Burnout from Gender Inequity in a Pandemic

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KEYWORDS

• Women anesthesiologists • Gender equity • Well-being • Burnout
• COVID-19 pandemic

KEY POINTS

- Before the start of the COVID-19 pandemic in 2020, it was known that women anesthesiologists faced unique challenges related to their gender, including but not limited to, harassment, compensation inequity, decreased rates of promotion, less representation in leadership, and inequitable distribution of domestic duties.
- During the pandemic, enhanced clinical duties, domestic responsibilities, and stress made it easier to see the flawed narrative of work–life balance in medicine. Inflexible scheduling, undervalued caregiving responsibilities outside of work, and loss of academic and leadership productivity caused many women physicians to reduce their work hours, transition to part-time, or consider leaving medicine.
- Women physicians, and in particular anesthesiologists, have a higher rate of burnout and mental health issues than their male counterparts, which was exacerbated during the pandemic and continues to be an issue as the pandemic evolves and overwhelms health care systems and health care workers.
- Unless systemic change is enacted to shift work culture and institutional norms regarding gender, work, and caregiving, we will see long-lasting and possibly permanent effects on the well-being of women anesthesiologists.

INTRODUCTION

The percentage of women physicians in anesthesiology ranks in the lower third among all medical specialties. Women are 33% of anesthesiology residents, 25% of the overall anesthesiology workforce, and 37% of the academic anesthesiology workforce.[1–3] These numbers have remained relatively consistent since 2006.[3]

There is no appropriate stereotype for a woman anesthesiologist. Each is at a different point in their professional careers and personal lives, and each makes

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decisions for themselves. This diversity of lived experiences highlights why broad assumptions about women anesthesiologists should be avoided. Unfortunately, in our culture and particularly in medicine, assumptions about women do exist. For example, there is an assumption that all women have a natural predilection for family life and children; this is applied to women without children as well. Additionally, the concept of intersectionality should be included, as many of the issues discussed here are often magnified for those who do not identify as cisgender and/or white.

We will briefly review the data regarding gender inequity in anesthesiology that were available before the COVID-19 pandemic in 2020. Next, we will discuss how the pandemic exposed the socially constructed norms, roles, and behaviors associated with gender that situates women anesthesiologists as both primary caregivers in the home and on the frontlines of health care. These systemic inequities continue to exacerbate burnout in women anesthesiologists. Finally, we will highlight initiatives that can improve well-being and the work culture for women anesthesiologists.

STATUS OF WOMEN ANESTHESIOLOGISTS PREPANDEMIC

Women anesthesiologists encounter unique challenges related to their gender that were well known before the beginning of the pandemic, including but not limited to harassment, compensation inequity, decreased rates of promotion, less representation in leadership, and inequitable distribution of domestic duties. Women anesthesiologists are more likely to perceive and experience gender-based discrimination, mistreatment, and sexual harassment than men in anesthesiology and report the highest rate of maternal discrimination among all medical specialties.[4–9] The most frequently identified sources of mistreatment include patients and nurses, followed by surgeons, and then other anesthesiologists.[5,6,10] Women anesthesiologists are paid less than their male counterparts for equitable work, with an annual pay gap of 8% (or approximately $32,000), and are overall more likely to have a lower salary range.[11] Over a 30-year career span and after investing in the same education and training, this translates to approximately 1 million dollars in lost earnings for women.

