ORIGINAL RESEARCH

Intervening to improve compassion fatigue resiliency in nurse residents

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ABSTRACT

Nurses who are younger and new to the profession demonstrate higher prevalence of compassion fatigue compared to their more experienced counterparts. Accordingly, the Commission on Collegiate Nursing Education Standards for Accreditation recently required that nurse residency programs incorporate the teaching of strategies to prevent compassion fatigue in their learning experiences. This study examined the impact of a compassion fatigue resiliency intervention in new graduate nurse residents in two hospitals with nurse residency programs within a university health system. Compassion satisfaction and the two components of compassion fatigue (CF), secondary traumatic stress (STS) and burnout (BO), were measured at baseline and 2-month follow-up. Changes in mean scores and prevalence were reported. A statistically significant decrease in mean STS from baseline to follow-up was found ($p < .001$). A mean increase in CS and decrease in BO were trending in the desired direction but were not statistically significant. As hypothesized, prevalence of CS increased and STS and BO decreased from baseline to 2-months post intervention. The results suggest that compassion fatigue interventions may be beneficial to nurse residents in decreasing CF symptoms and increasing CS early in their careers. More research is needed to understand the optimal timing and type of intervention.

Key Words: Nurse residents, Compassion fatigue, Secondary traumatic stress, Burnout, Compassion satisfaction, Intervention

1. INTRODUCTION

Nurses are routinely exposed to stressful and traumatic circumstances such as losing a patient or witnessing severe injury and illness.[1] Patient acuity and complexity of care is escalating, resources are decreasing and reimbursement is linked to patient satisfaction.[2] New graduate nurse residents face additional challenges including learning new information while working in a fast-paced environment.[3] Some nurse residents report anxiety as they experience their own perceptions of inadequacy and lack of independence while integrating into their new roles and beginning to develop coping skills.[4] Evidence suggests that younger, less experienced nurses show higher prevalence of compassion fatigue (CF) and lower prevalence of compassion satisfaction (CS) as compared to nurses who are older and more experienced.[3,5] Kelly, Runge, and Spencer found that the millennial generation (ages 21-33) are at greater risk for burnout (BO).[6] This suggests that nurse residents, most of which are from the millennial generation, may benefit from intervention to prevent CF and BO even more than their more experienced colleagues. Despite this evidence, little is known about the impact of compassion fatigue interventions in nurse residents. The Commission on Collegiate Nursing Education (CCNE) has recognized the importance of teaching stress manage-

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ment to nurse residents. In the 2015 Standards for Accreditation for entry-to-practice nurse residency programs, CCNE recommends that programs include strategies to prevent compassion fatigue in the learning experiences beginning in June 2016.[7]

High levels of compassion fatigue and burnout are linked to patient dissatisfaction.[8,9] Large caseloads and lack of leadership support can exacerbate this stress and may potentially lead to burnout, job dissatisfaction and compassion fatigue.[3] Therefore, it is critical to identify protective factors to prevent the onset of negative nurse outcomes (compassion fatigue, burnout, and job dissatisfaction) and to promote positive nurse outcomes (job satisfaction, compassion satisfaction). It is estimated that nearly 27% of new nurses leave their positions within the first year, although organizations with nurse residency programs tend to have lower attrition rates.[10] A concerning trend shows that many young nurses choose to leave the profession of nursing altogether very early in their careers.[11,12] The estimated cost of turnover is $88,000 per nurse which reflects a large fiscal impact on organizations.[13,14]

Background

Operational definitions

Compassion satisfaction: Compassion satisfaction is the joy, purpose and meaning experienced by nurses in their role as caregivers.[15,16]

Resiliency: Resiliency refers to the internal and external protective factors, and/or individual's strengths and resources that promote thriving in spite of adversity.[15,17]

Compassion fatigue: There are two main components of CF: secondary traumatic stress (STS) and BO.[18–21]

Burnout: Burnout is associated with the work environment, such as patient acuity, heavy caseloads, unrealistic patient expectations, lack of organizational support and professional isolation. Burnout may encompass feelings of exhaustion, hopelessness, frustration, anger, and depression, leaving some feeling that their work makes no difference.[16,21]

Secondary traumatic stress: Secondary traumatic stress refers to the toll associated with witnessing the pain and suffering of others. Secondary traumatic stress can be caused by feelings of inadequacy, fear, or exposure to individuals who have experienced trauma or hearing the trauma of others.[19,21]

2. METHOD

2.1 Research design

The study was conducted at two hospitals with nurse residency programs within a university health system, a 448-bed urban hospital and a 500-bed academic medical center (both Level II trauma centers) in the southwest United States. Institutional Review Board approval was obtained prior to the intervention.

