The Relationships between Coping, Occupational Stress and Emotional Intelligence in Newly Hired Oncology Nurses

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Abstract

Objectives: Associations between the varying levels of emotional intelligence in newly hired oncology nurses and their responses to stress and coping were examined. The secondary aim was to analyze whether emotional intelligence could moderate their choice of problem-focused or emotion-focused coping strategies.

Methods: Newly hired nurses ($n = 114$) were recruited from a national cancer institute. Data were collected through surveys using the Ways of Coping Questionnaire, the Nursing Stress Scale and the Emotional Quotient Inventory between the eighth and twelfth weeks post-hire date. Descriptive and bivariate statistical analyses were conducted on all variables. Regression models determined whether emotional intelligence moderated the choice of coping strategies.

Results: Emotional intelligence had a mean value of $M = 105.24$, $SD = 13.02$ and occupational stress scores were $M = 65.57$, $SD = 15.68$. Significant negative correlations were found for occupational stress and problem-focused coping ($r = -.189$, $p = .022$), emotional intelligence and emotion-focused coping ($r = -.340$, $p = .000$) and emotional intelligence and occupational stress ($r = -.428$, $p < 0.001$). Positive correlations were noted between occupational stress and emotion-focused coping ($r = .189$, $p = .022$) and emotional intelligence and problem-focused coping ($r = .340$, $p = .000$). Emotional intelligence did not predict the choice of coping strategies.

Conclusions: Though emotional intelligence did not moderate coping strategies in newly hired nurses, using problem focused coping to address occupational stress during the initial employment period may be a protective factor for coping with stress in the oncology workplace.

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Conflict of Interest: No conflicts of interest to report

Background

Newly hired nurses who are new to oncology work settings may lack the emotional and social skills needed to cope with the stress encountered in an oncology-focused healthcare environment[1,2,3]. Emotions are fundamental to nursing and crucial to providing empathetic, patient-focused care[4]. Understanding how newly hired oncology nurses manage their emotions and cope with the stress from their new work setting is important for supporting nurses through their initial employment period and keeping them at the bedside to ensure high-quality patient care.

Stress results from intense and negative experiences in the work setting[5] which can influence individual behavior[6] and cause feelings of professional incompetence, particularly for newly hired oncology nurses. Stress occurs in response to a lack of nursing experience, making mistakes with negative outcomes, the need to administer timely treatments and medications, a lack of ability to handle stressful situations, heavy work assignments and shiftwork[7]. In a study of occupational stress comparing newly hired oncology nurses in their initial employment period to experienced nurses, the occupational stress reported by the newly hired nurses at three, six and twelve months was consistent with that of experienced oncology nurses, and included feelings of anxiety related to high-level, job-related responsibilities and concerns/frustrations in coping with difficult situations[7]. Other researchers found that the adverse effects of stress included decreased professional satisfaction, decreased psychological and physical health[1,2,5] and a lack of sufficient coping skills[8], which together could increase the likelihood of resignations or leaving the nursing profession entirely.

Coping refers to thoughts and behaviors individuals use to manage stressful situations[9,10]. For example, if a situation is perceived to be stressful, the nurse re-appraises the situation to determine a coping strategy, either problem-focused coping (PFC) or emotion-focused coping (EFC), to address it. Problem-focused coping uses problem-solving skills and seeking social support as alternative means to decrease stress. This strategy is believed to be of greater benefit than emotion-focused coping for nurses dealing with occupational stress and is associated with positive feelings of self-fulfillment and well-being[10]. The emotion-focused coping strategy relies on reducing negative emotions caused by perceived harm or threat[9] by using emotional tactics including venting, withdrawing, avoiding or seeking more information[1,7,9]. Though two studies about coping with workplace stress reported that nurses used more emotion-focused coping strategies[11,12], the inability to cope with and resolve occupational stress could lead to psychological withdrawal and decreased well-being[9], decreased job satisfaction[10], increased health symptoms and burnout[13]. Nurses who could manage their emotions emanating from stressful oncology work settings and could understand emotions in their patients also could effectively make more emphatic clinical decisions that positively influence patient-focused care[14].

