The Impact of Institutional Factors on Physician Burnout: A National Study of Urology Trainees

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OBJECTIVE To determine the prevalence of burnout in urology trainees and examine the influence of personal, programmatic, and institutional factors on burnout rates.

STUDY DESIGN We conducted an anonymous survey of burnout in urology residents across the United States using a 50-question REDCap-based electronic questionnaire in May of 2018. The survey included demographic questions, an inventory of stress-reduction techniques and the Maslach Burnout Inventory. Univariate analysis and multinomial logistic regression models were used to assess associations between individual, program, and organizational factors and resident burnout.

RESULTS Overall response rate was 20.9%. Individual factors such as age, gender, exercise, and meditation were not associated with burnout while reading for relaxation ($P = .022$) and spending time with family ($P = .025$) were protective against burnout. Residents working >80 hours vs 60-80 hours and <60 hours per week were more likely to exhibit burnout (77.6% vs 66.1% vs 47.1%, respectively, $P = .044$). Institutional factors such as structured mentorship programs ($P = .019$) and access to mental health services ($P < .001$) were associated with decreased burnout. On multivariable analysis, unavailable or difficult-to-access mental health services were associated with increased odds of burnout (OR 5.38, 95%CI 2.20-13.16, $P < .001$, and OR 2.33, 95%CI 1.07-5.07, $P = .034$, respectively).

CONCLUSION The prevalence of burnout in urology trainees is high. Institutional factors such as formal mentorship and access to mental health services may play an important role in resident well-being. UROLOGY 131: 27–35, 2019. © 2019 Elsevier Inc.

Healthcare institutions are continually striving to improve patient well-being by addressing systemic quality and safety. Recently, the importance of provider well-being has also begun to come into focus. Organizations have become increasingly aware of the impact of physician burnout on organizational-, patient-, and physician-related outcomes.[1]

Burnout is an occupational syndrome resulting from persistent work-related stress. Initially described by Freudenberger and later developed by Maslach, the condition includes 3 major components: emotional exhaustion, depersonalization, and a feeling of reduced personal accomplishment.[2] Currently, the Maslach Burnout Inventory (MBI) is the gold standard and most commonly utilized instrument used to assess burnout across the 3 dimensions.[3]

Many factors contribute to burnout including, but not limited to, an increasing clerical burden,[4] longer work hours,[5] and a deteriorating work-life balance.[6] Meanwhile, burnout can lead to decreased professionalism, increased medical error rates, reduced physician empathy, and decreased patient and physician safety.[1] Burnout has also been associated with increased rates of depression and suicidality among physicians.[7]

Recent studies have demonstrated that nearly half of all physicians exhibit symptoms of burnout. However, the rates differ significantly between specialties.[8] Surgeons and surgical trainees are reported to have higher rates of burnout, with a recent study demonstrating that 75% of surgical residents meet the criteria for burnout. Yet burnout in surgery remains understudied and underestimated: in that study, less than a quarter of attending physicians correctly estimated the prevalence of this condition.[9]

Within the surgical specialties, the data are even more limited. This paucity of data is particularly evident in urology. A national survey of various specialties revealed that burnout in urology has increased from 41% in 2011 to 64% in 2014—the highest of all surveyed specialties.[10] A national Medscape survey placed urology burnout at 44%.[11] Notably, both studies were limited by the low

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number of participants. The only dedicated urology burnout study analyzed the annual census conducted by the American Urologic Association and demonstrated burnout to be 38.8%, with a burnout rate of 41.3% for urologists under 65.[12] Both surveys included only practicing urologists and did not assess burnout in trainees.

The only data on trainee burnout comes from a national multispecialty survey of burnout and career regret in residents during their PGY-2 year. Urology trainees revealed some of the highest burnout rates (63.8%) with 15.5% reporting regret about their specialty choice.[13] However, the study was limited by its assessment of junior residents, many of whom could have only been exposed to their chosen specialty for a limited time. Given the high prevalence of burnout in practicing urologists and the paucity of data in urology residents, we conducted a national study of burnout in urology residents utilizing the MBI and a custom questionnaire aimed at assessing the associations of personal and program factors with individual distress.

