why he had been assigned to the closing shift for a remarkably long period [three years]. He claims that the assignment is inequitably applied and that other RTTs work straight eight hours shifts, meaning they were free to leave at a pre-determined time every day. The closing shift often runs 12-14 hours per day, as it only ends when the "day is done." Per Quinn, a one-sided conversation took place in an upper administrator's office in which he was told that he could be removed from his full-time job if he wasn't "happy" with the arrangement. He noted that his lead therapist was not an advocate for him even though there was email documentation of his job description which did not include details of a permanent night shift; he recalled that he felt defenseless in the situation.

Co-Workers. Ideally, RTTs work in conjunction as teams or groups. This provides a safety feature for patient treatment and care and offers stability through a system of checks and balances. The participants in this study revealed that their immediate co-workers proved to be profound sources of stress due to overall negative work environments, job-related confrontations, inconsistent abilities, and treatment errors; each, ultimately, was found outside of the participant's individual power. Jasperse et al., in their 2014 New Zealand study, documented the significance of occupational stressors, including dysfunctional staff dynamics; the data from this current study corroborate the findings and add to the literature with detailed descriptions of the participants' experiences.

The participants described the stressors from negative work environments in varying degrees and due to a variety of sources. Nolan found himself in a situation that he described as "terrible" due to his inability to direct the outcome of the day; he referred to the "domino effect" that came to pass. Nolan journaled about a particularly busy day, writing,

> Today has been a terrible day for a therapist . . . The stress in sim, is not the work itself but it's you never know what you're going to get next. I got no help from anyone including the lead therapist and management. In fact, none of them even knew those things went on or the stress that goes on because I don't like to complain or ask for help. I would expect them to oversee and have me some help without me having to ask. The tension and stress carried over to the next day and you feel like no one cares. It's a domino effect. There needs to be a better process and someone to recognize what is going on.

Priscilla recounted that a negative work environment affected her job to the point that patient care could potentially be adversely impacted. Priscilla explained the situation like this,

> It affects the energy of the department. It drains you and you're not focused on what we're there for when you are dealing with people [other RTTs] who do not get along. We're not there to get along, we're there for the patients and it is very distracting and makes for a long day.

Priscilla condemned her co-workers as a source of divisiveness and unnecessary stress in the department,

> Some of my co-workers I feel support from and then the ones that could do something or say something, no I feel absolutely no support. I feel like they are there for their own, they want to slide under the radar, so they're not going to put themselves in harm's way.

Quinn elaborated on whether management could help to alleviate some of the stress in the department by equalizing divisions between RTTs, if administrators would help to create situations that allowed for more cohesive units. He optimistically stated that, "you can always hope for better things," but realistically charged his co-workers with the task of building valuable relationships.

> I think people need to kind of humble themselves . . . you are always going to have that little resentment inside of people and if it is like what we have seen, or what I've seen, it only builds, and builds, and builds until it inevitably blows up.

Likened to negative work environments, confrontational co-workers, showed to be an uncontrollable stressor that the RTTs described as having a profound impact on their job lives. The RTTs admitted to confrontations with their co-workers during the work day. The participants relayed that these conflicts were both job-related and personal in nature and that they added to the overall compounding stress in the cancer center. Leia detailed her actions during tense times, saying,

> I, um, if I'm in a confrontation with another therapist or if it is about that patient, we stop completely what we are doing. I mean, I will not let anything continue as far as treatment or a resolution has been made. You know, I don't get heated and yell. I let everybody say what they want to say and then we come up to a decision, you know, if we have to gather someone else or physics, management, or whatever, we will, but at that moment in time, everything comes to a halt as long as I am standing there. I can't say for others, but not as long as I am around.

Lila Jane recounted "a lot of competition between the therapists." She believes that some of this is due to the rivalry for full time positions at her facility and that, at times, the negativity

becomes so intense she "worries about losing good therapists to other jobs." Lila Jane described verbal confrontations in which the participating RTTs showed their "true colors," meaning that they exposed their real or motives. She believes that some of the people with whom she works, "don't care about other co-workers' families or outside of work." Lila Jane finds some of her fellow RTTs to be disappointingly selfish, personally and professionally.

Quinn began his interview with a story about two therapists who had been engaged in a verbal altercation over a patient treatment mishandling. The manager of the department had intervened and inquired as to what had happened during the incident; initial questioning of individual RTTs was followed by a departmental meeting. Quinn recalled,

> I was like no, I was there the whole time this happened and that did not transpire, none of that took place. So then when it was addressed in front of the whole group, [redacted] and [redacted] began to argue with each other. Very unprofessional. Very unprofessional. I will say that on [the manager's] point that could have been handled better because I almost feel like you have the Coliseum in Rome and you essentially pitted these people together when you target this question at them.

Quinn said of his co-workers, "we are all so wrapped up in ego that it is sickening. We prey on the downfall of others, so that we may feel some kind of joy in their suffering."

Priscilla said that co-workers should remember why they are there [at work] and not engage in quarrelsome, unprofessional behavior. "You are not there because so and so doesn't like so and so. That should be null and void. Like leave your problems at the door, and your feelings."

Amid dealing with confrontational co-workers in negative job environments, RTTs strive to act in the best interest of their patients by applying ethically, morally, and technically sound

radiation therapy practices; however, they are times that they find themselves forced to face the possibility of patient errors at the hands of another. Poulsen et al. (2014) and French (2004) reported that the potential for patient treatment errors adds to the stressors experienced by RTTs. The participants in this study suggested that stress caused by attempting to avoid or overcome possible errors fell into two categories: misadministration by 'lazy' or 'reckless' co-workers and responsibility to patients. Responsibility to patients will be discussed in the next section; the following remarks are dedicated to those feelings related to concerns with co-workers.

Lila Jane told of co-workers of whom she is wary due to their propensity to make treatment errors. She described that marginal numbers of RTTs are easily distracted or, oftentimes, do not know how to operate the equipment. Some instances have involved lack of visual patient monitoring, use of cell phones during patient treatment, inaccurate application of patient set-up devices, and irresponsible operation of treatment equipment. She feels that she is in a constant state of heightened awareness to cover for these co-workers so that she can appropriately care for her patients and avoid potential errors. Lila Jane finds herself in situations over which she has no control, but has full responsibility.

Patients. Patients brought about powerfully conflicting emotions in RTTs. Overwhelmingly, patients are the source of motivation and continuation for participants in this study and this will be illustrated in a future section. This section will be devoted to the unique stressors felt by RTTs as they support and deliver patient care, frequently giving up the control needed for efficiency and well-being.

The care of oncology patients is wrought with stressful emotional challenges for RTTs, as was documented by Gillies et al. (2014) and the participants in this study concurred with those findings. Lila Jane said that the, "stress takes away from what we come here to do . . . with the

patients." Tonya, referring to the patient schedule, struggled with adequate time for RTTs to spend with their patients. She expressed that in situations of a "double booked or triple booked" schedule, she may "rush them in and rush them out, there may be something that they didn't tell you because they knew you were pumped."

Sarah struggled with the concern that she doesn't have enough time to spend with each of her patients; the patient load is high, the staff is minimal, and the schedule is tight. Having no real charge over the patient schedule, Sarah is concerned over the depth of patient care that she is able to provide,

> Just making sure your patients are in and out in a timely manner and you know that they're questions are answered. You know you have enough time with them for patient care and not you know just getting them on and off the table for your next patient, sometimes that can be stressful. Yes, you know they have questions, and I don't even mean that the doctor needs to answer, just you know, they are scared, just scared, or is this normal or is this . . . you know, they just need some extra time and sometimes, you just don't have that extra time.