Emotional intelligence assumes that emotions are an important factor in life; that individuals have varying degrees of ability in perceiving, understanding and managing emotions in themselves and others; and that these differences affect their adaptability to a variety of environmental contexts, including the workplace[13]. Theoretically, emotional intelligence has

been conceptualized as either an abilities model[15], or a mixed-model that includes the core abilities as well as skills, competencies, and various personality traits[16]. These abilities and skills are especially important for professions involving emotions[17]. Since nursing is an emotional and social discipline, the Bar-On[18] mixed-model of emotional intelligence was employed in this study using the self-reporting measure EQi2.0™[19] since is measures emotional and social competencies. Conceptualized in this way, emotional intelligence includes inter-related emotional and social dimensions (the ability to perceive, understand, use, and manage emotions in oneself and others) as well as skills and competencies that enable individuals to relate with others, adapt to their immediate surroundings and successfully cope with environmental demands[13,18,20].

Varying emotional intelligence ability and skill accounts for each nurse's responses to occupational stress, which may influence the selection and control of either problem-focused or motion-focused coping to address stressful situations in the workplace. Gerits et al.[21] reported that nurses with high emotional intelligence used more problem-focused coping and had a greater ability to deal with occupational stress[21,22]. The Bar-On model[18] proposes that leaders and high-performing emotionally intelligent people have a positive outlook, can perceive and manage feelings in themselves and others and maintain realistic expectations[18,20]. Key leadership factors include empathy, positive interpersonal and social skills, problem-solving ability and the ability to cope with stress[18,23].

Measuring emotional intelligence in newly hired nurses and identifying whether emotional intelligence can predict choice of coping strategies could be a protective factor against the adverse effects of occupational stress in the oncology workplace[18,20,23–25]. Improving a nurse's skill in addressing occupational stress could lead to successful job performance, job satisfaction, improved physical and psychological health, self-actualization and well-being[18,20] and improved patient outcomes.

National cancer institutes (NCIs) attract patients seeking diagnosis and treatment of their cancers. Our research setting is an NCI facility focusing on comprehensive oncology practices and representing unique types of occupational stress associated with dealing with cancer patients, their families, various cancer regimens and uncertainty about providing the treatments[2,3,6]. In the present study, the associations between emotional intelligence, occupational stress and coping strategies (problem-focused and emotion-focused coping) were examined along with the extent to which occupational stress was experienced by newly hired nurses during the initial employment period. It was hypothesized that emotional intelligence would be positively related to problem-focused coping and indirectly related to emotion-focused coping and occupational stress. Furthermore, it was hypothesized that problem-focused coping would be inversely related to occupational stress and emotion-focused coping would be directly related to occupational stress. Emotional intelligence is posited to predict aspects of workplace performance, but empirical evidence for nurses is lacking. We hypothesized that when controlling for age and years of experience, emotional intelligence would moderate the selection of coping strategies in this study's newly hired nurses.

Methods

Participants and Procedures

The study sample of 114 newly hired nurses was recruited during the initial employment period at an NCI facility in the northeastern United States. Inclusion criteria incorporated all newly hired nurses without prior working experience in an NCI facility that focused on the comprehensive care of the oncology patient and encompassed oncology-specific occupational stress. Exclusion criteria included newly hired nurses who directly reported to the principal investigator or who had prior nursing experience in an NCI facility. Eligibility was confirmed after accessing the survey and completing a demographic questionnaire. An online agreement to participate was considered implied informed consent. All study measures were completed in one session, ensuring participant responses were anonymous. Data were collected from September 2013 through January 2015. The study was approved by the organization's institutional review board (IRB:X13–023). Permission was obtained to use all copyrighted measures[19, 26, 27].

