

RESEARCH ARTICLE**Wellness behavior profiles of internal medicine and psychiatry residents****Authors**

Milad Memari, MD¹, Margaret S. Chisolm, MD²,
Sean Tackett, MD, MPH¹, Anne Ruble, MD²,
Scott Wright, MD¹

Affiliations

Departments of Medicine¹ and Psychiatry², Johns
Hopkins Bayview Medical Center, Johns Hopkins
University School of Medicine, Baltimore, MD

Corresponding Author:

Dr. Milad Memari,
mmemari1@jhmi.edu

ABSTRACT

Background: The ACGME requires that residency training programs (RTP) establish interventions that facilitate resident well-being, promote resilience, and guard against burnout. There is, however, limited data characterizing residents' engagement in wellness promoting behaviors during training to guide these initiatives.

Methods: We surveyed all internal medicine and psychiatry residents at our institution regarding sixteen self-care or wellness-promoting behaviors that could have been performed away from work over the preceding 30-days; they were divided into activities done alone and those involving others.

Results: 101 residents were invited to share their behavioral profiles. Most residents completed the entirety of the survey (86%, n=87). Getting a good night's sleep (sleeping >7 hours consecutively) was the most frequent behavior that did not require others (averaged 14 times in prior 30 days). The most frequent wellness activities involving others included "cuddling" with another adult (16 times), calling family members (13 times), and sharing a meal with friends or family (11 times). Most behaviors (13/16) were performed more frequently among residents compared to interns; two of these reaching statistical significance - sleeping >7 hours consecutively and attending a special event (both $P < 0.05$).

Discussion: This study offers a glimpse into the self-care activities of interns and residents in 2 training programs. The wellness behaviors that were most commonly endorsed involved trainees' friends and family. These behavioral profiles of interns and residents may serve to inform the development of the program-specific wellness curricula that have been mandated by the ACGME.

Key words: Well-being, burnout, self-care, residency, wellness.

INTRODUCTION

Burnout is a serious problem among those working in healthcare, and its prevalence is currently estimated to exceed 50% among practicing physicians in the US today.¹ More than half of all medical students, residents, and practicing physicians in the United States (US) report symptoms of burnout.^{2, 3} Resident physicians are at especially high risk due to pressures to perform for supervisors, limited autonomy, and isolation from social supports.^{4, 5} Burnout is associated with increased risk of relationship discord, alcohol use disorders, and suicidal ideation.⁶ Burnout threatens patient safety, is associated with lower quality of care, and has been linked to expanding health care costs – primarily through medication errors, unnecessary testing, and patient dissatisfaction which may translate into doctor shopping or malpractice claims.¹ Burnout also leads to poor judgment and impulsivity.⁷ On the other hand, increased personal well-being has been associated with enhanced resident empathy for patients, and greater satisfaction at work.⁸

In 2017, in response to these concerns, the Accreditation Council of Graduate Medical Education (ACGME) revised its requirements and emphasized that residency training programs (RTPs) needed to prioritize the self-care and well-being of all trainees.⁹ The ACGME views self-care to be a professional responsibility which, like other

skills that support physician professionalism, can be learned via guidance, role-modeling,^{10, 11} and curricular attention. Thus, the ACGME now requires RTPs to develop and/or bolster existing interventions to facilitate authentic resident well-being and promote resilience so as to guard against burnout.

The wellness behaviors and self-care choices of residents shed light onto the activities that they are prioritizing. While working adults will never be required to share personal behavioral choices with their employers, RTPs cannot develop individualized self-care plans without first understanding what their trainees are already doing to support their own well-being. With this quandary in mind, we set out to characterize the wellness promoting behaviors of residents at two RTPs in late autumn of 2017.