METHODS

All US residents enrolled in an academic urology residency training program were eligible to participate in the study. An email was sent to each program director and program coordinator asking them to distribute the survey to their residents in May 2018 in order to capture all residents at the end of the academic year. A reminder email was sent 1-week and 2-weeks after the initial contact. The survey was closed in June to avoid capturing data from a different timepoint in the academic year. No individual or program-specific data were collected to protect program and individual anonymity. The data were collected into a deidentified database using REDCap electronic data capture tools hosted at the MedStar Health Research Institute. IRB exemption was acquired prior to study initiation.

The 50-question survey was developed to study the prevalence of and associations with burnout in urology trainees. Questions were developed using previously reported burnout drivers and new research questions. The study included the MBI, the Patient Health Questionnaire 9, and 26-questions assessing sociodemographic, program-specific, and personal characteristics.

Resident characteristics included gender, relationship status, and resident training level (intern, junior, or senior resident). A junior resident was defined as someone in their Urology 1 or 2 year of residency, and a senior resident was defined as someone in their Urology 3 or 4 year. We also assessed techniques regularly employed by residents to improve well-being—mediation, exercise, yoga, recreationally watching television/movies, reading, and spending time with family and friends—using a binary yes/no answer format. Program characteristics included the number of residents accepted per year, work hours, nights on call per week, weekends on call per month, medical records (electronic vs hybrid electronic and paper records), access to structured mentorship, and access to mental health services.

Using the previously established scoring criteria for healthcare workers, we considered residents meeting the criteria for high levels of depersonalization (≥10) and/or emotional exhaustion (≥27) as exhibiting symptoms of burnout.[14]

We summarized patient, hospital, and surgical characteristics with descriptive statistics. Categorical variables were compared using Fisher's exact test and continuous variable were compared using the Mann-Whitney Rank Sum Test. To assess the effect of resident and program characteristics on burnout, emotional exhaustion, and depersonalization, we developed a multivariable logistic regression model adjusting for resident and program characteristics as well as individual relaxation techniques. A backward selection method of model building was employed removing covariates with a P value <.20. Prior research has demonstrated the association of burnout with works hours[15] and gender[16] in surgical trainees; therefore, these covariates were held in the model.

Secondary analyses were performed to better understand the relationship of work hours and structured mentorship on access to mental health services. A multinomial regression model for access to mental health services was adjusted for gender, resident level, work hours, and structured mentorship. Using our multivariable models, the predicted probability of burnout and access to mental health was evaluated using marginal effects. Goodness-of-fit was assessed using the method developed by Lemeshow and Hosmer.[17] Tests were 2-sided, and a P value of <.05 was considered statistically significant. Statistical analysis was performed using Stata 14.2 (StataCorp, College Station, TX)

RESULTS

Of the 1304 currently filled urology residency positions, 293 were excluded due to failed email delivery to the program director and coordinator leaving 1011 participants who could have potentially been reached by our survey. A total of 211 residents responded to the survey for an overall response rate of 20.9%. Female residents comprised 31% of the cohort.

Of those surveyed, 144 (68.2%) met the criteria for burnout (Table 1). Of residents with burnout, 102 (48.3%) exhibited high emotional exhaustion, 120 (56.9%) exhibited high depersonalization, and 78 (37.0%) exhibited both high depersonalization and high emotional exhaustion. On univariate analysis, gender and relationship status were not associated with burnout. Lower levels of burnout was observed in those who regularly read for relaxation (n = 26/48, 54.2%, vs n = 118/163, 72.4%, P = .022) as well as in those who regularly spent time with family and friends (n = 109/169, 64.5%, vs n = 35/42, 83.3%, P = .025). Higher levels of burnout were observed in interns (n = 20/24, 83.3%) and junior residents (n = 62/85, 72.9%) compared to senior level residents (n = 60/100, 60%, P = .041). Those who worked ≥80 hours per week were more likely to exhibit burnout (n = 52/67, 77.6%) compared to those who worked 60-80 hours (n = 84/127, 66.1%) and those who worked <60 hours (n = 8/17, 47.1%, P = .044). Those who reported access to a structured mentorship program had significantly lower levels of burnout (n = 56/93, 60.2%) compared to those without access (n = 88/118, 74.6%, P = .019). Residents with readily available access to mental health services reported lower burnout levels (n = 39/70, 49.4%) compared to those with difficult to access mental health services (n = 54/65, 84.4%) or no access to mental health services (n = 51/68, 75%, P <.001).

