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Improving burnout and well-being among medicine residents: Impact of a grassroots intervention compared to a formal program curriculum

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Abstract:

BACKGROUND: With growing resident burnout, Accreditation Council for Graduate Medical Education issued new requirements for program interventions to optimize resident well-being. Little evidence exists on how to best teach resiliency to residents. This study assesses the impact of both a grassroots intervention and formal resiliency curriculum on resident burnout and well-being.

MATERIALS AND METHODS: From November 2016 to August 2017, residents in a large Internal Medicine Residency Program participated in grassroots wellness interventions from the resident-led Gator Council in Gainesville, FL USA. From August 2017 to June 2018, residents participated in a formal program-driven resiliency curriculum. Wellness interventions included monthly morning reports, bimonthly workshops, and biannual noon conferences. Pre- and postintervention Maslach Burnout Inventory (MBI) and Physician Well-Being Index (PWBI) assessed the effect of both interventions on resident burnout and well-being. Statistical analyses used Student's *t*-test, Fisher's exact tests, and linear regression model.

RESULTS: One hundred and twenty-two residents participated in grassroots interventions. One hundred and seventeen (87 residents, 35 students) participated in formal curriculum. Mean MBI scores for all three sections did not differ between pre- and postgrassroots intervention (emotional exhaustion [EE] $P = 0.46$; depersonalization [DP] $P = 0.43$; personal accomplishment [PA] $P = 0.73$) or between pre- and postcurriculum (EE $P = 0.20$; DP $P = 0.40$; PA $P = 0.51$). Students scored higher burnout levels compared to residents in EE ($P = 0.001$) and PA ($P = 0.02$). Pre- versus postcurriculum PWBI scores did not differ among residents ($P = 0.20$), while PWBI scores improved among students ($P = 0.01$).

CONCLUSIONS: This study found no improvement in resident burnout or well-being from a bottom-up and top-down approach. Our results imply the need for an early wellness curriculum to improve student well-being given their higher level of burnout. System-wide efforts are vital to combat physician burnout.

Keywords:

Burnout, curriculum, medical residency, resident burnout, resilience

Introduction

The transition from medical school to residency is challenging. Residents face intense clinical responsibilities resulting in long work hours and limited autonomy – all

which contribute to physician burnout. Recognizing the growing dilemma of resident burnout, the Accreditation Council for Graduate Medical Education (ACGME) issued new requirements in academic year (AY) 2016 for all residency programs

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to “establish policies and programs supporting optimal resident and faculty member well-being.”^[1] Yet, the ACGME does not specify program guidelines nor do best practices exist in the literature on resident resiliency education. In March 2016, a large Internal Medicine (IM) Residency Program administered a needs-assessment survey to gauge our residents’ acclimation into residency. The results showed that 18% of residents were dissatisfied with opportunities to manage fatigue or stress and 22% were dissatisfied with current processes to raise concerns (e.g., via chief residents, House staff Advisory Committee). In response, the IM residency leadership created a Wellness Gator Council as the first step to cultivate residents’ resiliency and empower residents to enact inclusive wellness activities. Grassroots efforts from the Wellness Gator Council subsequently drove the program development of a formal resident resiliency curriculum. This study investigated the effect of the Wellness Gator Council grassroots interventions compared to the formal resiliency curriculum on resident burnout and well-being. We hypothesized that the formal resiliency curriculum would be superior to grassroots interventions in mitigating burnout and improving resident well-being, as measured by the well-validated Maslach Burnout Inventory (MBI) and Physician Well-Being Index (PWBI).

Materials and Methods

Educational setting, description of participants, and ethics

This cross-sectional study was conducted from November 2016 to June 2018 in the department of medicine within a large academic institution. Targeted participants were 107 residents in the IM Residency Program in Gainesville, FL U. S. A from AY16-AY18; 35 students (physician assistant and third-year and fourth-year medical students) rotating in their 8-week IM clerkship were secondary participants. The organization’s Institutional Review Board approved the study under exemption from human research (IRB#201702978) and in accordance with the Helsinki Declaration of 1975, as revised in 2000.

Study design

Resident-led Wellness Gator Council

In November 2016, the residency program developed the Wellness Gator Council consisting of a chief residents and 10 resident volunteers as a resident-led effort to cultivate resiliency among their colleagues and their own learning environment. The group met monthly to address real-time resident concerns, develop wellness activities during protected educational time, and coordinate social events, for example, tailgating and sports activities (running and volleyball). Wellness grassroots interventions started in mid-November 2016 [Figure 1].

