A Randomized Controlled Trial to Decrease Job Burnout in First-Year Internal Medicine Residents Using a Facilitated Discussion Group Intervention

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ABSTRACT

Background Burnout is common in internal medicine (IM) trainees and is associated with depression and suboptimal patient care. Facilitated group discussion reduces burnout among practicing clinicians.

Objective We hypothesized that this type of intervention would reduce incident burnout among first-year IM residents.

Methods Between June 2013 and May 2014, participants from a convenience sample of 51 incoming IM residents were randomly assigned (in groups of 3) to the intervention or a control. Twice-monthly theme-based discussion sessions (18 total) led by expert facilitators were held for intervention groups. Surveys were administered at study onset and completion. Demographic and personal characteristics were collected. Burnout and burnout domains were the primary outcomes. Following convention, we defined burnout as a high emotional exhaustion or depersonalization score on the Maslach Burnout Inventory.

Results All 51 eligible residents participated; 39 (76%) completed both surveys. Initial burnout prevalence (10 of 21 [48%] versus 7 of 17 [41%], $P = .69$), incidence of burnout at year end (9 of 11 [82%] versus 5 of 10 [50%], $P = .18$), and secondary outcomes were similar in intervention and control arms. More residents in the intervention group had high year-end depersonalization scores (18 of 21 [86%] versus 9 of 17 [53%], $P = .04$). Many intervention residents revealed that sessions did not truly free them from clinical or educational responsibilities.

Conclusions A facilitated group discussion intervention did not decrease burnout in resident physicians. Future discussion-based interventions for reducing resident burnout should be voluntary and effectively free participants from clinical duties.

Introduction

Burnout is common among resident physicians with grave potential consequences, including depression, suicidality,[1,2] and suboptimal patient care.[3] Factors predisposing residents to develop burnout include personality type, lack of performance feedback,[4,5] and lack of a supportive work environment.[6] Increased emotional support during training has the potential to prevent burnout in residents.

Potential benefits of physician support groups include promotion of personal awareness,[7] improved teamwork and patient-caregiver relationships,[8] emotional and spiritual support,[9] and improved well-being related to coworker support.[10] Facilitated discussion groups have also been shown to decrease burnout among practicing physicians.[11] We hypothesized that a facilitated discussion group intervention could reduce burnout incidence among first-year internal medicine (IM) residents.

Methods

Setting

The study was performed in the IM residency program at the Icahn School of Medicine at Mount Sinai in New York. All incoming first-year IM residents were eligible to enter the study, which was conducted between June 2013 and May 2014. Power calculations based on prior research indicated that 60 participants would be necessary to minimize the likelihood of a Type I error to 0.05 when comparing burnout rates between the test and control groups. After participating residents consented to enroll, we clustered them into groups of 3 ("triplets") based on clinical rotation schedule and randomly assigned the resulting triplets to the intervention or control arm.

Intervention

We based the intervention on a program in which practicing physician groups who met regularly with trained discussion group leaders to discuss topics related to stress, balance, and job satisfaction experienced decreased job burnout.[11] Leaders assigned to each intervention arm triplet (9 groups) were psychotherapists with expertise in facilitating group discussion; psychotherapy was not part of the intervention. We purposely chose non-IM faculty to avoid any perception of evaluation or inhibition of discussion around sensitive topics. We asked groups to meet twice monthly on average between August

DOI: http://dx.doi.org/10.4300/JGME-D-15-00120.1

2013 and May 2014 for a total of 18 one hour-long sessions. Due to residency program requirements, we were unable to hold sessions in place of existing educational meetings. Each session was organized around a theme (eg, death and dying, coping mechanisms) with an accompanying session guide for group leaders that included teaching points, discussion questions, and associated readings. Group leaders were compensated $100 per session. Participating residents were provided a complimentary lunch and had no clinical duties during the sessions (though they carried pagers). Control arm residents were provided lunch vouchers.

Study Outcomes

Survey questions included basic demographic and personal characteristics, which were limited to maintain anonymity. We used the Maslach Burnout Inventory to measure 3 domains of burnout: emotional exhaustion (EE), depersonalization (DP), and feelings of decreased personal accomplishment (PA).[12] Following convention, we defined burnout as a high EE or DP score.[3]

We administered the initial survey at intern orientation in June 2013, and the postsurvey following the completion of the intervention in May 2014. All residents in the intervention arm also met with study investigators after final surveys were completed to provide additional informal feedback.

The study received approval by the Icahn School of Medicine Institutional Review Board.

Statistical Analysis

We compared intervention and control group demographic data using univariate analyses. All metrics (eg, DP, EE) were dichotomized into high level versus all others; prevalues and postvalues were compared using chi-square analyses. Fisher exact test was utilized when cell sizes were small ($n < 5$). When comparing changes in scores, we analyzed data using analysis of variance techniques. SAS version 9.2 (SAS Institute Inc, Cary, NC) was used for data analysis.

Results

Response Rate

All 51 first-year residents entering the 2013–2014 IM residency program participated in the study. Twenty-seven belonged to triplet groups that were randomized to the intervention arm. A total of 39 (76%) residents completed the presurveys and postsurveys. Group leaders voluntarily and anonymously reported attendance for 85% of sessions. Mean individual resident attendance was 9 sessions (range, 7 to 15); however, this number modestly underestimates actual attendance in light of the incomplete attendance records.

Demographics

Groups were similar in terms of burnout prevalence at the start of training, break between undergraduate and medical school studies, self-reported emotional support, self-reported duty hours, service size, and history of depression or anxiety (TABLE 1).

Development of Burnout

Rates of incident burnout as measured on the postsurvey did not differ between the study and control groups. The only significant difference was that more residents from the intervention arm had high depersonalization scores at study end, compared with the control arm (TABLE 2).