In academic medicine, women physicians are less likely to be promoted to associate, full professor, or department chair; there has been no narrowing of the gap over the last 35 years.[12] Contributing factors to promotion include publications, grants, speaking engagements, and awards. Women anesthesiologists have fewer publications as first or senior author in peer-reviewed anesthesiology journals and receive fewer career advancement awards.[13–18] Women anesthesiologists are less likely to receive invitations to speak at external departmental grand rounds.[19] At national anesthesiology meetings, all-men panels predominate, whereas women represent lower percentages of single or keynote speakers.[1,20,21] Between 1985 and 2020, only five women had delivered the prestigious Rovenstine lecture at the American Society of Anesthesiology (ASA) Annual Meeting.[1] Of the total Distinguished Service Awards given by all nine anesthesiology societies, women have been 12% of the recipients.[22]

Women anesthesiologists are a minority in anesthesiology leadership positions. To date, neither *Anesthesia & Analgesia* nor *Anesthesiology* has had a woman editor in chief.[2] There also has been little to no change in proportion of women editors for editorial boards of peer-reviewed anesthesiology journals over time.[2,23] The percentage of women chairs of academic anesthesiology departments has remained stagnant at 13% over the last 15 years.[24] The ASA has had five women presidents in 116 years; the first was Dr. Betty Stephenson in 1991.[17] Additionally, the proportion of women serving in the ASA House of Delegates continues to be well below the proportion of

women in the anesthesiology workforce.[17] Notably, similar percentages of men and women anesthesiologists are eager to pursue leadership positions and identify similar barriers, including work–life conflict, lack of mentorship and sponsorship, and frustration with organizational support.[25]

At home, women physicians spend more time on domestic responsibilities, at an average of 8.5 more hours per week, regardless of marital or child status.[26,27] Additionally, women physicians, including those in dual-career relationships, are more likely to be the primary caregiver for children or elderly and are less likely to have a stay-at-home partner.[27]

THE PROGRESSION OF GENDER INEQUITY DURING THE COVID-19 PANDEMIC

The COVID-19 pandemic revealed the flawed narrative of work–life balance in medicine and the general culture of overwork.[28] It also threatened to regress the positive trends in gender equity and success in anesthesiology.

In the workplace, the pandemic brought forth significant workflow changes including increased administrative tasks, greater clinical responsibilities, and at times, the reduction of work hours.[29] Surge planning, new clinical protocols, and staffing challenges are a few of the many new administrative challenges.[30] As compared with other medical colleagues who can provide a large percentage of their care through telemedicine, most anesthesiologists must be physically present to provide patient care.[31] There was a greater need for intensive care physicians and intubation teams; many anesthesiologists were dispatched to unfamiliar clinical settings, worked longer hours, and cared for critically ill patients.[29,32] Conversely, some anesthesiologists experienced decreased work hours because of widespread cancellation of elective surgical cases or increased caregiving roles at home.[29,33] With the cancellation of elective surgeries, many anesthesiologists, specifically those in private practice, were furloughed or on unpaid leaves of absences, creating financial hardship.[34] In a survey from the California Society of Anesthesiologists, women anesthesiologists reported furlough status or being given involuntary vacation more often than men.[35]

In the academic setting, many faculty reduced their participation in scholarly and research activities to ensure the increasing clinical workloads were met. Many women anesthesiologists used their nonclinical time to focus on domestic responsibilities and childcare, resulting in a 33% larger drop in research hours and academic productivity compared to men.[36–42] Additionally, because women in academic medicine are more likely to have education roles, the adaptation to remote learning may have superseded other scholarly endeavors needed for promotion or leadership.[43,44] The percentage of articles on which women were first authors dropped during the pandemic, further increasing the existing authorship gender gap.[33,45–48] This occurred in spite of the surge in COVID-19-related publications, many of which were published in high impact journals and accrued more citations than non-COVID research.[45] Finally, there was reduced time for women physicians to attend virtual conferences because of personal responsibilities and institutional cost-cutting measures, reducing networking abilities.[49] The aforementioned workforce and academic elements that emerged during the pandemic will likely cumulatively contribute to the enhancement of the gender gaps in compensation, promotion, and leadership roles that women anesthesiologists already face.[36–38,42,50]