Four 1-h wellness morning reports occurred bimonthly from December 2016 to June 2017 taught by residents in the Wellness Gator Council and supervised by chief residents. Topics included nutrition, guided meditation/ chair yoga, and two “Coffee Talk” debriefings. These “Coffee Talk” sessions provided residents with a safe space and protected educational time to share work and life experiences among peers. Residents were assigned to groups moderated by 1–2 senior residents who provided discussion points during the session. Two faculty-led noon conferences in January 2017 and May 2017 taught behavioral psychology practices and preventative cardiovascular health through nutrition. A “Wellness Column” in the monthly residency e-newsletter highlighted nutrition, healthy habits, and residents’ personal stories of resiliency. A monthly Wellness Event Calendar shared family-friendly outings (e.g., bowling and tailgating) and upcoming educational activities (e.g., wellness morning reports/ noon conferences and institutional events).

Formal program-driven resident resiliency curriculum

In June 2017, the IM residency leadership convened the Wellness Steering Committee of 12 College of Medicine faculty experts who met biweekly to design and operationalize a formal resident resiliency curriculum. All committee members had teaching expertise and faculty development in well-being practices, for example, mindfulness and narrative medicine. With guidance from the Wellness Gator Council and Wellness Steering Committee, the residency program implemented a formal resident resiliency curriculum in mid-August 2017. This multimodal curriculum included (1) monthly 1-h morning reports on various wellness topics (e.g., assessments of burnout, wellness goal-setting, sleep hygiene, exercise health, nutrition), (2) six bimonthly 1-h noon conferences on various resiliency practices (e.g., healthy lifestyle, work–life balance, humanities in medicine), (3) monthly clinic orientations of the Employee Assistance Program (EAP) led by EAP psychologists, and (4) bimonthly 3-h small group workshops on various wellness practices [Figure 2].

The first workshop of each month focused on time management, work–life balance, and mindfulness. The second workshop shared reflective writing narratives and positive psychology practices. Workshops and EAP orientations occurred within the residents’ 1-month ambulatory rotation. All sessions were interactive and taught by faculty experts within the Wellness Steering Committee. Each faculty taught 2–3 sessions/year. These program-driven sessions replaced all prior interventions from the Wellness Gator Council except for the monthly Wellness Event Calendar and the monthly residency e-newsletter which exist to date.

