

## Exploration of Burnout, Emotional Thriving, and Emotional Recovery in an Academic Medical Center: a Mixed Methods Quality Improvement Project

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### ABSTRACT

**Introduction:** Healthcare provider burnout, an indicator of wellbeing, impacts patient safety, provider distress, and employee turnover. In this mixed methods, multi-site quality improvement study conducted <6 months prior to the start of the COVID-19 pandemic, we assessed employee wellbeing in a large clinical department.

**Methods:** Wellbeing surveys were sent electronically to Department of Medicine clinicians, researchers, administrators, and staff from August-September 2019 assessing perceptions of Burnout, Emotional Thriving (ET), and Emotional Recovery (ER). Qualitative responses were reviewed for themes using mixed inductive-deductive analysis. The initial coding was done by small teams with consensus obtained through large group discussions. This study was IRB-approved as non-human subjects research.

**Results:** Of the 671 respondents, 54% met criteria for burnout (Burnout+), 65% for ER (ER+), and 61% for ET (ET+). ER+ and ET+ were present in nearly half of Burnout+ respondents (53% and 43% respectively). Several themes emerged in the qualitative analysis: workload and expectations; tangible resources; work culture; and salary/benefits, with leadership influencing each of the domains.

**Conclusion:** Burnout, ET, and ER can co-exist within the same individual. Employee wellbeing is not adequately reflected by the binary of whether or not an individual is experiencing burnout. All employees at academic medical centers, including staff, researchers, and clinicians, are vulnerable to the same workplace factors driving burnout. Our findings have been used to target areas of intervention during the COVID-19 pandemic at our institution. We propose that other academic medical centers may have similar workplace stressors that they could assess and target for improvement.

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### INTRODUCTION

Long before the COVID-19 pandemic, numerous studies highlighted the detrimental effects of clinician burnout [1-3]. Providers at academic medical centers (AMCs) are particularly vulnerable to burnout due to the educational and scholarship responsibilities superimposed upon their patient workload [4]. AMCs include employees beyond clinicians (e.g., researchers, administrators, and staff), yet limited studies examine burnout among these populations. The concept of burnout contagion suggests that all employees are at risk if any are experiencing burnout [5, 6]. Thus, AMCs should consider the workplace environment for all employees, addressing their different responsibilities and experiences.

Evaluating emotional thriving (ET) and emotional recovery (ER) can provide actionable opportunities to harness the beneficial effects of positive psychology [7]. Considered the opposite

of emotional exhaustion, ET refers to the extent of an individual's perceived flourishing [7]. ER assesses the individual's ability to "bounce back" from an emotionally taxing event or adversity [7]. As individual wellbeing is complex and reflects states of ET, ER, and burnout, we posit that evaluating them in combination could allow organizations to better identify areas for improvement and employee support.

To better understand the actual levels of employee burnout, ET, and ER, we administered a workplace wellbeing and culture survey during late summer of 2019. These results reflect the suboptimal state of wellness at our AMC prior to the pandemic. The COVID-19 pandemic introduced new stressors and has increased the pressure to address burnout and emotional

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distress among health care providers. As institutions consider interventions, we believe it is important to share these results from our pre-pandemic environment to call attention to the ways in which the culture of AMCs led to burnout and distress prior to the pandemic crisis.

## METHODS

### Study Design

In the summer of 2019, we distributed an anonymous, cross-sectional survey to members of the Department of Medicine at the University of Colorado (n = 1,994) with two email reminders sent over two months. This survey included both original questions and questions adapted from Adair's Thriving Culture Survey and Krol's Net Promoter Score [7, 8]. The total project period (including survey design, implementation, and analysis) was from August 2019 to November 2020. This quality improvement (QI) project was reviewed and approved as non-human subject research by the Colorado Multiple Institutional Review Board (#19-1553).

### Setting and Participants

This survey was distributed to all members of the Department of Medicine (staff, administrators, researchers, and clinicians) across five sites, including four health systems within the University of Colorado system: the University of Colorado School of Medicine, the University of Colorado Hospital, Denver Health, Rocky Mountain Regional Veterans Administration, and National Jewish Health.

