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BRIEF REPORT

Physician Wellness

Factors influencing emergency medicine worker shift satisfaction: A rapid assessment of wellness in the emergency department

Brooke Senken MD[1,2] | **Julie Welch MD**[1,3] | **Elisa Sarmiento MSPH**[1] | **Elizabeth Weinstein MD**[1,2] | **Emma Cushman BS**[4] | **Heather Kelker MD**[1,2]

[1]Department of Emergency Medicine, Indiana University School of Medicine, Indianapolis, Indiana, USA

[2]Department of Emergency Medicine, Riley Children's Hospital Indiana University Health, Indianapolis, Indiana, USA

[3]Indiana University School of Medicine, Indiana Clinical and Translational Sciences Institute, Indianapolis, Indiana, USA

[4]Butler University, Indianapolis, Indiana, USA

Correspondence
Julie Welch, Department of Emergency Medicine, Indiana University School of Medicine, Indianapolis, IN, USA.
Email: jlwelch@iu.edu

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Abstract

Objectives: In emergency medicine (EM), the interplay of wellbeing and burnout impacts not only patient care, but the health, productivity, and job satisfaction of EM healthcare workers. The study objective was to use a rapid assessment tool to identify factors that impact EM worker satisfaction, or "wellness," while on shift in the emergency department (ED) and the association with role and level of satisfaction.

Methods: This prospective descriptive study utilized a QR-code-based electronic survey instrument that included a 7-point Likert shift satisfaction score. A voluntary response sampling was obtained from EM workers at five EDs. Respondents self-reported role and work site. Association and logistic regression analysis were performed.

Results: Of 755 responses, 467 were dissatisfied (score ≤ 5) and 288 were satisfied (score ≥ 6) with their shifts. Physicians reported higher satisfaction on shift than nurses (OR 2.77, 95% CL 2.01–3.81, $p < 0.01$). Factors associated with dissatisfied responses included: admission or transfer process (OR 0.40, CL 0.21–0.77, $p < 0.01$), boarding patients (OR 0.13, CL 0.06–0.27, $p < 0.01$), tools to do my job (OR 0.65, CL 0.46–0.90, $p = 0.01$), and patient flow (OR 0.72, CL 0.53–0.98, $p = 0.04$). Factors linked to a satisfied response included: teaching/learning (OR 2.85, CL 1.86–4.37, $p < 0.01$) and team/coworker interaction (OR 8.92, CL 6.14–12.96, $p < 0.01$).

Conclusions: Satisfaction on shift for EM physicians, nurses, and staff differ and are associated with multiple identifiable factors. Focused attention to work environment and operations could help mitigate on-shift dissatisfaction. Endeavors aimed at cultivating and enhancing a supportive teaching and learning environment with an emphasis on team member and coworker interaction could positively impact and improve wellness.

KEYWORDS
burnout, job satisfaction, nursing staff, physicians, wellness, working conditions

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1 | INTRODUCTION

1.1 | Background

For healthcare workers, wellbeing is complex, multifactorial, and when compromised contributes to burnout.[1,2] Burnout is not physician exclusive but affects the entire healthcare team.[3] Emergency medicine (EM) has the highest level of physician burnout among specialties reaching over 60%.[4] This rate almost doubles that of the general US working population.[5] Burnout among EM stems from the nature of the work, which is inherently stressful due to the fast pace, patient acuity, challenging patient interactions, uncertainty in diagnoses, productivity demands, shift work, and high litigation risk.[3,6,7,8–10]

1.2 | Importance

The literature describes the negative impact of healthcare burnout on the individual and the system. Physician burnout is associated with mental health concerns, substance use, and attrition.[5,11–16] In addition, burnout adversely affects quality of care, patient satisfaction, and medical errors rates.[1,8,9,17]

While healthcare provider wellbeing is more than just the absence of burnout,[2] creating a culture of wellbeing in a healthcare system can potentially combat burnout and subsequent outcomes.[9] Wellbeing can be synonymous with professional fulfillment, which encompasses job satisfaction, self-efficacy, and meaningful work.[6,9,16] Professional fulfillment has been linked to fewer patient complaints, higher quality of care, fewer medical errors, reduced medical liability risk, and lower physician attrition.[16] However, translating *how* to create a culture of wellbeing in the emergency department (ED), and *how* to measure this in real-time, remains elusive. Thus far, healthcare worker wellbeing, professional fulfillment, and burnout have been measured using an array of validated tools.[9,16,18–20] However, none of these tools reflect real-time shift satisfaction in the ED. To fill this gap, we developed and piloted a rapid assessment tool (shift satisfaction score) to measure and identify factors impacting job satisfaction while on shift in the clinical ED work environment.[21]

1.3 | Goals of this investigation

The primary objective of this study was to use a novel rapid assessment tool across multiple EM worker roles to identify factors impacting job satisfaction, or "wellness," while on shift. The secondary objective was to examine the association between these factors, worker role, and level of shift satisfaction.

