



Prevalence and Etiology of Burnout in a Community-Based Graduate Medical Education System: A Mixed-Methods Study

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BACKGROUND AND OBJECTIVES: Burnout rates among American physicians and trainees are high. The objectives of this study were: (1) to compare burnout rates among residents and faculty members of the graduate medical education (GME) programs sponsored by the University of Kansas School of Medicine-Wichita (KUSM-W) to previously published data, and (2) to evaluate the physicians' feedback on perceived causes and activities to promote wellness.

METHODS: Between April and May 2017, we surveyed 439 residents and core faculty members from 13 residency programs sponsored by the KUSM-W. The survey included the Abbreviated Maslach Burnout Inventory, two open-ended questions, and demographic questions. The authors used Kruskal-Wallis and Fisher exact tests to analyze the quantitative data, and an immersion-crystallization approach to analyze the open-ended data.

RESULTS: Forty-three percent of all respondents met the criteria for burnout, and the overall response rate was 50%. When compared with core faculty members, rates of burnout among residents were higher (51% vs 31%, $P < .05$). The immersion-crystallization approach revealed five interconnected themes as possible causes of burnout among physicians: work-life imbalance, system issues, poor morale, difficult patient populations, and unrealistic expectations. Promotion of healthy and mindfulness activities; enhanced program leadership; and administration, program, and system modification were identified as activities/resources that can promote wellness among physicians.

CONCLUSIONS: The findings show that burnout is prevalent among physicians within GME. Wellness and burnout prevention should be addressed at the beginning of medical training and longitudinally. Potential intervention should include activities that allow physicians to thrive in the health care environment.

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Burnout among health care professionals has been associated with a decrease in the quality of patient care,¹⁻³ an increase in the number of medical errors,^{4,5} and an increase in the risk of suicidal ideation, depression, and substance abuse.^{6,7} Health care

professionals experiencing burnout also have a stronger intention of leaving the medical profession via early retirement and/or career change.^{8,9} Shanafelt and colleagues' work documented increasing rates of burnout among all specialties studied between the years of 2011 and

2014.¹⁰ The impact of burnout on undergraduate medical education and graduate medical education (GME) has clarified that burnout begins early in the medical school experience⁷ and extends throughout GME. Publications in the lay press have called attention to the impact of burnout within GME, increasing public awareness of the toll burnout has on residents in training.¹¹ The focus on addressing wellness within GME has been further codified by the inclusion of wellness initiatives with the Accreditation Council for Graduate Medical Education's (ACGME) revision of Section VI of the Common Program Requirements.¹²

Our community-based medical campus sponsors 12 residency programs and one fellowship program, containing 280 residents. The purpose of this study was threefold: (1) to evaluate the level of burnout among both resident and faculty members of the GME programs sponsored by the University of Kansas School of Medicine-Wichita (KUSM-W); (2) to understand how the burnout rates among our residents and core faculty (as listed in ACGME Accreditation Data System [ADS]) compared to the previously published data^{7,10}; and (3) to evaluate the participants' opinions of the causes of burnout among their colleagues, and the solutions that they

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viewed as necessary to affect a positive change in their burnout experience.

Methods

In April and May 2017, we surveyed 439 residents and core faculty members from 13 residency programs sponsored by KUSM-W. Each resident and faculty received an email invitation to participate along with a link to a survey. The survey included items from the Abbreviated Maslach Burnout Inventory (MBI-9), two open-ended questions, and demographic information (career status, specialty, faculty status, years in practice, and year in residency). The KUSM-W Institutional Review Board granted an exemption for the study.

The MBI-9 is a validated nine-item questionnaire considered a criterion to measure manifestations of burnout.¹⁴⁻¹⁹ The survey included two open-ended questions to elicit the physicians' feedback on perceived causes of burnout and activities to promote wellness. The question "In your opinion, what are some of the causes of burnout among your peers?" was used to elicit the participants' perceived causes of burnout. The question, "What resources and/or activities would help professionals like you to promote wellness?" was used to identify possible resources and activities deemed helpful in promoting wellness among physicians.