Measures

The Ways of Coping Questionnaire (WAYS)[28] measures coping and takes 15 minutes to complete. WAYS is a 66-item self-reporting tool with eight subscales and details the frequency of cognitive and behavioral strategies used during a stressful encounter. Subscales measure problem-focused coping (planful problem-solving, accepting responsibility, seeking social support, positive reappraisal) or emotion-focused coping (confronting, escaping/ avoiding responsibility, distancing and self-controlling) in a 4-point format Likert scale (0, "Not used"; 3, "Used a great deal"). Relative scores were used in study analysis and represent the proportion of total coping efforts used on a specific strategy[29]. Possible scores ranged from 0–100 and the M%(SD) for problem-focused and emotion-focused coping are based on percentage of 100. The α coefficient was 0.92[30].

The Nursing Stress Scale (NSS)[27] measures occupational stress and takes 10 minutes to complete. This 34-item self-reporting tool identifies the frequency and sources of occupational stress experienced by nurses and assesses seven subscales (death and dying, conflict with physicians, inadequate preparation, lack of support, conflict with other nurses, workload, and uncertainty concerning treatment) in a 4-point format Likert scale (1, "Never"; 4, "Very frequently"). Total scores were used in data analysis, and possible scores ranged from 0 to 102. High total scores (51 to 102) indicate more frequent exposures to occupational stress than low scores (0 to 50). The α coefficient was 0.89, and the total scale test-retest coefficient was 0.8[31].

Emotional intelligence (EI) was measured using the EQi 2.0™[19], which takes 40 minutes to complete. The EQ*i* 2.0™[19] is a 133-item self-reporting measure of emotionally and socially intelligent behavior as it relates to an individual's potential for success[19,21]. The EQ*i* 2.0™[19] includes five composite and 15 subscales and four validity indicators (omissions rate, inconsistency index, and a positive and negative impression) in a 5-point format Likert scale (1, "never/rarely"; 5, "almost always/always"). A total emotional quotient (EQ) score and composite scores were based on a mean (M) of 100 and a standard deviation (SD) of 15.

Total EQ scores represent an estimate of an individual's emotional intelligence and were used in the data analysis. Possible scores ranged from 0–140. Scores of 89 and below indicated low emotional and social functioning; scores of 90 to 109 were average; and scores of 110 to 130 were above average and predictive of strong, well-developed emotional skills and social functioning. Consistency reliability was 0.97 for the total scale. For the composite scale, the Cronbach's alpha values were 0.87 for interpersonal, 0.94 for intrapersonal, 0.86 for stress management, 0.89 for adaptability, and 0.88 for general mood[18,20,23]

The demographic questionnaire included questions determining study eligibility, including age, gender, years of overall nursing experience, type of nursing setting in prior working experience (non-NCI or NCI facility) and direct reporting to PI.

Data Analysis Plan

Power analysis using an effect size[22] of $f^2 = 0.15$, power of 0.80 and significance at $p = 0.05$ determined[32] a minimum sample size of 98 participants. Descriptive data were tabulated on the sample's emotional intelligence, occupational stress and coping strategies (problem-focused and emotion-focused coping). Occupational stress and emotional intelligence were independent variables. Coping strategies were dependent variables since these strategies were dependent on the nurses' varying degrees of emotional intelligence and the occupational stress specific to an oncology-focused comprehensive cancer institute. IBM SPSS Software[33] was used to calculate Pearson product moment correlations for all variables and reliability coefficients for all study instruments. Moderation models according to Bennett[34] were conducted using the STATA Data Analysis and Statistical Software, Release 13[35]. Using total EQ scores and controlling for age and years of nursing experience to decrease potential confounding effects on the study results, we hypothesized that a moderating effect of two independent variables could predict choice of coping strategies. The newly hired nurses in this study were employees of the organization. For the purposes of anonymity, age and years of nursing experience were collected in increments of 10 and 5 years respectively, hence the coefficients associated with the adjustment variables are interpreted as "per 10-year or 5-year increase". Hypothesis testing was two-tailed, $p <= 0.05$ was considered significant.

