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Keywords

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Comments

At the time of publication, Paula Gardiner was not yet affiliated with the University of Massachusetts Medical School.



The Incorporation of Stress Management Programming Into Family Medicine Residencies—Results of a National Survey of Residency Directors: A CERA Study

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BACKGROUND AND OBJECTIVES: Residents' stress and burnout is a concern among family medicine residency programs. Our objective is to assess stress management options available to family medicine residents.

METHODS: In 2012, the Council of Academic Family Medicine Educational Research Alliance (CERA) e-mailed a survey to US residency directors. Questions were asked on four types of stress management programming (SMP): (1) access to counselors, social workers, or mental health providers, (2) residency support or Balint groups, (3) stress management lectures or workshops, and (4) residency retreats. We assessed how many programs contained all four types of SMP and their relationship to the following topics: stress management techniques for patients, spirituality, mind/body techniques, and self-care for residents.

RESULTS: Of the 212 responses, 29% reported having all four types of SMP. Eighty-three percent reported stress management lectures or workshops, and 79% reported residency retreats. Smaller and mid-size residencies (36%) and residencies in the West (36%) were more likely to have all four types of SMP. There was a correlation between having didactics, clinical rotations, and electives on stress management techniques for patient care and having stress management lectures or workshops for residents. There was statistical significance between having resident self-care curriculum and (1) having retreats and (2) stress management lectures or workshops.

CONCLUSIONS: It is necessary to evaluate whether residency programs are providing appropriate stress management skills for residents that will improve physician wellness and patient outcomes.

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well-being and increased prolonged stress during postgraduate years leads to depression and burnout among residents.⁶⁻⁹ In a survey distributed to first-year family medicine residents, researchers found that 23% of residents scored in a range consistent with depression risk, 14% scored in the high emotional exhaustion range, and 24% in the high depersonalization range.¹⁰ In one study, 76% of internal medicine residents met the criteria for burnout.⁹ To assess the state of family medicine residency programs in addressing resident stress, this paper reviews the current state of implementation of stress management services and programming in family medicine residency.

When physicians pay less attention to their well-being and stress management, patients become at risk for medical errors related to physician burnout.^{11,12} For example, a study found that resident fatigue and stress is associated with self-perceived medical errors among internal medicine residents.^{12,13}

It is well researched that residency is marked with increased stress levels.¹⁻³ Sleep deprivation, long work hours, increasing

complexity of patient health issues, debt, and high levels of responsibility all affect resident mental and physical health.^{4,5} Decreased resident

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Consequences of decreased resident well-being can influence patients directly as well as job performance.¹⁴ Physicians who are stressed may exhibit hostility toward patients and have difficult relationships with co-workers.¹⁵ Burnout is also related to low job satisfaction, high rates of absenteeism, and job turnover.¹⁰ By consistently providing physician stress management skills, appropriate mental health support, and resilience training, residency programs can optimize physician performance and decrease medical errors.¹⁶

The Accreditation Council for Graduate Medical Education (ACGME) requires that residency programs make assistance services available for residents to address stressors.⁵ Traditionally, in residency settings, stress management has been reinforced through the use of assistance programs such as Balint groups, mental health providers, support groups, and residency retreats.⁵

In addition to assistance services, little is known about the other types of stress management programming offered in family medicine residencies, the characteristics of these programs, and if this programming is consistent throughout the United States. In this study, family medicine residency program directors were surveyed to assess the types of stress management programming available to residents. We hypothesize that programs that promote stress management techniques for patients will have stress management available for residents as well.

Methods

An online survey, sponsored semi-annually by the Council of Academic Family Medicine Educational Research Alliance (CERA) was distributed, through Survey Monkey, to a national sample of 431 residency directors via email. The contact list for the survey was generated using the Society of Teachers of Family Medicine (STFM) residency director database. Those on the target population list for the survey were sent an initial announcement and two

reminders on March 23, 2012 and April 18, 2012. Of those who received it, 212 responded, for a response rate of 49.1%. General survey questions assessed demographic characteristics of the residency program: region of program, size of community served, total number of residency spots, type of hospital, number of non-US graduates, and age of program in years.

Stress Management Program- ming (SMP) Questions

We asked “Do you currently provide any of the following stress management programs to your residents?” We also asked specifically about access to mental health providers, support or Balint groups, stress management lectures or workshops, or residency retreats. In addition to the above four types of programming, we asked if residencies provided teaching in the following curriculum domains: stress management techniques for patients, spirituality, mind/body techniques (yoga, deep breathing, and meditation), and self-care for residents in the form of didactics, clinical rotations, and electives and the amount of time spent in each activity (number of hours). We were interested in spirituality since it can be used for stress relief and is often ingrained in interactions with patients as well as a physician’s personal life.^{8,17} Clinicians have noted the need for more research on spiritual care.¹⁸ Mind-body techniques are also often used by residents for stress relief.¹⁰

Statistical Analyses

We used descriptive statistics including chi square tests using SAS-TM software (Version 9.1, Cary, NC: SAS Institute). We categorized variables as follows: number of non-US graduates, region of program (Northeast, South, Midwest, West), size of community served (less than 75,000, 75,000–150,000, 150,000–500,000, and more than 500,000), total number of residency slots (0-19, 20–29, 30+), type of hospital (university based, community based, university affiliated, community based

non-affiliated, military/other), and age of program (0–20 years, 21–35 years, 36–40 years, 41+ years).

For each type of teaching method (didactics, clinical rotations, and electives), we had an additional variable: those that included all three teaching methods (didactics AND clinical rotations AND electives).

The overall survey administered by the CERA administrators was approved by the Institutional Review Board of the American Academy of Family Physicians. The survey analysis was approved by the Institutional Review Board of Boston University School of Medicine.

Results

There were 212 residency directors who responded to the survey. Table 1 describes the characteristics of the residency programs. Ninety-eight percent of programs reported providing access to counselors, social workers, or mental health providers. Ninety-seven percent of programs included residency support groups or Balint groups. Eighty-three percent of programs reported stress management lectures or workshops, while 79% reported incorporating residency retreats into their programs. Only 29% (n=61) reported offering all four types of SMP. Smaller and mid-size residencies (36%) and residencies in the West (36%), community-based university-affiliated residencies (63%) were more likely to have all four types of SMP.

Table 2 reports the number of programs that devote no time or greater than 25 hours for each curriculum domain related to stress cross-referenced with the available SMP for residents. Among programs who provided access to residency support groups or Balint groups, 2% of programs (n=5) offered more than 25 hours of education dedicated to mind-body techniques.

In Table 3, we report teaching options (didactics, rotations, electives) by individual SMP availability for residents. There was a strong relationship between having didactics, clinical rotations, and electives on

