Shift-Based Emotional Stress Reactions in Emergency Nurses After Traumatizing Events

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Contribution to Emergency Nursing Practice

- The current literature on the state of scientific knowledge regarding emergency nursing indicates that stressful events in the workplace can induce an emotional and physical toll over time.
- This article contributes to research into a real-time association between negative emotional stress and repeated exposure to traumatizing events observed within a single emergency nursing shift.
- The key implication for emergency nursing practice from this research is that identifying those at risk of immediate adverse emotional consequences from work-related tension may provide opportunity for early intervention.

Abstract

Introduction: Emergency nurses experience multiple traumatizing events during clinical work. Early identification of work-related tension could lead to a timely intervention supporting well-being. We sought to discover whether there is an immediately measurable effect on emotional stress, as determined by changes between pre- and postshift survey scores, associated with exposure to traumatizing events during a single emergency nursing shift.

Methods: The Emotional Stress Reaction Questionnaire (ESRQ) is a real-time self-assessment tool based on positively, negatively, or neutrally loaded emotions. Participants voluntarily completed pre- and postshift ESRQs over a 6-month period at a quaternary academic emergency department and recorded the number of associated traumatizing events. Associations between number of traumatizing events and ESRQ scores were evaluated using Spearman rank correlation coefficients. Changes in positive-negative balance scores were compared between shifts using a 2-sample *t*-test.

Results: There were 203 responses by 94 nurses. The mean preshift ESRQ score was 11.3 (SD = 5.2), mean postshift score 6.8 (SD = 7.4), and mean change −4.4 (SD = 8.2; t = −7.26; $P < 0.001$). The total number of traumatizing events was correlated with change in ESRQ scores (correlation coefficient of −0.31; $P < 0.001$). The mean change in positive-negative scores for shifts without traumatizing events was −1.4 (SD = 6.0) compared with −5.0 (SD = 8.5) for shifts with at least 1 event (t = 2.27; $P = 0.03$).

Discussion: Our results suggest that repeated exposure to traumatizing events during a single clinical shift was associated with a measurable effect on negative emotional stress in emergency nurses as determined by ESRQ positive-negative balance scores.

Key words: Stress; Burnout; Compassion fatigue; Wellness

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Introduction

The emergency department is often a strenuous environment with potential for staff exposure to multiple traumatizing events during a single shift.[1] Survey-based research among emergency nurses has defined the most stressful events as relating to pediatric, medical, or trauma resuscitations; death; dealing with critical illness; and workplace aggression and violence.[2] Without safeguards in place, research has shown that workplace effectiveness and well-being may be decreased over time as a result of both compassion fatigue (reduced capacity for empathy induced by repeated exposure to pain and suffering) and burnout (emotional and physical exhaustion).[3]

Early identification of such work-related tension could lead to timely intervention and preservation of wellness. The purpose of this study was to determine whether there is an immediately measurable association between repeated exposure to traumatizing events and emotional stress reactions as determined by changes between pre- and postshift survey scores in emergency nurses during a single clinical shift.

Methods

SETTING

This was a survey study conducted over a 6-month period between March and September 2018 at a quaternary academic level 1 adult and pediatric trauma center in the midwestern United States, with an annual ED volume of approximately 77,000 patients. During the study, there were 187 registered nurses assigned to work in the emergency department, with an average of 752 nursing hours in a 24-hour period. Depending on time of day and unit acuity, the average number of nursing staff working at any given time ranged from 18 to 43. Patient acuity level billing for evaluation and management levels 4, 5, or critical care ranged from 84.1% to 89.7%, and patient mortality within the emergency department ranged from 0.02% to 0.1%.

ETHICAL CONSIDERATIONS

The study (no. 17-008862) was approved by the hospital institutional review board, and written informed consent was obtained from all participants. To ensure confidentiality, the consent form, master list, and surveys were collected and stored separately. A unique identifier was assigned to each nurse to link together multiple responses across shifts and provide an opportunity for intervention in the event we received comments from an individual indicating risk of self-harm. With the exception of the research coordinators, the research team was blinded to the identity of the respondents.

