

THE RELATIONSHIPS AMONG COPING, OCCUPATIONAL STRESS,  
AND EMOTIONAL INTELLIGENCE IN NEWLY HIRED NURSES  
IN AN ONCOLOGY SETTING

By

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A Dissertation submitted to the

Graduate School-Newark

Rutgers, The State University of New Jersey

In partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

Graduate Program in Nursing

Written under the direction of

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and approved by

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Newark, New Jersey

May 2015

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## ABSTRACT OF THE DISSERTATION

### The Relationship Among Coping, Occupational Stress and Emotional Intelligence in Newly Hired Nurses in an Oncology Setting

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Oncology work environments are stressful due to increasing workloads, decreasing staffing levels, and rising patient acuity, which may contribute to the physical stress and emotional exhaustion experienced by oncology nurses. Empirical evidence supports that individual Emotional Intelligence levels may be predictive of whether nurses can successfully cope with the occupational stress emanating from the work environment. Theorists contend that individual Emotional Intelligence may moderate the selection of coping strategies when managing occupational stress in the nursing environment. This study explored the relationships among coping strategies, occupational stress, and Emotional Intelligence in newly hired oncology nurses, as well as the degree to which Emotional Intelligence moderated the use of coping strategies in the presence of occupational stress. The EQ-i 2.0<sup>TM</sup>, the Ways of Coping Questionnaire and the Nursing Stress Scale were used to measure the study variables. Newly hired nurses, with no prior oncology experience in a National Cancer Institute-designated comprehensive cancer center, were invited to participate in the study through email/web link to online surveys. Data were collected from

October 2013 through January 2015, after 98 completed surveys were obtained. Data were analyzed to determine correlations between coping strategies (Emotion-Focused and Problem-Focused Coping), occupational stress and Emotional Intelligence. A moderation model was built to determine whether Emotional Intelligence moderated the effect of Problem-Focused and Emotion-Focused Coping during occupational stress. Results of this study found significant relationships between variables, however Emotional Intelligence did not moderate an effect on the choice of coping strategies. Findings concluded that newly hired nurses in this research had average to high Emotional Intelligence and used Problem-Focused Coping to deal with their occupational stress. The stress experienced by the newly hired nurses in this study was higher compared to experienced nurses in other studies. These findings concluded that the newly hired oncology nurses in this research experienced occupational stress within the first three months post hire, and contributed to the empirical nursing literature that explains coping, occupational stress and Emotional Intelligence in this sample of oncology nurses during their initial employment period.

*Keywords: emotional intelligence, problem focused coping and emotional focused coping, occupational stress, newly hired nurses*

## Preface

### Acknowledgments

My sincere thanks and appreciation to very special individuals who  
were instrumental in making my dream a reality:

To my mother, Concettina Ann S. Mazzella, for your love and support,  
and also my father Attilio E. Mazzella, I finished the paper!

To my family, Robert, Valerie Ann & Paul –  
All my love and a very special Thank You!

Dr Lucille Eller, for your guidance throughout this process, and a special  
thank you to my committee members, Dr Cherniss, Dr Ruggiero & Dr Cimiotti  
for your support of this research. To Robyn Ann Nelson, my dear friend and Editor,  
Bunni Jean, and to Dr Fran Iacobellis PhD - we started and ended this program  
together, and finally, my thanks to a very special friend, <sup>ILD.A.</sup>  
Thank you all for taking this journey with me.

To my Colleagues, Staff and Friends at Memorial Sloan Kettering  
who supported these educational efforts - especially  
Kay See Tan, Tamara Strah and Lystra Swift, and most importantly-  
The Newly Hired Nurses who contributed to the findings in this study.

In remembrance of special individuals who are no longer with us, but  
will always be in my heart - Berthold and Theresa Ebstein,  
my nephew Joseph Gaetano Mazzella  
and my Godson, William Norman Kaumann.

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## **CHAPTER I. The Problem**

### **Discussion of the Problem**

Many oncology nurses have had little training in this specialty (Rodrigues & Chaves, 2008; Escot, et al., 2001), even though it was recognized to be more emotionally and mentally stressful than other nursing specialties (Florio et al., 1998; Buerhaus et al., 2001). As a consequence, nurses with minimal nursing experience or who are new to oncology were likely to lack the fundamental skills needed to cope with stress in these complex nursing environments.

Coping is a multi-dimensional construct consisting of thoughts and behaviors that individuals use to manage situations that are deemed stressful (Lazarus & Folkman, 1984; Folkman, Lazarus, & Dunkel-Schetter et al., 1986; Lazarus, 1993a; Lazarus, 1993b; Folkman & Moskowitz, 2004; Matthews et al., 2004). Individuals used one of two types of coping strategies, which were defined by Lazarus and Folkman (1984) as Problem-Focused Coping and Emotion-Focused Coping, in their attempts to address environmental stress.

Problem-Focused Coping (PFC) is described as successful coping. This type of coping is characterized by thoughts and behaviors that are relevant to analyzing stressful situations and seeking alternative means to address them. Strategies used in Problem-Focused Coping are directed at: (1) defining the problem; (2) generating and weighing alternative solutions; (3) choosing a solution; and (4) acting upon it (Lazarus & Folkman, 1984). Successful coping is associated with job satisfaction,

which includes positive feelings of self-fulfillment and well-being (Parikh, Taukari & Bhattacharya, 2004).

Emotion-Focused Coping (EFC) is described as unsuccessful coping. This type of coping is characterized by efforts to reduce the emotional distress caused by perceived harm or threat (Lazarus, 1995) in order to maintain hope and optimism. Strategies used in Emotion-Focused Coping are directed at avoiding, distancing, and selective attention towards the stressful event (Lazarus & Folkman, 1984; Isikhan et al., 2004). Unsuccessful coping can lead to symptoms associated with occupational stress, such as: (1) psychological withdrawal and endangering individual well-being (Lazarus & Folkman, 1984); (2) decreased job satisfaction (Parikh, 2004); (3) increased psychological and physical complaints (Hillhouse & Adler, 1997); and (4) burnout (Elliot et al., 1996; Deary et al., 2003).

When occupational stress levels of newly hired oncology nurses were compared to those of nurses who had been practicing for more than 18 months, Hinds et al. (1994) found that newly hired nurses experienced occupational stress within the first three months post-hire. Nurses new to the oncology specialty characterized occupational stress as resulting from their lack of nursing experience; concerns about making mistakes that would have negative outcomes; providing timely treatments and medications; lack of ability to handle stressful situations; and stress from unusual shifts. Additional sources of stress included: (1) lack of organizational skills; (2) knowledge deficits in administration of medication/chemotherapy; (3) fear of clinical mistakes and their repercussions;

(4) amount/volume of work; (5) challenges of shift work; and (6) high patient acuity (Hinds et al., 1994; Halfer & Graf, 2006).

Occupational stress results from the external demands of situations emanating from the physical, social or psychological work environment that threaten the equilibrium of an individual (Appley & Trumbull, 1967; Lazarus, 1966; Lazarus & Folkman, 1987). Researchers concur that occupational stress for oncology nurses is a result of an imbalance between the demands of the work setting and a nurse's ability to cope with these demands (Nash, 1989; Isikhan et al., 2004). This imbalance can be the result of myriad demands, such as: (1) providing chemotherapy treatments; (2) developing relationships with dying patients and their families; (3) handling tense relationships or conflicts with the medical staff; (4) facing ethical and moral issues surrounding patient care and research; (5) managing high workload levels; (6) lacking experience in oncology; or (7) juggling a personal and professional life (Florio, 1998; Nash, 1989; Buerhaus et al., 2001; Escot et al., 2001; Isikhan et al., 2004; & Gelsema et al., 2005). Researchers concur that successful coping, which includes the ability to manage and regulate emotions in oneself and others through Problem-Focused Coping strategies, would be of greater benefit for nurses than Emotion-Focused Coping strategies in dealing with occupational stress (Le Sargent & Haney, 2005; Chang et al., 2007).

Researchers found that coping strategies reported by new oncology nurses were rudimentary and included: (1) venting; (2) withdrawing; (3) avoiding; or (4) seeking more information, opinions and knowledge (Hinds et al., 1994; Rodrigues & Chaves, 2008). Venting, withdrawing and avoiding were Emotion-Focused Coping strategies

and were consistent with unsuccessful coping with occupational stress. Findings in Hinds et al. (1994) suggest that new oncology nurses do not react to occupational stress in a problem-focused, situation-changing or situation-preventing manner, which results in their limited ability to effectively cope with occupational stress.

Emotional Intelligence (EI) is a multi-dimensional concept that encompasses inter-related emotional and social dimensions, as well as personal traits, skills, and competencies, which enable individuals to relate well with others and adapt to their immediate surroundings in order to be more successful in coping with environmental demands (Bar-On 2006; Cherniss, 2010; MHS, 2011). Emotional and social competencies are particularly important in occupations where emotional and social skills are necessary for successful job performance. Nurses, in particular, interact emotionally and socially with many members of the health care team during most of the workday. Because the workplace encompasses a wide range of these interactions, the individual's emotional and social competencies may contribute to their successful job performance and satisfaction, as well as moderate the relationship between stress and the ability to cope with occupational stress (Ciarrochi, Deane, Anderson, 2002). This, in turn, impacts an individual's physical and psychological health, self-actualization, and well-being (Matthews et al., 2004; Bar-On, 2006).

Theorists agree that an inability to cope with occupational stress emanating from the workplace negatively impacts both individual and organizational outcomes (Matthews et al., 2004). In addition, varying levels of emotional and social competencies for each individual are measurable and may influence and moderate the

selection of coping strategies under challenging or stressful situations (Matthews & Zeidner, 2000; Ciarocchi, et al., 2002).

### **The Purpose of the Study**

Nurses working in oncology settings view their work environment as one of increasing workloads and paperwork, decreasing staffing levels, and rising patient acuity (Buerhaus et al., 2001). The occupational stress associated with these problems may contribute to additional decreases in staffing levels, as well as physical stress and exhaustion in oncology nurses (Buerhaus et al., 2001). Theorists contend that a direct relationship exists between positive patient outcomes and positive work environments that provide support for nurses (Campos de Carvalho, Muller, Bachion de Carvalho, & de Souza Melo, 2005).

Theorists suggest that occupational stress and individual EI may be predictive of whether the oncology nurse can successfully cope with demands in the work environment (Florio, 1998; Nash, 1989; Buerhaus et al., 2001; Escot et al., 2001; Isikhan et al., 2004; Gelsema et al., 2005; & Bar-On, 2006). However, there is little empirical evidence that explains the relationships among coping strategies, occupational stress and EI in newly hired oncology nurses in an oncology setting.

The purpose of this study is to explore the relationships among coping strategies, occupational stress, and EI in newly hired oncology nurses, as well as the degree to which EI moderates the use of Problem-Focused and Emotion-Focused Coping and predict the coping strategies used in this population. The findings of this study will contribute to the body of knowledge regarding EI and occupational stress and the extent to which EI explains the coping processes in newly hired nurses in an oncology setting.



**Statement of the Problem**

What are the relationships among coping strategies (Problem-Focused Coping and Emotion-Focused Coping), Occupational Stress, and Emotional Intelligence in nurses newly hired in a comprehensive oncology setting?

**Sub-Problems:**

1. What is the relationship between Occupational Stress and Problem-Focused Coping in newly hired nurses in an oncology setting?
2. What is the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting?
3. What is the relationship between Emotional Intelligence and Problem-Focused Coping in newly hired nurses in an oncology setting?
4. What is the relationship between Emotional Intelligence and Emotion-Focused Coping in newly hired nurses in an oncology setting?
5. What is the relationship between Occupational stress and Emotional Intelligence in newly hired nurses in an oncology setting?
6. Does Emotional Intelligence moderate the relationship between Occupational Stress and Problem-Focused Coping in newly hired nurses in an oncology setting?
7. Does Emotional Intelligence moderate the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting?

**Definition of Terms**

Coping is theoretically defined as constantly changing cognitive and behavioral efforts to manage specific external/internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). The two dimensions of coping are Problem-Focused Coping and Emotion-Focused Coping.

Problem-Focused Coping, defined as successful coping, involves an objective, analytical process that is focused on conditions in the environment that are appraised as amenable to change (Lazarus & Folkman, 1984). Problem-Focused Coping strategies include: (1) analyzing the problem and focusing on a means of solving the problem; (2) acknowledging one's role in solving the problem; (3) obtaining information and support from others and (4) creating a positive meaning of the situation.

Emotion-Focused Coping, defined as unsuccessful coping, is targeted at regulating and reducing the emotional impact of stress. Emotion-Focused Coping strategies include: (1) efforts to alter the meaning of a situation which improves an individual's perception of control over their distress; (2) escaping or avoiding the situation; (3) distancing or detaching oneself from a situation and (4) exerting emotional self-control (Folkman, 1984; Lazarus & Folkman, 1984; Isikhan et al., 2004). Coping will be operationally defined by the scores on the Problem-Focused Coping and Emotion-Focused Coping sub-scales of the Ways of Coping Questionnaire (WAYS) (Folkman & Lazarus, 1988a).

Occupational Stress is theoretically defined by the Transactional Model of Stress as the external, internal, and environmental demands that individuals appraise as taxing,

threatening, or exceeding their resources specific to their work demands (Lazarus & Folkman, 1987; Lazarus, 1995). This framework conceptualizes stress in the workplace as an individual phenomenon in which the effects of work-related stressor events on emotions and behavior are moderated by an employee's perceptions and appraisals of stressors and her/his coping skills for dealing with them (Lazarus, 1995). Occupational stress was conceptualized in this study as a process involving a transaction between the individual and her/his work environment (Lazarus, 1993a & 1995) and operationalized by the total score on The Nursing Stress Scale (NSS) (Gray-Toft & Anderson, 1981a).

Emotional Intelligence (EI) is theoretically defined as a set of inter-related emotional and social competencies, skills, and facilitators that determine how effectively individuals understand and express themselves; understand others and relate with them; and cope with daily demands (Bar-On, 2006). It is operationally defined as a set of emotional and social skills that (1) influence the way we perceive and express ourselves; (2) develop and maintain social relationships; (3) cope with challenges and (4) use emotional information in an effective and meaningful way (MHS, 2011). The model of EI used in this study is a model of emotional and social competence formerly known as the model of Emotional Social Intelligence (ESI), developed by Reuvan Bar-On (2006). EI was operationalized by the total score on the Emotional Quotient Inventory 2.0<sup>TM</sup> (EQ- I 2.0<sup>TM</sup>) (MHS, 2011; Bar-On, 2006). The EQ-i 2.0<sup>TM</sup> is the proprietary revision of the former EQ*i* originally published in 1997.

**Delimitations**

The target population for this study was newly hired registered nurses who had not previously worked in a comprehensive oncology setting associated with a National Cancer Institute (NCI) designation. The focus of NCI facilities is the research and development of cancer therapies for treatment, rehabilitation, and the continuing care of cancer patients and their families (National Cancer Institute, retrieved July 7, 2011). All male and female nurses hired between October 2013 and December 2014 were invited to participate in this study.

**Significance of the Study**

Entry into a new workplace has been described by researchers as a stressful event in which the new employee expends a disproportionate amount of time and energy coping with stress, as opposed to focusing on learning the essential components of the new position (Canton, 1940; Preuss, McAliley & Ashenberg, 1992; Halfer & Graf, 2004). Although nurses who enter oncology as a specialty have a strong commitment to care for the cancer patient (Buerhaus et al., 2001), theorists point out that nurses hired into oncology specialties do not necessarily have specific training in the specialty (Rodrigues and Chaves, 2008).

Oncology work environments are known to be stressful work environments. Factors, which include patient deaths, emergency situations and relationships with other nurses and physicians, have the potential to cause feelings of emotional distress and professional incompetence in nurses new to oncology. These nurses may then choose to abandon the specialty (Hinds et al., 1994). As a result, oncology-focused hospitals will

be impacted in terms of increased vacancies and a decreased pool of qualified nurses to care for the oncology patient.

Oncology nurse-executives have grave concerns about the ability to fill vacant positions within oncology-specific organizations, in addition to maintaining a pool of available nurses to care for the acutely ill patient in the future (Buerhaus et al., 2001). The impact of declining staffing levels greatly influences patient outcomes and mortality (Lamkin et al., 2002; Curtain, 2003; Needleman et al., 2002; Needleman & Buerhaus, 2003; Sasichay-Akkadechanunt et al., 2003) and patient safety (Buerhaus et al., 2005).

Bulmer-Smith et al. (2009) point out that emotion is a fundamental component of the discipline of nursing and a critical function central to the context of nursing practice. Akerjordet and Severinsson (2004) suggest that research examining the meaning of emotion, as well as exploring the relationships between Emotional Intelligence and nursing practice is necessary in a profession that is defined by caring as a primary concept. Benner (1984) describes the novice learner as struggling to learn the caring practice of nursing. In order to provide emotional support to patients and their families, nurses must understand how to deal with emotions in themselves and others within nursing environments.

Freshwater and Stickley (2004) maintain that emotion may also be a factor that contextualizes decision-making, which in turn may influence more empathetic, patient-focused decisions. Facione and Facione (1996) also maintain that emotions are viewed as an integral element of critical decisions, and therefore, emotionally intelligent competencies are crucial to quality clinical decision-making.

By investigating EI and its relationship to occupational stress and coping, knowledge about whether EI moderates a nurse's ability to cope with occupational stress could empower nurses and organizations to implement initiatives to increase EI abilities and thereby improve coping strategies. Therefore, the rationale for this study is to explore the relationships among coping, occupational stress and EI in registered nurses. In doing so, the findings of this study will contribute to the body of knowledge regarding coping and EI, and the extent to which EI moderates the selection of coping strategies (Problem-Focused and Emotion-Focused Coping) during occupational stress in this population of newly hired nurses in an oncology setting.

Theorists claim that EI can predict individual coping strategies, as well as various aspects of human performance in the workplace, and their impact on health, self-actualization, and well-being (Bar-On, 2006). Theorists also agree that EI competencies, which are needed to cope with demands of daily living, can be taught and learned. Currently, there is a gap in the literature that describes the EI of oncology nurses and how they cope with occupational stress within the first three months post hire in oncology units. There is limited evidence that EI moderates the choice of coping strategies by nurses during occupational stress. Therefore, this study examined the relationships among coping, occupational stress, and EI in newly hired oncology nurses, as well as the extent to which EI can moderate and predict coping strategies of new oncology nurses during their initial employment period.

Occupational stress is a consistent variable in nursing environments. Theorists contend that individuals have varying levels of EI which influence or moderate the choice of coping strategies under stressful situations. If, as theorized, EI is found to

moderate and predict the use of successful coping strategies in newly hired oncology nurses, the information could be used to support the development of strategies to increase EI, thus increasing the use of successful coping strategies in this population. These initiatives could be included during initial employment period orientation programs and provide professional support for new nurses embarking on nursing careers in this highly technical and stressful environment. As a result, EI competencies, which can be taught and learned during nursing orientations, may be beneficial in decreasing occupational stress and could result in improving health, well-being, and performance (Slaski & Cartwright, 2003), as well as retaining new nurses beyond the initial employment period. This, in turn, would keep nurses at the bedside and ultimately improve the quality of patient care and patient outcomes.

## **CHAPTER II. Review of the Literature**

In this chapter, the theoretical and empirical literature relevant to the relationships among coping strategies, Occupational Stress (OS) and Emotional Intelligence (EI) in newly hired registered nurses in the oncology specialty are presented. A review of the theoretical literature relevant to the dependent variable of coping, and the strategies of Problem-Focused Coping (PFC) and Emotion-Focused Coping (EFC) is presented first. The theoretical literature relevant to the independent variable of occupational stress is presented second and the theoretical literature which is relevant to the independent variable of Emotional Intelligence is presented third.

The next section is an examination of the empirical literature pertaining to coping and the coping strategies: successful coping or Problem-Focused Coping and unsuccessful coping or Emotion-Focused Coping. This is followed by a review of empirical literature relevant to occupational stress. To complete this section, the empirical literature relevant to EI is reviewed.

In the last section, the gaps in the literature related to coping strategies, occupational stress, and Emotional Intelligence of registered nurses are identified. Finally, the theoretical rationale for the research questions is summarized and study hypotheses are outlined in conceptual diagrams.

### **Theories of Coping**

Early research investigating the concept of coping focused on why some individuals had the ability to manage and cope with stress better than others (Lazarus, 1966). Coping was thought to involve personality characteristics (traits and styles) and



ego-defenses, which were associated with threats to an individual's psychological integrity. From this ego-psychology perspective, Meinninger's (1963) theory of psychological regulation and control posited that the ego is the mediator between environmental stress and physiological processes, and includes the concept of homeostasis as described by Cannon (1932). Vaillant (1977) further investigated coping by examining ego defense mechanisms. He posited that these mechanisms are dynamic processes whereby individuals engage in behaviors to protect themselves from inner hurt or anger. Vaillant's work was an effort to explain human behavior and contributed to the development of personality psychology.

Lazarus (1966) identified stress as an individual's internal state when faced with threats to their physical or psychological well-being. Glass (1977) was influenced by Lazarus' (1966) definition that the individual's internal state could be measured by an increased or decreased heart rate, and an inability to concentrate on impaired interpersonal relations and further suggested that the use of different types of coping strategies was based on personality types. Glass (1977) postulated that personality characteristics may predispose individuals to successfully or unsuccessfully cope with occupational stress when they cannot control the stressful situation. These traditional theories of coping gave rise to the cognitivist view of coping. This perspective characterizes cognitive controls as attributes and strategies that account for how consistently individuals successfully cope with environmental demands (Gardner, Holzman, Kahn, Kline, Linton, & Spence, 1959; Lazarus & Folkman, 1984).

For this study, coping is conceptualized as defined by Lazarus and Folkman (1984, p 141). In this definition, coping is the "changing cognitive and behavioral

efforts required in managing specific demands that an individual appraises as taxing or exceeding their resources.” Coping is seen as process-oriented rather than trait-oriented, which suggests that coping changes based on the situation. This coping model proposes that the ability to cope is not determined solely by personal characteristics/traits but also by individual appraisals - cognitive processes associated with the demands of the stressful situation (Folkman et al, 1991; Lazarus & Folkman, 1984).

Appraisals, as described by Lazarus and Folkman (1984), include both primary and secondary appraisals. Both types require cognitive activity that involves judgment, discrimination and choice of coping strategies. The researchers defined a primary appraisal in the context of whether or not the stress is relevant to the individual’s values, goals, commitments, beliefs in themselves, and their environment. Primary appraisal is the result of an individual’s perceptions that a stressful demand is either irrelevant, benign-positive or stressful. An irrelevant appraisal is an individual’s perception that the demand has no value or impact on their well-being. A benign-positive appraisal results from the individual’s perception that the outcome of a demand is positive and preserves their well-being. A stressful appraisal is the result of a demand that is perceived to induce harm/loss, threat (harm or loss that is anticipated), and challenges (what the individual gains from the encounter).