Standard descriptive statistics, Fisher exact test, and Kruskal-Wallis test were used to analyze the quantitative data. The study team analyzed the content of the open-ended responses (qualitative data) individually and in two team meetings using an immersion-crystallization approach²⁰⁻²²—a dual process involving detailed review of textual data and momentarily suspending the immersion process to reflect on emerging findings until consistent themes are identified.^{20,21}

Results

Quantitative Results

The response rates were 50% (218/439) for all participants, 55% (87/159) for core faculty, and 47% (131/280) for residents. As shown in Table 1, 87 (40%) of the respondents were core faculty and 131 (60%) were residents. Sixty-nine (32%)

respondents were from the family medicine specialty, and 32 (37%) of the core faculty were full time, and paid by the sponsoring institution. Using the MBI-9 for assessment, 32% of all respondents had high emotional exhaustion, 31% high depersonalization, and 22% low personal accomplishment (Table 2). In

Table 1: Demographic Profile of Participants (N=218)

Demographic Profile of Participants	n (%)
Career Status	
Faculty	87 (39.9)
Resident-physician	131 (60.1)
Specialty	
Anesthesiology	23 (10.6)
Family medicine	69 (31.7)
Internal medicine	18 (8.3)
Medicine/pediatrics	9 (4.1)
Obstetrics/gynecology	18 (8.3)
Orthopaedic surgery	12 (5.5)
Pediatrics	14 (6.5)
Psychiatry	15 (6.9)
Radiology	14 (6.5)
Sports medicine fellowship	2 (0.9)
Surgery	23 (10.6)
Missing	1
Faculty Status	
Volunteer, part-time with KUSM-W	3 (3.4)
Volunteer, full-time with KUSM-W	13 (14.9)
Paid, part-time with KUSM-W	31 (35.6)
Paid, full-time with KUSM-W	32 (36.8)
Other	8 (9.2)
Years in Practice	
<1 year	1 (1.1)
1-5 years	12 (13.8)
6-10 years	27 (31.0)
11-15 years	15 (17.2)
≥16 years	32 (36.8)
Year in Residency	
PGY1	35 (26.7)
PGY2	37 (28.2)
PGY3	37 (28.2)
PGY4	18 (13.7)
PGY5	4 (3.1)

Table 2: Respondents' Burnout Rates

	All Participants (N=218)	All Core Faculty (n=87)	All Residents (n=131)	P Value
Burnout Dimensions^a				
Emotional Exhaustion				
Median score	7.0	7.0	8.0	.012
Low score	87 (39.9%)	43 (49.4%)	44 (33.6%)	.016
Intermediate score	62 (28.4%)	23 (26.4%)	39 (29.8%)	
High score	69 (31.7%)	21 (24.1%)	48 (36.6%)	
Depersonalization				
Median score	4.0	2.0	5.0	<.001
Low score	97 (44.5%)	55 (63.2%)	42 (32.1%)	<.001
Intermediate score	53 (24.3%)	17 (19.5%)	36 (27.5%)	
High score	68 (31.2%)	15 (17.2%)	53 (40.5%)	
Personal Accomplishment				
Median score	15.0	16.0	15.0	<.001
High score	135 (61.9%)	68 (78.2%)	67 (51.1%)	<.001
Intermediate score	35 (16.1%)	8 (9.2%)	27 (20.6%)	
Low score	48 (22.0%)	11 (12.6%)	37 (28.2%)	
Burned out^b	94 (43.1%)	27 (31.0%)	67 (51.1%)	.041

^a Assessed using the Abbreviated Maslach Burnout Inventory. The inventory assesses professional burnout across three dimensions: emotional exhaustion, depersonalization, and sense of personal accomplishment. Per standard scoring, scores of ≥ 11 on emotional exhaustion domain, ≥ 7 on the depersonalization domain, or ≤ 12 on personal accomplishment domain are considered to have high degree of burnout on that dimension.