### Data Collection

Our survey included 34 close-ended questions and four open-ended questions (Appendix 1). Survey data were collected and managed using a secure, web-based application electronic data capture tool (Research Electronic Data Capture [REDCap], Nashville, TN), hosted at the University of Colorado [9].

### Variable Definition

The survey included questions within the domains of emotional thriving (ET), emotional recovery (ER) and Burnout, adapted from previously validated metrics by Adair et al.[7] Respondents with an average of  $\geq 4.0$  on a 5-point scale (1-strongly disagree to 5-strongly agree) to four respective domain questions would be designated as scoring positively for the ET and ER domains. For the five burnout questions, an average of  $\geq 3.0$  would indicate various gradations of burnout and are designated as Burnout+. For this analysis, we defined "positive responses" as the combination of ET+, ER+, and Burnout- and "negative responses" as the combination of ET-, ER-, and Burnout+.

### Quantitative Analysis

Taking into account the survey design, we used the adjusted Wald chi-square test to explore whether ET, ER, and Burnout were associated with each other; whether the workplace environment questions were associated with ET, ER, or Burnout; and whether reports of ET, ER, or Burnout were associated with female gender; being in a clinical role; being in a research

role; having a mentor or being a mentor. We used a Wilcoxon-Mann-Whitney test to identify associations between ET, ER, or burnout and years in the Department of Medicine, an ordinal variable. Odds ratios with 95% confidence intervals are reported.

Data were analyzed using SAS Enterprise Guide 8.1 (SAS Institute, Inc., Cary, North Carolina). If a variable was included in a specific statistical test, subjects with missing data were excluded from that analysis (i.e., complete case analysis). Given the number of statistical tests conducted, Bonferroni's correction for multiple comparisons was applied, with  $p < 0.001$  considered statistically significant.

### Qualitative Analysis

Each of the open-ended survey responses (Appendix 1 – Survey Instrument) were coded by a team of two to three individuals (KMJ and KTM, RN, AG, and KND; ZAC and LM; and LK-R and ZAC), including clinicians, one professional research assistant, and two statisticians. After the initial coding process, the coding teams presented their impressions to the larger qualitative study team for further discussion and development of consensus around themes. Multiple members (AK, KMJ, LM, RN, and ZAC) had prior qualitative research experience. Qualitative content analysis was conducted to categorize and interpret the text responses [10]. We utilized a mixed inductive-deductive approach using both conventional content analysis and directed content analysis. Study team members assigned to a given open-ended question read all of the responses to immerse themselves in the content. The responses were then reviewed and coded independently by each coding team member. The codes applied to each response were then organized into conceptual categories. Discrepancies in coding were discussed within the coding team until a consensus was reached. Evaluation and refinement of the conceptual categories and codes grouped therein continued until consensus across all open-ended responses was reached between coding team members. The full qualitative team (AG, AK, KND, KMJ, KTM, LK-R, LM, RN, and ZAC) met to discuss the findings from each coding team. Consensus across all team members was reached through independent review of the responses and discussion of themes identified. A synthesis of results emerging from each analysis was summarized and question-specific concepts were compared across the survey questions to identify overarching themes.

## RESULTS

### Study Participants

Of the 1,994 invited, 671 persons completed this survey (response rate 34%) (Table 1). Thirty-three percent of respondents identified as male, 61% as female, with 5% who preferred not to answer, identified as non-binary, or did not respond (Table 1). Respondents included clinical faculty, advanced practice providers, research faculty, research staff, administrative staff, graduate students, and clinical fellows. Sixty-four percent of respondents served in a clinical role; 49% served in a research role. Two-thirds of respondents were in a mentorship relationship. Among respondents, 61% endorsed measures consistent with emotional thriving (ET+), 65% endorsed measures

