

IMPLEMENTING A RESILIENCE BUNDLE FOR EMERGENCY NURSES: AN EVIDENCE-BASED PRACTICE PROJECT



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Contribution to Emergency Nursing Practice

- What is already known about this topic? Although a bundle strategy for enhancing resilience is a relatively new concept, several recent studies show promising results.
- What does this paper add to the currently published literature? Implementation of Resilience bundles can function within existing workflows, can be low cost, and can be specially designed for each unique nursing environment.
- What is the most important implication for clinical practice? Implementation of resilience bundles has been shown to be effective in enhancing resilience.

Abstract

Introduction: Resilience bundles are designed to work within and enhance existing routines. In the wake of COVID-19, nurses are reporting high levels of burnout and are leaving the field at an alarming rate. Hospital system leaders across the country are working to develop wellness programs to improve nurse morale, decrease burnout, and enhance resilience. Resilience can help

mitigate nurse burnout, and using a bundle of tools to help nurses develop resilience is more effective than a single strategy.

Methods: Using the Connor-Davidson Resilience Scale-10 and the Perceived Stress Scale 4, emergency nurses were surveyed to measure resilience and stress before and after implementation of a 3-strategy resilience bundle. We surveyed at baseline, phase 1 (6 weeks after implementation), and phase 2 (15 weeks after implementation).

Results: A statistically significant increase in the Connor-Davidson Resilience Scale-10 scores was identified between the baseline and phase 1 surveys. A measurable decrease in the Perceived Stress Scale 4 was found between the baseline survey and the phase 1 and phase 2 postintervention surveys.

Discussion: Although evidence suggests a multifocal approach to improving resilience, use of resilience bundles is new. To enhance nurse resilience and mitigate burnout, nurse leaders may consider resilience bundles to prioritize the mental health and wellness of their staff.

Key words: Resilience; Bundle; Burnout; Stress; Emergency nursing

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Introduction

Emergency nurses experience considerable stress and numerous emotionally exhausting events in their role.¹ Emergency departments are frequently challenged with high levels of nurse turnover due to burnout and compassion fatigue, leading to a vicious cycle of highly stressed and emotionally exhausted nurses working in understaffed environments.²⁻⁴ Interventions that focus on building resilience can mitigate nurse burnout, which can help to reduce compassion fatigue and nurse turnover.⁵⁻⁷

Burnout affects nurses around the world and is described as mental and physical fatigue⁸ associated with decreased job

satisfaction, depression, anxiety,⁹ poor job performance, and nursing turnover.¹⁰ Emergency nurses are particularly prone to burnout because of the nature of emergency clinical care. Emergency nurses experience highly emotional situations frequently during their shifts, such as caring for trauma patients and observing fatalities.²

Nurse burnout and stress negatively impact clinical outcomes, nurse turnover, and patient experience.¹¹ The International Council of Nurses¹² reported that 80% of nursing organization leaders are concerned about the burnout and exhaustion experienced by the nursing workforce. In addition, the Joint Commission¹³ reported that emergency nurses are at higher risk of burnout than nurses in many other fields. Nurses who experience burnout are at risk of developing psychological and physical problems including depression, impaired memory, musculoskeletal pain, and compassion fatigue.^{13,14} In nurses, increased burnout also is associated with higher levels of absenteeism and turnover, substance abuse disorders, and even suicide.^{13,14}

Before the COVID-19 pandemic, about 40% of United States nurses reported experiencing burnout at some point in their career.^{6,15} The COVID-19 pandemic brought new challenges, fears, and stressors to the nursing profession. Inadequate personal protective equipment, increased patient-to-nurse ratios, and higher acuity patients are examples of the added stressors that undoubtedly increased nurse burnout.¹⁶ Foli et al¹⁶ study of nurses' experiences during the COVID-19 pandemic revealed alarming numbers of nurses reporting anxiety, depression, and increased substance use.

