Internal Medicine Residency Program Director Support and Burnout During the COVID-19 Pandemic: Results of a National Survey

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ABSTRACT

Background Burnout is common among physicians and physician leaders, including residency program directors (PDs). The effects of the COVID-19 pandemic and other stressors in 2020 on PDs is unknown.

Objective To measure the prevalence of burnout among internal medicine (IM) residency PDs 6 months into the COVID-19 pandemic.

Methods A total of 429 IM PDs, representing 83% of accredited residency programs, were surveyed from August to December 2020. Burnout, using a 2-item screening tool, and self-reported consideration of resigning in 2020, were compared to their annual prevalence since 2012 and tested for possible associations with pandemic stressors and program characteristics.

Results The survey response rate was 61.5% (264 of 429). One-third (33.6%, 87 of 259) of PD respondents met burnout criteria, and 45.1% (110 of 244) reported considering resigning in the past year, which were within the range of preceding years. PDs who reported feeling highly supported by institutional leadership were less likely to meet burnout criteria and to have considered resigning. There were no associations between burnout or consideration of resigning and the amount of clinical time PDs spent in their roles, duration of maximum stress on programs, budget cuts to programs, or geographic region.

Conclusions The prevalence of burnout among PDs in fall 2020 was similar to the prevalence of burnout in pre-pandemic years despite uniquely extreme stressors. PDs' perception of being highly supported by institutional leadership was associated with lower prevalence of burnout and consideration of resigning. Perceived leadership support may be a protective factor against burnout during periods of high stress.

Introduction

Physician burnout is associated with a number of adverse outcomes, including reduced patient care quality, physician health, and professionalism and increased job turnover.[1-4] Burnout among internal medicine program directors (IM PDs) is associated with PD turnover,[5] which may adversely affect residents' training; the Accreditation Council for Graduate Medical Education (ACGME) Common Program Requirements state that a residency program's "success. . .is generally enhanced by continuity in the program director position."[6]

The COVID-19 pandemic caused extreme stress for all health care professionals at work and home. Prior localized infectious disease outbreaks have been associated with psychological distress in responding physicians, including anxiety, burnout, depression, emotional exhaustion, and post-traumatic stress disorder.[7-10] PDs are both frontline physicians caring directly for patients with COVID-19 in overloaded health care settings and leaders charged with the education, development, and well-being of a group of residents who are also frontline physicians caring for patients with COVID-19. One might expect the unique stressors PDs faced in 2020 to increase burnout in some PDs, although the prevalence of burnout among a cohort of PDs has not been previously studied following a universally experienced extreme stressor.

We used an annual survey of a nationally representative population of IM PDs to compare the prevalence of PD burnout in fall 2020 to prior years and to explore factors that might be associated with burnout under uniquely stressful circumstances.

Methods

We surveyed the PDs of all 429 residency program members of the Association of Program Directors in Internal Medicine (APDIM), representing 83% of all ACGME-accredited IM residency programs at the

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time. The APDIM conducts an annual survey of PDs.[5,11] In addition to a question section about residency program characteristics that generally remains static and includes a 2-item screen for burnout (discussed below), the survey includes a limited number of thematic sections that vary annually. The 18-member survey committee, consisting of physician-faculty members with extensive experience as residency program or associate program directors and other graduate medical education (GME) leadership roles, determined that the 2020 annual survey should study the immediate effects of the pandemic on IM residency training. In April 2020, committee members curated the COVID-19 thematic content by reviewing open discussions about the effects of the pandemic via the APDIM Member Discussion Forum, an email listserv of over 4000 physician medical educators who contribute questions and ideas about pressing issues that affect IM residency training. The committee also solicited input from the APDIM Council and reviewed ACGME's policies and provisions for residency program training in response to the pandemic. Survey committee section development lead authors and co-contributors were appointed based on relevant experience; lead authors drafted questions intended to explore a range of potential effects of the pandemic on residency programs, PDs, and residents. Committee members modified the questions through several iterative rounds of revisions during group discussions. From June through mid-July 2020, the survey was pilot-tested and revised for content validity by the APDIM Survey Committee and 6 additional experts in GME, blinded to the survey committee. Any problematic questions/items were flagged for direct follow-up between project staff and the pilot tester(s). The survey launched on August 18, 2020, included 5 email reminder messages to nonrespondents, and closed on December 7, 2020 (survey provided as online supplementary data).