Table 1: Stress Programs for Residents by Characteristics of Residency Programs

Demographics	n (%)	All Four Types of Stress Management Options n=61	Access to Counselors, Social Workers, or Mental Health Providers n=207	Residency Support Groups or Balint Groups n=205	Stress Management Lectures or Workshops (Mindfulness, Exercise, Patient Communication) n=175	Residency Retreats n=167
Region of program						
Northeast	46 (22)	16 (25)	45 (22)	46 (23)	37 (22)	34 (21)
South	45 (22)	8 (13)	43 (21)	44 (22)	35 (21)	30 (18)
Midwest	56 (26)	17 (27)	55 (27)	53 (26)	46 (27)	46 (28)
West	61 (29)	23 (36)	60 (30)	58 (29)	53 (31)	53 (33)
Missing	4 (2)					
Size of community served						
Less than 75,000	62 (29)	16 (24)	62 (30)	58 (28)	55 (31)	46 (28)
75,000 to 150,000	46 (22)	18 (27)	44 (21)	46 (23)	37 (21)	41 (25)
150,000 to 500,000	44 (21)	11 (16)	43 (21)	43 (21)	32 (18)	32 (19)
More than 500,000	59 (28)	22 (33)	57 (28)	57 (28)	51 (29)	47 (28)
Total number of residency slots						
0–19	85 (40)	24 (36)	81 (39)	80 (39)	70 (40)	62 (37)
20–29	79 (37)	24 (36)	79 (38)	77 (38)	66 (38)	67 (40)
30+	48 (23)	19 (28)	47 (22)	48 (23)	39 (22)	38 (23)
Type of hospital						
University based	37 (17)	13 (19)	37 (18)	37 (18)	31 (18)	28 (17)
Community based, university affiliated	139 (66)	42 (63)	135 (65)	134 (65)	115 (66)	110 (66)
Community based, non-affiliated	22 (10)	8 (12)	21 (10)	21 (10)	16 (9)	17 (10)
Military/other	14 (7)	4 (6)	14 (7)	13 (6)	13 (7)	12 (7)
Number of non-US graduates						
1	110 (52)	40 (60)	108 (53)	106 (53)	93 (54)	97 (59)
2	27 (13)	8 (12)	26 (13)	26 (13)	24 (14)	18 (11)
3	32 (15)	8 (12)	32 (16)	30 (15)	26 (15)	23 (14)
4	39 (18)	11 (16)	37 (18)	39 (19)	29 (17)	26 (16)
Unknown	4 (2)					
Number of years training has been around						
0–20	53 (25)	19 (28)	53 (26)	49 (24)	46 (26)	41 (25)
21–35	47 (22)	14 (21)	45 (22)	47 (23)	39 (22)	42 (25)
36–40	70 (33)	19 (28)	68 (33)	67 (33)	59 (34)	51 (31)
41+	40 (19)	15 (22)	39 (19)	40 (20)	30 (17)	32 (19)

stress management techniques for patients and having stress management lectures or workshops available for residents ($P=.016$). We also found that there was a strong relationship between having all three types of spirituality curriculum domains and having all four types of SMP available to residents ($P=.025$). In terms of incorporation of mind-body techniques, we found an association

between having all three types of mind-body curriculum domains and having all four types of SMP ($P=.007$). Finally, there was statistical significance between having all three types of self-care activities for residents' curriculum domains and having residency retreats ($P=.027$) and stress management lectures or workshops ($P=.011$).

Discussion

Although the ACGME has limited work hours for residents to 80 hours/week and mandates resident assistance programs, stress and burnout still remain a problem for some residents.¹⁹ Our survey reports the current implementation of other stress management programming into family medicine residencies. We found that 29% of family medicine

Table 2: Amount of Time Spent for Stress-Related Residency Activities

Stress Management Options	Access to Counselors, Social Workers, or Mental Health Providers n=207	Residency Support Groups or Balint Groups n=205	Stress Management Lectures or Workshops (Mindfulness, Exercise, Patient Communication) n=175	Residency Retreats n=167
Stress management techniques for patients				
None	8 (2)	8 (4)	8 (5)	7 (4)
>25 hours	8 (2)	8 (4)	8 (5)	7 (4)
Spirituality				
None	40 (19)	40 (20)	37 (21)	30 (18)
>25 hours	5 (2)	5 (2)	5 (3)	5 (3)
Mind/body techniques (yoga, deep breathing, meditation)				
None	47 (23)	46 (22)	35 (20)	38 (23)
>25 hours	5 (3)	5 (2)	5 (3)	4 (2)
Self-care for residents				
None	2 (2)	2 (1)	2 (1)	2 (1)
>25 hours	28 (14)	28 (14)	28 (16)	24 (14)

residency programs are reporting inclusion of all four types of SMP. Smaller and mid-size residencies (36%) and residencies in the West (36%) were more likely to have all four types of SMP. Most residencies report providing access to mental health counselors and access to support groups or Balint groups. Eighty-three percent reported stress management lectures or workshops, and 79% reported having residency retreats.

