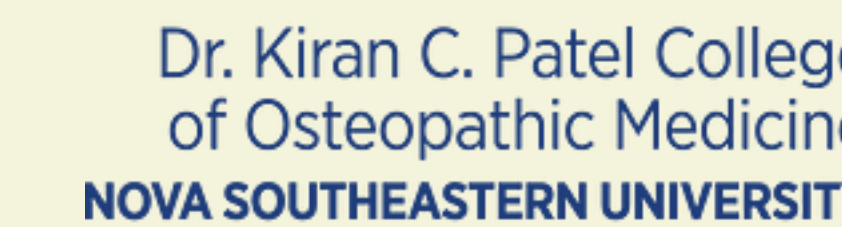
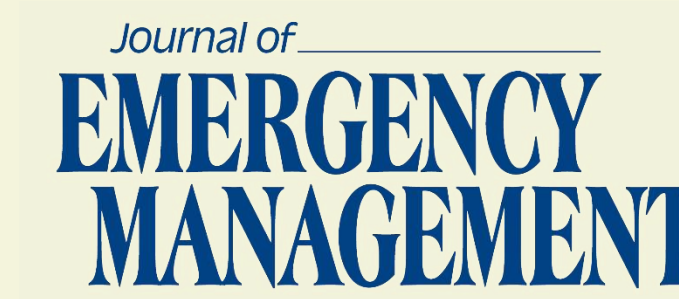


Stressors and Mental Health Survey of Emergency Management Professionals

Factors in Recruiting and Retaining Emergency Managers

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Abstract

Emergency Managers (EMs) have a unique set of mental health stressors compared to other professions. Early 2019 anecdotal information from the field combined with data from a *Journal of Emergency Management* (JEM) Higher Ed Survey conducted in 2017 suggested an accelerating rate of Emergency Managers leaving the field for other professions or leaving the field completely. Additional communication from practitioners in the field, before and during the pandemic, suggested that these unique stressors on EMs were compounding the exodus from the field.

Trained seasoned EMs do not emerge from higher ed but are the product of years of higher education and experiential knowledge. The current rate of departure portends a shortage of trained EMs in the near future.

The JEM Stressors and Mental Health Survey (SMHS) was designed to quantify the mental health of emergency managers using the validated Secondary Traumatic Stress Scale (STSS). The Emergency Response Questionnaire (ERQ), a validated survey, is used to confirm personality type of the respondent. Organizational type, education, and many other factors are assessed to determine their effect on the EM's mental health, their ability to function efficiently and effectively, and their propensity to leave the field.

The data collected will be used to establish baselines and support analysis and research on how we can better lead, support, recruit, retain, and grow as emergency management professionals and organizations capable of meeting the increasing demands of tomorrow.

Objectives and Future Goals

- Determine the current state of mental health of emergency managers in the field as defined using the Secondary Traumatic Stress Scale.
- Determine the contributing factors to EM's mental health including organizational culture, stress relief and mental hygiene, impact of personal stressors, years of education, age, years in the field, etc.
- Determine if STSS and other factors contribute to the (perceived) exodus of EMs in the field.
- Identify potential solutions to increase Emergency Manager's resilience, capacity, and capability as disasters/emergencies increase in size, scope, scale, and complexity.
- Determine and quantify the stressors on emergency management professionals.
- Determine if self-efficacy tracks experience and knowledge and if mental health affects decision making skills.
- Collect and report on various survey responses from EMs.
- Compare and contrast JEM SMHS data against CDC's Mental Health benchmarks.

Methods & Analysis

- A 153-question survey was constructed in Kobo Toolbox utilizing the STSS and ERQ abbreviated survey instruments to assess mental health and personality type.
- Eight email invitations were created and sent to ~22,000 contacts from the *Journal of Emergency Management* subscriber and EM prospect database.
- Multiple social media posts were used to drive EMs to take survey.
- Survey data collection ran from October 16, 2021, through March 30, 2022.
- We performed statistical analyses using SPSS version 28.01 (IBM Corp, Armonk, NY). Statistical significance was defined as $p < 0.05$.
- For bivariate analyses we used Pearson's χ^2 2-tailed tests. We tested for differences in respondent characteristics between respondents who reported considering leaving the field of emergency management before and/or during the COVID-19 pandemic.
- We dichotomized continuous data Secondary Traumatic Stress Scale index scores, Emergency Response Questionnaire index scores, and Organizational Culture index scores at the median, and we included them in analyses with respondents' categorical variables addressing race, sex, age category, number of major disasters managed, time spent in their primary position, and highest level of education.
- To further explore the possible associations between STSS, ERQ, and respondent characteristics on the odds of considering leaving the field, we included these variables in a logistic regression model.

