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Burnout and work-life balance among pediatric cardiologists: A single center experience

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Abstract

Background: Physicians are exposed to workplace factors that may result in acute or chronic stress resulting in burnout. This may impact the productivity and result in sub-optimal patient care practices.

Methods: We surveyed pediatric cardiology attending physicians at our institution to assess their perception of burnout and work-life balance using the Maslach Burnout Inventory and the Areas of Work-Life Survey.

Results: Forty-five out of the 50 pediatric cardiology attendings responded to the survey. They were divided into 4 groups: Interventional/Electrophysiology [n = 3], Cardiac Intensive Care/Inpatient [n = 8], Non-Invasive Imaging [n = 6], and Outpatient [n = 28]. The Maslach Burnout Inventory demonstrated group-specific scores in the areas of emotional exhaustion, depersonalization, and personal accomplishment that were all significantly better than the general population. However, group-specific Areas of Work-Life Survey results demonstrated concerning findings with respect to the perception of work-life balance.

Conclusions: Although the Maslach Burnout Inventory did not demonstrate significant burnout among the attending physicians, the Areas of Work-Life Survey results demonstrated reduced work engagement, which can impact patient care and lead to burnout in the future. Based on these results, we plan to implement strategies to help increase work engagement and improve overall organizational effectiveness.

KEYWORDS

balance, pediatric cardiology, worklife

1 | INTRODUCTION

The practice of medicine can be stressful and place significant demands on an individual. Multiple studies suggest that many physicians experience professional burnout after years of practice.[1-3] Furthermore, other recent studies suggest that burnout may affect professionalism, influence the quality of care, increase the risk for medical errors, and promote early retirement.[4-8] In addition, burnout may affect the personal lives of physicians and lead to broken relationships, excessive alcohol use, and suicidal ideation.[9-11]

A study looking at burnout and work-life balance among physicians in the United States relative to the general population found that the prevalence of burnout among United States physicians is at a high level, with physicians in specialties such as emergency medicine, general internal medicine, and family medicine being at greatest risk. The study found that physicians work longer hours, and after adjusting for hours worked per week, higher levels of education and professional degrees seemed to reduce the risk for burnout in fields outside of medicine, whereas a degree in medicine increased the risk.[12]

Limited studies have looked at burnout among physicians in the field of pediatric medicine and the studies looking at burnout in a specific pediatric subspecialty are further limited. To address this, we conducted a single center study looking at work-life balance and burnout specifically among pediatric cardiologists at our institution.

2 | MATERIALS AND METHODS

After obtaining institutional review board approval, an anonymous survey was sent out by email to the pediatric cardiology faculty at our institution. We used the Maslach Burnout Inventory and the Areas of Work-Life Survey to assess their perception of burnout and work-life balance. Participation was voluntary, and all the responses were anonymous. Participants were divided into 4 groups based on their primary clinical area of interest: Interventional/Electrophysiology, Cardiac Intensive Care/Inpatient, Non-Invasive Imaging, and Outpatient. Physician demographic variables including gender, years of employment, years in current position, and employment status were collected.

2.1 | The Maslach Burnout Inventory

Burnout among physicians was measured using the Maslach Burnout Inventory for medical personnel, a validated 22-item questionnaire considered the gold standard tool for measuring burnout.[1,13-15] The Maslach Burnout Inventory for medical personnel has 3 subscales to evaluate each domain of burnout, including emotional exhaustion, depersonalization, and low personal accomplishment.

The 9-item emotional exhaustion scale measures feelings of being emotionally overextended and exhausted at one's work. Higher scores correspond to experiencing greater burnout. The 5-item depersonalization scale measures an impersonal response toward recipients of one's service, care, treatment, or instruction. Higher scores correspond to experiencing greater degrees of burnout. The 8-item personal accomplishment scale measures feelings of competence and successful achievement in one's work with people. Lower scores correspond to experiencing greater burnout. The Maslach Burnout Inventory for medical personnel is a variation of the original Maslach Burnout Inventory and is specifically directed toward medical personnel. The most notable alteration is that this form refers to "patients" instead of "recipients." All the Maslach Burnout Inventory scales are scored using a 7-point frequency scale and each scale measures its own unique dimension of burnout. The 7-point frequency scale for all the Maslach Burnout Inventory scales is as follows: never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, and every day.