Priscilla agonized over the negativity in her department wondering if it would have an adverse impact on patient interactions and comfort. Priscilla wishes that patient care would take a priority to other distractors in the cancer center,

> It does affect the way a patient would probably perceive you know, the atmosphere is very tense. You're not making the most comfortable situation for the patient. We should be there to encourage the patient, to love on the patient and cheer them on.

Leia noted a generational difference in patient care at her facility, as she described that she was often maligned by newer RTTs for slowing down the process by spending too much time with

her patients.

> Also some of the generational or some of the newer therapists that are coming in seem to be more of a job. A Monday through Friday, get in/get out and not really concerned about what they are doing and I guess that is one of the stresses that I deal with on a daily basis because I take more time with my patients.

Nolan worried that the unmanageable rush of busyness would lead to decreased patient care; this feeling left him stressed about the degree of holistic attention given to his patients.

> I think I feel rushed. I feel like I am alone and I am doing it all myself and so you end up hurrying through the patient and there is less patient care, I think. You know I think we forget or we really don't know what the patient is really going through. Unless you have ever had a family member with cancer or a personal experience with cancer, you really don't know what that patient feels like.

Several participants divulged that patient interactions had evolved over time; patients had become more aggressive and demanding. The RTTs admitted that this was a minority of patients, but that an influential bad apple had the potential to spoil a whole bunch, or whole waiting room. Barney reminded that patients can sometimes be "verbally reactive" and that he has to "remember that [he] is just the sounding board and . . . not take it personally and even though some things they say sometimes can hurt your feelings."

Animatedly, Dory explained that RTTs carrying a dual burden, that of busy, demanding scheduling and serving as a sounding board for the patients. Dory exclaimed, "who gets to hear it? We do! Yeah, so we get all that stress of getting behind and trying to catch up but down the line, who gets the main sources of stress? We get to hear it from patients!" She went on to add that she sympathizes with the patients, especially considering her history in the field. To Dory,

things seemed to have been especially difficult of late.

> "Yeah, you don't want to have a confrontation with the patient. I mean bless their hearts I know they are going through a lot . . . And maybe it is denial with everybody and I can't say why they are feeling that way but it makes us have a harder time.

Malecon feels as if patients become "spoiled" to their appointment times and become somewhat cantankerous if they must wait due to schedule delays. He calls the patients' uncontrollable reactions, as well as the never-ending quest to stay on time, compounding stressors for RTTs.

> What doctor's appointment do you go to if your appointment is at 9:00 and you get in at 9:05, you know . . . then one day you have network issues, or the machine hiccups, or you take a little longer on a new start, now you're getting this patient back 5 or 10 minutes late and they are coming back with an attitude and they are making all of these snide remarks, not all of them, but some of them make these snide remarks. Oh you're late today? What is going on today? Oh, you've got to get on the ball! And some of them say it in a joking manner, but you know there's a lot of truth behind it. Not truth, but there's almost like a dig. Therapists take it like, man we're back here working our tail off. The last patient we had on took a little bit longer, so now we are getting you back a little later. Or what if it was you in that patient's time slot, would you want us to rush through you just so we could get the next guy in on time? I think that causes . . . that interaction between the therapist and the patient, um is kind of . . . it's really not a smooth interaction.

Minnie reiterated the sentiment that patients appear to be less understanding of wait times and that this places stressful burdens on the RTTs when she said,

> Patients usually get very upset. They don't understand why it is taking so long . . . and

> this is the only place I have ever seen that if you are 5 minutes late at the doctor's office, they become irate with you. . . They don't understand that, and I understand they are frustrated because of what they are going through, but we are there to help them and we seem to be the brunt of their anger sometimes.

RTTs in the current study reported the stressor of bearing responsibility for delivering life-saving, but potentially detrimental or lethal, high energy radiation treatments to cancer patients. The participants understand that, although physicians are accountable for ordering and prescribing the dosages of radiation, they are ultimately the last line between the treatment beam and the patient. French found this same response in her 2004 qualitative study of British RTTs, noting that they experienced stress from an "acute awareness of the potential damage" that could result from the treatments (p. 19).

Priscilla articulated the stressor by noting the overwhelming responsibility of protecting her patients from treatment errors,

> I'm stressed too 'cause of the fact that I work by myself most days and everything is riding on MY [emphasis added] shoulders. That's not the best feeling in the world. Yeah. I'm thinking a hundred times over because I am the only one standing between me and a mistake.

Malecon expanded on the stressor in noting that "therapists do a lot" and it would be beneficial if "they [management, physicians] really . . . underst[ood] what it is that therapists do." He went on to describe that RTTs are oftentimes wrongly accused of errors made in the department, as he explained, "and if there's a mistake made in dosimetry or physics, um, the therapist doesn't catch it, a lot of times it will be the therapist's fault because they didn't catch it. When someone back there [in dosimetry or physics] actually made the error." He suggested that the intent seemed to

be in finding fault, not in correcting patient errors or solving problems.

Doctors/Physics. The topic of physicians and physics staff proved to be a slippery slope for the participants in the study. Although the relationships between the RTTs and the two parties are dependent on each another, they are at times tense or negative; these stressors cumulatively add to the chance that quality of patient care could be comprised.

The participants described overpowering experiences in which they felt the physicians in their facilities did not support them, professionally or personally; both instances lie beyond the scope of control for the RTTs. Several told stories of degradation and personal attacks, while others felt that the doctors used their own positions at the expense of the RTTs. They felt that the motives of the physicians were not always in the best interests of the patients and were often costly to the participants themselves.

Tonya objected to the fact that doctors, to satisfy their own needs, double and triple book patients into an already packed schedule. "They're stubborn and want it tomorrow," she said, "It' not an emergency and in 24 hours it's not going to change if they come the next day. You have to give them what they want." Speaking from a patient's perspective, Tonya described that a patient, "sitting in the next room would understand that 'hey, we are booked and don't have space for you.'" She believes that physicians attempt to manipulate the schedule so that they "keep themselves happy." Tonya explained that factors such as these lead to long wait times, rushed schedules, stressed RTTs, and the potential for decreased patient care.

Nolan questioned the timing and motivation of doctors' actions, especially considering scheduling and staffing arrangements. He noted that the stress lay in the decisions that were out of his control and that seemed inequitably applied.

It always seems as if every patient has to be sim'd right then, even if they're not starting

> for another week or two. The consideration from doctors is only focused on patients when it benefits the doctor and how quickly they get paid. It is never on the flow of the schedule or whether we are staffed to handle certain workloads from day to day. We do 8 patients in a day and 1 the next day. The [particular] day really became the most irritating, in the afternoon when I finished the last patient on the schedule and the Dr. comes around at 3:30 pm and wants to add a patient on to the schedule that is going start in 2 weeks. Before I finished that patient, another doctor came around wanting to sim a whole brain at 4:30 pm that needed to start the next day.

Malecon explained the situation at his cancer center, considering the physician/chief administrator role, to be one of a more personal nature. He illustrated the temperament of the relationship in this manner,

> I don't really consider [redacted] a leader. [Redacted], uh, if I do something wrong or do something that maybe you don't think I should have done and because of the passive/aggressive it causes you to be angry with me, then I think that is something that you should deal with me.