Secondary appraisal occurs if the individual appraises a situation as stressful (Lazarus & Folkman, 1984). In this case, the individual re-appraises the situation in an effort to manage it. The researchers described secondary appraisal as a complex, cognitive activity whereby the individual decides on which coping strategies to use in order to address the stressful encounter.

Lazarus and Folkman (1987) divided the strategies employed by individuals to cope with stressful situations into two functional categories: Problem-Focused Coping (PFC) and Emotion-Focused Coping (EFC). In PFC, the individual employs coping strategies directed toward eliminating, managing or changing the stressful situation to change the actual terms of the troubled person-environment relationship. These strategies include defining the problem, searching for alternative solutions to the problem, and choosing among those solutions. Efforts associated with Problem-Focused Coping are considered successful coping in that they lead to permanent problem resolution without additional conflict and they maintain a positive emotional state (Zeidner & Saklofske, 1996).

In Emotion-Focused Coping, the individual employs coping strategies directed toward reducing the emotional relevance of the stressful situation. These include avoidance, moving away and seeking positive values in negative events (Lazarus & Folkman 1984; Lazarus & Folkman, 1987; Lazarus 1993b). Strategies associated with Emotion-Focused Coping are considered unsuccessful coping, and are derived from defense processes that are used when situations are appraised as not amenable to change (Folkman et al., 1991).

In summation, Lazarus and Folkman (1991) proposed that the ability to cope successfully is based on the individual's personal characteristics as well as their appraisal of the demands of stressful situations. The appraisal process includes both primary and secondary appraisal. These appraisals are complex cognitive processes that individuals unconsciously perform in an effort to manage stress (Lazarus & Folkman, 1984). The two categories of strategies identified in this coping theory are termed

Problem-Focused Coping (PFC) and Emotion-Focused Coping (EFC). These strategies are employed by the individual following secondary appraisal and will successfully or unsuccessfully assist an individual in dealing with stressful situations. Lazarus (1993a) posited that successful coping outcomes for the individual foster better morale, physical health and social functioning. Outcomes that are unsuccessful are more likely to result in chronic distress and lead to decreased morale, physical health, and social functioning.

### **Theories of Occupational Stress**

The theory of Occupational Stress evolved from Selye's (1950) research on the biological effects of exposure to stressful stimuli. Selye was influenced by the work of Cannon (1932), who investigated the physiology of emotions and the role of the sympathetic nervous system in adaptation. Cannon (1932) developed the concept of homeostasis which posited that when stressful conditions (cold, lack of oxygen, or low blood sugar) occur in an organism, the coordinated physiological processes that maintain most of the steady states in the organism are disturbed. From a physiological view, Cannon (1932) contended that stress evokes a typical systematic reaction-pattern to stress.

Selye (1950) believed that any stress to an organism endangers its life unless the organism can adapt to the stress. Adaptability and resistance to stress are fundamental prerequisites for life, as well as the basis for Selye's (1950) concept of the General Adaptation Syndrome (GAS). The GAS is a systematic, chronological set of defense responses to stress that unfolds in three stages: (1) the alarm reaction, (2) the stage of resistance, and (3) the stage of exhaustion (Selye, 1976). When an organism is exposed to stress, which may be caused by non-specific noxious agents, trauma or drug

intoxication; a specific syndrome appears in response to the acute damage to the organism in its efforts to adapt itself in these stressful conditions (Selye, 1976; 1998).

Appley and Trumbull (1967) conceptualized stress as a response resulting from how an individual appraises, perceives or interprets a specific situation. They also suggested that certain stimuli may lead to stress more rapidly in some individuals as opposed to others.

Lazarus (1966) proposed that the importance of individual differences in response to stressful stimuli are related to the successes or consequences of coping strategies that are intended to reduce threat and that coping is dependent on the individual's cognitive ability in appraising threat. Lazarus (1995) further elucidated that antecedent variables of stress, which include environmental conditions (defined as occupational stress in this study) and individual differences (personality traits and characteristics) should be treated as distinctly different causes of behavioral and medical states, such as illness, distress, burnout, work/job-dissatisfaction, poor performance, and absenteeism.

The Person-Environment Fit (P-E Fit) theory (Edwards, Caplan & Harrison, 1998a) proposes that stress for an individual arises when the environment does not provide the necessary resources to meet the needs of the individual, or when the individual does not possess the ability to use the resources within the environment. Edwards et al. (1998a) contend that the individual subjectively appraises stress as the degree of fit or misfit between the individual and the environment. The outcomes associated with P-E misfit may lead to psychological, physical and behavioral deviations

from normal functioning (Edwards et al. 1998a). Good P-E fit is associated with successful adaptation, and misfit is associated with unsuccessful adaptation to the environment (Lazarus, 1995).

In an attempt to address work-related stress, Lazarus (1995) emphasized that individuals engage in a process that changes over time and varies with specific work-related situations. The work-related situations occurring in the nursing environment are referred to in this study as Occupational Stress. The Transactional Model of Stress (Lazarus & Folkman, 1987) is used as the theoretical framework for Occupational Stress. The underlying proposition of this model describes the relationship between an individual and the environment as continually subject to change (Lazarus & Folkman, 1987; Lazarus, 1993a; 1993b Lazarus, 1995).

The Transactional Model of Stress (Lazarus & Folkman, 1987) is based on the theory of Psychological Stress and Coping (Lazarus 1966), which defines stress as a universal human phenomenon resulting in intense and distressing experiences which influence individual behavior. Lazarus (1995) posited that cognitive thought processes, known as appraisals, determine how individuals react to stress. The theorist further elucidated that the transaction between the person and the environment is stressful only when the individual evaluates or appraises that the stress is harmful, threatening, or challenging (Lazarus, 1995). Furthermore, the researcher believed that stress arises when there is an interaction between a particular kind of individual and an environment that leads the individual to perceive a threat appraisal (Lazarus, 1995). In addressing occupational stress, Lazarus (1995) defined harm, threat and challenge, constraints, opportunities, and personal resources in the following terms. Harm refers to damage

that is already perceived by the individual and would include loss of the job, failure, or disapproval by management or one's peers. Threat is defined as harm that has not yet happened, but may happen in the future. A challenge is defined as a high-demand condition that emphasizes a mastery of demands, overcoming obstacles, and personal growth. Lazarus (1999) defines constraints as restrictions that are generally punishable if violated. An opportunity is an environmental variable that influences the appraisal process due to its fortunate timing and the individual's recognition of the opportunity. Personal resources are personal variables which influence how individuals gratify their needs, attain goals, and cope with occupational stress (Lazarus, 1999). Personal resources include intelligence, social skills, education, and social support and are factors that influence adaptational success. The magnitude of occupational stress for an individual is dependent upon how they subjectively appraise harm, threat, challenges, and constraints within the environment, as well as personal resources that influence their ability to manage occupational stress (Lazarus, 1995).

Folkman et al. (1986; Folkman & Lazarus, 1985; Lazarus, 1995) described appraisals as two cognitive processes, which are referred to as primary and secondary appraisal. Primary appraisal focuses on the individual's perception of the degree of personal jeopardy in the encounter in terms of harm, threat, and challenge. In secondary appraisal, the individual is cognitively evaluating and selecting coping strategies to deal with the harm, threat, or challenge they perceive from occupational stress.

In his Occupational Stress theory, Lazarus (1995) contended that coping is central to the stress process. Through primary and secondary appraisals, coping is influenced by immediate individual emotional reactions and determines how the

individual will act in the person–environment relationship. Lazarus (1995) also pointed out that the stress process will affect both long- and short- term adaptational outcomes, including social functioning and physical and mental health.

In summary, Lazarus and Folkman (1987) described Occupational Stress in the Transactional Model of Stress as the relationship between an individual and the environment. The theorists posited that cognitive thought processes, referred to as primary and secondary appraisals, determine how individuals react to stress. The ability to manage stress is dependent upon an individual's appraisal of stressful events, environmental constraints and available supporting resources. Ultimately, the ability to manage stress does affect adaptational outcomes that can impact social functioning and physical and mental health.

### **Theories of Emotional Intelligence**

The term “Emotional Intelligence,” also known as EI, was adopted by theorists who broadly described how individuals understand emotions in themselves and how they use their emotions to manage the emotions of others (Mayer & Salovey, 1990 & 1997; Goleman, 1985; Bar-On, 2006). The conceptualization of Emotional Intelligence includes the premises that: (1) emotions are an important factor in life; (2) individuals have varying ability to perceive, understand, use, and manage emotions; and (3) varying abilities affect the individual's adaptation to their environment, including the workplace (Cherniss, 2010). Matthews and Zeidner (2000) further supported EI as a construct that accounts for how individuals respond to stressful



encounters and note that Emotional Intelligence influences the individual's selection and control of coping strategies for use within the immediate stress situation.

There were two theorists who greatly influenced the development of theoretical and conceptual definitions of emotional and social intelligence. The first was Darwin (1875/1965; 1872/2009), whose research demonstrated the importance of emotion in survival and successful adaptation. The second was Thorndike (1920), who believed that individuals have many types of intelligences, including a social intelligence. The Theory of Social Intelligence focused on describing and defining socially competent behavior (ways in which individuals interact and behave with others) in addition to human performance. Gardener (1983) conceptualized the theory of multiple intelligences, which describes the variations in the size and structure of the human brain. Ultimately, these differences support the strengths and weaknesses of each individual in terms of their intellectual function. Gardener's (1983) theory, which investigated the emotional and social aspects of human functioning, included personal intelligences. The emotional aspect of personal intelligence involves how individuals perceive emotions in themselves and others, while the social component of personal intelligence involves how individuals interact with others.

From this early research in intelligence, two distinct theoretical models of emotional and social intelligences evolved: the ability model and the mixed-model. The ability model proposed by Mayer and Salovey (1990; 1997) defines the ability to manage emotions in oneself and others as a specific type of intelligence that is different from the abstract intelligence associated with the Intelligence Quotient (IQ).

The mixed models of EI, theorized by Goleman (1985) and Bar-On (2006), include cognitive abilities (the ability to perceive, understand, use, and manage emotions in self and others), as well as personality characteristics, traits and competencies (Cherniss, 2010). Goleman's (1985) mixed model included ability and personality characteristics and defined Emotional Intelligence as a blend of personality traits, skills, and competencies that focused on performance outcomes. The Bar-On (1997; 2006) model of emotional and social intelligence further broadened the construct of intelligences to include the perspective that an individual's socially intelligent behavior impacts interpersonal behavior and successful adaptability.

During the development of the original model of emotional and social intelligence (Note: currently known as EQ- i 2.0<sup>TM</sup> and a model of EI), Bar-On (2006) postulated that being emotionally and socially intelligent meant that, on an intrapersonal level, individuals have an ability to be aware of their thoughts and feelings. Interpersonally, emotionally, and socially intelligent individuals have the ability to be aware of the emotions, feelings and needs of others and can establish and maintain cooperative, constructive, and mutually satisfying relationships. Emotionally and socially intelligent individuals have an ability to effectively manage personal, social, and environmental change by successfully coping with the immediate situation by solving problems and making decisions.

The EI model by Bar-On (1997; 2006) encompasses a multi-dimensional model of cognitive, emotional, and social abilities, as well as personality dimensions. However, the original model developed by Bar-On (1997) was redefined and is now known as the EQ- i 2.0<sup>TM</sup> Model of Emotional Intelligence (MHS, 2011). In this new

model, it is defined as “a set of emotional and social skills that influence the way we perceive and express ourselves, develop and maintain social relationships, cope with challenges, and use emotional information in an effective and meaningful way.” This mixed model of emotional and social competencies was the theoretical framework used in this study and was operationalized by the EQ-i 2.0<sup>TM</sup>.

According to Bar-On (1997; 2006), since emotionally and socially intelligent individuals can regulate and manage emotions in a positive way, they are optimistic and self-motivated. Bar-On (2006) also claimed that emotional and social intelligence can successfully predict aspects of human performance. In addition, Bar-On (2006) contended that emotionally and socially intelligent behavior can be enhanced through educational programs, as well as be monitored and measured. Ultimately, scores derived from measuring individual emotional and social competencies may be predictive of an individual's potential ability to successfully cope with adverse effects of occupational stress in the workplace (Bar-On, 2001; Bar-On & Parker, 2000).

In conclusion, the mixed model of EI is a multi-dimensional model of cognitive, emotional and social abilities, and personality dimensions. Taken together, these indicate an individual's overall emotional and social functioning.

### **Empirical Literature Relevant to Coping**

There is empirical evidence supporting a relationship between workplace stresses and coping strategies in samples of nurses. Chang, Bidwell, Huntington, et al. (2007) investigated whether Problem-Focused Coping and Emotion-Focused Coping were associated with physical and mental health in 328 Australian and 190 New Zealand

nurses through mailed surveys. Workplace stress was measured using the NSS (Gray-Toft & Anderson, 1981a; 1981b) and coping was measured using the WAYS (Lazarus & Folkman, 1988a). The study results showed that coping styles were unrelated to physical health. However, coping styles were significant predictors of mental health score  $F(7,411) = 17.51, p < .001, N = 419$ , multiple  $R$  was .48 with adjusted  $R^2 = .22$  (meaning that the model predicted 22% of the variance in mental health scores). Regression results for prediction of mental health revealed that Emotion-Focused Coping ( $r = -0.34, p < 0.001$ ) was significantly and negatively associated with reduced mental health; whereas Problem-Focused Coping was positively but not significantly associated with improved mental health ( $r = 0.09$ ).

LeSergent and Haney (2005) evaluated workplace stress and coping strategies (Problem-Focused Coping and Emotion-Focused Coping) in a sample of 87 nurses (84 female and 3 male) from a rural hospital in Canada. The ages ranged from 25 to 65 years ( $M = 44; SD = 8.19$ ). The WAYS (Folkman & Lazarus, 1988a) was used to measure coping strategies and the NSS (Gray-Toft & Anderson, 1981a) was used to measure the frequency and source of stress for nurses at work. Findings in the study revealed a stronger positive correlation between occupational stress and Emotion-Focused Coping ( $r = 0.37, p < 0.05$ ) than occupational stress and Problem-Focused Coping ( $r = 0.27, p > 0.05$ ), suggesting that nurses who felt greater stress relied more on Emotion-Focused Coping than Problem-Focused Coping strategies.

To summarize, results in Chang et al. (2007) and LeSergent and Haney (2005) found that nurses tended to use Emotion-Focused Coping rather than Problem-Focused Coping to address occupational stress. The researchers in both studies noted that

findings that did not describe nurses' use of Problem-Focused Coping may have been impacted by the small sample sizes.

### **Empirical Literature Relevant to Occupational Stress**

There is empirical evidence describing the nature and causes of stress emanating from nursing environments, defined in this study as occupational stress.

Hinds et al. (1994) conducted a qualitative study to identify differences in perceptions of stressors, reactions, and consequences in two groups of pediatric oncology nurses. The sample of 25 nurses consisted of 11 newly hired nurses during the initial employment period and 14 experienced nurses who worked in oncology ranging from 18 months to nine years. All participants were women with a mean number of 9.4 years in nursing. Results of the study revealed five stressors among new nurses at three and six months post hire, at 12 months and among experienced nurses. Although newly hired and experienced nurses described some differences in their perception of occupational stress, the consistent theme in both groups involves anxiety related to high-level, job-related responsibilities and concerns/frustrations in coping with difficult situations. Findings were confirmed that newly hired nurses experienced occupational stress during the first three months post hire (initial employment period). These findings identify that a new nurse's reaction to stress focused on modifying themselves rather than the stressful situation (focused on self-controlling efforts, which is a component of Emotion-Focused Coping), whereas the experienced nurse's reaction was to change the situation (focusing on the problem creating the stress or Problem-Focused Coping) rather than themselves. As a result, new nurses in the study who could not successfully cope with stress resigned from their nursing positions (Hinds et al., 1994).

Escot et al. (2001) examined the nature and causes of stress in oncology nurses. A sample consisting of 37 French nurses completed the NSS (Grey-Toft & Anderson 1981a). The study findings revealed that 89% of nurses had conflicts due to inadequate consultation concerning management of terminal cases and 75% did not have adequate time to complete patient assignments. These findings were supported by the total mean NSS score of 39.8 ( $SD = 8.87$ ). The NSS scores associated with scores on the General Health Questionnaire and the Maslach Burnout Inventory, which indicated end result of long-term exposure to stress. High scores on the NSS were significantly related to working extra hours ( $p = 0.04$ ), not becoming attached to the patient ( $p = 0.026$ ), feelings of failure in the face of disease reoccurrence ( $p = 0.003$ ), and poor perceived health ( $p = 0.046$ ). These findings suggest the high stress levels predisposed oncology nurses to a decrease in their psychological and physical health.

Isikhan, Comez and Danis (2004) investigated the causes of job stress in health professionals caring for cancer patients in a sample that included 57 Turkish oncology nurses and 52 physicians. The Turkish adaptation of the Job Stress Inventory (Atktas, 2001) measured the stress levels of the participants. Results of  $t$ -tests (Note:  $t$ -scores reported in the original study;  $df$  not identified in results;  $p < 0.05$ ) demonstrated that the most frequent and significant causes of stress for nurses and physicians were: lack of appreciation by supervisors ( $M = 30.68$ ,  $SD = 5.95$ ); unfairness in promotions ( $M = 31.84$ ,  $SD = 5.32$ ); imbalance between job and authority ( $M = 32.16$ ,  $SD = 5.02$ ); conflicts with colleagues ( $M = 32.11$ ,  $SD = 4.95$ ); role responsibilities ( $M = 32.58$ ,  $SD = 4.61$ ); long work hours ( $M = 31.86$ ,  $SD = 5.50$ ); lack of equipment ( $M = 31.98$ ,  $SD = 4.64$ ); lack of quality of family life ( $M = 31.95$ ,  $SD = 5.21$ );

and problems experienced with patients and families ( $M = 32.41$ ,  $SD = 4.81$ ).

These findings are consistent with literature demonstrating the seriousness of occupational stress on health care professionals.

Campos de Carvalho et al. (2005) investigated the nature of stressors emanating from oncology environments. Thirty-five nurses from Brazil (four male and 31 female), whose experience in oncology ranged from six months to 24 months (26%), 25-60 months (31%) and more than 60 months (42%), participated in the study. The nursing sample was not described as pediatric oncology nurses. However, they were participating in a specialty pediatric oncology course. The Stressor Scale for Pediatric Oncology Nurses (SSPON) was used for data collection. Scores of 7.5 to 8.6 indicate high stress. Scores on statements that indicated the highest sources of nursing stress included: (1) making mistakes ( $M = 8.6$ ,  $SD = 1.810$ ); (2) nursing/medical administrator doesn't try to make a problem situation better ( $M = 8.5$ ,  $SD = 1.440$ ); (3) not able to complete assignments ( $M = 8.2$ ,  $SD = 1.611$ ); and (4) watching patients suffer and not able to do anything about it ( $M = 8.0$ ,  $SD = 1.975$ ). The researchers in this study suggested that the occupational stress had the potential to negatively impact the delivery of quality nursing care which, as a result increased professional dissatisfaction and more stress.

There is evidence in support of the relationship between occupational stress and coping. Rodrigues and Chaves (2008) examined the stress factors of oncology nurses as well as the coping strategies used in stressful situations in a sample of 77 nurses (four male and 73 female) in Brazil with at least one year of practice. A demographic questionnaire developed by the investigators was used with the Coping Strategies

Inventory by Folkman and Lazarus (1996). The results from this study revealed that the most nursing stress was due to patient deaths (28.6%); emergency situations (16.9%); relationship issues with colleagues (16.9%); and work-process situations (15.5%).

In terms of coping strategies, nurses in this study more commonly had used Problem-Focused Coping, specifically positive reappraisal ( $M = 10.34$ ,  $SD 4.960$ ) and problem solving ( $M = 9.91$ ,  $SD 3.947$ ). They also frequently had used Emotion-Focused Coping strategies, particularly self-control ( $M = 9.86$ ,  $SD 3.979$ ) and social support ( $M = 8.76$ ,  $SD 3.179$ ). Results of this study described the most stressful factors facing oncology nurses, but did not provide insight into coping strategies other than that the strategy choice was personal, and both Problem-Focused and Emotion-Focused Coping strategies were used by the nurses in the study.

In summary, Hinds et al. (1994) revealed that when comparing occupational stress in new nurses with that of experienced nurses at three months, six months, and at 12 months post hire, the new nurses identified occupational stress at three months post-hire. Findings in Escot et al., (2001) and Campos de Carvalho et al. (2005) showed that high stress levels negatively impacted oncology nurses' psychological and physical health, which may ultimately contribute to decreased patient care. Isikhan, Comez and Danis (2004) concurred with empirical literature supporting the existence and seriousness of occupational stress in health care environments. Rodrigues and Chaves (2008) reported that nurses in the study frequently used coping strategies associated with both Problem-Focused and Emotion-Focused Coping. However, results could not provide insight into why nurses chose a particular strategy.



**Empirical Support Relevant to Emotional Intelligence**

There was limited evidence describing the relationship between Emotional Intelligence, stress and coping in nursing populations. In a longitudinal nursing study, Gerits et al. (2005) identified the EI profiles of 146 male and 234 female Dutch nurses, and symptoms of emotional exhaustion, depersonalization and job turnover resulting from occupational stress in the nursing environment. The setting consisted of 56 Dutch residential facilities caring for people with severe mental retardation. The variables were measured using the Utrecht Burnout Scale (Schaufeli & Dierendonck, 2000) and the earlier version of the EQi based on the original theory of ESI by Bar-On, 2006 (Note: Now known as EI). Analysis of variance (ANOVA) identified EI profile clusters (high EI and low EI) for male and female nurses at two points in time (fall and winter 1999 and 2001). Findings revealed that males with high EI demonstrated lower turnover, lower depersonalization and higher personal accomplishments ( $F(1) = 13.39, p < 0.01$ ) than males with low EI. Males with low EI and low depersonalization ( $F(6) = 3.94, p < 0.01$ ) demonstrated higher turnover than males with high EI. Females with high EI showed lower emotional exhaustion ( $F(6) = 4.05, p > 0.01$ ) and depersonalization ( $F(6) = 2.79, p > 0.05$ ) and higher personal accomplishment ( $F(6) = 5.25, p > 0.01$ ) than female nurses with low EI. Female nurses with low EI demonstrated higher depersonalization ( $F(1) = 6.41, p < 0.05$ ) and lower personal accomplishment ( $F(1) = 4.01, p < 0.05$ ) had higher turnover than nurses with high EI. (Note: *df* presented as written in the original article).

Results of Gerits et al. (2005) identified EI profile clusters of male and female nurses associated with occupational stress in their work environment. The findings supported that both male and female nurses with high EI experienced lower emotional exhaustion and depersonalization, which were factors likely to contribute to job turnover due to occupational stress, than nurses with low Emotional Intelligence.