Results

Recruitment emails were sent to 340 newly hired nurses. A total of 203 nurses completed the demographic questionnaire and attestation/consent to participate (60% response rate). There were two self-excluded participants, and 25 nurses were excluded due to prior NCI work experience. Of the remaining 176 participants, 62 nurses (female = 56; male = 4; not documented = 2) did not complete responses for the three study instruments and were eliminated. Thus, data were collected from 114 newly hired nurses (108 female; 5 males; 1 gender not documented) who met eligibility criteria (34% adjusted response rate) and completed the three study instruments and are described in Table 1.

Descriptive statistics from eligible newly hired nurses were evaluated for skewness, kurtosis, variability means, and standard deviations (Table 2). Significant negative correlations were found for occupational stress and problem-focused coping ($r = -.19$, $p = .022$), occupational

stress and emotional intelligence ($r = -.43$, $p = .022$), and emotional intelligence and emotion-focused coping ($r = -.34$, $p = .000$). Significant positive correlations were found between occupational stress and emotion-focused coping ($r = 19$, $p = .022$) and between emotional intelligence and problem-focused coping ($r = .34$, $p = .000$). A moderate correlation effect size was found for the variables in this study[36].

Table 3 presents the hierarchical regression analysis[35] and shows that the interaction of the product terms between occupational stress and EQ scores could predict the choice of coping strategies of newly hired nurses. In step 1, after controlling for age and years of experience, emotional intelligence ($p = .002$) was significant, whereas occupational stress was not ($p = 0.7$). In step 2, the interaction term was added to the model, but did not reveal significant interactions between occupational stress ($p = 0.2$) and emotional intelligence ($p = 0.7$). Since values for problem-focused and emotion-focused coping were calculated as percentages (out of 100%), the results for the moderation model were reciprocal when identical regression steps were followed for emotional intelligence, occupational stress and emotion-focused coping analysis. No statistically significant interaction between total EQ scores and total stress scores were found.

Discussion

The primary objective of this study was to examine relationships between emotional intelligence, coping and occupational stress in newly hired oncology nurses and the extent to which occupational stress was reported by these nurses during the initial employment period. The majority of nurses in this study were newly graduated nurses. The most frequent types of occupational stress reported were patient deaths, workload, conflicts in RN–RN interactions and uncertainty about treatment. Current study findings confirmed that newly hired nurses in this study experienced occupational stress during their initial employment period that was consistent with that of experienced oncology nurses and was greater than that experienced by nurses in other nursing studies[2,4,7].

Correlations between emotional intelligence and stress, as well as emotional intelligence and coping, were consistent with findings in relevant nursing studies[21, 22]. The newly hired nurses in this study were emotionally intelligent and used problem-focused coping to deal with stress. However, reported stress levels were higher for our nurses (M 65.6, SD 15.7) than in related nursing studies by Escot et al.[2] (M 39.8, SD 8.18), Isikhan et al. (M 31.00, SD not reported)[4], and Le Sergent et al. (M 48.70, SD 5.53)[11]. Further examination of the dimensions of the nursing stress scale could provide insight into the causes of nursing stress in this study.

The current study's sample had emotional intelligence above the mean of 100 and used more problem-focused strategies, which are believed to be of greater benefit for nurses dealing with occupational stress. The nurses who had lower emotional intelligence scores used emotion-focused coping strategies when dealing with occupational stress and may be more vulnerable to symptoms associated with stress. The findings of the current study were consistent with those of other nursing studies and suggested that greater emotional intelligence may be a protective factor in coping with stress[1,4].

