

Clinical Investigation

Burnout in United States Academic Chairs of Radiation Oncology Programs

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Received Sep 2, 2013, and in revised form Sep 14, 2013. Accepted for publication Sep 14, 2013.

Summary

The prevalence of burnout among chairs of radiation oncology is unknown. We performed an anonymous survey of chairs of academic radiation oncology departments and observed high rates of job satisfaction in conjunction with high rates of moderate burnout. Approximately one-quarter of respondents indicated a moderate likelihood of stepping down in the near future, with possible contribution from burnout. These

Purpose: The aims of this study were to determine the self-reported prevalence of burnout in chairs of academic radiation oncology departments, to identify factors contributing to burnout, and to compare the prevalence of burnout with that seen in other academic chair groups.

Methods and Materials: An anonymous online survey was administered to the membership of the Society of Chairs of Academic Radiation Oncology Programs (SCAROP). Burnout was measured with the Maslach Burnout Inventory-Human Services Survey (MBI-HSS).

Results: Questionnaires were returned from 66 of 87 chairs (76% response rate). Seventy-nine percent of respondents reported satisfaction with their current positions. Common major stressors were budget deficits and human resource issues. One-quarter of chairs reported that it was at least moderately likely that they would step down in the next 1 to 2 years; these individuals demonstrated significantly higher emotional exhaustion. Twenty-five percent of respondents met the MBI-HSS criteria for low burnout, 75% for moderate burnout, and none for high burnout. Group MBI-HSS subscale scores demonstrated a pattern of moderate emotional exhaustion, low depersonalization, and moderate personal accomplishment, comparing favorably with other specialties.

Conclusions: This is the first study of burnout in radiation oncology chairs with a high response rate and using a validated psychometric tool. Radiation oncology chairs share similar major stressors to other chair groups, but they demonstrate relatively high job satisfaction and lower burnout. Emotional exhaustion may contribute to the anticipated turnover in coming years. Further

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Presented orally at the 54th Annual Meeting of the American Society for Radiation Oncology (ASTRO), Boston, MA, October 28-31, 2012.

The REDCap survey instrument (<http://project-redcap.org>) at Oregon Health and Science University is supported by Grant No. UL1RR024140

from the Oregon Clinical Translational Research Institute (http://www.ohsu.edu/xd/research/centers_institutes/octri/index.cfm).

Conflict of interest: none.

Supplementary material for this article can be found at www.redjournal.org.

Acknowledgment—The authors thank the membership of the Society of Chairs of Academic Radiation Oncology Programs (SCAROP) for their participation in this study.

results indicate that further attention to individual and institutional contributors to burnout is needed.

efforts addressing individual and institutional factors associated with burnout may improve the relationship with work of chairs and other department members. © 2013 Elsevier Inc.

Introduction

The chair of an academic hospital department balances missions of education, research, and clinical care in addition to the overall management and development of the department. These diverse responsibilities in a demanding and dynamic health care environment can lead to a crisis in one's relationship with his/her work, more commonly known as burnout.

Burnout is a work-related syndrome characterized by feeling overextended and depleted of resources (emotional exhaustion), responding negatively or callously to various job aspects (depersonalization), and feelings of incompetence and lack of achievement (decreased personal accomplishment) (1). Burnout has the potential to have a negative impact on physical and mental health, job performance, and job turnover (1-3). Premature turnover is an important issue, given that the estimated cost of replacing academic faculty exceeds \$400,000 (4), with the cost of replacing a department chair likely greater than this. The prevalence of burnout in various department chair groups ranges from 3% to 28% (5-10), although to date no studies have focused on chairs of radiation oncology.

The aims of this study were to assess the prevalence of burnout in chairs of academic radiation oncology programs in the United States and to identify factors that may be associated with burnout. Additionally, we sought to compare the prevalence of burnout in radiation oncology chairs with those levels seen in other specialties.

Methods and Materials

A cross-sectional, online, anonymous questionnaire was administered to the 2011-2012 membership of the Society of Chairs of Academic Radiation Oncology Programs (SCAROP). Initial solicitation to participate in the study was sent to directory-listed e-mail address and followed by reminder e-mails 1 and 2 weeks after the initial invitation. No identifying information was collected. The study was approved by the Institutional Review Board of the Oregon Health and Science University (IRB#6940).