Table 1: Characteristics of Faculty and Staff Respondents

	All Survey Respondents	Emotional Thriving+	Emotional Recovery+	Burnout+
<b>N (%)</b>	671	410 (61%)	439 (65%)	362 (54%)
<b>Gender</b>		P = 0.0529	P = 0.5521	P = 0.2424
Man (He, him)	224 (33%)	152 (37%)	152 (35%)	112 (31%)
Woman (She, her)	412 (61%)	248 (60%)	270 (62%)	226 (62%)
Prefer not to answer/Other/Missing	35 (5%)	10 (2%)	17 (4%)	18 (5%)
<b>Years in the Department of Medicine</b>		P = 0.2470	P = 0.0356	P = 0.2682
0-3 years	201 (30%)	119 (29%)	126 (29%)	96 (27%)
3-5 years	118 (18%)	70 (17%)	78 (18%)	67 (19%)
5-10 years	132 (20%)	80 (20%)	75 (17%)	81 (22%)
>10 years	212 (32%)	137 (33%)	157 (36%)	112 (31%)
Missing/Did not respond	8 (1%)	4 (1%)	3 (1%)	6 (2%)
<b>Role</b>				
Clinician MD/DO/APP	205 (31%)	145 (35%)	129 (29%)	110 (30%)
MD/PHD Faculty	145 (22%)	87 (21%)	96 (22%)	90 (25%)
Research assistant	108 (16%)	64 (16%)	80 (18%)	47 (13%)
Administration	66 (10%)	34 (8%)	49 (11%)	30 (8%)
Physician Scientist	49 (7%)	32 (8%)	35 (8%)	27 (7%)
Fellow	24 (4%)	14 (3%)	12 (3%)	11 (3%)
PhD candidate/Post-Doc/PhD	17 (3%)	9 (2%)	12 (3%)	12 (3%)
Lab personnel	11 (2%)	4 (1%)	7 (2%)	6 (2%)
Other <sup>1</sup>	36 (5%)	16 (4%)	16 (4%)	23 (6%)
Missing/Did not respond	8 (1%)	5 (1%)	3 (1%)	6 (2%)
<b>Clinical Role<sup>2</sup></b>		P = 0.0048	P = 0.1280	P = 0.1149
Yes	427 (64%)	278 (68%)	272 (62%)	239 (66%)
<b>Research Role<sup>3</sup></b>		P = 0.3741	P = 0.0334	P = 0.4545
Yes	330 (49%)	196 (48%)	230 (52%)	182 (50%)
<b>Rank</b>				
Instructor	76 (11%)	57 (14%)	46 (10%)	42 (12%)
Assistant Professor	148 (22%)	98 (24%)	92 (21%)	91 (25%)
Associate Professor	104 (15.5%)	68 (17%)	70 (16%)	55 (15%)
Professor	89 (13%)	57 (14%)	67 (15%)	50 (14%)
Not Applicable	230 (34%)	119 (29%)	154 (35%)	110 (30%)
Missing/Did not respond	24 (4%)	11 (3%)	10 (2%)	14 (4%)
<b>Mentorship Relationship (Mentor or Mentee)</b>		P = 0.0127	P = 0.7857	P = 0.5119
Yes	434 (67%)	283 (70%)	288 (66%)	240 (66%)

<sup>1</sup> Clinical Counseling or Social Work, Clinical Coordination or other Clinician, Education and QI, Management, Researchers and Principal Investigators  
<sup>2</sup> Fellow, Clinician MD/DO/APP, MD/PHD Faculty, Physician Scientist  
<sup>3</sup> Research assistant, Lab personnel, PhD candidate/Post-Doc/PhD, MD/PHD Faculty, Physician Scientist

MD/DO: medical doctor/doctor of osteopathy; APP: advanced practice provider; PhD: doctor of philosophy

consistent with emotional recovery (ER+), and 54% endorsed measures consistent with Burnout+.

**Quantitative Results**  
**Emotional Thriving, Emotional Recovery, and Burnout**

When comparing the subgroups of respondents who endorsed ET+, ER+, or Burnout+ with those who did not, we observed no significant differences in demographics. Specifically, we did not observe a significant association between female gender; years in the department; serving in a clinical role; serving in a research role; or being in a mentorship relationship with report of ET, ER, or Burnout (Table 1).

We observed marked overlap between respondents who reported ER and ET. Of those who endorsed ET+, 77% also endorsed ER+. Both ET+ and ER+ respondents had decreased odds of reporting Burnout+ [OR (95% CI): ET+ 0.16 (0.11, 0.23); ER+ 0.29 (0.21, 0.41)]. However, ER+ and ET+ were present in nearly half of respondents who also endorsed symptoms of Burnout+ (53% and 43% respectively). This data shows that ET, ER, and Burnout can co-exist within the same individual.

