Assessment of the well-being of significant others of cardiothoracic surgeons

Jamie D. Ungerleider, PhD, MSW-LCSW,[a] Ross M. Ungerleider, MD, MBA,[a] Les James, MD, MPH,[b] Andrea Wolf, MD,[c] Melissa Kovacs, PhD,[d] Robert Cerfolio, MD,[b] Virginia Litle, MD,[e] David T. Cooke, MD,[f] K. Candis Jones-Ungerleider, MD,[g] Michael Maddaus, MD,[h] Jessica G. Y. Luc, MD,[i] Abe DeAnda, MD,[j] Cherie P. Erkmen, MD,[k] Kathy Bremner, RN,[l] and Ross M. Bremner, MD, PhD[d,m]

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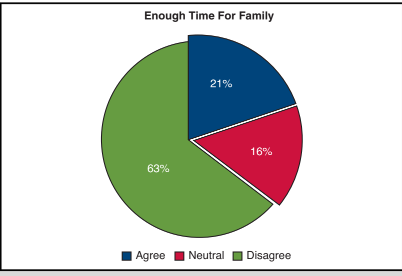
ABSTRACT

Objectives: We aimed to evaluate how the current working climate of cardiothoracic surgery and burnout experienced by cardiothoracic surgeons influences their spouses and significant others (SOs).

Methods: A 33-question well-being survey was developed by the American Association for Thoracic Surgery Wellness Committee and distributed by e-mail to the SOs of cardiothoracic surgeons and to all surgeon registrants of the 2020 and 2021 American Association for Thoracic Surgery Annual Meetings with a request to share it with their SO. The 5-item Likert-scale survey questions were dichotomized, and associations were determined by χ^2 or independent samples t tests, as appropriate.

Results: Responses from 238 SOs were analyzed. Sixty-six percent reported that the stress on their cardiothoracic surgeon partner had a moderate to severe influence on their family, and 63% reported that their partner's work demands didn't leave enough time for family. Fifty-one percent reported that their partner rarely had time for intimacy, 27% reported poor work–life balance, and 23% reported that interactions at home were usually or always not good-natured. SOs were most affected when their partner was <5 years out from training, worked in private vs academic practice, and worked longer hours. Having children, particularly younger than age 19 years, and a lack of workplace support resources further diminished well-being.

Conclusions: The current work culture of cardiothoracic surgeons adversely affects their SOs, and the risk for families is concerning. These data present a major area for exploration as we strive to understand and mitigate the factors that lead to burnout among cardiothoracic surgeons. (J Thorac Cardiovasc Surg 2024;167:396-402)



Most cardiothoracic surgeons (>60%) do not have enough time for family.

CENTRAL MESSAGE

Significant others of cardiothoracic surgeons report concerning influence of their partner's career on family needs, personal relationships, and work–life balance.

PERSPECTIVE

Through a well-being survey, we aimed to elucidate how the significant others of cardiothoracic surgeons perceive the effects of the high demands of their partner's career. We found concerning trends regarding family needs, personal relationships, and work–life balance. The culture of cardiothoracic surgery must evolve to ameliorate these negative influences.

See Commentary on page 406.
See Discussion on page 403.

From the [a]Institute for Integrated Life Skills, LLC, Bermuda Run, NC; [b]Department of Cardiothoracic Surgery, New York University Langone Health, New York, NY; [c]Department of Thoracic Surgery, The Icahn School of Medicine at Mount Sinai, New York, NY; [d]Norton Thoracic Institute, St Joseph's Hospital and Medical Center, Phoenix, Ariz; [e]Division of Thoracic Surgery, St Elizabeth's Medical Center, Brighton, Mass; [f]Division of General Thoracic Surgery, University of California, Davis Health, Sacramento, Calif; [g]Department of Cardiac Surgery, School of Medicine, University of Michigan, Ann Arbor, Mich; [h]Department of Surgery, University of Minnesota Medical School, Minneapolis, Minn; [i]Division of Cardiovascular Surgery, Department of Surgery, University of British Columbia, Vancouver, British Columbia, Canada; [j]Division of Cardiothoracic Surgery, University of Texas Medical Branch, Galveston, Tex; [k]Department of Thoracic Surgery, Temple University Health Systems, Philadelphia, Pa; and [l]Wellness Committee, American Association for Thoracic Surgery, Beverly, Mass; and [m]Creighton University School of Medicine, Phoenix Regional Campus, Phoenix, Ariz.

