



HHS Public Access

Author manuscript

J Am Coll Radiol. Author manuscript; available in PMC 2023 November 01.

Published in final edited form as:

J Am Coll Radiol. 2022 November ; 19(11): 1295–1297. doi:10.1016/j.jacr.2022.06.026.

Misalignment of Values Associated With Radiology Staff Burnout

Jay R. Parikh, MD [Professor]

Department of Breast Imaging, The University of Texas MD Anderson Cancer Center, Houston, Texas.

Katelyn J. Cavanaugh, PhD [Senior Analyst Leadership Institute]

The University of Texas MD Anderson Cancer Center, Houston, Texas.

Courtney L. Holladay, PhD [Associate Vice President Leadership Institute]

The University of Texas MD Anderson Cancer Center, Houston, Texas.

DESCRIPTION OF THE PROBLEM

Organizations within health care are now challenged to address burnout of all their health care workers [1], including in their radiology departments. Studies demonstrating widespread radiologist burnout and linking multiple adverse outcomes to physician burnout have established radiologist burnout as an issue to be addressed by radiology leaders [2]. Radiology, however, is a team sport, and successfully addressing burnout in a radiology practice also necessitates practice leaders addressing burnout of other health care workers in the radiology team. Reduced productivity and job performance from burned-out health care professionals within organizations negatively impacts patient care and organizational margin [1].

Recent studies using validated tools suggest that alignment of personal values and organizational values may be associated with physician burnout [3]. Within the organizational psychology literature, the examination of shared values or value congruence has shown that alignment between one's personal values and those of the organization resulted in positive work attitudes and organizational outcomes [4].

WHAT WAS DONE

The aim of our study was to evaluate the prevalence of burnout and professional fulfillment of radiology staff in an academic center and to specifically investigate the relationship among personal and organizational values alignment, burnout, and professional fulfillment. The study was approved by the institutional review board at our institution and exempt from ongoing evaluation. The study was HIPAA compliant, and no patient records were accessed.

Jay R. Parikh, MD: The University of Texas MD Anderson Cancer Center, Department of Breast Imaging, 1155 Pressler St, Unit 1350, CPB 5.3208, Houston, TX 77030; jrparikh@mdanderson.org.

The authors state that they have no conflict of interest related to the material discussed in this article. The authors are non-partner/non-partnership track/employees.

Study Population

The study population consisted of 833 staff in the Division of Diagnostic Imaging at our institution. These included 635 clinical staff (those involved directly with clinical patient care) and 198 nonclinical staff.

Data Collection

A confidential survey was prepared and structured using Qualtrics. XM (Qualtrics, Provo, Utah) The staff was electronically mailed a web link to this confidential institutional review board–approved survey on April 27, 2021. The staff received by email a description of the study and a voluntary option to participate in the study. By participating in the study, the staff chose to provide consent. The survey was closed May 30, 2021. Demographic data were confidentially imported from and linked to institutional Human Resource records using Peoplesoft (Pleasanton, California).

Reference Standards

Professional Fulfillment and Burnout.—The validated Stanford Professional Fulfillment Index (PFI) was used to assess both professional fulfillment and burnout in staff [5]. For nonclinical staff, three of the questions in the PFI were modified. This was primarily because of the lack of direct patient contact and lack of involvement with direct patient care. These three questions have been previously used and validated in nonclinical health care professionals [6]. See the e-only Appendix 1 for scale questions.

Personal–Organizational Values Alignment.—Personal–organization values alignment was assessed with the three-item Stanford Values Alignment scale to measure the extent to which the staff's personal values aligned with the values of their institution [3]. Items were scored on a 5-point Likert scale with options ranging from not at all true (0) to completely true (4). Aggregate scores were determined by summing the 0 to 4 score for each of the individual items to yield a total score ranging from 0 to 12, with higher scores indicating greater alignment. This instrument has been previously used by multiple health care organizations within the United States.

Statistical Analysis

The differences in expected and observed frequencies of categorical variables were assessed by χ^2 tests. Mean differences between groups on continuous variables were assessed by independent samples *t* tests for two-group comparisons and by analysis of variance (*F* test) for multiple group comparisons. The associations between continuous variables were assessed by Pearson correlations. *P* < .05 was considered statistically significant for all two-sided tests.

OUTCOMES AND LIMITATIONS

The overall response rate was 25% for clinical staff (157 of 635) and 45% for nonclinical staff (90 of 198). The variation of burnout and professional fulfillment for radiology staff by demographics is summarized in Table 1. The majority of the radiology staff were White women, with an average age of 44 years.

The overall burnout rate of all staff was 40%, and the overall professional fulfillment rate of all staff was 40% (Cronbach's $\alpha = 0.887$). Burnout rates were slightly higher for clinical staff than nonclinical staff (43% versus 34%), although the difference was not statistically significant. Clinical staff were slightly less professionally fulfilled than nonclinical staff (38% versus 44%), but the difference did not reach statistical significance. Our study findings corroborate previous work that burnout is prevalent across health care roles [7]. Given the similarity on overall burnout and professional fulfillment rates, clinical and nonclinical staff are reported together as "staff" for the remainder of the analyses. There was a statistically significant inverse correlation between professional fulfillment and burnout among staff ($r = -0.57$; $P < .001$).