In our multivariable model (Table 2), the only predictors of overall burnout that remained statistically significant were access to mental health services and the regular use of reading for relaxation while being a senior resident was associated with lower depersonalization. Mental health services that were difficult to access or unavailable were associated with a greatly increased odds of burnout (OR 5.38 [95%CI 2.20, 13.16] P <.001, and OR 2.33 [95%CI 1.07, 5.07] P = .034, respectively). Those who had no access to or difficulty accessing mental health services had an increase in the predicted probability of burnout by 17.8% [95%CI 1.6, 33.9%]

Table 1. Resident characteristics stratified by burnout

	No Burnout $n = 67$		Burnout $n = 144$		*P* Value
Gender, *n* (%)					.426
Male	49	(33.8)	96	(66.2)	
Female	18	(27.3)	48	(72.7)	
Relationship status, *n* (%)					.968
Single	15	(30.6)	34	(69.4)	
Committed	14	(29.8)	33	(70.2)	
Married	37	(33.3)	74	(66.7)	
Divorced	1	(25)	3	(75)	
Regularly utilized methods of relaxation, *n* (%)					
Meditation					1.000
No	64	(32)	136	(68)	
Yes	3	(27.3)	8	(72.7)	
Exercise					1.000
No	32	(32)	68	(68)	
Yes	35	(31.5)	76	(68.5)	
Yoga					.797
No	62	(32.1)	131	(67.9)	
Yes	5	(27.8)	13	(72.2)	
Reading					.022
No	45	(27.6)	118	(72.4)	
Yes	22	(45.8)	26	(54.2)	
TV/Movies					
No	14	(31.1)	31	(68.9)	
Yes	53	(31.9)	113	(68.1)	
Spending time with family and friends					.025
No	7	(16.7)	35	(83.3)	
Yes	60	(35.5)	109	(64.5)	
Residents accepted per year, *n* (%)					.450
1	2	(25)	6	(75)	
2	25	(39.1)	39	(60.9)	
3	30	(30.3)	69	(69.7)	
≥4	10	(25)	30	(75)	
Resident level, *n* (%)					.041
Intern	4	(16.7)	20	(83.3)	
Junior	23	(27.1)	62	(72.9)	
Senior	40	(40)	60	(60)	
Work hours, *n* (%)					.044
<60 h	9	(52.9)	8	(47.1)	
60-80 h	43	(33.9)	84	(66.1)	
>80 h	15	(22.4)	52	(77.6)	
Nights on call per week, *n* (%)					.430
1	22	(30.6)	50	(69.4)	
2	22	(34.4)	42	(65.6)	
3	12	(27.9)	31	(72.1)	
4	6	(46.2)	7	(53.8)	
≥5	1	(10)	9	(90)	
Weekends on call per month, *n* (%)					.217
1	34	(35.4)	62	(64.6)	
2	28	(30.1)	65	(69.9)	
3	1	(8.3)	11	(91.7)	
Healthcare records, *n* (%)					.356
Electronic	61	(31)	136	(69)	
Hybrid (electronic and paper)	6	(46.2)	7	(53.8)	
Structured mentorship, *n* (%)					.037
No or Do not know	30	(25.4)	88	(74.6)	
Yes	37	(39.8)	56	(60.2)	
Access to your mental health services, *n* (%)				<0.001	
Readily available	40	(50.6)	39	(49.4)	
Available, but difficult to access	10	(15.6)	54	(84.4)	
Not available or Do not know	17	(25)	51	(75)	

and 30.9% [95%CI 16.2, 45.7%], respectively (Fig. 1). The impact of access to mental health services was seen in both depersonalization and emotional exhaustion (Table 2).