The Bottom Line

Job satisfaction of emergency medicine healthcare workers is a crucial component to combating burnout. Our study assessed the on-shift satisfaction, or "wellness," of physicians, nurses and staff in the emergency department. Physicians reported overall higher shift satisfaction than nurses. Several work environmental and operational factors were associated with on shift satisfaction for the emergency medicine team. Emergency healthcare workers need the tools to do their jobs, patient overcrowding to be addressed, operations to run smoothly and efficiently, and a work environment that cultivates camaraderie, teamwork and education.

2 | METHODS

2.1 | Study design and setting

This prospective descriptive study included a voluntary response sample of EM workers piloted across five academic and community EDs within two healthcare systems. This included two academic trauma centers, one academic pediatric trauma center, and two suburban community hospitals. The institutional IRB approved this study.

2.2 | Selection of participants

Participants were ED shift workers including attending physicians, learners (e.g., fellows, residents, medical students), nurses, and ancillary staff (e.g., paramedics, medical technicians, environmental service workers, and unit secretaries). All personnel were eligible to voluntarily complete the survey during or after any shift.

2.3 | Measurements and outcomes

Data were collected anonymously using an electronic QR code-based survey instrument from May 2021 to May 2022. The QR code was attached to workstations throughout the EDs. Participants were limited to one survey response per shift.

The survey instrument was developed via a modified Delphi method with experts from occupational psychology and EM.[21] Data collected included provider role and ED site. Additional demographic data were not collected to protect anonymity and encourage participation. Question one (Q1) asked, "Overall, how satisfied were you with your shift today?" A 7-point Likert scale measured the level of satisfaction with 1 = very dissatisfied to 7 = very satisfied. Question two (Q2) assessed, "What are the main factors that you considered when rating your level of satisfaction with your shift today?" A dropdown menu, derived from prior qualitative themes,[21] allowed selection of one or more factors including: acuity, admission or transfer process, boarding patients, code/death/trauma/medical alert, equipment/stocking/tools to do my job, interaction with admitting team(s), interaction with consultant(s), interaction with patient/parent(s), opportunity for procedures, patient flow through department, patient volume/census, personal reasons, physical space, staffing, supervisors/leadership, teaching/learning,

team/coworker interaction, time to results (lab/rad reads), and other (open comment box) (Supporting Information, Appendix 1).

2.4 | Data analysis

Level of satisfaction (Q1) was categorized into two binary groups based on numeric score (ie, dissatisfied [score ≤ 5]; satisfied [score ≥ 6]). Binary analysis was utilized with a cut-off point of ≥6 to capture those workers who were distinctly satisfied with their shift (ie, 6 = satisfied and 7 = very satisfied). The more ambiguous responses of ≤5 (ie, 5 = somewhat satisfied, 4 = neutral) were included in the dissatisfied binary group. To test for differences between groups, the Chi-square or Fisher's exact tests were used. Qualitative analysis of Q2 open comments was performed by two authors using inductive thematic coding to identify additional themes. Logistic regression was used to determine the association between level of satisfaction and provider role and factors. The models were unadjusted, and no covariates were included. All statistical analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC).

3 | RESULTS

3.1 | Characteristics of study participants

Of the 755 survey responses, 400 were completed by nurses, 143 by attending physicians, 144 by learners, and 68 by ancillary staff across all five ED sites.

3.2 | Main results

Of the responses, 467 (62.1%) reported dissatisfied shift scores (≤5) and 288 (38.2%) reported satisfied scores (≥6). Of all roles, nurses were more likely to be dissatisfied (38.2 vs. 10.8–28.5%, $p < 0.01$). Factors linked to shift dissatisfaction included: admission or transfer process (9.9 vs. 4.2%, $p < 0.01$), boarding patients (18.2 vs. 2.8%, $p < 0.01$), equipment/stocking/tools to do my job (32.8 vs. 24.0%, $p = 0.01$), and patient flow through the department (40.3 vs. 32.6%, $p = 0.04$). Factors linked to a satisfied response included teaching/learning (21.5 vs. 8.8%, $p < 0.01$) and team/coworker interaction (85.1 vs. 39.0%, $p < 0.01$). For "other" responses, no additional themes were identified in the open comments (Table 1).