INCLUSION/EXCLUSION CRITERIA

We included all registered nursing staff assigned for 8- to 12-hour clinical shifts in our institutional emergency department for the duration of the study period. We excluded nurses assigned to work in the ED observation unit, as well as those whose daily role did not have primary patient care responsibilities, such as triage, charge, or flow nurses.

RECRUITMENT

Participation was voluntary, and no compensation was provided. Research coordinators were available Monday to Friday from 7 AM to 11 PM with occasional weekend coverage. They approached the nursing group at daily shift changes (7 AM, 3 PM, 7 PM, and 11 PM, with a range of 5 to 20 nurses present) for written consent and distribution of surveys. Nurses were allowed to participate in the study more than once; however, each individual observation (1 shift) counted toward the final target accrual.

DATA COLLECTION

Demographics that may affect emotional stress levels were collected, including gender and years of experience working as a nurse. Research staff assisted in distribution and collection of paper-based pre- and postshift Emotional Stress Reaction Questionnaires (ESRQs) (Figure 1) and traumatizing occurrence observation sheets (Figure 2). The latter were used for capturing the frequency with which each participant was exposed to specific traumatizing event categories during each shift. These categories were obtained from previous emergency nursing research studies.[1,2] Subjects were given space on the observation tool to record and explain additional traumatizing event categories as desired. A locked mailbox was available for return of the surveys. All data collected were entered by research assistants into the Research Electronic Data Capture (REDCap)[4] system hosted within our institution.

MEASUREMENT

ESRQ Score

ESRQ is a validated tool that can be completed in 60 seconds or less.[5] Participants are asked to rank their current state regarding 14 neutrally, positively, or negatively loaded

Nurse Code Identifier: _____ Date of start of shift: _____

EMOTIONAL STRESS REACTION QUESTIONNAIRE
INSTRUCTION

Below is a list of words describing different emotions. Beside each word are four response choices. Circle the choice which first comes to mind best describing how you feel **right now**.

1 The word **does not** correspond to you how feel right now.
2 The word **partly** corresponds to how you feel right now.
3 The word **fairly well** corresponds to how you feel right now.
4 The word **completely** corresponds to how you feel right now.

1. Indifferent	1	2	3	4	8. Energetic	1	2	3	4
2. Relaxed	1	2	3	4	9. Concerned	1	2	3	4
3. Pleased	1	2	3	4	10. Uncertain	1	2	3	4
4. Glad	1	2	3	4	11. Disappointed	1	2	3	4
5. Alert	1	2	3	4	12. Heated	1	2	3	4
6. Focused	1	2	3	4	13. Mad	1	2	3	4
7. Concentrated	1	2	3	4	14. Angry	1	2	3	4

FIGURE 1
Pre- and postshift Emotional Stress Reaction Questionnaire. Figure courtesy of Gerry Larsson.

emotions that are designed to measure the following 4 primary appraisal categories: (1) Irrelevant (Indifferent); (2) Benign-positive (Relaxed, Pleased, Glad); (3) Challenge (Alert, Focused, Concentrated, Energetic); and (4) Threat, harm, or loss (Concerned, Uncertain, Disappointed, Heated, Mad, Angry). From these 4 subscore rankings a total score is calculated along a positive-negative emotions balance scale ranging from −21 to

Nurse Code Identifier: _____ Today's Date: _____

Duration of shift (hours): _____

Traumatizing Event	**Check each episode**	**Total**
Level Red/Yellow adult/pediatric traumas		
Medical resuscitation bay activations		
In-room patient resuscitation		
Patient requiring ICU admission (adult/pediatric)		
Patient death		
Physical or verbally aggressive patient toward staff NOT requiring chemical or physical restraint		
Physical or verbally aggressive patient toward staff requiring intervention		
Physical or aggressive family or friends of patient		
Suicidal patients		
Inability to deliver good quality of care (e.g. medication error, unexpected side effects, equipment failure, incorrect patient forms given, incorrect tests ordered, etc)		
Concern for child/elder abuse/negligence (SANC/SANVA form completed)		
Concern for domestic violence/sexual assault/sex trafficking)		
Other (please define):		
Total		

ICU = intensive care unit
SANC = Suspected Child Abuse and Neglect
SANVA = Suspected Vulnerable Adult Abuse and Neglect

FIGURE 2
Traumatizing Occurrence Observation Recording Sheet.