Characteristics and Predictors

Table 1: Characteristics of Respondents to the JEM Mental Health Survey for Emergency Management and Affiliated Professions, United States of America, 2022 (n=1,008)

Respondent Characteristics	Median ^a	Inter-Quartile Range
Secondary Traumatic Stress Scale Index	0.06	-0.82 0.75
Emergency Response Questionnaire Index	0.04	-0.62 0.71
Organizational Culture Index – Negative Culture ^b	-0.10	-0.81 0.70
	n ^c	%
Considering Leaving the Field before or during the Pandemic		
No before and no during	310	30.80%
Yes before and/or during	698	69.20%
Race		
Asian	22	2.20%
Black	40	4.00%
Caucasian	844	85.00%
Hispanic	51	5.10%
Other	36	3.60%
Sex		
Female	461	46.20%
Male	536	53.80%
Age Category		
18-35 Years old	174	17.60%
36-45 Years old	246	24.90%
46-55 Years old	296	30.00%
56+ Years old	270	27.40%
How Many MAJOR Disasters Have You Directly Managed as Incident Commander or Equivalent Emergency Management Leadership Position?		
0 Disasters	410	40.70%
1-2 Disasters	213	21.20%
3-5 Disasters	146	14.50%
6-10 Disasters	96	9.50%
10+ Disasters	142	14.10%
How Long Have You Been in Your Primary Position?		
0-1 Year	82	8.20%
2-5 Years	278	27.90%
6-10 Years	203	20.30%
11-15 Years	132	13.20%
16-20 Years	105	10.50%
20+ Years	198	19.80%
Highest Level of Education		
Fire, police, military, or other training	35	3.50%
High school graduate or less than college	150	15.00%
Bachelor's degree	267	26.60%
Graduate degree (masters or doctorate)	551	54.90%

^a The Secondary Traumatic Stress Scale, Emergency Response Questionnaire, and Organizational Culture index scores were computed using principal component analysis. Reporting means and standard deviations would result in each variable having a mean of 0 and a standard deviation of 1. Therefore, we present a median and an inter-quartile range to report each index score's central tendency and spread.
^b Given the association we found between poor organizational culture and greater odds of considering leaving the field, we provide an inverse version of the organizational culture index score to facilitate interpretation and communication of our findings.
^c Some variables do not total 1,008 due to some cases missing data outside of the primary variable of interest.