Recent studies show that being a resident/fellow is associated with increased odds of burnout.^{20,21} It is unclear whether today's offerings of stress management curriculum and assistance services provided by family medicine residencies optimize patient care by preventing resident burnout. For instance, Hurst et al in qualitative interviews found that residents without strong team support, poor orientations to their program, and few learning opportunities often have lower well-being than those with strong supportive programs.⁴

In the first analysis of the prevalence of US Balint groups, researchers found that about half of family medicine residencies offered groups described as Balint groups.²² We

found that 97% of residency programs reported having support or Balint groups available to residents; however, it is unclear whether these groups are effective in addressing resident burnout. Evidence for Balint group effectiveness is mixed. One study found that there was no association between Balint group work and physician empathy or overall work satisfaction.²³ Another study examining oncology residents found that burnout scores decreased and that communication skills were improved among the residents following a Balint group intervention.²⁴ Resident support groups are proven successful in assisting residents to reduce burnout and identify feelings associated with residency stressors.²⁵

Access to mental health services has been an important resource for residents.²⁶ Our analysis found that 98% of programs reported access to counselors. While it is unclear how many residents actually utilize the mental health workers, it has been shown that confidentiality and privacy are two issues of paramount importance to residents that may influence whether these services are used by residents.²⁷ In addition, many residents seek mental health services outside of their

training institution, thus it may be difficult to assess utilization of mental health services by residents due to privacy concerns. Residents in general lack comprehensive and confidential medical care and often ignore personal health problems.²⁸ Residency programs need to understand the barriers that prevent residents from accessing private and appropriate mental health care.

We found a high percentage of residency programs that reported offering stress management programs; however, there is little data to support whether these programs work. One study found that eating nutritiously, spending time with family, pursuing continuing medical education, and learning to value the doctor-patient relationship were strategies for reducing personal and occupational burnout.²⁹ However, a systematic review of interventions to combat resident burnout found that few quality interventions exist to address such a significant problem.³⁰ Additionally, there has been inadequate research to guide residency directors in the curriculum design of stress management programs and curriculum.¹⁰