There was limited evidence describing the relationship between emotional intelligence and coping in nursing populations. Gerits, Derksen and Verbruggen (2004) conducted a longitudinal study that examined the relationship between EI and successful coping in 152 male and 228 female Dutch nurses caring for individuals with mental retardation and severe behavioral problems in a large group home. Emotional Intelligence was measured using the Dutch Version of the original EQi formerly known as ESI (Bar-On, 1997) and coping was measured using the Utrecht-Coping List (Schreurs, Van de Willige, Tellegen & Brosschot, 1987). The Utrecht Coping List has seven scales: (1) Active Dealing; (2) Palliative Reaction; (3) Avoidance; (4) Social Support Seeking; (5) Passive Reaction; (6) Expression of Emotions; and (7) Comforting Thoughts, and measured coping styles similarly to the WAYS (Folkman & Lazarus, 1988). Data for this study were analyzed using correlations from one point in time (fall and winter 1999). Findings of this study related to EI and coping demonstrated that male and female nurses with high emotional intelligence used active coping and sought social support styles (Problem-Focused Coping), and less passive avoidance coping (Emotion-Focused Coping). For females, the total emotional and social intelligence scores were significantly, positively associated with Active Coping ( $r = .43, p < .01$ ) (Problem-Focused Coping), and Social Support-Seeking ( $r = .33, p < .01$ )

(Problem-Focused Coping) and significantly, negatively associated with Avoidance ( $r = -.23, p < .01$ ) (Emotion-Focused Coping), and Passive Reaction ( $r = -.45, p < .01$ ) (Emotion-Focused Coping). In males, there were significant positive correlations between Total Emotional and Social Intelligence scores ( $r = .34, p < .01$ ) and significant negative correlations between EI and Avoidance ( $r = -.23, p < .01$ ), and Passive Reaction ( $r = -.31, p < .01$ ) (both Problem-Focused Coping). Results of this study supported that both male and female nurses with high EI demonstrated greater use of Problem-Focused Coping when dealing with occupational stress in the nursing environment.

Landa et al. (2008) examined the relationship between EI and occupational stress in 180 nurses (46 male and 134 female) from a hospital in southern Spain. Participants completed the NSS (Gray-Toft & Anderson, 1981) and the Tri Meta Mood Scale (TMMS; Salovey et al., 2005). Associations between nine dimensions of the NSS (service load, uncertainty with respect to the treatment, problems with the hierarchy, insufficient preparation, lack of support, not knowing how to handle and operate specialized equipment, problems between staff, and working temporarily in other services owing to staff shortage) and three dimensions of EI [emotional clarity (one's tendency to discriminate one's emotions and moods), emotional attention (one's tendency to observe and think about one's feelings and moods) and emotional repair (one's tendency to regulate one's feelings)] (Landa et al., 2008) were examined. Scores were divided into high or low emotional clarity, emotional repair, and emotional attention. Those above the 33rd percentile were scored "low" and those above the 67th percentile were scored "high" respectively.

Nurses with low emotional attention scores reported higher levels of stress ( $M = 1.12$ ) due to not knowing how to handle equipment than nurses who had high emotional attention scores ( $M = 0.84$ ) ( $t(112) = 2.12, p \leq 0.05$ ). Nurses with low emotional clarity scores had significantly more stress related to lack of support ( $M = 2.92$ ) than nurses with high emotional clarity scores ( $M = 2.24$ ) ( $t(110) = 1.98; p \leq 0.05$ ). Nurses with high emotional clarity scores had higher stress related to knowledge deficit from floating to unfamiliar patient services due to short staffing ( $M = 1.44$ ) than those with low emotional clarity scores ( $M = 1.04$ ) ( $t(110) = -2.43; p \leq 0.05$ ). Nurses who showed low emotional repair scores were more stressed due to problems with colleagues ( $M = 1.95$ ) than nurses with high emotional repair scores ( $M = 1.51$ ) ( $t(125) = 1.95; p < 0.05$ ). (Note: Landa et al. did not provide standard deviations for any of the above reported means). Results of the study support that nurses with high emotional clarity and repair reported less stress levels, whereas nurses with high attention to emotion scores experienced greater stress. Findings in this study suggested that nurses with high EI (emotional clarity and repair) had the skills to understand emotions in themselves and in doing so could successfully address their occupational stress. However, individuals with low EI (emotional attention) focused more on their own feelings and did not demonstrate skills to deal with occupational stress.

In summary, Gerits, Derksen, and Verbruggen (2004) and Gerits et al. (2005) found that both male and female nurses with high EI had used more Problem-Focused Coping and had greater ability to deal with occupational stress. Similarly, the findings

in Landa et al. (2008) also found that nurses who had high EI scores demonstrated greater ability to deal with occupational stress than nurses with low EI scores, which suggested that EI was a protective factor against occupational stress in their nursing environment.

### **Moderation Model: Empirical Support**

There has been empirical evidence supporting the hypothesis that Emotional Intelligence moderates the relationship between occupational stress and mental health, which may be a proxy for coping style. Ciarrochi, Deane and Anderson (2002) investigated whether an individual's ability to manage emotions in themselves and others (indicators of EI) moderated the relationship between stress and mental health, described as the negative effect of stress. Participants included 302 Australian university students (70 male and 232 female) from psychology, nursing, and the arts and sciences disciplines. The Schutte et al. (1998) self-report questionnaire was used to measure dimensions of EI: managing self-emotions (MSE) and managing others' emotions (MOE). Ciarrochi et al. (2002) hypothesized that the ability to manage one's own emotions and those of others was a protective factor from the adverse effects of occupational stress. Other tools used in this study were: the Hassles Scale (*HAS*; Kanner et al., 1981); the Life Experiences Survey (*LES*; Saranson et al., 1978); the Suicide Ideation Questionnaire (*SIQ*; Reynolds, 1987); the Beck Depression Inventory-II (*BDI-II*; Beck et al., 1996); and the Beck Hopelessness Scale (*BHS*; et al., 1974). Results of regression analysis showed significant positive interactions, which moderated the relationship between occupational stress and EI for depression

( $\beta = 0.18$ , S.E. = 0.50,  $p < 0.01$ ), hopelessness ( $\beta = 0.16$ , S.E. = 0.22,  $p < 0.01$ ), and suicidal ideation ( $\beta = 0.15$ , S.E. = 1.21,  $p < 0.01$ ). Occupational stress was measured with Hassles Scale (Kanner et al., 1981) and EI was measured with the emotional perception dimension of EI (Schutte, 1998). Findings also showed there were significant negative interactions which moderated the relationship between EI and occupational stress for Suicidal Ideations ( $\beta = -0.23$ , S.E. = 1.46,  $p < 0.001$ ). These findings demonstrated that individuals with the ability to perceive, control, and/or manage emotions in others (high EI) were less impacted by occupational stress when compared to individuals who perceived emotions in others, but could not control and/or manage the emotions in others (low EI).

In summary, the results in Ciarrochi et al. (2002) demonstrated that the EI skill of managing emotions in others moderates an individuals' ability to successfully adapt to occupational stress in the work environment.

### **Theoretical Rationale**

Emotional Intelligence is a set of inter-related emotional and social competencies, skills, and facilitators that determines how effectively individuals understand and express themselves; understand others and relate with them; and cope with daily demands (Bar-On, 2006). Individuals who are emotionally and socially intelligent are aware of emotions in themselves and can understand, regulate, and manage emotions in themselves and in others.

Occupational Stress refers to the external, internal, and environmental demands that individuals appraise as taxing, threatening, or exceeding their resources specific to

their work demands (Lazarus & Folkman, 1987; Lazarus, 1995). Stress in the workplace is an individual phenomenon in which the effects of work-related stressor events on emotions and behavior are moderated by an employee's perceptions and appraisals of stressors and her/his coping skills for dealing with them (Lazarus, 1995).

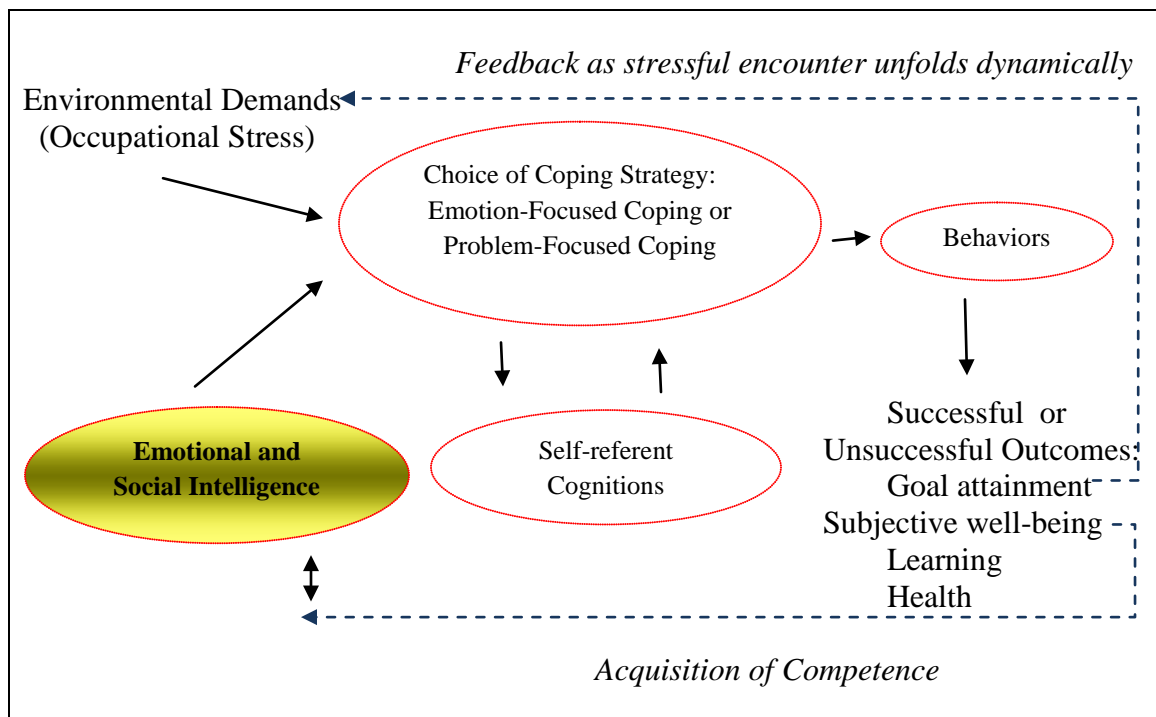
Coping is theoretically defined as the constantly changing cognitive and behavioral efforts to manage specific external/internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). The two dimensions of coping are Problem-Focused Coping (successful coping) and Emotion-Focused Coping (unsuccessful coping). Problem-Focused Coping (PFC) is centered on conditions in the environment that are appraised as amenable to change (Lazarus & Folkman, 1984). Emotion-Focused Coping (EFC) is targeted at reducing the emotional impact of stress.

Theorists posited that EI abilities may moderate the selection and control of coping strategies when dealing with occupational stress in the nursing environment (Bar-On, 2006; Ciarrochi et al., 2002; Lazarus & Folkman, 1984; Wells & Matthews, 1994). Figure 1 describes a conceptualization of EI within the transactional model of stress framework by Lazarus and Folkman (1984). In this diagram EI, theorized to be stored in an individual's long term memory, may change through experience and learning noted as the acquisition of competence. It is defined as the set of competencies and skills used to address stressful encounters which may predict future outcomes. When an individual is involved with a stressful encounter or challenging environment, Emotional Intelligence influences the selection of coping strategies used to manage the immediate situation. The consequence of coping is either a successful or unsuccessful

outcome (Matthews & Zeidner (2000). Matthews and Zeidner (2000) pointed out that the transactional model (Lazarus, 1993, 1999; Lazarus & Folkman, 1984) was congruent with the conceptualization of EI. Successful coping maintained a positive emotional state and wholeness for an individual, whereas unsuccessful coping failed to resolve the stressful situation and could negatively exacerbate an individual's personal problems.

### Conceptual Diagram

**Figure 1:** Conceptual Diagram: EI in the Model of Stress and Coping  
(Matthews & Zeidner (2000))



### Hypotheses

1. Occupational Stress is negatively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
2. Occupational Stress is positively related to Emotion- Focused Coping in newly hired nurses in an oncology setting.



3. Emotional Intelligence is positively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
4. Emotional Intelligence is negatively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.
5. Emotional Intelligence is negatively related to Occupational Stress in newly hired nurses in an oncology setting.
6. Emotional Intelligence moderates the relationship between Occupational Stress and Problem-Focused Coping in newly hired nurses in an oncology setting.
7. Emotional Intelligence moderates the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting.

### Diagrams

**Figure 2:** H1) Hypothesized Relationship of Occupational Stress and Coping (PFC): Occupational Stress is negatively related to Problem-Focused Coping in newly hired nurses in an oncology setting.

High Occupational Stress ————— (-) ————— Problem-Focused Coping

**Figure 3:** H2) Hypothesized Relationship of Occupational Stress and coping (EFC): Occupational Stress is positively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.

High Occupational Stress ————— (+) ————— Emotion-Focused Coping

**Figure 4:** H3) Hypothesized Relationships of Emotional Intelligence and Coping (PFC): Emotional Intelligence is positively related to Problem-Focused Coping in newly hired nurses in an oncology setting.

High Emotional Intelligence ————— (+) ————— Problem-Focused Coping

**Figure 5:** H4) Hypothesized Relationships of Emotional Intelligence and Coping (EFC):

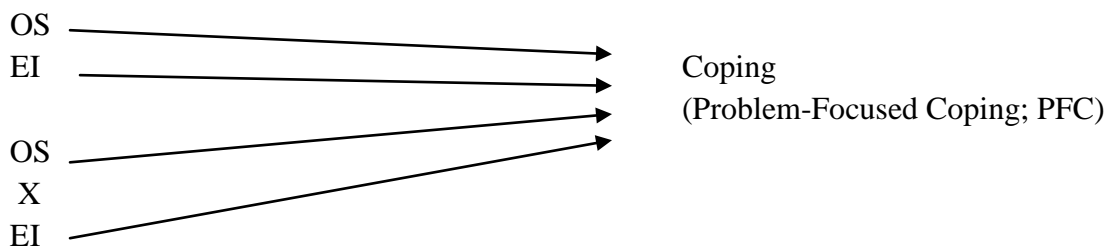
Emotional Intelligence is negatively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.

Low Emotional Intelligence ——— (-) ——— Emotion-Focused Coping

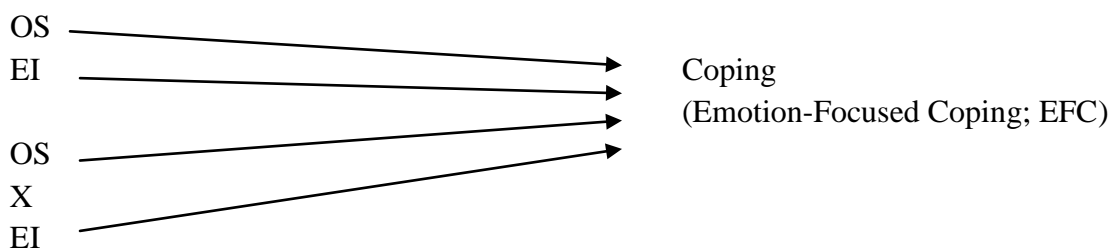
**Figure 6:** H5) Hypothesized Relationship of Emotional Intelligence and Occupational Stress: Emotional Intelligence is negatively related to Occupational Stress in newly hired nurses in an oncology setting.

Emotional Intelligence ——— (-) ——— Occupational Stress

**Figure 7:** H6) Moderation Model: Emotional Intelligence moderates the relationship of Occupational Stress on Problem-Focused Coping in newly hired nurses in an oncology setting.



**Figure 8:** H7) Moderation Model: Emotional Intelligence moderates the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting.



### **CHAPTER III. Methods**

This chapter describes the research setting, the sample, instruments, and the procedure for data collection. A descriptive, correlational design was used to explore relationships among coping, occupational stress, and Emotional Intelligence in registered nurses newly hired in a comprehensive cancer center. The reliability and validity of the Ways of Coping Questionnaire (WAYS), the Nursing Stress Scale (NSS), and the Emotional Quotient Inventory 2.0 <sup>TM</sup> (EQ-i 2.0 <sup>TM</sup> formerly known as the EQi) are also described in this chapter. In this study, variables were not manipulated, but were examined as they naturally existed (Brink & Wood, 1998).

#### **Description of the Research Setting**

This study was conducted in a 514-bed, comprehensive cancer center in New York City. The focus of the facility was caring for adult and pediatric cancer patients who were newly diagnosed, undergoing active treatment for cancer, or in the end-stage of disease. Nurses were hired for inpatient units, perioperative services (which included radiology, operating rooms, recovery, and endoscopy), or ambulatory physician office practices and ambulatory treatment facilities.

The comprehensive cancer center in this study is a designee of the National Cancer Institute (NCI). Its focus is the research and development of cancer therapies for treatment, rehabilitation, and the continued care of cancer patients and their families (National Cancer Institute, Retrieved July 7, 2011 from the National Cancer Institute Mission Statement Home page: <http://www.cancer.gov/aboutnci/overview/mission>).

### **Sampling Methods**

Eligible participants were all newly hired registered nurses who had not previously worked in a comprehensive oncology-focused facility with a National Cancer Institute (NCI) designation. Participants were in the first three months (up to 12 weeks) of their initial employment period in the research setting and were providing care for cancer patients on an inpatient, outpatient, or ambulatory basis. Findings in Hinds, et al. (1994) supported the existence of occupational stressors in oncology nurses at three months post hire.

### **Exclusion Criteria**

Nurses who were newly hired and directly reported to the Principal Investigator (PI) of this study, as well as nurses who had prior nursing experience in a comprehensive oncology-focused facility with a NCI designation were also excluded from the study.

Power analysis for Pearson correlations and multiple regression procedures was used to calculate sample size. Gerits et al. (2004) used a large effect size in their study evaluating emotional/social intelligence profiles of nurses. However, this study utilized a conservative effect size. The G-Power online statistical calculator (Faul, Erdfelder, Buchner & Lang, 2007 & 2009) and the Soper online A-priori Sample Size Calculator for Multiple Regression (Soper, 2013; Abramowitz & Stegun, 1965; Cohen, 1988; & Cohen, et al, 2003) were used to determine the minimum sample size needed for this study. Assuming a medium effect size of  $f^2 = .15$ , a minimum of 98 participants were needed for a power of 0.80 at a 0.05 level of significance for this study, which included

four independent variables (occupational stress, Emotional Intelligence, and age and years of nursing experience as control variables) and two dependent variables (Emotion-Focused and Problem-Focused Coping) (Cohen, 1988).

The PI continued to accept participants into the study until 98 complete sets of surveys had been achieved. Generally, there are approximately 40 nurses hired in this comprehensive cancer center every quarter, based on current vacancies and recruitment of nurses without prior work experience in NCI facilities. In assessing the prospective participants for the study, it was estimated that the exclusion criteria and nurses who did not choose to participate in the study totaled 16 nurses. Referencing Gerits et al. (2005), the researchers achieved an 83% response rate based on valid survey scores. Assuming a more conservative 80% recruitment rate and 40 new hires per quarter, it was estimated that 24 nurses were recruited into the study per quarter. At this recruitment rate, it was anticipated that it would take approximately four quarters to recruit 98 participants into the study.

### **Instruments**

**The Ways of Coping Questionnaire (WAYS):** Coping was measured with the Ways of Coping Questionnaire (WAYS), the most widely used measure of coping (Folkman & Lazarus, 1988). The WAYS is a 66-item self-report tool which measures a broad range of cognitive and behavioral strategies used to cope during a stressful encounter (Folkman & Lazarus, 1985). Responses are based on a four-point Likert scale that measures the frequency with which the respondent uses each strategy to cope

with the stressful encounter. The scores are: 0 = Not used; 1 = Used somewhat; 2 = Used quite a bit and 3 = Used a great deal.

The WAYS sub-scales measure eight specific coping strategies: (1) Planful Problem-Solving; (2) Accepting Responsibility; (3) Seeking Social Support; (4) Positive Reappraisal; (5) Confronting Coping; (6) Escape-Avoidance; (7) Distancing; and (8) Self-Controlling. The WAYS provides estimates of coping strategies that consist of both Problem-Focused and Emotion-Focused strategies.

Problem-Focused Coping (PFC), consisting of positive coping or successful strategies, is measured by summing the scores on the Planful Problem-Solving, Accepting Responsibility, Seeking Social Support, and Positive Reappraisal sub-scales.

Emotion-Focused Coping (EFC), which is a coping strategy arising from defensive processes, is measured by summing the scores on the Confrontive Coping, Escape-Avoidance, Distancing, and Self-Controlling sub-scales. These sub-scales indicate the use of negative or unsuccessful strategies to reduce the occupational stress.

Scoring for the WAYS is computer-generated. Results are calculated for both raw and relative scores for the total WAYS, and each of the WAYS sub-scales.

As detailed by Folkman and Lazarus (1988a), raw scores are the sums of individual responses on each scale and indicated the degree to which each type of coping was used in a particular encounter. While Folkman and Lazarus (1988a) used raw scores for the majority of their research, Vitaliano et al. (1987) and Knussen et al. (1992) found that relative scores presented insight into coping processes. [The relative scores control for the unequal numbers of items within the sub-scales and control for the individual

differences in response rates, and described the proportion of effort represented by each type of coping.] Therefore, relative scores, rather than raw scores, were used in this study. The WAYS were completed by respondents in 10 to 15 minutes.

Folkman and Lazarus (1988a) reported that the WAYS had been used to assess coping in encounters (descriptions of scenarios occurring in the environment) either chosen by the respondent or provided to the respondent to investigate a particular research question. For example, the following scenario was provided for the participant to reflect upon when responding to WAYS items:

*“Take a few moments and think about the most stressful situation that you have experienced in the past week during one of your work assignments. By stressful, we mean a situation during your clinical experiences **at work** that was difficult or troubling for you; either because you felt distressed about what happened or because you had to use considerable effort to deal with the situation. For example, it might have been a discussion or confrontation with someone a work problem with a patient or family, or a problem with a physician or colleague.”*

Construct validity of the WAYS was established using a sample of 100 community-based adults, (48 male and 52 female) ages 45 to 64, who described their coping strategies of daily living during one year (Folkman & Lazarus, 1980). Participants were comprised of White Protestant (93%), Catholic (6%), and Jewish (1%) adults.

A principal components factor analysis, with a varimax rotation, was used to analyze the 68 items of the WAYS, and two rationally derived scales (Problem-Focused Coping and Emotion-Focused Coping) were revealed. In 1986, Folkman and Lazarus

revised the factor structure of the WAYS using the original sample of community-based adults and another sample of 75 middle and upper-middle class white married couples with one child living at home.