Looking towards physics' staffs, patient treatment plans are the foundation by which all radiation therapy is delivered and are developed in the physics and dosimetry department. RTTs depend on physicists and dosimetrists to deliver the treatment plans in a timely manner, according the patients' schedules. Although there is an abundance of factors at play, including the physician, the participants cited the disruptive stressor of late treatment plans and physics oversights as substantial when referring to those that compromise patient care.

Barney described a situation in which he had to inform a patient that there would be a delay in beginning their treatment, not because of a scheduling delay, backup on the machine, or

a lag by the RTTs, but due to an omission or misunderstanding by the physician or physics department.

> Sometimes you know I have felt bad when I had to go tell a patient, especially a new patient, that first day that maybe an additional 30 minutes or an hour before they will receive their radiation treatment because we are still in the treatment planning process and I will feel bad just because of sometimes I know that on the other side of things there were delays that weren't necessary just due to not just intense planning but due to the fact that there was an oversight or the physician was late on planning it or that was not ample time to get everything in place for the first treatment

Minnie found that an incomplete or undone treatment plan leads to chaos and frustration, for both the RTTs and the patients. She stated that her number one job-related stressor was "patient set-ups" and a little forward preparation could help to alleviate some of the stress, therefore paving the way for potentially more smooth and secure patient treatments. Minnie described the disorganized situation as this,

> I think if things were done in a timely fashion, as in planning and everything was done the way it should be done and we were allowed to possibly review the chart before we were handed to us and put the patient on the table and get chart 15 minutes after they are supposed to start that it may help to ease some of that stress . . . they [patients] don't understand why you can't move forward, why you are sitting in a hurry up and wait pattern, so they are looking at you and you are having to come up with an excuse that or we are just trying to maneuver this or adjusting this, when in reality, you are just sitting waiting for a plan to be done.

Research Question Three: (*What mechanisms do radiation therapists employ to cope with job-related stress?*)

Poulsen et al. (2014) reported that the coping strategies of avoidance and continuation, which they labeled "ignored it and got on with job," were employed more often in administrative or organizational situations than in patient care cases. Some of the participants from the current study recounted similar coping mechanisms of 'breathe' and 'kept on going' when facing stressors in their respective cancer centers. It is noted that there were limited responses to the topic of coping mechanisms, leading the researcher to wonder if the RTTs considered or practiced the skill of coping. In regards to Research Question Three, the most frequently reported coping mechanism with 5/11 RTTs describing its use, was summarized as "breathe and keep working;" another less commonly illustrated category will also be discussed (see Table 4).

Table 4

Research Question Three: Common Theme and Associated Categories

RQ 3: What mechanisms do radiation therapists employ to cope with job-related stressors?
Common Theme: Breathe/Keep Working
a) Support

Common Theme: Breathe/Keep Working

The RTTs explained that, above all else, their patients come first and this means they will continue to work through any stressors that arise. Despite the overwhelming obstructions and stressors, they actually had very few coping mechanisms in place; most of the participants did nothing. Less than half (45%) did little more than pause, breathe, and move on.

Barney, while wishing for more time to cope with the stressors of a busy department, put it this way,

> Well, you know like anytime, sometimes like after the situation you have to find the place that you kind of go to diffuse and that may mean that you go to the bathroom and lock the door for a minute. [Laughs] . . . Or you know, of course, anything around here with our schedule is so busy, there's another situation waiting to pick up when that one is over so you just take a deep breath and kind of sigh and just move to the next moment and put it behind you.

Juggling all the stressors are "just part of your job working with patients," Sarah explained. She recounted that to "have everything done by the end of the day" she "just take[s] a deep breath and [remembers] you can only do one [patient] at a time, and [hopefully] tomorrow will be better [laughs]". Quinn noted that time is a commodity which is not taken for granted and if he finds even a very short free space he, "just take[s] a breather for a couple of minutes then go[es] back out and hit it head on again."

Dory said that she has been "doing this for so long that its almost second nature; you don't really thing about how you are doing it." "Everybody needs to be treated and you just have to do your job and you just keep going," Dory expressed of those situations that get so busy and stressful. She, too, acknowledged "tak[ing] a deep breath" and moving on; reassured, she claimed, "it's going to be ok."

Lila Jane explained that, as a radiation therapist, patient care is her first priority despite the things that are happening around her. She does not perceive much support from her external sources [administration or management] to alleviate the stress or to recognize coping strategies.

She noted with, “everyday stressors, you just cope with on your own. Deal with it and move on.” Lila Jane described how she keeps a patient-first mindset during the stress by continuing and not allowing her own frustrations to show,

> Like I don’t like to feel rushed to where you want to do everything correctly, no matter what. No matter if you’re behind, or whatever and so we usually just keep on, going through the motions and try not to rush or make the patient feel rushed.

Although the participants wished for greater separation from the stressors in their job lives, they were comforted in taking whatever bits of time that they could find. In tiny increments, they could be found hiding in bathrooms or taking walks outside.

Dory told of a co-worker who had become quite upset because of a confrontation with a patient over scheduling. She said that both the physician and the department manager had become involved in the situation. Dory explained that following the resolution of the altercation, she advised the co-worker to, “go. . . you [the therapists] really can’t go far. You go to the break room or get a snack, but food is always good and sometimes coffee, right? [laughs].”

Fifteen minutes, that’s all that Quinn hoped for, and he described that there are days he doesn’t have time to carve out even a quarter hour of down time.

> Now if I get 15 minutes to myself, I will just sit and do nothing. Like if I have a moment from the machine, if it’s lunch or whatever it may be and some days we don’t get lunches because nobody knows how to rotate. If I have those quiet moments, even if it is just going to the bathroom for a few minutes, I don’t mean to use the facility.

Quinn wasn’t the only radiation therapist that found solace from his stressors by sneaking away to the bathroom. Barney, too, verbalized his solution for a short getaway,

> Well, you know like anytime, sometimes like after the situation you have to just have to

> find the place that you kind of go to diffuse and that may mean that you go to the bathroom and lock the door for a minute . . . [laughs].

Leia said that even though she tries to "deal with it," it's hard to "shut it off" when the stressors accumulate. She describes that when she feels the weight of the stress building throughout the day, she tries to take a moment to "self-examine" and "go for a walk during the day for lunch or something to just get out. . ." "I will get out of the department; I will get away from it."

In an effort to get away from the stressors of the job, the RTTs attempted to leave their work days behind. Trying to "leave work at work" was a coping strategy employed by a handful of the participants in this study; however, it proved to be ineffective for a couple of the RTTs as they admitted to thinking about their patients even during their off time. They worried about their patients' health and well-being and about treatment specifics (i.e. set-ups and physics plans). They found that even while away, they remained compassionately dedicated to their patients.

Lila Jane said she tries to leave work at work and "home at home," but she finds herself often thinking of her patients and their care.

> It's hard to just stop thinking about it. Yeah, like we had an electron that we did last week that I thought about all week because I was wondering how it was going to work out because it was a really complicated set-up. I mean I do still think of it.

Nolan, who also enjoys relieving his stress by coaching children's sports in his free time, said that he leaves his job in the afternoons with a pretty good mindset. "I don't really leave here stressed. I try not to take work home and I never hate coming to work," he voiced.