Despite the proposition that emotional intelligence may predict work performance, there is limited empirical literature describing emotional intelligence in various populations; thus, it was difficult to apply findings from studies using other theoretical definitions and measurements to this study of newly hired oncology nurses. No empirical studies could be found that tested the relationships between the variables (emotional intelligence, occupational stress and coping strategies) or whether emotional intelligence could predict coping strategies using our theoretical model. Further complicating emotional intelligence theory is the lack of a single definition of emotional intelligence combined with a consistent tool to measure it. Using dimensions associated with managing and perceiving emotions in oneself and others alone would be consistent with ability models of emotional intelligence and would not effectively test emotional intelligence defined by the mixed model used in this study and measured by the EQ*i* 2.0™[19].

Two studies were found that tested emotional intelligence as a moderator or predictor variable in various settings. One study of nursing students used a mixed model of emotional intelligence and self-report measurement to test whether two of nine dimensions (emotional perception and emotional management) moderated the association between stress and mental health[24] and whether emotional management was a protective factor of adverse effects of stress. The findings showed that managing other emotions significantly moderated the relationship between stress and mental health but did not find the same for emotional perception. In a study involving public health nurses, an ability model[25] defined as perceptions of emotional ability, measured dimensions of emotional intelligence as a predictive variable for total scores and subscales of life satisfaction and well-being. Study findings indicated that reducing negative emotions and increasing positive emotions help maintain well-being but were not a predictive factor for life satisfaction. Results common to both studies included the significant correlations between study variables, but moderating effects of outcomes were inconsistent. Data for the present sample were collected at only one point in time, and the findings also demonstrated significant relationships between a nurse's EQ and ability to cope with occupational stress, though no moderating effect was found between EQ and stress in choosing coping strategies. Taken in a context of emotional and social performance, emotional intelligence as a predictor/moderator may be inconsistent and vary depending on the specific job, situation and population[13] and may have been a factor in the current study findings.

The results of the current study provide a baseline for further study. A secondary analysis of the study data could be useful in determining the emotional intelligence profiles of newly hired nurses. Further regression analysis of the interaction effects using the composite scales and individual subscales of the EQ*i* 2.0™[19] and occupational stress to predict coping strategies might improve the understanding of emotional intelligence measured by the EQ*i* 2.0™[19] in the study's sample. Making assumptions about the measurement's predictability or work performance, based on selective subdimensions described in related nursing studies and using other models of emotional intelligence, may be less informative.

Conclusion

Newly hired nurses in this study had average emotional intelligence and used problem-solving approaches to deal with occupational stress. The stress levels of the newly hired nurses were consistent with types of stress reported by experienced nurses and confirmed that occupational stress exists during the initial employment period. Reported stress levels were higher for our nurses than those found in related nursing studies[2,4,11]. Though the present study found significant relationships between a nurse's EQ and coping with occupational stress, no moderating effect was found between EQ and stress in selecting coping strategies. Unresolved stress is associated with progressive decline in a nurse's mental health and physical and emotional performance and could result in symptoms of burnout[37] and compassion fatigue[38].

Clinical Implications

Findings from this study can be used to identify supportive methods to mitigate the effects of the occupational stress of newly hired nurses during the initial employment period. Maintaining a nurse's emotional and social stability and the ability to cope with occupational stress levels cannot be ignored. Supportive efforts could include a periodic assessment of nurses using emotional intelligence measures. Mentoring efforts related to assessment findings could provide individualized emotional and social support for nurses lacking in emotional intelligence skills and competencies. Diminished emotional and social skills and competency in oncology nurses could negatively impact their capacity to provide nursing care and, thus, negatively impact patient outcomes.

Limitations

This study had limitations. First, our sample size was small, and all our measures were self-report which could contribute to non-significant findings and reporting bias. Second, this study was limited to one specialized facility and as such study findings may not be generalizable to newly hired nurses working in other facilities and other settings. Third, the percentage of nurses who did not complete all three study surveys compared to those who did complete all study surveys might have been affected by respondent fatigue/burden. However, despite these limitations, we are confident that our study will contribute to the body of knowledge on the emotional intelligence, occupational stress and coping strategies of newly hired nurses.