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Address for reprints: Ross M. Ungerleider, MD, MBA, Institute for Integrated Life Skills, LLC, 431 Riverbend Dr, Bermuda Run, NC 27006 (E-mail: ross@integratedlifeskills.com).

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Abbreviations and Acronyms
AATS = American Association for Thoracic Surgery
SOs = spouses and significant others

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Although the prevalence of burnout among physicians has been increasing over the last decade, data regarding how this burnout affects spouses and significant other (SO) partners of cardiothoracic surgeons are limited. A recent report by the Wellness Committee of the American Association for Thoracic Surgery (AATS) was the first publication to describe and quantify burnout specifically among cardiothoracic surgeons.[1] This current report describes how the SOs of cardiothoracic surgeons perceive the effects of the current cardiothoracic surgery work environment on their family and home life as well as the influence on their cardiothoracic surgeon partner. Although SOs are likely challenged by the career obligations of their cardiothoracic surgeon partners, their perceptions of these experiences have not previously been investigated.

METHODS

The AATS Wellness Committee selected 33 questions related to wellness and burnout as experienced by SOs of cardiothoracic surgeons. These questions were adapted from other validated questions on burnout in the literature.[2-8] The survey questions were sent via email to SOs whose contact information was previously provided to the AATS by their cardiothoracic surgeon partner. In addition, the survey was sent to all surgeon registrants of the 2020 and 2021 AATS annual meetings with a request that they share it with their SO. Reminders for completing the survey were sent out twice over a 2.5-month period. Respondents were also invited to provide de-identified free-form answers that are reported in Tables E1-E9.

Statistical Analysis

The majority of answers to the survey questions were structured as a 5-item Likert scale, and responses were converted to a dichotomous "top-2 box" variable for statistical purposes. For example, if the question had 5 possible responses: "Strongly Agree" and "Agree" were re-coded as "1," and the remaining responses: "Neutral," "Disagree," and "Strongly Disagree" were scored as "0." This recoding pattern is common when examining survey data. The χ^2 tests and independent samples *t* tests were conducted to test for associations between demographic measures and question responses. Stata version MP15 was used for the analyses (StataCorp LLC).

RESULTS

The AATS Wellness Committee received 238 completed surveys. Although it is not possible to know how many SOs actually received the survey, the cardiothoracic surgeon partners of SOs who returned the survey represented a wide range of career experience: from residency training to retirement and from academic practice, private practice or military service. There was a broad range of responses regarding average hours worked and the presence or absence of workplace support resources. There was strong representation between SOs with and those without children in the home (Table 1). The results that are most relevant to this article are discussed below; however, the survey provided substantial additional valuable information that is available in Tables E1 through E9. Furthermore, the free-form comments from SOs describe some of the workplace support resources that would be helpful.

Influence of the Cardiothoracic Surgeon's Career on Family

More than 65% of SOs reported that their cardiothoracic surgeon partner's career has had a moderate or severe impact on their family (Table 2). SOs with cardiothoracic surgeon partners in private practice were more likely than those with partners in academic practice to think that burnout has had a moderate or severe impact on their family (60.7% vs 46.8%; $P = .058$). SOs with children younger than age 19 years were significantly more likely to think that burnout has had a moderate or severe impact on their family than those with only adult children or no children in the home (55.3% vs 42.3%; $P = .020$). SOs who believe burnout has had a moderate or severe impact on their family had cardiothoracic surgeon partners who worked more hours per week on average than those who believed that burnout has had a minimal to mild impact on their family (average 68.4 hours per week vs 60.4 hours per week; $P = .005$).

Time for Personal and Family Needs

Sixty-three percent of respondents reported that their cardiothoracic surgeon partner's schedule did not allow enough time for personal and family needs (Table 3). SOs of cardiothoracic surgeons with <5 years of experience were less likely to agree that the work schedule permits sufficient time for both personal and family needs (11.7% vs 23.6%; $P = .048$). SOs who did agree that the work schedule leaves enough time for both personal and family needs have cardiothoracic surgeon partners who work 20 hours per week less than those who did not agree (average 49.6 hours per week vs 70 hours per week; $P < .001$).