2.2 | The Areas of Work-Life Survey

The Areas of Work-Life Survey was created to assess the employees' perceptions of work-setting qualities that play a role in whether they experience work engagement or burnout. It is a companion piece to the Maslach Burnout Inventory. The Areas of Work-Life Survey is a short questionnaire with demonstrated reliability and validity across a variety of occupational settings.[16] It produces a profile of scores that permits users to identify key areas of strength or weaknesses in their organizational settings. It applies to small workgroups or summary profiles across large organizations. The Areas of Work-Life Survey evaluates 6 areas of work-life including workload, control, reward, community, fairness, and values. The Areas of Work-Life Survey contains 28 separate questions and the response options are "strongly disagree," "disagree," "hard to decide," "agree," or "strongly agree."

2.3 | Statistical analysis

Data were summarized using descriptive statistics including counts and percentages for categorical variables or means and standard deviations for continuous variables, as appropriate. Prior to the statistical analyses, the Areas of Work-Life Survey responses were collapsed into 2 levels: participants endorsing "agreed" or "strongly agreed" were grouped together and compared to those endorsing "strongly disagree," "disagree," or "hard to decide." Similarly, the Maslach Burnout Inventory responses were further collapsed into 2 groups: those that responded at least a few times a month or more and those that responded once a month or less. Concerning areas in the Maslach Burnout Inventory survey were defined as more than 50% of respondents answering "yes" to a question at least a few times a month or more. Based on these binary classifications, responses to questions were compared among physician characteristic subgroups (eg, gender or years of experience) using chi-square tests. Continuous variables, such as each domain of burnout from the Maslach Burnout Inventory, were compared to the general population Maslach Burnout Inventory scores using one-sample t tests. Statistical analyses were performed using SAS v. 9.4 (SAS Institute, Cary, North Carolina), and significance was assessed at the 0.05 level.

3 | RESULTS

Of the 50 pediatric cardiologists who received the survey, 45 responded (response rate 90%). The clinical areas of interest for the respondents included Interventional/Electrophysiology (n = 3),

TABLE 1 Characteristics of the physicians who responded to the survey

Physician characteristic	Number (%)
Gender	
Male	33 (73%)
Female	8 (18%)
Did not respond	4 (9%)
Employment years	
1-10 years	26 (58%)
11-20 years	15 (33%)
Did not respond	4 (9%)
Years in current position	
6 months-10 years	29 (64%)
10+ years	12 (27%)
Did not respond	4 (9%)
Employment	
Full-time	35 (78%)
Part-time	10 (22%)
Did not respond	0 (0%)

Cardiac Intensive Care/Inpatient (n = 8), Non-Invasive Imaging (n = 6), and Outpatient (n = 28). The characteristics of the respondents are described further in Table 1.

The Maslach Burnout Inventory group scores were compared to the general population. Group-specific scores in the areas of emotional exhaustion, depersonalization, and personal accomplishment were all significantly better when compared to the general population ($P < 0.05$ in all 3 areas) (Figure 1). Concerning areas in the Maslach Burnout Inventory were limited to "I feel used up at end of the work day" (65%) and "I feel emotionally drained from work" (51%) (Table S1). Concerning results were further stratified by location of work, gender, years of employment, years of employment in current position, and employment status. Two out of 3 (66.6%) of the interventional/electrophysiologist physicians felt used up at end of day at least a few times/month while 83% of noninvasive imaging physicians, 64% of outpatient physicians, and 50% of cardiac intensive care/inpatient physicians felt used up at the end of the day at least a few times/month (no significant difference noted across these groups; $P = 0.64$). Sixty-seven percent of the physicians employed for more than 10 years complained of feeling used up as compared to 58% of those employed less than 10 years ($P = 0.57$). Similarly, 67% of noninvasive imaging and 63% of cardiac intensive care/inpatient physicians felt emotionally drained from work at least a few times/month with no significant difference noted between the 4 clinical areas of interest ($P = 0.65$).

$$Emotional\ Exhaustion - p = 0.0067$$

$$Depersonalization - p < 0.0001$$

$$Personal\ Accomplishment - p < 0.0001$$

FIGURE 1 The overall Maslach Burnout Inventory results compared to the general population