In addition to burnout, emergency nurses are experiencing compassion fatigue, vicarious or secondary trauma, and second-victim trauma.¹⁶ Compassion fatigue is (a) a loss of the ability to nurture and/or (b) apathy that results from repeated exposure to tragedy and absorbing the suffering of others.¹⁷ Repeated exposure to high stress and emotional exhaustion leads to compassion fatigue and burnout in emergency nurses.² Emergency nurses frequently care for patients in acute distress who are suffering traumatic injuries, all while coping with overcrowded, fast-paced environments. Repeated exposure to this environment may lead to compassion fatigue.¹⁸ Vicarious or secondary trauma is defined as the accumulation of acute and chronic trauma experienced through witnessing others' trauma.¹⁶ This trauma affects how nurses make decisions both at work and in their personal lives. Second-victim trauma is the

trauma that may be experienced after an adverse event, poor outcome, or medical error.^{13,16}

RESILIENCE

Resilience is the ability to adjust to adversity, retain a sense of control, and maintain positivity.^{6,7} Resilience is a learned trait that can be fostered and enhanced.^{6,7,13,19-21} Increasing resilience in nurses decreases nurse burnout and compassion fatigue³ and improves nurse-sensitive indicators for quality patient care.^{5,10}

In their position statement on emergency nurse duty hours and patient safety, the Emergency Nurses Association²² recommend that nurses and leaders implement strategies to increase nurse resilience. Enhancing the resilience of emergency nurses increases their joy in the workplace,²³ the Institute for Healthcare Improvement's fourth aim in the Quintuple Aim.²⁴ Furthermore, improving joy in the workplace decreases turnover rates and improves patient safety and quality.²³ Increasing resilience is one way to improve joy in the workplace.²³

RESILIENCE BUNDLE

Although a bundle strategy for enhancing resilience is a relatively new concept, several recent studies show promising results.^{15,25-28} The evidence supports the use of multimodal approaches for increasing nurse resilience.^{13,25,29,30} A single approach rarely benefits all nurses equally³¹; therefore, implementing a bundle of evidence-based interventions is considered most effective.³² The elements for the bundle were selected after evaluation of available knowledge and consideration of sustainability and ability to implement at the project site. Creating a serenity room,² using structured debriefing,³ and implementing a program of relaxation and mindfulness³³ have each been shown to promote resilience in nurses.

SERENITY ROOM

The allocation of a small space (serenity room) for relaxation and restoration during work allows staff to relax and refresh. The serenity room provides a quiet space for taking breaks at work, which is advantageous because work breaks promote self-care and replenishment and reduce fatigue.^{13,34} An employer's commitment to creation of this space also sends a positive message to staff that their well-being is important and valued by the organization.^{2,13}

STOP 5 debriefing form first ask "Is everyone okay?" If yes, then continue: debrief should take approximately 5 min <small>(Form adapted from STOP 5, Walker et al., 2020)</small>	
S ummarize (type of event or situation)	
T hings that went well	
O pportunities for improvement	
P oints for action	
CN: _____ Date and time _____	
Participants: _____ _____ _____	
Any additional remarks: _____ _____ _____	

FIGURE
 Resilience bundle debrief form. CN, Charge Nurse. Adapted from Walker et al.³³

DEBRIEFING

The Emergency Nurses Association²² position statement on healthy work environments cites debriefing as an integral component of a healthy work environment. Debriefing is the facilitated reflective process of the interprofessional team involved in a critical event.³⁵ Debriefing builds resilience through helping nurses to better understand their own emotions and experiences through social connectedness and group bonding.³

MINDFULNESS

Mindfulness is defined as being present in the current moment³⁶ in mind and body to reduce stress and anxiety, improve focus, and decrease burnout.³⁷ Promoting positivity through mindfulness moments increases resilience.³³ Mindfulness activities may include a few minutes of quiet deep breathing, coloring, or journaling. Learning to practice mindfulness while at work can help nurses to focus their attention on the work at hand. Moreover, learning this skill