Burnout rates were similar across sexes (40% female, 40% male) and race/ethnicity (46% White, 42% Black, 36% Asian, 34% Hispanic). Burnout rates differed by managerial level (43% nonmanagers, 30% managers), although this difference was not statistically significant. Professional fulfillment rates were similar across sexes (41% male, 39% female) and managerial levels (45% managers, 39% nonmanagers), but differed by race and ethnicity (54% Asian, 43% Hispanic, 35% Black, 31% White).

The variation of personal–organizational values alignment by demographics is summarized in Table 2. Personal–organizational value alignment scores of staff demonstrated an inverse correlation with burnout ($r = -0.45$; $P < .001$) and a positive correlation with professional fulfillment ($r = 0.50$; $P < .001$). That is, higher personal-organizational values alignment scores are related to lower burnout scores and higher PFI scores; staff whose personal values align more strongly with organizational values reported less burnout and more professional fulfillment. Mean alignment scores were similar across sexes (mean = 7.29 female, mean = 7.23 male) and race and ethnicity (mean = 7.53 Black, mean = 7.38 Hispanic, mean = 7.14 Asian, and mean = 7.13 White) but differed by managerial level (mean = 8.71 manager, mean = 6.82 nonmanagers).

To help reduce burnout of radiology staff, our findings suggest academic organizations should focus at the system level, beyond individual resiliency, considering organizational culture and enactment of values [8]. Possible organizational interventions include allocation of available resources, structural changes in the environment, changes in workload, and structural staffing changes [8].

Study limitations included a response rate of 30%. Study was conducted at a single-institution tertiary-care oncology center; the results may not be generalizable to all types of radiology practices. Responses were prone to voluntary selection-type bias. Nonresponse bias may have occurred in the most severely burned-out individuals; because of higher workload and/or time constraints, they may have been less inclined to participate.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

ACKNOWLEDGMENT

This work was supported in part by the National Institutes of Health through Cancer Center Support Grant P30CA106672.

REFERENCES

1. National Academies of Sciences, Engineering, and Medicine; National Academy of Medicine; Committee on Systems Approaches to Improve Patient Care by Supporting Clinician Well-Being. Taking action against clinician burnout: a systems approach to professional well-being Washington, DC: The National Academies Press; 2019.
2. Parikh JR, Bender CE. How radiology leaders can address burnout. *J Am Coll Radiol* 2021;18:679–84. [PubMed: 33958083]
3. Shanafelt TD, Wang H, Leonard M, et al. Assessment of the association of leadership behaviors of supervising physicians with personal-organizational values alignment among staff physicians. *JAMA Netw Open* 2021;4:e2035622. [PubMed: 33560424]
4. Posner BZ, Westwood RI. A cross-cultural investigation of the shared values relationship. *International Journal of Value-Based Management* 1995;8:197–206.
5. Trockel M, Bohman B, Lesure E, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. *Acad Psychiatry* 2018;42:11–24. [PubMed: 29196982]
6. Stanford University Medical Center and Stanford School of Medicine. 2019 scientist wellness survey Palo Alto, CA: Stanford University Medical Center and Stanford School of Medicine; 2019.
7. Cavanaugh KJ, Lee HY, Daum D, et al. An examination of burnout predictors: understanding the influence of job attitudes and environment. *Healthcare (Basel)* 2020;8: 502. [PubMed: 33233620]
8. Panagioti M, Panagopoulou E, Bower P, et al. Controlled interventions to reduce burnout in physicians: a systematic review and meta-analysis. *JAMA Intern Med* 2017;177:195–205. [PubMed: 27918798]

Table 1.

Demographic variation of burnout and professional fulfillment of radiology staff

| Variable | Staff, n (%) | Burnout, n (%) | P Value | Fulfilled, n (%) | P Value |
|-------------------------|--------------|----------------|---------|------------------|---------|
| Sex | | | >.999 | | .887 |
| Female | 175 (71) | 70 (40) | | 69 (39) | |
| Male | 73 (29) | 29 (40) | | 30 (41) | |
| Race and Ethnicity | | | .479 | | .037 |
| White | 80 (32) | 36 (46) | | 32 (54) | |
| Black | 59 (24) | 23 (42) | | 23 (43) | |
| Asian | 55 (22) | 21 (36) | | 19 (35) | |
| Hispanic | 52 (21) | 18 (34) | | 25 (31) | |
| Managerial level | | | .133 | | .507 |
| Individual contributors | 185 (80) | 79 (43) | | 21 (45) | |
| Managers | 47 (20) | 14 (30) | | 72 (39) | |

Table 2.

Demographic variation of personal–organizational alignment of radiology staff

| Variable | Alignment | | Test | Value | P Value |
|------------------------|-----------|------|---------------|-----------------|---------|
| | Mean | SD | | | |
| Sex | | | <i>t</i> test | <i>t</i> = 0.12 | .903 |
| Female | 7.29 | 3.30 | | | |
| Male | 7.23 | 3.34 | | | |
| Race/Ethnicity | | | <i>F</i> test | <i>F</i> = 0.21 | .890 |
| Black | 7.53 | 3.25 | | | |
| Hispanic | 7.38 | 3.45 | | | |
| Asian | 7.14 | 3.70 | | | |
| White | 7.13 | 2.97 | | | |
| Managerial level | | | <i>t</i> test | <i>t</i> = 4.00 | <.001 |
| Individual contributor | 6.82 | 3.36 | | | |
| Manager | 8.71 | 2.75 | | | |

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript