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A longitudinal look at individual resident preferences to prevent burnout: Which matter the most?

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Abstract

Background and Objectives

Burnout among residents-in-training is being reported more frequently. Previous studies have shown that lower measures of emotional intelligence, mindfulness, emotional regulation, and gratitude earlier in residency were associated with higher burnout scores later. Many studies have reported interventions intended to lessen burnout but not chosen by the residents with variable results on subsequent burnout measures. This paper reports an individually paired longitudinal analysis of strategies ranked by the resident as important with a subsequent burnout measure.

Methods

From 2017 through 2021, 32 residents completed a survey ranking their preference of ten approaches to preventing burnout at the beginning of the academic year. Then they later completed a burnout survey at the end of each year.

Results

With a usable response rate of 94% and calculating Spearman's Correlation, residents completing their first year of training after medical school (PG-1) who gave a higher rank to a workplace supporting their personal values (p=.016), self-care (p=.031), and administrative support (p=.046) showed less burnout at the end of the year. PG-3s (those completing their third year of training after medical school) who gave a higher rank to spending time with family and friends (p=.002) showed less burnout. For all three years, the most powerful correlation was with adopting a healthy philosophical outlook (p=.014, .008, <.001).

Conclusions

In this group of residents, the correlations of preferred strategies for lessening burnout differed by training level. Rather than faculty choosing an intervention, we propose these ten strategies as a potential menu, allowing the individual resident to focus on their preferences working with a mentor. Group discussion of methods used by individual residents to adopt a healthy philosophical outlook would also be helpful.

INTRODUCTION

Most studies show that burnout increases during residency training and is characterized by depersonalization, emotional exhaustion, loss of a sense of personal accomplishment, and rising cynicism.[1,2] The source of burnout during residency is described as an environment of high job demands in the setting of low individual autonomy.[3-5] In a previous longitudinal study, burnout measures at graduation were worse for those with lower measures of emotional intelligence, mindfulness, and gratitude earlier in residency.[6] A cross-sectional study of PG-1s as they began residency showed that those reporting restful sleep and physical activity had lower

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burnout scores.[5] In another longitudinal study, a measure of emotional regulation done on residency entry was correlated with concurrent measures of burnout, and also with burnout at the beginning of the PG-2 and PG-3 year.[7]

In our residents, we have shown a linear trend of increasing burnout across the three years of residency and that burnout increased before empathy decreased.[8] We also studied paired individual measures of empathy longitudinally, and remarkably found that within the means there were subsets of residents who did not change empathy scores and some that actually showed longitudinal increases.[9] This led us to postulate that there may be different strategies preferred by some residents that lessen burnout and may promote resilience, and our previous focus groups led us to consider that these strategies may differ by training level.[9] Our goal in this study was to determine if the ranking of burnout mitigation strategies by individual residents predicts their individual burnout scores longitudinally during residency training.

METHODS

Our residency was begun in 1971 and is located in a town of 20,000 in a rural area in the upper southeast United States, with six residents in each year, with no other residencies in town.[10] The site is also host for our regional rural medical school campus, with the main campus in a metropolitan community 160 miles away.[11]

From 2017 through 2021, 34 residents completed a paper survey during a regular administrative meeting at the beginning of the academic year asking them to rank the value of ten approaches to preventing burnout using a survey adapted from previous publications (see Table 1).[12,13] Separately, they later completed a previously validated single question burnout survey at the end of each PG year that asked them to choose one of five statements reporting increasing burnout (see Table 2).[14-20] We used the single-item burnout measure rather than the full Maslach Inventory to increase the completion rate[21] and avoid the licensure cost. We used this survey in our project rather than some other brief measures because it focused on emotional exhaustion rather than depersonalization, and the former was clearly the issue during our focus groups.[9] Each survey was matched by individual resident. If a resident completed at least one of each of the surveys during the study period, regardless of training year, their data was included. Two resident responses were excluded from the analysis for not following directions, so the response rate was 32/34 (94%). The host hospital IRB designated the project as exempt from review.

Spearman's Rho (rs) was used to assess correlation of the annual burnout measure with the ten prevention strategies. Significance was set at $p<0.05$ and all tests were two-tailed. SPSS version 28.0 was used for statistical analysis. The demographics of the study population are shown in Table 3.

Table 1: Burnout Prevention Survey

The following activity is important to me to prevent burnout.