Physicians, including learners, in comparison with nurses were more likely to provide a satisfied response (odds ratio [OR] 2.77, 95% confidence limits [CL] 2.01–3.81, $p < 0.01$). There was no difference between learners and attending physicians in terms of odds of providing a satisfied response (Table 2).

The odds of responding dissatisfied were statistically significant if the following factors were selected: admission or transfer process (OR 0.40, CL 0.21–0.77, $p < 0.01$), boarding patients (OR 0.13, CL 0.06–0.27, $p < 0.01$), equipment/stocking/tools to do my job (OR 0.65, CL 0.46–0.90, $p = 0.01$), patient flow through the department (OR 0.72, CL 0.53–0.98, $p = 0.04$). The odds of responding satisfied were significant if the following factors were selected: teaching/learning (OR 2.85, CL 1.86–4.37, $p < 0.01$) or team/coworker interaction (OR 8.92, CL 6.14–12.96, $p < 0.01$) (Table 2).

Factors associated with a satisfied or dissatisfied response were also dependent on the respondent's role. Both nurses and attending physicians were more likely to be dissatisfied if they selected boarding patients (OR 0.19, CL 0.07–0.48, $p < 0.01$; OR 0.04, CL 0.01–0.33, $p < 0.01$, respectively). Attending physicians were also more likely to be dissatisfied if they selected patient flow through the department (OR 0.21, CL 0.10–0.45, $p < 0.01$). Both nurses and physicians were more likely to be satisfied if they chose teaching/learning (OR 2.39, CL 1.16–4.92, $p = 0.02$; OR 4.96, CL 1.84–13.33, $p < 0.01$, respectively) or team/coworker interaction (OR 10.44, CL 5.68–19.17, $p < 0.01$; 11.60, CL 5.25–25.62, $p < 0.01$, respectively). Finally, learners were more likely to be satisfied if they chose team/coworker interaction (OR 7.84, CL 3.49–17.59, $p < 0.01$) (Table 2).

4 | LIMITATIONS

Our study had several limitations. The survey was voluntary, and participation was subject to sampling bias, selection/participation bias, and nonresponse bias. There were no personal identifiers added to keep with the anonymity of the survey and to encourage participation; therefore, it is possible for one respondent to have completed the survey more than once during a shift, although we believe that the likelihood of that happening is low. Survey fatigue may have impacted the number of responses. The survey tool itself was developed to fill a gap for real-time assessment tools. Although this tool was developed using a modified Delphi technique and piloted,[21] it is not yet validated. Two of the five sites studied were academic teaching hospitals, which may have skewed results. Furthermore, the responses to Q2 may be subject to interpretation bias as the inherent wording of the question does not specify if respondents who chose "somewhat satisfied" are indicating that the factors chosen influenced their satisfaction or dissatisfaction. Finally, the study was conducted in one state; however, there were both academic and community sites within two systems.

5 | DISCUSSION

To our knowledge, this is the first study to examine the association of on-shift ED factors with shift satisfaction and EM healthcare worker roles. Many studies have highlighted the alarmingly high rate of burnout in the field of EM. Yet many of these studies focused on workers' overall sense of burnout and wellness and have not looked at the day-to-day shift factors, which cumulatively can promote or detract from job satisfaction and professional fulfillment. Daily shift satisfaction is a crucial element for overall wellbeing, job satisfaction, and turnover in EM.[11] While job satisfaction is one subcategory of wellbeing, it is often linked to resource factors, clerical workload, efficiency,

TABLE 1 Association of level of shift satisfaction with emergency department worker role and factors in the emergency department.