The survey content closely followed that of other studies examining burnout in academic chair groups (5-9) and contained 4 different sections followed by the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), a validated tool in measuring burnout. The survey content can be found in accompanying online supplemental material at www.redjournal.org.

Demographics

The first 15 questions focused on individual demographics and professional characteristics, including age, sex, race/ethnicity, type of appointment (permanent vs acting), type of institution (public vs private), years as chair, duration of predecessor's service, number of institutions worked in, department size, work

hours per week, and distribution of work time (time spent on administrative, patient care, teaching, and research activities).

Professional stressors

Chairs were presented with 12 commonly encountered stressors and asked to rate the extent to which each stressor affected them, by use of a 5-point Likert scale from "not at all" to "an extreme amount." Potential stressors included budget deficits, billing audits, union disputes, staff dismissal, faculty/resident dismissal, faculty retention/recruitment, malpractice suits, administration disputes, tenure/promotion disputes, and residency review/Accreditation Council for Graduate Medical Education (ACGME) issues. Respondents were also given the opportunity to provide additional stressors by free text. Chairs were then asked to describe 3 ways in which they managed their stress level and whether or not their institution had a support group for department chairs.

Satisfaction and job plans

Current job satisfaction was measured by a 5-point Likert scale of "very dissatisfied" to "very satisfied." Respondents were also asked to report level of job satisfaction 1 and 5 years prior. Using the same Likert scale, chairs were asked to rate satisfaction with personal and professional life balance. Respondents then were to report the likelihood of stepping down in the next 1 to 2 years and to cite the primary reason if they were likely to do so.

Self-efficacy, effectiveness, and support

Perceived control over one's professional life was measured by a modified self-efficacy scale (6, 11). This calculated score was based on responses to 7 questions, with the lowest possible score being 7 (low degree of control) up to the maximum score of 35 (high degree of control). Respondents also rated their effectiveness as chair on a scale from 0 to 100 (0 being least effective and 100 being most effective). Finally, 3 questions examining support by spouse/significant other were presented.

Maslach Burnout Inventory-Human Services Survey

The MBI-HSS is the most widely used, validated tool in measuring burnout (1). This survey tool uses 22 items to assess the domains of emotional exhaustion, depersonalization, and personal accomplishment. Other studies of chair groups have used shortened versions of the MBI-HSS tool (5-7, 9), although we used the survey tool in its entirety to completely assess burnout. Subjects are presented with statements such as "I have accomplished many worthwhile things in this job" and are asked to report the frequency with which they identify with each statement on a 7-point Likert scale from "never" to "every day." (Editors' note:

the publisher of the MBI-HSS, Mind Garden, Inc, Menlo Park, CA, does not permit reproduction of survey questions.)

A subscale score was calculated for each of the burnout domains and then stratified into “high,” “moderate,” and “low” categories according to MBI-HSS scoring guidelines (12). High burnout is considered to be present when an individual demonstrates coexisting high emotional exhaustion, high depersonalization, and low personal accomplishment. Low burnout exists as the converse (ie, low emotional exhaustion, low depersonalization, and high personal accomplishment). Group level MBI-HSS data are also presented as mean subscale scores.

To facilitate comparison with other studies using alternative criteria for the presence of burnout, we also calculated the proportion of chairs with high scores in either emotional exhaustion or depersonalization subscales (13-16) or abnormal scores in any 1 of the 3 burnout domains (17, 18). At the conclusion of the survey, respondents were given the opportunity to provide further comments or feedback through free text.

Statistical analysis

Summary statistics were used to describe respondent and workplace characteristics. Data are presented as frequency counts, percentages, means, and medians, as indicated. Differences were compared with the χ^2 test for categorical variables and *t* test or analysis of variance for continuous variables. Correlations were examined with the Pearson correlation coefficient. Univariate and multivariate logistic regression were planned to examine possible predictors of high burnout. All statistical tests were performed with a predefined level of significance of $P < .05$. All analyses were conducted by use of the statistical software package SAS, version 9.2 (SAS Institute, Cary, NC).