Folkman and Lazarus (1988) used factor analysis to determine factors which have maximum generalizability, in addition to principal factor analysis with an oblique rotation. An eight-factor model was revealed and accounted for 46.2% of the variance (Folkman et al., 1986). The current eight-factor structure is comprised of: (1) Planful Problem-Solving ( $\alpha = .68$ ); (2) Accepting Responsibility ( $\alpha = .66$ ); (3) Seeking Social Support ( $\alpha = .76$ ); (4) Positive Reappraisal ( $\alpha = .79$ ); (5) Confrontive Coping ( $\alpha = .70$ ); (6) Escape-Avoidance ( $\alpha = .72$ ); (7) Distancing ( $\alpha = .61$ ); and (8) Self-Controlling ( $\alpha = .70$ ).

The internal consistency of the original WAYS was examined using Cronbach's alpha coefficients from a sample of middle and upper-middle class white married couples with one child living at home. The mean alpha coefficient for the Problem-Focused Coping scale was .80 and for the Emotion-Focused Coping scale was .81 (Folkman & Lazarus, 1980). In subsequent studies, Cronbach's alpha coefficients of the WAYS scales ranged from 0.61 to 0.79 (Folkman and Lazarus, 1988; Folkman, Lazarus, Dinkel-Schetter, et al., 1986). Aldwin and Revenson (1987) also reported adequate internal consistency of the WAYS in a longitudinal study of 291 community-dwelling adults.

There is evidence of ongoing support for the reliability of the WAYS in nursing studies with culturally diverse samples. Lambert, Lambert and Itano, et al. (2004)



examined the cross-cultural profiles of ways of coping and mental health using the WAYS in a sample of 1554 hospital-based nurses from 35 hospitals located across Japan, Thailand, South Korea and USA/Hawaii. Of the total number of hospital-based nurses participating in the study, 4.5% from South Korea and 5.8% from Hawaii had worked in oncology-focused units. The coefficient alpha ( $p = 0.05$ ) for the total scale from each country was consistent with the Folkman and Lazarus (1988) studies and were as follows: (1) Japan ( $n = 310$ ) was  $\alpha = 0.92$ ; (2) South Korea ( $n = 449$ ) was  $\alpha = 0.93$ ; (3) Thailand ( $n = 297$ ) was  $\alpha = 0.89$ ; and (4) USA / Hawaii ( $n = 498$ ) was  $\alpha = 0.92$ .

Chang et al. (2007) examined coping strategies in a sample of 328 Australian and 190 New Zealand nurses. Responses to work setting questions revealed a cross-section of work experiences, which included: Emergency (11%); Medical and Surgical Intensive Care (18%); Adult Medical-Surgical Nursing (16%); Maternity and Obstetrics (10%); Oncology (4%); Outpatient Medical-Surgical (4%); Pediatric (8%); Pre- and Post-Surgical (14%); Psychiatric and Mental Health (7%); Post-Anesthesia Recovery (5%); and other settings (33%). Cronbach's alpha reported for Problem-Focused Coping was  $\alpha = .86$  and for Emotion-Focused Coping was  $\alpha = .84$ , which indicated high internal consistency for the scale in this study.

In summation, there has been empirical evidence that supports the WAYS as a reliable and valid tool for measuring both Problem-Focused and Emotion-Focused Coping across different types of stressful encounters and diverse nursing populations. The WAYS has been used in studies that specifically included nurses working in oncology units and was therefore appropriate for use in this study.

**The Nursing Stress Scale (NSS):** Occupational stress was measured using the Nursing Stress Scale (NSS). Gray-Toft and Anderson (1981a) developed the NSS to measure the frequency with which certain situations in nursing environments were perceived as stressful by nurses. It has been widely used to examine occupational stress in nursing within a variety of work settings (Lee, Holzemer, & Faucett, 2007).

The NSS was based on the Psychological Model of Stress described by Lazarus (1966). In this model, stress was defined as an internal cue in the physical, social or psychological environment that threatens the equilibrium of an individual (Lazarus, 1966; Appley and Trumbull, 1967; Gray-Toft & Anderson, 1981a; 1981b). The NSS is a 34-item self-report tool which measures the frequency and major sources of occupational stress experienced by nurses in hospital units (Gray-Toft & Anderson, 1981a). Item responses are organized in a four-point Likert scale described as: 1 = never; 2 = occasionally; 3 = frequently and 4 = very frequently. Respondents are asked to choose how often they found the item in question to be stressful.

The total NSS score is calculated by summing individual item responses. Total scores range from 0 to 102 and measure the overall frequency of occupational stress experienced by nurses. The NSS sub-scales consist of items related to the following sources of stress: (1) Death and Dying; (2) Conflict with Physicians; (3) Inadequate Preparation; (4) Lack of Support; (5) Conflict with Other Nurses; (6) Workload; and (7) Uncertainty Concerning Treatment. Sub-scale scores are computed by summing the sub-scale item ratings. High total scores (51 to 102) indicate more frequent exposures to occupational stress than lower scores (0 to 50)

(Gray-Toft & Anderson, 1981a). The total NSS score was used in this study.

The NSS takes approximately 10 minutes to complete.

The development of the NSS was based on 34 potentially stressful situations identified through the literature and interviews with nurses, physicians and chaplains (Gray-Toft & Anderson, 1981a). The researchers administered the tool to a sample of 122 nurses from five patient care units in a 1160-bed Midwestern hospital. This represented the broadest range of nursing care, medical conditions, and sources of occupational stress. The units included Medicine (27-bed); Surgery (51-bed); Cardiovascular (42-bed); Hospice (11-bed); and Oncology (54-bed) units.

Construct validity was supported by factor analysis and used quartimax rotation, which resulted in a total stress score and seven sub-scales that were consistent with areas of stress that had been identified in the literature (Gray-Toft & Anderson, 1981a). Each sub-scale contributed to the variance in occupational stress as follows: (1) Death and Dying Patients (39.3%); (2) Conflict with Physicians (11.8%); (3) Inadequate Preparation (9.1%); (4) Lack of Support (7.2%); (5) Conflict with Other Nurses (6.5%); (6) Workload (5.6%); and (7) Uncertainty Concerning Treatment (5.5%).

The validity of the NSS was supported through significant ( $p \leq 0.05$ ) statistical associations with anxiety, job satisfaction, and turnover, which were theoretically related to occupational stress (Gray-Toft & Anderson, 1981b). Trait anxiety (indicators of worry, tension, low self-control, emotionality, and suspiciousness) was measured with the Institute for Personality and Ability Testing (IPAT) Anxiety Scale Questionnaire (Krug, et al., 1976) and the Affect Rating Scale (ARS) (Sippelle et al., 1966), which

measured transitory changes in anxiety. Significant correlations were identified between the NSS and the IPAT Anxiety Scale ( $r = 0.39, p < .01$ ) and between the NSS and the ARS ( $r = 0.35, p < .01$ ). The work sub-scale (describing jobs in general) of the Job Description Index (JDI) (Smith et al., 1969) used to test this association found that the Job Satisfaction Scale (of the JDI) had a negative relationship with the NSS.

When used in the original sample of 122 nurses from five inpatient units at a Midwestern hospital, the NSS had demonstrated adequate reliability after four measures of internal consistency were obtained for total stress scores: (1) Spearman-Brown coefficient of 0.79; (2) a Guttman split-half coefficient of 0.79; (3) Cronbach's alpha of  $\alpha = 0.89$ ; and (4) the standardized item alpha of  $\alpha = 0.89$  (Gray-Toft & Anderson, 1981a; 1981b). The test-retest coefficient for the total scale was 0.81 over a two-week interval and was considered satisfactory for this instrument (Gray-Toft & Anderson, 1981b; Lee et al., 2007).

As reported by Gray-Toft and Anderson (1981b), test-retest reliability coefficients for three sub-scales, Inadequate Preparation (0.42); Lack of Support (0.65); and Uncertainty Concerning Treatment (0.68), had not exceeded 0.70. The four sub-scales that had exceeded 0.70 were: Death and Dying (0.83); Conflict with Physicians (0.72); Conflict with Other Nurses (0.86); and Workload (0.74). Internal consistency measures had exceeded 0.70 in all but two sub-scales: Conflict with Physicians ( $\alpha = 0.68$ ) and Lack of Support ( $\alpha = 0.65$ ). Total NSS scores were used for analysis in this study.

Evidence supporting the NSS as a valid and reliable tool was replicated in a study by Lee, Holzemer and Faucett (2007). A sample of 770 Chinese nurses from diverse units, whose mean age was 29 years (range: 19 – 59 years;  $SD = 5.58$ ) and was 99 % female, was used to examine occupational stress. The nursing units were categorized as follows: Intensive Care Units (34.7%); Medical (20.6%); Surgical (19.5%); Tumor (5%); Pediatric (5.1%); OB/GYN (4.3%); Emergency (4.3%); Psychiatric (2.7%); and other (3.6%). Factor analysis revealed that 29 of the 34 items in the Chinese NSS were similarly loaded on the same factors as the English version. According to Lee et al. (2007), the percentage of agreement between the Chinese NSS and the English version was above .80, indicating adequate equivalence in meaning between the two versions of the NSS.

The Chinese version of the NSS demonstrated psychometric properties similar to those of the U.S. version, with an overall coefficient-alpha for the total scale of 0.91. As Lee et al. (2007) reported, internal consistencies for the sub-scales included: (1) Death and Dying ( $\alpha = .77$ ); (2) Conflict with Physicians ( $\alpha = .79$ ); (3) Inadequate Preparation ( $\alpha = .78$ ); (4) Lack of Staff Support ( $\alpha = .75$ ); (5) Conflict with Other Nurses ( $\alpha = .68$ ); (6) Workload ( $\alpha = .70$ ); and (7) Uncertainty Concerning Treatment ( $\alpha = .67$ ). However, test-retest reliability ( $r = .71$ ) was lower than in the original English version ( $r = .81$ ), which indicated that the Chinese version was internally consistent, but possibly was not stable over a two-week period.

Chang et al. (2007) examined occupational stress using the NSS in a sample of 328 Australian and 190 New Zealand nurses. Responses to work setting questions revealed a cross-section of work experiences, which included: Emergency (11%);

Medical and Surgical Intensive Care (18%); Adult Medical-Surgical Nursing (16%); Maternity and Obstetrics (10%); Oncology (4%); Outpatient Medical-Surgical (4%); Pediatric (8%); Pre- and Post-Surgical (14%); Psychiatric and Mental Health (7%); Post-Anesthesia Recovery (5%); and other settings (33%). The NSS scales were analyzed using principal components factor analysis, which revealed factor loadings from .70 to .84. Cronbach's alpha for the total NSS was .87, which indicated high internal consistency.

To summarize, the NSS is a reliable and valid measure of occupational stress in nurses working in varied hospital settings. The reported psychometric properties of the NSS also included nurses who were oncology-direct patient care providers, thus supported the use of the NSS to measure occupational stress in this study.

**The Emotional Quotient Inventory: The EQ- i 2.0 <sup>TM</sup>:** Emotional Intelligence (EI) in this study was measured using the EQ- i 2.0 <sup>TM</sup> (2011). This tool was specifically designed to measure EI as conceptualized in the model of emotional and social competences. It provides an estimate of an individual's emotionally and socially intelligent behavior as it relates to an individual's potential for success and not cognitive intelligence (Bar-On, 1997, 2004, MHS, 2011). The EQ- i 2.0 <sup>TM</sup> is a self-report measure comprised of 133 items with responses on a five-point Likert scale, which range from "never/rarely" to "almost always/always." It includes five key composite scales and 15 sub-scales. The definition of each composite scale and sub-scales are described in Table 1. According to the original developer Bar-On (1997, 2004), the EQ- i 2.0 <sup>TM</sup> questionnaire was based on the Flesch formula of readability

(Flesch, 1948) and the reading level in English was assessed at the North American sixth-grade level. The instrument takes approximately 40 minutes to complete.

Table 1:

The EQ- i 2.0 <sup>TM</sup> Composite Scales and Subscales (MHS, 2011)

<i><b>Dimensions/ Sub-Dimensions</b></i>	<i><b>Definitions of Dimensions/ Sub-Dimensions</b></i>
Self-Perception	Perceiving emotions in oneself and others
Self-Regard	To be respecting of oneself; confidence
Emotional Self-Awareness	To be aware of and understand one's emotions
Self-Actualization	Finding meaning in oneself and striving to attain personal goals/ self improvement
Self-Expression	Openly expressing one's feeling verbally and non-verbally
Emotional Expression	Constructive expression of emotions
Assertiveness	Communicating feeling and/or beliefs in a non-offensive manner
Independence	Self directed and free from emotional dependency
Interpersonal	Social awareness and interpersonal relationships
Interpersonal Relationships	Involved in mutually satisfying relationships
Empathy	Understanding and appreciating how others feel
Social Responsibility	Social consciousness and helpfulness
<i><b>Decision Making</b></i>	<i><b>Ways in which emotional information is used in the decision-making process</b></i>
Problem Solving	Finding solutions when emotions are involved
Reality Testing	Being objective and seeing things as they really are
Impulse Control	Resist or delay an impulse to react
<i><b>Stress Management</b></i>	<i><b>Emotional Management and Regulation</b></i>
Flexibility	Adapting emotions, thoughts and behaviors
Stress Tolerance	Coping with stressful situations
Optimism	Positive attitude and outlook on life
<i><b>Well Being Indicator</b></i>	<i><b>Other indicators but not part of the EQi 2.0 model</b></i>
Happiness	Product of Emotional Intelligence rather than a contributing factor of Emotional Intelligence
<i><b>Response Style Indicators</b></i>	<i><b>Detects respondents who may be providing exaggerated responses</b></i>
Positive /Negative Impression Scales	<i><b>Positive:</b></i> Inflated responses associated with self deception, lack of personal insight in facing ones' limitations and <i><b>Negative:</b></i> Deflated responses to one's purpose, seeking sympathy, low self esteem, negative attention or assistance in resolving personal problems.
Inconsistency Index	Inconsistent responses occurring when respondents rate similar items in dissimilar or opposite ways, which may be due to deliberate non-compliance



The original EQ*i* was developed by Reuvan Bar-On (1997; 2004). The instrument, currently owned by Multi-Health Systems, Inc. (MHS, 2011), was renamed the EQ-*i* 2.0<sup>TM</sup>. The following four validity indicators were included in the instrument: (1) Omissions Rate (the number of omitted responses); (2) Inconsistency Index (the degree of inconsistency among similar types of items); (3) Positive Impression (the tendency to give inflated, exaggerated positive responses) and (4) Negative Impression (the tendency to give deflated, exaggerated negative responses).

The scores of the EQ-*i* 2.0<sup>TM</sup> were computer-generated into average or standard scores, and were based on a mean of 100 and a standard deviation (SD) of 15 (MHS, 2011; Bar-On, 1997). A Total EI score, as well as scores for the each of the five composite scales, were calculated. An Emotional Intelligence score of 89 and below demonstrated low emotional and social functioning, and were predictive of the need to improve particular EI competencies and skills in meeting environmental demands. Scores between 90 and 109 indicated an average Emotional Quotient (EQ) and were representative of average emotional and social functioning. Scores from 110 to 130 were considered above average and were predictive of strong, well-developed emotional skills and social functioning.

Prior to the release of EQ-*i* 2.0<sup>TM</sup>, the instrument was normed with a sample of 5,000 self-reports from professional adults who resided in the United States (90%) and Canada (10%). A total professional norm sample included individuals from the United States ( $N= 1260$ ) and from Canada ( $N= 140$ ), equally distributed for men and women. The revised EQ-*i* 2.0<sup>TM</sup> was normed in two phases. Phase one was a professional norm sample ( $N= 700$ ) which consisted of 571 professionals and 129 leaders from a subset of

the general North American sample. The sample included all regions of the United States and Canada which was comprised of 64% Whites; 15.7% Hispanic/Latinos; 10.4% Blacks; 6.7% Asians; and 3.3% Others. The professional sample only included employed and self-employed professionals (15% some college or university education; 11.3% had college diploma; 42.5% held baccalaureate degree; 31.3% had post-graduate or professional degree). Phase two included  $N = 700$  employed and self-employed EQ-i 2.0<sup>TM</sup> subjects. A side-by-side comparison of the EQi (Bar-On, 1997) and the EQ-i 2.0<sup>TM</sup> had determined that, despite some model changes, the EQ-i 2.0<sup>TM</sup> was practically, empirically and theoretically sound (MHS, 2011). The original EQi sample, which provided the International Normative Data, had been developed over a 17-year period. The cumulative population of  $N = 2,868$  had been comprised of undergraduate students from South Africa, Nigeria, India and Argentina; South African health-care workers and Israeli and German high school graduates, police, government and military personnel. A North American normative sample of 3,831 subjects had been comprised of high school and college students, military personnel, health care and automotive workers, and employees of insurance companies and financial institutions. The participants ranged in age from 16 to 100 years old and were 49% male and 51% female. The mean age was not reported by the EQi developer. Ethnicity was primarily White (79%); with some Asian (8%); African-American (7 %); Hispanic (3%); and Native American (1%) participants.

Internal consistency of the EQi was examined and used Cronbach's alpha for the five dimensions of the EQi and ranged from 0.69 to 0.86, with an internal consistency coefficient of 0.97 for the total scale (Bar-On, 1997). Test-retest reliability after one

month in the South African sample was 0.85 and after four months had changed to 0.75. The internal consistency from the EQ- i 2.0 <sup>TM</sup> for the Total EI scale was .97, and values for the composite scales ranged from .88 to .93. Scores were .77 or greater for all sub-scale scores of the EQ- i 2.0 <sup>TM</sup>. Test-retest reliability at two to four weeks was 0.92 and at 8 weeks had changed to 0.83. The results were consistent with those that were found in the original EQ-*i* (Bar-On, 2004).

Principal components factor analysis with an orthogonal varimax rotation, was used on 117 of the 133 items (15 validity items and item 133, which were not scored, were omitted). Factor loadings of greater than 0.40 were used for item analysis. Items with Eigen values of greater than one were retained and yielded a 13-factor solution (Bar-On, 1997). Confirmatory factor analysis was applied to validate that the 15-factor model that had currently been used in the EQ*i* was conceptually justified. Despite the feasibility of other more complex, hierarchical structures, Bar-On (1997) concluded that the 1-5-15 (one total composite scale, five composite scales, and 15 sub-scales) hierarchical model structure was: (1) consistent with the theoretical definition of ESI; (2) consistent in describing and predicting emotionally and socially intelligent behavior; and (3) consistent in providing the greatest utility for empirical research.

The revisions for the EQ- i 2.0 <sup>TM</sup> included a principal axis factoring extraction which was used to identify underlying constructs expected to produce the EQ- i 2.0 <sup>TM</sup> scores. Direct oblique rotation was used for the composite scales. Factor loadings of greater than 0.30 were considered significant. Confirmatory factor analyses were conducted and validated the 1-5-15 model structure (one total scale, five composite scales, and 15 sub-scales) similar to that of the original EQ*i* (Bar-On 2004).

Construct validity was evaluated in individuals from the international normative sample which had compared the EQi with other measures that assessed various aspects of emotional and social functioning. Bar-On (1997) reported that the total EQi score had positive correlation coefficients with other measures of emotional functioning, such as the Sixteen Personality Factor Questionnaire (16PF) (Cattell, Eber & Tatsouka, 1970); Symptom Checklist-90 (SCL-90) (Derogatis, 1973); and the Beck Depression Inventory (BDI) (Beck & Steer, 1987). Using Morey's (1991) Personality Assessment Inventory (PAI), results also revealed high negative correlations with the EQi in anxiety (-.71), depression (-.76), and schizophrenia (-.54); which were associated with breakdown in normal emotional functioning. The reported findings in this study supported the validity of the EQi as a measure of emotional functioning (Bar-On, 1997).

The revised EQ-i 2.0<sup>TM</sup> was evaluated by examining the overlap with other psychological measures. When it was compared to the original EQi (Bar-On, 2004), correlations ranged from  $r = 0.65$  to  $r = 0.88$  for the overall EI level. These correlations revealed that despite the changes in item content from the original EQi, the revised EQ-i 2.0<sup>TM</sup> consistently measured the Emotional Intelligence construct. The only exception was reflected in the correlation between Emotional Expression in the revised EQ-i 2.0 and the Emotional Self-Awareness scale in the original EQi ( $r = 0.84$ ). The high correlation was attributed to the fact that the Emotional Self-Awareness items from the original EQi were incorporated into the revised version's Emotional Expression subscale (MHS, 2011). The total scores for Social Skills Inventory (SSI; Riggio & Carney, 2003) and the EQ-i 2.0<sup>TM</sup> revealed positive correlations with the Total EI score ( $r = 0.54$ ;  $p < .01$ ). The Mayer-Salovey-Caruso Emotional Intelligence Test

(MSCEIT; Mayer, Salovey & Caruso, 2002) is an ability-based measure of Emotional Intelligence. When compared to the EQ-i 2.0<sup>TM</sup> (competency and trait-based measure), the Total EI score and the MSCEIT Total EI score were not significantly correlate ( $r = 0.12$ ;  $p = 0.22$ ). Total EI scores of the EQ-i 2.0<sup>TM</sup> were not significantly correlated with the Watson-Glaser II Critical Thinking Appraisal (Watson & Glaser, 2009) scores ( $r = -0.05$ ;  $p = 0.62$ ). The results supported the perspective that EI was not cognitive intelligence, which was more strategic in terms of long-term capacity. Emotional Intelligence focuses on immediate functioning and addresses the emotional, personal, social, and survival dimensions of intelligence critical for daily functioning and adapting to environmental demands (MHS, 2011).

There was limited evidence supporting the predictive validity of the EQi in predicting adaptive success in nurses. Gerits, Derksen and Verbruggen (2004) conducted a two-year longitudinal study that used the EQi to determine the ESI and coping skills of nurses caring for patients with mental retardation and severe behavior problems. A Dutch sample of 380 mental health nurses (141 male and 229 female) who ranged in age from 20 to 59 (mean age 33.3 years) and worked in 56 Dutch residential facilities, was taken from a larger sample of 436 respondents based on the EQi scores. The nurses' EQi scores were examined to determine whether higher EQi scores were associated with less psychopathology as evidenced by lower scores on the Minnesota Multiphasic Personality Inventory (MMPI-2) (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), a measure of personality and psychopathology. Findings reported by Gerits et al. (2004) revealed significant negative correlations for the total EQi and the social introversion scale of the MMPI-2 ( $r = -.31$ ,  $p < 0.01$ ). Nurses who

had lower scores on the MMPI-2 had high EI, tended to be more extroverted and had greater social skills and an ability to articulate their feelings. Results for female nurses showed additional significantly negative correlations with the total EQ*i* and social introversion scale of the MMPI-2 ( $r = -.31, p < 0.01$ ) as well as the Depression scale ( $r = -.35, p < 0.01$ ) and the Psychasthenia scale (which characterized individuals as anxious, worrisome, or having negative feeling about themselves) ( $r = -.26, p < 0.01$ ). These results also indicated that female nurses with low MMPI-2 scores had high Emotional Intelligence, had not overreacted to minor occupational stress, and could anticipate problems before they occurred. When the total EQ*i* scores were analyzed with the content scales of the MMPI-2, results revealed that strong negative correlations were found for both male and female nurses. For males, results showed ( $r = < -.30$ ) for Depression ( $r = -.36, p < 0.01$ ); Type-A Behavior ( $r = -.32, p < 0.01$ ); Low Self-Esteem ( $r = -.33, p < 0.01$ ); Work Interference ( $r = -.43, p < 0.01$ ); and Negative Treatment Indicators ( $r = -.38, p < 0.01$ ). Female nurses demonstrated ( $r = < -.44$ ) stronger negative correlations for Anxiety ( $r = -.44, p < 0.01$ ); Obsessiveness ( $r = -.48, p < 0.01$ ); Depression ( $r = -.51, p < 0.01$ ); Low Self-Esteem ( $r = -.50, p < 0.01$ ); Work Interference ( $r = -.55, p < 0.01$ ) and Negative Treatment Indicators ( $r = -.45, p < 0.01$ ). Taken together, these results suggested that individuals with low Emotional Intelligence demonstrated symptoms of depressed mood, fatigue, and pessimism; which included attitudes and behaviors that may have contributed to poor work performance and problem-solving ability.