Acknowledgments

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Table 1:

Demographic Characteristics of the Subjects

Demographics	Completed All Surveys	Did Not Complete All Surveys	p-value
	Frequency (Percent)	Frequency (Percent)	
Total survey Log-in N=176	N = 114 (68)	N = 62 (35)	
Age Range		Only available for N = 60	0.057
20–30	78 (68)	32 (53)	
31–40	26 (23)	25 (42)	
41–50	8 (7)	3 (5)	
51–60	2 (2)	0 (0)	
Gender			0.7
Female	108 (96)	56 (93)	
Male	5 (4)	4 (7)	
Not entered	1		
Years of Experience		Only available for N = 60	0.007
New Graduates	60 (53)	19 (31)	
1–5 Years	37 (32)	25 (41)	
6–10 Years	13 (11)	12 (20)	
11–15 Years	1 (1)	5 (8)	
16–20 Years	2 (2)	0 (0)	
21 or More Years	1 (1)	0 (0)	

Table 2:

Total Scores and Range Scores Matrix of Variables and Reliability Coefficients

Variables	Emotional Intelligence	Occupational Stress	Coping	
			Problem-focused Coping	Emotion-focused Coping
	Mean (SD)	Mean (SD)	[†]M% (SD)	[†]M% (SD)
ALL (N = 114)	105.24 (13.02)	65.57 (15.68)	62.86 (9.17)	37.14 (9.17)
Score Range	76–135	37–106	37–92	8–63
Items in Tool	133	40	66	
Variability	169.55	245.89	84.06	84.06
Skewness	−0.09	0.45	−0.02	0.02
Kurtosis	2.56	2.50	3.46	3.46
New Graduates (N = 60)	104.82 (12.53)	69.96 (16.15)	61.71 (9.23)	38.29 (9.23)
Score Range	78–130	37–106	37–78	22–63
1–5 Years Exp. (N = 37)	104.41 (12.62)	62.26 (14.48)	65.18(8.78)	34.82(8.78)
Score Range	76–132	45–99	51–92	8–49
>5 years Exp. (N = 17)	108.47 (15.70)	57.29 (11.53)	61.90(9.37)	38.10(9.37)
Score Range	77–135	39–82	46–80	20–54
Reliability coefficient	.93	.94	.95	

[†]M% (SD) = M% scores based on percent of 100.

Table 3:

Moderator Models

Variables (N = 114)	Beta Coefficient	95% Confidence Interval (Lower limit, Upper Limit)	P
Step 1: Problem-Focused Coping (PFC)	$F_{(4, 109)} = 3.71$; Probability $>F = 0.0072$ $R^2=0.12$, Adjusted $R^2=0.09$		
Total EQ scores	0.23	0.09, 0.36	0.002
Total Stress Scores	−0.03	−0.14, 0.08	0.7
Age[†]	.26	−2.30, 2.82	0.8
Years of Experience[‡]	.08	−1.87, 2.04	0.9
Constant	40.44	20.36, 60.11	0.00
Step 2: PFC	$F_{(5, 108)} = 3.33$; Probability $>F = 0.0078$ $R^2=0.13$, Adjusted $R^2=0.09$		
Total EQ Score	−0.10	−0.62, 0.42	0.7
Total Stress Score	−.55	−1.35, 0.26	0.2
Age[†]	.63	−1.98, 3.25	0.6
Years of Experience[‡]	.02	−1.93, 1.98	1.0
Total EQ/Total Stress Scores (Interaction term/ Moderator variable)	.005	−0.003, 0.012	0.2
Constant	74.41	18.90, 129.92	0.009

[†]Age: 10-year increments;

[‡]Years of Experience: 5-year increments