Informal Feedback

Several consistent remarks emerged in the informal debriefing sessions held after the completion of the study. First, sessions did not effectively free residents from clinical responsibilities; instead they created an added burden. Some reported that the group discussion did not suit their personality style or that they did not form a connection with their group leader.

Discussion

We postulated that facilitated group discussion would decrease job burnout in resident physicians, but our study found no such benefit. Plausible explanations for the ineffectiveness of the intervention could relate to the intervention design, unique challenges of residency training, underpowered enrollment, or novel factors related to the structure of our residency training program.

Our intervention differed in important ways from the model on which it was based.[11] The successful model randomized self-selected participants, whereas our participants were randomly selected from a convenience sample (the incoming resident class). Self-selected participants might be more engaged in facilitated discussion and therefore may derive greater benefit from it, suggesting that the success of interventions[13] to decrease burnout could be related to an individual's initial desire to participate. Unlike the model, we chose psychotherapist group leaders rather than IM physicians as group facilitators. Our rationale was that resident physicians, who work with and are evaluated by IM faculty, may be less inclined to confide in them. It is possible, however, that some

TABLE 1
Demographic Characteristics of IM Residents in Study Examining Impact of Facilitated Discussion on Burnout

Characteristic	Intervention Arm, No. (%)[a]	Control Arm, No. (%)[b]	*P* Value
Burnout prevalence at start of training	10 (48)	7 (41)	.70
Had break 1+ years before medical school	7 (33)	8 (47)	.60
Self-reported emotional support from family			
Residents who strongly agree they receive this support regularly	12 (57)	12 (71)	.61
Self-reported emotional support from friends			
Residents who strongly agree they receive this support regularly	12 (57)	11 (65)	.89
Self-reported hours worked per week			
≤ 70	11 (52)	12 (71)	.42
> 70	10 (48)	5 (29)	
Self-reported patient service size			
≤ 8	13 (62)	5 (29)	.10
> 8	8 (38)	12 (71)	
Self-reported history of depression	1 (5)	0 (0)	$> .99$
Self-reported history of anxiety	2 (10)	0 (0)	.49

Abbreviation: IM, internal medicine.
[a] N = 21.
[b] N = 17.

of our participants were not inclined to communicate with therapists.

Other factors may also have limited our success. Despite our effort to liberate time from the residency schedule for the intervention, we were unable to substitute the sessions for other educational requirements. As a result, our intervention added to participants' already full schedules. Prior to the study, power calculations assumed 30 participants each in the test and control groups; however, the actual incoming class size was 9 short of the anticipated number of 60. The finite size of the residency class precluded enrolling additional subjects, regardless of power needs. Finally, although statistically similar, the 2 study arms had differences that could have biased the results.

The failure of the intervention to reduce burnout may be due to fundamental differences in job stress in residents and posttraining physicians. Both groups experience intense work demands and work-life interference; however, resident physicians likely experience a greater lack of autonomy.[14,15] The structure of residency minimizes residents' control over work responsibilities.[16] Indeed, high measured levels of residents' internal locus of control correlated with better tolerance of intense work demands.[17] Facilitated discussion likely alleviates burnout in practicing

TABLE 2
Burnout Incidence of IM Residents Participating in Study Examining Impact of Facilitated Discussion

Residents' Characteristic	No. (%) Intervention Arm (N = 21)	No. (%) Control Arm (N = 17)	*P* Value
Overall burnout			
Burnout prevalence at end of PGY-1	18/21 (86)	12/17 (71)	.43
Burnout incidence[a]	9/11 (82)	5/10 (50)	.18
Depersonalization			
High DP subscores at start of training	6/21 (29)	4/17 (24)	$> .99$
High DP subscores at end of PGY-1	18/21 (86)	9/17 (53)	.04
High DP incidence[b]	12/15 (80)	6/13 (46)	.11
Emotional exhaustion			
High EE subscores at start of training	5/21 (24)	3/17 (18)	.71
High EE subscores at end of PGY-1	13/21 (62)	12/17 (71)	.73
High EE incidence[c]	10/16 (63)	9/14 (64)	$> .99$

Abbreviations: IM, internal medicine; PGY, postgraduate year; DP, depersonalization; EE, emotional exhaustion.
[a] Percentage of residents who start training without burnout and develop burnout by the end of PGY-1.
[b] Percentage of residents who start training without high DP and develop high DP by the end of PGY-1.
[c] Percentage of residents who start training without high EE and develop high EE by the end of PGY-1.

physicians by reframing their perspective on work-life balance.[18] At the same time, it may be ineffective in residents because the lack of autonomy may interfere with their ability to make meaningful change.

Given that lack of autonomy[16] may make residents refractory to interventions to mitigate burnout, future studies should evaluate resident-driven interventions. Resident burnout persists and may contribute to severe consequences. We must continue to explore potential interventions to protect both trainees and their patients.

Conclusion

A facilitated discussion intervention modeled after a successful program used to decrease job burnout in practicing physicians was not found to be effective in resident trainees, possibly due to the limitations of the design of the intervention in this population or the unique challenges of residency training compared with posttraining practice, particularly reduced autonomy and control of schedules and workload.

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Funding: This study was generously supported by a grant from the Feldstein Medical Foundation, and Dr. Korenstein's work was supported by a National Cancer Institute Cancer Center Support Grant

Conflict of interest: The authors declare they have no competing interests.

These data were presented in poster format at the Society for General Internal Medicine's 38th Annual Meeting in Toronto, Ontario, Canada, April 22–25, 2015.

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Received March 9, 2015; revisions received September 8, 2015, and December 10, 2015; accepted January 4, 2016.