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A cross-sectional study of United States family medicine residency programme director burnout: implications for mitigation efforts and future research

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Abstract

Background: Academic physician burnout is concerning.Too little is known about factors associated with residency programme director burnout. Continued uncertainty risks adverse outcomes including graduate medical education leadership turnover and negative impact on recruiting and retaining under-represented minority residency programme directors.
Objective: This study assessed symptoms of burnout (emotional exhaustion, depersonalization) and depression along with evidence-based individual and environmental risk factors in a U.S. sample of family medicine residency programme directors.
Methods: The omnibus 2018 Council of Academic Family Medicine Education Research Alliance survey was used to contact programme directors at all Accreditation Council for Graduate Medical Education accredited U.S. family medicine residency programmes via email. Descriptive data included programme director and programme characteristics, Areas of Worklife (workload, values and control), loneliness (lack companionship, feel left out and feel isolated), burnout (emotional exhaustion, depersonalization) and depressive symptoms. Chi-square tests contrasted descriptive variables with burnout and depressive symptoms. Logistic regression (LR) modelled associations between significant descriptive variables and burnout and depressive symptoms.
Results: The survey response rate was 45.2% (268/590). Programme directors reported: emotional exhaustion (25.0%), depersonalization (10.3%) and depressive symptoms (25.3%). LR models found significant associations with emotional exhaustion (Workload: lacking time and other work-related resources); lack of companionship, depersonalization (North West Central residency region; Workload and lack of companionship) and depressive symptoms (Black/African American ethnicity).
Conclusions: One-quarter of U.S. programme directors report burnout or depressive symptoms. Future research should consider associated variables as possible intervention targets to reduce programme director distress and turnover.

Key words: Burnout, depression, faculty retention, family medicine, graduate medical education, leadership, research, United States

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Key Messages

- Burnout/depressive symptoms are common for family medicine programme directors.
- Inadequate worklife resources increase burnout/depression.
- Worklife resources: skilled colleagues, administrative/financial/institutional support.
- Inadequate social resources (companionship) increase burnout/depression.
- Burnout/depressive symptoms differ by geographic region and ethnic minority status.

Introduction

Burnout is an occupational stress syndrome that adversely impacts healthcare professionals, organizations, and patients (1,2). While burnout has been studied for nearly 50 years, most research focuses on non-physicians (2). In the past decade, physician burnout has been an area of focus with accumulating evidence of adverse impacts on medical students, resident physicians/fellows and practicing physicians (3–10). This research estimates physician burnout rates of 30–70% (30–40% median) in the United States and other developed countries (e.g. Canada, Great Britain, European countries, Australia, New Zealand and Asian countries) (3–6,11–15).

Quantitative burnout research focused on academic faculty physicians is beginning to emerge (16,17). In the United States, the Accreditation Council for Graduate Medical Education (ACGME) requires that one faculty member designated as programme director. The programme director must be board-certified in family medicine and have no less than 3 years of professional experience beyond residency training. The programme director is granted protected administrative time (e.g. minimum of 50% professional time regardless of programme size) to carry out a broad range of administrative and reporting duties on behalf of the residency programme (18). Available quantitative research documents 20–31% burnout amongst residency programme directors (17,19–21). A large national survey of U.S. medical school faculty (n = 7653 full-time faculty; 74% response rate) found burnout rates range from 15% to 35% amongst faculty members with clinical duties (30% for family medicine faculty with clinical duties) (17). A recent U.S. survey of internal medicine residency programme directors found a one-third burnout rate with >50% attrition in the prior 4 years (22). The median tenure for family medicine residency programme directors is 4.5 years (23). Programme director burnout is a likely threat to graduate medical education (GME) residency leadership continuity.

Conceptually sophisticated research concerning causes and consequences of burnout for GME residency programme directors is a recent development (17). One longitudinal study of primary care physicians used the Areas of Worklife Scale to develop a path analysis model for predicting burnout drivers on worklife domains [workload, control, reward, community and fairness and values]. Results confirmed that the worklife areas of workload (job demands exceed worker capacity with insufficient time or other resources), values congruence (conflict between personal values and organizational values) and control (active participation in workplace decisions) were associated with increased burnout (24).