Results

Demographics

Questionnaires were returned from 66 of 87 subjects, for a response rate of 76%. Sixty-one participants had sufficient responses for inclusion and consented to participate. The median age of the respondents was 52 years. The respondents were predominantly male and white, and nearly all chairs served in permanent appointments, equally distributed between public and private institutions (Table 1). The respondents had worked in a median of 2 institutions since the completion of residency, had served as chair for an average of 9.2 years, and worked an average of 62.3 hours per week. The majority of time at work was divided between administrative and patient care duties. Sixteen percent of respondents reported having a support group for department chairs at their institution. There was no significant difference in work hours by sex, duration as chair, or institution type (data not presented).

Professional stressors

The most frequently reported stressors rated as “large” or “extreme” were hospital or department budget deficits, followed by faculty recruitment and retention (Table 2). Other reported significant stressors included human resource issues such as staff dismissal (18%) and faculty or resident dismissal (12%). Thirty-two respondents (52%) reported additional stressors in free text,

Table 1 Descriptive data of academic radiation oncology department chairs in the United States

Characteristic	Respondents (N=61)
Age, y: median, (range)	52.0 (42-70)
Sex, n (%)	
Male	54 (88.5)
Female	7 (11.5)
Race, n (%)	
Asian	9 (14.8)
Black/African-American	4 (6.6)
White/Caucasian	47 (77.0)
Other	1 (1.6)
Appointment type, n (%)	
Permanent	59 (98.3)
Acting	1 (1.7)
Institution type, n (%)	
Private	31 (51.7)
Public	29 (48.3)
Support group for chairs, n (%)	
Yes	10 (16.4)
No	51 (83.6)
Institutions worked at, median (range)	2 (1-6)
Years as chair, mean (range)	9.2 (0-34)
Previous chair's service in years, mean (range)	10.9 (0-30)
Total faculty, median (range)	14 (4-60)
Total residents, median (range)	8 (2-24)
Hours worked per week, mean (range)	62.3 (50-90)
Percent time spent on duty, mean (range)	
Administrative work	38.0 (10-80)
Patient care	36.3 (5-80)
Teaching	10.1 (0-25)
Research	15.8 (0-50)

with the predominant themes being balancing the multiple roles of a chair, obtaining and maintaining grants, dealing with increasing bureaucracy, and competition in the community. The most common stress-relieving activities were sports/physical activity (54%), spending time with family/pets (38%), and miscellaneous hobbies (18%).

Satisfaction and job plans

Current job satisfaction was relatively high and stable compared with 1 and 5 years prior (Fig. E1, available at www.redjournal.org). Comparing current level of job satisfaction with that 1 year prior, 6 respondents rated that their current satisfaction decreased by 1 or more levels, 47 had no change, and 8 reported improvement in satisfaction by 1 or more level (Sign test, $P = .79$). When comparing current satisfaction with that 5 years prior, 16 rated a decrease by at least 1 level, 27 were unchanged, and 17 reported improvement by at least 1 level (Sign test, $P = 1.00$). One-third of chairs reported feeling at least “moderately likely” that their professional life would worsen over the next several years. Fifty percent of the chairs felt it was at least “moderately likely” that their professional life would improve over the next several years. Twenty-six percent of

Table 2 Stress-provoking issues and level of impact reported by academic radiation oncology chairs in the United States

Stressor	Amount of stress (% of respondents)		
	Not at all to slight	Moderate	Large to extreme
Hospital/department budget deficits	31.2	26.2	42.6
Medicare/Medicaid billing audits	80.3	16.4	3.3
Union disputes	91.5	6.8	1.7
Staff dismissal	56.7	25.0	18.3
Faculty retention/recruitment	33.3	28.3	38.3
Faculty/resident dismissal	70.0	18.3	11.7
Defendant in malpractice case	95.1	4.9	0.0
Disputes with dean	91.8	8.2	0.0
Tenure/promotion dispute	86.7	13.3	0.0
Residency review committee/ACGME	62.3	27.9	9.8

Abbreviation: ACGME = Accreditation Council for Graduate Medical Education.

respondents reported that it was “moderately” to “extremely likely” that they would step down from their position in the next 1 to 2 years. The most commonly cited reasons for stepping down were the feeling that it was the appropriate time to transition to a new chair (6 respondents) and frustration and stress of the job (5 respondents). No significant difference in likelihood of stepping down was observed in those feeling at least “moderately likely” that their professional life would worsen compared with those who did not (odds ratio = 0.97, $P = .96$).