Since 2012, the APDIM annual survey has screened for burnout using 2 items from the Maslach Burnout Inventory (MBI)[12,13]: "How often do you feel burned out from work?" (emotional exhaustion) and "How often do you feel you've become more callous toward people since you took this job?" (depersonalization). Respondants choose from a 7-point scale ranging from "Never" to "Every day" for both questions. Previous studies support the factorial validity of those 2 items, with close correlations documented between these items and their respective emotional exhaustion and depersonalization domain scores from the complete MBI.[14-16] These items have been used to screen for the presence of burnout in several studies of physicians.[5,11,17-19] Since 2012 the APDIM annual survey has also asked, "Have you considered resigning in the past 12 months?" with response options of "No," "Yes," or "Not sure/Cannot answer" (eg, in position for less than one year).[5,11]

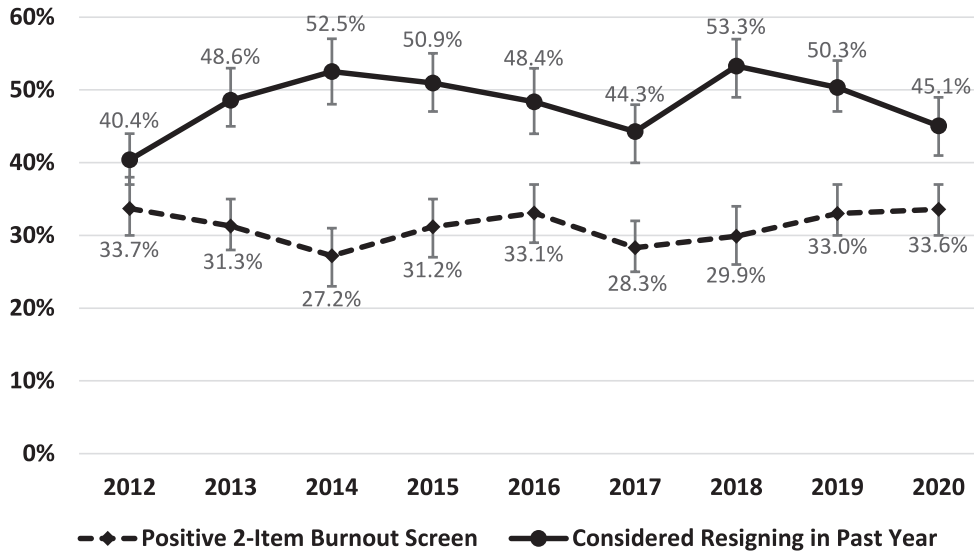
In fall 2020 PDs were also asked, "During your period of maximal stress, how supported did you feel by the following in managing your program's response?" (to the pandemic) with response options of "Highly," "Somewhat," "Not at all," and "Do not know/Unsure" applied to each of the following: "Hospital leadership," "Graduate medical education (GME) leadership," "Departmental leadership," and "Residents."

Data analysis was conducted in Stata 16 SE (StataCorp LLC, College Station, TX). Before de-identifying the final responses for analysis, the study dataset was appended with data from external sources, including US Census Bureau geographic region.[20] Residency program characteristics including number of approved positions were obtained from the ACGME Accreditation Data System.[21] Program type and other program characteristics were obtained through a data license provided by the American Medical Association.[22] Statistical significance was designated with an alpha level set to $P<.05$ and the results reported include 95% CIs. We used the adjusted Wald (Pearson) test of association to assess for goodness-of-fit or statistical associations between categorical variables. Due to unequal variances or nonparametric data, we used the Mann–Whitney–Wilcoxon test to compare continuous variables to dichotomous variables in groups and a nonparametric equality-of-medians test when comparisons of means would be unreliable. We used a multivariate test of means for comparing the prevalence of burnout from 2012 to 2020 and consideration of resigning for the same years.