All nurse residents received a 4-hour CF Resiliency intervention with the lead author as part of their onboarding process. Those who self-selected to provide demographic data and submit pre- and post-questionnaires were included in the study. The CF intervention used an intervention-only research design with participants serving as their own controls. In order to ensure confidentiality, participants were asked to create their own ID that could not be matched to their real name (make, model and year of first car). Responses were matched at baseline and follow-up.

2.2 Intervention

A four-hour interactive seminar was conducted by the lead author, a Certified Compassion Fatigue Specialist. The seminar was adapted with permission from Dr. J. Eric Gentry's Compassion Fatigue Prevention & Resiliency, Fitness for the Frontline course.[22] Content included information about the origins of CF, physiological effects, signs and symptoms of CF, as well as the factors associated with being a new nurse that may lead to CF. The seminar initiates with a powerful documentary video about an aeromedical evacuation mission, sharing the experience of a nurse suffering from CF. The remainder of the seminar included an interactive lecture with slides, individual and group exercises and group discussions. Additionally, the nurse residents learned about the effects of chronic sympathetic stimulation on behavioral and cognitive function, which laid the foundation for conceptualizing the importance of stress management in CF resiliency.[12,23]

Participants engaged in several individual and group exercises that allowed them to apply each strategy.[15] Through self-regulation, the participants learned parasympathetic dominance (relaxation skills) as a way to reduce negative arousal during times of perceived threats. Learning and applying specific rapid relaxation techniques while caring for the traumatized helps individuals to reduce sympathetic nervous system dominance (fight or flight response, with release of neruotransmitters, catecholamines and stress hormones) The participants experienced techniques of self-regulation, perceptual maturation and connection/support. Additionally, participants experienced a 10-minute recorded guided imaging as a method of relaxation. Living with intentionality and application as a nurse resident was described. Self-care activities necessary for renewing and refueling required to sustain energy and passion for nursing were explored.[16,23]

Finally, multi-media resources were made available to the

participants, including printed seminar handouts and the guided imaging/music CD used in the class.[24]

2.3 Instrument

The Professional Quality of Life Test (ProQOL) Version 5[25] was used at two timepoints, immediately before the intervention and at 2 months post-intervention. The ProQOL consists of 30 self-report items on a 5-point likert scale, divided into three subscales which represent distinct albeit related constructs: CS, BO and STS.[21] Construct validity has been well-established, as have reliability and validity of the scale. The ProQOL features an alpha reliability of 0.84-0.90 on the subscales and a structural reliability coefficient of 0.91. It is considered the most widely used scale to capture both positive and negative impacts of caregiving.[19,21] In addition to the ProQOL, participants were asked to complete an application questionnaire reporting frequency of use of each of the techniques taught in the intervention at the 2-month assessment.

2.4 Data analysis

The ProQOL was scored as prescribed by the Concise ProQOL Manual.[21] For descriptive purposes, scores were assigned to three groups using established cutpoints. The optimal combination of scores is high CS and low BO and STS. For each scale, a score of 22 or less indicates low levels of the construct of interest, 23-41 is moderate and 42 or greater is high. Continuous scores were used for the data analysis. Preliminary analyses included descriptive statistics (means, standard deviations, and frequencies). Prevalence of CS, STS and BO were reported at baseline and at 2-month follow-up.