Empathy, Sensitivity, Interest in Social Activities, and Connection With Loved Ones

Forty-two percent of SOs responded that their surgeon partners had shown less empathy toward their family over the past year, and 48% experienced their surgeon partners

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TABLE 1. Demographic characteristics of survey responders

Characteristic	Result
Years in practice	
Residency or fellowship	22 (9.3)
less than 5	38 (16.1)
5-10	27 (11.4)
11-15	30 (12.7)
16-20	28 (11.9)
21-25	34 (14.4)
>25	57 (24.2)
Primary practice setting	
Academic medical center	150 (63.3)
Private practice	47 (19.8)
Other	23 (9.7)
Not in practice/retired	13 (5.5)
Active military/veteran's hospital	4 (1.7)
Children in the home	
Yes	149 (63.4)
No	86 (36.6)
No. of hours worked in a typical week	
Average (SD)	65.7 (21.2)
Median	70
Interquartile range	57-80
Access to resources for burnout support at work	
Strongly agree or agree ("Top Two Box")	37 (16.4)
Neutral, disagree, or strongly disagree (all others)	189 (83.6)

Values are presented as n (%), unless otherwise indicated. *SD*, Standard deviation.

showing less connection to loved ones. Furthermore, 58% reported that their cardiothoracic surgeon partner had less connection to outside interests and hobbies (Table 4).

SOs with children younger than age 19 years were significantly more likely to state that cardiothoracic surgery as a career has contributed to their cardiothoracic surgeon partner showing less empathy to people and situations outside their own family; less sensitivity to others' feelings/emotions; less connection with outside interests and hobbies; and less connection to loved ones (empathy: 48.5% vs 33.7%; $P = .021$; sensitivity: 50% vs 36.5%; $P = .038$; interests: 63.4% vs 49%; $P = .026$; loved ones: 53.7% vs 39.4%; $P = .028$). SOs were significantly more likely to believe that their partners showed less empathy to people and situations outside their own family if their cardiothoracic surgeon partner had <5 years of experience (56.7% vs 37%; $P = .008$) or worked more hours per week (average 70.8 hours per week vs 62 hours per week; $P = .002$).

Relationship With SO

Fifty-one percent of SOs reported that their partner rarely had time for intimacy, and 48% reported rarely spending a healthy amount of time together. Thirty-nine percent stated that they and their cardiothoracic surgeon partner rarely engaged in activities together. Almost a quarter of respondents (23%) claimed that interactions at home were rarely calm and good-natured or that they felt emotionally connected to their partners (Table 5). SOs with children of any age were significantly less likely to agree with the statements: "We often engage in activities together," "We have calm and good-natured interactions," "We spend a healthy amount of time together," and "We are emotionally connected" than those without children (activities: 34.2% vs 51.2%; $P = .011$; calm: 49% vs 66.3%; $P = .010$; time: 24.2% vs 47.7%; $P < .001$; connected: 43.6% vs 70%; $P < .001$). SOs whose cardiothoracic surgeon partners have access to workplace support resources were more likely to agree on almost all the measures in this question, including "We often engage in activities together," "We spend a healthy amount of time together," "We find a comfortable amount of time for intimacy," and "We are emotionally connected" (activities: 56.8% vs 37.3%; $P = .027$; time: 51.4% vs 29.4%; $P = .009$; intimacy: 43.2% vs 25.4%; $P = .026$; connected: 73% vs 49.8%; $P = .009$).

TABLE 2. At this point in your significant other's career, burnout has had…

Answer choice	Result
Minimal to mild impact on your family	80 (33.8)
Moderate impact on your family	108 (45.6)
Severe impact on your family	49 (20.7)

Values are presented as n (%).

SOs whose partners work fewer hours per week on average were more likely to report that "We often engage in activities together," "We spend a healthy amount of time together," and "We find a comfortable amount of time for intimacy," than those whose partner worked more hours per week (activities: average 61.8 hours per week vs 68.3 hours per week; $P = .022$; time: average 61.4 hours per week vs 67.8 hours per week; $P = .028$; intimacy: average 60.9 hours per week vs 67.6 hours per week; $P = .022$). SOs whose cardiothoracic surgeon partner practices at an academic medical center (vs private practice) were significantly more likely to agree that "we have calm and good-natured interactions" and "we spend a healthy amount of time together" (calm: 60.7% vs 46.6%; $P = .035$; time: 37.3% vs 25%; $P = .050$).

Choosing CT Surgery Again

If starting over, just more than one-quarter of SOs would definitely want their partner to choose cardiothoracic surgery again (Table 6). SOs whose cardiothoracic surgeon partner had <5 years of experience were significantly less likely to want their surgeon partner to again pursue a career in cardiothoracic surgery (28.3% vs 43.3%; $P = .041$). SOs whose cardiothoracic surgeon partner has access to workplace support resources were significantly more likely to want their surgeon partner to again pursue a career in cardiothoracic surgery (70.3% vs 33.8%; $P < .001$).