^b High score on emotional exhaustion and/or depersonalization subscale of the MBI-9

aggregate, 43% of all respondents met the criteria for burnout (Table 2). When compared with core faculty members, rates of burnout among residents were higher (51% vs 31%, $P < .05$; Table 2).

Qualitative Results: Causes of Burnout

Of the 218 participants, 74% provided responses to the possible causes of burnout question. Five themes emerged as possible causes of burnout among physicians: work-life imbalance, system issues, poor morale, difficult patient populations, and unrealistic expectations (Table 3; Figure 1).

Qualitative Results: Wellness Promotion

Sixty-three percent of the 218 participants provided responses to the wellness promotion question. Three themes emerged as activities and resources that can promote wellness among physicians: promotion of

healthy and mindfulness activities; enhanced program leadership; and administration, program, and system modification (Table 4; Figure 1).

Discussion

This study illustrates burnout rates within GME programs sponsored by a community-based medical school. As 12 of the 13 sponsored programs are core rather than fellowships, these burnout rates of all participants further illustrate Shanafelt's data regarding burnout risk in front-line specialties.¹⁰ While our data correspond with previously published data, there are notable differences. The faculty burnout rate of 31% is lower than other published burnout rates among practicing physicians.^{10,18} Within the community-based GME model in our institution, the faculty are active in clinical responsibilities and patient care as well as academic responsibilities including teaching, supervision, and scholarly activities. Whether these

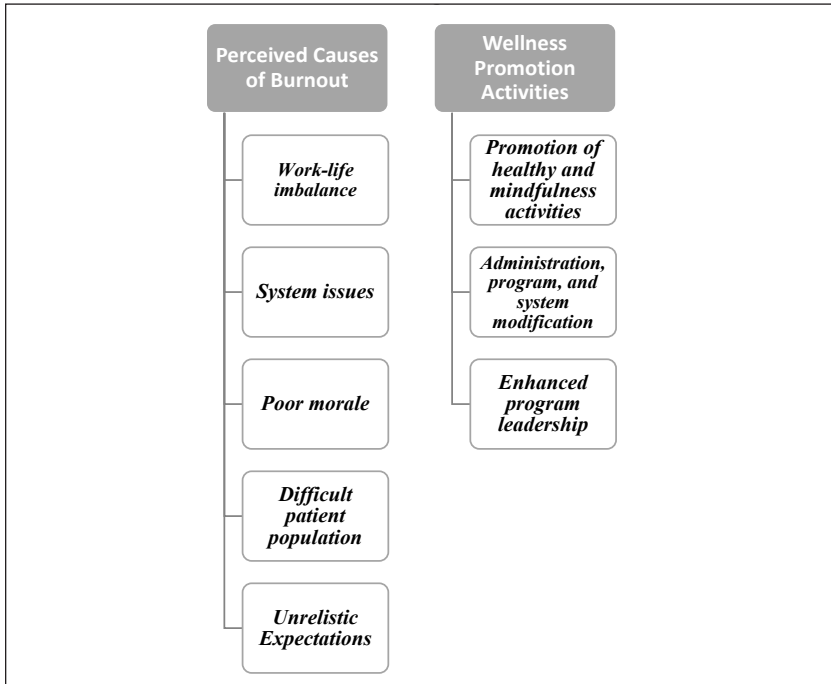
academic activities impact the experience of burnout were not addressed in this study. Additionally, the residents' contribution to patient care, including much of the clinical charting, orders, and medication reconciliation lessens the EHR and clerical burden upon the faculty. Though the residents' overall burnout rate of 51% is lower than the reported 60% among US residents/fellows,⁷ it nonetheless validates the call to understand and address the residents' experience of burnout within GME programs.¹²