**Perceptions of Workplace Environment**

Responses to queries surrounding workplace environment are depicted in **Figure 1** (select workplace environment

questions) and **Appendix 2** (all questions). The statement with the highest combined percentage of respondents who agreed/strongly agreed across all 4 categories was “The people I work with care about me as a person” (Overall 81%, ET+ 89%, ER+ 87%, Burnout+ 73%). Conversely, the statement with the lowest combined percentage of respondents who agreed/strongly agreed was “We have enough staff to handle our workload” (Overall 38%, ET+ 46%, ER+ 42%, Burnout+ 25%) (Figure 1). The remainder of the workplace environment questions ranged between 50-80% agree/strongly agree among the ET+ and ER+ subgroups.

An example of a mixed response is seen with “We have a ‘We are in it together’ attitude,” in which ET+ and ER+ subgroups had high rates of agree/strongly agree (79% and 72% respectively) while Burnout+ had low agreement/strongly agree (49%).

The Burnout+ subgroup rated all statements with <50% Agree/Strongly Agree except for “The people I work with care about me as a person” (73% Agree/Strongly Agree as above) and “Being a part of [this department] is a source of professional pride” (51%) (Appendix 2). We observed that so-called “positive responses” (ET+, ER+, Burnout-) tended to show very similar rates of agree/strongly agree with each other. Similarly, “negative responses” (ET-, ER-, Burnout+) showed similar rates of agree/strongly agree with each other.

### Explicit Recognition of Workplace Contributions

When asked how recently they had received explicit recognition of the value of their workplace contributions, respondents endorsing “negative responses” had slightly less recent experiences than those with “positive responses” (Figure 2). ET+ was significantly associated with more recent explicit workplace recognition ( $p < 0.0001$ ). We observed a signal towards significance among persons Burnout+ and ER- reporting less recent recognition from their colleagues ( $p = 0.0085$  and  $p = 0.0142$ , respectively).

### Qualitative Results

Qualitative analysis of the four open-ended questions in this survey expanded our understanding of these quantitative findings. **Table 2** highlights representative quotes for each of these themes, both positive and negative.

#### Workload and expectations

Excessive workload and unrealistic expectations emerged as common stressors amongst all respondents regardless of