TABLE 3. The typical schedule leaves enough time for both personal and family needs

Answer choice	Result
Strongly agree	9 (3.8)
Agree	40 (16.9)
Neutral	38 (16)
Disagree	82 (34.6)
Strongly disagree	68 (28.7)

Values are presented as n (%).

Work–Life Balance

More than one-quarter of SOs (27%) did not agree that they work effectively with their partner to create the work–life balance that they envision (Table 7). However, SOs were significantly more likely to agree that they work effectively together with their partner to create the work–life balance they envision when their cardiothoracic surgeon partner had access to workplace support resources (62.3% vs 31.3%; $P < .001$) or practiced in an academic (vs private) setting (40.7% vs 28.4%; $P = .057$).

Effects of the COVID-19 Pandemic

Not surprisingly, at the time of the survey, more than half (53%) of SOs responded that the pandemic has affected the wellbeing of their family in a negative way, and most (58.4%) also reported that they have experienced more symptoms of burnout as a result of the pandemic. (Table E10).

DISCUSSION

Over the past 20 years, there has been an increased awareness of physician burnout, with some reports focusing specifically on burnout in US surgeons.[1,9-13] There have also been descriptions of how physician burnout influences families and particularly the SOs of physicians.[2,4-8,14,15] Studies on the effects of conflict, stress, and allostatic load (the wear and tear on the body which accumulates as an individual is exposed to repeated and chronic stress)[16] predict that stress anywhere can create stress everywhere. Therefore, it is not surprising that there is a reciprocal relationship between stress at home and stress at work.[2,5-7,16-18] More recently, the term burnout has evolved to include a description of "moral injury," which emphasizes that while burnout may manifest in an individual, its root cause is the result of a mismatch between the demands, expectations, or flawed/insufficient resources of the health care systems and the ability of an individual to perform their job or to pursue their calling.[19,20] It is easy to imagine the same experience of moral injury when the surgeon is unable to satisfy their family relationships due to the demands, expectations, or resource limitations (eg, time and energy) imposed by their profession, predisposing the surgeon, their SOs, and their children to moral injury and burnout on all fronts in an interconnected and self-perpetuating cycle.

Although much of the literature investigating burnout among physicians has focused on the quality of care they can provide, it is important to remember that physicians are also human beings with lives outside medicine. The stressors physicians face in managing their career obligations and responsibilities must impact their home life and interpersonal relationships. Our culture has evolved such that both partners in many families work full-time, and the needs of a nonphysician partner can create additional demands and strain on a relationship. This stress may be even further augmented if both partners are physicians, and especially if both partners are surgeons.[4,5,14] This study was intended to provide specific insight into the impact that stress from a career in cardiothoracic surgery has on the SOs of cardiothoracic surgeons. Furthermore, we offer some suggestions as to the underlying cause of burnout and distress.

Within the past several decades, careers in cardiothoracic surgery have changed dramatically.[10] Reimbursements have decreased such that many cardiothoracic surgeons will now need to work longer until they can afford to retire.[2] Concomitantly, expectations on cardiothoracic surgeon performance have never been higher, fueled in part by public reporting, and the culturally imbued notion that anything

TABLE 4. During the past year, cardiothoracic surgery as a career has contributed to the following changes in my significant other (cardiothoracic surgeon partner)

Answer choices	Response: Completely false	Response: Somewhat false	Response: Neutral	Response: Somewhat true	Response: Completely true	Total
Showing less empathy toward our family	57 (24)	44 (18.6)	36 (15.2)	71 (30)	29 (12.2)	237
Showing less empathy to people and situations outside our family	47 (19.9)	48 (20.3)	42 (17.7)	73 (30.8)	27 (11.4)	237
Less sensitive to others' feelings/emotions	43 (18.1)	40 (16.9)	49 (20.7)	74 (31.2)	31 (13.1)	237
Less interest in social activities	28 (11.8)	38 (16)	42 (17.7)	83 (35)	46 (19.4)	237
Less connected to loved ones	44 (18.6)	29 (12.3)	50 (21.2)	71 (30)	42 (17.8)	236
Less connection with outside interests and hobbies	22 (9.3)	41 (17.4)	37 (15.7)	66 (28)	70 (29.7)	236

Values are presented as n (%) or n.

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TABLE 5. How true do you feel the following statements are about your relationship with your significant other over the past 2 months?