One criticism of physician burnout research is the tendency to oversimplify risk factors and related strategies for reducing burnout (25). It is useful to view physician burnout as a complex social phenomenon where individual (e.g. knowledge, skill, resilience) and environmental (e.g. social connectedness) resources matter (17,26–29). Furthermore, while burnout has adverse impacts on well-being, it is not considered a mental disorder (2). Clinical depression can follow prolonged or severe job-related stress (3,9,10). Poorly developed social networks may lead to physicians feeling lonely with these feelings being key determinants of burnout (27). Social isolation with a low sense of belonging is a known barrier to recruitment, development and retention of underrepresented persons as GME residency programme directors (30). The optimal deployment of individual and environmental resources is required to minimize burnout risk (26,27,31,32).

Given the growing number of residency programmes and increasing complex training requirements, there is a pressing need for organized, systematic professional development for programme directors. The Association of Family Medicine Residency Directors (AFMRD) within the United States has developed the National Institute for Programme Director Development (NIPDD) fellowship to provide participants with knowledge, skills, and a professional community to serve in their educational leadership roles most effectively. Nearly 1000 family medicine educators have participated in NIPDD with >50% of current programme directors having completed this 9-month fellowship (33). The relationship of NIPDD training to burnout or depressive symptoms is not known.

Utilizing a representative U.S. sample of programme directors at ACGME accredited family medicine programmes and established quantitative measures, the objectives of this study was to document:

1. Level of burnout (emotional exhaustion, depersonalization) and depressive symptoms.
2. Presence of evidence-based individual and environmental risk factors (programme director and programme characteristics; area of worklife domains; social connectedness/loneliness; NIPDD fellowship participation).
3. Findings relating evidence-based individual and environmental risk factors to each measures of programme director distress (emotional exhaustion, depersonalization, and depressive symptoms).

Implications for research focused on intervention are explored.

Methods

Survey questions were part of a larger 2018 survey conducted by the Council of Academic Family Medicine Educational Research Alliance (CERA). Methodology of this cross-sectional CERA Programme Director Survey has been described (34). The sampling frame for the entire survey was all U.S. Family Medicine Residencies accredited by the ACGME as identified by the AFMRD. Email invitations for programme directors to participate were delivered utilizing Survey Monkey. Seven follow-up emails to encourage non-respondents to participate were sent after the initial invitation. Data was collected from December 2018 to January 2019.

Demographic data is a portion of recurring CERA surveys. Specific questions included on the 2018 survey related to programme director burnout were developed by our research team based on established scales. The Areas of Worklife Scale measures six areas of worklife that previous research has suggested are related to burnout (19,27). Our

research team drafted three single-item questions to reflect the following worklife factors: Workload, Values and Control (24,29). The three items: 'I have sufficient time and resources to meet the demands of my job'; 'There is minimal to no conflict between the personal values/philosophy that I bring to work and the expression of organizational values'; 'I am an active participant in problem-solving and making decisions that impact the residency outcomes for which I am accountable'; were evaluated on a 5-point scale (0 = strongly disagree, 1 = disagree, 2 = hard to decide, 3 = agree, 4 = strongly agree). A three-item version of the UCLA (University of California, Los Angeles) Loneliness scale has acceptable reliability data when contrasted to the 20-item parent scale (α = 0.72; correlation between the 3- and 20-item loneliness scales = 0.82). This three-item scale was used to assess potential relationship between programme director loneliness and burnout (35). The three items: 'I lack companionship'; ' I feel left out'; ' I feel isolated'; were evaluated on a 4-point scale (0 = never, 1 = hardly ever, 2 = some of the time, 3 = often). A two-item measure of burnout, based on the Maslach burnout inventory (MBI), has been developed for use with physicians. This measure assesses the dimensions of emotional exhaustion ('I feel burned out from my work') and depersonalization ('I have become more callous towards people since I took this job'), with strong correlation between these single-item measures (0.76–0.83 for emotional exhaustion; 0.61–0.72 for depersonalization) and corresponding MBI scale scores (36). Our study employed this two-item burnout measure, each question was assessed on a 7-point scale (0 = never, 1 = a few times a year or less, 2 = once a month or less, 3 = a few times a month, 4 = once per week, 5 = a few times a week and 6 = every day). Using Patient Health Questionnaire-2 (PHQ-2), the single question 'In the past 2 weeks, how often have you felt down, depressed or hopeless' was endorsed by 93% of people with clinical depression as determined by a validated structured interview (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day) (37). Our study employed this one item depressive symptom measure. NIPDD fellowship participation was assessed with an additional question.

