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The impact of burnout syndrome on practitioners working within rural healthcare systems

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Abstract

Introduction: Burnout syndrome (BOS) affects up to 50% of healthcare practitioners. Limited data exist on BOS in paramedics/firstresponders, or others whose practice involves trauma. We sought to assess the impact of BOS in practitioners of rural healthcare systems involved in the provision of trauma care within West Virginia.

Methods: A 3-part survey was distributed at two regional trauma conferences in 2018. The survey consisted of 1) Demographic/occupational items, 2) The Mini Z Burnout Survey, and 3) elements measuring the impact, and supportive infrastructure to prevent and/or manage BOS.

Results: Response rate was 74.7% (127/170 attendees). Respondents included emergency medical services (EMS) (44.9%), nurses (37.8%), and physicians (9.4%). Overall, 31% reported BOS - physicians (45.5%), EMS (35.1%), and nurses (25.0%). Most agreed that BOS impacts the health of medical professionals (99.2%) and presents a barrier to patient care (97.6%). Those with BOS reported higher stress ($p < 0.001$), chaos at work ($p < 0.001$), and excessive documentation time at home ($p < 0.001$). Fewer respondents with BOS reported job satisfaction ($p < 0.001$), control over workload ($p = 0.001$), sufficient time for documentation ($p = 0.001$), value alignment with institutional leadership ($p = 0.001$), and team efficiency ($p = 0.004$). Unique factors for BOS in EMS included: lack of control over workload ($p = 0.032$), poor value alignment with employer

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Presentations

Preliminary findings of this study were presented at the following scientific meetings.

1. Society of Critical Care Medicine (Research Snapshot Theater), February 2019.
2. 2019 WVCTSI Annual Meeting (Poster Presentation), April 2019.

Declaration of Competing Interest

Audis Bethea has no conflict of interest to report.

Damayanti Samanta has no conflict of interest to report.

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($p = 0.002$), lack of efficient teamwork ($p = 0.006$), and excessive time documenting at home ($p = 0.003$).

Conclusions: Burnout syndrome impacts rural healthcare practitioners, regardless of discipline. These data highlight a need to address the entire team and implement occupation-specific approaches for prevention and treatment. Further prospective study of these findings is warranted.

Keywords

Burnout; Emergency medical transport; Trauma; Surgeon; Nurse

1. Introduction

Emotionally and physically demanding environments, increasing expectations, long hours, and insufficient support systems have led to increasing job-related frustration for many work force laborers. As a result, Burnout Syndrome (BOS) has emerged as a major impediment to the maintenance of a healthy work environment among healthcare professionals as well as individuals in other highly stressful professions such as firefighters, law enforcement officials, and educators [1]. Burnout Syndrome is associated with an insidious onset of exhaustion, indifference, and a decreased sense of personal accomplishment [1,2]. It is thought to be caused by an imbalance between ideals and expectations of the employee versus the actual requirements of his/her position [1]. Numerous precipitating factors have been associated with the development of BOS in healthcare practitioners including organizational factors, personal characteristics, exposure to end-of-life situations, and quality of working relationships [1,2].

Recently published data suggests that burnout may affect up to 50% of evaluated practitioners [1,3]. Of note, the incidence of BOS has been primarily studied among nurses and physicians in various specialties and service lines. Findings from these studies indicate that approximately 25% to 33% of critical care nurses manifest symptoms of severe BOS and up to 86% display at least 1 of the 3 classic symptoms [1–3]. The incidence of BOS among physicians is also substantial, with severe symptomatology reported in up to 45% of practitioners. Especially high rates have been reported in pediatric intensivists, with as many as 71% of surveyed respondents displaying significant symptoms of BOS [1,4,5].

Despite the recognition of BOS as a major problem among physicians and nurses, limited data exists on the incidence and impact of BOS in other healthcare professionals such as paramedics and other first-responders, or on providers whose practice includes the care of trauma patients. In this study we seek to assess the incidence, associated factors, knowledge of BOS significance, and available infrastructure for BOS intervention in various types of rural healthcare practitioners in the state of West Virginia.