As residents often recommend adequate rest and stress management

Table 3: Stress-Related Domains by Stress Management Programs for Residents

Stress Management Programming	All Four Types of Stress Programming n=67	Access to Counselors, Social Workers, or Mental Health Providers n=207	Residency Support Groups or Balint Groups n=205	Stress Management Lectures or Workshops (Mindfulness, Exercise, Patient Communication) n=175	Residency Retreats n=167
Curriculum about stress management techniques for patients					
Didactics	54 (81) P=.330	161 (78) P=.012	160 (78) P=.009	145 (83) P<.0001	128 (77) P=.878
Clinical rotations	46 (69) P=.113	127 (61) P=.382	127 (62) P=.114	111 (63) P=.094	105 (63) P=.2445
Electives	26 (39) P=.038	62 (30) P=.325	61 (30) P=.676	57 (33) P=.021	54 (32) P=.057
Any of the three	67 (100) P=.003	191 (92) P=.059	190 (93) P=.015	166 (95) P=9.007 E-04	156 (93) P=.070
All three	18 (27) P=.080	42 (29) P=.586	42 (20) P=.349	40 (23) P=.016	35 (21) P=.420
Spirituality					
Didactics	42 (63) P=.077	114 (55) P=.020	114(56) P=.004	100 (57) P=.032	96 (57) P=.037
Clinical rotations	25 (37) P=.366	69 (33) P=1.000	68(33) P=1.000	64 (37) P=.017	56 (34) P=.759
Electives	23 (34) P=.024	51(25) P=1.000	51 (25) P=1.000	50 (29) P=.003	46 (28) P=.049
Any of the three	53 (79) P=.181	153 (74) P=.122	153 (75) P=.016	134 (77) P=.014	127 (76) P=.063
All three	12 (18) P=.025	23 (11) P=1.000	23 (11) P=1.000	23 (13) P=.017	20 (12) P=.422
Mind/body techniques (yoga, deep breathing, meditation)					
Didactics	41 (61) P=.053	109 (53) P=.026	106 (52) P=.715	101 (58) P<.0001	91 (54) P=.084
Clinical rotations	29 (43) P=.002	60 (29) P=1.000	60 (29) P=.676	57 (33) P=.008	51 (31) P=.274
Electives	32 (48) P=.008	73 (35) P=.660	73 (36) P=.426	66 (38) P=.062	64 (38) P=.044
Any of the three	55 (82) P=.005	144 (70) P=.176	143 (70) P=.208	131 (75) P<.0001	119 (71) P=.148
All three	15 (22) P=.007	28 (14) P=1.000	27 (13) P=1.000	27 (15) P=.035	25 (15) P=.144
Self-care for residents					
Didactics	63 (94) P=.300	191 (92) P=.006	187 (91) P=.487	168 (96) P=3.125 E-06	157 (94) P=.007
Clinical rotations	37 (55) P=.133	99 (48) P=1.000	100 (49) P=.122	88 (50) P=.094	86 (52) P=.030
Electives	22 (33) P=.056	51 (25) P=1.000	52 (25) P=.198	49 (28) P=.011	46 (28) P=.049
Any of the three	64 (96) P=.759	196 (95) P=.031	193 (94) P=.362	169 (97) P=.002	160 (96) P=.035
All three	18 (27) P=.136	44 (21) P=.586	44 (22) P=.349	42 (24) P=.011	40 (24) P=.027

for their patients, it is imperative that they follow their own advice. In our analysis, we found a strong association between having programs with various options to learn about stress management for patients (didactics, clinical rotations, and electives) and having stress management lectures or workshops available for residents. These results highlight the need to understand why clinicians have difficulty following their own recommendations.

Addressing stress by focusing on improving overall wellness or mindfulness has been a growing concept among residency program research.³¹ One intervention revealed that residents could reduce exhaustion by incorporating a meditation-based method into breathing.³² Another residency developed a program that provides resources for residents and their families about health-related topics, including stress.³³ A mindfulness-based training course for primary care providers has also been found effective in reducing burnout, depression, anxiety, and stress.^{34,35}

There are several limitations to our analyses. First, our sample size only represents 50% of all family medicine residency program directors. This leaves the opportunity for selection bias to occur, if respondents were from programs with stress management programs. In addition, we were limited in the amount of questions we were able to ask. Thus, we were unable to have open text options to allow for residency directors to write in other types of relaxation techniques available. Each residency program may teach stress management techniques differently and may include an experiential component for their residents; however, we were unable to allow residency directors to input free text. Also, when asking about time spent on stress management activities, we are unable to assess how the number of hours spent on each programming is distributed throughout the residency and whether more hours are spent during the first year or in subsequent years. Another limitation is that while some

residencies may provide SMP opportunities, we are unable to assess how many residents access these programs and whether these programs benefit the residents. Lastly, we are measuring a report from residency directors and not looking at the outcomes of differences in stress levels based on the services available. Therefore, we don't know if the programming is correlated with outcomes, we only know it is correlated with services for residents, and there may be some demographics that are associated. More research is needed to understand resident utilization of stress management options to guide allocation of resources that promote stress management.

Conclusions

To foster a productive workforce immune to burnout, it is necessary to evaluate whether our residency programs are providing the right type and adequate amount of SMP. Following the ACGME guidelines, most programs included access to counselors and residency support groups, while not as many programs had residency retreats and workshops available. It is unclear, however, if these techniques have been rigorously evaluated in today's busy residency settings. Having diverse opportunities for stress management not only improves the overall quality of a program but also improves the individual self-care practices that each resident can partake in. As more residents enter postgraduate education, residency programs must promote consistent wellness that can improve individual resident productivity and health as well as the health of patients.