TABLE 1
Serenity room items and cost for an emergency department

Resource	Quantity required	Cost per each (\$)	Total cost (\$)
Massage chair	1	0 (donated by Foundation)	0
Aromatherapy diffuser	1	15	15
Sound machine	1	20	20
LED candles	1 pack of 9 candles	20	20
Vacant or occupied sign	1	10	10
Fluorescent light cover	2	35	70
Tranquil tapestry or wall art	1	30	30
Total cost			~165

LED, light-emitting diode

also can benefit nurses by teaching them how to focus attention and be engaged with family.³⁴

PROBLEM

The project site is a level I trauma center with 66 ED beds with approximately 77,000 ED visits per year. The emergency department employs approximately 120 registered nurses, ranging from graduate nurses to nurses with more than 20 years of experience. The emergency department's turnover rate for nursing staff was 16.7% in 2019, 17.4% in 2020, and 33% in 2021. The unit is understaffed about 10% of the time, increasing workplace stress. Although resilience has been shown to reduce burnout, compassion fatigue, and nurse turnover,⁵⁻⁷ This emergency department had no strategies in place to improve resilience in nurses who work in the department. At the time of this project, the hospital had recently begun efforts to enhance clinician resilience through the addition of a serenity room at the center of the hospital, approximately a 7-minute walk from the emergency department. The objective of this evidence-based practice implementation was to increase resilience levels of emergency nurses. Permission was obtained by hospital administration to implement the project. The Texas Tech University Health Sciences Center Quality Improvement Review Board determined that this project was categorized as evidence-based implementation and evaluation and did not meet the definition of human subjects research or quality review; thus, this project was exempt from further institutional review.

Methods

This was an evidence-based practice project. Interventions were selected after review of available literature and discussion with ED administration. The 3 elements of the resilience bundle implemented for this project were (a) mindfulness and relaxation techniques added to daily shift huddles; (b) structured debriefing led by charge nurses after a death on the unit, a highly stressful or emotional event, or at the charge nurse's discretion; and (c) a serenity room, designed and developed for the use of all ED employees.

Education for the charge nurse team about the project was provided at the monthly charge nurse meetings in August 2021 and September 2021. The charge nurse team, consisting of 13 nurses at the time of project implementation, was taught by the lead author to lead mindfulness activities and reflective debriefing. The charge nurse team received a copy of *Practicing Mindfulness* by Matthew Sockolov,³⁸ as well as the *Mindfulness Game* by Innericons,³⁹ to use as prompts for mindfulness-based activities during shift huddles. These items were selected by the primary author after review of available materials. Posters teaching and encouraging mindfulness were hung throughout the unit. We used Walker et al⁴⁰ STOP 5 (Summarize, Things that went well, Opportunities for improvement, Points for action) debrief method and provided copies for the charge nurse to use for debriefing sessions (see Figure). ED administrative staff designated and transformed an unused room in the emergency department to a serenity room. The project site Foundation donated the funds for a massage chair for the emergency department. The remaining items for the serenity room were donated by the first author. A list of items and cost may be viewed in Table 1.

Before implementation of the resilience bundle, a link to a Qualtrics (Provo, UT) survey was emailed to all emergency nurses at the project site, including bedside staff nurses, the charge nurse team, and emergency nurse administration through their employee email accounts. When fully staffed, the emergency department employs approximately 120 full-time equivalents of nurses. The survey consisted of 5 demographics questions (see Table 2), the Connor-Davidson Resilience Scale 10 (CD-RISC-10), and the Perceived Stress Scale 4 (PSS4). Permission was obtained to use the CD-RISC-10 survey, and permission was not required for use of the PSS4.