21, with negative scores indicating greater negative emotional stress.

Work Area

Nurses can be assigned to work in the following ED areas: Pediatric, Acute Psychiatric, High Acuity Area 1, or High Acuity Area 2.

Traumatizing Event

Additional categories were created as follows. For traumatizing occurrences captured by participants on the recording sheet under the "other" category, study team members met to discuss whether each event could be filed under existing headings on the document or whether additional groupings were necessary. Consensus was reached to add the following traumatizing event categories to the final data analysis:

TABLE 1
Summary of nurse characteristics and responses to surveys (N = 203)

Feature	Mean (SD)	Range
Preshift ESRQ scores*		
Irrelevant (N = 201)	2.2 (1.1)	1-4
Benign-positive (N = 201)	2.9 (0.7)	1-4
Challenge (N = 202)	3.0 (0.7)	1-4
Threat, harm, or loss (N = 202)	1.2 (0.4)	1-3.8
Positive-negative balance† (N = 200)	11.3 (5.2)	−10 to 21
Postshift ESRQ scores		
Irrelevant (N = 194)	2.0 (1.0)	1-4
Benign-positive (N = 194)	2.5 (0.9)	1-4
Challenge (N = 193)	2.5 (0.7)	1-4
Threat, harm, or loss (N = 194)	1.4 (0.7)	1-4
Positive-negative balance (N = 190)	6.8 (7.4)	−19 to 21
Postshift minus preshift ESRQ score (N = 187)	−4.4 (8.2)	−40 to 17

Feature	Median (IQR)	Range
Years of nursing experience (N = 90)	9.5 (5-14)	2-40
Hours in shift (N = 196)	12 (8-12)	4-14
Number of traumatizing events (N = 200)		
Trauma resuscitation bay activations	0 (0-1)	0-5
Medical resuscitation bay activations	0 (0-1)	0-11
In-room patient resuscitations	0 (0-0)	0-2
Patients requiring intensive care unit admission	0 (0-1)	0-4
Patient deaths	0 (0-0)	0-2
Aggressive patients not requiring restraints	0 (0-1)	0-6
Aggressive patients requiring intervention	0 (0-0)	0-3
Aggressive family or friends of patients	0 (0-0)	0-3
Suicidal patients	0 (0-1)	0-16
Inability to deliver good quality of care	0 (0-0)	0-12
Concerns for child or elder abuse	0 (0-0)	0-2
Concerns for domestic violence or sexual assault	0 (0-0)	0-1
Staffing issues	0 (0-0)	0-5
Systems-based issues	0 (0-0)	0-2
Breakdown in teamwork	0 (0-0)	0-3
Nonclinical burdens	0 (0-0)	0-1
Technology issues	0 (0-0)	0-4
Miscellaneous	0 (0-0)	0-1

continued

TABLE 1
Continued

Feature	Median (IQR)	Range
Total number	3 (1-5)	0-24
Total number of traumatizing events/hours in shift (N = 193)	0.25 (0.08-0.50)	0-2.75

Feature	n (%)
Gender of nurse (N = 186)[‡]	
Female	168 (90)

ESRQ, Emotional Stress Reaction Questionnaire.

*ESRQ scores: ESRQ is a validated tool that can be completed in 60 seconds or less. Participants are asked to rank their current state (1 = does not correspond, 4 = completely corresponds) regarding 14 neutrally, positively, or negatively loaded emotions. This is designed to measure 4 primary appraisal categories: (1) Irrelevant (Indifferent); (2) Benign-positive (Relaxed, Pleased, Glad); (3) Challenge (Alert, Focused, Concentrated, Energetic); and (4) Threat, harm, or loss (Concerned, Uncertain, Disappointed, Heated, Mad, Angry).