Support. Support as a general category for coping was marginally referenced by the participants in this study. Support from co-workers throughout the study was a topic of mixed

results for the RTTs; about half described good supportive relationships with their fellow RTTs and half had no support at all from their co-workers. Considering the effects of positive and negative coping environments on stress, the data results will show samples of both ends of the spectrum. Faith and family were referenced by a nominal number of the participants as supportive coping mechanisms, compared somewhat to the findings of Gillies et al. (2014), who noted that RTTs found strong social support in their families; both strategies allowed for the RTTs to leave the stressors of the cancer centers behind and do so in constructive ways.

Malecon said that his immediate co-workers are very supportive and that he "enjoy[s] the people that [he] works with" and that he finds the RTTs to be "very supportive" of each other. When asked about the support system provided by her co-workers, Minnie replied that they, "get along really well. I love them dearly . . . We all feel about the same on most things, so we can talk to each other about it without fear of any kind."

Conversely, Priscilla suggested that her co-workers' inability to cooperate was her biggest source of job-related stress. She found that the constant source of negativity drained energy from the department, proved to be taxing on her personally, and placed patients in an uncomfortable situation. Her co-workers offered no support to her as she struggled to cope with the stressors of her job as a radiation therapist; instead they left her feeling as if she, "want[ed] to leave and just walk away from the situation because you can only take so much tension in your department when, you know." Leia said that she realized "it took a lot of spiritual help" for her to come to a place of peace about her role in the department, and that ultimately she knows that her faith is her "number one coping mechanism."

Other RTTs, Lila Jane and Sarah, acknowledged that they depend on their families and children to draw them away from work stressors. Lila Jane commented that her, "daughter helps

[her] a lot, because she is a busy bee and we are on the go a lot. I do things usually with her all the time." Sarah said that the first thing she does when she leaves her job is to, "go get children;" however, she noted laughingly that "just ends one job and starts another!"

Research Question Four: (*How do radiation therapists find motivation to continue in their chosen field in light of job-related stress?*)

So, how do they do it? How do RTTs find the motivation to continue in their careers despite all the job-related stressors that they have described? Participants in this study, which are likened to the RTTs studied in the 2014 work by Diggens and Chesson, suggested that they find personal and professional satisfaction from working with the patients and in knowing that they are helping to make a difference in their lives. One main theme developed from this research question, with it exceptionally overwhelming everything else. (see Table 5).

Table 5

Research Question Four: Common Theme and Associated Category

RQ4: (How do radiation therapists find motivation to continue in their chosen field in light of job-related stress?)
Common Theme: Patients
a) Co-workers

Common Theme: Patients

Patients, helping patients, caring for patients, being there for patients, loving patients, guiding patients, healing patients. There was an extraordinary response to the question of motivation. Every single participant, in some way, credited their patients for being the glue that held them to their chosen profession. Despite the many experiential job-related and personal

stressors, RTTs rely on the relationships with their patients to keep them coming back to work day after day.

Priscilla exclaimed that she loves her job and that she believes her duties include, in addition to technical expertise, encouraging her patients and "cheering them on." She feels that she forges bonds with her patients by providing intimate, close care to her patients.

> I love my patients when they like come and haven't been under treatment for 3 years and they ask to see me, that's why I go in. To come back and visit me is like the world. Like they ask for me and come give me a hug and say hey how have you been? That's why I come to work every day.

Dory said that she is motivated by "helping people . . . [by] saving lives." Tonya feels the desire to take care of her patients and for them to know that she is giving "100% of [her] attention and [her] time" to their treatments. Minnie expressed that, despite all the stress, she, "love[s] treating the patients and [she] love[s] getting to know them." Barney shared, that even after 32 years in the field, he realizes that the patients help keep him going and Leia described that, during moments of intense stress, she remembers that it all "about treating patients."

Lila Jane said that she finds herself "stressing a little" when she is away from work; she wants to know how her patients are doing; she wants to come back to work and "know about so and so, this or that set-up." She explained that she, "like[s] coming to work and doing my job. I love the patients. They just make you feel so loved."

Sarah, a self-proclaimed people person, enjoys meeting patients from all different walks of life. She said that she loves everything about it and "even the stressful situations . . . would never keep [her] from coming back the next day." Sarah says of the reward that is her career,

> We have these patients that come back over and over you know just to drop by and say

> hello and there are patients you know that I get Christmas cards, or they just keep in touch years and years later and it's just very rewarding.

Quinn summed up his feelings on why he strives for top-notch patient care while in the face of job-related stressors; for him, it's personal.

> I keep going to work because people will tell you that I am a politician when I go into work because all of the patients remember my name. Because it's more than that to me. I want you to look at me and say [Quinn] was such a nice guy and he helped me out. And I tell people this too, especially when I was in CT because when I was in CT, I was literally the first person these people saw after being given this [diagnosis] and okay now what do we do? And something I told everybody not just from a scripted standpoint, but because I mean it, is we're here for the technical side of things, but we are also here for the non-technical side of things. And when people ask, 'what do you mean?' It's like if you need help with anything, a support group, you need food, you need a gas card, you need something like that, I will be your point person. You just have to tell me. I will get you there. I will do whatever in my power to help you through this. That's why I do what I do.

Co-workers. A minority of the RTTs in the current study felt as if their co-workers provided motivation for them to return to work each day and some felt very differently on the topic. This category will focus on the participants whose relationships with their co-workers were sources of strength and resiliency.

Minnie said that she and her co-workers "depend" on each other. Nolan explained, when asked why he loves coming to work, that he gets to, "work in a good environment . . . [and] [he] like[s] the people that he works with . . . I just feel like I have something that a lot of people

don't have and I'm fortunate for that." Malecon expressed that he felt his workplace, "has been one of those places where everyone has always loved coming to work because of the people that we work with."

Barney, looking back at three decades of experience, credits his co-workers and a little stress for keeping him on his toes. He claimed that he wants to just keep, "coming here to be the best therapist, co-worker, or even my role as a supervisor to make sure that I am doing the best that I can."

Summary

The phenomenon of job-related stress in RTTs was demonstrated through the research process. Robust interpretations from all participants illustrated the experiences related to stress and to associated coping mechanisms. As the data was analyzed for the four research questions, four main themes developed and 11 sub-themes were subsequently derived. A depiction of the analysis is shown in Table 6, with specific attributions of the themes and categories noted by experiential description.

Table 6

Summary of Common Themes and Associated Categories

Common Themes and Associated Categories as Related to Research Questions							
#1 Describe Stress		#2 Contribute to Stress		#3 Cope with Stress		#4 Motivation	
Frustration	11/11	**Uncontrollable Situations**	11/11	**Breathe/Keep Working**	5/11	**Patients**	11/11
Lack of Autonomy	6/11	Schedules	11/11	Support	3/11	Co-workers	4/11
Mixed Emotions	6/11	Management	9/11				
Responsibilities	6/11	Co-workers	8/11				
Distrust	4/11	Patients	8/11				
		Doctors/Physics	6/11				

CHAPTER FIVE: DISCUSSION

Overview

The purpose of this phenomenological study was to describe occupational stressors and related coping mechanisms of RTTs at select cancer treatment centers. This chapter will provide a discussion of the findings, along with implications and recommendations for future research. The parallels and discrepancies between former and current research will be noted.