METHODS

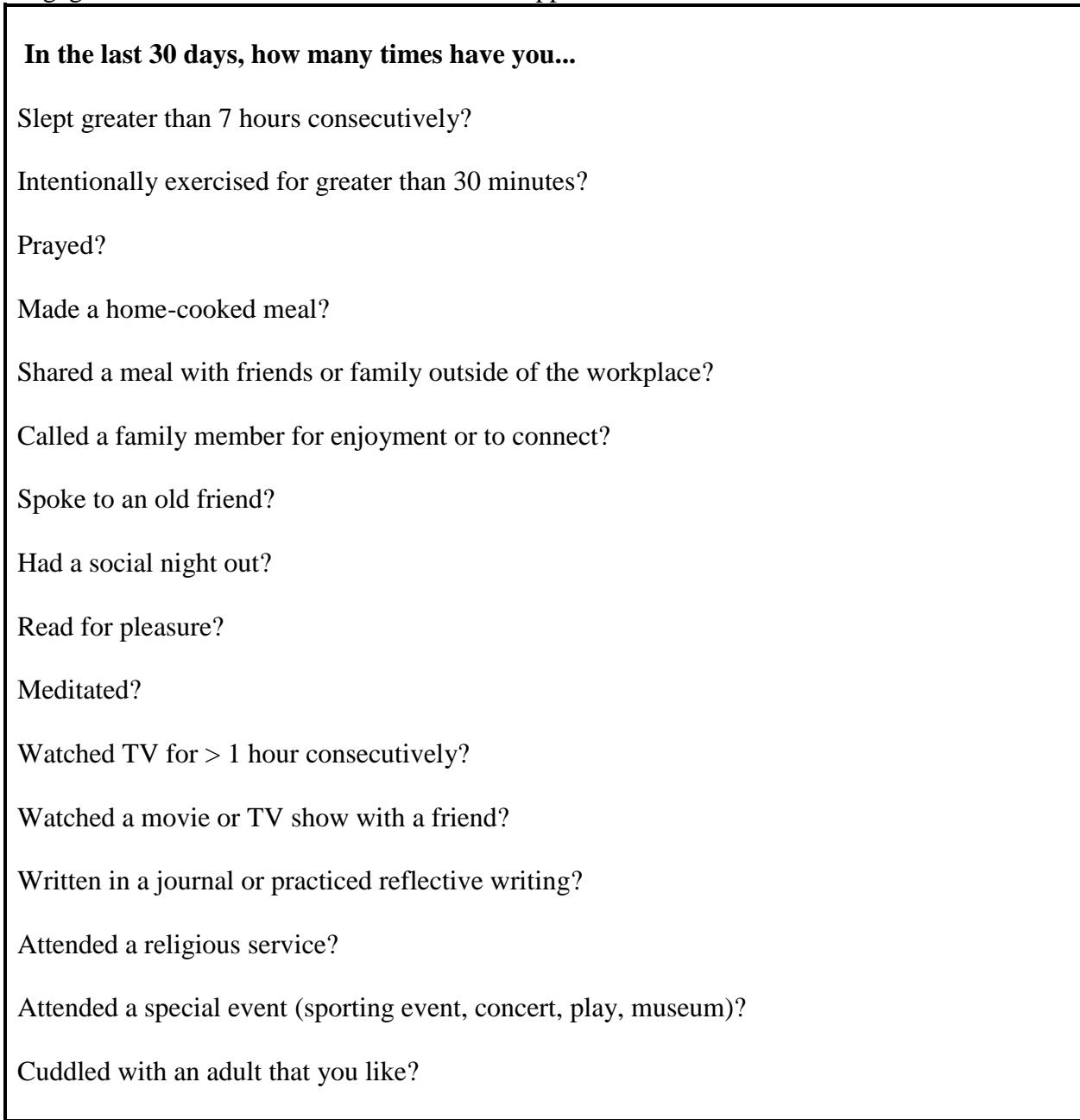
In December 2017, we recruited participants from two Johns Hopkins University School of Medicine residency training programs to be part of a wellness study: the Internal Medicine (IM) residency, located at the Johns Hopkins Bayview Medical Center (JHBMC), and the Johns Hopkins University (JHU) General Psychiatry residency, the latter of which spans both the JHBMC and the Johns Hopkins Hospital (JHH) campuses.

This survey instrument sought to assess trainee attention to self-care as measured by the

number of times they engaged in specific wellness promoting activities over the prior 30 days. The instrument asked about sixteen self-care behaviors; this list was established by a review of published biomedical literature, discussions at our research conferences, and with input from experienced

educators as well as recent graduates from these programs.^{11, 13 - 17} Trainees were asked about the frequency that they engaged in each behavior, (see Figure). Limited demographic data were also collected.