2. Methods

Following approval by the Charleston Area Medical Center/West Virginia University (CAMC/WVU) Institutional Review Board, an anonymous, cross-sectional study was conducted on rural healthcare practitioners from the state of West Virginia. The study was

coordinated through the Annual West Virginia Trauma Symposium and Emergency Services Conference (ESCAPE) in February 2018. The annual West Virginia Trauma Symposium is a multidisciplinary, educational conference serving practitioners and institutions that provide care to trauma victims in the state of West Virginia. The emergency services conference, ESCAPE 2018, was added to the annual educational programming within the state of West Virginia and specifically designed to provide education and hands-on training opportunities for ancillary emergency services healthcare providers.

A survey was included in registration packets and provided to each attendee upon checking into their respective conference. Attendees were asked to complete the survey and return the completed document to the registration table by the conclusion of the first day of the conference. All registrants were invited to participate in the survey but participation in the study was entirely voluntary. The survey consisted of three sections: 1. Demographic and occupational data (Appendix A), 2. the Mini Z burnout survey (accessible through the American Medical Association's Stepsforward™ website [6]), and additional questions targeting the respondent's perception of BOS' impact, as well as the availability of supportive infrastructure to prevent and/or manage BOS if an at-risk individual was identified (Appendix B). The Mini Z burnout survey is an assessment tool for evaluating burnout that was developed and statistically validated by Linzer et al. [7] It was administered in this study after obtaining his written permission.

Descriptive analysis was conducted for each study variable. Means and standard deviations were reported for continuous variables while proportions and frequencies were computed for categorical variables. To assess statistically significant associations, *t*-tests or Mann-Whitney U analyses were conducted for continuous variables. Categorical variables were compared using chi-square or Fisher's Exact test. Mini Z survey items were coded using the scoring key provided by Linzer et al. [7] All comparisons were performed at a level of significance of $p = 0.05$. Analysis was done using SPSS version 22.0.

3. Results

3.1. Overall findings

The survey was completed by 127 of the 170 practitioners attending the two conferences, yielding an overall response rate of 74.7%. Practitioners who completed the survey included emergency medical services (EMS) providers (44.9%), nurses (37.8%), physicians (9.4%), advanced practice providers (nurse practitioners and physician assistants) (3.1%), physical therapists (1%) and other practitioners (3.9%). The mean age of the practitioners was 42.4 years with 60.2% of the responders being female. On average, responding practitioners had spent 15.6 years in their current clinical practice. Of all respondents, 31% of the responding practitioners reported feeling symptoms of burnout. A summary of the demographics and the various practitioners' responses are presented in Table 1.

Of those responding, the majority of responders agreed that burnout is impactful on the well-being of medical professionals (99.2%) and that BOS is a potential barrier to the provision of patient care (97.6%). A much lower proportion of respondents (34.9%), however, were aware of programs designed to prevent the development of burnout in healthcare

professionals. An even lower percentage reported knowledge of programs whose focus was supporting healthcare practitioners currently experiencing burnout (29.8%). Nearly one-half of the practitioners (45.6%) were willing to participate in programs designed to prevent or support healthcare practitioners who develop burnout, however, only 15.4% indicated programs or processes designed to identify burnout were readily available to them.

3.2. Burned out vs. not burned out

When analyzed as groups, demographic characteristics of the practitioners such as age, gender, profession, and years of professional experience were not significantly different between respondents reporting being burned out versus not burned out. A significantly higher percentage of burnout respondents reported experiencing a “great deal” of job-related stress (89.5% vs. 53.5%, $p = 0.001$), chaos in their primary work area (65.8% vs. 27.4%, $p = 0.001$), and too much time spent on documentation (via the electronic medical record EMR) at home (36.8% vs. 8.5%, $p = 0.001$). A lower percentage of burnout respondents reported being satisfied with their job (53.8% vs. 94.3%, $p = 0.001$), having satisfactory control over workload (46.2% vs. 77.0%, $p = 0.001$), satisfactory time available for documentation (41.0% vs. 77.6%, $p = 0.001$), high value alignment with institution/employer leadership (38.5% vs. 70.6%, $p = 0.001$), and efficiency in team work (79.5% vs. 96.5%, $p = 0.004$). Both groups were comparable with regard to their acknowledgement of the potential impact of burnout on the provision of patient care and awareness of supportive infrastructure. A non-significant association was noted in the proportion of practitioners reporting burnout who had availability to professional resources designed to identify BOS (5.3% vs. 19.0%, $p = 0.055$) (Table 2).