Finally, we sought to understand the relationship of access to mental health services to other possible predictors of burnout using adjusted models. Residents that reported working >80 hours per

Table 2. Multivariable logistic regression model of the association of resident and program characteristics with burnout, depersonalization, and emotional exhaustion

	Burnout			Depersonalization			Emotional Exhaustion		
	Odds Ratio	95% Confidence Interval	*P* Value	Odds Ratio	95% Confidence Interval	*P* Value	Odds Ratio	95% Confidence Interval	*P* Value
Female gender	1.03	[0.5-2.14]	.9	0.68	[0.36-1.29]	.2	1.49	[0.76-2.93]	.3
Resident level									
Intern		Referent							
Junior	0.65	[0.19-2.28]	.5	0.46	[0.15-1.41]	.2	1.04	[0.37-2.91]	.9
Senior	0.36	[0.1-1.22]	.1	0.25	[0.08-0.75]	.013	0.69	[0.25-1.92]	.5
Regular reading for relaxation	0.41	[0.19-0.87]	.02	0.79	[0.39-1.59]	.5	0.41	[0.19-0.89]	.024
Work hours									
<60 h		Referent							
60-80 h	1.87	[0.58-5.99]	.3	1.18	[0.38-3.64]	.8	1.68	[0.46-6.13]	.4
>80 h	2.63	[0.74-9.28]	.1	1.14	[0.34-3.8]	.8	3.6	[0.93-13.97]	.1
Structured mentorship	0.64	[0.32-1.25]	.2	0.72	[0.39-1.33]	.3	0.62	[0.32-1.19]	.1
Access to mental health services									
Readily available		Referent							
Available but difficult to access	5.38	[2.2-13.16]	<.001	2.74	[1.29-5.78]	.008	5.93	[2.65-13.3]	<.001
Unavailable or Do not know	2.33	[1.07-5.07]	.034	2.43	[1.15-5.11]	.019	3.3	[1.53-7.11]	.002

week had a significant decrease in the predicted probability of readily available access to mental health services (−34.8% [95%CI −59.9, −9.6%], *P* = .006, Fig. 2A). Similarly, residents that do not have a structured mentorship program also had a decrease in the predicted probability of readily available access to mental health services (−26.3% [95%CI −34.0, −18.7%], *P* <.001, Fig. 2B).

DISCUSSION

In this study, 68.2% of surveyed urology residents met the criteria for burnout. This is consistent with a recent national study demonstrating burnout in urology junior residents as being 63.8%—the highest of any specialty examined in this survey.[18] Though burnout in urology trainees has not been previously rigorously assessed, recent data suggests that 41.3% of practicing urologists under 65 exhibit burnout.[12] The discrepancy in these burnout rates points toward structural components in graduate medical training that increase the likelihood of depersonalization and emotional exhaustion.[19] Our data support this observation.

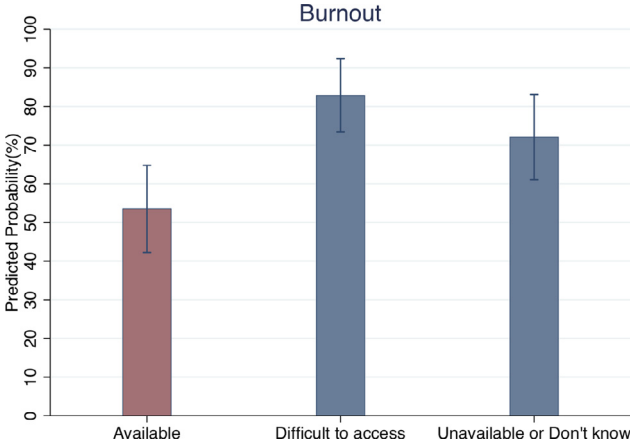

Figure 1. The predicted probability of burnout in residents stratified by access to mental health services. (Color version available online.)

Our response rate of 21% was low but comparable with other national survey studies. Importantly, the age and gender breakdown were consistent with the national averages for the urology trainee complement: cohort gender breakdown 31% female: 69% male vs 25% female: 75% male nationally; cohort average age 30.5 vs 31.5 nationally).[20] This increased the likelihood of the representativeness of our sample cohort.