Figure. The series of survey questions that asked trainees to write in the frequency with which they engaged in 16 behaviors that are believed to support wellness.



The Johns Hopkins University (JHU) Institutional Review Board approved this study. This work was funded by the Johns Hopkins Institute for Excellence in Education’s *Shark Tank* grant program.

Of the total of 101 IM and general psychiatry residents, 91 agreed to participate: 48 IM and 43 psychiatry residents. Eighty-seven trainees completed the entire survey (86% response rate). The mean age of the participating trainees was 30 years, Table 1.

RESULTS

Table 1. Select participant characteristics for the 87 intern and resident respondents

	Study Participants N = 87
Residency Program, n (%)	
Internal Medicine	45 (52%)
Psychiatry	42 (48%)
Post-Graduate Year, n (%)	
1 st	28 (32%)
2 nd	24 (28%)
3 rd	24 (28%)
4 th	11(12%)
Female Gender, n (%)	52 (60%)
Age in years, mean (SD)	30.2 (3.1)
Single, n (%)	29 (33%)
Lives alone, n (%)	24 (28%)
Has children, n (%)	12 (14%)

Of the wellness promoting behaviors that involved others, “cuddling” with another adult (15.6 [SD 11.7] times in the prior 30 days), and calling a loved one (12.9 [SD 12.3] times) were most commonly performed (Table 2). Among the

self-care activities that can be done alone, getting a good night’s sleep (>7 consecutive hours; 13.8 [SD 9.2] times), and making a home cooked meal (10.4 [SD 8.6] times) were most frequent. Of the 16 behaviors studied, 13 were performed more

frequently among residents compared to interns; two of these reaching statistical significance (sleeping >7 hours consecutively {16.3 times versus 8.2 times} and attending a special event [e.g. sporting event, play, concert...], {1.8 times versus 0.9 times}], both $P < 0.05$). When considering all of these activities together,

residents engaged in more wellness promoting behaviors than did interns in the prior 30 days (119 versus 90, $p = 0.01$). The three activities that interns engaged in more frequently than residents were praying, meditating, and reflective writing (all $p > 0.05$).

Table 2. Wellness behaviors of Medicine and Psychiatry interns and residents in the last 30 days

Experiences	Interns, N = 28; Mean (SD)	Residents, N = 59; Mean (SD)	P-value
<i>Activities involving others</i>			
Cuddling with another adult	15.0 (13.2)	15.9 (11)	0.73
Called a family member just to talk	10.6 (8.9)	14.0 (13.6)	0.23
Shared a meal with friends or family	10.3 (10.3)	10.8 (8.1)	0.81
Watching a movie or TV with a friend	4.9 (8.2)	6.2 (7.8)	0.47
Spoke to an old friend	4.2 (5.4)	5.4 (6.0)	0.36
Had a social night out	2.8 (1.5)	3.6 (2.5)	0.15
All activities involving others	47.2(5.7)	56.7 (3.8)	0.17
<i>Activities that can be performed alone</i>			
Slept greater than 7 hours consecutively	8.2 (6.1)	16.3 (9.3)	0.00
Prayed	8.0 (11.5)	6.9 (13.2)	0.71
Made a home-cooked meal	7.4 (7.1)	11.8 (9.0)	0.026
Watched TV for more than 1 hour consecutively	6.4 (6.4)	9.8 (8.4)	0.068
Read for pleasure	3.9 (6.8)	7.2 (9.6)	0.10
Intentionally exercised for greater than 30 minutes	3.9 (5.7)	6.5 (7.4)	0.099
Meditated	3.7 (6.6)	2.3 (5.5)	0.29
Attended a special event (sporting event, concert, play, museum)	0.9 (1.3)	1.8 (2.2)	0.042
Written in a journal or practiced reflective writing	0.7 (1.4)	0.6 (1.7)	0.891
Attended a religious service	0.5 (1.3)	0.8 (1.6)	0.403
All activities done alone	44.5 (4.7)	64.2 (4.0)	0.005
All wellness supporting behaviors	90.1 (9.7)	119.0 (6.2)	0.01

Subgroup analyses examining differences by gender or residency program (internal medicine versus psychiatry) failed to reveal any significant differences.