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References

- Guille C, Clark S, Amstadter AB, Sen S. Trajectories of depressive symptoms in response to prolonged stress in medical interns. *Acta Psychiatr Scand* 2013. doi: 10.1111/acps.12137; 10.1111/acps.12137.
- Knight JM. Physiological and neurobiological aspects of stress and their relevance for residency training. *Acad Psychiatry* 2013;37(1):6-10. doi: 10.1176/appi.ap.11100187; 10.1176/appi.ap.11100187.
- Sargent MC, Sotile W, Sotile MO, Rubash H, Barrack RL. Stress and coping among orthopaedic surgery residents and faculty. *J Bone Joint Surg Am* 2004;86-A(7):1579-86.
- Hurst C, Kahan D, Ruetalo M, Edwards S. A year in transition: a qualitative study examining the trajectory of first year residents' well-being. *BMC Med Educ* 2013;13:96. doi: 10.1186/1472-6920-13-96.
- Levey RE. Sources of stress for residents and recommendations for programs to assist them. *Acad Med* 2001;76(2):142-50.
- Grant F, Guille C, Sen S. Well-being and the risk of depression under stress. *PLoS One* 2013;8(7):e67395. doi: 10.1371/journal.pone.0067395.
- Sen S, Kranzler HR, Krystal JH, et al. A prospective cohort study investigating factors associated with depression during medical internship. *Arch Gen Psychiatry* 2010;67(6):557-65. doi: 10.1001/archgenpsychiatry.2010.41.
- Yi MS, Luckhaupt SE, Mrus JM, et al. Religion, spirituality, and depressive symptoms in primary care house officers. *Ambul Pediatr* 2006;6(2):84-90. doi: S1530-1567(05)00014-6 [pii].
- Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 2002;136(5):358-67.
- Lebensohn P, Dodds S, Benn R, et al. Resident wellness behaviors: relationship to stress, depression, and burnout. *Fam Med* 2013;45(8):541-9.
- Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and medical errors among American surgeons. *Ann Surg* 2010;251(6):995-1000. doi: 10.1097/SLA.0b013e3181b1bfdab3.
- West CP, Tan AD, Habermann TM, Sloan JA, Shanafelt TD. Association of resident fatigue and distress with perceived medical errors. *JAMA* 2009;302(12):1294-300. doi: 10.1001/jama.2009.1389.
- Landrigan CP, Rothschild JM, Cronin JW, et al. Effect of reducing interns' work hours on serious medical errors in intensive care units. *N Engl J Med* 2004;351(18):1838-48. doi: 10.1056/NEJMoa041406.