When analyzed by profession, the incidence of burnout varied markedly. Among the respondents, physicians reported the highest rates of burnout (45.5%) followed by EMS (35.1%), and nurses (25.0%) (Table 3). Due to a small sample size of physicians ($N = 12$), additional analysis was conducted with nursing and EMS groups to determine if the factors contributing to burnout in these two professions were similar. Job-related stress, unsatisfactory time for documentation and chaotic work atmosphere were found to be significantly associated with burnout in both groups. However, lack of control over workload, poor value alignment with employer, lower degree of perception of efficient team work and excessive time spent on documentation were significantly associated with burnout only in the EMS group (Table 4). With regard to the knowledge and availability of infrastructure related to BOS identification and treatment, no significant differences were found between those burned out and not burned out in both nurses and EMS (Table 5).

4. Discussion

Burnout syndrome is being increasingly recognized as a significant problem among healthcare providers. Symptoms include, among others, progressive exhaustion, indifference, and a decreased sense of personal accomplishment. Numerous precipitating factors have been associated with the development of BOS in healthcare practitioners; however, they may be broadly grouped into four major subcategories: organizational factors,

personal characteristics, exposure to end-of-life situations, and quality of working relationships [1,2].

Organizational factors that have been associated with BOS include a lack of control of one's work environment, increasing workload, dysfunction in the work community, and inadequate realization of reward [4,8]. Data from the current study suggests that rural West Virginia healthcare practitioners experiencing burnout are also impacted by organizational factors. Those that were significantly associated with burnout, and reflective of organizational impact, were job-related stress, lack of control over workload, and poor value alignment with institution/employer leadership.

Personal characteristics that place individuals in the at-risk group for BOS include sleep deprivation, the implementation of unhealthy coping mechanisms (such as drug and alcohol use), failure to maintain a work-life balance, and unfavorable self-assessment. Frequent exposure to end-of-life situations is also more common in practitioners who develop BOS, with nurses particularly at higher risk. Environmental qualities of patient care areas, such as those with higher mortality rates and patient acuity have been associated with increased rates of BOS [9]. Exposure to scenarios that are unique to practices involving the trauma patient population, such as injuries secondary to violent acts, severe bodily injury or preventable deaths have also been hypothesized to contribute to the development of BOS [10].

Respondents in the current study represent a cohort of healthcare practitioners that participate in the management of traumas, and as a result, may routinely experience some of these unique factors. In addition, respondents with BOS were significantly more likely to spend a moderately high or excessive amount of time on the electronic medical record while at home. Analogous findings were also seen with survey items that evaluated environmental factors in respondents' practice areas. Accordingly, a significantly higher frequency of practitioners with BOS described their work environment as being "very busy" or "hectic-chaotic" as compared to those not reporting BOS.

Poor quality of working relationships is also a commonly reported factor in practitioners experiencing BOS. This factor has been consistently reported by all practice disciplines and does not appear to be exclusive to relationships with colleagues. Dysfunctional relationships with patients and their families are also frequently cited as significant sources of stress for practitioners experiencing BOS [11,12]. Similar findings were relevant in the current data set as perception of patient care teams working together was significantly lower in practitioners who reported burnout versus no burn out.

Data clearly establishes BOS as a significant problem affecting the personal well-being of practicing nurses and physicians, and this has been the focus of much of the published literature on the subject. The consequences of BOS have been shown to have an impact far beyond the health of the involved practitioners. Sequelae for practitioners experiencing BOS can be significant. Perhaps the most alarming consequence of BOS relates to its effect on the provision of quality patient care [1,13–15]. Specifically, current literature suggests that the presence of BOS is associated with significant increases in medical errors, healthcare associated infections and 30-day mortality [13–15]. A study conducted by Shanafelt et al. evaluated the effect of BOS on U.S. surgeons. In this study, Fellows of the American

College of Surgeons were sent an anonymous survey which included tools for the assessment of depression, burnout, quality of life and self-assessment of medical errors. Nine percent (n = 700) of the responding surgeons (n = 7905) reported concern that they may have made a major medical error in the last three months. Practitioners' perception of committing an error had a statistically significant adverse effect on mental quality of life, perceived burnout, and symptoms of depression. Multivariate analysis revealed that burnout and depression were independent predictors of reporting a major medical error in the previous 3 months [13]. Patients have also reported higher levels of dissatisfaction with the care they received from practitioners suffering from BOS [16]. These concepts were supported by the findings of the current study where over 97% of the surveyed practitioners perceived BOS to be impactful to their personal well-being and their ability to provide patient care.