	Dissatisfied (score ≤ 5)	Satisfied (score ≥ 6)	
	N total = 755 *N* (%)		*p* value*
Role in the emergency department (ED)			
Nursing	290 (62.1)	110 (38.2)	<0.01*
Attending physicians	78 (16.7)	65 (22.6)	
Learners	62 (13.3)	82 (28.5)	
Ancillary staff	37 (7.9)	31 (10.8)	
Factors in the ED (selected)			
Acuity of patients	120 (25.7)	61 (21.2)	0.16
Admission or transfer process	46 (9.9)	12 (4.2)	<0.01*
Boarding patients	85 (18.2)	8 (2.8)	<0.01*
Code/death/trauma/medical alert	37 (7.9)	14 (4.9)	0.10
Equipment/stocking/tool to do my job	153 (32.8)	69 (24.0)	0.01*
Interaction with admitting team(s)	44 (9.4)	25 (8.7)	0.73
Interaction with consultant(s)	31 (6.6)	28 (9.7)	0.13
Interaction with patient/parent(s)	113 (24.2)	75 (26.0)	0.57
Opportunity for procedures	0 (0.0)	1 (0.4)	0.38
Other	24 (5.1)	6 (2.1)	0.04*
Patient flow through the department	188 (40.3)	94 (32.6)	0.04*
Patient volume/census	225 (48.2)	147 (51.0)	0.44
Personal reasons	26 (5.6)	12 (4.2)	0.39
Physical space	1 (0.2)	0 (0.0)	0.43
Staffing	193 (41.3)	120 (41.7)	0.93
Supervisors/leadership	71 (15.2)	49 (17.0)	0.51
Teaching/learning	41 (8.8)	62 (21.5)	<0.01*
Team/coworker interaction	182 (39.0)	245 (85.1)	<0.01*
Time to results (lab/rad reads)	91 (19.5)	48 (16.7)	0.33

This table reports the association of level of shift satisfaction with emergency department (ED) worker role and ED factors (ie, environmental and operational factors). The level of shift satisfaction was categorized into two groups based on a possible score of 1–7 (ie, dissatisfied [score ≤ 5]; satisfied [score ≥ 6]). Chi-square and Fisher's Exact tests were used to test for differences between groups. *p* Value of <0.05 indicates significance.
*Estimated using Chi-square and Fisher's Exact tests ($p < 0.05$ indicates significance).

relationships, and control.[2,6,12,22,23] By acknowledging the complexity in defining provider wellbeing, we chose to focus on the intersection of wellness and the clinical work environment to identify factors that impact shift satisfaction by role.

Our results highlight major factors that are positively associated with EM shift satisfaction and subsequently wellness. Teaching and learning opportunities as well as interactions with colleagues and coworkers both positively influenced shift satisfaction. Interestingly, both nurses and attending physicians had greater odds of being satisfied on shift if they were engaged in teaching or learning (2.39 times and 4.96 times, respectively). With the ever-changing field of medicine, it is clinically important to acknowledge and understand new information and implement it into practice. Our results reflect this eagerness to learn and stay up-to-date on medical practice. Encouraging an inquisitive learning environment for all roles and supporting endeavors that promote teaching and learning should be considered in ED settings. Education can easily be incorporated into shifts without disruption in workflow or operations. These teaching and learning interactions may also promote camaraderie among team members and allow for a culture that values asking questions and learning from mistakes without negative repercussions.

We were encouraged to find that shift satisfaction related strongly to team member interactions. The odds of nurses choosing a satisfied response were 10.44 times greater if they experienced supportive and encouraging team and coworker interactions. This trend continued for physicians with the odds of attendings and learners reporting a higher shift satisfaction, 11.60 and 7.84, respectively, in the setting of positive team interactions. High functioning care teams have strong foundations in closed-loop communication, effective leadership, and psychological safety in providing feedback or asking questions.[24]

TABLE 2 Odds of emergency medicine worker satisfaction on shift by role and associated emergency department factors.

	Odds ratio (event = satisfied)	95% confidence limits (CL)	*p* value*
Role			
Learners[a] vs. attending physicians (Ref)	1.59	1.00–2.53	0.05
Physicians vs. nurses (Ref)	2.77	2.01–3.81	<0.01*
Factors in ED (event = selected)			
Admission or transfer process	0.40	0.21–0.77	<0.01*
Boarding patients	0.13	0.06–0.27	<0.01*
Equipment/stocking/tool to do my job	0.65	0.46–0.90	0.01*
Other	0.39	0.16–0.97	0.04*
Patient flow through the department	0.72	0.53–0.98	0.04*
Teaching/learning	2.85	1.86–4.37	<0.01*
Team/coworker interaction	8.92	6.14–12.96	<0.01*
Factors in ED (event = selected) by role			
Admission or transfer process			
Nurses	0.41	0.16–1.09	0.07
Attending physicians	0.40	0.12–1.32	0.13
Learners	0.55	0.12–2.56	0.45
Boarding patients			
Nurses	0.19	0.07–0.48	<0.01*
Attending physicians	0.04	0.01–0.33	<0.01*
Learners	0.37	0.03–4.18	0.42
Equipment/stocking/tool to do my job			
Nurses	0.68	0.42–1.10	0.12
Attending physicians	0.36	0.15–0.85	0.02*
Learners	2.37	0.93–6.06	0.07
Other			
Nurses	0.45	0.13–1.57	0.21
Attending physicians	0.59	0.05–6.70	0.67
Learners	0.75	0.10–5.48	0.78
Patient flow through the department			
Nurses	0.72	0.45–1.15	0.17
Attending physicians	0.21	0.10–0.45	<0.01*
Learners	1.29	0.65–2.54	0.47
Teaching/learning			
Nurses	2.39	1.16–4.92	0.02*
Attending physicians	4.96	1.84–13.33	<0.01*
Learners	2.15	0.94–4.92	0.07
Team/coworker interaction			
Nurses	10.44	5.68–19.17	<0.01*
Attending physicians	11.60	5.25–25.62	<0.01*
Learners	7.84	3.49–17.59	<0.01*