Akroyd et al. reported in 2002 that RTTs in their study were "depleted or drained of emotional resources, overextended, and exhausted by their work;" (p. 818) the results of the current study would suggest that RTTs suffer likewise. The stressors that RTTs attributed to leading to this level of distress included: increased workload, complex patient treatments, administration and management issues, intensified responsibilities, and negative or hostile co-worker relationships (Poulsen et al., 2014; Diggens & Chesson, 2014).

RTTs turn to differing coping mechanisms attempting to alleviate the stressors related to their jobs. Options for strategies include active coping measures, in which personal and professional interventions are sought to intervene in stressful situations (Akroyd & Adams 2000; French 2004, Jasperse et al., 2014; Le Blanc et al., 2007). Previous researchers have reported that the use of passive coping mechanisms, such as escape, avoidance, and continuation, result in mixed outcomes (French, 2004; Poulsen et al., 2014; Umann et al., 2014).

It was also suggested by Lawrence et al. (2011) that "any strategies to alleviate the problems identified tend to be vague and difficult to implement in practice" (p. 1).

Summary of the Findings

The data, which was derived from face-to-face interviews, online focus groups, and personal journaling entries, was gathered over the course of eight weeks. The data was interpreted and summarized via the method of Christ and Tanner (2010) and analyzed through the coding methods of Ranney et al. (2015). These processes revealed four main themes and 11 associated categories which related to the four research questions. The research questions with corresponding main themes and categories are as follows:

Describe Stress: Main Theme and Categories from Research Question #1

1. Frustration
    a. Lack of Autonomy
    b. Mixed Emotions
    c. Responsibilities
    d. Distrust

Contribute to Stress: Main Theme and Categories from Research Question #2

1. Uncontrollable Situations
    a. Schedules
    b. Management
    c. Co-Workers
    d. Patients
    e. Doctors/Physics

Cope with Stress: Main Theme and Category from Research Question #3

1. Breathe/Keep Working
    a. Support

Motivation: Main Theme and Category from Research Question #4

1. Patients
    a. Co-Workers

Thick, rich descriptions of the participants' experiences as described to the researcher validate these themes and can be found in Chapter Four. The discussion, implications, and recommendations for future research which follow are a result of these interpretive findings.

Discussion

The first main theme that emerged during this study, relating to Research Question #1, was that of *Frustration*. Every radiation therapist expressed the experience of frustration in an over-arching form; it seemed to be a catch-all phrase that served to identify different emotional manifestations. Four associated categories developed from *Frustration*: Lack of Autonomy, Mixed Emotions (Hurt/Anger/Upset/Disrespect), Responsibilities, and Distrust. The RTTs described *Mixed Emotions* of being angry, overwhelmed, anxious, and worthless, with some of the participants especially noting the feeling of "*lack of control [autonomy*]." Galletta et al. (2011) reported on the significance of autonomy as related to positive intrinsic motivation, consequently positive work feelings and attitudes. Meanwhile, Jasperse et al. (2014), Johnson et al. (1998), and Savoy and Wood (2015) all spoke to the job-related stressor of *professional disrespect*, also expressed as a lack of recognition.

As suggested by Sehlen et al. in 2009, RTTs are challenged by increasingly difficult patient treatment schemes. This led, in part, to the third category for Research Question #1: *Responsibilities*. The RTTs felt that they experienced ever expanding levels of responsibility for both their job duties and for patients. The participants' obligations which were related to job-duties included facets such as delivering complex treatment regimens and assuming job tasks of

other department employees. The RTTs expressed patient-centered responsibilities as those feelings of obligation in that they perceived inadequate time to spend with patients and the personal beliefs of "stress by compassion," as described by Sehlen et al. (2009, p. 2).

The fourth and final category derived from Research Question #1 was that of *Distrust*; participants honed in on two sources of stress in this category, management and co-workers. Diggens and Chesson (2014) addressed the stress placed upon working RTTs by ineffective team dynamics and by problematic team relationships. The RTTs in this current study identified their managers and/or their co-workers as ineffective, useless, lazy, or reckless. These attributes bled into other themes and categories in a circular, dysfunctional pattern.

What do RTTs, in this study, attribute to causing most their job-related stress? Cumulatively, the participants felt that they worked in *Uncontrollable Situations*. The RTTs believed that although they held great responsibility in their professions, they were very often forced into situations which were completely out of their control; this was described by one participant as an "uncontrollable, vicious cycle" (Quinn). They voiced concern for the quality of treatment delivery, for the value of patient care, and for their own emotional well-being. The first category associated with Research Question #2 was *Schedules* and it resounded with every participant (11/11). Patient schedules were the root cause of experiences ranging from inequitable 14 hour working days to hateful attitudes directed at RTTs, and RTTs' personnel confrontations or highly ineffective management decisions. Several participants complained about never-ending work days, lack of time with their own families, or the inability to oversee patient schedules. Gillies et al. (2014) documented in their study on Canadian RTTs that "85% felt 'overwhelmed because of their case (work) load seeming endless." Staffing schedules encompassed some of these same feelings and emotions, as they led to some of the same

decisions on the parts of the RTTs and the managers. It was voiced that the RTTs felt as if their input into departmental decisions were unimportant and, therefore, not heard. Previous literature reports staffing issues such as high stress levels and displeased workforces; however, these fall short in richly and expressively describing the experiences which are found in this study.

Associated category number two, *Management*, elicited incredibly strong responses from the participants and produced harsh verbiage: ineffective, disrespectful/unsupportive, and bullying. The most described stressful experience related to management was 'ineffective' (82%). The participants in this study found their managers to be unorganized, irresponsible, uncaring, indifferent, and inconsiderate. These sentiments reflect those detailed by the respondents in Reingold's 2015 report in which it was noted that stressors included a "lack of consistency from management, feeling underappreciated at work, and a negative work environment, including 'unnecessary drama' and complaints about management in general" (p. 157). The RTTs attributed, in some capacity, stress from management to aspects of almost every category, regardless of subject; the only exceptions were those topics related to patients and motivation. The RTTs in the current study felt as if their managers were not supportive of them as employees, during working hours or as persons, once outside of the job environment. Five of the participants described experiences of unsupportive or disrespectful behavior. Isikhan et al. (2004) found that ineffective support from management or administration caused a statistically significant increase in the job-related stress scores of health care professionals. Lawrence et al. reported in their 2011 qualitative study that poor support from management was a limiting factor. One third of the participants (4/11) felt as if they had experienced bullying behavior by a person in a managerial or administrative position. The hostility of a bullying work environment on RTTs was documented by Johnson and Trad (2014). Currently, those reporting participants felt

as if they had been harassed and threatened; this mirrors the behaviors reported by Johnson and Trad (2014).

The third category to emerge from Research Question #2 was *Co-workers* and the participants spoke boisterously about negative work environments, confrontations, inconsistent abilities, and treatment errors. Most notably, the participants blamed their co-workers for contributing to negative work environments. In their 2014 study, Diggens and Chesson reported on the stressor of "problematic working relationships with team members/colleagues" (p. 11). Although this is an all-encompassing statement, it is lacking vigorous descriptions such as those given by participants in this study. RTTs characterized their co-workers as selfish, petty, argumentative, or arrogant. These personal attributes potentially led to confrontations between employees which, in turn, gave chance for errors in patient treatments. Some participants relayed sentiments of co-workers whom they believed to be inadequate, irresponsible, lazy, and reckless.