On the domestic front, there was an uptick in household responsibilities and caregiving needs because of school and daycare closings, disruption of children's activities, and stay-at-home orders. As most U.S. households lack elderly family members to rely on as backup, these responsibilities fell disproportionately to women.[28,36–38,41,51–55] Since the onset of the pandemic, parents in the United States

have almost doubled their time spent on household tasks and childcare, with mothers contributing an average of 15 more hours per week more than fathers.[51] When virtual school and work-from-home became prevalent, it created a double-edged sword. Certainly, this new paradigm had the potential to facilitate the management of work–family roles, although multitasking, interruptions, and extended workday availability also increased.[38] Mothers were 50% more likely to be interrupted when working from home compared to fathers working from home.[41] In summary, augmented childcare and home schooling obligations coupled with disproportionate household responsibilities had an outsized impact on women anesthesiologists who struggled to meet family needs while also fulfilling increasing demands of pandemic-related work responsibilities.[56] As a consequence, more women anesthesiologists, particularly junior faculty, reduced work hours, considered leaving medicine altogether, or transitioned to part-time, secondary to pandemic stressors.[28,36,41,51,53]

Many anesthesiologists reported a heightened sense of personal precarity and sacrifice at the onset of the pandemic.[28,51] Women health care workers performing tracheal intubation of patients with suspected or confirmed COVID-19 were at increased risk of subsequent COVID-19 diagnosis or symptoms requiring self-isolation or hospitalization. This was likely due to the gendered design of personal protective equipment (PPE) and the limited availability of appropriately sized PPE.[57] There was anxiety about one's duty as a physician and the risk of contracting COVID, exposing family, and even death.[51,52,56,58] There was also a fear of leaving children as orphans, an unprecedented ethical dilemma for all physician parents torn between a dedication to the profession when needed most and a desire to protect their families; women in particular did not wish to be perceived as uncommitted to their job.[58,59] Breastfeeding women and mothers faced additional uncertainty regarding where and when to pump at work due to the potential risk of infection and/or if they should self-isolate from their infants and children while working in a high-risk environment.[56,59,60]

THE EFFECTS OF COVID-19 ON WELLNESS AND BURNOUT IN WOMEN ANESTHESIOLOGISTS

It is not surprising then that women physicians have a higher rate of burnout and mental health issues than their male counterparts. It has been known for years that women physicians experience depression and suicidality at higher rates than male physicians. A study in 1999 suggested that the incidence of depression among women physicians might be as high as 19.5%[61] along with suicide completion rates as much as 130% higher rate compared to women in the general population.[62]

The Medscape National Physician Burnout and Suicide Report is an annual compilation of survey results of physicians from all specialties. The 2021 Report included 12,339 physicians surveyed from August 30 to November 5, 2020. Overall, the rate of burnout for women was 51% compared to 36% for men. Only 49% of all physicians reported feeling happy to very happy compared to 69% of participants evaluated before the pandemic. The survey also reported that 1% of physicians had attempted suicide and 13% had thoughts about suicide.[63] Additionally, there were several studies published with data collected before the pandemic, suggesting that anesthesiologists and critical care physicians specifically are at high risk for burnout.[64,65] A recent article in *Anesthesiology* reported the prevalence of burnout among anesthesiologists is higher than previously known, with 59.2% of survey participants being at high risk for burnout and 13.8% meeting the criteria for burnout syndrome.[66] Such trends are likely worsening with the ongoing pandemic as it continues to overwhelm health care systems and its workers.