Table 2: Representative Quotes by Theme from Open-Ended Survey Question

Theme	Positive Quotations on Theme	Negative Quotations on Theme
<b>Workload and Expectations</b>	<p>“The culture in my particular department is excellent. My supervisors treat me very well and I really enjoy my colleagues. The people I work with, the flexibility in my schedule, a reasonable workload and excellent benefits at the University make my job satisfying.” (Respondent 552, Woman/she/her, Administrative Staff)*</p> <p>“For some the work load is on the heavier side, but our supervisor recognizes that and has been working hard to hire more people for us.” (Respondent 116, she/her, Research assistant)*</p>	<p>“There is no funding for education efforts but tremendous need, stretching very few faculty very thin to meet needs of medical student, resident and fellow education, all while performing all of the other clinical and administrative aspects of their funded positions. Essentially, in order to work in education you give 150% effort for 100% FTE.” (Respondent 584, Woman/she/her, Clinician)</p> <p>“The workload keeps increasing and the PI keeps adding more and more without considering we do not have enough people and hours in the day to manage all she wants.” (Respondent 123, Man/he/him, Research assistant)*</p>
<b>Tangible Resources</b>	<p>“My division provides wonderful administrative support, which has been essential to keeping my lab afloat” (Respondent 647, Man/he/him, MD/PhD faculty)*</p> <p>“We are fortunate enough to have a good amount of support in the clinical arena—this works great when they are competent but can cause significant frustration when they are not.” (Respondent 392, Woman/she/her, Clinician)</p>	<p>“There is absolutely NOT enough staff in the clinics to support clinical care. Way too few nurses to help call patients with results or medication needs and too few clinical coordinators for the workload.” (Respondent 204, Woman/she/her, Physician Scientist)</p> <p>“Percent effort allocated to various research projects is often too small for what is really needed to execute the research well.” (Respondent 158, Woman/she/her, MD/PhD faculty)</p>
<b>Work Culture</b>	<p>Regarding contributors towards thriving at work: “...Working in real interprofessional teams where everyone understands the goals, the mission, the guiding principles and everyone knows each other by first name.” (Respondent 66, Man/he/him, Clinician)</p> <p>“...A supportive environment with my teammates and colleagues where we celebrate each other’s accomplishments and can share challenging cases.” (Respondent 156, Woman/she/her, Clinician)</p>	<p>“I feel recognized by my peers but not as recognized by the leadership. If recognition by the leadership was done I would be at 100%.” (Respondent 196, Woman/she/her, Clinician)*</p> <p>“An environment that wasn't motivated by money, hierarchy and politics. And knowing that the research we do will make it through the bureaucracy to actually make a difference in the lives of patients.” (Respondent 207, Woman/she/her, Other-Senior PRA/Statistician)</p>
<b>Salary &amp; Benefits</b>	<p>Regarding contributors towards thriving at work: “... If I get sick or need vacation that's very easy to accommodate here, and the benefits are good.” (Respondent 380, Woman/she/her, Lab personnel)</p>	<p>“Salaries have not kept pace with the cost of living...The benefits are fabulous and I like the people that I work with and the work that we do, but it is a financial sacrifice, especially for those of us at the bottom of the food chain.” (Respondent 339, Woman/she/her, Research assistant)</p> <p>“I do feel that the disconnect between increasing clinical productivity and stagnant compensation does adversely impact my wellbeing...” (Respondent 31, Man/he/him, Clinician)</p>
<b>Leadership</b>	<p>“Our supervisor...is the best! She always makes sure that her staff has everything they need and will hire someone when the anticipated workload becomes too high. She is by far the best person I have ever worked for.” (Respondent 255, Woman/she/her, PhD Candidate/Post-Doc/PhD)</p> <p>“I have a great working relationship with my direct supervisor and my division head. They give me the opportunity to thrive through projects and institutional level committee involvement.” Respondent 558, Woman/she/her, Administration)</p>	<p>“The management in the clinic where I work all lack the skills and personality to be effective leaders. Communication, policy, accountability are rarely used or enforced, and the lack of direct confrontation has led to certain staff to feel taken advantage of and 'steam rolled'.” (Respondent 644, Woman/she/her, Other-Care Coordinator)</p> <p>“I feel that the hospital business people make many decisions about how clinicians should practice (patient volume, time duration of clinic visits). I don't feel this is well received nor do I feel that clinicians' best interest is taken into account.” (Respondent 659, Woman/she/her, Clinician)</p>
<p>Clinician = medical doctor or advanced practice provider; PI = principal investigator; FTE = full time equivalent; * Quotes that directly comment upon the impact of leadership</p>		

clinical, research, staff, or administrative roles. Significant tensions were identified between job expectations and what the respondents were actually capable of completing. The sense of feeling overwhelmed from unrealistic expectations and workload was pervasive. Conversely, clear expectations and reasonable workloads (when present) led to greater job satisfaction and fulfillment.

Figure 1: Select Workplace Environment Questions

ET: Emotional Thriving;  
ER: Emotional Recovery

Horizontal black lines designate the demarcation of Strongly Agree/Agree from the remainder of the responses.