Answer choice	Response					
	Not true at all	Somewhat true	Neutral	Mostly true	Completely true	Total
We often engage in activities together	28 (11.8)	66 (27.9)	47 (19.8)	72 (30.4)	24 (10.1)	237
We have calm and good-natured interactions	13 (5.5)	41 (17.4)	50 (21.2)	100 (43.4)	32 (13.6)	236
We spend a healthy amount of time together	49 (20.8)	65 (27.5)	44 (18.6)	66 (28)	12 (5.1)	236
We find a comfortable amount of time for intimacy	54 (23)	68 (28.9)	46 (19.6)	59 (25.1)	8 (3.4)	235
We are emotionally connected	18 (7.6)	36 (15)	55 (23.3)	70 (29.7)	57 (24.2)	236

Values are presented as n (%) or n.

short of perfection is a failure.[21] At the same time, despite increasing complexity of cardiothoracic surgeries, outcomes continue to improve, sustaining the high bar for performance and occasionally fueling public mistrust over imperfect outcomes.[21] Cardiothoracic surgeons now have less autonomy in decision making, even regarding how they manage their time and lives outside the operating room. In many circumstances, cardiothoracic surgeons are being asked to work harder and do more, including substantially more complicated cases, with fewer resources. Compounding these increased work demands, and in response to the emerging concerns around physician burnout, many surgeons report being asked to attune more to their psychosocial needs and to create more work–life balance.

In 2022, the AATS Wellness Committee described the prevalence and manifestation of burnout among cardiothoracic surgeons,[1] which was similar to that of physicians in other specialties. In particular, cardiothoracic surgeons were more at risk for burnout if they were younger, female, or had children. Mitigators for burnout in cardiothoracic surgeons included being in a relationship, such as with a SO, or having workplace resources to support emotional well-being.[1] Cardiothoracic surgeons reported that resources to strengthen resilience to burnout included.

- Access to and support for counseling and psychological health services, without any associated stigma;
- An environment that supports personal well-being, including simple fringe benefits (ie, free coffee, showers, and time and space to exercise); and
- Forums for small group discussions and seminars for teaching various aspects of well-being.

TABLE 6. If you could start again, would you have wanted your significant other to pursue a career in cardiothoracic surgery?

Answer choice	Result
Definitely	57 (26.2)
Probably	37 (17)
Possibly	33 (15.1)
Probably not	49 (22.5)
Definitely not	42 (19.3)

Values are presented as n (%).

Review of the free-form comments indicate that the resources deemed important by SOs are consistent with the types of resources desired by their surgical partners[1] (Appendix E1). SOs of cardiothoracic surgeons desire more available and accessible counseling, coaching, and well-being education; a change in the culture that demands unrelenting work, particularly in the early years of surgical practice, as well as systems for cross-coverage; and more emphasis on taking time off and utilizing all vacation days. Both cardiothoracic surgeons and their SOs expressed the need for hospital and departmental leaders (eg, department chair and section chiefs) to change the culture such that family time is protected and encouraged, and competition among individuals for relative value units or other productivity metrics is deemphasized.

There are several strikingly repetitive themes from these data that can inform healthcare leaders and decision makers.

- Cardiothoracic surgeons, and their families, are particularly at risk for burnout and distress early in their career (<5 years out from training), and this effect can be ameliorated if hospitals provide appropriate and adequate support, especially for younger surgeons and their families.
- Cardiothoracic surgeons, and their families, have the most substantial risk for burnout and distress when work hours exceed 68 hours per week and are more protected when work hours are closer to 58 to 60 hours per week. The praise of "work ethic" with unrelenting call obligations is damaging to family life. This theme was consistent across the data and emphasized repeatedly in the free-form responses (Appendix E1).
- It appears that cardiothoracic surgeons in private practice may put their families at greater risk for the effects of burnout than those in academic practice. Our survey could not determine the reasons, although they may be related to the potential for unrelenting work hours or lack of hospital resource support in private practice settings.
- Cardiothoracic surgeon families that have children of any age, but particularly children younger than age 19 years, have more risk for burnout and distress.

TABLE 7. My significant other and I work effectively together to create the work–life balance that we envision

Answer choice	Result
Strongly agree	17 (7.9)
Agree	69 (31.9)
Neutral	72 (33.3)
Disagree	34 (15.7)
Strongly disagree	24 (11.1)

Values are presented as n (%).