In summary, findings in the nursing study by Gerits et.al. (2004) demonstrated that the EQ- i 2.0 <sup>TM</sup> was a reliable and valid measure of emotional social behavior in nurses and was appropriate to have been used in this study sample.

### **Demographic Questionnaire**

The Demographic Questionnaire was developed by the Principal Investigator (PI) for use in this study. Questions were asked in regard to age; gender; years of overall nursing experience (if applicable); type of nursing setting in prior working experience; years of oncology nursing experience (if applicable); and years of experience in an NCI-designated, comprehensive oncology setting. If the prospective candidate had worked in a NCI-designated facility (focused on care and treatment of cancer patients) they were not considered new to oncology nursing and were excluded from this study. This questionnaire was developed by the PI as the tool to determine whether or not the prospective participant was a candidate for inclusion into this study.

### **Data Collection Procedure**

The usual practice at the data collection site was that all new employees were required to attend a hospital-wide new employee orientation for two consecutive days post-hire. Once this initial two-day orientation was completed, the newly hired nurses attended up to 10 days of nursing orientation classes, which were conducted by the Department of Nursing Professional Development. The initial competency-based orientation program included providing patient care with the guidance of a staff nurse preceptor. The newly hired nurses were given a modified clinical assignment that

gradually increased in complexity through the 12th week of orientation. Data collection took place between the eighth and 12th week of the orientation period.

The initial hospital and nursing orientation lasted approximately three weeks from the hire date. By week four, the new nurses were working with their preceptors on their nursing units. Since the nurse residency program had begun at 12 weeks post hire date (which included interventions that could impact results of this study), online access to the instruments in Survey Monkey was provided between weeks eight through twelve post hire. This time range had been based on variables such as flex shifting (10-hour and 12-hour shifts and weekend coverage), which resulted in gaps between scheduled work shifts and time off, which may have impacted the participant's availability in completing the survey.

During nursing orientation, the Principal Investigator/Designee invited all newly hired nurses to participate in the study. The presentation included discussion of the study and the anonymity of responses. It was emphasized that participation in the study was for fulfillment of the PI's nursing doctoral dissertation and in no way was related to her role at Memorial Sloan Kettering Cancer Center.

Nurses were told to expect an invitation email in approximately 8 weeks which asked for their participation in taking the surveys. The design method by Dillman (2007) was used as the guide to construct the Pre-Notice email (Appendix H); the Cover Letter email (Appendix I); and the Reminder/Thank you email (Appendix J).

The survey was administered through SurveyMonkey. Lists of email addresses for each new hire cohort were obtained by the Principal Investigator (PI) through Nursing Recruitment. An invitation email was sent to all new hires in the cohort, except



for those newly hired nurses who reported directly to the PI. Reminder emails were sent to the entire cohort as the PI had no knowledge of which new hires had completed the survey. The email addresses and responses were not linked in SurveyMonkey.

The Assent to participate (Appendix K) was confirmed when the participant logged on to SurveyMonkey. The Assent (required by the Rutgers, State University of New Jersey Institutional Review Board, described the study, and a participant's right to withdraw from the study at any time. If a participant chose "I Agree", they continued on to complete the survey. If a participant chose "I Do Not Agree", they exited the survey and were removed from the study.

Eligibility criteria were confirmed after the Assent to participate was completed, and subjects were asked if they had worked in a National Cancer Institute (NCI)-designated cancer center (lists of NCI designees were provided on the survey). If the subjects checked that they had prior nursing experience in one of the 67 NCI designees, they were deemed ineligible and were then led to a disqualification page in the survey that thanked them for their interest in this study.

Participants were encouraged to complete the survey when they were in a quiet environment in one session. They were given the flexibility to complete the instruments at work or at home via the Internet. In order to facilitate and encourage completion of all three instruments during one session, the questions/statements from all instruments (WAYS, NSS, and the EQ-i 2.0™) were accessed by a single sign-on in SurveyMonkey. Completion of the EQ-i 2.0™, NSS, and the WAYS was expected to take approximately 60 minutes.

The research was anonymous and no information was recorded that could identify the participant with their responses. The PI/Designee did not know the identity of the participants in the survey. Once the survey was completed, SurveyMonkey no longer had contact with the participant and any association between SurveyMonkey and the participant was severed.

### **Human Subjects Protection**

Prior to data collection, this study was submitted to the Institutional Review Boards of Rutgers, The State University of New Jersey (Appendix L), and Memorial Sloan Kettering Cancer Center (Appendix M) to ensure that the rights of human subjects were protected. An expedited review was requested from the Rutgers IRB as there were no more than minimal risks to participants in the study. An exempt review from the Memorial Sloan Kettering Cancer Center IRB was obtained as there was no more than minimal risk to participants in the study.

### **Anonymity of Responses**

The raw data exported from SurveyMonkey (for all 3 instruments) were associated with one responder number, assigned by the PI, so the data were analyzed as described in the data analysis plan. Participants were accepted into the study until 98 completed data sets had been achieved. All participant associations with this study were electronic via the internet and therefore no paper copies of surveys were made.

### **Data Analysis Plan**

A data analysis plan was outlined to test the following the hypotheses:

1. Occupational Stress is negatively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
2. Occupational Stress is positively related to Emotion- Focused Coping in newly hired nurses in an oncology setting.
3. Emotional Intelligence is positively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
4. Emotional Intelligence is negatively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.
5. Emotional Intelligence is negatively related to Occupational Stress in newly hired nurses in an oncology setting.
6. Emotional Intelligence will moderate the relationship between Occupational Stress and Problem-Focused Coping in newly hired nurses in an oncology setting.
7. Emotional Intelligence will moderate the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting.

Data exported by the PI from Survey Monkey for the EQ-I 2.0<sup>TM</sup> were sent to the publisher for scoring via email through a secure server. Raw data in the spreadsheet were associated with a unique identifier assigned by the PI. The NSS and the WAYS were scored according to author guidelines. A statistical database was created, using

STATA Statistical Software: Release 13 (2013) into which participant demographics, scores from the NSS, WAYS and EQ-i 2.0<sup>TM</sup>, and data from the SurveyMonkey and vendor-scored database were imported.

The data sets were examined for missing data. If any one of the three surveys were not completed, the responses were excluded from the study. The EQi 2.0<sup>TM</sup> was developed with an Omissions Rate (OR) of 6% for determining the tool's validity. The WAYS and the NSS had been examined for missing data to determine if imputation techniques could have been utilized (Tabachnick & Fidell, 2007; & Munro, 2005). Munro (2005) and Tabachnick and Fidell (2007) discussed the importance of evaluating data for: 1) random and systematic patterns; 2) the amount of missing data; and 3) assessing why the data is missing prior to determining the best method to address it. The current guidelines on the amount of missing data were not available (Tabachnick & Fidell, 2007; & Kline, 1998). However, Cohen and Cohen (1983) recommended that five to ten percent of missing data would have been small enough to retain the variable and handle the missing data.

Tabachnick and Fidell (2007) and Munro (2005) described the Expectation Maximization (EM) method which proceeded in a two-step process to achieve expected values. Musil, Warner, Yobas, and Jones (2002), compared five imputation methods for estimating missing data on descriptive statistics and correlation coefficients. A small data set ( $n = 96$ ) with missing data were taken from the original, larger data set ( $n = 492$ ) to conduct the analysis which included list-wise deletion, mean substitution, simple regression, regression imputation with error term, and the expectation maximization (EM) algorithm. Findings demonstrated that the EM imputations had been most

comparable to the original data for mean, skew, correlations, and kurtosis. Standard deviations were the least accurate component for the EM technique. In this study, the completed surveys did not require imputation methods.

Initial analysis included descriptive analysis of the demographics data (i.e. frequencies, mean/median scores) and described the sample characteristics. Diagnostic statistics included frequency tables, histograms and scatter plots and were used to assess distribution of the independent and dependent variables to test normality. Testing for skewness and kurtosis was conducted and examined for inconsistencies and outliers. Parametric bivariate testing was conducted, if assumptions were met. Non-parametric equivalents were performed if the assumptions were not been met.

To test hypotheses one through five, a Pearson Product Moment Correlation matrix was conducted to describe the pair-wise associations between the total scores of the WAYS, NSS and EQ- i 2.0 <sup>TM</sup> scores that used the Bonferroni approach to control for Type-I error. Confidence intervals (95%) of the Pearson and Spearman correlation coefficients were calculated to assess the precision of the correlation coefficients. A two-tailed test of significance set at  $\alpha = 0.05$  level was used, even in the event that the relationship showed direction, to have reduced the risk of committing a Type-I error and thereby reduced the likelihood of a false-positive result (Polit, 2010). The Durbin-Watson test was also conducted to determine residual values. Spearman correlations were conducted between ordinal demographic variables and the three scales; WAYS, NSS and the EQ- i 2.0 <sup>TM</sup>.

To test hypotheses six and seven, the moderator model by Baron and Kenny (1986) was used. According to Baron and Kenney (1986), a moderator is a qualitative or quantitative variable that affects the direction and/or strength of the relationship between the independent (Emotional Intelligence and occupational stress) and dependent (coping) variables. Linear regression was used to determine the relationship between EI and coping as well as the relationship between occupational stress and coping in newly hired oncology nurses. A linear regression model was built using data from the EQ-i 2.0<sup>TM</sup> and WAYS to determine the extent to which a functional relationship existed between EI and coping as well as to test the NSS and the WAYS to determine the extent to which a functional relationship existed between occupational stress and coping strategies (Problem-Focused and Emotion-Focused Coping). The participant's age and years of nursing experience were entered in the regression model as control variables. Multiple linear regression analyses were used to examine the extent to which two independent variables (occupational stress and Emotional Intelligence) explained the variance of the dependent variable (coping).

Using regression models, data from the WAYS, NSS and EQ- i 2.0<sup>TM</sup> were analyzed to determine if Emotional Intelligence moderated the use of coping strategies that were used to manage occupational stress in newly hired nurses in oncology work environments. For hypothesis six, to determine the extent to which Emotional Intelligence moderated the relationships between occupational stress and Problem-Focused Coping, a moderation model was built. A multi-step hierarchical regression was conducted to determine the main effects of the independent variables of occupational stress and EI, and the interaction between these variables. In step one,

the independent variable occupational stress was entered. In step two, the independent variable Emotional Intelligence was entered. In step three, an interaction term between occupational stress and Emotional Intelligence was created and entered to represent the interaction between the predictor (occupational stress) and the moderator (EI) on the dependent variable (Problem-Focused Coping). If a moderator effect was present, the interaction term was significant.

For hypothesis seven, to determine the extent to which Emotional Intelligence moderated the relationships between occupational stress and Emotion-Focused Coping, a moderation model was built. A multi-step hierarchical regression was conducted to determine the main effects of the independent variables of Occupational Stress and EI and the interaction between these variables. In step one, the independent variable Occupational Stress was entered. In step two, the independent variable Emotional Intelligence was entered. In step three, an interaction term between Occupational Stress and Emotional Intelligence was created and entered to represent the interaction between the predictor (Occupational Stress) and the moderator (Emotional Intelligence) on the dependent variable (Emotion-Focused Coping). If a moderator effect was present, the interaction term was significant.

## CHAPTER IV: Analysis of the Data

The purpose of this study was to explore the relationships among Coping, Occupational Stress and Emotional Intelligence in newly hired nurses in an oncology setting. The Ways of Coping Questionnaire (Folkman & Lazarus, 1998) measured coping, the Nursing Stress Scale (Gray-Toft & Anderson, 1981a) measured occupational stress and the Emotional Quotient Inventory 2.0™ (MHS, 2011) measured Emotional Intelligence in this study. All analyses were conducted using one-tailed tests of significance and significance value  $p = 0.05$  (alpha). The data sets were examined for missing data. If any one of the three surveys was not completed, that participant's data were excluded from analysis. Data were collected from 114 newly hired nurses who met eligibility criteria and had completed scores on all instruments. The analysis of the data is presented in this chapter.

Invitations to participate in the study were emailed to 340 individuals. Of those prospective candidates, 203 nurses linked into the online survey, to an attestation where self-identified exclusion criteria included prior work experiences in a National Cancer Institute (NCI)-designated cancer center or reporting directly to the PI at work.

This represented a 60% response rate. Twenty-five nurses indicated that they had previously worked in an NCI facility and were ineligible to participate in the study. Of the remaining 176 participants, 62 nurses (Female = 56; Male = 4; gender not documented = 2) were eliminated from analysis because they did not complete all three surveys in the study. Data were collected from 114 newly hired nurses who met eligibility criteria and had completed scores on all instruments (WAYS, NSS and the EQi 2.0™). This represented a 65% completion rate for this study.



### Statistical Description of the Variables

Analysis included descriptive analysis of the demographic data (i.e. frequencies, mean/median scores) to define the sample characteristics. Diagnostic statistics using frequency tables, histograms, and scatter plots were used to assess distribution of the independent and dependent variables to test normality. Testing for skewness and kurtosis was conducted and examined for inconsistencies and outliers. The demographics of the participants ( $N=114$ ) who completed all the surveys in this study (WAYS, NSS and the EQi 2.0<sup>TM</sup>) are described in Table 2. The majority of the participants were female, 30 years of age or less, and new graduates.

Table 2:

#### *Demographic Characteristics of the Subjects*

Demographics	Frequency	Percent
Age in Range (Total N= 114)		
20- 30	78	68.42
31- 40	26	22.81
41- 50	8	7.02
51- 60	2	1.75
Gender (Total N=114)		
Female	108	95.58
Male	5	4.42
Not entered in survey	1	
Years of Experience (Total N=114)		
New Graduate	60	52.63
1-5 Years	37	32.46
6-10 Years	13	11.40
11-15 Years	1	0.88
16-20 Years	2	1.75
21 or More Years	1	0.88

### **Dependent Variable**

Coping was measured using the Ways of Coping Questionnaire (Folkman & Lazarus, 1988). A total score for each subscale of the WAYS was calculated for raw and relative scores. The sums of the subscales were grouped into Problem-Focused Coping (PFC)( $M = 62.86$ ;  $SD = 9.17$ ) and Emotion-Focused Coping (EFC) ( $M = 37.14$ ;  $SD = 9.17$ ). Scores for the WAYS were analyzed in terms of relative scores (Vitaliano et al., 1987) and were expressed as a percentage that ranged from 0 - 100 for each coping strategy. Higher relative scores represented greater use of the coping strategy.

### **Independent Variables**

Occupational Stress was measured with the Nursing Stress Scale (Gray-Toft & Anderson, 1981a). Comprised of seven subscales, and a total stress scale, the possible scores of the scale ranged from 1 to 136, and measured the overall frequency of stress experienced by the nurses (higher scores signified that more stress had been experienced). Scores for the seven subscales were calculated, but only the total stress scores ( $M = 65.57$ ;  $SD = 15.68$ ) were used in the data analysis.

Emotional Intelligence was measured by the Emotional Quotient Inventory 2.0™ (EQi 2.0™) (Bar-On, 1997, 2004; MHS, 2011). Possible scores for this instrument ranged from 12-140. Scores were based on standard scores ( $M = 100$ ;  $SD = 15$ ). A standard score of 89 and below suggested a need for improvement in emotional and social functioning. A score from 90 to 109 suggested an average level of emotional and social functioning. Scores of 110 to 130 or higher

were above average and predictive of strong emotional and social functioning.

Total EQi 2.0™ scores ( $M = 105.24$ ;  $SD = 13.02$ ) were used in the data analysis.

### **Psychometrics of the Instruments**

The psychometrics of the instruments used in this study were calculated for each instrument and presented in Table 3. The reliability of the WAYS scale for the study sample was 0.95 ( $N = 114$ ) Cronbach's alpha and was consistent with reliability that had been observed by Lambert et al., (2004) in the USA Hawaiian nurses' sample ( $N = 498$ ;  $\alpha = 0.92$ ). In this study, the Nursing Stress Scale demonstrated a reliability coefficient of 0.94 ( $N = 114$ ) Cronbach's alpha. The reliability coefficient was consistent with findings in Lambert et al., (2004) for the Hawaiian nursing sample  $\alpha = 0.93$  ( $N = 498$ ) and Lee et al., (2007) for the Chinese version of the NSS in their Chinese nursing sample  $\alpha = 0.91$  ( $N = 770$ ). The Emotional Quotient Inventory demonstrated a reliability coefficient of 0.93 ( $N = 144$ ) Cronbach's alpha, which was consistent with findings in Bar-On (1997) based on a North American normative sample ( $N = 3,831$ ) of high school and college students, military personnel, health care and automotive workers, and employees of insurance and finance institutions for the total EQi 2.0™ score  $\alpha = 0.97$ . In a Dutch nursing sample ( $N = 380$ ), using the Dutch version of the EQi, average Cronbach's alpha coefficients for EQi 2.0™ subscales were between .69 and .86 (Gerits et al., 2004). According to Polit and Beck (2004), for group level comparisons coefficient alpha of .70 or above was an acceptable level of reliability; all instruments in this study demonstrated adequate reliability.

Table 3

*Psychometrics of the Study Instruments*

Reliability	WAYS	NSS	EQi
Scale reliability coefficient Cronbach's alpha for Reliability	0.95	0.94	0.93

Data quality was assessed by evaluating the study variables for skewness, kurtosis, variability means, and standard deviations and presented in Table 4 (Polit & Beck, 2006; Kerlinger & Lee 1992). Preliminary analysis included frequency tables and histograms for all study variables, which were assessed for normal distribution by using visual shape of the distribution, skewness, and kurtosis values. Based on Fisher's measure of skewness, Z-score values (measure of skewness/standard error of skewness) that fall between 1.96 and -1.96 constitute a normal distribution (Kerlinger & Lee, 1992). The Z-scores were calculated for the variables in IBM SPSS Statistics for Windows (Version 22.0) and revealed that the variables were normally distributed.

Table 4:

*Distribution of Independent and Dependent Variables and Z-Scores*

N = 114			Skewness		Kurtosis		Actual Score Range	Possible Score Range
	SD	Mean	Stat	SE	Stat	SE		
Occupational Stress	15.68	65.573	0.455	0.226	-0.475	0.449	37-102	0 - 136
Emotional Intelligence	13.02	105.24	-0.089	0.226	-0.414	0.449	76 -135	1 - 140
PFC	9.168	62.864	-0.024	0.226	0.539	0.449	37 - 92	0 - 100
EFC	9.168	37.135	0.024	0.226	0.539	0.449	8 - 63	0 -100
Z-score (EFC)	1		0.024	0.226	0.539	0.449		
Z-score (PFC)	1		-0.024	0.226	0.539	0.449		
Z-score (EI)	1		-0.089	0.226	-0.414	0.449		
Z-score (OS)	1		0.455	0.226	-0.475	0.449		

### Hypotheses Testing

The hypothesis testing is presented in this section. A one-tailed test of significance was used to test the hypotheses in this study. A statistical database was created, which implemented *STATA* Statistical Software (Release 13, 2013), and IBM *SPSS* Statistical Software for the Social Sciences (Version 22.0; 1986, 2013). The participant demographics, scores from the instruments used to test the SurveyMonkey data of the variables (NSS, WAYS and EQ- i 2.0 <sup>TM</sup>), and vendor-scored database were then imported.

To test Hypotheses 1 through 5, Pearson Product Moment Correlation Coefficients were calculated and quantified the relationships among Problem-Focused Coping (PFC), Emotion-Focused Coping (EFC), Occupational Stress (OS) and Emotional Intelligence (EI). Confidence intervals of 95% of the Pearson coefficients were calculated and determined their precision. The hypothesized relationships were examined using a one-tailed test with the significance level set at  $p < 0.05$ . The correlational matrices of the study variables for Hypotheses 1 through 5 are described in Table 5.

Table 5:

#### *Correlational Matrix of Variables*

N=114	PFC (WAYS)	EFC (WAYS)	OS	EQi
PFC(WAYS)	1	-1.000**	-.189*	.340**
EFC(WAYS)	-1.000**	1	.189*	-.340**
Occupational Stress	-.189*	.189*	1	-.428**
Emotional Intelligence	.340**	-.340**	-.428**	1

Sig. (1-tailed) \* =  $p \leq 0.05$ ; \*\* $p \leq 0.001$

Hypotheses 6 and 7 were examined by using a two-step hierarchical regression analysis to test the moderator model by Baron and Kenny (1986) and Bennett (2000). This model was used to test the quantitative variables that affected the direction and/or strength of the relationship between the independent (Emotional Intelligence and occupational stress) and dependent (Problem-Focused Coping and Emotion- Focused Coping) variables in this study (Baron and Kenney, 1986). The data were evaluated and met the assumptions for regression analysis. According to Munro (2007) and O'Brien (2007), a tolerance of less than 0.25 and/or variance inflation factor (VIF) of greater than five (5) would have indicated multicollinearity between the variables (Table 6). There were correlations among the variables in this study, however they were not multicollinear.

Table 6:

*Collinearity Statistics*

Model DV: PFC WAYS	Tolerance	VIF
Emotion-Focused Coping (EFC)	0.882	1.134
Occupational Stress	0.815	1.227
Emotional Intelligence	0.747	1.338
Model DV: EFC WAYS		
Problem-Focused Coping (PFC)	0.815	1.134
Occupational Stress	0.747	1.227
Emotional Intelligence	0.882	1.338

**Hypothesis 1:** It was hypothesized that a negative correlation existed between occupational stress and Problem-Focused Coping. This meant that newly hired nurses who experienced high occupational stress had not used Problem-Focused Coping strategies in the presence of occupational stress. Correlational analysis demonstrated a

significant, negative relationship between occupational stress and Problem-Focused Coping ( $r = -.189, p = .022$ ) which supported this hypothesis.