The CERA steering committee evaluated questions for consistency with overall subproject aims, readability and existing evidence of reliability and validity. Pretesting was done on family medicine educators who were not part of the target population. Questions were modified following pretesting for flow, timing and readability. The project was approved by the American Academy of Family Physicians Institutional Review Board in November 2018.

Data analysis plan

Univariate analyses included frequency counts, means and standard deviations of study variables (Programme Director Characteristics, Programme Characteristics, Areas of Worklife Scale Responses and UCLA Loneliness Scale Responses; Tables 1–4). Frequency counts for psychological distress variables were developed based on different cut-points for emotional exhaustion (once per week or more), depersonalization (once per week or more) and depressive symptoms (several days or more in the past 2 weeks; Table 5).

Multivariate data analysis began with four blocks of variables potentially related to psychological distress variables (emotional exhaustion, depersonalization and depressive symptoms; Table 5): demographic variables (Table 1), programme characteristics (Table 2), worklife factors (Table 3) and loneliness (Table 4). Chi-square testing determined significant associations ($P < 0.05$) between key descriptive variables (Tables 1–4) and measures of programme director distress (Table 5). Finally, three binary logistic regression (LR) equations were determined based on the simultaneous forced entry of block variables.

Table 1. Family medicine residency programme director demographic characteristics in the United States[a]

Category	Number of respondents, *N*	Percentage
Gender		
Male	135	51.9
Female	125	48.1
Race		
White	224	84.8
Asian	14	5.3
Black or African American	13	4.9
Multiracial	6	2.3
Native Hawaiian or Pacific Islander	2	0.8
American Indian or Alaskan Native	1	0.4
Other	4	1.5
Ethnicity		
Hispanic/Latino	11	4.5
Non-Hispanic/Latino	236	95.5
NIPDD status		
Completed/enrolled	159	65.4
Never completed/enrolled	84	34.6
Years as programme director	257	6.42 years (mean), 5.94 years (sd)
Years in current position	257	5.62 years (mean), 5.27 years (sd)

[a]Item level responses varied between 243 and 267. Percentages are based on number of responses to each item.

Results

There were 624 programme directors at the time of the survey. Sixteen had previously opted out of CERA surveys. The survey was emailed to 608 persons. Eighteen emails could not be delivered. The final sample size was 590. The overall response rate was 45.4% (268/590).

Programme director and programme characteristics

The typical programme director is white (84.8%), completed the NIPDD fellowship (65.4%) and in the role of programme director for 6.42 years. Complete demographic characteristics of the programme directors are in Table 1. A community-based, university-affiliated residency programme (62.7%) was most common. The modal resident compliment was 19–31 residents (44.2%), although there were a substantial number of programmes with smaller resident compliments (39.2% with <19 resident physicians). Residency programme characteristics can be found in Table 2.

Areas of worklife responses

Table 3 presents data concerning programme directors worklife area characteristics: workload, values and control. Most participants (54.3%) indicated some degree of uncertainty or frank disagreement that their work-related resources were sufficient to meet job demands (workload). In terms of *minimal or no conflict between personal values/philosophy […] and the expression of organizational values* (Values) a sizable portion of programme directors expressed some uncertainty or disagreement (15.9% *hard to decide*, 18.4% *disagreed*, 6.1% *strongly disagreed*). Regarding being *an active participant in*

Table 2. Family medicine residency programme work environment characteristics in the United States[a]