Research on relationships confirms that humans are biologically programmed to seek belonging, security, and stability.[22] At our core, we long to be "seen, heard, understood, and valued" in order to feel safe and secure.[23] This report indicates that a substantial number of surgeons and their SOs struggle to create this secure base, and in its absence, the allostatic load on both partners will be amplified.

It has been recommended by experts in the field of physician well-being[24] that we cultivate change in the culture of health care. This includes thoughtful education of individuals and teams. Surgical leaders (eg, department chairs, section chiefs, and senior practice partners) must strive to create more resonant and integrated workplaces, and hospital leaders need to develop a more expansive appreciation of and understanding for the complex interpersonal and relational dynamics that extend beyond the perceived immediate needs of the organization.[25] Coaching, counseling, and support for cardiothoracic surgeons and their families will be paramount to help them embrace new concepts to cultivate better ways to integrate their work life and home life, appreciating that the solutions will be unique and dynamic for each individual. In particular, coaching and counseling for surgical and hospital leaders can help teach them how to explore ways to customize resources for their distinct environment that are attuned to the expressed desires of their faculty. Successful leaders for the future will enthusiastically embrace the possibilities of this evolution as they strive to repair the emotional culture[25,26] of high stakes health care and restore epistemic trust.

There is substantial evidence, related to well-being, that focuses on the concept of competing demands,[27-30] and this has been described for cardiothoracic surgeons.[9,31] In the case of cardiothoracic surgery, the competing demands are between the needs of the self, the needs of important others (which include SOs), and the needs of the context cardiothoracic surgeons "operate" in—the unrelenting demands of the next sick patient, the various obligations of the practice or hospital, or the never-satisfied urge to contribute more to the field. Recognizing, acknowledging the importance of, and trying to satisfy all of these demands simultaneously can be emotionally exhausting, lead to the belief that we are not effective (a lack of personal accomplishment), or simply encourage the desire to "check out" and avoid the impossibility of it all (depersonalize). This is the definition of the syndrome we have come to know as "burnout." The moral injury from becoming complicit with a system that cannot or will not support the kind of care cardiothoracic surgeons wish to deliver invites further depersonalization, if not shame, guilt, and anger.[19] Furthermore, the exhaustion from this inability to accomplish everything in a professional structure that has normalized overperformance can lead to demoralization, shame, guilt, anger and depression—in other words, burnout.

Developing an ability to honor competing commitments while making choices that are congruent with core values takes education, effort, practice, and self-compassion. These processes can be and have been learned by numerous cardiothoracic surgeons and their families, creating an expansive understanding that diminishes resentment and a feeling of being "stuck."[30] This linkage of the differentiated needs of one's self, important others, and the professional context of cardiothoracic surgery must be honored and responded to in a manner that is flexible, adaptive, and stable for integration to be achieved.[17,29,30,32] This is the reason why the term work–life integration has been our longtime preference over the term work–life balance,[13,33] and this term has recently been adopted by others.[34]

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Limitations

This article is based on a survey and is limited by the survey methodology. It represents a snapshot of SOs who received the AATS SO Well-being questionnaire and who responded by submitting their answers and comments. It can be appreciated as a screening study to provide some objective data that this problem is worth studying in greater depth and in more detail. There is no way to measure the experience of those who received a survey but did not respond, and there are so many questions that need to be asked as the study of burnout in cardiothoracic surgery continues to evolve. Research on surveys[35,E1,E2] suggests that the response to this survey, as it reflects answers from a fairly homogeneous group of respondents, very likely provides accurate information. The virtual completion of all survey questions by those who participated along with the numerous free-form responses likely yields a very robust and meaningful data set. Furthermore, the information we received is consistent with other reports related to how physician burnout influences families, and the responses are also consistent with what the authors have experienced in their work with cardiothoracic surgeons.[E3] We believe that these data are reflective of the current state and raise considerable concern for the emotional well-being of families of cardiothoracic surgeons.

CONCLUSIONS

The data in this survey suggest that cardiothoracic surgeons and their SOs face enormous challenges, as does

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the future of cardiothoracic surgery if we do not find ways to intervene and create a culture that is more inviting and supportive. The current culture isn't working, yet we have within our profession the capability to acknowledge reality and develop innovative solutions. After all, isn't taking on vexing challenges and finding solutions what we have always done in the profession of cardiothoracic surgery?

Webcast

You can watch a Webcast of this AATS meeting presentation by going to: https://www.aats.org/resources/the-effect-of-a-career-in-ct-surgery-on-spouses-and-significant-others.