A rapid scoping review by Sriharan and colleagues reported that women health care workers are at increased risk for stress, burnout, and depression amid the pandemic.[67] Another study of 442 health care workers revealed that being woman,

Table 1
Suggestions for improvement of work culture and well-being for anesthesiologists

Group	Recommendations
Recommendations from ASA Committee on Systemic Life Imbalances	• Nontraditional and/or flexible scheduling adds value to a department or practice by giving flexibility to its members and their needs, as well as the ability to accommodate the surges and ebbs in surgical scheduling. • As the definitions of "a family" and of contemporary caregiver roles are changing rapidly, leaders need to create cultures in which physicians feel safe sharing information about caregiving responsibilities and feel secure in the knowledge that this will be used to support more equitable working environments. It is helpful to provide childcare and family care resource options, financial support, and leave time for caregiving needs. • Accommodations should be made for the loss of academic productivity due to changes in clinical duties, loss of academic time, stagnation of progress in a promotion track, and increased caregiving demands. • General wellness initiatives should be deployed, including but not limited to, well-being education, peer support, substance use disorder prevention and treatment, suicide prevention training, and diversity, equity, and inclusion initiatives.
ASA Statement on Creating a Culture of Well-Being for Health Care Workers	• Advocate for a culture of openness, normalization, and destigmatizing of mental health care in physicians. • Physicians should be able to seek care through mental health resources without fear of impact on licensure and credentialing. • The path to access these resources be easily accessible to individuals and that confidentiality be maintained. • Standardize state medical licensure and local credentialing questions to promote parity between mental and physical health, thus removing a barrier to seeking appropriate mental health care.
Other examples and suggestions	• There should be zero tolerance for harassment and microaggressions, as well as easily accessible reporting structures and psychologically safe spaces to discuss vulnerabilities. • Departments and practices should be transparent about compensation and standardize how professional effort is calculated among education, research, and clinical care. • Organizational leadership opportunities should be widely publicized to ensure that women have strong representation in the nomination, interview, and selection processes. • Rethink the traditional conference to include virtual options and childcare support. • Aim for deliberate representation. Having women as a part of the leadership group that makes pivotal decisions is imperative.

Box 1
Maslow's hierarchy of need

Basics: Physical and mental health needs

Safety: Patient and health care worker safety

Respect: Professional behavior among all health care workers

Appreciation: Recognition for practicing good patient care

Heal patients and contribute: Self-actualization, purpose-driven life

young, single, having less work experience, and working on the frontlines were associated with higher rates of depression, anxiety, and stress.[68] Some experts believe that up to 80% of health care worker burnout is related to health care system operations and the culture of the organization. The well-being of health care workers is essential to any health care system. The COVID-19 pandemic will have long-lasting and permanent effects on all health care workers. Those on the frontlines, including anesthesiologists and critical care physicians, are facing physical and emotional exhaustion as variants emerge and resurge.

A CALL TO ACTION AND RECOMMENDATIONS

In March 2020, a group of anesthesiologists called for the ASA to investigate systemic life imbalances that the pandemic exacerbated for women anesthesiologists. These included issues such as scheduling flexibility, caregiving, academic productivity, and well-being. The Ad Hoc Committee on Systemic Life Imbalances was subsequently formed. In addition to authoring a series of documents with specific suggestions (available at https://www.asahq.org/standards-and-guidelines/resources-from-asa-committees), in June 2021, the Ad Hoc Committee supported the overall recommendations as shown in **Table 1**. The committee also collaborated with members of the ASA Committee on Physician Well-Being and put forth a Statement on Creating a Culture of Well-Being for Health Care Workers. The statement recommends an expert opinion and evidence-based system that meets the Physician Wellness Hierarchy of Needs derived from Maslow's Hierarchy of Need as described in **Box 1**.[69] The recommendations include a team-based organizational platform as opposed to a top–down structure for establishing a more just culture of support and enabling a two-way communication between health care workers and hospital leadership. **Table 1** outlines these specific suggestions and recommendations as well as examples of other opportunities for work culture improvement to better support women anesthesiologists.

SUMMARY

We are caregivers—all of us. We care for our patients, but we also must care for loved ones and ourselves, said simply. We need to shift institutional perspectives of gender, work–life balance, and caregiving. With an eye toward strengthening the career trajectories of women anesthesiologists, the pandemic is an opportunity to build a more equitable workforce—namely initiating sustained institutional and systemic efforts to address gender disparities and fostering a culture of support that normalizes and destigmatizes mental health care in physicians. New paradigms and thought processes are critical to ensure the well-being of health care workers and the retention of women physicians.