The CD-RISC-10 is a valid and reliable tool ($\alpha = 0.93$)^{41,42} with 10 self-assessment statements and scoring that ranks each item from not at all true (0) to true nearly all the time (4). CD-RISC 10 scores range from 0 to 40: the higher the score, the higher the resilience. The PSS4 is a valid and reliable self-assessment ($\alpha = 0.81$) used to measure perceived stress.⁴³ This 4-question survey scores statements on a Likert-type scale ranging from Never (0) to Very Often (4). The total score range is 0 to 16, with higher scores on the PSS4 indicating higher levels of stress.

Phase 1 data were collected via Qualtrics survey 6 weeks after implementation of all elements of the resilience bundle (insert dates). Phase 2 data were collected via Qualtrics survey 15 weeks after implementation. In addition to the questions in the baseline survey, phase 1 and phase 2 surveys also contained qualitative questions about the use of each of the elements of the bundle and an open-ended question for additional feedback. Qualitative questions asked whether the participant used each element of the bundle and whether they found it useful. IBM SPSS Statistics 25 was used to analyze data.³² Demographic data were analyzed using descriptive statistics. The Kruskal-Wallis test (KW) and the Mann-Whitney U test were used to test for differences among baseline, phase 1, and phase 2 survey data. The project team elected not to use paired samples owing to high nurse turnover rate. For each survey phase, the survey link was available for 2 weeks.

Results

Demographic characteristics of emergency nurses are displayed in Table 2. Response rates were calculated using filled full-time equivalents at the close of each survey time frame. The baseline survey had a 51% response rate, the phase 1 survey had a 30% response rate, and the phase 2 survey had a 29% response rate. Normality and uniformity (Poisson) of the summative score

TABLE 2
Characteristics of emergency nurses who experienced the implementation of a resilience bundle

Characteristic	n (%)
Age group (y)	
18-20	2 (2.1)
21-30	45 (46.9)
31-40	35 (36.5)
41-50	12 (12.5)
51-60	2 (2.1)
Gender	
Male	6 (6.3)
Female	86 (89.6)
Prefer not to respond	4 (4.2)
How many y have you been a nurse?	
<1 y	9 (9.4)
1-3 y	21 (21.9)
4-9 y	36 (37.5)
10-15 y	18 (18.8)
16-20 y	9 (9.4)
>20 y	3 (3.1)
How many y have you been an emergency nurse?	
<1 y	17 (17.7)
1-3 y	24 (25)
4-9 y	32 (33.3)
10-15 y	20 (20.8)
>20 y	3 (3.1)
What is your education level?	
Diploma nurse	2 (2.1)
Associate degree	14 (14.6)
Bachelor's degree	41 (42.7)
Master's degree	17 (17.1)
Doctoral degree	15 (15.6)
Prefer not to respond	7 (7.3)

continuous variables were tested with the Kolmogorov-Smirnov test. None of the summative scores tested were normally or uniformly distributed. The Mann-Whitney U test was used to compare mean ranks of 2 groups, and KW test was used to compare 3 groups of non-normally distributed summative score data. The threshold of probabilistic significance for differences in comparisons was set at the level of 0.05. Incomplete surveys were excluded from analysis.

TABLE 3
Descriptive data of CD-RISC-10 and PSS4 across survey phases

Variables	PSS4					
	CD-RISC-10		Baseline	Phase 1	Phase 2	Phase 2
Survey dates	September 9, 2021-October 11, 2021	November 22, 2021-December 5, 2021	September 27, 2021-October 11, 2021	November 22, 2021-December 5, 2021	January 1, 2022-January 20, 2022	January 1, 2022-January 20, 2022
<i>N</i>	47	26	47	26	23	23
Mean	29.96	32.31	8.91	8.92	30.17	8.78
SD	4.96	6.16	1.53	1.79	5.65	1.70
Median	29	32.5	9	9	30	9
Range	20-40	17-40	3-13	4-13	20-40	6-12

CD-RISC-10, Connor-Davidson RISC-10; PSS4, Perceived Stress Scale 4.