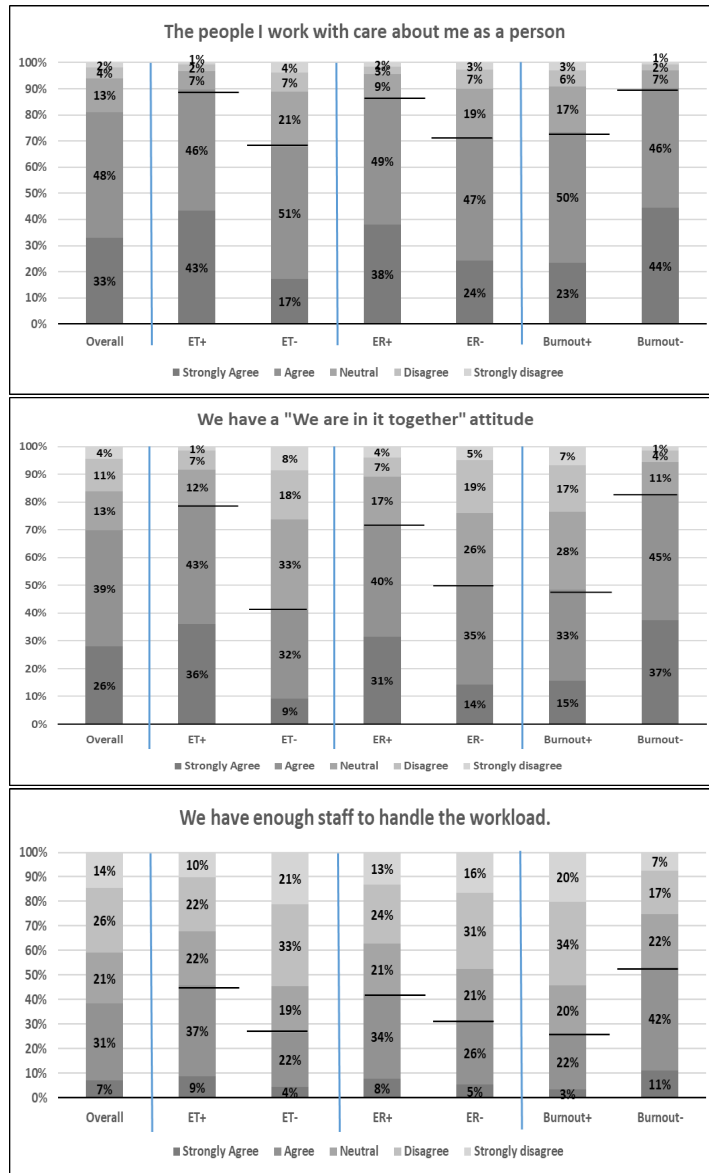
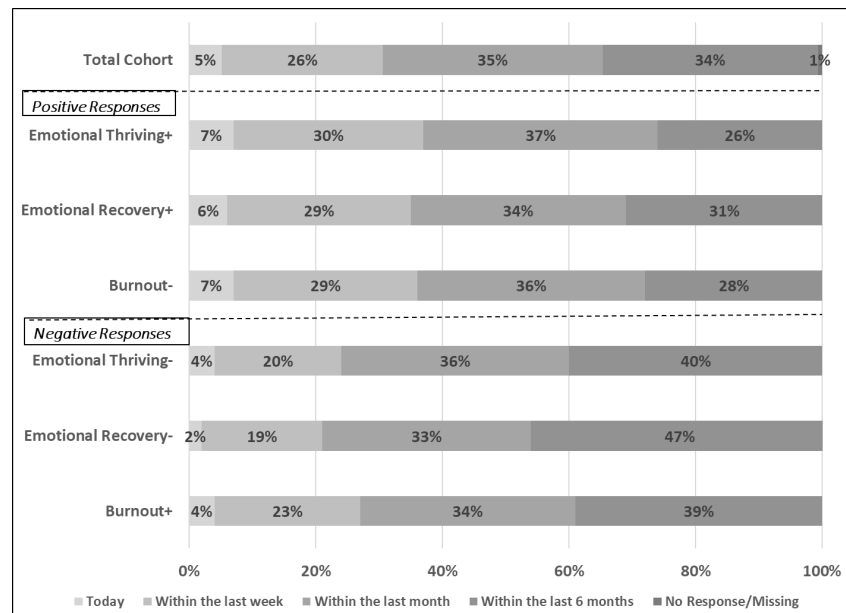


Figure 2: Work Colleague Explicitly Recognized the Value of My Contributions





## Tangible Resources

The perceived lack of necessary resources was another commonly identified stressor (e.g., inadequate staffing, paucity of administrative support, insufficient physical workspaces). Respondents expressed the importance of adequate funding and protected time to support other initiatives essential to the academic mission of these institutions. While most comments reflected a request for more resources, some respondents reported improved workplace satisfaction when appropriate resources were in place.