†Positive-negative balance: From the 4 subscore rankings a total score is calculated along a positive-negative emotions balance scale ranging from −21 to 21. Higher negative scores indicate greater negative emotional stress and higher positive scores indicate greater positive emotional stress.

‡A total of 94 individual nurses participated in the study but were allowed to complete the surveys more than once. N is the number of responses received identifiable with regard to gender.

staffing issues, systems-based issues, breakdown in teamwork, nonclinical burdens, technology issues, and miscellaneous. See Figure 2 for definitions.

STATISTICAL METHODS

Continuous features were summarized with means and standard deviations (SDs) if approximately normally distributed, and otherwise with medians and interquartile ranges (IQRs); categorical features were summarized with frequency counts and percentages. Changes in ESRQ scores from pre- to postshift were evaluated using a 1-sample *t*-test (to measure whether the change in scores was statistically significant from 0). Associations between the number of traumatizing events and changes in ESRQ scores from pre- to postshift were evaluated using Spearman rank correlation coefficients. Changes in scores were also compared between shifts with and without at least 1 traumatizing event using 2-sample *t*-tests. Comparisons by gender were evaluated using Wilcoxon rank sum and 2-sample *t*-tests. Only those observations with nonmissing data for each statistical test of interest were included in the analysis. Statistical analyses were performed using SAS software version 9.4 (SAS Institute, Cary, NC). All tests were 2-sided, and *P* values less than 0.05 were considered statistically significant.

The primary endpoint, for which the study was powered, was the correlation between the number of traumatizing events and changes in ESRQ scores from pre- to postshift. The expected correlation would be negative, with a higher number of traumatizing events associated with greater negative emotional stress at the end of the shift. We determined a correlation coefficient of −0.20 to be clinically meaningful as it would detect a small to medium association.[6] This −0.20 correlation required a sample size of 213 paired surveys to provide 80% power using a significance level of 0.05.

The secondary endpoints were (1) variation of ESRQ score within a shift, (2) association of ESRQ score with density of traumatic events during a shift (events per hour), and (3) association of ESRQ with specific traumatizing event categories.

Results

The estimated response rate was 50% (94 individual nurses out of a possible 187). Because nurses were allowed to participate more than once, there were a total of 203 paired survey responses used for data analysis between 03/26/2018 and 09/27/2018. Of these, 186 were from nurses identified with a unique code; 17 had no identifier. Of the 186 identifiable responses, 168 (90%) were from women. Assuming the 17 de-identified responses were from unique individuals not otherwise represented in the study, there was a median of 1 response per nurse (IQR 1-3; range: 1-11). More specifically, there were 55 nurses who responded with 1 survey, 15 nurses with 2 surveys, 12 nurses with 3 surveys, 3 nurses with 4 surveys, 3 nurses with 5 surveys, 2 nurses with 6 surveys, 1 nurse with 10 surveys, and 3 nurses with 11 surveys. A total of 17 participants were not included in the analysis of the primary endpoint: there were 5 incompletely answered postshift surveys, 2 incompletely answered preshift surveys, 6 missing postshift surveys, 1 missing preshift survey, 2

TABLE 2
Correlation of number of traumatizing events with change in ESRQ positive-negative scores

Type of traumatizing event	Correlation*,†	*P* value
Patient deaths	−0.26	<0.001
Trauma resuscitation bay activations	−0.25	<0.001
Patients requiring intensive care unit admission	−0.22	0.002
Inability to deliver good quality of care	−0.21	0.004
Aggressive patients not requiring restraints	−0.20	0.007
Concerns for child or elder abuse	−0.19	0.009
Breakdown in teamwork	−0.19	0.011
Technology issues	−0.18	0.012
Medical resuscitation bay activations	−0.18	0.014
In-room patient resuscitations	−0.15	0.04
Systems-based issues	−0.11	0.15
Aggressive family or friends of patients	−0.10	0.15
Suicidal patients	−0.08	0.26
Aggressive patients requiring intervention	−0.07	0.33
Nonclinical burdens	−0.03	0.64
Concerns for domestic violence or sexual assault	−0.02	0.83
Miscellaneous	0.00	0.95
Staffing issues	0.11	0.13
Total number of events	−0.31	<0.001
Density (number of events/hours worked)	−0.29	<0.001