Almost three quarters of the participants (8/11) expressed that they felt stress from their patients. The fourth category for Research Question #2 was *Patients*, a subject that had been heavily discussed in previous literature. French (2004), Gillies et al. (2014), and Sehlen (2009) wrote about RTTs intense relationships with patients, oftentimes leading to emotional responsibilities and personal fears. The RTTs in this study described mental stressors of knowing "what goes through a therapist's head all day long" (Leia) and just trying to care for their patients with exceptional care. Noddings (2012) wrote, concerning Care Theory, that the "attention characteristic of caring is receptive [and] [it] is open and vulnerable" (p. 54). "To learn what the cared-for is going through, we put aside our own projects and listen. If the cared-for is troubled or in pain, the carer is likely to feel some degree of pain also" (Noddings, 2012, p.

54). Some of the RTTs in this study expressed feelings of trouble and pain for the situations of their patients. Poulsen et al. (2014) and French (2004) also documented the stressor of 'mistakes' in that there was "no room for error" (p. 228); this was echoed by one participant who noted that she was all that stood between the patient and a costly mistake (Priscilla).

Finally, for Research Question #2, the category of *Doctors/Physics* emerged and from it, the RTTs expressed encounters of unsupportive staffs and issues of late treatment plans. The participants described experiences in which they felt the physicians in their departments did not appreciate their roles professionally, did not act in their or the patients' best interests, and did not support the overall cohesiveness of the department, at times acting negatively or aggressively. Issues in the physics or dosimetry which led to late or incomplete treatment plans caused for delays in patient schedules, inconsistent start times, and prolonged patient wait times. These stressors were seen in about half of the RTTs in the study.

Research Question #3 asked participants about coping with job-related stressors. One main theme emerged from the data; however, the number of responses was substantially lower than those associated with other themes. The contrast might suggest that there are fewer coping mechanisms in place than there are stressors or motivators. The most commonly utilized coping strategy by participants in this study was *Breathe/Keep Working* (5/11), with an associated category of *Support* (3/11) being revealed. It is noted that over half of the participants in this study had no recognized coping mechanisms; they simply continued to work through the overwhelming stress. Those who chose to "cope" felt as if they just had to take a very brief instant and keep on going; they didn't have time to actually process "coping" due to the fact that they had patients to treat while operating on incredibly tight schedules. This same type of coping mechanism, avoidance and continuation, was reported by Poulsen et al. (2014) and by Umann et

al. (2014). Few RTTs attempted to find time for themselves from stressful situations whenever possible, even taking brief moments to hide away in the bathroom. Folkman (2004) found that this form of distancing was an adaptive form of coping, in which the outcome of a situation is seen as "negative and unalterable" (p. 1001). The category of *Support* was described even less frequently, with *Co-workers* and *Faith* and *Family* being expressed by three participants. This mechanism (labeled 'support-family and friends'), had been suggested by other researchers as a constructive coping strategy (Gillies, 2014); that experience was not as evident in this study.

Considering the theoretical concept of meaning-focused coping (Folkman, 2004), described as that in which "cognitive strategies are used to manage the meaning of a situation" (p. 752). Folkman (2004) explained that the coper draws from his own beliefs, morals, values, or goals to find meaning or modify the significance of a stressful encounter and that this was especially appropriate in cases of chronic stress that had not found resolution through alternative coping efforts. RTTs, having habitually dealt with compounding stress and having found few effective coping outlets, may turn towards meaning-focused coping in which they look for solutions deep within their own beliefs and goals. It is in their own quiet places that they find their own personal processes with which to work through job-related stressors.

To end on an incredibly positive note, how do they do it? How do RTTs keep going despite all the intense stressors? The answer pointed overwhelmingly to one reaction: *Patients*. A distant second category emerged, *Co-workers*. The RTTs (100%) in this study said that they continue in their jobs because they have astonishing compassion for their patients. RTTs feel powerful responsibility, relationship, and respect for their patients. Akroyd et al. (2009) referred to RTTs caring attachment in noting the "sense of purpose, intense and unique patient interaction, and shared goals for patient treatment. . ." (p. 119). This concept was reported in

earlier research by Gillies et al. (2014) and Slocum-Gori et al. (2011). Radiation therapists will fight for their patients even when they find it difficult to fight for themselves. Gagni and Deci (2005) referred to this theory of self-determination as "integrated regulation" (p.335), calling it the fullest type of motivational internalization. The authors noted that it "allows extrinsic motivation to be truly autonomous or volitional [and] involves the integration of an identification with other aspects of oneself—that is, with other identifications, interests, and values" (p. 335). Gagni and Deci (2005) recalled the experience of different types of healthcare workers in which they identify the importance of patient care while integrating the role of their professions. "With integrated regulation, people have a full sense that the behavior is an integral part of who they are, that it emanates from their sense of self and is thus self-determined" (p. 335).

Implications

This study was implemented to fill the gap in the literature on stress and coping in RTTs in the United States. Although current studies have been conducted internationally, no studies have been carried out on U.S. RTTs in almost two decades which investigate the phenomenon of stress and associated coping mechanisms. Additionally, the majority of studies have been completed utilizing quantitative methodology. Subsequently, RTTs in the United States have been left without a voice in the field of research regarding their job-related stressors and coping strategies.

Considering the earlier study done in the U.S. (Akroyd et al., 2002a), the authors determined that RTTs had "significantly higher levels of emotional exhaustion and depersonalization" when these numbers were compared to the statistical norms. Emotional exhaustion can best be described as "having feelings of being depleted or drained of emotional resources, overextended, and exhausted by their work" (Akroyd et al., 2002a, p. 818). This

sentiment was found to be true of the participants' experiences in the current study; however, depersonalization, described as "negative, callous, or cynical attitudes toward their patients" (Akroyd et al., 2002a, p. 818) was not a sentiment that resonated with the current group of participants. Consequently, the participants in this study, unlike those in the study by Akroyd et al. (2002a) did not seem to exhibit high levels for the first two stages of burnout, only the first stage. It was found to be contrary on the second point; the participants found tremendous motivation despite stressors from their patients.

It has been noted that the majority of earlier studies, nationally and internationally, have been conducted utilizing quantitative methodology. For this reason and to better understand the phenomenon, a qualitative approach was taken for the current study. The subject of incompetent management, which was inter-connected with a myriad of themes and categories, came to light. It is unclear as to whether these issues are relevant only to this study or that they have not been fully disclosed in earlier quantitative works. The only informative description of management interactions came in a small South African qualitative study in which the participants divulged lack of communication between RTTs and managers (Lawrence et al., 2011). The current study demonstrated that RTTs consider themselves to be unsupported and unappreciated by management or administration. Akroyd et al. (2009) noted that those in leadership positions "significantly influence the workplace environment in positive and negative ways" (p. 119). Therefore, it seems imperative that the topic of management in radiation therapy be further investigated considering its impact on the radiation therapy workforce and patient care foundation.

The responses for stress far outweighed the responses for coping. Does this imply that the stressors outweigh the coping mechanisms? The participants didn't have solid answers for

how they coped with job-related stressors; they just kept on going. Despite being warned by Akroyd et al. (2002a) and more recently by Jasperse (2014) that the quality of patient care was on the line, healthcare administrators continue to place their employees and their patients at risk by work overload, ineffective management, and increased technical standards with decreased staffing.