This study (#20-AAIM-113) was deemed exempt by the Pearl Institutional Review Board (US DHHS OHRP #IRB00007772).

Results

The survey response rate was 61.5% (264 of 429). Four respondents did not answer any questions in the brief section "Program Director Experiences and Well-Being" (upon which most of this study is based). There were no statistical associations between survey nonrespondents and respondents based on program characteristics that explained most of the survey population variance (provided as online supplementary data). Among section respondents (n=260), 36.7% (95 of 259; 1 nonrespondent) were leaders of their institutional or departmental response to



FIGURE

Percentage of Internal Medicine Residency Program Directors Who Met Criteria for Burnout and Reported to Have Considered Resigning in the Preceding Year (2012–2020)

Note: Burnout criteria determined from 2-item Maslach Burnout Inventory.[12] Multivariate test of means for the prevalence of burnout from 2012 to 2020: Hotelling T^2=218.0; P=.35; multivariate test of means for consideration of resigning from 2012 to 2020: Hotelling T^2=87.6; P=.24. CIs are 95% for each percentage shown. Source: APDIM Annual Survey of Internal Medicine Residency Programs study database, 2012-2020. Association of Program Directors in Internal Medicine of the Alliance for Academic Internal Medicine (AAIM). Alexandria, VA: AAIM.

COVID-19, and 71.9% (187 of 260) identified as hospitalists.

The burnout screen was positive in 33.6% (87 of 259) of PDs; 45.1% (110 of 244) of PD respondents had considered resigning during the past year (TABLE), which is comparable to data from 2012 to 2019 (burnout range 27%–34% and considered resigning range 30%–53%; FIGURE).[5,11] The burnout screen was positive in 60.0% (66 of 110) of PDs who had considered resigning but in only 14.9% (20 of 134) of PDs who had not considered resigning (P<.001).

Most PDs reported feeling "Highly supported" by each of the following: department leadership (76.9%, 193 of 251), GME leadership (68.1%, 175 of 257), and hospital leadership (52.1%, 134 of 257), whereas 41.7% (108 of 259) reported feeling "Highly supported" by all 3. Most PDs also reported feeling "Highly supported" by their residents (80.2%, 207 of 258). Conversely, 15.4% (40 of 259) of PDs reported feeling "Not supported at all" by one or more of these groups: hospital leadership (9.7%, 25 of 257), GME leadership (8.2%, 21 of 257), and department leadership (4.4%, 11 of 251); only 3 PDs (1.2%) reported feeling "not at all supported" by their residents.

The prevalence of burnout was lower among PDs who reported being "Highly supported" by leadership of their hospital, GME, and department, as well as by their residents, whereas burnout was more prevalent among PDs who reported feeling "Not at all supported" by each of these same groups (TABLE). Similarly, PDs who reported to have considered resigning were more likely to report feeling "Not at all supported" by leadership of their hospital, department, or GME, whereas those who reported feeling "Highly supported" by their hospital, department, or residents were less likely to report having considered resigning (TABLE).

We did not observe associations between PD burnout or consideration of resigning and any of the remaining "stressor" variables that we studied, including holding an additional departmental or institutional leadership role, identifying as a hospitalist, program's geographic location, PD gender, duration of tenure as PD, reductions in program budget, reductions in PD salary, and duration of maximal stress (TABLE).

Discussion

We found that the prevalence of burnout and consideration of resigning were comparable to previous years despite the pandemic and other events of 2020 (FIGURE). Burnout and having considered resigning were less prevalent among PDs who reported feeling supported by their leadership. However, several variables we thought might be associated with burnout and consideration of resigning were not, including longer duration of maximal pandemic stress, clinical role as a hospitalist, program and

TABLE

Characteristics of Responding Internal Medicine Residency Program Directors and Associations With Burnout and Having Considered Resigning Within the Past Year