ESRQ, Emotional Stress Reaction Questionnaire.
*Spearman rank correlation coefficient for the correlation between the number of traumatizing events in each category and the change in ESRQ positive-negative scores.
†A negative correlation number indicates that with higher numbers of events, the worse the final ESRQ score, ie, the more negative emotions at the end of the shift.

lacking both postshift surveys and traumatizing occurrences observation sheets, and 1 lacking an associated traumatizing occurrences observation sheet.

Only 89 (44%) surveys contained information regarding area worked during the shift. Of these, 42 (47%) were from High Acuity Area 1, 17 (19%) High Acuity Area 2, 15 (17%) Acute Psychiatric, 6 (7%) Pediatrics, and 9 (10%) from mixed areas.

Secondary endpoint data, additional characteristics of nurse participants, and responses to the pre- and postshift surveys are summarized in Tables 1 and 2. The mean ESRQ positive-negative balance score from the preshift survey was 11.3 (SD = 5.2), which decreased to 6.8 (SD = 7.4) at the postshift survey, resulting in a mean change of −4.4 (SD = 8.2) for those shifts with both surveys completed. This change was statistically significantly different from 0 ($t = -7.26$; $P < 0.001$), indicating that positive-negative balance scores significantly decreased during the shift, reflecting greater negative emotional stress at the end of the shift.

The median total number of traumatizing events per shift was 3 (IQR 1-5). The percentage of each traumatic category with greater than or equal to 1 event recorded per shift is presented in Figure 3. Correlations of the number of traumatizing events in each category with the change in ESRQ positive-negative scores are summarized in Table 2, arranged in descending order of correlation strength and significance. The total number of traumatizing events across all categories was significantly and negatively correlated with the change in ESRQ scores (correlation coefficient of −0.31, $P < 0.001$). In other words, as the number of traumatizing events increased, the change in scores from pre- to postshift decreased, indicating that a higher number of traumatizing events is associated with greater negative emotional stress at the end of the shift. To illustrate this further, the mean change in positive-negative scores for shifts without any traumatizing events was −1.4 (SD = 6.0) compared with −5.0 (SD = 8.5) for shifts with at least 1 traumatizing event ($t = 2.27$; $P = 0.03$). Thus, shifts with at least 1 traumatizing event were associated with an

increase of negative emotional stress 3.6 times greater, on average, than that seen in shifts with no traumatizing events. Moreover, a greater density of traumatizing events—that is, more traumatizing events per hour worked—was associated with an increase in negative emotions (correlation coefficient of −0.29; $P < 0.001$). Similar results were observed after accounting for correlation among multiple responses from the same nurse (data not shown).

Associations between the total number of traumatizing events and changes in ESRQ positive-negative balance scores were not calculated separately by gender because there were only 18 (10%) responses from men. However, the total number of traumatizing events was not significantly different between female (median 3; IQR 1-5) and male (median 3; IQR 1-5) nurses ($P = 1.0$); likewise, the change in positive-negative scores was not significantly different between female (mean −4.0; SD = 8.0) and male (mean −5.1; SD = 7.3) nurses (t = 0.47; $P = 0.64$). No associations with years of nursing experience or area worked during the shift were calculated because of the amount of missing data (56% and 56%, respectively) for these 2 features.