Conflict of Interest Statement

The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest

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Key Words: cardiothoracic surgeon, spouse, significant other, family, burnout, well-being

APPENDIX E1. FREE-FORM COMMENTS

When asked for comments, there were numerous responses from spouses or significant others, some of which are reproduced below.

- More mental health support and work to destigmatize getting that support. Prioritizing family and work life balance as opposed to the glorification of more stress and longer hours.
- Much of the stress leading to burn out in my husband's situation in this job and his previous is a result of not having the support of the hospital situation to correct identified problems or be able to hire well-trained, effective partners. Other stress comes from the "grading" and reporting system that negatively effects how my husband would like to treat his patients.
- More mental health resources available in a way where surgeons can get access to help that's not threatening to their job or academic position. Emphasis on taking all vacation days available.
- Introduce more psychological education for increased behavioral awareness in this specialty and how it can contribute to the well-being of the surgeon and ultimately effects on the family.
- Cardiothoracic surgery programs need to become more empathetic. Leadership needs to be more human and less chest beating about how many cases they do, and how in their training times it was so much worse. Citing how ignorant the past was does not bode well as a guiding light for the present and future.
- Please help to stop the pathological mindset engrained in training that cardiothoracic surgeons don't need time for mental health and mindfulness. My husband wears this like a band of honor that he has been beaten down and lives to be on the other side to pass judgment on the next generation. It is destructive to the surgeons and their families and overall does affect patient care. It is trained into them as residents and fellows, and now as my husband is an attending, he considers current trainees weaker because they try and set personal boundaries. This mindset is not ok. Extend fellowship training to 3 years and set fellows up for success and continue to work toward eliminating the old school mentality of cardiothoracic surgery. It's outdated and obsolete in today's society.
- I think that providing more resources for residents is much needed. From my perspective as a wife, friend, and a clinical psychologist (by profession), I believe all of the residents are completely burnt out, some have considered leaving the profession, and almost all of them feel they are lacking help from the program to combat burnout/stress. I think we all understand that this particular career path is one that is naturally stressful and leaves you feeling overworked. However, I am a PhD and I definitely had more resources during my training years than they do currently.
- Get the institutions to step up and recognize and facilitate ideas and programs to help
- Advocate for more humane scheduling to include call schedules, more compassion and less competition is needed among colleagues, higher remuneration is also needed given the inordinate amount of work, after hours work, stressors, and quality of life imbalance that negatively impacts entire family and requires much outsourcing
- Stop perpetuating a culture of overwork and virtual impossibly in taking vacations. RE: being on call constantly. Consider giving cardiothoracic surgery fellows and families housing or a stipend, since most incur more debt during training, which adds to stress.
- There should be more mental health counseling options made available for surgeons, and they should be encouraged by their superiors to utilize those options
- There needs to be some "safe space" in which the surgeons can discuss what is really going on in their lives without fear of termination or retribution.
- And finally, this comment: what cardiac surgeons can do for patients is amazing. You really do save lives. Decreasing or eliminating all the paperwork and other stressors (dealing with insurance companies) is the way to help with burnout in cardiac surgery. Also, being nice to each other (ie, surgeons being nice to surgeons) would help. There are still too many mean cardiothoracic surgeons.

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E-References

E1. Curtin R, Presser S, Singer E. The effects of response rate changes on the index of consumer sentiment. *Publ Opin Q*. 2000;64:413-28.

E2. Visser PS, Krosnick JA, Marquette J, Curtin M. Mail surveys for election forecasting and evaluation of the Columbia Dispatch Poll. *Publ Opin Q*. 1996;60:181-227.

E3. Ungerleider RM, Ungerleider JD. Integrated Life Skills homepage. 2022. Accessed March 21, 2023. https://www.integratedlifeskills.com

TABLE E1. Do you think that burnout affects your relationship at home and with friends?

Answer choice	Result
Always	52 (22)
Usually	64 (27.1)
Sometimes	78 (33)
Rarely	30 (12.7)
Never	12 (5.1)

Values are presented as n (%). Significant others (SOs) of those with <5 years experience were significantly more likely to think that burnout affects their relationships always or usually (63.3% vs 43.8%; $P = .009$). SOs with children of any age, and with children younger than age 19 years, were significantly more likely to think that burnout affects their relationships always or usually (any age: 56.4% vs 36.1%; $P = .003$; younger than age 19 years: 56% vs 39.4%; $P = .011$). SOs who always or usually think that burnout affects their relationships had cardiothoracic surgeon partners who worked 70.3 hours per week on average, whereas SOs who did not agree with this had partners who worked 61.4 hours per week on average ($P = .001$).