Burnout syndrome has also been associated with an increased rate of turnover and rates of healthcare professionals leaving their fields to seek alternative professions [17–19]. The resulting loss of clinical experience and personnel further stresses an already heavily burdened healthcare system. The financial impact of replacing personnel can also be quite substantial. It is estimated that the cost for replacing a nurse or physician practitioner has been estimated to be approximately \$65,000 and \$250,000 respectively. Due to the frequency of BOS and its significant impact, “A Call for Action on Burnout” was recently published by the Critical Care Societies Collaborative [19].

The pace in which patient care activities occur, and the acuity of the patients being managed have been linked to an increased risk of burnout [19]. In addition, the characteristics of the patients encountered have been suggested to impact the risk of BOS development. These factors include: exposure to traumas involving violent acts or severe bodily injury, especially those involving pediatric patients, multiple family members, or preventable deaths [19]. From this it is not difficult to understand why practitioners of trauma care are potentially at increased risk of BOS, as these risk factors and circumstances are encountered on a routine basis in the trauma care setting [19]. These findings are supported in a study by Hinderer et al. evaluating BOS in trauma nurses, in which the investigators reported an incidence of BOS of 35.9%. Burnout was found to correlate significantly with negative coworker relationships, more hours per shift, years in current position, and the percentage of time spent providing direct patient care [20]. Data from a recent single center study evaluating BOS in nurses whose practices included, but were not limited to the provision of care to trauma patients was reported by Munnagi and colleagues. In this study, 75 nurses were evaluated for the presence of BOS using the Maslach Burnout Inventory. A moderate level of burnout was identified, however, the level of emotional exhaustion experienced by nurses varied among their location of practice with the highest rate being documented in surgical ICU nurses. Additional variables showed significant variation dependent upon the participants' baseline health status, race, and age [21].

Most studies available for review are single-center in design and focused primarily on BOS in nurses and physicians whose practices included care of trauma patients. Minimal data is available on BOS in other practitioners involved in the provision of trauma care such as first responders, suggesting the need for further study into other potentially affected at risk

groups. An initial work by Berg and colleagues reported a burnout rate of (58.3%) in trauma practitioners of various disciplines [22]. The study was described by the investigators as qualitative in nature, and indeed, the sample size in this study was only 12 practitioners, making it impossible to generalize the results. A larger study of over 2000 emergency medical transport (EMT) and paramedic practitioners conducted by Crowe et al. found significant rates of BOS in this subgroup of providers, with higher rates among paramedics when compared with EMTs (38.3% vs. 24.9%), with correspondingly higher rates of missed work and employee turnover [23]. The current study also evaluated the incidence of BOS among a broad collection of practitioners whose practices included the provision of care to trauma patients. Approximately 45% of those surveyed practiced in EMS. In this subset, the rate of BOS was 35%. While the current data did not differentiate between the types of EMS provider, these findings are similar to that reported by Crowe et al.

4.1. Limitations

Although these data supplement the existing literature on BOS and its impact on rural health system practitioners involved in the provision of care to traumas, it is not without limitations. The sample size was relatively small - 127 respondents - and was collected from a specific demographic - that of providers in rural healthcare systems. In addition, the survey was conducted in two different meeting locations which might have predisposed to systematic error. Further, we did not analyze differences in nursing practice settings, for example ICU nurses vs. ED nurses which may be a useful comparison in future studies but was not felt to be possible in this study due to the small sample size. The study's demographic data did not verify that all respondents' primary focus was the management of care for trauma patients. While these data were collected from attendees of conferences targeting practitioners involved in trauma care, the authors cannot conclusively assert that these findings are reflective of practitioners whose practice is exclusive to trauma. Despite these limitations, we believe that this study highlights the need for further investigation into the effects of burnout on rural healthcare practitioners that are involved in the management of trauma victims as a whole, both on individual well-being and on patient outcomes and medical errors. In addition, our study provides data on key practitioners within the rural healthcare system, and we feel that these data support the identification of an additional rarely discussed at-risk group for BOS - that of EMS practitioners. Finally, we believe that these data support the notion that unique stressors exist for different members of the healthcare team. Further prospective study of these findings is warranted to examine the role of occupation-specific interventions in the prevention and management of BOS.