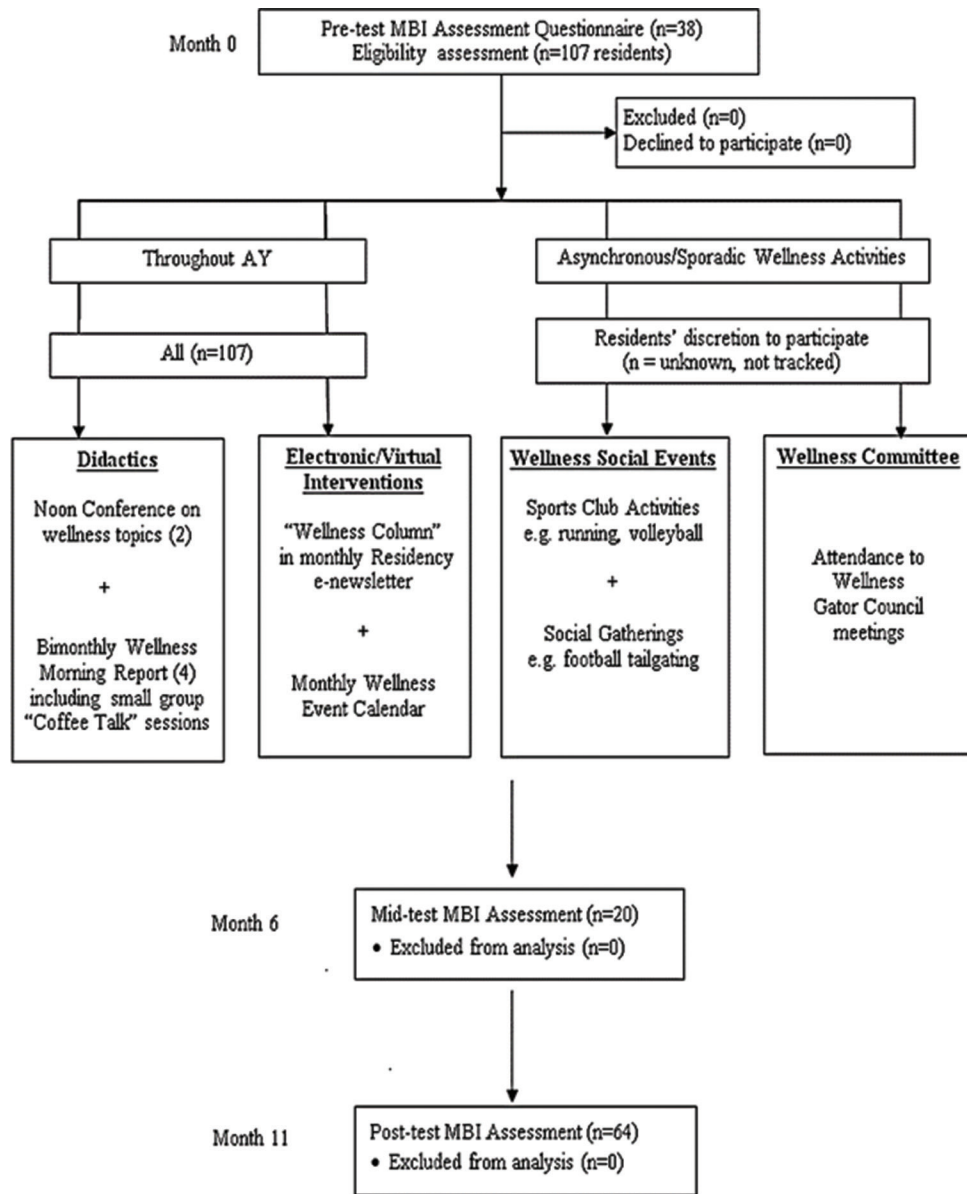


Figure 1: Resident-led wellness gator council intervention

Technical information

To analyze the effect of the Wellness Gator Council grassroots interventions on physician burnout, the 22-question MBI^[2,3] measuring three dimensions of burnout (emotional exhaustion [EE], depersonalization [DP], and personal accomplishment [PA]) was administered to IM residents and any students in their IM clerkship rotation during a Resident Noon Conference in November 2016 (preintervention), February 2017 (mid-intervention), and August 2017 (postintervention). Students were present in August 2017, but none were present in November 2016 or February 2017.

To assess the impact of the formal resident resiliency curriculum, IM residents and students completed the validated MBI and the 7-question PWBI^[4] during a noon

conference in August 2017 (preintervention) and June 2018 (postintervention) [Figures 1 and 2]. All MBI and PWBI responses were anonymous and voluntary. Chief residents collected all responses.

Statistics

This study compared outcomes pre-, mid-, and postexposure to the Gator Council grassroots interventions (month 0, 6, and 11) and compared outcomes pre- and postexposure to the formal resiliency curricular interventions (month 0 and 11) for all learners. The response variables were MBI scores and PWBI scores. Primary outcome was MBI scores and PWBI scores before and after the Wellness Gator Council grassroots intervention and the program-driven formal resiliency curriculum.