The qualitative data provide insight into resident and teaching faculty's personal experiences. These insights reveal significant angst within the GME system to provide quality care for patients while having little time for self and family needs. The novel findings regarding poor morale and system issues display an opinion of leadership and systems augmenting the problem rather than addressing the

Table 3: Qualitative Results: Causes of Burnout

Themes	Quotes From Participants
1. Work-Life Imbalance	
<p>Thirty-four percent (103 of 303) of the responses regarding the causes of burnout were about work-life imbalance among physicians.</p> <p>Most physicians in our sample felt that the demands of medicine do not allow time for physicians to have life outside medicine. The participants felt they were constantly on the go leaving little time for personal space. There were some who felt overworked and barely had time to recover.</p>	<p>Dr A stated, “it [medicine] deprives you of the opportunity to do the things you enjoy outside of medicine, you miss so much with family, and it feels like there is never enough time to recharge.”</p> <p>Dr B shared, “being overworked and under pressure to provide the best health care possible in the shortest time interval possible. Adequate time is needed to provide good health care and establish a good rapport with patients; this also helps with job satisfaction.”</p>
2. System Issues	
<p>Thirty-one percent (94 of 303) of participants’ responses regarding the potential causes of burnout was under the “system issues” theme.</p> <p>Many respondents commented on difficulties in dealing with inefficient electronic health record (EHR). Due to “meaningful use requirement,” physicians are required to use EHR to accurately and comprehensively capture patient’s history, but many have complained that the system is inefficient, making its use inconvenient. Likewise, excessive documentation or administrative burden has been cited as potential cause of burnout among physicians.</p>	<p>Dr C shared, “I burnout when I have to work extremely hard fighting against systems that are out of my control that do not emphasize good patient care, realizing that if I give up that fight, the people who will suffer the consequences will be patients.”</p> <p>Dr D noted, “poor [EHR] systems which are not intuitive to use and require lots of clicks and lots of time to write notes and enter orders, and pressure to see patients quickly rather than time to spend with patients.”</p> <p>Dr E noted, “administrative burden with multiple sources of paperwork and nonclinical requirements to complete off the clock” are major factors responsible for physician burnout.</p> <p>Dr F shared a major cause of burnout among his colleagues as “constant pressure to meet all the regulatory requirements to be optimally reimbursed for service.”</p>
3. Poor Morale	
<p>Fifteen percent (44 of 303) of the participants’ responses was on the issue of poor morale in the residency programs.</p> <p>The participants felt that they are overworked and undervalued and that affects morale.</p>	<p>Dr G explained, “no words of encouragement from leaders, sometimes all I would like is just a ‘thank you for all that you do and I appreciate you for what you are doing’ and not a raise (but financial reward would be nice also).”</p>
4. Difficult Patient Populations	
<p>Twelve percent (35 of 303) of the responses demonstrated a belief that dealing with difficult patients has potential to cause burnout among physicians.</p> <p>The physicians get discouraged dealing with difficult patient population that either does not adhere to treatment plans, or lacks social support in dealing with their medical issues.</p>	<p>Dr I noted, “trying to help patients who don’t take ownership of [their] own health and dealing with repeat offenders of drug seeking patients.”</p>
5. Unrealistic Expectations	
<p>Nine percent (27 of 303) of the participants’ responses was on unrealistic expectations.</p> <p>Although the participants discussed their good intentions for choosing medicine as a career, some might have underestimated the emotional requirement of the profession.</p>	<p>Dr J indicates, “unmet expectations of what a career in medicine would entail and what it actually requires emotionally to be a physician.”</p>

Figure 1: Physicians' Feedback Themes on Perceived Burnout Causes and Activities to Promote Wellness



experience of burnout. Compassion fatigue is evident in findings regarding the difficult patient population. The qualitative data captured participant input regarding ideas to promote greater wellness, which is consistent with the National Academy of Medicine's (NAM) burnout framework aimed at promoting well-being and resilience among physicians.²³ Comments illustrated recognition of the need for actions on the part of the individual, engaging in exercise, healthier diet, and decompression from the daily stress. Comments also expressed the need for administrative and system modification including enhanced leadership. Suggested action items also imply the need for more resources within hospital and institutional systems.