Normality of distributions was examined. To assess differences between means for the outcome variables (continuous ProQOL scores for CF, STS and BO subscales) at baseline and 2-months follow-up, dependent *t*-tests were used with participants serving as their own control. A *p*-value of .05 was considered significant. Frequency of use of techniques taught in the intervention was calculated and examined for association with the outcomes. All statistical analyses were conducted as two-tailed tests using STATA, version 14.[26]

3. Results

Of 176 nurse residents that returned either one or both questionnaires, 96 were matched and 94 were deemed eligible and used for analysis. Eighty-four percent were between ages 20 and 30 and 82% were female (see Table 1). More than two-thirds (77%) had worked in health care for 13 years. Consistent with the requirements of the nurse residency programs, all had worked as an RN for less than a year. Ninety-four percent held a bachelor's degree as their highest degree.

Table 1. Demographics of nurse residents

Demographics (n = 94)	Category	(n, %)
Age	20-25	39, 42%
	26-30	39, 42%
	31-35	10, 10%
	36-40	4, 4%
	41+	0, 0%
	missing	2, 2%
Gender	Male	14, 15%
	Female	78, 82%
	missing	2, 2%
Years worked in Health Care	1-3	77, 77%
	4-7	17, 18%
	8-11	3, 3%
	12-15	1, 1%
	16+	0, 0%
	missing	2, 2%
Years worked as RN	1 year or less	92, 98%
	missing	2, 2%
Highest degree held	Associate's	1, 1%
	Bachelor's	88, 94%
	Master's	3, 3%
	missing	2, 2%

Note. Some nurse residents worked previously in health care as technicians or nursing Assistants.

Prevalence of compassion satisfaction (CS) was moderate to high for all participants at baseline and follow-up, with 30% of participants reporting high CS at baseline and 34% at follow-up (see Table 2). No participants reported low CS. All participants reported low to moderate BO, with 53% of participants reporting low BO at baseline and 61% at follow-up. No participants reported high BO. All participants reported low to moderate STS at baseline with 35% of participants reporting low STS at baseline and 49% at follow-up. Only one participant reported high STS at follow-up. For all three constructs, a larger proportion of participants reported optimal levels at follow-up as compared to baseline.

A statistically significant decrease in mean STS from baseline to follow-up was found, decreasing from 24.9 to 22.7 ($p < .001$, see Table 3). A mean increase in CS and decrease in BO were trending positively but not statistically significant (mean CS increased from 38.4 to 39.0, $p = .27$ and mean BO decreased from 22.2 to 21.6, $p = .14$).

Frequency of use of each technique taught in the intervention was also examined at follow-up (see Table 4). Perceptual maturation/self-validation was the most frequently used technique with 50% of nurse residents reporting daily use. More than one-third of participants reported daily use of each technique other than guided imagery, the least frequently used technique. Eighty-six percent of nurse residents reported using at least one technique daily, including 40% who reported using three or more techniques at least once per day.

Table 2. Prevalence of compassion satisfaction, burnout and secondary traumatic stress in nurse residents – baseline and 2 months post-intervention

(n = 94)		Pre-intervention (n, %)	2 months post-intervention
Compassion Satisfaction (CS)	High*	28, 30%	32, 34%
	Moderate	66, 70%	62, 66%
	Low	0, 0%	0, 0%
Burnout (BO)	Low*	50, 53%	57, 61%
	Moderate	55, 47%	37, 39%
	High	0, 0%	0, 0%
Secondary Traumatic Stress (STS)	Low*	33, 35%	46, 49%
	Moderate	61, 65%	47, 50%
	High	0, 0%	1, 1%

*Denotes optimal score for each subscale.

Table 3. Pre-post compassion satisfaction, burnout and secondary traumatic stress scores in nurse residents, *t* scores

Prevalence (n = 94)		Pre-intervention (n, %)	Post-intervention (n, %)	*p*-value
Compassion Satisfaction (CS)	Mean (s.d.)	38.4 (5.5)	39.0 (5.5)	
	Median	38.5	38	NS (.27)
	Range	26-48	25-49	
Burnout (BO)	Mean (s.d.)	22.2 (4.83)	21.6 (4.44)	
	Median	22	21	NS (.14)
	Range	13-35	13-33	
Secondary Traumatic Stress (STS)	Mean (s.d.)	24.9 (6.3)	22.7 (5.2)	
	Median	25	23	$p < .001$***
	Range	11-40	12-44	

***$p < .001$

Table 4. Frequency of use of techniques taught in intervention (in descending order of daily use)