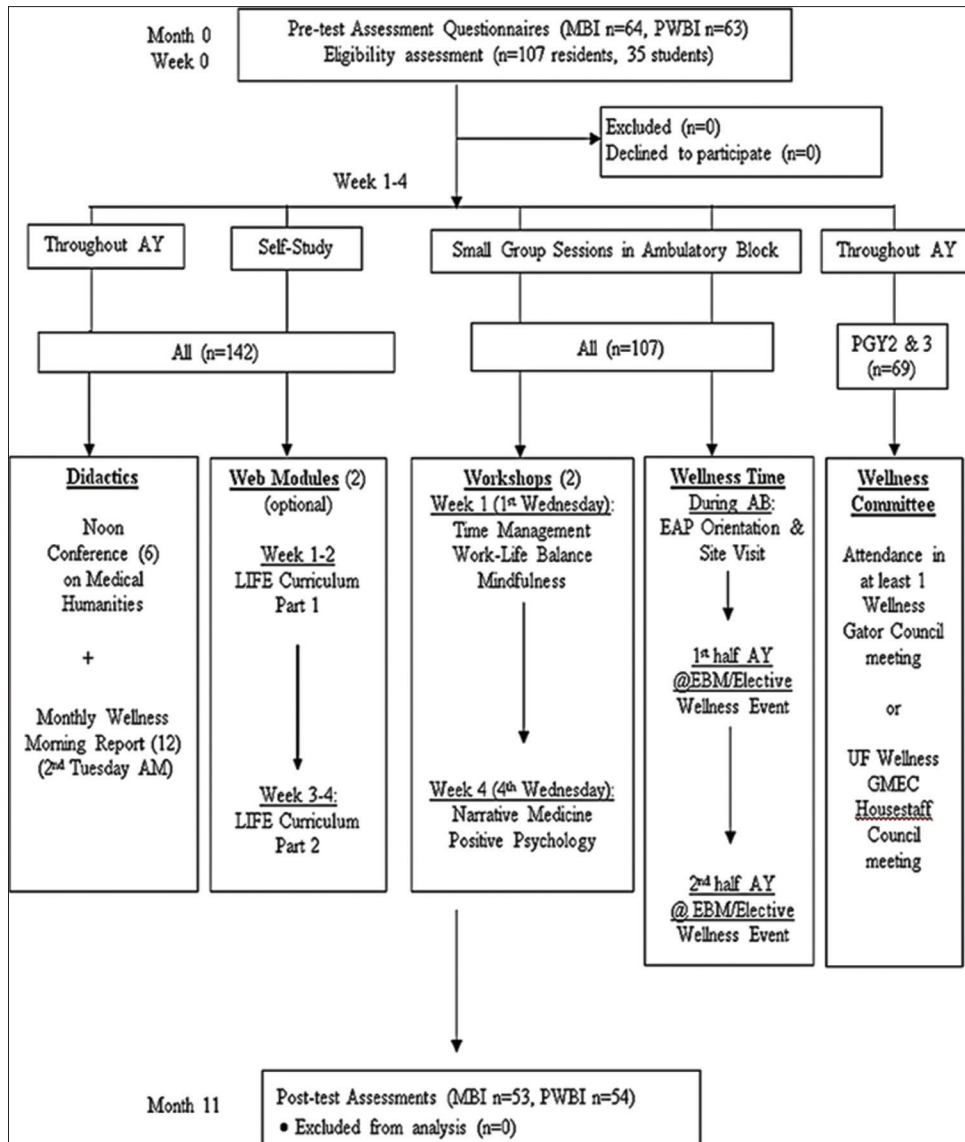


Figure 2: Program-driven formal resident resiliency curriculum

Statistical analyses included descriptive two-sample Student’s *t*-test (comparing mean differences between two independent groups), Fisher’s exact tests (comparing differences between %burnout levels), and linear regression model. Analysis of variance with correction for multiple testing methods was used while conducting Bartlett’s test for assessing equality of variance within groups.

Results

Resident-led grassroots wellness gator council

A total of 122 residents completed the MBI; 5 residents left section PA blank in the postintervention phase [Table 1]. No students participated in the grassroots intervention. For MBI section EE, DP, and PA, no statistically significant difference was found in mean

MBI scores between pre-, mid- and postgrassroots interventions for each section, using Student’s *t*-test. [Table 1 and Figure 3].

Fisher’s exact test found no statistically significant difference in %levels of burnout (low, moderate, and high) for each MBI section between pre-, mid- and postgrassroots intervention [Table 2]. Bartlett’s test for equal variances indicated no evidence of heterogeneity between time periods for each section (EE *P* = 0.21; DP *P* = 0.71; PA *P* = 0.08).

Program-driven formal resident resiliency curriculum

A total of 117 participants (82–87 residents, 30–35 students) completed the MBI and PWBI [Table 3].

Table 1: Mean scores (±standard error) on the Maslach Burnout Inventory and Physician Well-being Index before and after exposure to the Wellness Gator Council grassroots interventions and to the formal resident resiliency curriculum

Well-being assessments	Wellness Gator Council grassroots interventions				Formal resident resiliency curriculum		
	Preintervention (n=38)	Mid-intervention (n=20)	Postintervention (n=64) (n=59 for PA)	P [¶]	Precurriculum (n=64) (n=59 for PA)	Postcurriculum (n=53)	P [¶]
MBI [§]							
Section EE*	11.92±1.65	8.30±1.56	13.34±1.12	0.46	13.34±1.12	11.25±1.2	0.20
Section DP [†]	10.50±1.26	9.10±1.53	11.78±1.00	0.43	11.78±1.00	10.53±1.1	0.40
Section PA [‡]	37.45±1.43	37.30±1.92	36.92±0.84	0.73	36.92±0.84	36.04±1.1	0.51
PWBI (n=63, pre-) (n=54, post-)	-	-	-	-	2.70±0.23	1.85±0.22	0.01