The specific institutional factors of work hours, structured mentorship, and access to mental health services were found to be associated with burnout, indicating that institutional factors play a significant role on resident burnout. Even when controlling for gender, training level, work hours, and structured mentorship programs, lack of access to mental health services was predictive for resident burnout across both the emotional exhaustion and depersonalization domains. With only 37.4% of urology trainees reporting readily available access to mental health services, our study is consistent with prior observations of pervasively limited access to mental health support for residents, despite their interest in utilizing these resource were they to become available.[21] Though it is unclear whether access to mental health was limited by cultural barriers (the stigma of seeking help), programmatic barriers (longer work hours), or institutional barriers (a lack

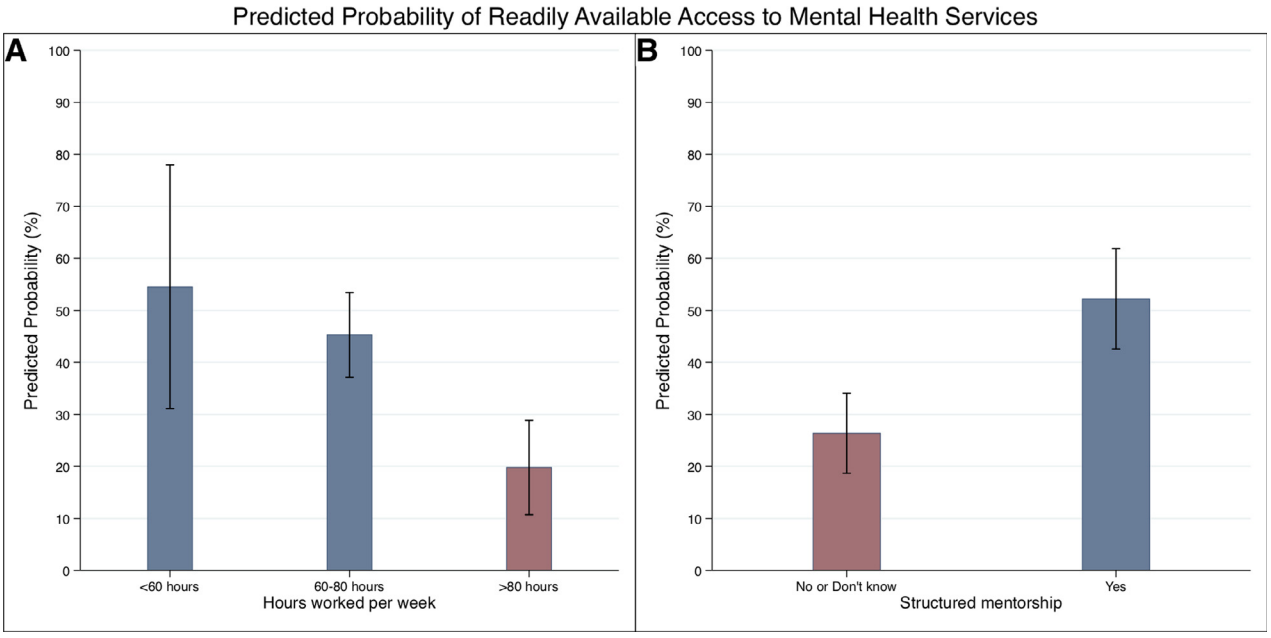

Figure 2. The predicted probability of readily available access to mental health services stratified by work hours (A) and structured mentorship (B). (Color version available online.)

of mental health services across the system), the perceived lack of mental health services access was an important burnout driver. It is also important to note that access to mental health could be a surrogate for a larger array of institutional approaches to postgraduate medical training. For example, programs that lacked supportive mental health services were also more likely to have residents work >80 hours per week and lack an infrastructure for resident mentorship. Importantly, this is the first study to demonstrate the strong association of access to mental health services with trainee burnout.