Because the data were not normally distributed, we used the KW test and found no statistically significant differences in CD-RISC-10 scores across the 3 groups ($N = 96$, $KW = 3.78$, $df = 2$, $P = .08$). CD-RISC-10 scores increased from baseline ($n = 47$, median [Md] = 29, interquartile range [IQR] = 27-34) to phase 1 ($n = 26$, Md = 32.5, IQR = 28.75-38) and from baseline ($n = 47$, Md = 29, IQR = 27-34) to phase 2 ($n = 23$, Md = 30, IQR = 25-35). After further investigation, we found that the mean rank of the CD-RISC-10 score was significantly higher ($n = 26$, mean rank [MR] = 43.44, SD = 6.16) in phase 1 than at baseline ($n = 47$, MR = 33.44, SD = 4.96) in a 1-sided Mann-Whitney U test ($n = 73$, $U = 778.500$, $P = .03$). See Table 3 for results.

A total of 5 open-ended comments (56%) were favorable, and 44 open-ended comments (44%) were unfavorable (see Table 4). An example of a favorable comment was, "It was awesome." An example of an unfavorable comment was, "Serenity rooms are useless if there's no time to utilize them." The mean rank of the perceived stress score was measurably lower in the combined postintervention group (phase 1+2, $n = 49$, MR = 46.27, SD = 2.34) than in the pre-intervention group ($n = 47$, MR = 50.83, SD = 2.8) but was not significantly different in a Mann-Whitney U test ($N = 96$, $U = 1,042.000$, $P = .42$, $z = -0.425$).

Discussion

Implementation of a resilience-building bundle produced a statistically significant increase in resilience among emergency nurses from baseline ($n = 47$, MR = 33.44, SD = 4.96) to phase 1 ($n = 28$, MR = 43.44, SD = 6.16) after intervention ($n = 73$, $U = 778.500$, $P = .03$). These results are similar to results found by others who implemented toolkits or bundles aimed at reduction of stress and enhancement of resilience.²⁵⁻²⁷ The mean CD-RISC-10 score increased from baseline ($M = 29.96$, SD = 4.96) to phase 1 ($M = 32.31$, SD = 6.2). Although there was a decrease of the mean score of the CD-RISC-10 from phase 1 ($M = 32.31$, SD = 6.2) to phase 2 ($M = 30.17$, SD = 5.65), the mean for phase 2 was still higher than the baseline mean. These results suggest that the implementation of a resilience bundle may have been effective in enhancing the resilience of emergency nurses.

Davis and Batcheller²⁵ implementation of a resilience bundle in a pediatric intensive care unit also showed enhanced resilience over 6 months. Mintz-Binder et al²⁷ found that implementation of resilience-building methods, which the authors called a toolkit, improved nurse resilience

TABLE 4

Emergency nurse responses to open-ended survey question: “Any feedback you would like to share about the resilience program?”

Responses

Please Keep the Tranquility Room!! It's such a nice break from the hustle and bustle!

I appreciate Whitney focusing efforts on a staff who has been stretched too thin for too long.

Serenity rooms are useless if there's no time to utilize them.

Love the room! I'm finally able to sit and have lunch now instead of standing in a corner shoveling food in as quick as I can!

I think it's a great idea if you have time to take to stop, but there's such a rushing culture here that it's not really encouraged to stop and take time for yourself while at work.

Did not have time post shift to utilize the serenity room. Certainly did not have time during shift.

The mindfulness exercises seem tone deaf in the face of such overwhelming adversity, rather like telling someone to smile while they're drowning. The debriefing forms are somewhat better, but there is very little time or chance to complete them. The serenity room is very beautiful, from the glimpses of it I've caught running from one end of the ER [emergency room] to the other. Perhaps someday I'll have time to use it.

I would like to have more time in the serenity room.

It was awesome.

over a period of 6 weeks. In their study, nurses' resilience was measured using the CD-RISC-10 scale at baseline and after implementation of stress-reduction techniques.²⁷ Andersen et al²⁶ replicated this toolkit in an inpatient hospital setting and also found a significant increase in nurse resilience over their 3-month study period. The resilience bundle in the present study was inspired by Mintz-Binder et al²⁷ and Andersen et al²⁶ studies; however, this bundle was implemented in an emergency department and focused specifically on resilience of emergency nurses.