TABLE E2. Do you think that burnout has affected your significant other (SO) at work?

Answer choice	Result
Always	27 (12.1)
Often	66 (29.5)
Sometimes	69 (30.8)
Rarely	43 (19.2)
Never	19 (8.5)

Values are presented as n (%). SOs who agree that burnout affects their SO at work had cardiothoracic surgeon partners who worked 69.3 hours per week on average, whereas SOs who did not agree with this had partners who worked 63.4 hours per week on average, ($P = .034$).

TABLE E3. Has your significant other (SO) ever experienced physical ailments (eg, back or neck problems) that you believe are related to the nature of their work?

Answer choice	Result
Yes	158 (69.9)
No	68 (30.1)

Values are presented as n (%). SOs of residents are more likely to report physical ailments than those of non-residents (87.5% vs 67.8%; $P = .047$). SOs of those with physical ailments had cardiothoracic surgeon partners who worked 69.1 hours per week on average, compared with SOs without physical ailments whose partners worked 58 hours per week on average ($P < .001$).

TABLE E4. Do you feel that your significant other (SO) spends adequate time with your family and friends?

Answer choice	Result
Always	9 (4)
Often	43 (19.2)
Sometimes	102 (45.5)
Rarely	55 (24.6)
Never	15 (6.7)

Values are presented as n (%). SOs who feel that their SO spends adequate time with their family and friends had cardiothoracic surgeon partners who worked 58.2 hours per week on average, compared with all others whose partners worked 67.8 hours per week on average ($P = .004$).

TABLE E5. Overall I believe that my significant other's (SO's) career is important and fulfilling for them and our family

Answer choice	Result
Strongly agree	63 (27.9)
Agree	101 (44.7)
Neutral	34 (15)
Disagree	22 (9.7)
Strongly disagree	6 (2.7)

Values are presented as n (%). SOs with spouses or partners at academic medical centers are more likely to agree that their SO's career is important and fulfilling (74.7% vs 59%; $P = .012$).

TABLE E6. My significant other (SO) has experienced more symptoms of burnout as a result of the pandemic

Answer choice	Result
Strongly agree	38 (17.8)
Agree	58 (27.1)
Neither agree nor disagree	61 (28.5)
Disagree	48 (22.4)
Strongly disagree	9 (4.2)

Values are presented as n (%). SOs who agree that their SO has experienced more symptoms of burnout as a result of the pandemic had cardiothoracic surgeon partners who worked 70.6 hours per week on average, compared to all others who worked 62.4 hours per week on average ($P = .003$).

TABLE E7. I have experienced more symptoms of burnout as a result of the pandemic

Answer choice	Result
Strongly agree	49 (22.9)
Agree	76 (35.5)
Neither agree nor disagree	42 (19.6)
Disagree	37 (17.3)
Strongly disagree	10 (4.7)

Values are presented as n (%). Respondents who have children are more likely to agree that they have experienced more symptoms of burnout as a result of the pandemic. (57.1% vs 44.2%; $P = .057$). Respondents who agree that they have experienced more symptoms of burnout as a result of the pandemic have cardiothoracic surgeon partners who work 69 hours per week on average, whereas respondents who disagree have partners who work 61.8 hours per week, on average ($P = .007$).

TABLE E8. We have been affected negatively from a financial standpoint because of COVID-19

Answer choice	Result
Yes	63 (29.4)
No	151 (70.6)

Values are presented as n (%). Significant others (SOs) whose cardiothoracic surgeon partners work in an academic medical center are less likely to state that they have been negatively affected financially because of COVID-19 (22.7% vs 42.5%; $P = .003$).

TABLE E9. As a result of our experience with COVID-19, we are contemplating an earlier retirement or a new career for one or both of us

Answer choice	Result
Yes	50 (23.4)
No	164 (76.6)

Values are presented as n (%). Significant others (SOs) whose spouses are residents are less likely to state that they are contemplating an early retirement or new career compared with nonresidents (4.4% vs 25.7%; $P = .023$).

TABLE E10. COVID-19 has affected the well-being of our family in a negative way

Answer choice	Result
Very true	50 (23.5)
Somewhat true	63 (29.6)
Neutral	44 (20.7)
Not much	44 (20.7)
Not at all	12 (5.6)

Values are presented as n (%) or n.

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