*EE (7 questions); [†]DP (7 questions); [‡]PA (8 questions). [§]Total 22 questions rated on frequency likert scale from 0 to 6 (0=Never to 1=few times a year to 6=every day) per section. Higher scores in section EE (total 42) and section DP (total 42) and lower scores in section PA (total 48) indicate burnout. ^{||}Total 7 questions rated on yes/no scale. Total "Yes" score ≥5 indicate low well-being e.g., low mental quality of life and high fatigue. [¶]P value shown compares pre-versus postintervention. P values based on a student's t-test. EE=Emotional exhaustion, DP=Depersonalization, PA=Personal accomplishment, PWBI=Physician Well-being Index, MBI=Maslach Burnout Inventory

Table 2: Percent level of burnout on the Maslach Burnout Inventory before and after exposure to the Wellness Gator Council grassroots interventions and to the formal resident resiliency curriculum

MBI section	Level of burnout [§]	Wellness Gator Council grassroots interventions				Formal resident resiliency curriculum		
		Preintervention (n=38)	Mid-intervention (n=20)	Postintervention (n=64) (n=59 for PA)	P [¶]	Precurriculum (n=64) (n=59 for C)	Postcurriculum (n=53)	P [¶]
EE*	Low	65.79	85	67.19	0.57	67.19	77.36	0.09
	Moderate	28.95	15	25		25	22.64	
	High	5.26	0	7.81		7.81	0	
DP [†]	Low	23.68	35	21.88	0.85	21.88	35.85	0.18
	Moderate	36.84	30	37.50		37.50	24.53	
	High	39.47	35	40.63		40.63	39.62	
PA [‡]	Low	44.74	55	37.29	0.47	37.29	39.62	0.68
	Moderate	18.42	20	32.20		32.20	24.53	
	High	36.84	25	30.51		30.51	35.85	

*EE (7 questions); [†]DP (7 questions); [‡]PA=personal accomplishment (8 questions). [§]Scores for level of burnout as defined below per section: Section EE: Total ≤17: Low-level burnout. Total 18-29: Moderate burnout. Total ≥30: High-level burnout. Section DP: Total ≤5: Low-level burnout. Total 6-11: Moderate burnout. Total ≥12: High-level burnout. Section PA: Total ≤33: High-level burnout. Total 34-39: Moderate burnout. Total ≥40: Low-level burnout. [¶]P shown compares pre versus. postintervention. P based on Fisher's exact test of independence. EE=Emotional exhaustion, DP=Depersonalization, PA=Personal accomplishment, MBI=Maslach Burnout Inventory

Table 3: Mean scores (±standard error) on the Maslach Burnout Inventory and Physician Well-being Index for residents and students pre- versus postintervention to the formal resident resiliency curriculum

Well-being assessments	Medicine residents			Students		
	Precurriculum (MBI: n=40) (PWBI: n=44)	Postcurriculum (MBI: n=42) (PWBI: n=43)	P [¶]	Precurriculum (MBI: n=24) (PWBI: n=19)	Postcurriculum (n=11)	P [¶]
MBI [§]						
Section EE*	10.55±1.31	10.86±1.34	0.87	18.00±1.69	12.73±1.42	0.08
Section DP [†]	10.43±1.27	10.55±1.29	0.95	14.04±1.55	10.45±2.19	0.20
Section PA [‡]	n=35, 38.49±1.08	37.31±1.04	0.45	34.63±1.21	31.18±2.90	0.20
PWBI	2.16±0.27	1.67±0.26	0.20	3.95±0.32	2.55±0.37	0.01

*EE (7 questions); [†]DP (7 questions); [‡]PA (8 questions). [§]Total 22 questions rated on frequency Likert scale from 0 to 6 (0=Never to 1=few times a year to 6=every day) per section. Higher scores in section EE (total 42) and section DP (total 42) and lower scores in section PA (total 48) indicate burnout. ^{||}Total 7 questions rated on yes/no scale. Total "Yes" score ≥5 indicate low well-being e.g., low mental quality of life and high fatigue. [¶]P values based on a Student's t-test. EE=Emotional exhaustion, DP=Depersonalization, PA=Personal accomplishment, PWBI=Physician Well-being Index, MBI=Maslach Burnout Inventory

Mean MBI scores for pre- versus postcurriculum did not differ significantly for each section per Student's t-test [Table 1 and Figure 4].

No statistically significant difference was found in %levels of burnout for each MBI section between pre-and postintervention, using Fisher's exact test [Table 2]. Subgroup analysis stratifying by residents and by students found no statistically significant differences in mean MBI

scores [Table 3] or in %level of burnout [Table 4] for either learner types in pre- versus postcurriculum.