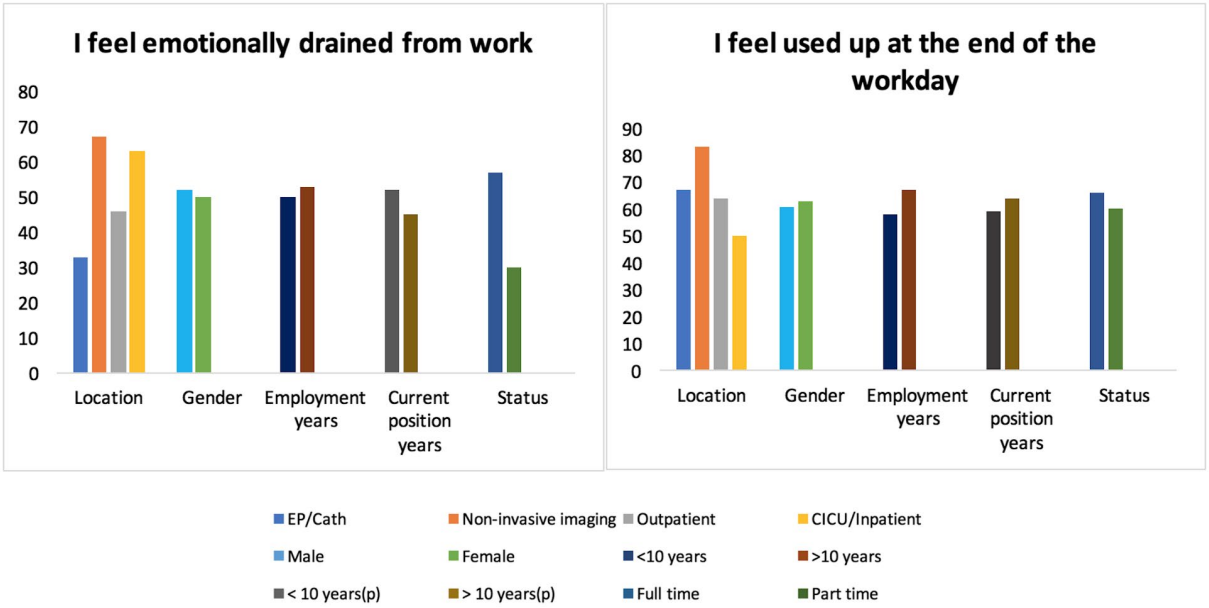

FIGURE 2 The Maslach Burnout Inventory results of respondents feeling emotionally drained from work and used up at the end of the workday at least a few times per month

Fifty-seven percent of the physicians employed full time complained of feeling emotionally drained from work as compared to 30% of the physicians employed part time ($P = 0.1$). These results are summarized in Figure 2.

Group-specific Areas of Work-Life Survey results demonstrated concerning findings with respect to perception of work-life balance. Approximately 89% physicians felt they "worked for prolonged periods of time," 56% felt they have so much work that it takes them away from their personal interests, and only 35% felt opportunities were decided by merit (Table S2). When the results were stratified by location of work, gender, years of employment, years of employment in current position, and employment status, physicians employed full time were more likely to feel that their work takes them away from personal interests as compared to part-time physicians (66% vs 20%; $P \leq 0.05$). No significant differences were noted in other areas. These results are summarized in Figure 3.

A follow-up 30-minute interview was conducted on a randomly chosen subset of participants (15/45 participants, Table 2). This was done to better elucidate the causes of the survey responses. Two of the 15 physicians (13.3%) said they felt burned out, 6/15 (40%) said they were unsure but may feel burned out in the near future while 7/15 (46.7%) physicians denied any feelings of burnout. Some common themes emerged which may increase the risk of burnout: struggles with the electronic health record and documentation; lack of administrative time with an inflexible work schedule, and inability to set boundaries between work and home time. Themes which may reduce the risk of burnout included: changes within the electronic health record, working part-time and having more control of one's own schedule; and increasing the amount of team building exercises.

4 | DISCUSSION

This single center study aimed to look at burnout and work-life balance among pediatric cardiologists at a single center. Burnout can lead to multiple problems in practicing physicians which may impact