Category	Item `onse, *N*	Item-level percentage
Residency type		
Community-based, University-affiliated	162	62.7
Community-based, Non-affiliated	47	18.1
University-based	44	16.9
Military	7	2.7
Other	7	2.7
Residency region		
East North Central (WI, MI, OH, IN, IL)	53	20.1
Pacific (WA, OR, CA, AK, HI)	41	15.5
Middle Atlantic (NY, PA, NJ)	39	14.8
South Atlantic (PR, FL, GA, SC, NC, VA, DC, WV, DE, MD)	35	13.3
West North Central (ND, MN, SD, LA, NE, KS, MO)	26	9.8
Mountain (MT, ID, WY, NV, UT, AZ, CO, NM)	25	9.5
West South Central (OK, AK, LA, TX)	23	8.7
East South Central (KY, TN, MS, AL)	12	4.5
New England (NH, MA, ME, VT, RI, CT)	10	3.8
Community size		
Below 30 000	25	9.4
30 000–74 999	44	16.5
75 000–149 999	50	18.8
150 000–499 999	63	23.7
500 000–1 000 000	46	17.3
Over 1 000 000	38	14.3
Resident compliment		
Less than 19	104	39.2
19–31	117	44.2
More than 31	44	16.6
Non-U.S. medical graduates		
0–24%	170	64.2
25–49%	37	14.0
50–74%	30	11.3
75–100%	24	9.1
Do not know	4	1.5

[a]Item level responses varied between 264 and 267. Percentages are based on number of responses to each item.

thinking through and problem-solving regarding choices and decisions that clearly impact residency outcomes (Control), respondents largely agreed (29.8% *agree*, 58.8% *strongly agree*).

UCLA loneliness responses

Table 4 reports the following regarding self-reported social networks: 34.3% reported lack of companionship either *some of the time* or *often*. Fewer programme directors reported that they feel left out (18.0% *some of the time*, 3.7% *often*). Nearly one-third of programme directors reported feelings of isolation (23.7% *some of the time*, 8.6% *often*).

Programme director distress

Table 5 presents data concerning three measures of programme director distress. There were no gender differences across measures; therefore, aggregate distress responses are provided. One-quarter (25.0%) of programme directors reported that *once a week* or more often feeling *burned out from your work as a family medicine programme director*. Fewer (10.3%) reported *once a week* or more often feeling that they'd *become more callous towards people* since becoming a programme director. One-quarter (25.3%) of programme directors reported *several days of the past 2 weeks* feeling *down, depressed or hopeless*.

Table 3. Areas of worklife scale responses (*n* = 245) for family medicine residency programme directors in the United States

Category	Item level response, *n*	Item-level percentage
Workload[a]		
Strongly disagree	39	15.9
Disagree	59	24.1
Hard to decide	35	14.3
Agree	70	28.6
Strongly agree	42	17.1
Values[b]		
Strongly disagree	15	6.1
Disagree	45	18.4
Hard to decide	39	15.9
Agree	86	35.1
Strongly agree	60	24.5
Control[c]		
Strongly disagree	9	3.7
Disagree	4	1.6
Hard to secide	15	6.1
Agree	73	29.8
Strongly agree	144	58.8

[a]I have sufficient time and resources (e.g. skilled faculty colleagues, administrative support/assistance, institutional leadership support and financial resources) to meet the demands of my job as a family medicine residency programme director.

[b]There is minimal to no conflict between the personal values/philosophy that I bring to work as a family medicine programme director and the expression of organizational values.

[c]I am an active participant in thinking through and problem-solving regarding choices and decisions that clearly impact the residency outcomes for which I am accountable.

Table 4. UCLA loneliness scale responses (*n* = 245) from family medicine residency programme directors in the United States

Category	Item level response, *N*	Item-level percentage
Lack of companionship [a]		
Never	82	33.5
Hardly ever	79	32.2
Some of the time	59	24.1
Often	25	10.2
Feel left out 2		
Never	93	38.0
Hardly ever	99	40.4
Some of the time	44	18.0
Often	9	3.7
Feel isolated 3		
Never	95	38.8
Hardly ever	71	29.0
Some of the time	58	23.7
Often	21	8.6

[a]How often do you feel you lack companionship?

[b]How often do you feel left out?

[c]How often do you feel isolated from others?

Table 5. Family medicine residency programme director distress (n = 260)[a] in the United States

Emotional exhaustion[b]	25.0%
Depersonalization[c]	10.3%
Depressive symptom[d]	25.3%

[a]Gender differences for all three distress measures were non-significant ($P > 0.05$).