## Work Culture

Respondents highlighted the importance of a work culture in which individuals are recognized for their contributions and feel valued by their coworkers and leaders. Respondents noted that opportunities for growth and career development led to professional fulfillment. Conversely, some individuals reported a lack of support from leaders and colleagues; increased stress; and dissatisfaction.

## Salary/benefits

Noncompetitive salaries and the lack of generous parental and family leave policies were presented as notable stressors. Staff respondents discussed the challenges presented by salaries not reflecting the high cost of living in this metropolitan area. Faculty respondents described inadequate financial compensation for non-clinical work that is expected by the academic mission of their institutions. Conversely, some comments cited job flexibility and good benefits at the institution as contributing to their workplace satisfaction.

## Leadership

Respondents shared the importance of leadership in influencing workload, communication, resource allocation, and expectation setting. Additionally, respondents highlighted the need for transparency in hiring and promotions processes to ensure fairness and equity. Leadership was identified as a crucial component in whether departmental culture was supportive, safe, and collegial. As one respondent aptly stated: “Poor leadership at [their workplace] has a corrosive effect on morale.” (Respondent 346, Man/he/him, MD/PHD faculty)

## DISCUSSION

This survey reflects the views of nearly 700 members of a large clinical department spanning 5 collaborating institutions, including clinical providers, researchers, administrators, and staff. Nearly two-thirds endorsed measures consistent with ET and ER, while over half endorsed symptoms of Burnout. We observed that ET, ER, and Burnout can simultaneously co-exist in the same individual, reinforcing Adair et al’s findings that thriving and burnout are not necessarily opposite sides of the same coin [7]. Additionally, our respondents cover a wide variety of roles, yet they report similar rates of ET, ER, and Burnout as each other, suggesting that what appears to be an individual’s own experience of ET, ER, and Burnout highlight the impact of a shared environment [5, 11, 12].

The degree of uniformity to responses of workplace

environment questions can provide leaders with unique insights regarding domains upon which to focus interventions. In this survey, the statements of “we have enough staff to handle the workload” and “our culture makes it easy to learn from the mistakes of others” both had similarly low levels of agreement regardless of the presence of ET, ER, or Burnout. Targeting these issues that were perceived as problematic by a great majority is a natural next step to improve the wellbeing of all persons in this department. Conversely, the workplace environment domains that reveal mixed experiences suggest potential vulnerabilities within subpopulations necessitating further evaluation to develop tailored interventions to improve their wellbeing.

Our qualitative and quantitative data highlight the overlap between individuals feeling valued and recognized by their colleagues and their wellbeing metrics. Recognition has been cited as an important factor for employee retention and to protect against burnout [13]. Positive recognition experiences and a culture of respect can mitigate the impact of burnout among employees and foster wellbeing [14]. Our findings show that leaders can use the combination ET, ER, and Burnout as indicators of workplace culture to better quantify the need for increased recognition and support in their departments.

Our qualitative analysis identified several important domains which impact wellness and burnout. Those domains include workload and expectations; tangible resources; work culture; salary and benefits, and lastly leadership which impacts all the other domains. Our findings are consistent with Shanafelt and Noseworthy’s 2017 study which found that “workload and job demands”, “efficiency and resources”, and “culture and values” are among a larger list of drivers of burnout [2]. Our respondents described increased workplace satisfaction when workload and expectations were reasonable. More commonly, however, respondents described experiences of over-work and unattainable expectations in concert with inadequate resources and compensation as contributors to their burnout. This reinforces the importance of balancing clear and reasonable expectations with fair compensation, appropriate resources, and supportive leadership [2, 15-17].

Organizational interventions (e.g. promoting effective leadership) are far more effective in decreasing provider burnout than individually-focused interventions [17, 18]. Strong leaders need to advocate for appropriate resources, competitive salaries, and comprehensive benefits for their departments. Leadership crucially sets the tone for workplace culture, ensuring it remains supportive, safe, and collegial [2, 16, 17, 19].