Discussion

Our study results support the hypothesis that exposure to traumatizing events during a single shift is associated with increased negative emotional stress in emergency nurses. This effect on emotional stress was determined by a net negative change in ESRQ positive-negative emotions balance score. We expected that a small decrease in ESRQ score would occur naturally following any emergency nursing shift based on mental and physical fatigue alone. This change was indeed demonstrated by secondary endpoint analysis of the surveys reporting no associated traumatizing events (mean change in ESRQ score −1.4, SD = 6.0). The presence of even a single traumatizing event, however, caused significantly decreased ESRQ scores (mean change −5.0, SD = 8.5, $P = 0.025$) for shifts with at least 1 traumatizing event. This effect was amplified with additional traumatizing events (correlation coefficient of −0.31; $P < 0.001$) and increasing density of events per shift (correlation coefficient of −0.29; $P < 0.001$). Although limited inferences can be drawn from this correlational design, our results support the idea that emergency nurses exposed to multiple occupational stressors in a short period of time are at higher risk for immediate adverse effects on their emotional state.

The traumatizing event categories used in our shift observation recording tool were taken directly from emergency nursing literature describing the most stressful events encountered on a clinical shift.[1,2] We also incorporated any additional events reported by participants on the observation sheet that did not otherwise align into our prespecified categories. Our secondary endpoint analysis of the effects of each type of traumatizing event experienced showed that patient death, although infrequent (reported as greater than or equal to 1 occurrence on only 4% of surveys, Figure 3), was associated with the greatest negative change on the ESRQ positive-balance emotion score (Table 2). This was followed by trauma team activations (present on 26% of surveys), intensive care unit admissions (30%), inability to deliver good

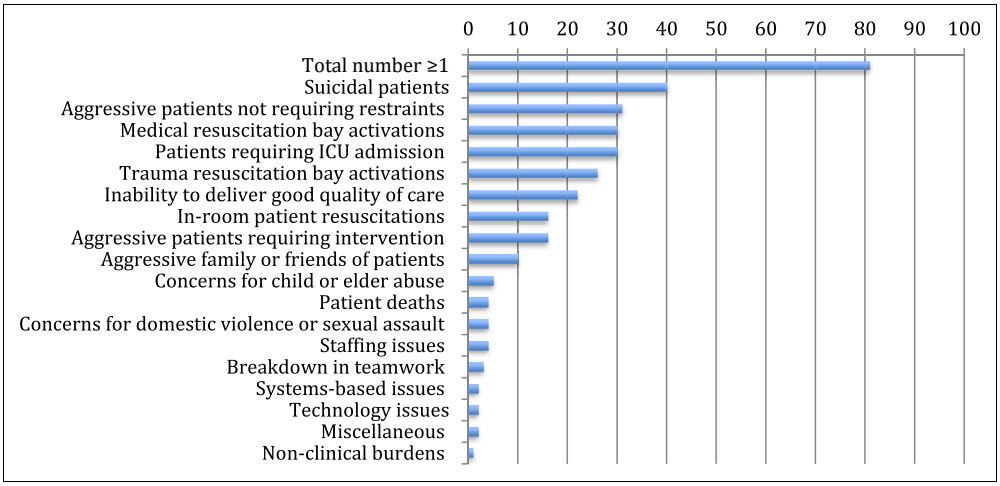

FIGURE 3

Percentage of each traumatic category with ≥1 event recorded per shift. ICU, intensive care unit.

quality of care (22%), aggressive patients not requiring restraints (31%), breakdown in teamwork (3%), and concerns for child/elder abuse (5%). These findings suggest that emergency nurses are at higher risk for negative emotional response not only when caring for the sickest of ED patients, as would be expected, but also when impacted by negative interpersonal dynamics at work and when working with vulnerable patient populations.

Although still significant, medical resuscitations (reported on 30% of surveys) had a smaller than expected impact on ESRQ score. This result may be because of the nature of our quaternary academic institution's patient population, which includes high baseline medical acuity. Suicidal patients (listed on 40% of surveys) and aggressive patients requiring intervention (16%) had a nonsignificant impact on ESRQ score. In this study, some nurses were assigned to the Acute Psychiatric hallway on a particular shift, where these patient behaviors may be expected. It is possible that anticipated experiences may not yield as much negative stress as unanticipated events. Most of the remaining nonsignificant traumatic events were also the ones recorded with the least frequency (10% or less). It is worth noting, however, that "concerns for child or elder abuse" (5%) had a significant association with negative stress as discussed above, whereas "concerns for domestic violence or sexual assault" (4%) did not. This may indicate institutional cultural perceptions of vulnerability or may simply be in tandem with our state's mandated reporting laws creating added workload burdens.