Characteristic	Total N=259	No Burnout N=87	No Burnout N=172	*P* Value[a]	Considered Resigning N=110	Not Considered Resigning N=134[b]	*P* Value[a]
	No. (%), 95% CI	No. (%), 95% CI	No. (%), 95% CI		No. (%), 95% CI	No. (%), 95% CI	
Female PD	112 (43.2), 38.2-44.7	36 (41.2), 38.2-44.7	76 (44.2), 42.3-46.1	.61	55 (50.0), 43.3-56.7	52 (38.8), 33.3-44.6	.25
Median PD age (IQR)[c]	49 (13) (48-50)	49 (11) (47-50)	49 (16) (48-51)	.50	49 (11) (46.8-50)	50 (16) (48-53)	.18
Median tenure as PD (IQR)[c]	4 (5) (3.5-6)	4 (5) (3-5)	4 (6.5) (3.6-6)	.63	5 (5) (4-6)	4 (5) (3-6)	.70
University-based program	98 (37.8), 33.5-42.4	37 (42.5), 40.0-45.1	61 (35.5), 29.7-41.7	.19	41 (37.3), 34.4-40.2	55 (37.3), 33.1-41.7	.99
Middle Atlantic program location[d]	59 (22.8), 18.7-27.4	23 (26.4), 22.7-30.6	36 (20.9), 16.3-26.5	.31	25 (22.7), 20.1-25.6	31 (23.1), 16.9-30.8	.93
Tenure less than 5 years	137 (52.9), 47.6-58.1	43 (49.4), 44.7-56.4	94 (54.6), 49.0-59.0	.45	51 (46.4), 37.0-56.0	72 (53.7), 50.3-57.1	.18
Identify clinical role as hospitalist	187 (72.2), 68.1-76.0	68 (78.2), 71.7-83.5	119 (69.2), 64.5-73.5	.16	85 (77.3), 70.2-83.0	90 (67.2), 62.4-71.6	.09
50% or more clinical time	54 (22.8), 16.3-30.8	20 (25.3), 16.7-36.4	34 (21.5), 15.9-28.4	.50	26 (26.8), 20.3-34.4	25 (19.8), 14.8-26.0	.05
Institution, hospital, or department leader of pandemic response	91 (35.1), 32.5-37.9	30 (34.5), 31.6-37.4	61 (35.5), 32.9-38.2	.88	38 (34.6), 30.4-38.9	48 (35.8), 30.6-41.4	.83
Program budget cut during 2020-2021 year	108 (44.6), 37.7-51.8	42 (51.9), 45.9-57.7	66 (41.0), 33.5-49.0	.06	51 (50.5), 42.1-58.9	50 (39.1), 28.7-50.5	.11
PD income cut during 2020-2021 year	66 (27.1), 23.2-31.2	24 (30.0), 25.2-35.3	42 (25.6), 21.4-30.3	.49	26 (25.2), 21.3-29.6	37 (28.5), 22.7-35.0	.63
Duration of maximal stress >90 days	100 (38.6), 37.8-40.9	30 (34.5), 27.5-42.3	70 (40.7), 38.5-45.4	.84	45 (40.9), 33.6-48.6	49 (38.0), 30.5-46.1	.93
"Highly supported"[e]							
"Highly supported" by hospital leadership	134 (52.1), 48.9-55.3	34 (39.0), 28.0-51.4	100 (58.8), 55.4-62.2	.040	42 (38.2), 31.9-44.9	86 (64.7), 61.4-67.8	.003
"Highly supported" by GME leadership	175 (68.1), 64.9-71.1	49 (57.0), 50.7-63.0	126 (73.7), 72.1-75.2	.001	70 (64.2), 61.4-66.9	94 (70.2), 65.3-74.6	.13
"Highly supported" by departmental leadership	193 (76.9), 69.9-82.6	55 (64.7), 53.3-74.6	138 (83.1), 77.6-87.5	.044	73 (68.2), 56.3-78.1	107 (83.0), 80.0-85.6	.016
"Highly supported" by hospital, GME, *and* departmental leadership	108 (41.7), 36.9-46.7	26 (29.9), 20.6-41.2	82 (47.7), 44.5-50.9	.030	33 (30.0), 25.4-35.1	69 (51.5), 45.3-57.7	<.001
"Highly supported" by residents	207 (80.2), 77.0-83.1	62 (71.3), 63.1-78.3	145 (84.3), 83.4-86.1	.031	81 (73.6), 65.5-80.4	113 (85.0), 80.7-88.4	.048
"Not at all supported"[e]							
"Not at all supported" by hospital leadership	25 (9.7), 8.6-10.9	15 (17.2), 14.3-20.6	10 (5.9), 3.7-9.3	.042	18 (16.4), 14.3-18.7	7 (5.3), 3.4-8.1	.003
"Not at all supported" by GME leadership	21 (8.2), 6.6-10.1	13 (15.1), 13.0-17.5	8 (4.7), 3.4-6.4	.001	14 (12.8), 10.2-16.0	7 (5.2), 4.0-6.8	.037
"Not at all supported" by departmental leadership	11 (4.4), 3.2-5.9	8 (9.4), 7.8-11.4	3 (1.8), 0.6-5.1	.038	8 (7.5), 5.1-10.9	3 (2.3), 1.5-3.7	.022
"Not at all supported" by hospital, GME, *or* departmental leadership	40 (15.4), 13.7-17.3	23 (26.4), 22.4-30.9	17 (9.9), 6.8-14.1	.041	28 (25.5), 22.3-28.9	12 (9.0), 7.5-10.6	.007
"Not at all supported" by residents	3 (1.2), 0.4-3.3	0 (0) (0)	3 (1.8), 0.6-4.9	.021	1 (0.9), 0.3-2.6	2 (1.5), 0.5-4.2	.07