DISCUSSION

In the fall of 2017, residents in internal medicine and psychiatry residency programs at one institution engaged in a breadth of wellness promoting behaviors. Residents participated in more of these activities than did interns. It is known that good sleep is necessary for learning,¹² but – at this critical time for professional growth and identity formation – trainees are not sleeping enough.

While previous studies have explored wellness and burnout in graduate medical education (GME),¹⁸ trainees' engagement in many self-sustaining behaviors has not been well characterized previously. Much of the previous work has focused on assessment of causes of burnout among residents,¹⁹ while some research has explored interventions that may help mitigate these effects.^{20, 21} Prior studies have examined exercise habits among physicians and trainees, with conclusions extolling the wellness benefits of physical activity and 'working out' for residents.²² Other work in this realm explored the value placed on sleep by residents when they are 'postcall'. It was discovered that many residents explicitly choose to trade off sleep in an attempt to maintain a semblance of a "normal life".^{23, 24} One study

investigating the nutrition habits of trainees found that among internal medicine residents whose personal fruit and vegetable intake is subpar, their nutrition counseling to patients is inferior to those who prioritize healthful eating, thereby directly affecting patient care.²⁵ The AMA has highlighted nutrition and fitness among its list of "keys for wellness" among healthcare providers.²⁶ One large, multi-specialty survey revealed that residents engaging more frequently in activities involving friends and family exhibited increased wellness and experienced less dysphoria than peers who were making less time for socialization and group activities in their free time.²⁷ Internship is believed to be the busiest and most stressful year of training because of the number of rotations with on-call responsibilities and the adjustment to the new roles.^{21,24} These factors may explain why interns less regularly engaged in the studied behaviors. The stressful adjustment to their new lives as doctors for interns may explain their higher reliance on prayer, meditation, and reflective writing as compared to residents.

Several limitations of this study should be considered. First, although we gleaned the perspectives of trainees from two residency programs, both were associated with a single school of medicine. Second, the rates of engagement in these behaviors were self-reported. However, there are no reasons to suspect dishonesty or biased responses. Third, we only asked about wellness promoting behaviors from the

month or thirty days before the survey's administration. This time period was chosen because recall beyond thirty days would be less accurate and would increase the likelihood of recall bias; other studies have used the same interval. Lastly, the list of the 16 self-care and wellness promoting behaviors were not exhaustive and some residents may rely heavily on activities that were not included in the survey.

With ACGME's position on self-care as a professional competency that must be supported and monitored, this study's findings suggest that encouraging trainees – especially interns - to make time for well promoting activities in their time away from work may be warranted. Teaching and curricula focused exclusively on enhancing trainee resilience at the hospital, without consideration of how they are spending their downtime to recover and re-energize, may be insufficient. Much of the work done in GME is solitary and it can feel lonely; this may be why the most frequent wellness

promoting behaviors pursued by trainees in their free time are done with friends and family. If trainees were to complete a “wellness promoting behavioral profile” that shows their time spent in different activities, for their own examination or to be shared with a faculty advisor or program director, this may explicitly promote attention to their own commitment to self-care. Heightened awareness and reflection on their practices could translate into optimizing well-being and guarding against burnout.

ACKNOWLEDGEMENTS

Johns Hopkins' Institute for Educational Excellence's Shark Tank Program supported this study.

Dr. Wright is the Anne Gaines and G. Thomas Miller Professor of Medicine which is supported through the Johns Hopkins' Center for Innovative Medicine.