[b]Per cent reporting *once a week* (or more often) to the question: *How often do you feel burned out from your work as a family medicine programme director?*

[c]Per cent reporting *once a week* (or more often) to the question: *How often do you feel you've become more callous towards people since you took the job as a family medicine programme director*?

[d]Per cent reporting *several days over the past 2 weeks* (or more often) to the question: *How often have you felt down, depressed or hopeless?*

Univariate and multivariate analyses

Emotional exhaustion.

Significant univariate associations with emotional exhaustion existed for: NIPDD Status (χ^2 = 18.53, $P < 0.005$; protective), Community Size (χ^2 = 50.82, $P < 0.01$; smaller more stressful), Workload (χ^2 = 75.12, $P < 0.001$; insufficient work-related resources), Values (χ^2 = 51.57 $P < 0.001$; incongruent with job demands), Control (χ^2 = 55.22, $P < 0.001$; limited input into decisions impacting residency outcomes), Companionship (χ^2 = 83.56, $P < 0.001$; lack of), Feel Left Out (χ^2 = 43.84, $P < 0.001$; more frequently) and Feeling Isolated (χ^2 = 71.83, $P < 0.001$; more frequently). The final LR model testing the strength of association between each key descriptive variable and emotional exhaustion showed that only Workload (OR = 0.59, 95% CI = 0.43–0.80, $P < 0.001$) and Companionship (OR = 2.05, 95% CI = 1.17–3.59, $P < 0.013$) accounted for significant emotional exhaustion variance.

Depersonalization.

Significant univariate associations with depersonalization included: Residency Region (χ^2 = 68.13, $P < 0.04$; North West Central area); Workload (χ^2 = 47.30, $P < 0.003$); Control (χ^2 = 61.26, $P < 0.001$); Companionship (χ^2 = 79.56, $P < 0.001$); Feel Left Out (χ^2 = 47.74, $P < 0.001$); and Feeling Isolated (χ^2 = 65.21, $P < 0.001$). For the final LR model, Resident Region (North West Central area; OR = 7.49, 95% CI = 1.14–49.15, $P < 0.036$), Workload (insufficient work-related resources; OR = 0.48, 95% CI = 0.30–0.78, $P < 0.003$) and Companionship (lack of; OR = 4.68, 95% CI = 1.70–12.91, $P < 0.003$) accounted for significant depersonalization variance.

Depressive symptoms.

Depressive symptoms were significantly associated with the following key descriptive variables: Race (χ^2 = 36.04, $P < 0.007$; Black or African American), Ethnicity (χ^2 = 8.52, $P < 0.04$; Hispanic/Latino), Workload (χ^2 = 25.94, $P < 0.01$); Values (χ^2 = 29.15, $P < 0.004$), Companionship (χ^2 = 53.16, $P < 0.001$); Feel Left Out (χ^2 = 32.04, $P < 0.001$) and Feeling Isolated (χ^2 = 55.28, $P < 0.001$). For the final LR model, only being African American/Black accounted for significant variance (OR = 5.85, 95% CI = 1.43–24.01, $P < 0.014$).

Discussion

Results from this U.S. national survey confirm that a substantial number of programme directors are experiencing work-related stress (emotional exhaustion, depersonalization and depressive symptoms). Burnout is increasingly recognized as an occupational risk for academic physicians (3,6–9,17). However, most burnout research in the UnitedStates and other developed countries has not specifically focused on residency programme directors (11–15). The likely linkage between GME residency programme director burnout and attrition is concerning (22,23). Thoughtful, systematic efforts are needed to support the well-being of residency leadership in their efforts to support and mentor the future workforce of Family Physicians during formative graduate training years (17,28,30,32,33).

Regarding environmental resources, our results indicate that having insufficient time and resources to meet job demands (Workload) was a common stressor. A smaller percentage of respondents expressed discrepancies between their individual and organizational Values. Notably, Workload was a significant predictor of both emotional exhaustion and depersonalization symptoms. Previous research found that Control was indirectly associated with burnout based on a relationship with Values (24,38). The current results suggest that burnout reduction efforts aimed at residency leadership should address the relationship between Workload and Values.