CLINICS CARE POINTS

- Women anesthesiologists face unique challenges related to their gender, including but not limited to, harassment, compensation inequity, decreased rates of promotion, less representation in leadership, and inequitable distribution of domestic duties.
- During the pandemic, enhanced clinical duties and increased domestic and caregiving responsibilities caused burnout and mental health issues to intensify for many women anesthesiologists, causing them to reduce their work hours, transition to part-time, or consider leaving medicine.

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The authors have nothing to disclose.

REFERENCES

1. Moeschler SM, Gali B, Goyal S, et al. Speaker Gender Representation at the American Society of Anesthesiology Annual Meeting: 2011-2016. Anesth Analg 2019;129(1):301–5.
2. Bissing MA, Lange EMS, Davila WF, et al. Status of Women in Academic Anesthesiology: A 10-Year Update. Anesth Analg 2019;128(1):137–43.
3. Gonzalez LS, Fahy BG, Lien CA. Gender distribution in United States anaesthesiology residency programme directors: trends and implications. Br J Anaesth 2020;124(3):e63–9.
4. Miller J, Katz D. Gender Differences in Perception of Workplace Experience Among Anesthesiology Residents. J Educ Perioper Med 2018;20(1):E618.
5. Shams T, El-Masry R. Cons and pros of female anesthesiologists: Academic versus nonacademic. J Anaesthesiol Clin Pharmacol 2015;31(1):86–91.
6. Zdravkovic M, Osinova D, Brull SJ, et al. Perceptions of gender equity in departmental leadership, research opportunities, and clinical work attitudes: an international survey of 11 781 anaesthesiologists. Br J Anaesth 2020; 124(3):e160–70.
7. Adesoye T, Mangurian C, Choo EK, et al. Perceived Discrimination Experienced by Physician Mothers and Desired Workplace Changes: A Cross-sectional Survey. JAMA Intern Med 2017;177(7):1033–6.
8. Kraus MB, Dexter F, Patel PV, et al. Motherhood and Anesthesiology: A Survey of the American Society of Anesthesiologists. Anesth Analg 2020;130(5): 1296–302.
9. Association of American Medical Colleges Faculty Roster. 2019. Available at: https://www.aamc.org/data-reports/faculty-institutions/interactive-data/2019-us-medical-school-faculty. Accessed August 31, 2021.
10. McKinley SK, Wang LJ, Gartland RM, et al. Yes, I'm the Doctor": One Department's Approach to Assessing and Addressing Gender-Based Discrimination in the Modern Medical Training Era. Acad Med 2019;94(11):1691–8.
11. Hertzberg LB, Miller TR, Byerly S, et al. Gender Differences in Compensation in Anesthesiology in the United States: Results of a National Survey of Anesthesiologists. Anesth Analg 2021;133(4):1009–18.