5. Conclusions

Data from the current study represents a sample of West Virginia practitioners from various practice sites within rural healthcare systems that provide care to trauma victims. These data suggest that at the time of the survey approximately 65% of the respondents reported experiencing "a great deal" of job-related stress, and 31% reported that they felt burned out. Burnout was associated with reduced job satisfaction, control over workload, time for documentation, value alignment with institutional or employer leadership, and efficiency in teamwork. Conversely, BOS was also associated with higher stress, chaotic work

environment, and excessive time spent on EHR at home. These findings are consistent with the results of other studies of physicians and nurses, suggesting that BOS may well exist across the entire spectrum of rural healthcare providers and at a comparable incidence. We found it particularly interesting, however, that the factors affecting perception of burnout among nurses and EMS practitioners differed in several key areas. This suggests that a “one size fits all” approach to prevention and treatment of BOS may be overly simplistic, and that perhaps an occupational-specific approach addressing identified factors would potentially be more efficacious.

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Appendix A.: Demographic survey items

-
1. Age:
 - a. 20–29
 - b. 30–39
 - c. 40–49
 - d. 50–59
 - e. 60–69
 - f. 70+
 2. Gender
 - a. Male
 - b. Female
 3. Current profession:
 - a. Nurse
 - b. Advanced Practice Provider (NP/PA)
 - c. Physician
 - d. Pharmacist
 - e. Respiratory Therapist
 - f. Physical therapy
 - g. Occupational therapy
 - h. Emergency Medical Transport
 - i. Other
 4. Years of clinical practice in current profession
 - a. <5 years
 - b. 5–10 years
 - c. 11–15 years
 - d. 16–20 years
 - e. 20+ years
 5. In what type of facility do you practice? Select all that apply:
 - a. Level 1 trauma center
 - b. Level 2 trauma center
 - c. Level 3 trauma center
 - d. Level 4 trauma center
 - e. Community hospital
 - f. Academic medical center
 - g. Emergency medical transport
 6. What is the size of the institution?
 - a. <100 beds
 - b. 100–200 beds
 - c. 201–499 beds
 - d. 500–749 beds

e. 750–999 beds

f. N/A

Appendix B.: Impact of burnout and supportive infrastructure survey items

1. On a scale of 1 to 5, how important do you feel burnout is to the well-being of medical professionals?				
1	2	3	4	5
Not at all important	Slightly important	Moderately important	Very important	Extremely important
2. On a scale of 1 to 5, how significant of a potential barrier do you feel Burnout Syndrome is to the provision of patient care?				
1	2	3	4	5
Not a barrier	Slightly significant	Moderately significant	Very significant	Extremely significant
3. Are you aware of programs designed to prevent the development of burnout in healthcare practitioners?				
Yes	No			
4. Are you aware of programs or processes that focus on supporting healthcare practitioners who may be experiencing burnout?				
Yes	No			
5. Are programs or processes designed to identify Burnout Syndrome readily available to you?				
Yes	No			
6. On a scale of 1 to 5, how likely would you be to participate in a program(s) designed to prevent, or support healthcare practitioners who develop Burnout Syndrome?				
1	2	3	4	5
Definitely not	Probably not	Possibly	Probably	Definitely

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Overall data with regard to demographics, Mini Z survey items, impact of burnout and awareness/availability of supportive infrastructure.