It is imperative to study ways in which to intervene on occupational stress given the potential impact on health. A cross-sectional survey of Chinese nurses showed that exposure to verbal, physical, or sexual workplace violence significantly affected self-assessment. This phenomenon was measured on single-item Likert scales rating psychological stress, sleep quality, and subjective health.[7] Similarly, police officers often face emotional or threatening interpersonal situations while on duty. For example, research has shown a significant inverse association between select traumatic work-related events (based on a 9-item self-reported Police Incident Survey) and quality of sleep over the previous month (using the validated subjective Pittsburgh Sleep Quality Index, or PSQI survey).[8]

A future study assessing daily ESRQ scores in conjunction with previously recognized longitudinal measurements of work-related tension could investigate whether shift-based negative emotional stress is transient or enduring. This missing data could include associations of ESRQ over time with the Professional Quality of Life Scale (measuring compassion satisfaction and compassion fatigue over the previous 30 days),[9,10] the Maslach Burnout Inventory (assessing characteristics of burnout for up to a 1-year period),[11,12] or the PSQI. Another investigation could determine whether a self-directed, targeted intervention (such as slow breathing techniques, aerobic exercise, or mindfulness)[13–16] after exposure to traumatizing events could be used to diminish both short- and long-term consequences.

Limitations

Limitations of this study include a correlational design and a nonrandom convenience sample of respondents. The study was performed in a single institution with culturally and geographically unique worker demographics. Our study had an estimated 50% nonresponse rate. Emergency nurses who chose to respond to the survey may be different from those who chose not to respond. There are limitations inherent to survey research, including the fact that respondents may not feel comfortable providing answers that present themselves in an unfavorable manner. This possibility could present bias in our results, with a potential to demonstrate less negative emotional stress than was actually present. Our study had 56% missing data for both area worked during the shift and years of nursing experience, removing our ability to analyze how these variables may affect emotional stress reactions.

During our sample size calculation, we estimated we would need 213 surveys to detect a correlation of −0.20. We obtained 203 surveys and observed a correlation of −0.31. Because the observed difference was larger than expected, we obtained significant results with a smaller sample size.

The ESRQ was developed for instant measurement of a respondent's psychological stress level following a performance task. Its use was first reported in military literature, with study populations including civilian first responders, civilian clinic patients, military cadets, and military task force participants.[5] The ESRQ has also been used in the health care setting to study patient perceptions of quality of care and satisfaction.[17] It has not been assessed for test-retest reliability nor has it been used to measure stress reactions both before and after a particular event. Therefore, some measurement error associated with natural fatigue or other unforeseen variables could occur with this study design.

Our emergency department underwent an institution-wide electronic medical record transition in May 2018, which may have contributed to an overall increase in baseline participant stress response. We do not believe this affected our data analysis because we were studying changes in individual ESRQ scores on an intrashift (not intershift) level.

Implications for Emergency Nurses

The results of this study demonstrate the usefulness of the ESRQ in identifying negative stress responses in emergency nurses on a real-time basis and outline circumstances within a shift that could place individuals at higher risk for an adverse emotional state. Future areas of study should focus on timely ways to intervene to prevent rising negative stress levels and could incorporate established methods such as slow breathing techniques, aerobic exercise, or mindfulness.[13–16]

Conclusions

Repeated exposure to traumatizing events while on a single clinical shift results in increased negative emotional stress in emergency nurses, as measured by the ESRQ positive-negative balance score. Further investigation is required to determine whether specific interventions in the immediate aftermath can prevent or dampen an adverse emotional response and how short-term negative emotional stress may impact long-term wellness measures.

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Author Disclosures

Conflict of interest: none to report.

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