12. Richter KP, Clark L, Wick JA, et al. Women Physicians and Promotion in Academic Medicine. N Engl J Med 2020;383(22):2148–57.
13. Miller J, Chuba E, Deiner S, et al. Trends in Authorship in Anesthesiology Journals. Anesth Analg 2019;129(1):306–10.
14. Pagel PS, Freed JK, Lien CA. Gender Composition and Trends of Journal of Cardiothoracic and Vascular Anesthesia Editorial Board Membership: A 33-Year Analysis, 1987-2019. J Cardiothorac Vasc Anesth 2019;33(12):3229–34.
15. Galley HF, Colvin LA. Next on the agenda: gender. Br J Anaesth 2013;111(2):139–42.
16. Flexman AM, Parmar A, Lorello GR. Representation of female authors in the Canadian Journal of Anesthesia: a retrospective analysis of articles between 1954 and 2017. Can J Anaesth 2019;66(5):495–502.
17. Toledo P, Duce L, Adams J, et al. Diversity in the American Society of Anesthesiologists Leadership. Anesth Analg 2017;124(5):1611–6.
18. Mayes LM, Wong CA, Zimmer S, et al. Gender differences in career development awards in United States' anesthesiology and surgery departments, 2006-2016. BMC Anesthesiol 2018;18(1):95.
19. Sharpe EE, Moeschler SM, O'Brien EK, et al. Representation of Women Among Invited Speakers for Grand Rounds. J Womens Health (Larchmt) 2020;29(10):1268–72.
20. Shillcutt SK, Lorenzen KA. Whose Voices Are Heard? Speaker Gender Representation at the Society of Cardiovascular Anesthesiologists Annual Meeting. J Cardiothorac Vasc Anesth 2020;34(7):1805–9.
21. Lorello GR, Parmar A, Flexman AM. Representation of women amongst speakers at the Canadian Anesthesiologists' Society annual meeting: a retrospective analysis from 2007 to 2019. Can J Anaesth 2020;67(4):430–6.
22. Ellinas EH, Rebello E, Chandrabose RK, et al. Distinguished Service Awards in Anesthesiology Specialty Societies: Analysis of Gender Differences. Anesth Analg 2019;129(4):e130–4.
23. Lorello GR, Parmar A, Flexman AM. Representation of women on the editorial board of the Canadian Journal of Anesthesia: a retrospective analysis from 1954 to 2018. Can J Anaesth 2019;66(8):989–90.
24. Chandrabose RK, Pearson ACS. Organizing Women in Anesthesiology. Int Anesthesiol Clin 2018;56(3):21–43.
25. Matot I, De Hert S, Cohen B, et al. Women anaesthesiologists' attitudes and reported barriers to career advancement in anaesthesia: a survey of the European Society of Anaesthesiology. Br J Anaesth 2020;124(3):e171–7.
26. Jolly S, Griffith KA, DeCastro R, et al. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. Ann Intern Med 2014;160(5):344–53.
27. Ly DP, Jena AB. Sex Differences in Time Spent on Household Activities and Care of Children Among US Physicians, 2003-2016. Mayo Clin Proc 2018;93(10):1484–7.
28. Brubaker L. Women Physicians and the COVID-19 Pandemic. JAMA 2020;324(9):835–6.
29. Margolis RD, Strupp KM, Beacham AO, et al. The effects of COVID-19 on pediatric anesthesiologists: A survey of the members of the Society for Pediatric Anesthesia. Anesth Analg 2021;134(2):348–56.
30. Siegrist KK, Latham GJ, Huang J, et al. Anesthesia Professionals: Helping to Lead the COVID-19 Pandemic Response From Behind the Drape and Beyond. Semin Cardiothorac Vasc Anesth 2020;24(2):121–6.
31. Rubin R. COVID-19's Crushing Effects on Medical Practices, Some of Which Might Not Survive. JAMA 2020;324(4):321–3.