[a] Bivariate (Adjusted Wald [Pearson] test of association with one degree of freedom) used for categorical variables.
[b] Denominator for "Considered Resigning" differed from "Burnout" total after excluding responses of "Not sure/Cannot answer" (eg, in position for less than one year).
[c] Nonparametric equality-of-medians test (continuity corrected Pearson chi-square).
[d] Middle Atlantic region includes New York City programs, of which a high number were particularly stressed by the pandemic.
[e] Excludes respondents who reported "Do not know/Unsure" for the questions regarding "support." Denominators thus will vary.
Note: Burnout criteria determined from 2-item Maslach Burnout Inventory.[12]
Abbreviations: PD, program director; GME, graduate medical education.

salary cuts, holding additional leadership roles, and the geographic region of programs. It is possible that the potential adverse effects of the pandemic and other stressors were counterbalanced by increased work engagement,[23] sense of purpose, and "making a difference" that many physicians and leaders experienced during the initial months of the pandemic. The timing of the annual survey coincided with a relative lull in the US pandemic (August to December 2020), when disruption and fear declined and optimism increased; the subsequent "winter surge" occurred after survey fielding.

Burnout of IM PDs is associated with consideration of resigning and PD turnover.[5] From a previous survey, the most common narrative explanation that PDs provided for considering resigning was insufficient institutional support.[11] Recent studies have found that health care workers who felt supported by their organization during epidemic outbreaks experienced fewer adverse mental health outcomes.[8,24] Our study further demonstrates that leadership support may help reduce burnout among physician educational leaders.

Our study design allows us to describe association but not causation; it is possible, for example, that PDs were more likely to report feeling unsupported because they were burned out. We studied a single specialty; thus, our results may not apply to PDs of other specialties. Although the survey respondents were generally representative of the study population, it is possible that there were latent variables associated with nonrespondents (eg, PDs who are burned out may be more or less likely to complete a survey); further, we did not collect PD race or ethnicity data, which if obtained, may have demonstrated important differences by self-identification group. Our use of the 2-item MBI screening tool constrains our ability to draw more nuanced conclusions about the dimensions of burnout.

Conclusions

One-half year into the COVID-19 pandemic and following other stressors of 2020, we obtained similar rates of burnout and consideration of resigning among IM PDs as in prior years. PDs' characterization of the supportiveness of their leadership was inversely associated with PD burnout.

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