Previous works (Akroyd et al., 2002a, 2002b; Jasperse, 2013; Le Blanc et al., 2007) called for increased education and training to help alleviate job-related burnout and occupational stress, while subsequently providing means for effective coping. The participants in the present study did not report any available resources to reduce stress or employ successful coping strategies in their work environments. The RTTs described tremendous stress and expressed virtually no coping mechanisms in their present job experiences. Vygotsky (1997) suggested, in his Social Constructivism Theory, that human learning is a social process which originates in society or culture. Reflecting on this, it would suggest that RTTs have learned from their own peers (management and co-workers) how to become overwhelmed by stress and how to avoid coping with it. Based on the findings of this current project and following the recommendations of previous researchers, the implication would stand that cancer care administrators provide educational and training tools to assist RTTs in more effectively dealing with job-related stress and necessary coping. Likewise, educators should note the need for student preparation and facilitate curricular implementation to include strategies for recognizing and coping with work-related stress.

Limitations

There were several limitations to this study, namely the geographical constraints of the participant pool. The research was limited to RTTs working at cancer centers in area in Central

Alabama and in Eastern and Southeastern Tennessee. Additionally, the participants were chosen by selection, based on maximum variation; they each volunteered for the project. Possibly, a larger pool of RTTs may have provided for larger variances in responses.

Another limitation of this study was that all the data was collected via a self-report format, i.e. interviews, online discussion board, and personal journaling. The participants were free to speak and write about their own experiences; the researcher interpreted data from the transcripts of the participants' own words.

Demographically speaking, the majority of the participants were female (64%). This sample is representative of the overall RTTs' population, with the ASRT reporting a 70% female dominance in the profession (ASRT, 2004, p. 38).

Recommendations for Future Research

This study has shown that RTTs are excessively stressed and possess few coping mechanisms. These experiences appear to have remained the same, despite research indications almost two decades ago (Akroyd et al., 2002a). Although many previous studies (Akroyd & Adams, 2000; French, 2014; Gillies et al., 2014; Jasperse et al., 2014) have called for implementation of training, either personally or organizationally, to assist RTTs better deal with stress and learn to cope, none of the participants in this study had any resources of the kind.

RTTs and the community might benefit from future research that includes a mirrored qualitative study utilizing a diverse population, in a different geographical area. This would provide in-depth experiences of RTTs for comparison and contrasts to the ones presented in this study. Additionally, a repeat or revision of the nationwide quantitative study may provide an updated look at a large sampling of RTTs, to be measured against the ideas expressed in this study.

Another suggestion is to implement a case study approach in which one to two RTTs record their thoughts through journals over a longer period. They would be interviewed throughout the project. This would allow for the normal ebbs and flows of a cancer center to weave into the story; how did time affect the participants' emotions and moods? Did management get better, worse, or stay the same during the experience? And how about the patient interactions? What really affects the RTTs' levels of stress and methods of coping?

And finally, engage with an international colleague and dig into one of their quantitative studies. Considering the more recent nature of their studies, find out if some of the participants' responses from the current study relate to any items from other research. If so, work towards a connection. Is it inherent to RTTs' experiences? To management? To patients? Work collaboratively towards greater practice and better patient care.

Summary

My personal experience as a radiation therapist and professor throughout this project led me to remember "an event lying in my past which led me to project on this particular act" (Schutz, 1967, p. xxiv). During the data collection phase, my level of empathy for my fellow RTTs reached great depths, allowing me to dig and seek out answers for explanation. As van Manen (1990) stated, "lived life is always more complex than any explication of meaning can reveal;" however, I endeavored through this research project to interpret and relay the participants' genuine stories. Their experiences were collected and documented during interviews, online discussion boards, and personal journaling experiences. The participants' voices provided a powerful tool for interpretation and discussion as related to the phenomenon of job-related stress and associated coping mechanisms.

Many of the results were consistent with previous research; however, some interesting findings emerged in the current study based on the RTTs' perceptions of stress and coping. The participants acknowledged all of the tenets of emotional exhaustion, as described by those researchers who have previously studied burnout. These characteristics include being depleted, drained, and overextended. Unlike other studies, the participants did not exhibit signs of depersonalization, which was shown to be demonstrated as having a callous or negative attitude towards patients. The RTTs in this study proved quite the opposite; they found their patients to be the greatest sources of motivation for returning to work each day. Their patients were the reason that they chose to continue to work as RTTs despite the incredibly overwhelming stressors.

By utilizing qualitative methodology, I was able to provide rich textural descriptions of the RTTs experiences with the phenomenon. This is something that has not been available with the quantitative surveys. Also, considering that the last research study conducted on U.S. RTTs' levels of stress and coping was completed in 2002 by Akroyd et al., this study provided great detail into the actual working world of the participants. The overpowering theme of uncontrollable situations, which was entangled with scheduling, management, negative work environments, and lack of support, was painstakingly laid out by the participants.

The RTTs have very, very few coping skills. Looking at the foundational theory for this project, Vygotsky's Social Constructivism Theory, the participants learn in their everyday working environments. They have learned to become overwhelmed by stress in poorly managed departments and have been provided no mechanisms with which to cope. Despite repeated calls for help from earlier researchers, the aid has not reached those RTTs who need it. One participant sadly summed up the emotion of the experience, "the damning part of that is . . . [we]

are so worn out and under so much stress, it kills us in the process" (Quinn, personal interview, 2016).

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APPENDICES

Appendix A: Invite Email

Dear (*insert name*),

As a doctoral student at Liberty University preparing to conduct research for my dissertation, I would like to invite you to participate in my study which will explore stress and coping in radiation therapists. If you agree to be a part of the project, you can expect to volunteer approximately 4-6 hours of your time over the next one to two months. This time will be spent in two initial appraisal surveys which evaluate levels of stress and abilities to cope, a private individual interview session with me, an online focus group, and a personal journaling experience. Your level of participation will determine your actual time commitment to the study.

Please note that you will be assigned a pseudonym for the project so that your identity will remain confidential; however, you must be careful to guard any personal or professional information that you reveal during the online focus group sessions in order to protect your privacy. The data garnered from this study will be utilized for subsequent publication; at that time, all sensitive details will either be removed or modified to protect your identity.

If this sounds like a project with which you are willing to help, please reply to this email within the next three days and I will send follow-up instructions and informed consent for the research study. If you have any questions or comments, you can reach me at cherylsturner230@gmail.com.

Thank-you for your time and consideration,

Cheryl S. Turner, MA, R.T. (R)(T)

Appendix B: Email to Participants

Dear (*insert name*),

Our research group has been finalized! I will send an invitation to you so that you can join the Google Group (Stress and Coping in RTTs); all of the components are written in Google platforms. For this reason, you will need to create a Gmail account if you don't already have one (it's free and you can delete it after this project is over if you like). I will be scheduling personal interviews over the next couple of weeks. We will work to make the time and location convenient for you. In the meantime, please complete the following steps:

1. Sign the **attached informed consent** and send it back to me. I will collect a hard copy when I come for your interview.
2. Send me your cell phone # (if I don't already have it)—texting seems to be a much more efficient method of communication.
3. Establish your Gmail account and send me the new email address.
4. I will contact you so that you can choose a pseudonym to be utilized throughout the study—pick a good one ☺
5. I will send you the links to 2 short assessment surveys on stress and coping (Google Forms); these should only take about 10-15 minutes' total time. Complete these prior to your interview.
6. Ask me any questions that you may have.