Although the majority (56%, $n = 5$) of nurses who provided comments to the open-ended question were favorable (eg, “Love the room! I am finally able to sit and have lunch now” and “Please keep the tranquility room!! It is such a nice little break from the hustle and bustle!”), some nurses' comments were not favorable. One comment was particularly concerning:

The mindfulness exercises seem tone deaf in the face of such overwhelming adversity, rather like telling someone to smile while they're drowning. The debriefing forms are somewhat better, but there is very little time or chance to complete them. The serenity room is very beautiful, from the glimpses of it I've caught running from one end of the ER to the other. Perhaps someday I'll have time to use it.

This statement illustrates a call to action for ED leaders. A resilience bundle cannot function as a Band-Aid and cannot replace adequate staffing and emotional support from leadership. It is vital that organizations and health

care leaders prioritize the mental health and well-being of their staff.¹³ In order to retain nurses and improve staffing conditions, hospital leaders must provide safe working conditions, support nurses' health and well-being, and develop and sustain a culture of safety.^{13,44,45}

Project Barriers and Limitations

Baseline surveys were distributed during a small COVID-19 surge at the project site, which may have reduced response rates. Phase 1 and 2 surveys were distributed during a large COVID-19 surge at the project site, when patients diagnosed with COVID-19 were occupying >30% of hospital beds at the facility. In addition, large numbers (almost 26%) of emergency nursing staff were out sick with COVID-19 themselves. Staffing challenges led to administrative nurses providing care at the bedside and increased nurse-to-patient ratios from 1:3 to 1:4. Second, the nurse turnover rate for the project site exceeded 30% during the project, reducing the number of nurses available to complete surveys. Finally, charge nurse turnover during project implementation was >46%. Charge nurse turnover created a challenge in providing new charge nurses with information about the resilience bundle, including the use of debriefing and mindfulness activities during shift huddles.

The project included a relatively small sample size of emergency nurses. Larger projects across multiple facilities or multiple departments over a longer period of time would enhance understanding of the effects of resilience bundles.

Moreover, the inability to measure scores for the same individuals across the multiple surveys limited the ability to determine each individual's response to interventions. It is possible that the choice of mindfulness-based activities may have influenced adoption. Finally, the short time frame of the project did not allow for study of potential effects of seasonal variation.

Implications for Emergency Nurses

Since the COVID-19 pandemic, nurse burnout has increased, and some scholars have reported that 30% to 40% of nurses intend to leave the nursing profession.^{46,47} Furthermore, emergency departments across the country have experienced a large influx of critically ill patients, ED crowding, and boarding of patients for extended periods of time as a result of COVID-19.⁴⁸ Although a resilience bundle is not a substitute for adequate staffing and emotional support for emergency nurses, it can improve the psychological well-being of nurses and help mitigate nurse turnover.⁴⁹ Resilience can help build a bridge from burnout to wellness. With positive resilience interventions, burnout may be decreased, and wellness may be enhanced.²⁸ Nurse leaders should focus efforts to support both individual and organizational resilience, stress reduction, and wellness strategies to enhance nurse well-being as well as retention. Health care leaders also may consider appointing a Chief Wellness Officer, a dedicated person responsible for organizing and overseeing the culture of wellness within an organization.¹³

Conclusion

The implementation of this resilience bundle provided emergency nurses at the project site with new tools to foster and enhance resilience. Results of this project have been shared with leadership hospital-wide. Working to improve nurse resilience is an ongoing effort, and the bundled approach provides a variety of approaches to target resilience for different team members' unique preferences. Future projects would benefit from larger sample sizes from multiple centers, conducted over a longer time frame to increase generalizability of findings.

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Author Disclosures

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