In this table, logistic regression was used to determine the odds (reported as odds ratio [OR] with 95% confidence limits (CL)] of shift satisfaction by ED worker role and ED factors. An OR of >1.0 is associated with a satisfied shift score (ie, score ≥6), while an OR of <1.0 indicates a negative association with shift satisfaction (ie, dissatisfied score of ≤5). *p* Value of <0.05 indicates significance.

[a]Learners include residents, fellows, and medical students.

*Estimated using logistic regression ($p < 0.05$ indicates significance).

These findings stress the importance of implementing and maintaining endeavors that create an inclusive, supportive, and respectful environment. It could include team building exercises and developing policies and practices that promote communication and team interactions. The ED setting can make working with consistent care teams challenging, so efforts to bolster camaraderie, such as shift huddles and debriefing, are important.

Factors associated with shift dissatisfaction fell into two main categories: operational and resources. Admission or transfer processes, boarding patients in the ED, and patient flow through the department are operational processes and metrics. Healthcare team members also need the equipment, tools, and supplies available to do their jobs effectively, and stocking issues can cause frustration and compromise patient care. Our findings imply that focused interventions are needed to address these factors. Maximizing ED efficiency and resource availability, particularly equipment supply, are such interventions.

We found differences in shift satisfaction based on roles. Notably, nurses tended to be more dissatisfied on shift compared with physicians and ancillary staff. We hypothesize that this could be secondary to nurses being heavily loaded with operational tasks, some of which may be unpleasant for patients, such as invasive lines or tubes and lab draws. This could also be due to challenging patient and family interactions and repeated traumatic stress, as nurses often spend more time at the bedside than other roles. Additionally, due to staffing shortages impacting hospitals nationwide, nurses may be carrying excessive patient loads leading to more work, less time for breaks, and additive stress on shift.[25–27] Physicians were almost three times more likely to be satisfied on shift than nurses. This may be due to the nature of their interactions with patients and team members and/or related to having time for teaching on shift.

For physicians, we did not find any difference in shift satisfaction between attendings and learners. Both noted positive shift satisfaction linked to teaching and learning opportunities and impactful colleague interactions. Dissatisfaction was found with operational metrics and equipment supply issues. Such factors could help guide training programs as they address wellness and its impact on learner burnout and ED care.[7,28,29] These findings can also be used to assist healthcare systems in lower income countries who are not immune to burnout and face similar hurdles as it relates to healthcare worker wellness.[30]

In summary, work environmental and operational factors have a considerable impact on shift satisfaction in the ED. EM physicians, nurses, and staff need tools to do their jobs, operations to run smoothly and efficiently, and an environment that supports teamwork and education. Practices that encourage camaraderie, quality team interactions, and teaching could positively impact shift wellbeing. Our study identifies specific areas of focus for ED and hospital directors to help mitigate job dissatisfaction and subsequent burnout. Further studies are needed to examine real-time targeted interventions to improve on-shift wellness for EM healthcare workers

AUTHOR CONTRIBUTIONS

B. S. and H. K. conceived the study and conceptual design of the project. B. S., J. W., E. S., E. W., E. C., and H. K. contributed to either the collection, analysis, and/or interpretation of the data. B. S. and H. K. drafted the manuscript and all authors contributed to the editing, revising, and final version. B. S., J. W., and H. K. take responsibility for the paper as a whole.

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CONFLICT OF INTEREST STATEMENT

The authors have no actual or potential conflict of interest in relation to this manuscript.

ORCID

Julie Welch MD https://orcid.org/0000-0002-3961-8401

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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AUTHOR BIOGRAPHY

Brooke Senken, MD, is a specialist in pediatric emergency medicine at Indiana University School of Medicine in Indianapolis, IN.