I appreciate you so much for helping with this project and this process. I believe that, ultimately, we will have a voice which could impact our co-workers and our profession. I promise to diligently uphold the integrity of this project and present your words so that they are heard.

Best,

Cheryl

Appendix C: Consent Form

The Liberty University Institutional
Review Board has approved
this document for use from
5/25/2016 to 5/24/2017
Protocol # 2534.052516

CONSENT FORM

HOW DO THEY DO IT? A PHENEMONOLOGICAL DESCRIPTION OF STRESS AND COPING IN RADIATION THERAPISTS

Cheryl S. Turner

Liberty University
School of Education

You are invited to participate in a research study investigating radiation therapists' experiences with job-related stressors and coping mechanisms. You were selected as a possible participant because you are a radiation therapist currently working in a cancer center in the regional area of Tennessee, Georgia, and/or Alabama. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Cheryl S. Turner, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to explore the phenomenon of stress in the lives of radiation therapists and to gain a greater understanding of the coping mechanisms they employ to attempt to deal with job related stressors. There is very little research in this area, and virtually no qualitative research, that has asked radiation therapists how they deal with the stressors of working in oncology facilities. Through sound research practices, it is hoped that more effective education and training on preventative coping measures could be suggested to better provide increased well-being for radiation therapists thusly supporting quality patient care.

Procedures: The expected amount of time that you will be asked to contribute to this study is approximately 4-6 hours, which includes the following:

- Pre-interview appraisal survey packet,
- One 60-minute individual confidential interview,
- Online confidential focus group x 1 week, at least one entry or unlimited entries,
- 1-2 hours of personal journaling post-focus group, at least once weekly x 3 weeks, and
- One follow-up interview to verify accuracy of information, which should last 15-30 minutes.

If you are identified to participate in this research study and agree to voluntarily give of your time, you should expect the following:

- Completion of the pre-data collection packet, which includes two surveys designed to appraise your levels of stress and your abilities to cope with stress. These surveys will be managed with Google Forms and will be confidential.
- Participation in a sixty-minute individual interview with the researcher at a location of privacy and convenience to discuss your role as a radiation therapist, your job stressors, and your associated coping mechanisms; your identity will remain confidential.
- Participation in a one-week online focus group with other project participants. The group will be housed within Google Groups, and your identity will remain confidential;

however, you will be responsible for maintaining the privacy of the details which you disclose to the other members of the group.

- Keep a detailed journal of your job experiences, job stressors, and associated coping mechanisms at least once weekly for a period of three weeks following the online focus group. This journal will be maintained in Google Docs and will be password protected; participants will utilize pseudonyms to ensure confidentiality.
- Participation in a follow-up interview (in person or telephone) to allow for verification of information and to reflect on the research process.

Risks and Benefits of being in the Study: You may feel uncomfortable discussing issues dealing with job stressors; however, the risks associated with this study are minimal and are no more than you would encounter in everyday professional life.

The possible benefits to society from participation in this study include increased awareness concerning the issues of job stressors in radiation therapists, the establishment of strategies concerning educational and training needs related to coping mechanisms, the establishment of strategies to improve well-being of radiation therapists, and the recognition of strategies to improve the nature of patient care.

Compensation: Participants will not be compensated for taking part in this study.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records. We may share the data we collect from you for use in future research studies or with other researchers; if we share the data that we collect about you, we will remove any information that could identify you before we share it.

The records from this study will be kept confidential. The data gathered will be used for the sole purpose of writing a dissertation. In any published report, all identifying information will be removed as to make it impossible to identify participants. Research records will be securely stored and available only to the researcher and the dissertation committee.

All participants will be assigned a code and all responses will be assigned code-categories. In the final report, participants will be assigned pseudo-names. All cities and locations will be assigned pseudo-names, noting ambiguity.

Recordings of the interviews will be securely stored and will only be heard by the researcher, the transcriptionist, and the dissertation committee (if desired). The recordings will be destroyed once they have been transcribed.

The data gathered from the interviews will be stored in locked cabinets and will be destroyed three years after the published study, as required by law.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If

you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions: The researcher conducting this study is Cheryl S. Turner. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at cherylsturner230@gmail.com. You may also contact the researcher's faculty advisor, Dr. Kimberly Brown at kbhall5@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record me as part of my participation in this study.

_____

Signature Date

_____

Signature of Investigator Date

Appendix D: PSS-14 Questionnaire

http://www.psy.cmu.edu/~scohen/scales.html

Appendix E: Brief COPE

http://www.psy.miami.edu/faculty/ccarver/sclBrCOPE.html

Appendix F: Interview Questions

1. Tell me about the times or situations in your work experiences as a radiation therapist that have been sources of stress.
2. How would you describe the experiences which led to these times or situations of stress in your work as a radiation therapist?
3. What examples can you provide of things that you did during or after these situations to attempt to alleviate the stressful feelings?
4. How can you elaborate on your efforts to reduce stress or utilize coping mechanisms to deal with job related stressors?
5. Tell me about ways that the stressful experiences have affected or influenced you or your job performance?
6. Can you describe particular methods that you think would be most beneficial for your overall stress reduction in the workplace?
7. How would you explain your motivation to keep going during times of stress?
8. Please feel free to add anything else about this topic that you think would be valuable for this study.

Appendix G: Discussion Topic – Online Focus Group

Below you will find discussion topics for the online focus group related to radiation therapists' stress and coping. The group discussion board will remain open for one week (seven days). You are not required to address each topic for discussion, but may speak to those which you feel most affect your work environment and overall well-being. Please address the topics which you feel most resonant with you and your current situation or best communicate your experiences thus far in this project. Post to the discussion group at least once during the week; feel free to 'converse' with the group as often as you would like. Please be reminded that this is a confidential forum. Utilize your coded study names when posting and be cognizant of any personal and/or professional details that you may make available to the group.

1 Can you describe your feelings after you took the Stress and Coping surveys?

2 Which items on the stress survey surprised you with your answer? Why? How can you relate any of these stressors to your work environment?

3 What were your top three coping mechanisms? How would you explain the effectiveness of your coping skills in your everyday life?

Appendix H: Journaling

Personal Journaling Prompts:

- During Week One, describe your journey towards this point in your career and where you find yourself currently.

The following statements can be applied to any journaling entry:

- Can you describe the best part or a particular good instance of your past work week?
- How would you explain the hardest part of your work week?
- How would you relate to a particular instance that led to difficult stress during the past week?
- Do you have a method for "categorizing" stress, making some more critical than others? Can you describe that?
- Can you demonstrate how you best dealt with or coped with the stressful situations that occurred?
- Can you describe your coping mechanisms as being effective or ineffective and how did you come to that conclusion?
- Who would you describe as being your most trusted source of support during stressful work situations and how does that person(s) fill that role for you?
- Describe how workplace stressors change the way that you feel about your current professional situation? About your career choice?
- How do you feel that your co-workers, supervisor or work administration helps you in managing or coping with work place stressors?
- Where or how do you believe that you find the strength and motivation to continue to work even though you are faced with stressors?

Please know that you do not have to address each question; you only need to speak to the situations or emotions that have affected you in some way and/or feel have impacted your workplace experiences or well-being.