Frequency of use (n = 94)	Daily (1 time or more)	Weekly or Monthly	Never	Missing
Perceptual Maturation/self-validation	47, 50%	39, 42%	5, 5%	3, 3%
Intentionality	44, 47%	43, 46%	4, 4%	3, 3%
Self-care and refueling	39, 42%	47, 52%	4, 4%	4, 4%
Connection and support	36, 39%	46, 49%	9, 9%	3, 3%
Self-regulation	33, 35%	45, 49%	13, 14%	3, 3%
Guided Imagery	6, 6%	39, 42%	45, 48%	4, 4%

Subjective evaluation information was obtained from the nurse residents who attended the intervention using Survey Monkey (58% response rate). Ninety-six percent of the respondents indicated the program met their needs and recommended adding the content to the nurse ongoing residency program curriculum.

When asked about optimal timing of the intervention, the majority of respondents (49.4%) recommended receiving the intervention in the middle of their one year program for optimal use. The remaining respondents recommended early in the year (23.5%) or late in the year (27.4%).

4. Discussion

The purpose of this study was to examine the prevalence of compassion fatigue and compassion satisfaction in nurse residents, as well as the impact of a compassion fatigue intervention. At baseline, the mean level compassion satisfaction was at the high range of moderate, mean level of burnout was low (optimal), and secondary traumatic stress was near the low range of moderate. This suggests that overall mean levels of the three constructs were relatively close to the optimal levels to begin.

It is important to note that all measures showed a positive trend, albeit not statistically significant for BO and CS. The same intervention showed statistically significant positive differences in a sample of forensic nurses[27] as well as a sample of emergency department nurses,[16] both of which had considerably more nursing experience in roles that involve high exposure to trauma and victims of violence.

One potential explanation for the fact that STS improvement was statistically significant but not BO is that nurse residents are still new to the profession and have not had the time

and exposure to nursing for long enough to develop burnout symptoms. Low mean burnout levels at baseline suggests that burnout may not yet be an issue for nurses new to the profession. A potential explanation for the lack of significance for CS is that the intervention may have occurred too early in their careers for their CS to be increased by the intervention. This may be because baseline CS was relatively high and some may be in the "honeymoon" phase of their careers.

This study has several limitations. First, 80 surveys were unable to be matched at one timepoint, thereby reducing the sample size. Additionally, use of techniques taught in the intervention was not measured at baseline, so it is unknown how the intervention impacted these behaviors or if any techniques were already in use by participants.

As nurse residency programs implement education on stress management and compassion fatigue prevention to comply with the CCNE standards for accreditation, more research is needed to understand the long-term impact of CF resiliency training for nurse residents. Future research should explore the optimal timing and type of intervention for nurse residents to prevent CF, BO and STS or mitigate their effects.

5. Conclusions

The present study addresses the gap in the literature on preventing compassion fatigue in nurse residents. The Commission on Collegiate Nursing Education's (CCNE) recommendation to deploy strategies to prevent compassion fatigue[7] underscores the need to examine compassion fatigue prevention programs in nurse residents.

All nurse residents participating in the study reported moderate to high compassion satisfaction, low to moderate burnout and low to moderate secondary traumatic stress. For all three constructs (CS, BO and STS), a larger proportion of participants reported optimal levels at follow-up as compared to baseline. All measures showed a trend in the right direction from baseline to follow-up. A statistically significant decrease in secondary traumatic stress was observed at 2-month follow-up. Positive differences (albeit non-significant) were observed for BO and CS. At follow-up, 86 percent of nurse residents reported using at least one compassion fatigue prevention technique daily, including 40% who reported using three or more techniques at least once per day.

The results of this study suggest that the compassion fatigue interventions can be beneficial for nurse residents. More research is needed to examine the optimal timing, content and delivery of compassion fatigue prevention interventions. The need for additional research is underscored by the fact that CCNE recently included compassion fatigue education in their standards for accreditation. There is growing evidence that the long term health of an organization's bottom line and health of its employees are aligned. Additional research is needed to examine whether implementation of CF interventions benefits the organization, such as reducing turnover and adverse events associated with burnout.

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Conflicts of Interest Disclosure

The author declares that there is no conflict of interest statement.

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