**Hypothesis 2:** It was hypothesized that a positive relationship existed between occupational stress and Emotion-Focused Coping. This signified that newly hired nurses who experienced high occupational stress used more Emotion-Focused Coping strategies in the presence of occupational stress. Correlational analysis supported a positive and significant relationship between occupational stress and Emotion-Focused Coping ( $r = .189, p = .022$ ) which supported this hypothesis.

**Hypothesis 3:** It was hypothesized that Emotional Intelligence was positively related to Problem-Focused Coping. This meant that nurses who had high Emotional Intelligence used more Problem-Focused Coping strategies than nurses with low Emotional Intelligence. Correlation analysis demonstrated a positive and significant relationship between Emotional Intelligence and Problem-Focused Coping ( $r = .340, p = .000$ ) which supported this hypothesis.

**Hypothesis 4:** It was hypothesized that Emotional Intelligence was negatively related to Emotion-Focused Coping. This meant that nurses with low Emotional Intelligence used more Emotion-Focused Coping strategies to address their occupational stress. Correlation analysis demonstrated that Emotional Intelligence and Emotion-Focused Coping were negatively and significantly correlated ( $r = -.340, p = .000$ ), which supported this hypothesis.

**Hypothesis 5:** It was hypothesized that Emotional Intelligence was negatively related to occupational stress. This meant that nurses who had low Emotional

Intelligence experienced greater occupational stress. Correlational analysis demonstrated that Emotional Intelligence and occupational stress were negatively and significantly correlated ( $r = -.428, p = .000$ ), which supported this hypothesis.

**Hypothesis 6:** It was hypothesized that Emotional Intelligence moderated the relationship between occupational stress and Problem-Focused Coping strategies of newly hired nurses in an oncology setting. A model to assess the impact of Emotional Intelligence and occupational stress was initially created (Table 7). In step one, Emotional Intelligence and occupational stress were entered into the model as predictors of Problem-Focused Coping. The model explained that for every unit increase in Emotional Intelligence, the Problem-Focused Coping coefficient increased 0.23 (95% CI .087 - .362,  $p < .002$ ) and was significant. When age and years of experience were entered into the model as the control variables, Emotional Intelligence ( $p = .002$ ) was significant, but occupational stress ( $p = 0.7$ ) was not significant. This model explained 12% of the variance in Problem-Focused Coping. In step two, an interaction term was created and entered into the model (Table 8). The interaction term represented the interaction between occupational stress (predictor) and Emotional Intelligence (moderator) as a predictor of Problem-Focused Coping. When age and years of experience were entered into the model as control variables, neither the predictor (occupational stress,  $p = 0.2$ ) nor the moderator (Emotional Intelligence,  $p = 0.7$ ) variable were significant. The addition of the interaction terms (Emotional Intelligence and occupational stress) were not significant 0.005 (95% CI, -.003 - .012,  $p = .223$ ) and did not account for a significant amount of additional variance (a 1% increase above step-one at 13%)



in Problem-Focused Coping. There was no support for this hypothesis and the moderating effect of Emotional Intelligence.

Table 7:

*Moderator Model: Occupational Stress, Emotional Intelligence, and Problem-Focused Coping*

PFC Variable	Coefficient	95% Confidence Interval	p-value
Emotional Intelligence	0.23	0.09, 0.36	0.002*
Occupational Stress	-0.03	-0.15, 0.09	0.7
Age	0.26	-2.30, 2.82	0.8
Years of Experience	0.08	-1.87, 2.04	0.9
Constant	40.44	20.36, 60.51	0.001

Dependent Variable: PFC  $p \leq 0.05$ ; 2-Tailed \* = significance

Table 8:

*Moderation Model Interaction Term: Occupational Stress, Emotional Intelligence, and Problem-Focused Coping*

PFC Variable	Coefficient	95% Confidence Interval	p-value
Emotional Intelligence	-0.20	-0.62, 0.42	0.7
Occupational Stress	-0.55	-1.35, 0.26	0.2
Age	0.63	-1.98, 3.25	0.6
Years of Experience	0.02	-1.93, 1.98	1.0
Occupational Stress*Emotional Intelligence	0.005	-0.003, 0.012	0.2
Constant	72.41	18.90, 129.92	0.009

Dependent Variable: PFC  $p \leq 0.05$ ; 2-Tailed \* = significance

**Hypothesis 7:** It was hypothesized that Emotional Intelligence moderated the relationship between occupational stress and Emotion-Focused Coping in newly hired nurses in an oncology setting. An initial model was created and assessed the impact of Emotional Intelligence and occupational stress (Table 9). In step one, Emotional Intelligence (moderator) and occupational stress (predictor) were entered into the model

as predictors of the outcome variable (Emotion-Focused Coping). In this step, findings revealed that Emotional Intelligence ( $p = 0.02$ ) was significant and occupational stress ( $p = 0.7$ ) was not significant. When age and years of experience were added into the model as control variables, the model demonstrated that for every unit increase in Emotional Intelligence, the Emotion-Focused Coping coefficient decreased by - 0.23 (95% CI -0.36 – 0.09,  $p < .002$ ) and was significant. The model also explained 12% of the variance in Emotion-Focused Coping. In step two, the interaction terms (occupational stress and Emotional Intelligence) were entered into the model (Table 10). When age and years of experience were added to the model as control variables, the interaction terms (Emotional Intelligence and occupational stress) were not significant - 0.005 (95% CI, - 0.01 – 0.003,  $p = .223$ ). These findings revealed that the joint relationship of Emotional Intelligence and occupational stress did not account for a significant amount of additional variance (an increase of 1% above step-one at 13%) in Emotion-Focused Coping. The resultant findings obtained from this interaction did not support this hypothesis and the moderating effect of Emotional Intelligence.

Table 9:

*Moderator Model: Occupational Stress, Emotional Intelligence, and Emotion-Focused Coping*

Variable	Coefficient	95% Confidence Interval	p-value
Emotional Intelligence	-0.23	-0.36, -0.09	0.002
Occupational Stress	0.03	-0.09, 0.15	0.7
Age	-0.26	-2.82, 2.30	0.8
Years of Experience	-0.08	-2.04, 1.87	0.9
Constant	59.56	39.49, 79.64	0.001

Dependent Variable: EFC  $p \leq 0.05$ ; 2-Tailed \* = significance

Table 10:

*Moderation Model Interaction Term: Occupational Stress, Emotional Intelligence, and Emotion-Focused Coping*

EFC Variable	Coefficient	95% Confidence Interval	p-value
Emotional Intelligence	0.10	-0.42, 0.62	0.7
Occupational Stress	0.55	-0.26, 1.35	0.18
Age	-0.63	-3.25, 1.98	0.6
Years of Experience	-0.02	-1.988, 1.93	1.0
Emotional Intelligence* Occupational Stress	-0.005	-0.01, 0.003	0.2
Constant	25.59	-29.92, 81.10	0.4

Dependent Variable: EFC  $p \leq 0.05$ ; 2-Tailed \* = significance

To summarize, Hypotheses 1-5 were supported. Significant, negative correlations were observed between occupational stress and problem-focused coping; Emotional Intelligence and Emotion-Focused Coping; and, Emotional Intelligence and occupational stress. Significant, positive correlations were observed between occupational stress and Emotion-Focused Coping; and, Emotional Intelligence and Problem-Focused Coping. Hypotheses 6 and 7 stated that Emotional Intelligence moderated the relationship between occupational stress and problem-focused coping, and that Emotional Intelligence moderated the relationship between occupational stress and Emotion-Focused Coping. Neither of these hypotheses was supported.

### **Additional Findings**

#### **Comparison of Completers and Non-Completers of Study Surveys**

A total of 340 candidates were asked to participate in the study. A response rate of 60% was achieved by the 203 individuals who had logged in to the online surveys obtained through SurveyMonkey data collection from October 2013 until February

2015. Twenty-five respondents met exclusion criteria and two of the invitees had chosen not to participate. Of the 176 remaining surveys, only 114 respondents (65% completion rate) completed all study instruments (completers) and were used in the final analysis stage (Table 10).

Surveys were separated into completed (had valid EQi 2.0 <sup>TM</sup>, NSS, and WAYS scores) and non-completed (missing any one of the three surveys). Analyses were conducted to assess differences between participants who completed the survey ( $N=114$ ) and participants who did not complete the survey ( $N=62$ ).

The data variables (age, years of experience, and PFC/EFC) were compared by using the Wilcoxon Rank-Sum Test, a non-parametric technique analogous to the paired t-test used to compare paired measures (Munro, 2007). The categorical variables were tested using Fisher's Exact Test between completed and non-completed surveys. Fisher's Exact test was an alternative to Pearson's chi-square and used when sample sizes and expected frequencies were small (Munro, 2007).

The completed and non-completed groups of participants did not differ based on age, gender, or Emotional Intelligence scores. There was a significant difference ( $p = 0.007$ ) between new graduate nurses who completed the surveys and nurses in the non-completed group. However, there were higher percentages of nurses in the non-completed group who reported one or more years of experience (69 %) than those in the completed group (47%). Group comparisons of coping ( $N=11$ ), occupational stress ( $N=4$ ) and Emotional Intelligence ( $N=20$ ) were not conducted, due to the small sample size in the non-completed group.

Table 11:

*Comparison of Completed and Non-Completed Surveys (WAYS, NSS, and EQi 2.0<sup>TM</sup>)*

	COMPLETED (N=114; 65%)	NON-COMPLETED (N=62; 35%)	P Value
Age (N=174)		(N=60)	
20-30	78 (68%)	32 (53%)	0.057
31-40	26 (23%)	25 (42%)	
41-50	8 (7.0%)	3 (5.0%)	
51-60	2 (1.8%)	0 (0%)	
Gender (N=173)			
Female	108 (96%)	56 (93%)	0.7
Male	5 (4.4%)	4 (6.7%)	
Years of Experience (N=175)		(N=61)	
New Graduate	60 (53%)	19 (31%)	0.007
1-5 years	37 (32%)	25 (41%)	
6-10 years	13 (11%)	12 (20%)	
11-15 years	1 (0.9%)	5 (8.2%)	
16-20 years	2 (1.8%)	0 (0%)	
21 or more years	1 (0.9%)	0 (0%)	
EQi (N=134)	107.0 (97.0, 113.0)	103.5 (95.0, 111.5) (N=20)	
NSS (N=118)	63.0 (53.0, 76.0)	74.9 (59.5, 88.9) (N=4)	
WAYS (N=125)	62.3 (57.5, 69.1)	70.6 (63.0, 80.0) (N=11)	

\* =  $p \leq 0.05$ ; \*\* $p \leq 0.001$

### Stress and Years of Nursing Experience

Comparisons of the types of stress experienced by new graduate nurses, nurses with one to five years experience, and nurses with more than five years of nursing experience are presented in Table 12. Findings revealed that the degree of stress in newly hired new graduate nurses occurred in the following order : 1) Death and Dying; 2) Workload; 3) Uncertainty Regarding Treatment; 4) Conflict with Other Nurses; and 5) Conflict with Physicians. These exact findings from the most to the least stress were experienced by nurses with more than five years of experience. There was only one difference in the order of stress from most to least by nurses with one to five years of experience: 1) Death and Dying; 2) Workload; 3) Conflict with other Nurses;

4) Uncertainty Regarding Treatment; and 5) Conflict with Physicians. All three groups of nurses felt supported and adequately prepared for their orientations.

Table 12

*Stress and Years of Nursing Experience*

Nursing Stress Subscales	Group 1 New Graduates (N =60) M (SD)	Group 2 One to Five Years Nursing Experience (N=37) M (SD)	Group 3 More than Five Years Nursing Experience (N=17) M (SD)	P-Value
Death & Dying	16.45 (3.37)	14.08 (3.48)	13.76 (2.70)	.001**
Workload	11.88 (3.15)	10.54 (3.29)	9.53 (2.70)	.012*
Uncertainty Regarding Treatment	10.82 (3.13)	9.68 (2.57)	8.65 (2.06)	.012*
Conflict with Other Nurses	10.68 (3.34)	9.70 (2.63)	8.35 (1.90)	.014*
Conflict with Physicians	9.73 (2.94)	8.89 (2.49)	8.29 (1.90)	.095
Lack of Support	6.17 (2.14)	5.59 (1.89)	5.12 (1.45)	.111
Inadequate Preparation	4.23 (1.30)	3.78 (1.18)	3.59 (1.12)	.099
Total Stress Score	69.96(16.15)	62.26 (14.48)	57.29 (11.53)	.003**

\* =  $p \leq 0.05$ ; \*\* $p \leq 0.001$

Post-hoc tests comparing group means (see Table 13) revealed significant differences between new graduate nurses (Group 1) and nurses with five or more years of nursing experience (Group 3) in the subscales, Death and Dying, Workload, Uncertainty Regarding Treatment, conflict with Other Nurses, and Total Stress. Significant differences were found between new graduate nurses (Group 1) and nurses with one to five years nursing experience (Group 2) in the Death and Dying, Workload, and Total Stress subscales. No significant differences were found between Groups Two and Three in any of the nursing stress subscales.

Table 13

*Comparisons of Group Means: Years of Experience and Types of Occupational Stress*

Nursing Stress Subscales Group 1: New Graduate (N=60) Group 2: 1-5 Yr. Nursing Experience (N= 37) Group 3: > 5 Yr Nursing Experience (N= 17)	Group 1 & Group 2	Group 1 & Group 3	Group 2 & Group 3
Death & Dying	.001**	.004**	.749
Workload	.043*	.007**	.273
Uncertainty Regarding Treatment	.055	.006**	.216
Conflict with Other Nurses	.113	.005**	.123
Conflict with Physicians	.134	.052	.446
Lack of Support	.169	.056	.412
Inadequate Preparation	.099	.072	.606
Total Stress Score	.016*	.003*	.262

\* =  $p \leq 0.05$ ; \*\* $p \leq 0.001$

## **CHAPTER V. Discussion of the Findings**

The purpose of this study was to explore the relationships among coping, occupational stress, and Emotional Intelligence in newly hired nurses in an oncology setting. The findings discussed in this chapter were interpreted in regard to the theoretical propositions derived from theories of Coping (Lazarus & Folkman, 1984), Occupational Stress (Appley & Trumbull, 1967; Lazarus, 1966; Lazarus & Folkman, 1986), and Emotional Intelligence (Bar-On, 2006; MHS, 2011).

### **Coping**

Coping was the dependent variable and represented a multi-dimensional construct consisting of thoughts and behaviors that individuals used to manage situations that were deemed stressful (Lazarus & Folkman, 1984; Folkman, Lazarus, & Dunkel-Schetter et al., 1986; Lazarus, 1993a; Lazarus, 1993b; Folkman & Moskowitz, 2004; Matthews et al., 2004). Researchers proposed that the ability to cope successfully was not only based on an individual's personal characteristics, but also their appraisal of stressful situations (Lazarus & Folkman (1991). They also proposed that during the appraisal process, the individual cognitively chose the strategy to cope with the situation, which was either Problem-Focused or Emotion-Focused Coping (Lazarus & Folkman (1991). Problem-Focused Coping (PFC) was described as successful coping, and focused on analyzing stressful situations and seeking alternative means to address them. Emotion-Focused Coping (EFC) was described as unsuccessful coping, and led to physical and emotional symptoms associated with occupational stress.



Isikhan et al. (2004) reported that although nurses encountered occupational stress on a daily basis, they were not so successful with coping with it. Nurses who reported workload as a source of stress used more problem-focused strategies to deal with patient demands and home/work conflicts. However, the nurses who had low job satisfaction used avoidance coping strategies (Isikhan et al; 2004). Nurses in the Isikhan et al., (2004) study (not newly hired and with previous nursing experience) were caring for oncology patients and reported that they primarily used coping strategies associated with Problem-Focused Coping (Self-Confident; Optimistic; Seeking Social Support), while the least used were Emotion-Focused Coping Strategies (Helpless and Submissive).

Findings in the study reported here were consistent with literature that described oncology nurses using Problem-Focused Coping strategies rather than Emotion-Focused Coping strategies. Coping strategies were studied in nurses with prior nursing experience (Isikhan et al; 2004; Chang et al., 2007; Rodriques & Chaves, 2008; LeSrgent & Haney, 2005). However, those researchers did not distinguish the sample of nurses in their studies from newly hired new graduates to nurses with prior working experience. The largest group of newly hired nurses in this study were new graduates (53%), compared to the group of newly hired nurses who had one or more years of nursing experience (47%). It could be speculated that nurses who chose to work in the oncology specialty actually possess greater coping ability as demonstrated by the greater use of Problem-Focused Coping by newly hired nurses in this study. Results revealed in this research significantly contributed to bridging the gap in the

nursing literature, by describing coping strategies in newly hired nurses in an oncology setting during their initial employment period.

### **Occupational Stress**

Occupational stress, an independent variable in this study, resulted from the external demands of situations emanating from the physical, social, or psychological work environment that threatened the equilibrium of an individual (Appley & Trumbull, 1967; Lazarus, 1966; Lazarus & Folkman, 1987). Lazarus (1995) posited that coping was influenced by an individual's emotional reaction to stress, which determined the choice of strategies employed to cope (PFC or EFC) with the stress. Researchers agreed that successful coping, which included the ability to manage and regulate emotions in oneself and others through Problem-Focused Coping strategies, were of greater benefit for nurses dealing with occupational stress (LeSergent & Haney, 2005). Conversely, the use of Emotion-Focused Coping was detrimental to an individual's health (Chang et al., 2007). Nurses in the Escot et al. study (2001) reported stress scores of experienced oncology nurses in France ( $M = 39.8$ ;  $SD = 8.18$ ) were less than average scores ( $M = 41$ ) reported for nurses in four cancer centers also in France (Note: The citations and  $SD$  were not reported for the additional French cancer centers in the study). They concluded in their study that the high levels of stress were considered serious for nurses. Isikhan et al., (2004) reported stress scores for their sample of Turkish nurses ( $M = 31.00$ ,  $SD$  not reported in the study) that were also deemed high enough to be considered serious. By comparison, the stress scores described in Escot et al., (2007) and Isikhan et al., (2004) were lower than the total stress scores obtained in the research reported here for newly hired American nurses ( $M = 65.57$ ,  $SD = 15.6$ ). Since the

largest groups of nurses in this study sample were newly hired and new graduate nurses, the findings further supported that newly hired nurses experienced occupational stress during their initial employment period that was greater than nurses in other studies. These findings not only contributed to the lack of knowledge in the nursing literature that explained occupational stress in newly hired nurses in an oncology setting, but significantly quantified the qualitative findings in Hinds et.al, (1994) that work-related stressors (occupational stress) were identified in both the newly hired graduate nurses and the experienced oncology nurses.

### **Coping and Occupational Stress**

Researchers concurred that nurses, particularly oncology nurses, were vulnerable to stress, but lacked the support and training to deal with the continual changes in technology, and the physical and psychological exhaustion associated with patient care (Campos de Carvalho et al., 2005; Rodriques & Chaves, 2008; Escot, et al., 2001; Florio et al., 1998; Buerhaus et al 2001). In the only research found to investigate nursing stress during the initial employment period, Hinds et al., (1994) identified consistent themes in perceptions of occupational stressors experienced by novice nurses (newly hired to the pediatric oncology setting) and expert nurses (18 months or greater experience). The occupational stressors involved were associated with high-level, job-related responsibilities, uncertainty regarding oncology treatment regimens and medications, and concerns/frustrations in coping with difficult situations. Nurses who could not cope with the stress experienced during their employment period resigned from their position and the oncology setting. However, the nurses who completed their orientations and were still employed at one year were able to identify their stressors and had the ability to

cope with them (Hinds et al., 1994), suggesting that the ability to cope successfully is a critical factor in retention of nurses in the oncology setting.

The problem-focused strategies used most often by newly hired nurses in the study reported here were Planful Problem, Solving, Accepting Responsibility and Positive Reappraisal. The newly hired nurses who used more Problem-Focused Coping also perceived less stress, which indicated that occupational stress was negatively correlated with Problem-Focused Coping. Nurses who used more Emotion-Focused Coping experienced greater stress, which indicated that occupational stress was positively correlated with Emotion-Focused Coping. Findings from this study were also consistent with the current literature (LeSergent & Haney, 2005; Chang et al., 2007; Isikhan et al., 2004) involving coping strategies of nurses and how they deal with their occupational stress. LeSergent and Haney (2005) reported that nurses relied on Emotion-Focused Coping rather than Problem-Focused Coping strategies when they felt stressed, and would have benefitted by using more successful coping (Problem-Focused Coping). Findings in Chang et al., (2007) concurred that Problem-Focused Coping was positively correlated with mental health and nurses in their study who used more Problem-Focused Coping strategies reported better mental health. Isikhan et al., (2004) reported a high stress level ( $M = 31.00$ ,  $SD =$  not reported in the study) for their sample of experienced oncology nurses. The researchers reported a negative impact of stress on the Turkish nurses; stress was associated with physical and psychological symptoms (headache, excessive nervousness, sleep disorders, and ulcers/gastritis) and unsuccessful (EFC) means of coping (Isikhan et al., 2004). Another study that focused on coping strategies of newly hired and experienced oncology nurses in Brazil found that the

nurses used more Problem-Focused Coping strategies (Planning, Active Coping, Acceptance, Self-Distraction, and Positive Reframing) when they dealt with occupational stress (Gomez, Custodio dos Santos & Carolino, 2013).

The current literature involving occupational stress and coping does not specifically investigate newly hired nurses' coping abilities in oncology settings during the initial employment period. The results of the study reported here indicated that newly hired nurses in an oncology setting experienced occupational stress during their initial employment period which was consistent with nurses who had previous nursing experience. Findings in this study represented a significant addition in closing the gap in the nursing literature that explains the occupational stress experienced by newly hired nurses in an oncology setting and the strategies they used to cope with it during the first three months post hire.

### **Emotional Intelligence**

Emotional Intelligence (EI), the second independent variable and also the moderating variable in this study, encompassed emotional and social skills and competencies that enabled individuals to be more successful in coping with environmental demands (Bar-On 2006; Cherniss, 2010; MHS, 2011). Since the nursing environment includes a wide range of emotional and social interactions, the individual's emotional and social competencies have contributed to successfully moderating the relationship between stress and the ability to cope with occupational stress (Ciarrochi, Deane, Anderson, 2002; Bar-On, 1986; MHS 2011).