Program-specific factors had important associations with burnout as well. A recent study revealed a dose-response association between nights on call, hours worked, and burnout in general surgeons[15] and previous studies have demonstrated a similar negative effect on the emotional state of surgical residents and fellows.[22] In our cohort, nights and weekends on call did not appear to be related to overall burnout rates while work hours did. We attribute this finding to the unique structure of urology residency training in which the majority of programs allow for home call and weekend rounding, thereby decreasing the total amount of time spent in hospitals outside of regular training hours. Yet, as with a recent study of surgical trainees,[15] we saw a dose-dependent increase in burnout with increasing work hours.

The association between individual factors and burnout was complex in our study. Although relationship status has been previously found to be protective of burnout,[23] in our study it did not appear to have a significant effect. The use of electronic health records, previously associated with increased physician distress, revealed no connection to burnout in our cohort. However, with the near ubiquitous utilization of electronic records (only 13 respondents reported using hybrid medical records), we expect the difference in healthcare records experience to be difficult to demonstrate.

Resident level played a role in overall burnout on univariate analysis and on depersonalization, specifically, in our multivariate model. Interestingly, though previous studies have shown an increase in depersonalization and cynicism and an erosion in professionalism that occurs as residents progress through training,[24] our study show an overall improvement in burnout across the depersonalization domain with increasing training levels. This may point toward a large discrepancy in the resident experience in early vs late urology training and the impact that may have on trainees' ability to remain compassionate toward their patients and co-workers. One possibility for this is the trend for urology residents to spend more time in the operating room in their later years—a phenomenon that may have a protective effect against burnout.

Although female gender has also been repeatedly associated with increased burnout rates,[16] we did not find an association between gender and burnout on either uni- or multivariate analysis in our study. We find these results to be reassuring and indicative of the active effort made by urology programs nationally to address the issue of gender inequality in training.

A variety of studies have focused on the role of personal factors and emotional resilience on preventing burnout in practicing physicians[25] and surgical residents, specifically.[26] Studies have supported the protective effect of meditation,[27] exercise,[28] and yoga[29] on provider well-being. In our study, individual factors such as gender, relationship status, and regular use of common relaxation techniques (meditation, yoga, exercise, and watching movies) had no association with burnout. There are various potential explanations for

this including the binary structure of the questions, not enough trainees employing these techniques to demonstrate significance, and different relaxation techniques employed by the particular urology cohort. Furthermore, no validated instruments were used to assess mindfulness. Factors linked to a strong support structure such as time spent with family and friends demonstrated significance on univariate analysis but lost significance in the multivariate model. One personal relaxation technique did stand out, however. Reading for relaxation demonstrated a negative association with burnout caused by emotional exhaustion on both uni- and multivariate analysis. These findings support the recent theories of the protective effects of reading on well-being, empathy, and, potentially, on emotional exhaustion.[30,31]

Taken together, these findings reveal the complexity of burnout drivers in urology residents. Although some individual factors—reading for relaxation and spending time with friends and family—were protective against burnout, some of the strongest associations with burnout appear to be institutional and programmatic.

LIMITATIONS

The survey-based study design is potentially limited by sampling and selection bias. Because this is a cross-sectional study, we were unable to assess the directionality of our associations and to control for confounders not included in our survey. Although our survey explored various individual parameters and relaxation techniques, we did not utilize specific instruments to assess personal resilience and mindfulness, limiting our ability to draw conclusions about these factors. Our survey was anonymous to protect programs and respondents. Thus, important confounders such as specific training program, and family structure (dependents, young children) were not analyzed.

Finally, there is concern for response bias, especially given the low response rate. Residents experiencing burnout may be either more or less likely to completed surveys on the topic of burnout and program directors' pre-existing concern regarding burnout in their trainees may have influenced the survey distribution patterns.

We believe that increased awareness on the topic of burnout across the urology specialty may help combat the stigma associated with filling out such surveys and improve future response rates. Increased burnout-related education aimed at both trainees and program directors at the departmental and institutional levels may similarly prove to be beneficial.

CONCLUSION

The rate of burnout in urology residents is comparable to that of other surgical trainees. While many factors may be associated with resident burnout, organizational factors appear to play an important role. Thus, our findings demonstrate the importance of considering not just individual, but also programmatic and institutional factors in addressing trainee burnout.