Linear regression analysis indicated that students when compared to residents had significantly higher EE and PA burnout levels precurriculum with a mean difference of 7.45 ± 2.13 (P = 0.001) and 3.86 ± 1.65 (P = 0.02), respectively, and significantly higher PA burnout level postcurriculum with a mean difference of 6.13 ± 2.49 (P = 0.02). No

Table 4: Percent level of burnout on the Maslach Burnout Inventory for residents and students pre- versus postintervention to the formal resident resiliency curriculum

MBI section	Level of burnout [§]	Medicine residents			Students		
		Precurriculum (n=40)	Postcurriculum (n=42)	P	Precurriculum (n=24)	Postcurriculum (n=11)	P
EE*	Low	80	78.57	0.36	45.83	72.73	0.36
	Moderate	15	21.43		41.67	27.27	
	High	5	0		12.50	0	
DP [†]	Low	27.50	35.71	0.33	12.50	36.36	0.31
	Moderate	40	23.81		33.33	27.27	
	High	32.50	40.48		54.17	36.36	
PA [‡]	Low	45.71	42.86	0.88	25	27.27	0.40
	Moderate	31.43	28.57		33.33	9.09	
	High	22.86	28.57		41.67	63.64	

*EE (7 questions), [†]DP (7 questions), [‡]PA (8 questions), [§]Scores for level of burnout as defined below per section: Section EE: Total ≤ 17: Low-level burnout. Total 18-29: Moderate burnout. Total ≥ 30: High-level burnout, Section DP: Total ≤ 5: Low-level burnout. Total 6-11: Moderate burnout. Total ≥ 12: High-level burnout, Section PA: Total ≤ 33: High-level burnout. Total 34-39: Moderate burnout. Total ≥ 40: Low-level burnout, ^{||}P values based on Fisher's exact test of independence. EE=Emotional exhaustion, DP=Depersonalization, PA=Personal accomplishment, MBI=Maslach Burnout Inventory

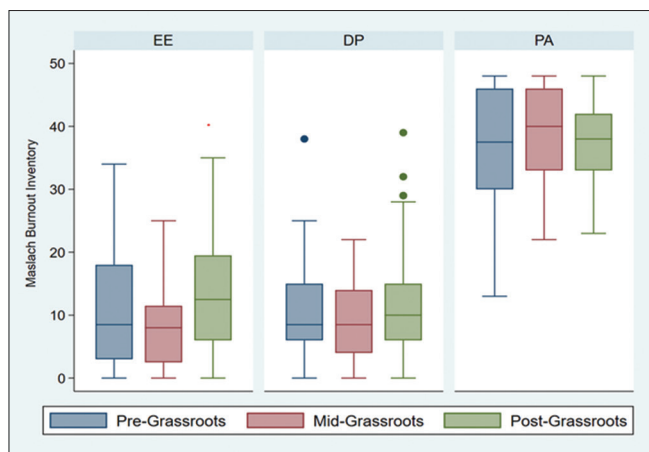


Figure 3: Resident-led intervention: mean Maslach Burnout Inventory score for pre-, mid-, and postgrassroots interventions. No significant difference across section emotional exhaustion, depersonalization, or personal accomplishment

statistically significant difference was seen in DP burnout levels between students and residents (precurriculum $P = 0.08$, postcurriculum $P = 0.97$).

The overall mean PWBI scores improved significantly between pre- and postcurriculum periods ($P = 0.01$), using Student's t -test [Table 1 and Figure 5].

When stratified by learner types, the pre- versus postcurriculum PWBI scores among residents did not differ significantly, while the difference in PWBI scores was statistically significant among students ($P = 0.01$) [Table 3]. Linear regression model adjusting for intervention effect indicated that students had a significant improvement in mean PBWI scores compared to residents (mean difference 1.42 ± 0.35 , $P < 0.001$).

Discussion

Graduate medical education (GME) directors face unique challenges in the successful implementation of resiliency