Gerits et al., (2004; 2005) reported that Dutch nurses working with patients with behavior problems had Emotional Intelligence scores that were negatively and significantly correlated with Emotion-Focused Coping strategies; high occupational stress scores were significantly and negatively associated with Emotional Intelligence. Similar results were found in the study reported here. Newly hired nurses in this study who had high Emotional Intelligence scores used more Problem-Focused Coping strategies to deal with occupational stress. Conversely, nurses who had low Emotional Intelligence used more Emotion-Focused Coping to deal with occupational stress. Findings supported theoretical propositions that emotionally intelligent individuals understood how others felt and were successful with relating to other people (Bar-On (1997, 2006). The literature suggests that nurses who used Emotion-Focused Coping strategies when they dealt with occupational stress were vulnerable to symptoms associated with stress which included emotional distress, depersonalization, professional incompetence, resignation from the oncology specialty (Rodrigues & Chaves, 2008; Hinds et al., 1994), and a decrease in the quality of patient care (Isikhan et al., 20014). Therefore it is critical to assess the Emotional Intelligence of newly hired nurses in oncology settings in order to identify and intervene with those who are more likely to use unsuccessful coping strategies and are more vulnerable to physical and psychological symptoms.

### **Emotional Intelligence and Occupational Stress**

Researchers reported that higher Emotional Intelligence scores correlated with lower levels of perceived occupational stress, positive stress adaptation, fewer symptoms of emotional distress and emotional depersonalization, and positive conflict styles

(Landa et al., 2008). Landa et al., (2008) also reported that nurses who had high Emotional Intelligence demonstrated a greater ability to deal with occupational stress than nurses with low Emotional Intelligence scores. Findings in Landa et al., (2008) suggested that emotionally intelligent competencies could have been a protective factor against occupational stressors in the nursing environment.

Findings in the study reported here indicated a negative correlation between Emotional Intelligence and occupational stress. These results, obtained from newly hired nurses, were statistically significant and consistent with the results found in the nursing literature on experienced nurses (Landa et al., 2008 & 2010; Gerits et al., 2004; Gerits et al., 2005). However, Gerits et al., (2004) reported that the nurses in their study demonstrated high Emotional Intelligence and postulated that the homogeneity of nurses working in specific nursing sub-specialties (i.e. caring for patients with mental retardation and behavior problems) was a factor contributing to findings in their study. They also suggested that nurses with high Emotional Intelligence abilities could be attracted to specific nursing specialties. Similarly, findings in the study reported here also suggest that the oncology sub-specialty may attract nurses with high Emotional Intelligence. The results obtained in this research address a gap in the literature by describing the prevalence and magnitude of Emotional Intelligence and occupational stress during the initial employment period.

In summary, the nursing literature describes coping, occupational stress, and Emotional Intelligence of nurses, but does not differentiate how nurses at specific time points in their nursing careers addressed occupational stress emanating from the work environment. Nurses in this study experienced higher occupational stress than was

previously reported, and used more Problem-Focused Coping strategies to deal with the stress. In addition, results obtained in this study narrowed the gap in the empirical literature by focusing on the Emotional Intelligence and coping abilities of newly hired nurses, in the presence of occupational stress they experienced during the initial employment period.

### **Moderation Model**

It was hypothesized that for the nurses in this study (newly hired and in the initial employment period in an oncology setting) Emotional Intelligence would moderate their choice of Problem-Focused or Emotion-Focused Coping strategies in the presence of occupational stress. This was derived from the theoretical proposition that emotionally intelligent individuals have an ability to manage personal emotions and emotions of others; social and environmental changes; and, problem solving and decision making. These abilities enable them to cope successfully with stressful situations (Bar-On, 2006, MHS 2011). No prior studies on this topic could be found in the literature.

In the study reported here, a significant positive relationship was found between Emotional Intelligence and Problem-Focused Coping, and a significant negative relationship was found between Emotional Intelligence and Emotion-Focused Coping. After the interaction terms were entered in the moderation model, the interaction of the two independent variables (Emotional Intelligence and occupational stress) did not account for any significant amount of variances in either Emotion-Focused or Problem-Focused Coping. As a result, the moderating effect of Emotional Intelligence was not found in this study.



The lack of support for this moderation model may be due to the use of total Emotional Intelligence scores. Emotional Intelligence and occupational stress were analyzed using only the total scores for each instrument. The total Emotional Intelligence scores obtained in this study estimated an individual's overall emotional and social behavior. However, they were potentially too broad in scope because the total scores included EI abilities, skills, and competencies. Researchers that previously investigated and supported the moderating effect of Emotional Intelligence did not use the total score for Emotional Intelligence. Studies that tested whether Emotional Intelligence moderated the relationships between occupational stress and mental health variables in nursing students (Ciarrochi et al., 2002) and emotional exhaustion and depersonalization in experienced nurses (Görgens-Ekermans & Brand, 2012) used specific dimensions of Emotional Intelligence and obtained significant results. Some, but not all sub-dimensions of Emotional Intelligence (sub-dimensions of the EQi) significantly moderated the relationships between variables in both studies. These included emotional perception, management and control (Ciarrochi et al., 2002; Görgens-Ekermans & Brand, 2012).

In summary, although significant relationships among the independent variables and the dependent variables were found, the hypothesized moderation models were not supported.

### **Additional findings**

#### **Comparison of Completed and Non-Completed Study Surveys**

Additional analyses were conducted to identify differences between nurses who had completed all surveys in this study (WAYS, NSS and EQi 2.0<sup>TM</sup>) and those who had not. These two groups did not differ based on age, gender and Emotional Intelligence scores. Nurses in the non-completed group were more likely to have more than one year of experience ( $p = .007$ ). It may be that nurses with more experience felt they had nothing to gain by participating in this study. As the surveys were web-linked through email to keep the responses anonymous, the nurses had to complete all three surveys in one session. If the nurse logged off at any time while taking the survey, it was considered incomplete. This was another possible factor in difference between the completed and non-completed surveys. Finally, a comparison of the two groups (completed and non-completed) could not be conducted in terms of occupational stress and Problem-Focused and Emotion-Focused Coping because there were too few values in the non-completed group to conduct analyses. There may have been some characteristic of these surveys that resulted in some participants' decision not to complete them.

#### **Stress and Years of Nursing Experience**

Additional testing was conducted to examine the mean levels of the types of stress experienced by newly hired nurses in terms of their years of experience. Although the data analysis plan in this study used only the total scores for occupational stress, a description of stress that greatly impacted newly hired oncology nurses was of

value. Findings revealed that nurses experienced greater overall occupational stress compared to levels of occupational stress measured in experienced oncology nurses in other studies (Escot et al., 2001). Newly hired nurses in this research who were grouped as new graduates and the group of nurses with more than five years of nursing experience attributed Death and Dying, Workload, Uncertainty Regarding Treatment, and Conflict with Other Nurses as the top four sources of their stress. Nurses grouped in the one to five years of nursing experience reported the top four sources of stress as Death and Dying, Workload, Conflict with Other Nurses, and Uncertainty Regarding Treatment. Despite the small difference in the order of causes of stress among the nursing groups, (new graduates, nurses with more than five years experience, and the nurses with one to five years of experience), these findings provide new information which concluded that newly hired nurses experienced the same types of stress during the first three months post hire as nurses with more years of experience.

Braun, Gordon and Uziely (2010) reported that there was an association between the fear of death and the attitudes of oncology nurses caring for dying patients. Their findings concluded that nurses who were more fearful about death had less positive attitudes towards caring for the dying patient. The researchers also suggested that training and support programs for nurses to discuss their fears and attitudes towards death and dying might assist them to feel less alone, to better understand their own behaviors, and develop more positive attitudes towards caring for the dying patient (Braun et al., 2010).

Gomes et al., (2013) reported that oncology nurses (not new graduates or newly hired) experienced the greatest stress from workload, physical pace of the work

environment, and situations of death and/or illness with emotional negative character, which presented consistent threats to the nurses' equilibrium. Rodriques and Chaves (2008) also reported that most oncology nurses (not newly hired) with experience related that work stress included patient death (28.6%), emergency situations (16.0%), relationship issues among nurses (15.5%), and work process situations (15.5%).

Based on current literature regarding occupational stress in nurses (Gomes et al., 2013; Rodriques & Chaves, 2008), the daily impact of occupational stress identified by nurses in the study reported here may precipitate a negative impact on them in the future.

Organizations would benefit by investigating the factors contributing to workload stress and seek alternatives to address them.

Mehta and Singh (2014) reported that Nepalese nurses' stress associated with uncertainty regarding treatment was attributed to their feelings of inadequacy when they were placed in supervisory roles or emergent situations, and nursing supervisors or the physicians were not available to assist them. The researchers recommended that identifying the underlying causes of a nurses' stress and implementing stress management programs to address the issues most stressful to them, would improve the nurses' self confidence, increase job satisfaction, and ultimately reduce their levels of stress (Mehta & Singh, 2014)

The fourth source of stress for the newly hired new graduate nurse, as well as the nurse with more than five years experience, were conflicts with other nurses. Simons and Mawn (2010) reported that the new graduates in their qualitative study identified four themes: 1) *Structural Bullying* was attributed to unfair schedules, patient assignments and workload; 2) *Nurses Eating Their Young* was viewed by new nurses as

hostility and negativity from other nurses; 3) *Out of the Clique* was experienced by new nurses as feelings of alienation; and 4) New nurses were *Leaving the Job* as a result of being targets of bullying behaviors by other nurses. Bartholomew (2010) reported that unless there are efforts by organizations to examine workplace concerns, the impact of negative work environments on nurses would produce feelings of inferiority, anger, powerlessness, frustration, and a decrease in teamwork. At a time when new nurses were acclimating to a nursing specialty known to be highly stressful, technological advances that included complex treatment regimens, and patient deaths, conflicts with other nurses presented another factor to be investigated through further research. According to Bartholomew (2010), new nurses will be attracted to healthy nursing environments. It is also in the best interest of organizations to acknowledge that conflict with other nurses is stressful for newly hired nurses and identify strategies to address them.

Despite the consistent stress in oncology work environments, newly hired nurses in this study also reported that they felt supported and prepared. This may have been a contributing factor in their preferential use of Problem-Focused Coping strategies (Gomes et al., 2013). The new nurses in the research setting received an intensive and supportive nursing orientation prior to their assignments in their prospective units. The new nurses were provided a nursing preceptor and abridged assignments, which gradually increased for approximately six months. This nurturing program provided by the nursing educators also may have been a contributing factor in how nurses in this study felt well-prepared and supported.

Findings in this study regarding occupational stress were consistent with results reported in the literature. They also supported the presence and sources of occupational stress in this group of newly hired oncology nurses in the initial employment period.

## **CHAPTER VI. Summary, Conclusions, Implications, and Recommendations**

### **Summary**

The purpose of this study was to explore the relationships among coping, occupational stress, and Emotional Intelligence in newly hired nurses in an oncology setting. The theoretical relationships developed in this study involved coping, occupational stress and Emotional Intelligence. Coping, the dependent variable was based on the theoretical propositions by Lazarus and Folkman (1984). Occupational stress was the first independent variable and was based on the Stress Theory of Lazarus and Folkman (1997). The second independent variable, (and the moderating variable) Emotional Intelligence, was based on the theory of Bar-On (1997 & 2006; MHS 2011).

Coping encompasses the thoughts and behaviors that individuals used to manage situations that are deemed stressful (Lazarus & Folkman, 1984; Folkman, Lazarus, & Dunkel-Schetter et al., 1986; Lazarus, 1993a; Lazarus, 1993b; Folkman & Moskowitz, 2004; Matthews et al., 2004), and proposed that the ability to cope successfully is based on an individual's personal characteristics and their appraisal of the stressful situations (Lazarus & Folkman (1991). During the appraisal process, the individual cognitively chooses either Problem-Focused or Emotion-Focused Coping strategies to cope with the situation (Lazarus & Folkman (1991). Problem-Focused Coping (PFC) was described as successful coping and focuses on how to analyze stressful situations and how to seek alternative means to address them. Emotion-Focused Coping (EFC) was described as unsuccessful coping and could lead to physical and emotional symptoms associated with occupational stress.

Occupational stress results from the external demands of situations that emanate from the physical, social or psychological work environment that threaten the equilibrium of an individual (Lazarus & Folkman, 1987; Appley & Trumbull, 1967; Lazarus, 1966). Lazarus (1995) posited that coping was influenced by an individual's emotional reaction to stress, which determined the choice of the strategies (PFC or EFC) used to cope with the stress.

Emotional Intelligence includes the emotional and social skills and competencies that enable individuals to be more successful in coping with environmental demands (Bar-On 2006; Cherniss, 2010; MHS, 2011). Since the nursing environment encompasses a wide range of emotional and social interactions, the individual's emotional and social competencies contribute to successful job performance and satisfaction, as well as moderate the relationship between stress and the ability to cope with occupational stress (Ciarrochi, Deane, Anderson, 2002).

In the study reported here, strong correlations were found between Occupational Stress and Problem-Focused Coping and Emotion-Focused Coping. Emotional Intelligence was also strongly correlated with Problem-Focused and Emotion-Focused Coping, as well as with Occupational Stress. All findings were consistent with the literature (Chang et al., 2007; Isikhan et al., 2004; Rodriques & Chaves, 2008; LeSergent & Haney 2005). However, results of the moderation model demonstrated that the interaction of the two independent variables (EI and OS) did not account for a significant percentage of the variance in the dependent variables (PFC and EFC).



### **Hypotheses Summary**

The following hypotheses were derived for this study from the theoretical and empirical literature.

1. Occupational Stress is negatively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
2. Occupational Stress is positively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.
3. Emotional Intelligence is positively related to Problem-Focused Coping in newly hired nurses in an oncology setting.
4. Emotional Intelligence is negatively related to Emotion-Focused Coping in newly hired nurses in an oncology setting.
5. Emotional Intelligence is negatively related to Occupational Stress in newly hired nurses in an oncology setting.
6. Emotional Intelligence will moderate the relationship between Occupational Stress and Problem-Focused Coping in newly hired nurses in an oncology setting.
7. Emotional Intelligence will moderate the relationship between Occupational Stress and Emotion-Focused Coping in newly hired nurses in an oncology setting.

The sample for this study consisted of all newly hired registered nurses who had not self-reported prior working experience in a comprehensive oncology-focused facility with a National Cancer Institute (NCI) designation. Participants were in the first three

months of their initial employment period and provided care for cancer patients on an inpatient, outpatient, or ambulatory basis.

Coping was measured with the Ways of Coping Questionnaire (Folkman & Lazarus, 1988), which was the most widely used measure of coping. Occupational stress was measured with the Nursing Stress Scale (Gray-Toft & Anderson, 1981a) and determined the frequency of stress perceived by nurses. Emotional Intelligence was measured with the Emotional Quotient Inventory 2.0<sup>TM</sup> (MHS, 2011), which was the revised version of the Emotional Quotient Inventory developed by Bar-On (1997; 2004; 2006). Alpha coefficients for the instruments ranged from 0.93 to 0.94. Data were analyzed using the IBM Statistical package for the Social Sciences (IBM SPSS, 1989, 2013) Version 22.0 and STATA Statistical Software (Release 13, 2013). Hypotheses 1 through 5 were tested using Pearson's Product Moment correlational analysis. A one-tailed test of significance level set at alpha 0.05 was used to test Hypotheses 1 through 5. Hypotheses 6 and 7 were tested by using hierarchical multiple regression. A two-tailed test of significance was used and the significance level was set at alpha 0.05. Hypotheses 1 through 5 were supported. Hypotheses 6 and 7, which represented the moderation models, were not supported.

### **Limitations**

1. All surveys were web-linked through email, and the surveys all had to be completed in one session to maintain anonymity of the participant. If the participant was interrupted while taking the survey and logged off the link before completing it, the total survey responses were incomplete.

2. Since the newly hired nurses were also employees of the research setting, a concern about the organization having access to the responses, despite anonymity, was a possible factor as to why nurses chose not to participate in this study.
3. This study was conducted in one National Cancer Institute-designated facility; therefore, findings are not generalizable to all newly hired oncology nurses.
4. The small number of males who participated was a limitation of this study.

### **Conclusions**

The following conclusions were derived from the responses of 114 newly hired nurses in an oncology setting:

1. Nurses in this study used more Problem-Focused Coping compared to Emotion-Focused Coping. Only one other study had similar findings for oncology nurses (Isikhan et al., 2004), however, the nurses in the previous study were not newly hired in the specialty. Results obtained in this study suggested that nurses who chose the oncology specialty possessed more successful coping abilities and used more Problem-Focused Coping strategies.
2. Nurses in the study who experienced low occupational stress used more problem-focused coping strategies, while nurses who experienced high occupational stress used more Emotion-Focused Coping strategies. Findings were consistent with the empirical literature regarding nurses' use of coping strategies in regard to occupational stress (LeSergent & Haney, 2005, Change et al., 2007; Isikhan et al., 2004). However, previous studies were conducted

with experienced nurses rather than nurses who were newly hired. The newly hired nurses in the study reported here also reported work-related stressors that were similar to those reported by experienced nurses in other studies, and used more Problem-Focused Coping to deal with their stress. It can be concluded that during their initial employment period, newly hired nurses in an oncology setting experience occupational stress similar to that of experienced nurses and they can be successful in dealing with it.

3. Newly hired nurses in this study who possessed Emotional Intelligence skills demonstrated greater use of Problem-Focused Coping strategies.

Additionally, the higher their EI, the more they were able to address the occupational stress in the oncology nursing environment. Conversely, nurses with low EI used more Emotion-Focused Coping strategies and were not able to successfully address their occupational stress. It can be concluded that Emotional Intelligence is a factor in successful coping with occupational stress in newly hired nurses in an oncology setting.

4. The Emotional Intelligence scores for newly hired nurses in this study suggested that nurses who chose the oncology specialty already possessed varying amounts of emotionally intelligent skills and competencies that supported them through their initial employment period. Similar Emotional Intelligence scores were reported by Gerits et al (2004 & 2005) in nurses caring for patients with severe behavior problems. However, further studies were needed to investigate the EI of newly hired nurses in other

specialties to determine whether Emotional Intelligence varies by chosen nursing sub-specialty.

5. Emotional Intelligence did not moderate the relationship between occupational stress and Problem-Focused or Emotion-Focused Coping in the newly hired nurses in the study reported here. These findings were the product of the analysis of EI total scores, which included emotional and social abilities as well as skills and competencies, rather than specific sub-dimensions of the EQi. In the two nursing studies which supported the moderating effect of Emotional Intelligence (Ciarrochi et al., 2002; Görgens-Ekermans & Brand, 2012), the dimensions of Emotional Intelligence (managing emotions in oneself and others), rather than the total score, were used as the moderating variables. Further analysis of the moderating effect of Emotional Intelligence in this sample of newly hired nurses could be conducted in a future study using the EQi subscales (managing the emotions in oneself and others). Although Emotional Intelligence did not moderate their choice of coping strategies, it can be concluded that the higher emotionally intelligent skills that nurses possessed, the more they were able to deal with their stress. Sharif et al., (2013) reported a significant increase in the EI of the Turkish nurses in their study post-EI training, and should prompt other organizations to consider implementing similar initiatives into orientation programs. These initiatives could improve EI skills of the newly hired oncology nurses, and may improve their ability to successfully cope with occupational stress during the initial employment period.

### **Implications for Nursing**

Nurses who work in the oncology specialty report a strong commitment to care for cancer patients (Buerhaus et al., 2001) and theorists have pointed out that these environments have been known to be stressful. Nurses hired into the oncology specialties may not have specific training in the specialty (Rodriques & Chaves, 2008). If they were not able to protect themselves against feelings of emotional distress and professional incompetence, the newly hired nurses chose to leave the specialty and/or the nursing profession (Hinds et al., 1994). As a result, oncology-focused hospitals could be negatively impacted by increased vacancies and a decreased pool of nurses to care for their patients (Buerhaus et al., 2001). These staffing deficits would impact daily patient care and ultimately, the quality of patient outcomes.

The newly hired nurses in this study used Problem-Focused coping more often than Emotion-Focused Coping to deal with the occupational stress of the nursing environment. Problem-focused coping is a strategy that enables individuals to handle their stress successfully (Lazarus & Folkman, 1984). It is well-supported in the literature that the use of Emotion-Focused Coping strategies is not effective for nurses dealing with occupational stress (LeSergent & Haney, 2005; Rodriquez & Chaves, 2008). In the process of caring for the oncology patient, nurses interact with patients, their families and colleagues. These interactions are recognized to be emotionally and mentally stressful (Florio et al., 1998, Buerhaus et al., 2001). As a result, these stressful experiences present imbalances between the demands of the work setting and the nurses' ability to cope with the demands (Nash, 1989; Isikhan et al., 2004). If nurses are not able to protect themselves from the continuous impact of occupational stress, the detrimental

consequences to them increase, resulting in physical and psychological complaints (Hillhouse & Adler, 1997), decreased job satisfaction (Parikh, 2004), and burnout (Elliott et al., 1996; Deary et al., 2003). It would be in the best interest of nursing organizations, particularly oncology facilities, to better understand the coping strategies employed by their nurses and investigate educational activities to improve or strengthen the nurses' use of Problem-Focused Coping strategies.

Although Emotional Intelligence did not moderate the relationship between occupational stress in the choice of coping strategies in this sample of newly hired nurses, significant relationships were found between Emotional Intelligence and coping strategies (PFC and EFC), and Emotional Intelligence and occupational stress. These findings strongly suggest that Emotional Intelligence is a factor in a nurse's ability to successfully or unsuccessfully deal with occupational stress. Nursing practice - caring for the patient and their family - involves complex processes: to perceive and understand the patient's emotions, as well as understand emotions in themselves; to manage patient situations; and to provide patient care (ASRN, 2007; Bulmer-Smith et al., 2005). Theorists postulate that EI skills/competencies are a factor in decision-making that, in turn influence more empathetic, patient-focused decisions (Freshwater & Stickley, 2004; Facione & Facione, 1996).

The Emotional Intelligence of newly hired nurses in this study was average to high (scores 90 and above). The nurses used more Problem-Focused Coping strategies to deal with occupational stress, but the levels of stress experienced by these nurses were greater than the levels of stress reported in studies of experienced nurses. Findings suggest that newly hired nurses need to foster their emotionally intelligent abilities and

skills to promote the use of successful coping strategies (Problem-Focused Coping) in an effort to protect themselves from the negative impact of occupational stress. Theorists of Emotional Intelligence (Bar-On, 2006; Cherniss, 2010) agreed that EI abilities, skills and competencies can be taught and learned, which may ultimately improve coping abilities (Ciarrochi et al., 2002; Lazarus & Folkman, 1984); improve job satisfaction (Parikh, 2004); and potentially improve the nurse's physical and psychological health and self-actualization (Matthews et al., 2004; Matthews & Zeidner, 2000; & Ciarrochi, 2002). The EI of the newly hired oncology nurses could be improved through formalized Emotional Intelligence education and training (Codier, Freitas, & Muneno, 2013; Sharif, Rezaie, Keshavarzum, Mansoori, & Ghadakjpoor, 2013). This training could be incorporated into orientation programs and would enhance the EI skills/competencies of newly hired nurses, as well as potentially increase the use of Problem-Focused Coping strategies. These skills would ensure that newly hired nurses maintained their skills and competencies and would provide a protective benefit to them against the stress of working in oncology nursing environments. However, further studies are needed to quantify results involving the teaching of Emotional Intelligence strategies.