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EDITORIAL COMMENT

Physician burnout has become a hot topic among urologists since we started appearing on the most burned out list in well-publicized multispecialty studies such as Medscape.[1] Once concern about these multispecialty studies is that urologists make up about 1% of the study population. The 2016 American Urological Association Census found that the rates of burnout among practicing urologists were better than previously reported.[2] Less is known about burnout among urology residents and this study is the first to look exclusively at urology trainees to assess burnout. Unlike the American Urological Association Census data which showed that practicing urologists do not have higher than average rates of burnout, the findings here suggest high rates of burnout among urology residents. One concern with these results is that this study had a very low response rate. We don't know if burned out residents are more likely to respond to a survey or if burn out prevents them from responding but this study only represents one-fifth of urology residents.

Although the American College of Graduate Medical Education has implemented work hour regulations, recognized the need to address burnout in residency, and mandated access to mental health services, it is apparent from this study that many institutions are failing to meet these requirements.[3] It is imperative that our specialty follow the rules and regulations set by the American College of Graduate Medical Education and all urologists involved in academic medicine need to uphold these standards. If residents are consistently working more hours than are permitted and programs are not being cited, that implies dishonest reporting either on the part of the program directors or by the residents. The practice of medicine demands integrity and encouraging false reporting by our trainees is unacceptable.

High rate of burnout negatively impact our specialty. The number of applicants to urology residency programs has decreased over the last several years.[4] The reasons for this downward trends are not clear but it is concerning to see this follow in the wake of so much negative publicity about burnout in urology. With impending workforce shortages in urology, we cannot afford to lose more residents. Further research into the causes of resident burnout and widespread implementation of programs to support resident wellness are needed to not only protect the future of the urologic workforce but also to promote the well-being of ourselves and our colleagues.

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[1] *https://www.medscape.com/slideshow/2019-lifestyle-burnout-depression-6011056* Accessed May 7, 2019

[2] *https://www.auanet.org/research/research-resources/aua-census/census-results* Accessed May 7, 2019

[3] *https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRs_Section%20VI_with-Background-and-Intent_2017-01.pdf* Accessed May 7, 2019

[4] *https://www.auanet.org/education/auauniversity/for-residents/urology-and-specialty-matches/urology-match-results* Accessed May 7, 2019

AUTHOR REPLY

With rates approaching 60%, it is becoming irrefutable that urology has one of the highest levels of physician burnout in medicine. In addition to the mentioned Medscape survey, this observation has been supported by several large-scale studies (most notably, a multispecialty survey of 6880 physicians that compared attending physician burnout to the general population in 2011, 2014, and 2017).[1,2] As with other multispecialty surveys, in this study urologists made up only 0.7%-1.9% of the responses. However, with urologists contributing to roughly 1.2% of the physician workforce, the urology cohort was likely representative of a national physician sample.

Not surprisingly, high burnout rates have similarly been reported in urology trainees. In a study of 3588 junior residents, urology residents had the highest level of burnout of all polled specialties (63.8%), while 8.6% demonstrated specialty-specific, and 15.5% demonstrated overall career-choice regret.[3] These data are confirmed by data showing a high prevalence of specialty and career regret in urology trainees, especially in those exhibiting burnout.[4]

Our study reveals a 68.2% rate of burnout among surveyed urology residents, a rate nearly identical to general surgery trainees.[5] As the editorial comment rightfully points out, our study is similarly subject to limitations from response bias. While our sample does not appear statistically dissimilar from the national complement of urology trainees,[6] with a 20% response rate we remain concerned about under sampling. We also have concerns that programs where the morale is particularly low or where burnout remains a nonpriority may have been less likely to share a burnout survey with their residents. If this is true, burnout in our urology trainees may be even higher than what we report.