Self-efficacy, effectiveness, and support

Thirty percent of respondents reported that achieving good control of their professional life was mostly due to factors beyond their control. When discussing time management, 23% of respondents rated themselves “slightly” to “not at all effective,” with 33% feeling they were “very” to “extremely effective.” Forty-three percent of chairs felt that their professional roles either largely or totally interfered with developing other

life goals. Chairs were asked what level of uncertainty they experienced in life as a result of their position, with 43% reporting a “moderate amount” and 13% reporting a “large amount.” The average modified self-efficacy score was 21.6 (median, 22.0; standard deviation [SD], 3.3; range, 14–28), corresponding to a moderate perceived control over one’s professional life. A negative correlation between modified self-efficacy score and emotional exhaustion subscale score was observed ($r = -0.47$, $P < .01$). The average self-rated effectiveness as chair was 82.5 (median, 85; SD, 10.1; range, 50–97). No statistically significant difference in self-rated effectiveness was observed by sex or by duration as chair.

Sixty-nine percent of respondents reported that their spouses were “usually” to “always” willing to listen to work-related problems, and 77% reported that spouses were “usually” to “always” understanding of their having to work additional work hours. Fifty-three percent of respondents reported that spouses “usually” to “always” encouraged additional professional opportunities (Fig. E2, available at www.redjournal.org).

MBI-HSS results

Individual MBI-HSS subscale scores demonstrated 25% of respondents with high emotional exhaustion, 10% with high depersonalization, and 15% with low personal accomplishment (in the domain of personal accomplishment, low achievement translates to high risk) (Fig. 1). No individuals met the MBI-HSS high burnout criteria of coexisting high emotional exhaustion, high depersonalization, and low personal accomplishment (Fig. 2). Seventy-five percent of respondents demonstrated moderate burnout, with 25% meeting the criteria for low burnout, comparing favorably with other chair specialties (Table 3). Thirty-nine percent of respondents possessed at least 1 abnormal subscale score, and 30% scored high for either emotional exhaustion or depersonalization. Owing to a lack of subjects meeting MBI-HSS high burnout criteria, multivariate analysis examining predictors of high burnout was not performed.

The group mean domain subscale scores were as follows: emotional exhaustion, 21.0 (SD, 10.2; median, 19; range, 3–48); depersonalization, 5.3 (SD, 4.6; median, 3; range, 0–17); and personal accomplishment: 38.5 (SD, 6.8; median, 39; range, 17–48). This represents a pattern of moderate emotional exhaustion, low depersonalization, and moderate personal accomplishment. The mean MBI-HSS subscale scores of radiation oncology chairs compared favorably with those of chairs of other specialties (5–9) (Table 4). Compared with other chair groups, radiation

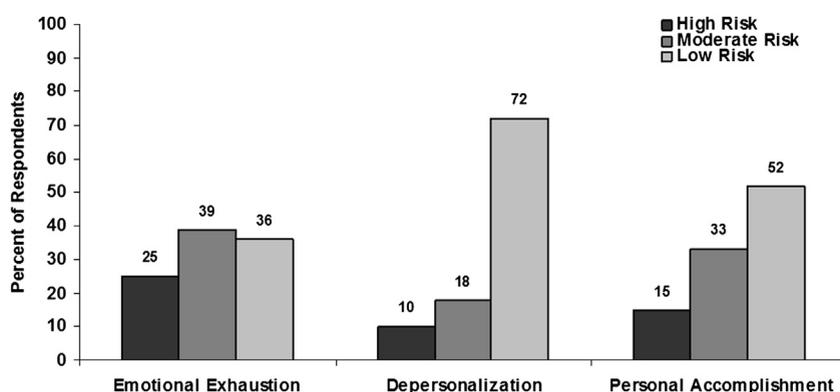


Fig. 1. Categorization of radiation oncology chair MBI-HSS subscale scores.