interventions and wellness curricula for residents, including scheduling constraints, demanding clinical duties, limited educational protected time, and lack of autonomy. Conflicting evidence exists in the literature on how to best teach resiliency and self-care to residents and/or students.^[5,6] Our study is unique to the literature by investigating the value of both resident-led grassroots intervention and formal program-driven resiliency curriculum in mitigating burnout and improving well-being. Resident-led grassroots interventions are particularly important to empower residents to drive their own well-being and instill autonomy over their own self-care. This study failed to prove our hypothesis that a program-driven formal resiliency curriculum is superior to resident-led grassroots intervention in improving burnout and well-being. Our negative results for both educational interventions are consistent with most GME wellness studies.^[7-9] The limited studies on resident-led wellness initiatives demonstrated no improvement in resiliency^[7] or had burnout reductions not attributable to the wellness program.^[10] The body of literature focused on formal resiliency curricula with a single intervention, small sample size, and mixed results^[5,6] and most showed no-long term benefits on well-being. Several potential reasons exist for the lack of improvement in our residents' burnout and well-being scores. We suspect burnout rates worsen through the AY, especially during intern and second year when learning curves are steep.^[11,12] To maintain anonymity, we did not analyze each resident year separately, which may help understand the natural progression of burnout in residency. Other personal confounders may also play a role in resident burnout, for example, childcare and financial stress.^[13] Resiliency curricula with brief interventions, such as ours, may be too cursory to obviate resident burnout or foster well-being on its own. Our findings illustrate that any bottom-up or top-down approach within a single program is insufficient and highlights the need for cultural changes

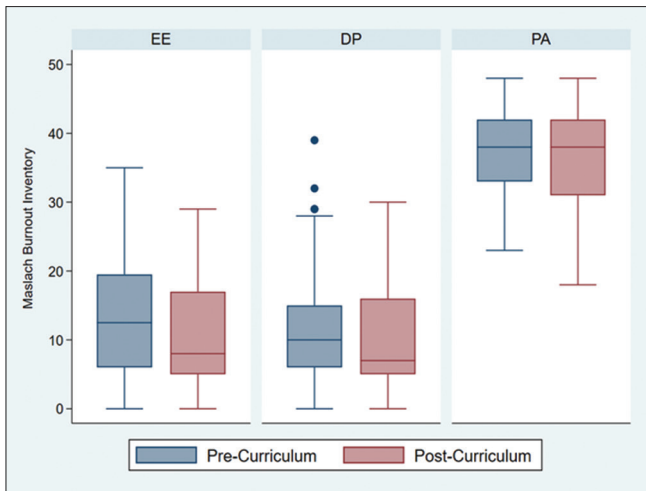


Figure 4: Program-driven formal curriculum: mean Maslach Burnout Inventory scores for pre- vs. post-curriculum.

No significant difference across section emotional exhaustion, depersonalization, or personal accomplishment

and system-wide efforts to realize a positive, sustained impact on resident well-being. Systematic reviews found that both individual-focused (e.g., mindfulness, stress management, and small group debriefings) and organizational interventions (e.g., work hour limitations, clinical practice modifications, and access to mental health services) can offer meaningful benefit in combating physician burnout.^[6] While individual-focused interventions had a small reduction in burnout, organizational interventions produced a significant, moderate reduction in burnout.^[6,14] In its Charter on Physician Well-being^[15] and its Oath to Self-Care and Well-Being,^[16] the Collaborative for Healing and Renewal in Medicine and many other academic societies^[17,18] call for close partnerships between the individual clinician and the academic organization to create the culture of well-being, with the majority of the responsibility lying with the system itself.

With comparable burnout rates, our study supports the current literature citing significant presence of burnout among residents and students.^[19,20] Subgroup analyses imply that students may face higher levels of burnout than residents, particularly in EE and PA. This implication must be taken with caution since our interventions targeted residents and our sample size for students was small. Nonetheless, our findings suggest that a formal wellness curriculum during medical school may improve students' well-being given their higher level of burnout. Our medical students participated in an introductory "Mindfulness Meditation" session in their preclinical years. Some were enrolled in the 11-week "Promoting Resilience in Medicine" elective where they learn various practices to improve their self-awareness and self-care. Thus, the significant

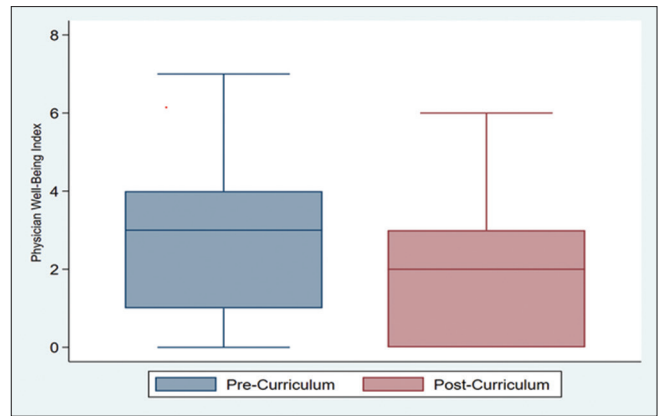


Figure 5: Program-driven formal curriculum: Mean Physician Well-Being Index scores between pre- and postcurriculum. Significant difference ($P = 0.01$) was found comparing pre- and postcurriculum Physician Well-Being Index score

improvement in our students' PWBI scores may be attributed to re-experiencing these resiliency practices through the formal resiliency curriculum. The optimal "dose" of meditation practice to produce cognitive and affective benefits is unknown but is easily enhanced by repeated and continuous practice.^[21] Wellness curricula for students should teach resiliency practices such as mindfulness and positive psychology to reduce EE and promote PA to counter the academic rigor of medical school and residency.^[13]