The ACGME has responded to programme director concerns regarding Workload in the updated family medicine programme requirements, effective July 1, 2019 (18). These updated guidelines stipulate a tiered requirement for associate programme directors based on number of programme residents and have expanded the amount of programme director time dedicated to programme administration. These updates should provide programme directors needed protected time and dedicated faculty support. Programme directors who are supplied with the resources needed to lead effectively and who are supported in acting in a manner consistent with their values should be less likely to experience emotional exhaustion, depersonalization or depressive symptoms.

Social connectedness was also identified as an important factor in reducing emotional exhaustion and depersonalization (27,35). In terms of social support, this study demonstrates that many programme directors struggle with feeling a lack of companionship. Some programme directors also report feeling left out or isolated. Lack of companionship is associated with heightened feelings of emotional exhaustion and depersonalization. While confirmatory research is needed, it seems likely that efforts that reduce the sense of lacking companionship should reduce programme director burnout as well as programme director turnover. Univariate associations between NIPDD participation and reduced emotional exhaustion, depersonalization and depressive symptoms are consistent with this interpretation (i.e. companionship with NIPPD fellowship colleagues may reduce programme director burnout and turnover). As well, it seems likely that having another core faculty member designated as associate programme director with whom to 'share the burden' offers greater opportunity to experience genuine professional companionship and reduced burnout or depressive symptoms (2,21,27,29,33).

Depressive symptoms are a major issue for a substantial number of programme directors. Noting our LR depression model, this appears to be particularly true for Black or African-American programme directors (chi-square analyses also suggest heightened depressive symptoms for Hispanic/Latino programme directors). Prior research has determined that social isolation with low feelings of belonging contribute to burnout, which may apply to under-represented minority programme director (2,9). It seems likely that feelings of depression or hopelessness among some under-represented minority (URM) programme directors may be related to their confrontation with greater unconscious bias at both the individual and organizational levels. This racial disparity in reported depressive symptoms

demands further study to understand root causes in efforts to target and eliminate this disparity. To do less risks undermining current diversity, inclusion and equity efforts to attract and retain URM colleagues into educational leadership positions (39).

The burnout dimension of depersonalization was unexpectedly associated with programme directors in the West-North Central region (ND, MN, SD, IA, NE, KS and MO). This finding is in addition to the expected multivariate associations between depersonalization, higher workload and lower Companionship. Some programmes in this region are in rural areas. Perhaps these programme directors are challenged by limited professional resources including insufficient collegial support and/or by the level of community need. Further research is needed to understand programme director leadership needs in this region.

This study has strengths and limitations. Strengths include: a broad sample of programme directors representing all regions of the United States, the selection of study variables based on a review of conceptual models of occupational stress and prior research, the use of reliable and valid measures, and a systematic data analysis plan. Overall, this study represents one of the more robust studies of programme director burnout to date (16,17). This study also has limitations. For example, this is a single study with modest response rate. Nevertheless, our results are consistent with other studies of burnout among U.S. medical school faculty (17). In addition, CERA Programme Director surveys conducted over the past decade have obtained similar response rates ranging from 38% to 54% (23). While our measures are statistically reliable and valid, our chosen constructs are narrow in scope and may not fully capture all relevant aspects of work and personal life stress that may be important to burnout (25).

Conclusion

We found that work-related stress (emotional exhaustion, depersonalization and depressive symptoms) is an important current issue for programme directors. We found that racial disparities exist in the reporting of depressive symptoms by programme directors. The programme directors from the West-North Central (ND, MN, SD, IA, NE, KS and MO) region were more likely to report depersonalization. While we can not say precisely why these patterns of results emerged, further study, and in particular intervention efforts, to address factors that may underlie racial and regional disparities is warranted (16,17,21,28,32,33). In addition, LR models make it clear that inadequate Workload and Companionship resources place programme directors at risk for emotional exhaustion and depersonalization. Professional development plans and other stress reduction strategies should include efforts to robustly address these burnout (emotional exhaustion, depersonalization) and depressive symptom risk factors (4,5,26,27,32).

Declarations

Ethical approval: The study was approved by the American Academy of Family Physicians Institutional Review Board in November 2018.
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Conflict of interest: None declared.

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