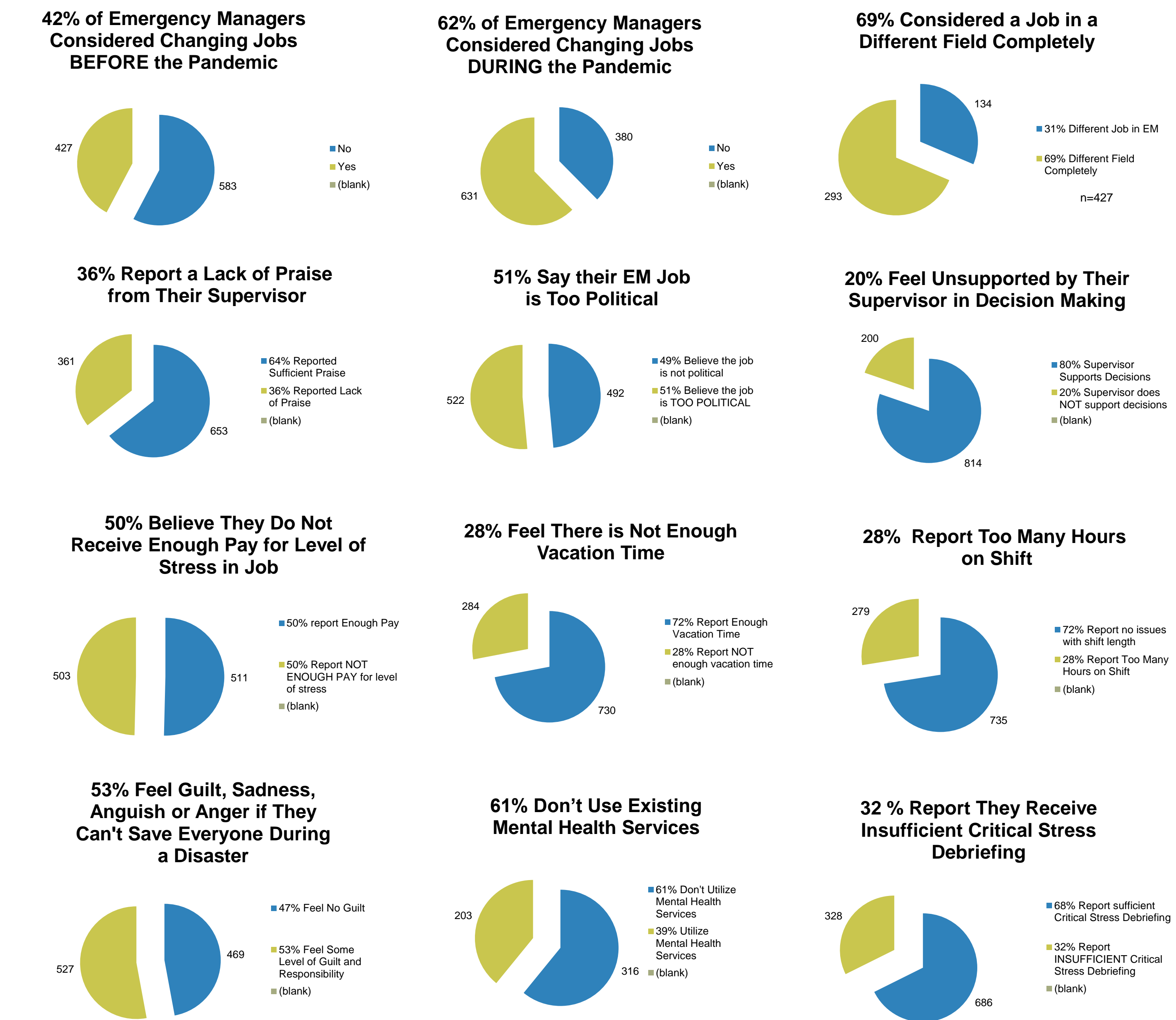
Table 2: Predictors of Considering Leaving the Field before or during the COVID-19 Pandemic among Respondents to the JEM Mental Health Survey for Emergency Management and Affiliated Professions, United States of America, 2022 (n=1,008)