In summary, this study narrowed the gap in the nursing literature by describing the Emotional Intelligence and occupational stress of newly hired oncology nurses and their choice of coping strategies within the first three months post hire in oncology units. The newly hired nurses in the study experienced occupational stress that was greater than that reported in studies investigating occupational stress in experienced nurses. They possessed average to high Emotional Intelligence, and the majority of them used



more Problem-Focused Coping strategies to deal with the stress. Findings from empirical nursing studies reported significant results from the integration of EI training initiatives for critical care nurses. Nurses can benefit from the improvement of EI skills and competencies, as well as the increased use of successful coping strategies to protect themselves from the consequences of occupational stress. As a result, these initiatives have the potential to positively improve the newly hired nurses' health, well-being, and performance (Slaski & Cartwright, 2003). It could also increase retention of nurses beyond their initial employment period. This in turn would keep nurses at the bedside, and ultimately improve the quality of patient care and patient outcomes.

### **Recommendations for Further Research**

Future research to investigate the relationships among coping, occupational stress and Emotional Intelligence should include testing specific dimensions of Emotional Intelligence, as well as specific types of stress and coping strategies.

The following questions are proposed for future research:

1. What are the Emotional Intelligence profiles of newly hired nurses in an oncology setting?
2. Is there a difference in the relationships among age, years of experience, and Emotional Intelligence in oncology nurses compared to nurses in other nursing specialties?
3. Are there differences in the Emotional Intelligence scores of newly hired nurses who choose oncology nursing compared to other nursing specialties?

4. Does a specific dimension of Emotional Intelligence (Self-Perception, Self-Expression, Interpersonal, Decision Making, and Stress Management) moderate the relationship between occupational stress and coping (Problem-Focused or Emotion-Focused Coping) of newly hired nurses in oncology settings?
5. What are the types of stress experienced by newly hired oncology nurses compared to newly hired nurses working in other nursing settings?

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**APPENDIX A**

Emotional Quotient Inventory 2.0™ ©- Composite Scales and Subscales (MHS, 2011)

Dimensions/ Sub-Dimensions	<i>Definitions of Dimensions/ Sub-Dimensions</i>
Self Perception	Perceiving emotions in oneself and others
Self-Regard	To be respecting of oneself; confidence
Emotional Self-Awareness	To be aware of and understand one's emotions
Self-Actualization	Finding meaning in oneself and strive to attain personal goals/ self improvement
Self Expression	Openly expressing one's feeling verbally and non-verbally
Emotional Expression	Constructive expression of emotions
Assertiveness	Communicating feeling and/or beliefs in non-offensive manner
Independence	Self directed and free from emotional dependency
Interpersonal	Social awareness and interpersonal relationships
Interpersonal Relationships	Involved in mutually satisfying relationships
Empathy	Understanding and appreciating how others feel
Social Responsibility	Social consciousness and helpfulness
<b><i>Decision Making</i></b>	<b><i>Ways in which emotional information are used in the decision-making process</i></b>
Problem-Solving	Finding solutions when emotions are involved
Reality Testing	Being objective and seeing things as they really are
Impulse Control	Resist or delay an impulse to react
<b><i>Stress Management</i></b>	<b><i>Emotional Management and Regulation</i></b>
Flexibility	Adapting emotions, thoughts and behaviors
Stress Tolerance	Coping with stressful situations
Optimism	Positive attitude and outlook on life
<b><i>Well Being Indicator</i></b>	<b><i>Other indicators but not part of the EQi 2.0 model</i></b>
Happiness	Product of emotional intelligence rather than a contributing factor of emotional intelligence
<b><i>Response Style Indicators</i></b>	<b><i>Detects respondents who may be providing exaggerated responses</i></b>
Positive /Negative Impression Scales	<b><i>Positive:</i></b> Inflated responses associated with self deception, lack of personal insight in facing ones' limitations and <b><i>Negative:</i></b> Deflated responses to one's purpose, seeking sympathy, low self esteem, negative attention or assistance in resolving personal problems.
Inconsistency Index	Inconsistent responses occurring when respondents rate similar items in dissimilar or opposite ways; which may be due to deliberate non-compliance

## APPENDIX B

Emotional Quotient Inventory 2.0™ © -  
Permission to use Emotional Quotient Inventory

<div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 0.8em;">To...</span> <span style="font-size: 0.8em;">Shawna Ortiz &lt;shawna.ortiz@MHS.com&gt;</span> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 0.8em;">Cc...</span> <span style="font-size: 0.8em;"></span> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 0.8em;">Bcc...</span> <span style="font-size: 0.8em;"></span> </div> </div> <div style="border: 1px solid #ccc; padding: 2px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 0.8em;">Subject:</span> <span style="font-size: 0.8em;">RE: Student Research Discount with MHS Products</span> </div> </div>	<p><b>From:</b> Shawna Ortiz [mailto:shawna.ortiz@MHS.com]  <b>Sent:</b> Thursday, September 04, 2014 11:33 AM  <b>To:</b> Mazzello, AnnMarie/Nursing  <b>Cc:</b> eller@rutgers.edu  <b>Subject:</b> Student Research Discount with MHS Products</p> <p>Hello Anne Marie,</p> <p>You have been approved for a Student Research Discount on the EQ-I 2.0 for your study under the supervision of Lucille Eller, Ph.D. This discount grants:</p> <p><b>Conditions</b></p> <ol style="list-style-type: none"> <li>1) Your discount expires one year from today. If you require a discount beyond the expiry date please re-apply at that point.</li> <li>2) Please bear in mind that scored datasets are to be used for the collection of data only and cannot be used to provide feedback to respondents. If you are intending to provide feedback please ensure that you order one of our available reports. Your :</li> <li>3) Your research is important to us, as agreed upon in your application please remember to send a report of your results to: <a href="mailto:researchsummaries@mhs.com">researchsummaries@mhs.com</a> following the completion of your study.</li> </ol> <p>Thank you, and good luck with your research,</p> <p><b>Shawna Ortiz</b>, Customer Service Representative  <b>MULTI-HFAITH SYSTEMS INC. (MHS)</b>          In Canada: 1-800-268-6011 Address: 3770 Victoria Park Ave. Toronto, Ont. M2H 3M6          In U.S.: 1-800-456-3003 Address: P.O. Box 950 North Tonawanda, NY 14120-0950          International: 416 492 2627          Fax: 416-492-3343 Toll Free in Canada &amp; U.S.: 1-888-540-4484          Website: <a href="http://www.mhs.com">www.mhs.com</a>  <small>Please send all US courier deliveries to 60 Industrial Parkway, Suite 706, Cheektowaga, NY, 14127 or our Canadian address.</small></p>
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**APPENDIX C****Ways of Coping Questionnaire Scales and Definitions (Lazarus & Folkman, 1984)**

<b><i>Coping Scales</i></b>	<b><i>Definitions</i></b>
Confrontive Coping	Aggressive efforts to alter situations
Distancing	Cognitive efforts to detach oneself and minimize the significance of a situation
Self- Controlling	Efforts to regulate one's feelings and actions
Seeking Social Support	Efforts to seek informational, tangible and emotional support
Escape- Avoidance	Described as wishful thinking and involves efforts to escape or avoid a problem
Accepting Responsibility	Acknowledging one's role in a problem and working towards putting things right
Planful Problem-Solving	A deliberate problem-focused effort to alter a situation as well as analytically working towards solving a problem
Positive Reappraisal	Efforts to create positive meaning by focusing on personal growth

## APPENDIX D

### Permission to use the Ways of Coping Questionnaire

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**Ways of Coping Questionnaire  
Instrument and Scoring Guide**

**Susan Folkman, Ph.D.  
Richard S. Lazarus, Ph.D.**

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You replied on 1/6/2015 8:12 PM.  
From: "Mind Garden (info@mindgarden.com)"  
To: mazzella, annmarie@uic.edu  
Cc: Kiehl, Kristin  
Subject: Re: Permission extension for WAYS

Sent: Thu 1/6/2015 11:09 AM

Hello Ann Marie,  
Thanks for the call. You may use this email message as proof of permission to extend use of the purchased WAYS licenses through August 2015.  
Best,  
Katherine  
Mind Garden, Inc.

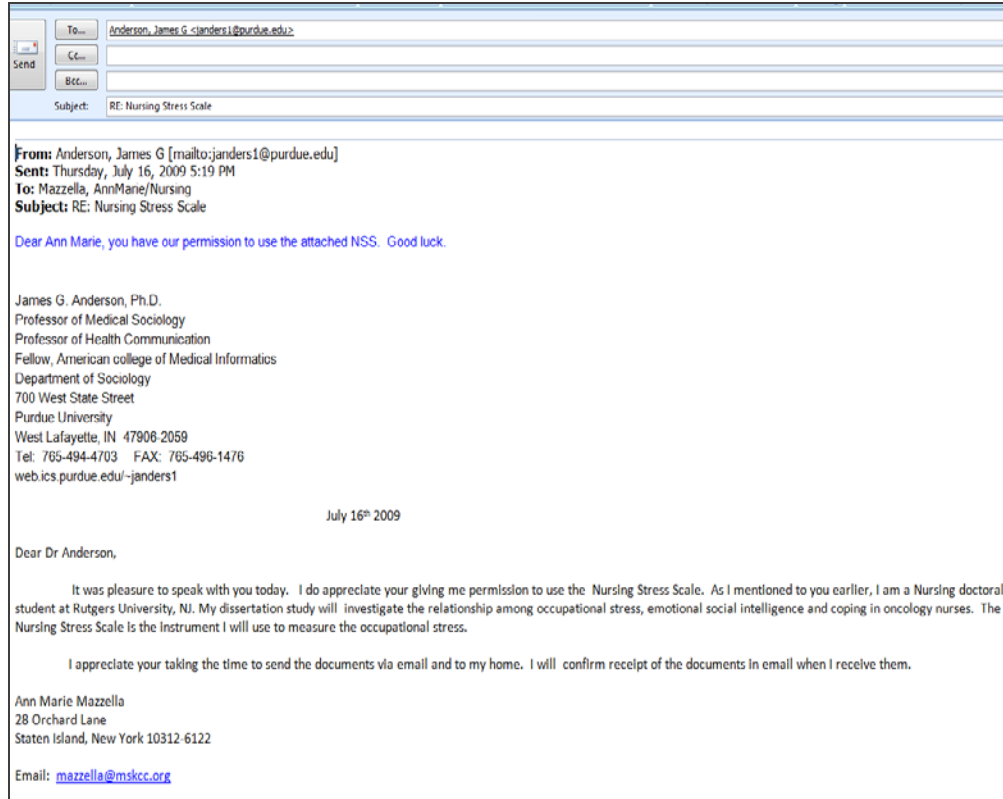
On Thu, Jan 8, 2015 at 8:44 AM, "mazzella@uic.edu" wrote:  
Dear Catherine,  
Thank you for your assistance today. As I mentioned to you in our phone conversation, I purchased 150 WAYS surveys and to date, have only collected 10. I will need 100 participants to satisfy the sample for my study. As a result of the slow recruitment, I will require a permission extension to use the WAYS until August 2015.  
I apologize my oversight of the actual expiration of November 4<sup>th</sup> 2014.  
Thank you for your assistance and I look forward to hearing from you soon.  
Best regards,  
Ann Marie Mazzella

**APPENDIX E****The Nursing Stress Scale**

The factors and items for the Nursing Stress Scale (Gray-Toft & Anderson, 1981) are noted below.

Table 3: Factors and items of the Nursing Stress Scale (Gray-Toft & Anderson, 1981)

Factor 1	<b>Death&amp; Dying</b>	<i>Performing procedures that patients experience as painful Feeling helpless in the case off a patient who fail to improve Listening or talking to a patient about his/her approaching death The death of a patient The death of a patient with whom you developed a close relationship Physician not being present when a patient dies Watching a patient suffer</i>
Factor II	<b>Conflict with Physicians</b>	<i>Criticism by a physician Conflict with a physician Fear of making a mistake in treating a patient Disagreement concerning the treatment of a patient Making a decision concerning a patient when the physician is unavailable</i>
Factor III	<b>Inadequate Preparation</b>	<i>Feeling inadequately prepared to help with the emotional needs of a patient's family:Being asked a question by a patient fro which you do not have a satisfactory answer. Feeling inadequately prepared to help with the emotional needs of a patient</i>
Factor IV	<b>Lack of Support</b>	<i>Lack of an opportunity to talk openly with other units personnel about problems on the unit; Lack of an opportunity to share experiences and felling with other personnel on the unit; Lack of opportunity to express to other unit personnel negative feelings towards patients</i>
Factor V	<b>Conflict with Other Nurses</b>	<i>Conflict with a supervisor; Floating to other units that are short-staffed Difficulty in working with a particular nurse ( or nurses) outside the unit Criticism by a supervisor Difficulty in working with a particular nurse ( or nurses) on the unit</i>
Factor VI	<b>Work Load</b>	<i>Breakdown of computer Unpredictable staffing and scheduling Too many non-nursing tasks required, such as clerical work Not enough time to provide emotional support to a patient Not enough time to compete all nursing work Not enough staff to adequately cover the unit</i>
Factor VII	<b>Uncertainty Concerning Treatment</b>	<i>Inadequate information from a physician regarding the medical condition of a patient; A physician not being present in a medical emergency Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment Uncertainty regarding the operation and function of a specialized equipment</i>

**APPENDIX F****Nursing Stress Scale (NSS)****Permission from Dr Gray-Toft and Dr Anderson to use the Nursing Stress Scale**

**APPENDIX G**

## Nurses Demographic Information

Check one

Age range:

20-30 \_\_\_\_\_

31-40 \_\_\_\_\_

41-50 \_\_\_\_\_

51-60 \_\_\_\_\_

61-70 \_\_\_\_\_

Gender:

Female: \_\_\_\_\_

Male: \_\_\_\_\_

Years of Nursing Experience:

New Grad \_\_\_\_\_

1-5 years \_\_\_\_\_

6-10 years \_\_\_\_\_

11-15 yrs \_\_\_\_\_

16 -20 yrs \_\_\_\_\_

21 + yrs \_\_\_\_\_

**APPENDIX H**

Pre-notice Email: 1 week prior to the official email to take the survey.

My name is Ann Marie Mazzella and a few days from now you will receive an email with a link to survey monkey asking you to fill out a questionnaire for an important research study. This nursing research is being conducted as part of my nursing doctoral dissertation at Rutgers, the State University of New Jersey.

I am sending you advanced notice because we have found many nurses like to know ahead of time that they will be contacted. This study is so important because it involves newly hired nurses in oncology. You are the only ones that can provide insight into the emotional and social intelligence of newly hired nurses and how they cope with the occupational stress in oncology settings during the initial employment period.

Thank you for your time and consideration. It is only with the generous help of nurses like you that our research can be successful.

Sincerely,

A handwritten signature in cursive script that reads "Ann Marie Mazzella".

Ann Marie Mazzella  
Nursing Doctoral Candidate  
Rutgers, the State University Of New Jersey



**APPENDIX I**

## Invitation Email with Survey Link

I am emailing to ask your help in a study of newly hired nurses in oncology settings.

My name is Ann Marie Mazzella and I am asking you to fill out a survey as part of my nursing doctoral dissertation at Rutgers, the State University of New Jersey. You have been invited to participate in this study in an effort to learn more about the emotional and social intelligence of newly hired nurses and how they cope with the occupational stress during the initial employment period.

Results from the survey will help organizations make the acclimation to the oncology specialty a more successful and positive experience for the newly hired nurse. With your help, a greater understanding of the kinds of stress that affect newly hired oncology nurses and how emotional and social intelligence influences how new oncology nurses cope with the stress.

In this email, there is a link to survey monkey where you will be directed to an Assent page. By agreeing to participate in this study, you will then be directed to a few demographic questions, followed by the survey. Your responses are completely anonymous and are not linked in any way to your identity. This survey is voluntary and does not impact your employment in any way. However, you can help me very much by taking an hour of your time and sharing your experiences as a new oncology nurse.

If you have any questions or comments about this study, I would be happy to speak with you. I can be reached at [ammazzella007@gmail.com](mailto:ammazzella007@gmail.com).

Thank you very much for helping me with this important study.

Sincerely,



Ann Marie Mazzella  
Nursing Doctoral Candidate  
Rutgers, the State University of New Jersey

**APPENDIX J**

## Reminder/ Thank You Emails

Date

Last week, a survey seeking your experiences as a newly hired oncology nurse. You were selected because you have been recently hired by the organization.

If you have already completed the survey, please accept my sincere thanks. If you have not completed the survey, I am asking that you complete it today. I am especially grateful for your help because it is only by asking new nurses like you to share your experiences that a better understanding of how emotional and social intelligence influences how new oncology nurses cope with the stress.

If you have any questions regarding this survey, please feel free to contact me at [ammazzella007@gmail.com](mailto:ammazzella007@gmail.com).

Sincerely

*Ann Marie Mazzella*

Ann Marie Mazzella  
Nursing doctoral Candidate  
Rutgers, the State University of New Jersey

## APPENDIX K

### ASSENT

You are invited to participate in a research study that is being conducted by Ann Marie Mazzella RN, MS CGRN, who is a PhD candidate in the Nursing Department at Rutgers University. The purpose of this research is to determine "The Relationship Among Coping, Occupational Stress and Emotional Intelligence in Newly hired Nurses in Oncology Settings." This study will examine responses from nurses who are new to oncology nursing. As a participant you are requested to respond as accurately as possible to the questionnaires. The results of this study may be instrumental in developing strategies to strengthen emotional intelligence skills. These skills could assist newly hired nurses in oncology setting to better cope with occupational stress during their initial employment period. The survey questions will take you approximately sixty minutes to complete in one session.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. If you agree to take part in the study, you will be assigned a random code number. Your name will not appear on any list of subjects, and will not be linked to the code number that is assigned to you. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for three years in a password protected computer database and will then be destroyed.

There are no foreseeable risks to participation in this study. In addition, you may receive no direct benefit from taking part in this study. However, information from this study may provide insight which would assist nurses in the future.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you.

If you have any questions about the study or study procedures, you may contact me, Ann Marie Mazzella RN MS CGRN at 401 East 89<sup>th</sup> Street, New York, NY 10128. E-mail: [amme@scarletmail.rutgers.edu](mailto:amme@scarletmail.rutgers.edu)

If you have any questions about your rights as a research subject, you may contact the IRB Administrator:

Rutgers University, the State University of New Jersey  
Institutional Review Board for the Protection of Human Subjects  
Office of Research and Sponsored Programs  
3 Rutgers Plaza  
New Brunswick, NJ 08901-8559  
Tel: 848-932-0150  
Email: [humansubjects@orsp.rutgers.edu](mailto:humansubjects@orsp.rutgers.edu)

Any hospital that does research on people has an institutional review board (IRB). This board reviews all new studies to make sure that the research participant's rights and welfare are protected. In addition to Rutgers University, the IRB at Memorial Sloan Kettering Cancer Center (MSKCC) has reviewed this study. For more information about this process at MSKCC or your rights as a research participant, you may call the MSKCC IRB office at (212) 639-7592.

You can print a copy of this assent form for your records from your computer.

If you are 18 years of age or older, understand the statements above, and will agree to participate in the study, click on the "I Agree" button to begin the survey/experiment. If not, please click on the "I Do Not Agree" button which you will exit this program.

## APPENDIX L

Rutgers State University of New Jersey  
Internal Review Board Approval

RUTGERS UNIVERSITY  
Office of Research and Sponsored Programs  
ASB III, 3 Rutgers Plaza, Cook Campus  
New Brunswick, NJ 08901

August 20, 2013

P.I. Name: Mazzella Ebstein  
Protocol #: E13-785

Ann Marie Mazzella Ebstein  
401 East 89th Street  
New York NY 10128

Dear Ann Marie Mazzella Ebstein:

**Notice of Exemption from IRB Review**

**Protocol Title:** "The Relationship among Coping, Occupational Stress and Emotional Intelligence in Newly Hired Nurses in an Oncology Setting"

The project identified above has been approved for exemption under one of the six categories noted in 45 CFR 46, and as noted below:

**Exemption Date:** 8/13/2013      **Exempt Category:** 2

This exemption is based on the following assumptions:

- **This Approval** - The research will be conducted according to the most recent version of the protocol that was submitted.
- **Reporting** - ORSP must be immediately informed of any injuries to subjects that occur and/or problems that arise, in the course of your research;
- **Modifications** - Any proposed changes MUST be submitted to the IRB as an amendment for review and approval prior to implementation;
- **Consent Form (s)** - Each person who signs a consent document will be given a copy of that document, if you are using such documents in your research. The Principal Investigator must retain all signed documents for at least three years after the conclusion of the research;

**Additional Notes:** None

**Failure to comply with these conditions will result in withdrawal of this approval.**

The Federalwide Assurance (FWA) number for Rutgers University IRB is FWA00003913; this number may be requested on funding applications or by collaborators.

Sincerely yours,



Acting For--  
Dr. Beverly Tepper, Ph.D.  
Professor  
Chair, Rutgers University Institutional Review Board

cc: Dr. Lucille Sanzero Eller

## APPENDIX M

Memorial Sloan Kettering Cancer Center  
Internal Review Board Approval*Institutional Review Board/Privacy Board*

**TO:** AnnMarie Mazzella, RN  
Department of Nursing

**FROM:** Roger S Wilson, MD  
Chairman, Institutional Review Board/Privacy Board-A

A handwritten signature in black ink, appearing to read "Roger S. Wilson".

**DATE:** 08/14/2013

**RE:** Exempt Research X13-023

---

Your exempt application entitled "The Relationship Among Coping, Occupational Stress and Emotional Intelligence in Newly-Hired Nurses in an Oncology Setting", was presented to the Institutional Review Board/Privacy Board-A at its 08/13/2013 meeting and was determined to be exempt research as per 45 CFR 46.101 (b)(2).

Your request for waiver of the HIPAA Authorization and informed consent has been granted as per 45 CFR 164.512(i)(2)(ii) and 45 CFR 46.116(d).

After receiving IRB/PB approval, no changes to the form are allowed without notifying the IRB/PB-A.

Dr. Aileen Killen did not participate in the discussion of or in the voting on the above listed exempt project.

*Memorial Sloan-Kettering Cancer Center  
1275 York Avenue, New York, New York 10065  
Telephone 212.639.7592*

*NCI-designated Comprehensive Cancer Center*

And Nursing Research Approval  
Memorial Sloan Kettering Cancer Center



05/06/2013

AnnMarie Mazzella, RN  
Department of Nursing

Dear Dr. Mazzella:

The Department of Nursing has approved your protocol, "The Relationship Among Coping, Occupational Stress and Emotional Intelligence in Newly-Hired Nurses in Oncology Settings" on May 6th.

Sincerely,

A handwritten signature in black ink that reads "Pamela Ginex".

Pamela Ginex, RN, EDD  
Chair, Nursing Protocol Review Committee  
Department of Nursing