Studies published prior to the COVID-19 pandemic identified burnout of clinical providers as deeply prevalent and impactful, posing a threat to the quality of patient care, organizational health, and provider wellbeing [3, 20, 21]. This is even more relevant with increasing rates of burnout and distress experienced throughout all employee populations in AMCs as a result of the pandemic.

Mounting pressures in U.S. healthcare systems have been identified as contributing to an imbalance between the demands of clinical jobs and the resources available to those clinicians [22]. However, this survey highlights the importance of balancing demands and resources across AMCs, extending beyond clinicians [21] to include researchers, administrators, and staff.

Our study is unique in that it reflects the experience of all of these subpopulations. Prior to this, much of the literature surrounding wellness in healthcare settings has typically focused upon clinical providers [1, 5, 15]. Our findings suggest that no single metric is sufficient to capture the wellbeing of the respondent; these metrics should be considered as a composite. While it is important to address wellbeing at an individual level, it is also incumbent upon leadership to move the discussion on wellness and thriving away from individual self-care and towards progressive organizational change, addressing resources, supporting a safe culture, and communicating clear and fair expectations to their employees [17, 23].

### Limitations and Strengths

This QI survey reflects the experiences of employees in a Department of Medicine across 5 sites, including 4 health systems, and thus may not be generalizable to other settings. This survey did not include racial or ethnic demographics, which prevents identifying differences amongst underrepresented minority members. Second, this survey was conducted before the COVID-19 pandemic, which has increased workloads and financial strain on our healthcare systems and is disproportionately impacting racially diverse communities [24-26]. Thus, our data represents a pre-pandemic baseline, but does not reflect the impact of this pandemic on the members of our department. Due to the voluntary nature of this survey, we may be missing the sentiments of many individuals. Additionally, this survey was not designed to allow for subgroup analyses by role (e.g., staff or faculty, clinical, research, education, or administration) or by site as many faculty members work in multiple sites and hold multiple roles simultaneously in this department. Those limitations notwithstanding, this survey captured the experiences of 671 employees spanning 5 sites (including 4 health systems) across ranks and roles including administrative staff, research staff, clinicians, and researchers.

To our knowledge, this is among the first published surveys to include all roles in a large academic medical department. Thus, our findings add the important perspectives of non-clinicians and non-researchers to the medical literature. Additionally, the combination of qualitative and quantitative data provides a more nuanced understanding of the experiences of our workforce. We believe that the results of this study are even more relevant with the ongoing COVID-19 pandemic. This pandemic has worsened and revealed pre-existing weaknesses in healthcare systems while simultaneously increasing workload, personal stressors, and systemic stressors [22-24]. Investment in the wellbeing of all department members is now even more important to allow these institutions to continue to provide much-needed healthcare and scientific advancement at this time.

### CONCLUSION

Inclusion of all roles is necessary to fully understand the wellbeing of employees and the workplace experience. The quantitative responses to this survey showed high levels of the positive attributes of ET and ER simultaneously coexisting with burnout within individuals and across this department.

Wellbeing metrics are more complex than a simple binary of whether someone is experiencing burnout. We observed that directly assessing the workplace environment can provide valuable insights regarding domains to target (more uniform responses) and domains requiring further evaluation (more varied responses).

Qualitative analysis of free answer questions allow a deeper understanding of the experience of employees. The themes arising from these questions highlight the importance of leadership to address the balance of workload and expectations, being transparent and equitable regarding salary and benefits, and exploring the availability and distribution of tangible resources. We saw that these themes are important universally in our AMC amongst clinicians, researchers and staff. These themes existed prior to the onset of the COVID-19 pandemic and have become even more relevant in the presence of increasing burnout and distress expressed by healthcare workers since the onset of the pandemic. Our hope is that the lessons learned from this QI survey will resonate with other AMCs, informing interventions to improve their workplace culture and the wellbeing of all their employees.

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**Conflicts of Interest:** JAC has participated as an educator and conference planning committee member for the Institute of Functional Medicine, payments for which were made directly to his institution. He is also the owner of NYOC, LLC, which is an inactive corporation initially established to provide educational tools and consulting for patients, but has had no work done nor financial activity for the past 3 years.

Otherwise, to the best of our knowledge, no conflicts of interest exist, financial or otherwise.

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