REFERENCES

1. Shanafelt TD, Dyrbye LN, West CP. Addressing physician burnout: The way forward. *JAMA*. 2017; 317 (9): 901-902. Doi:10.1001/jama.2017.0076.
2. Dyrbye, LN et al. Burnout and suicidal ideation among US medical students. *Ann Intern Med*. 2008; 2;149(5):334-41.
3. Shanafelt, TD et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. *Mayo Clin Proc*. 2015 Dec;90(12):1600-13. doi: 10.1016/j.mayocp.2015.08.023.
4. Lefebvre, DC. Perspective: Resident physician wellness: A New Hope. *Acad Med*. 2012;87(5):598-602. doi: 10.1097/ACM.0b013e31824d47ff.
5. Ripp, JA et al., "Well-being in graduate medical education: A call to action". *Acad Med*. 2017 Jul;92(7):914-917. doi: 10.1097/ACM.0000000000001735.
6. Oreskovich, MR. The prevalence of substance use disorders in American physicians. *Am J Addict*. 2015 Jan;24(1):30-8. doi: 10.1111/ajad.12173.
7. Shanafelt TD et al. Relationship between increased personal well-being and enhanced empathy among internal medicine residents. *J Gen Intern Med*. 2005; 20(7): 559–564.
8. Kahneman D. The lazy controller. *Thinking, Fast and Slow*. New York, NY: Farrar, Straus and Giroux; 2011.
9. ACGME Common Program Requirements, 2017. *Accreditation Council for Graduate Medical Education*.
10. Wright SM et al. Attributes of excellent attending-physician role models. *N Eng J Med*. 1998; 339: 1986-93.
11. Wright SM, Carrese JA. Which values do attending-physicians try to pass on to house officers? *Medical Education*. 2001; 35: 941-945.
12. Pang, Alex Soojung-Kim. Sleep. In: *Rest: Why you get more done when you work less*. New York, NY: Basic Books; 2016.
13. Frank E, Rothenberg R, Lewis C, Belodoff BF. Correlates of physicians' prevention-related practices: findings from the Women Physicians' Health Study. *Arch Fam Med* 2000;9(4):359-67.
14. Abramson S, Stein J, Schaufele M, Frates E, Rogan S. Personal exercise habits and counseling practices of primary care physicians: a national survey. *Clin J Sport Med* 2000;10(1):40-8.
15. Panagioti M et al. Controlled interventions to Reduce Burnout in Physicians: A Systematic Review and Meta-analysis. *JAMA Intern Med*. 2017; 177 (2): 195-205. Doi:10.1001/jamaInternmed.2016.7674.
16. Awa W, Plaumann M, Walter U. Burnout prevention: a review of intervention programs. *Patient Educ Couns*. 2010;78(2):184-190.

17. Ruotsalainen J, Verbeek J, Mariné A, Serra C. Preventing occupational stress in healthcare workers. *Cochrane Database Syst Rev.* 2015;(4):CD002892.
18. Lebensohn P et al. Resident wellness behaviors: relationship to stress, depression and burnout. *Fam Med.* 2013 Sep; 45(8): 541-9.
19. Dyrbye L, Shanafelt T. A narrative review on burnout experienced by medical students and residents. *Med Educ.* 2016 Jan; 50 (1): 132-49.
20. Desai SV, Feldman L, Brown L, et al. Effect of the 2011 vs 2003 duty hour regulation-compliant models on sleep duration, trainee education and continuity of patient care among internal medicine house staff: a randomized trial. *JAMA Intern Med.* 2013; 173 (8): 649-655. Doi:10.1001/jamainternalmed.2013.2973.
21. Williams D., Tricomi G, Gupta J, Janise A. Efficacy of burnout interventions in the medical education pipeline. *Acad Psychiatry.* 2015 Feb; 39 (1): 47-54.
22. Williams AS et al. Understanding the exercise habits of residents and attending physicians: a mixed methodology study. *Fam Med.* 2015 Dec; 47 (2): 118-23.
23. Taylor T et al. Recovery of sleep or recovery of self? A grounded theory study of residents' decision making regarding how to spend their nonclinical postcall time. *Acad Med.* 2016; 91:395-400.
24. Baldwin Jr., DC, Daugherty, SR, Ryan, PM, Yaghamour, NA. What do residents do when not working or sleeping? A multispecialty survey of 36 residency programs. *Acad Med.* 2012;87:395-402.
25. Khandelwal S, Zemore SE, Hemmerling A. Nutrition education in internal medicine residency programs and predictors of residents' dietary counseling practices. *J Med Educ Curric Dev.* 2018 Mar 21.
26. American Medical Association. *Preventing burnout in medical residents and fellows: 6 keys for wellness.* January 20, 2016. Accessed online at <https://www.ama-assn.org/residents-students/resident-student-health/preventing-burnout-medical-residents-and-fellows-6-keys>.
27. Jauhar S., "The real problem with medical internships". *The New York Times.* July 1, 2015.