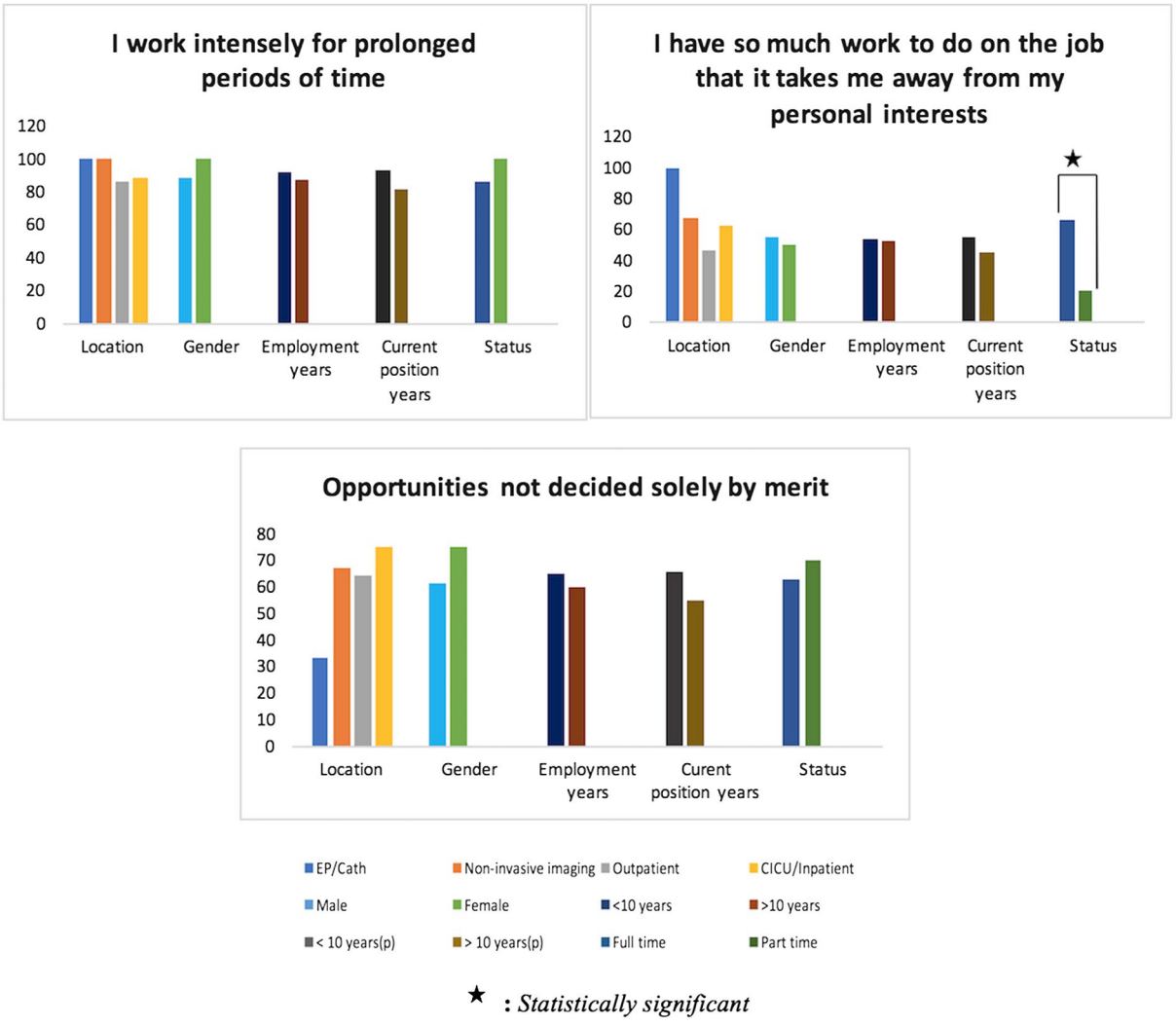

FIGURE 3 The Areas of Work-Life Survey results of respondents agreeing or strongly agreeing to working intensely for prolonged periods of time, being taken away from personal interests, and not believing opportunities are decided solely by merit

TABLE 2 Follow-up interview on a random subset of survey respondents

Feeling burnt-out	Driving factors • Electronic medical record requiring more comprehensive documentation • Lack of downtime in between clinical responsibilities • No guaranteed administrative time • Using time at home to catch up on documentation Remedial suggestions • More smart or dot phrases in the electronic medical record • Staggering of scheduling of clinic patients • Guaranteed administrative time • More team building exercises
May feel burned out in the future	Driving factors • Increasingly difficult to balance clinical responsibilities with research • Being on call too frequently • Lack of schedule control or flexibility • Limited peer interaction Remedial suggestions • Recognize time for research projects • Not being on call so frequently • More smart phrases in the electronic medical record • Include spouses/family in recognition/celebration and perform a survey with families
No feelings of burnout	Driving factors • Working part-time • Ability to put the right amount of information into the electronic medical record • Taking part in a variety of activities • Amenable to receiving less monetary reimbursement

both patient care and personal and professional relationships. As previously described, physician burnout has been documented to adversely affect the quality of care and this is detrimental to the whole health care system. Hence, it is important to elucidate the causes of burnout in order to form and implement better strategies to effectively cope with it.