Respondent Characteristics	No before and no during [n (%)] ^a	Yes before and/or yes during [n (%)] ^a	p value ^b	AOR (95% CI)
Secondary Traumatic Stress (STS) Index				
Lower STS	211 (43.60%)	273 (56.40%)	<.001	1.00
Higher STS	84 (17.20%)	404 (82.80%)		2.848 (2.015-4.025)**
Emergency Response Questionnaire (ERQ) Index				
Lower ERQ	131 (26.70%)	360 (73.30%)	.014	1.00
High ERQ	167 (33.90%)	326 (66.10%)		0.875 (0.628-1.22)
Organizational Culture Index – Negative Culture ^c				
Better culture	216 (43.90%)	276 (56.10%)	<.001	1.00
Poorer culture	83 (16.80%)	412 (83.20%)		2.892 (2.058-4.063)**
Race				
Asian	4 (18.20%)	18 (81.80%)	.218	1.407 (0.421-4.701)
Black	14 (35.00%)	26 (65.00%)		1.114 (0.484-2.567)
Caucasian	255 (30.20%)	589 (69.80%)		1.00
Hispanic	20 (39.20%)	31 (60.80%)		0.553 (0.28-1.091)
Other	15 (41.70%)	21 (58.30%)		0.516 (0.216-1.232)
Sex				
Female	131 (28.40%)	330 (71.60%)	.103	1.00
Male	178 (33.20%)	358 (66.80%)		1.11 (0.796-1.55)
Age Category				
18-35 Years old	29 (16.70%)	145 (83.30%)	<.001	2.791 (1.538-5.068)**
36-45 Years old	61 (24.80%)	185 (75.20%)		1.484 (0.925-2.381)
46-55 Years old	92 (31.10%)	204 (68.90%)		1.477 (0.976-2.235)
56+ Years old	123 (45.60%)	147 (54.40%)		1.00
How Many MAJOR Disasters Have You Directly Managed as Incident Commander or Equivalent Emergency Management Leadership Position?				
0 Disasters	127 (31.00%)	283 (69.00%)	.263	1.00
1-2 Disasters	65 (30.50%)	148 (69.50%)		1.212 (0.791-1.856)
3-5 Disasters	35 (24.00%)	111 (76.00%)		1.882 (1.123-3.152)*
6-10 Disasters	32 (33.30%)	64 (66.70%)		1.275 (0.678-2.396)
10+ Disasters	51 (35.90%)	91 (64.10%)		1.314 (0.787-2.195)
How Long Have You Been in Your Primary Position?				
0-1 Year	14 (17.10%)	68 (82.90%)	<.001	2.781 (1.299-5.955)*
2-5 Years	69 (24.80%)	209 (75.20%)		1.446 (0.858-2.434)
6-10 Years	52 (25.60%)	151 (74.40%)		1.693 (0.99-2.896)
11-15 Years	50 (37.90%)	82 (62.10%)		0.766 (0.442-1.327)
16-20 Years	34 (32.40%)	71 (67.60%)		1.175 (0.652-2.117)
20+ Years	87 (43.90%)	111 (56.10%)		1.00
Highest Level of Education				
Fire, police, military, or other training	19 (54.30%)	16 (45.70%)	<.001	1.00
High school graduate or less than college	63 (42.00%)	87 (58.00%)		2.108 (0.848-5.244)
Bachelor's degree	82 (30.70%)	185 (69.30%)		2.812 (1.173-6.741)*
Graduate degree (masters or doctorate)	144 (26.10%)	407 (73.90%)		3.534 (1.507-8.287)*

STSS Secondary Traumatic Stress Scale, ERQ Emergency Response Questionnaire, AOR adjusted odds ratio, CI confidence interval
^a Some variables do not total 1,008 due to some cases missing data outside of the primary variable of interest.
^b Pearson's Chi square
^c Given the association we found between poor organizational culture and greater odds of considering leaving the field, we provide an inverse version of the organizational culture index score to facilitate interpretation and communication of our findings.
 * Significant at the $p < 0.05$ level
 ** Significant at the $p < 0.001$ level

STSS Score Interpretation n=955			
	Frequency	Percent	Valid Percent
Little or No STS	450	47.1	47.1
Mild STS	225	23.6	23.6
Moderate STS	113	11.8	11.8
High STS	77	8.1	8.1
Severe STS	90	9.4	9.4
Total	955	100.0	100.0

Trends in the Field



3X More Likely to Leave Field - Emergency Managers with untreated or undertreated Secondary Traumatic Stress are almost three times more likely to leave the field!

Organizational Culture directly impacts an Emergency Manager's mental health and their propensity to leave their job or their field completely.

52.9% of respondents have **MILD-SEVERE Secondary Traumatic Stress**
29.3% of survey respondents have **MODERATE-SEVERE Secondary Traumatic Stress**, n=955

Results

- We found significant differences between respondents reporting considering leaving the field before and/or during the COVID-19 pandemic in terms of STSS, ERQ, organizational culture, age category, length of time in primary position, and highest level of education. $p < 0.05$
- Through logistic regression analysis, we found that respondents with higher STSS, respondents identifying their places of work as having poorer organizational culture, respondents between the ages of 18-35, respondents who had been in their primary position for one year or less, and respondents with bachelors' degrees had nearly three times the odds of reporting considering leaving the field. $p < 0.05$
- Respondents with graduate degrees had nearly four times the odds of reporting leaving the field. $p < 0.05$
- Respondents who had directly managed between three and five disasters had nearly two times the odds of reporting considering leaving the field. $p < 0.05$