Despite negative findings, our study had several strengths and innovations to support continuation of our curriculum and taught important lessons for future improvements. The resident-driven Wellness Gator Council and the formal resident resiliency curriculum both garnered support from residency leadership. This was essential to provide protected educational time and faculty experts for skills-building sessions. Both taught practical resiliency skills and created safe spaces for mindfulness, reflective writing, and positive psychology. This, in turn, built a sense of community and a peer support system within our program where our residents willingly share experiences and lead efforts to foster well-being. Given its intimate, introspective nature, mindfulness must be taught by faculty trained in mental health and wellness practices;^[22] residents lack skills in managing any potential triggering of psychiatric illnesses, as occurred in our grassroots meditations. Wellness activities were best conducted in interactive small group sessions away from clinical work environment; residents preferred outdoor settings. Think-pair-share and flipped-classroom strategies helped to facilitate group participation. The multimodal, multistaged structure of the formal curriculum allowed for ease of implementation and systematic iterative changes. This multifaceted approach also allowed late adopters to engage in wellness practices at their own comfort level. Despite no improvement in MBI and PWBI scores, our

residents reported more satisfaction with the program's opportunities for fatigue management and processes to raise concerns in our needs-assessment survey 1 year post interventions (5% and 9% dissatisfaction, respectively).

Certain limitations existed in this study. The small sample size and single-center implementation limited the external validity of our results and generalizability of our interventions to other academic programs. The lack of a control group undermined the efficacy of our resiliency curriculum on students' well-being. With new ACGME wellness requirements, it was unethical for us to exclude some learners from our resiliency interventions for a control group. The varying level of participation and use of assessment tools further confounded our positive findings in students' well-being. To preserve anonymity, we did not track the number of wellness morning reports and noon conferences students attended. Students were not discouraged from disseminating resiliency skills learned through our curriculum, so some contamination may have occurred by the time other students participated in our curriculum. Finally, our study did not investigate the factors behind the high level of burnout or the outcomes of any resiliency skills taught. We cannot determine which resiliency skills were practiced by our learners, if any.

Future steps need to explore what types of programmatic and institutional wellness interventions are most effective for specific learner groups. Although formal organizational redesign was beyond the scope of this study, our program and faculty experts are collaborating with the Director of Wellness Programs and the GME Institutional Wellness Committee to bolster resident-specific resources and activities. These include an 8-week "Mind-Body Medicine" elective, same-day on-site "GatorCareNow" medical services, free EAP psychotherapy sessions, and renovation of resident lounges and on-site gym. We continue to solicit input from our learners on resiliency topics and delivery mechanisms most valuable for their learning. Based on learner feedback, we plan to tailor our narrative medicine workshops to teach aspects of health advocacy and social justice. The bridge between health advocacy and resiliency is an emerging pedagogy in medical education.^[23,24] Residents and students often care for the most vulnerable populations with extreme health-care disparities. Such challenges create a sense of powerlessness and burnout for physicians in training. Narrative medicine is a powerful tool for learners to share their experiences from their clinical work to the forefront of health advocacy work.^[25,26] Resident and students have multiple ways to incorporate narrative medicine as a tool in their opinion-editorials, tweet, or elevator pitch. This, in turn, fosters their sense of purpose, well-being, and investment in their work.^[23]

As resident burnout has societal impact, we medical educators must continue to investigate and implement novel programs to cultivate resiliency.

Conclusions

Our study adds to the literature by investigating the value of both bottom-up and top-down interventions in mitigating resident burnout and improving well-being. While both the approaches failed to demonstrate improvement in resident burnout and well-being, our educational program did empower our residents to drive their own well-being and self-care. Medical students may face higher levels of burnout than residents; thus, wellness education should start early in the medical training. System-wide efforts are essential to create a culture of resiliency and sustain resident well-being.

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Conflicts of interest

There are no conflicts of interest.

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