14. Passalacqua SA, Segrin C. The effect of resident physician stress, burnout, and empathy on patient-centered communication during the long-call shift. *Health Commun* 2012;27(5):449-56. doi: 10.1080/10410236.2011.606527.
15. Balch CM, Freischlag JA, Shanafelt TD. Stress and burnout among surgeons: understanding and managing the syndrome and avoiding the adverse consequences. *Arch Surg* 2009;144(4):371-6. doi: 10.1001/archsurg.2008.575.
16. Schmitz GR, Clark M, Heron S, et al. Strategies for coping with stress in emergency medicine: early education is vital. *J Emerg Trauma Shock* 2012;5(1):64-9. doi: 10.4103/0974-2700.93117.
17. Doolittle BR, Windish DM, Seelig CB. Burnout, coping, and spirituality among internal medicine resident physicians. *J Grad Med Educ* 2013;5(2):257-61. doi: 10.4300/JGME-D-12-00136.1.
18. Selman L, Young T, Vermandere M, Stirling I, Leget C, Research Subgroup of the European Association for Palliative Care Spiritual Care Taskforce. Research priorities in spiritual care: an international survey of palliative care researchers and clinicians. *J Pain Symptom Manage* 2014 Oct;48(4):518-31. doi: 10.1016/j.painsymman.2013.10.020. Epub 2014 Mar 27.
19. Accreditation Council for Graduate Medical Education. ACGME program requirements for graduate medical education in family medicine. www.acgme.org.
20. Levine RB, Haidet P, Kern DE, et al. Personal growth during internship: a qualitative analysis of interns' responses to key questions. *J Gen Intern Med* 2006;21(6):564-9. doi: 10.1111/j.1525-1497.2006.00383.x.
21. Dyrbye LN, West CP, Satele D, et al. Burnout among US medical students, residents, and early career physicians relative to the general US population. *Acad Med* 2014;89(3):443-51. doi: 10.1097/ACM.0000000000000134.
22. Johnson AH, Brock CD, Hamadeh G, Stock R. The current status of Balint groups in US family practice residencies: a 10-year follow-up study, 1990-2000. *Fam Med* 2001;33(9):672-7.
23. Cataldo KP, Peeden K, Geesey ME, Dickerson L. Association between Balint training and physician empathy and work satisfaction. *Fam Med* 2005;37(5):328-31.
24. Bar-Sela G, Lulav-Grinwald D, Mitnik I. "Balint group" meetings for oncology residents as a tool to improve therapeutic communication skills and reduce burnout level. *J Cancer Educ* 2012;27(4):786-9. doi: 10.1007/s13187-012-0407-3.
25. Satterfield JM, Becerra C. Developmental challenges, stressors and coping strategies in medical residents: a qualitative analysis of support groups. *Med Educ* 2010;44(9):908-16. doi: 10.1111/j.1365-2923.2010.03736.x.
26. Pitt E, Rosenthal MM, Gay TL, Lewton E. Mental health services for residents: more important than ever. *Acad Med* 2004;79(9):840-4.
27. Dunn LB, Moutier C, Green Hammond KA, Lehrmann J, Roberts LW. Personal health care of residents: preferences for care outside of the training institution. *Acad Psychiatry* 2008;32(1):20-30. doi: 10.1176/appi.ap.32.1.20.
28. Campbell S, Delva D. Physician do not heal thyself. Survey of personal health practices among medical residents. *Can Fam Physician* 2003;49:1121-7.
29. Lee FJ, Stewart M, Brown JB. Stress, burnout, and strategies for reducing them: what's the situation among Canadian family physicians? *Can Fam Physician* 2008;54(2):234-5. doi: 54/2/234 [pii].
30. McCray LW, Cronholm PF, Bogner HR, Gallo JJ, Neill RA. Resident physician burnout: is there hope? *Fam Med* 2008;40(9):626-32.
31. Eckleberry-Hunt J, Van Dyke A, Lick D, Tucciarone J. Changing the conversation from burnout to wellness: physician well-being in residency training programs. *J Grad Med Educ* 2009;1(2):225-30. doi: 10.4300/JGME-D-09-00026.1.
32. Ospina-Kammerer V, Figley CR. An evaluation of the respiratory one method (ROM) in reducing emotional exhaustion among family physician residents. *Int J Emerg Ment Health* 2003;5(1):29-32.
33. Dabrow S, Russell S, Ackley K, Anderson E, Fabri PJ. Combating the stress of residency: one school's approach. *Acad Med* 2006;81(5):436-9. doi: 10.1097/01.ACM.0000222261.47643.d2.
34. Fortney L, Luchterhand C, Zakletskaia L, Zgierska A, Rakel D. Abbreviated mindfulness intervention for job satisfaction, quality of life, and compassion in primary care clinicians: a pilot study. *Ann Fam Med* 2013;11(5):412-20. doi: 10.1370/afm.1511.
35. Krasner MS, Epstein RM, Beckman H, et al. Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA* 2009;302(12):1284-93. doi: 10.1001/jama.2009.1384.