These findings should be alarming to all urologists. There are known downstream effects of burnout on patient satisfaction, medical errors, and physician retention. Even more striking is the fact that the risk of suicide for physicians is 1.5-2.5 times higher than in the general population. This data cannot be ignored. The question is: what will we do with this information? We have 2 choices: continue to question the validity of the data we see echoed repeatedly in various studies or decide that it is time for action. In our national work on physician well-being, we have seen our own profession fall behind other specialties in taking a proactive and decisive approach to combatting burnout in our physicians. Why has urology been slower to address this national crisis? What is the downside of taking this data seriously? And more importantly: what are the risks of not?

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EDITORIAL COMMENT

I commend Drs. Marchalik et al on their manuscript and work to help define contributors and mitigators to burnout among urology trainees. Their findings are consistent with a similar study by Elmore et al (2014) that demonstrated a 69% rate of burnout among general surgery trainees.[1] It is both curious and worrisome that rates of burnout are consistently this high, despite ACGME efforts to reduce resident work hours, improve learning: service ratios, and build programmatic supports into our training programs. Why is this so alarming? Burnout has been consistently linked to medical errors, suicidal ideation and attempts, and substance abuse and thus poses a great risk to our patients and our trainees.[2-5] In a review of the role of healthcare leadership on physician burnout, Shanafelt and Noseworthy[6] point out that the burden of prevention or treatment for burnout is often placed on the individual, with interventions like stress-reduction activities and coaching. However, in reality an integrated approach that focuses on treatment and prevention at all levels (individual, work unit, organization, National) is more effective. Two organizational programs noted here—access to mental health and structured mentoring programs—were shown to be important to reducing burnout. All trainees should have access to mental health treatments and be provided confidential opportunities to seek care. We need to work hard to reduce the stigma and shame surrounding mental health treatment by normalizing mental health as a part of self-care. Structured mentoring programs mitigated burnout in both this study and in the Elmore study. In an era of ever-increasing pressures for clinical productivity on faculty, demonstrating the value of faculty participation in mentoring and finding ways to protect these programs will be critical. In addition to programmatic supports like mentoring and mental health, the most important thing faculty can do is role model the primacy of self-care, seek meaning in joy in work, and build collegiality and community at work so that our future doctors can learn and hone their own resiliency skills.

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AUTHOR REPLY

We agree with the comment and commend it for its nuanced overview of the tension that currently exists in burnout science: on one hand, awareness of burnout and interventions related to it are increasing around the country; on the other hand, the needle seems to be moving too slowly. This slow progress has serious implication. A recent financial model of the economic impact of burnout to the US Healthcare system estimated the cost to be between $2.6 and $6.3 billion per year.[1] The impact on patient and physician lives is even more troubling.

While the numbers remain concerning, we feel that there is cause for optimism. Evidence-based intervention can indeed make a difference. A meta-analysis of 52 studies revealed that burnout-related programs had the ability to decrease burnout rates by an average of 10%.[2] In this analysis, organizational and structural interventions played a particularly important role.

We also fundamentally agree with the need to move away from the historic tendency to blame individuals for their burnout and then look to them to remedy it through resiliency training. While individual changes like mindfulness-based cognitive training[3] and reading[4] have been shown to have a positive effects on surgery trainee well-being, these interventions simply cannot exist in a vacuum. Instead, what we need is a clear recognition of the need for change and a commitment to that change from departmental and organizational leaders.

This is particularly important because leadership has a tremendous impact on physician well-being. An evaluation of a 12-question organizational leadership composite revealed that, even when controlling for gender, age, and specialty, each 1-point change on a 60-point leadership scale resulted in a 9% increase in the likelihood of professional satisfaction and a 3.3% decrease in the likelihood of burnout.[5] These findings are staggering both in their magnitude and in the seeming simplicity of

the required changes. The composite questions evaluated a variety of traits most of which we would consider staples of good leadership (eg, the supervisor "inspires me to do my best;" "holds career development conversations with me;" "treats me with respect and dignity;" "provides helpful feedback and coaching on my performance," etc.). Would these qualities not fall under basic expectations of program directors and department chairs?

In this way, some of our most successful burnout interventions might not hinge on large investments and innovative new programming. Instead, a renewed focus on leadership training, medical education, culture change, and structured mentorship, and a commitment to tracking leadership performance and burnout rates in our departments, will be paramount to improving well-being for both faculty and residents alike.

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