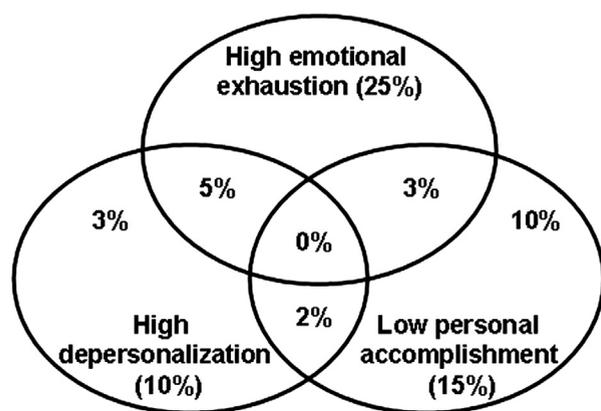


Fig. 2. Percentage distribution of high Maslach Burnout Inventory-Human Services Survey (MBI-HSS) subscale scores for radiation oncology chairs. Total percentage of respondents with high domain subscale score is presented in parentheses; percentage of coexisting high scores in other domains is represented by circle overlap.

oncology chairs generally had lower scores for emotional exhaustion, lower scores for depersonalization, and higher scores for personal accomplishment. Those who reported that it was at least “moderately likely” that they would step down in the next 1 to 2 years had a mean emotional exhaustion score of 27.6 (SD, 13.1; range, 10-48) compared with 18.6 (SD, 7.8; range, 3-33) for those not at all or slightly likely to step down ($P < .01$).

Discussion

This is the first study of burnout in radiation oncology chairs. We found that three-quarters of radiation oncology chairs experience moderate burnout, with a very similar profile of stressors to that of other chair groups (5, 6). We observed relatively high and stable job satisfaction with moderate perceived professional control. One-quarter of respondents reported that it was at least moderately likely that they would step down in the next few years, with emotional exhaustion a potential cause.

The MBI-HSS considers individuals with coexisting high emotional exhaustion, high depersonalization, and low personal accomplishment to have high burnout (12). Although no respondents met these criteria, moderate burnout was observed in three-quarters of radiation oncology chairs. Burnout is an important issue even in those not meeting high burnout criteria, and several physician studies have used modified criteria for the presence of burnout, resulting in prevalence estimates of 8% to 76% (13, 15-18). Applying the burnout criteria of either high emotional

Table 4 Comparison of mean MBI-HSS subscale scores for department chairs

Chair specialty	Emotional exhaustion*	Depersonalization†	Personal accomplishment‡
Radiation oncology	21.0	5.3	38.5
Otolaryngology	17.5	3.9	32.8
Obstetrics/gynecology	29.9	9.1	41.5
Ophthalmology	21.3	4.3	29.8
Anesthesiology	32.3	12.2	34.7
Orthopedic surgery	24.0	9.2	28.0

Abbreviation: MBI-HSS = Maslach Burnout Inventory-Human Services Survey.

* Score <17 indicates low level; 17 to <27 indicates moderate level; ≥ 27 indicates high level.

† Score <7 indicates low level; 7 to <13 indicates moderate level; ≥ 13 indicates high level.

‡ Score >38 indicates low level; 31 to <38 indicates moderate level; ≤ 31 indicates high level.

exhaustion or high depersonalization to our study group yields a 30% prevalence of burnout. Considering burnout to be present with any 1 abnormal domain score would yield a burnout prevalence of 39%. Overall, both burnout prevalence estimates compare favorably with those in studies of physician groups using each criterion, respectively (10, 13, 15-18).

The highest levels of chair burnout to date have been observed in anesthesiology, with 28% of department chairs meeting the 3-domain MBI-HSS criteria for high burnout (6). Compared with chairs in anesthesiology, fewer radiation oncology chairs reported working more than 60 hours per week (41% vs 64%). The distribution of work also differed, with 81% of anesthesia chairs spending more than 40% of their time on administrative duties, compared with only 38% of radiation oncology chairs. Radiation oncology chairs spent more time involved in patient care, with 33% of respondents spending more than 40% of their time on patient care compared with only 18% of anesthesiology chairs. Many respondents in our study commented specifically on the personal rewards of patient care and teaching, and finding meaning in one's work is an important factor in reducing the risk of burnout (2). Although it is speculative, the pattern of a more equal distribution between patient care and administrative duties may contribute to the favorable burnout rates seen in radiation oncology chairs. Relatively high personal accomplishment, good spousal support, and fewer hours spent at work are additional factors that may contribute to the lower burnout seen in this population.