Table 1

		N = 127	
		N	Mean ± SD or N(%)
Demographics			
Age		123	42.4 ± 11.0
Years in current clinical practice		123	15.6 ± 10.6
Gender	<ul style="list-style-type: none"> • Male • Female 	123	49 (39.8%) 74 (60.2%)
Profession	<ul style="list-style-type: none"> • Nurse • Advanced practice provider (NPPA) • Physician • Physical therapist • Emergency medical services • Other 	125	48 (37.8%) 4 (3.1%) 12 (9.4%) 1 (0.8%) 57 (44.9%) 5 (3.9%)
Mini Z burnout survey			
Overall satisfied with job (agree, strongly agree)		127	104 (81.9%)
Great deal of stress because of my job (agree, strongly agree)		125	81 (64.8%)
Symptoms of burnout (definitely burning out, symptoms won't go away, completely burned out)		126	39 (31.0%)
Control over my workload (satisfactory, good, optimal)		127	86 (67.7%)
Time available for documentation (satisfactory, good, optimal)		125	83 (66.4%)
Work atmosphere description (very busy, hectic-chaotic)		123	48 (39.0%)
Value alignment with institution/employer leadership (agree, strongly agree)		125	76 (60.8%)
Degree patient care team works efficiently together (satisfactory, good, optimal)		125	114 (91.2%)
Amount of time spent on EMR at home (moderately high, excessive)		121	21 (17.4%)
Proficiency with EMR use (satisfactory, good, optimal)		121	103 (81.1%)
Impact of burnout and supportive infrastructure			
Burnout is important to the well-being of medical professionals		127	126 (99.2%)
Burnout is a potential barrier to the provision of patient care		127	124 (97.6%)
Aware of programs designed to prevent the development of burnout in healthcare professionals		126	44 (34.9%)
Aware of programs or processes that focus on supporting healthcare practitioners who may be experiencing burnout		124	37 (29.8%)

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N = 127		Mean ± SD or N(%)
N		
123	Programs or processes designed to identify burnout readily available to you	19 (15.4%)
125	Likely to participate in program(s) designed to prevent, or support healthcare practitioners who develop burnout	57 (45.6%)

Comparison of demographics, Mini Z survey items, impact of burnout and supportive infrastructure between respondents reporting burnout vs. not burned out.

Table 2

	Burnout (N = 39)		Not burned out (N = 87)		p Value
	N	Mean ± SD or N (%)	N	Mean ± SD or N (%)	
Demographics					
Age	38	44.1 ± 11.6	84	41.6 ± 10.8	0.234
Years in current clinical practice	38	16.9 ± 10.0	84	15.1 ± 11.0	0.375
Gender	38	16 (42.1%)	84	33 (39.3%)	0.769
		• Male		51 (60.7%)	
		• Female		36 (41.4%)	0.680
Profession	39	12 (30.8%)	87	3 (3.4%)	
		• Nurse		6 (6.9%)	
		• Advanced practice provider (NP/PA)		1 (1.1%)	
		• Physician		37 (42.5%)	
		• Physical therapy		4 (4.6%)	
		• Emergency medical services			
		• Other			
Mini Z burnout survey					
Overall satisfied with job (agree, strongly agree)	39	21 (53.8%)	87	82 (94.3%)	<0.001
Great deal of stress because of my job (agree, strongly agree)	38	34 (89.5%)	86	46 (53.5%)	<0.001
Control over my workload (satisfactory, good, optimal)	39	18 (46.2%)	87	67 (77.0%)	0.001
Time available for documentation (satisfactory, good, optimal)	39	16 (41.0%)	85	66 (77.6%)	<0.001
Work atmosphere description (very busy, hectic-chaotic)	38	25 (65.8%)	84	23 (27.4%)	<0.001
Value alignment with institution/employer leadership (agree, strongly agree)	39	15 (38.5%)	85	60 (70.6%)	0.001
Degree patient care team works efficiently together (satisfactory, good, optimal)	39	31 (79.5%)	85	82 (96.5%)	0.004
Amount of time spent on EMR at home (moderately high, excessive)	38	14 (36.8%)	82	7 (8.5%)	<0.001
Proficiency with EMR use (satisfactory, good, optimal)	38	32 (84.2%)	82	70 (85.4%)	1.000
Impact of burnout and supportive infrastructure					
Burnout is important to the well-being of medical professionals	39	39 (100.0%)	87	86 (98.9%)	1.000
Burnout is a potential barrier to the provision of patient care	39	38 (97.4%)	87	85 (97.7%)	1.000
Aware of programs designed to prevent the development of burnout in healthcare professionals	39	14 (35.9%)	86	29 (33.7%)	0.812
Aware of programs or processes that focus on supporting healthcare practitioners who may be experiencing burnout	39	12 (30.8%)	84	24 (28.6%)	0.803

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	Burnout (N = 39)		Not burned out (N = 87)		p Value
	N	Mean ± SD or N (%)	N	Mean ± SD or N (%)	
Programs or processes designed to identify burnout readily available to you	38	2 (5.3%)	84	16 (19.0%)	0.055
Likely to participate in program(s) designed to prevent, or support healthcare practitioners who develop burnout	39	17 (43.6%)	85	40 (47.1%)	0.719

Bold face indicates statistical significance ($p < 0.05$).