This study has a number of limitations. First, as this study's results are limited to the 13 community-based

Table 4: Qualitative Results: Wellness Promotion

Themes	Quotes From Participants
1. Promotion of Healthy and Mindfulness Activities	
<p>Sixty-seven percent (102 of 153) of the participants' commented on activities that promote healthy and mindfulness activities.</p> <p>Similarly, engaging in physical activities was cited as a way to promote wellness among physicians.</p>	<p>Dr AA stated, "every physician involved in teaching, I hope feels a commitment to education and patient care. However, too many physicians do not find time to take care of their own physical and emotional health. Finding methods to disengage from daily stress varies among us all. Each person must learn their own methods of accomplishing their necessary goal....I believe that finding 'hobbies' that require each of us to, at least for a short while, detach ourselves from the daily stress that we encounter is huge part of the answer."</p> <p>Dr AB's statement typifies the importance of physical activities in wellness promotion: "give residents gym memberships; promote health and encourage us to work out and be healthy."</p>
2. Administration, Program, and System Modification	
<p>Twenty percent (31 of 153) of the responses was on the need to modify program, administrative, and system issues to make the practice of medicine better for physicians.</p> <p>From their viewpoint, physicians are less likely to be burned out if their clerical administrative responsibilities are minimized and delegated to support staff to allow physicians to focus on patient care.</p> <p>Improved EHR was one way physician wellness was communicated: EHR is ineffective and burdensome.</p>	<p>Dr AC stated, "physicians should not be treated as secretaries..."</p> <p>Dr AD wrote: "better EHR systems and more support for physicians such as scribes."</p> <p>"Increased recognition by hospitals and CMS of the burden EHRs place on physicians. Resources aimed at making the EHRs more efficient/ergonomic would help. Training physicians on algorithms or having IT staff to help physicians navigate the IT world and allow physicians to devote more time to patient care and education" (Dr AE).</p>

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Table 3: Continued

Themes	Quotes From Participants
3. Enhanced Program Leadership	
Thirteen percent (20 of 153) of the responses was on enhanced program leadership as an approach in promoting physician wellbeing. The respondents believe that physicians are less likely to be burned out if residency programs have stronger leadership that cares about the wellbeing of others.	Dr AF stated, “team building and nurturing relationships among peers, I think is very beneficial for one’s work environment. “Shifting mindset of ‘it was worse back in my day’ or ‘we’ve always done it this way,” according to Dr AG will help to improve wellness among resident physicians.

residency programs sponsored by a single Midwest medical school, the findings may not be generalizable to other areas. Second, there is possibility of response bias with the response rate of 50%. However, the small response rate is consistent with other studies on physicians and residents.^{7,10} Third, given the size of our program we could not report specialty programs’ burnout scores without compromising anonymity.

In conclusion, burnout was prevalent among residents and core faculty within a GME system with multifactorial and interwoven themes. The high burnout rates combined with the qualitative insights on possible cause of burnout within the GME environment require serious intervention. Potential intervention should incorporate the NAM burnout framework. Medical trainees should be educated on the business of becoming physicians (workload, Medicare, billing, relationships with administration, etc) while also understanding the very real emotional toll and the need for resiliency training (diet, exercise, time for decompression, etc). Given that poor morale as a possible cause of burnout, intervention should include developing more authentic relationships among faculty and trainees. Residents must feel free to ask for help, whether clinical or personal without fear of showing weakness. Health system recognition of the value of GME should include tangible demonstration of this recognition.

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