We observed relatively high rates of job satisfaction, with nearly 80% of respondents reporting current job satisfaction and only 3% (2 respondents) stating that they were currently “very dissatisfied” with their jobs. Loss of job satisfaction can be both a contributor to and a consequence of burnout (19). In a recent study of burnout in New Zealand departments of radiation oncology, Jasperse and colleagues (20) observed that dealing with patient stressors was predictive of higher job satisfaction, not lower satisfaction as some might assume. This may be considered further evidence to support a balance in distribution, inasmuch as in this same study, dealing with organizational stressors predicted lower job satisfaction. The relatively favorable environment of radiation oncology chairs is also demonstrated by the stability of job satisfaction we observed, which differs from the pattern of decreasing job satisfaction with duration as chair seen in other studies (6, 8, 21).

Table 3 Comparison of Maslach Burnout Inventory-Human Services Survey (MBI-HSS) burnout groupings by chair specialty

Chair specialty	MBI-HSS burnout category		
	High (%)	Moderate (%)	Low (%)
Radiation oncology	0	75	25
Otolaryngology	3	81	16
Obstetrics/gynecology	4	88	8
Ophthalmology	9	82	9
Anesthesiology	28	62	10

Conceptually, burnout exists along a continuum, and the creators of the MBI-HSS advocate for presenting group mean subscale scores (12). As a group, radiation oncology chairs demonstrate scores moderate for emotional exhaustion, low for depersonalization, and moderate for personal accomplishment, with subscale scores that are favorable to those of other specialties. Despite this, it is important to recognize that one-quarter of radiation oncology chairs demonstrated high emotional exhaustion, the most important contributor to burnout. We observed significantly higher emotional exhaustion scores in those more likely to step down in the next 1 to 2 years, possibly identifying a subgroup of individuals who may benefit from burnout prevention and reduction strategies.

Several studies of physician burnout have demonstrated a perceived benefit of mentorship, but the magnitude of impact of mentorship on burnout is uncertain (3, 22, 23). A randomized study of a formalized mentoring program for new chairs of obstetrics and gynecology found no significant impact on burnout, but this study included only 1 year of follow-up, and a very large proportion of study participants in both arms actively received mentorship outside of the study context (21). While there was a lack of demonstrable impact on burnout, many respondents in this study reported perceived benefits of mentoring and stated that the areas of highest need for assistance were the same areas reported as major stressors in our study: finances and human resources. Distance mentoring was noted to be a barrier, suggesting that local mentoring relationships with those having institutional familiarity may be more beneficial. Despite this, we found that only 16% of radiation oncology chairs had access to such groups.

It is important to distinguish burnout, which describes one's relationship with work, from depression, a clinical diagnosis that pervades an individual's life (24). The link between depression and burnout is unclear, although they often coexist (25). We did not measure psychological morbidity and thus cannot comment on its presence in this population. Additional limitations include the reliance of the MBI-HSS on self-reporting, which may not reflect actual behaviors. Although challenging, an examination of the concordance between the MBI-HSS responses and a uniform 360-degree performance assessment tool would be useful. The survey was not administered in a controlled setting, which allowed for the possibility of outside influence on answers, and the results may not be generalizable to other practice settings or countries. The relatively homogeneous nature of academic department chairs may limit the applicability of the survey results with the evolution of sex and ethnic diversity in the future. Finally, it is possible that those with high burnout may have vacated their positions, leaving a group that is relatively resistant to burnout. The cross-sectional nature of our study provides only a snapshot of information and limits the ability to assume causation in any observed associations.

Conclusions

In summary, the majority of radiation chairs experience moderate levels of burnout, comparing favorably to other chair groups. Significant turnover is anticipated in coming years, with emotional exhaustion as a potential contributing factor. Institutional support providing accessible mentoring and training in financial and human resource issues are key areas to improve work relationships and minimize burnout in radiation oncology leadership.

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