Table 3

Mini Z survey responses by profession - overall incidence of burnout

Mini Z burnout survey by profession	Nurse (N = 48)	NP/PA (N = 4)	Physician (N = 12)	Physical therapist (N = 1)	EMS (N = 57)	Other (N = 5)
Burned out (%)	12 (25.0%)	1 (25.0%)	5 (45.5%)	0 (0.0%)	20 (35.1%)	1 (20.0%)

Table 4

Mini Z survey items by profession (nurses vs. emergency medical services).

	Burnout		Not burned out		p Value
	N	N (%)	N	N (%)	
Mini Z burnout survey					
Overall satisfied with job (agree, strongly agree)					
Nurse	12	7 (58.3%)	36	36 (100.0%)	<0.001
EMS	20	10 (50.0%)	37	32 (86.5%)	0.005
Great deal of stress because of my job (agree, agree strongly)					
Nurse	11	10 (90.9%)	36	20 (55.6%)	0.039
EMS	20	17 (85.0%)	36	19 (52.8%)	0.021
Control over my workload (satisfactory, good, optimal)					
Nurse	12	5 (41.7%)	36	25 (69.4%)	0.101
EMS	20	10 (50.0%)	37	30 (81.1%)	0.032
Time available for documentation (satisfactory, good, optimal)					
Nurse	12	4 (33.3%)	36	25 (69.4%)	0.041
EMS	20	9 (45.0%)	35	30 (85.7%)	0.002
Work atmosphere description (very busy, hectic-chaotic)					
Nurse	11	9 (81.8%)	35	14 (40.0%)	0.035
EMS	20	12 (60.0%)	35	8 (22.9%)	0.009
Value alignment with institution/employer leadership (agree, strongly agree)					
Nurse	12	6 (50.0%)	35	23 (65.7%)	0.493
EMS	20	6 (30.0%)	36	27 (75.0%)	0.002
Degree patient care team works efficiently together (satisfactory, good, optimal)					
Nurse	12	11 (91.7%)	36	35 (97.2%)	0.441
EMS	20	14 (70.0%)	36	35 (97.2%)	0.006
Amount of time spent on EMR at home (moderately high, excessive)					
Nurse	12	3 (25.0%)	36	4 (11.1%)	0.345
EMS	19	7 (36.8%)	32	1 (3.1%)	0.003
Proficiency with EMR use (satisfactory, good, optimal)					
Nurse	12	9 (75.0%)	35	32 (91.4%)	0.164
EMS	19	17 (89.5%)	33	25 (75.8%)	0.293

Bold face indicates statistical significance (p < 0.05).

Table 5

Impact of burnout and knowledge/availability of supportive infrastructure by profession.

Impact of burnout and supportive infrastructure	Burnout		Not burned out		p Value
	N	N (%)	N	N (%)	
Burnout is important to the well-being of medical professionals					
Nurse	12	12 (100.0%)	36	36 (100.0%)	-
EMS	20	20 (100.0%)	37	36 (97.3%)	1.000
Burnout is a potential barrier to the provision of patient care					
Nurse	12	11 (91.7%)	36	35 (97.2%)	0.441
EMS	20	20 (100.0%)	37	37 (100.0%)	-
Aware of programs designed to prevent the development of burnout in healthcare professionals					
Nurse	12	3 (25.0%)	36	13 (36.1%)	0.725
EMS	20	7 (35.0%)	36	14 (38.9%)	1.000
Aware of programs or processes that focus on supporting healthcare practitioners who may be experiencing burnout					
Nurse	12	3 (25.0%)	36	12 (33.3%)	0.728
EMS	20	5 (25.0%)	34	10 (29.4%)	1.000
Programs or processes designed to identify burnout readily available to you					
Nurse	12	0 (0.0%)	36	6 (16.7%)	0.315
EMS	20	1 (5.0%)	37	10 (27.0%)	0.076
Likely to participate in program(s) designed to prevent, or support healthcare practitioners who develop burnout					
Nurse	12	7 (58.3%)	36	20 (55.6%)	1.000
EMS	20	7 (35.0%)	36	15 (41.7%)	0.777