The 3 cardinal signs of burnout are: *exhaustion*, in which the physician's physical and emotional energy levels are extremely low and in a downward spiral; *depersonalization*, signaled by cynicism, sarcasm, and the need to vent about patients or the job; and *lack of efficacy*, where one begins to doubt the meaning and quality of work.[17] Studies have described the 5 main causes of burnout: these include the practice of clinical medicine itself and the inherent stress associated with it; the specific job within the field of medicine; lack of education and knowledge regarding work-life balance in medical training; carryover of traits which enables one to undergo and succeed despite the rigors of medical school; and the leadership skills of our immediate superiors. The accepted standard for a diagnosis of burnout is the Maslach Burnout Inventory, developed by Christina Maslach and her colleagues at the University of San Francisco in the 1970s.[18]

Our study used 2 tools to assess physician burnout and work-life balance. The Maslach Burnout Inventory showed group-specific scores which were significantly better than the general population and was an overall reassuring finding. However, the Areas of Work-Life Survey highlighted some concerning areas with respect to perception of work engagement. These were evident in domains including *working for prolonged periods of time*, *physicians unable to pursue their personal interests*, and *not being convinced that opportunities were solely decided by merit*. Not surprisingly, a greater percentage of physicians employed >10 years and those who have been in their current position >10 years felt more used up at the end of the workday. A smaller percentage of part-time physicians complained of burnout as compared to full-time employed physicians.

A follow-up 30-minute interview on a randomly chosen subset of 15 participants was performed at the end of the survey. The factors highlighted by the participants complaining of feeling "burnt out" related to the electronic medical record and the need for comprehensive documentation, lack of dedicated administrative time, being unexpectedly pulled into additional clinical responsibilities, and having to complete clinical documentation after regular work hours. With respect to electronic documentation, they specifically complained of it taking more of their time compared to the prior practice of dictation, despite the use of templates and smart phrases. From an administrative time perspective, these participants felt that guaranteeing at least a half day every other week for dedicated time away from clinical duties would reduce the feelings of burnout. These participants said that these scenarios had become more frequent over the last 2 years. Remedial measures suggested during the survey are listed in Table 2.

Based on our data from this survey, we implemented a speech recognition software to assist with documentation in the electronic

medical record which has received positive reviews from its users. The schedulers have been more cognizant about scheduling physicians for more dedicated administrative days and ensuring they are not provided with additional clinical responsibilities during this time. Our institution is also about to institute a new "paid leave of absence" policy which provides more paid time off for physicians to take care of sick relatives and take time off for personal health issues. In addition, we plan to increase our maternity and paternity leave to 12 and 4 weeks, respectively, and propose to increase the vacation time from 4 to 5 weeks at age 50, to account for the "wear and tear" on physicians. We also aim to implement an approach to assess and monitor changes within the internal structure of our organization. For this purpose, we will employ the McKinsey 7S model which is a management model developed by Robert H. Waterman, Jr and Tom Peters in the 1980s. The 7S's are structure, strategy, systems, skills, style, staff, and shared values.[19] We plan to undertake a similar survey 3 years after the model has been in effect in order to assess the changes in the frequency of physicians complaining of burnout.

An important limitation of this study is that it represents a single center with a unique practice model that is a combination of an academic and private practice set-up. Though this study is not generalizable to other programs or other subspecialties, it enlightens our field regarding the potential factors that could play an important role in physician burnout.

5 | CONCLUSION

Our single center study focusing on pediatric cardiology attending physicians demonstrated early signs of reduced work engagement and possible burnout in the near future, especially in full-time physicians and those in practice greater than 10 years. These findings will hopefully inform other pediatric cardiology programs on some of the unique factors that threaten resilience among their faculty and provide some granularity to the problem of physician burnout.

CONFLICT OF INTEREST

The authors declare that they have no potential conflict of interest.

AUTHOR CONTRIBUTIONS

Soham Dasgupta, Larry Mohl, Ritu Sachdeva, and William Border contributed equally to the genesis of the research design, analysis and interpretation of data, initial drafting of the manuscript, and review and approval of the submitted and final version.

Ishaan Dave and Courtney McCracken contributed to the genesis of the research design, analysis and interpretation of data, and review and approval of the submitted and final version.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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