	Personal	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
1	Influence happiness through personal values and choices	1	2	3	4	5
2	Spending time with family and friends	1	2	3	4	5
3	Religious or spiritual activity	1	2	3	4	5
4	Self-care (nutrition, exercise)	1	2	3	4	5
5	Adopting a healthy philosophical outlook	1	2	3	4	5
6	A supportive spouse or partner	1	2	3	4	5
	Work					
1	Control over environment: workload	1	2	3	4	5
2	Finding meaning in work and setting limits	1	2	3	4	5
3	Having a mentor	1	2	3	4	5
4	Having adequate administrative support systems	1	2	3	4	5

Table 2: Burnout Survey

Residents were asked to choose one of 5 statements (modified from Ref 17):
1) I enjoy my work. I have no symptoms of burnout;
2) Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out;
3) I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion;
4) The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot;
5) I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help

Table 3: Demographics of Study Population (N=32)

Gender	Male [N (%)]	20 (62.5%)
	Female [N (%)]	12 (38.5%)
Race/Ethnicity	White [N (%)]	17 (53.1%)
	Asian [N (%)]	9 (28.1%)
	Hispanic [N (%)]	4 (12.5%)
	Black [N (%)]	2 (6.3%)
Age	[Mean (SD)]	30.75 (7.24)

RESULTS

Table 4 shows that most correlations were negative, suggesting that the higher the ranking of the strategy the lower the burnout score. Seven correlations achieved statistical significance. In our PG-1 residents (those completing their first year of training after medical school), those who gave a higher rank to a workplace supporting their personal values as well as self-care and administrative support showed less burnout at the end of the year. For our PG-3s (those completing their third year of training after medical school), those who gave a higher rank to spending time with family and friends showed less burnout. For all three years, the most powerful correlation was with adopting a healthy philosophical outlook.

Table 4: Burnout Prevention Strategy Scale

		Burnout Measure score		
The following activity is important to me to prevent burnout:		Post PGY 1 (N=18)	Post PGY 2 (N=15)	Post PGY 3 (N=20)
Influence happiness through personal values and choices	Spearman's Correlation	-.559*	-.286	-.233
	Sig. (2-tailed)	.016	.302	.322
Spending time with family and friends	Spearman's Correlation	-.178	-.296	-.640**
	Sig. (2-tailed)	.481	.284	.002
Religious or spiritual activities	Spearman's Correlation	.175	-.083	.154
	Sig. (2-tailed)	.488	.769	.516
Self-care (nutrition, exercise)	Spearman's Correlation	-.509*	-.273	-.124
	Sig. (2-tailed)	.031	.325	.602
Adopting a healthy philosophical outlook	Spearman's Correlation	-.567*	-.657**	-.721***
	Sig. (2-tailed)	.014	.008	<.001
A supportive spouse or partner	Spearman's Correlation	-.100	.227	-.075
	Sig. (2-tailed)	.694	.417	.755
Control over environment: workload	Spearman's Correlation	-.050	-.235	-.023
	Sig. (2-tailed)	.843	.400	.923
Finding meaning in work and setting limits	Spearman's Correlation	-.303	.096	.087
	Sig. (2-tailed)	.222	.734	.714
Having a mentor	Spearman's Correlation	-.437	-.070	.039
	Sig. (2-tailed)	.070	.804	.869
Having adequate administrative support	Spearman's Correlation	-.475*	.045	-.157
	Sig. (2-tailed)	.046	.874	.507

*p < .05
**p < .010
***p < .001

Discussion

Our finding of differing correlations of preferences across training years fits developmentally, as PG-1s are more focused on the workplace and often have delayed local friend development and have less time to travel to family, priorities which are more important to our PG-3s. It is interesting that our PG-2s seemed to be intermediate, with workplace issues perhaps more resolved but they were not yet prioritizing time with family and friends. This is similar to what we found in our focus groups.[9] However,

even if because of our small sample the individual resident differences rather than training level are the true cause for the differences, they are still true for that individual.

Limitations and Strengths

We have shown a correlation between the importance of some strategies with subsequent burnout but we did not measure the effort invested in these strategies. The assumption that a resident would invest time in a strategy that is important to them would need to be proven by larger studies. As with most previous reports on resident burnout, selection bias and limited generalizability are a concern with reports from a single site. Although used and validated in varying populations, the single-item burnout measure may not perform as well as the full Maslach Inventory in all populations. By using a shorter survey administered during a standing meeting, we got a 94% response rate compared to previous studies that had response rates ranging from 63% to 77%.

It is tempting to assume that efforts focused on mitigating strategies would decrease burnout, but both recent reviews of these efforts conclude that there is just not enough evidence that interventions make a difference.[3,22] Instead, we conclude that individual residents arrive with preferences that help mitigate their experience of burnout. The previously published strategies used effectively by practitioners shown in Table 1 could be used as a menu to allow residents to indicate their interests. After the time period of these surveys, our program began assigning a faculty mentor for each resident. An individual plan to strengthen individual resident interests can be developed with their faculty mentor and limited time and resources can be focused on the strategies that we found most correlated. As residents complete the PG-1 year, the focus for them might become more about developing their connections to family and local friends. Group time can also be spent to understand what individual residents mean by the most powerful predictor of maintaining a healthy philosophical outlook and get group commitment to strengthen this skill.

We continue to collect longitudinal measures of burnout and will analyze temporal changes such as those occurring before and after the COVID pandemic. We welcome other residency sites to use our instruments to determine how generalizable our findings are.

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