32. McCartney CJ, Mariano ER. COVID-19: bringing out the best in anesthesiologists and looking toward the future. Reg Anesth Pain Med 2020;45(8):586–8.
33. Andersen JP, Nielsen MW, Simone NL, et al. COVID-19 medical papers have fewer women first authors than expected. Elife 2020;9.
34. Anesthesia Practices See Major Financial Hit as Physician Anesthesiologists Pivot During COVID-19 to Treat Patients in Critical Care and ICUs, ASA Survey Highlights. 2020. Available at: https://www.asahq.org/about-asa/newsroom/news-releases/2020/05/anesthesia-practices-see-major-financial-hit-as-anesthesiologists-pivot-during-covid-19. Accessed September 2, 2021.
35. Hertzberg LB. COVD-19 Impact Survey. 2020. http://www.csahq.org/docs/default-source/practice-management-docs/covid-19-survey-economic-impact-v2-(1).pdf?sfvrsn=e8b5c146_2. Accessed August 30, 2021.
36. Jones Y, Durand V, Morton K, et al. Collateral Damage: How COVID-19 Is Adversely Impacting Women Physicians. J Hosp Med 2020;15(8):507–9.
37. Narayana S, Roy B, Merriam S, et al. Minding the Gap: Organizational Strategies to Promote Gender Equity in Academic Medicine During the COVID-19 Pandemic. J Gen Intern Med 2020;35(12):3681–4.
38. Jagsi R, Fuentes-Afflick E, Higginbotham E. Promoting Equity for Women in Medicine - Seizing a Disruptive Opportunity. N Engl J Med 2021;384(24):2265–7.
39. Yule AM, Ijadi-Maghsoodi R, Bagot KS, et al. Support for Early-Career Female Physician-Scientists as Part of the COVID-19 Recovery Plan. Acad Med 2021;96(5):e16–7.
40. Malisch JL, Harris BN, Sherrer SM, et al. Opinion: In the wake of COVID-19, academia needs new solutions to ensure gender equity. Proc Natl Acad Sci U S A 2020;117(27):15378–81.
41. National Academies of Sciences, Engineering, and Medicine; Policy and Global Affairs; Committee on Women in Science, Engineering, and Medicine; Committee on Investigating the Potential Impacts of COVID-19 on the Careers of Women in Academic Science, Engineering, and Medicine. In: Dahlberg ML, Higginbotham E, editors The Impact of COVID-19 on the Careers of Women in Academic Sciences, Engineering, and Medicine. Washington (DC): National Academies Press (US); 2021.
42. Garrido P, Adjei AA, Bajpai J, et al. Has COVID-19 had a greater impact on female than male oncologists? Results of the ESMO Women for Oncology (W4O) Survey. ESMO Open 2021;6(3):100131.
43. Mayer AP, Blair JE, Ko MG, et al. Gender distribution of U.S. medical school faculty by academic track type. Acad Med 2014;89(2):312–7.
44. Das D, Lall MD, Walker L, et al. The Multifaceted Impact of COVID-19 on the Female Academic Emergency Physician: A National Conversation. AEM Educ Train 2021;5(1):91–8.
45. Wehner MR, Li Y, Nead KT. Comparison of the Proportions of Female and Male Corresponding Authors in Preprint Research Repositories Before and During the COVID-19 Pandemic. JAMA Netw Open 2020;3(9):e2020335.
46. Williams WA 2nd, Li A, Goodman DM, et al. Impact of the Coronavirus Disease 2019 Pandemic on Authorship Gender in The Journal of Pediatrics: Disproportionate Productivity by International Male Researchers. J Pediatr 2021;231:50–4.
47. Nguyen AX, Trinh XV, Kurian J, et al. Impact of COVID-19 on longitudinal ophthalmology authorship gender trends. Graefes Arch Clin Exp Ophthalmol 2021;259(3):733–44.
48. Ipe TS, Goel R, Howes L, et al. The impact of COVID-19 on academic productivity by female physicians and researchers in transfusion medicine. Transfusion 2021;61(6):1690–3.

49. Matulevicius SA, Kho KA, Reisch J, et al. Academic Medicine Faculty Perceptions of Work-Life Balance Before and Since the COVID-19 Pandemic. JAMA Netw Open 2021;4(6):e2113539.
50. Woodhams C, Dacre J, Parnerkar I, et al. Pay gaps in medicine and the impact of COVID-19 on doctors' careers. Lancet 2021;397(10269):79–80.
51. Halley MC, Mathews KS, Diamond LC, et al. The Intersection of Work and Home Challenges Faced by Physician Mothers During the Coronavirus Disease 2019 Pandemic: A Mixed-Methods Analysis. J Womens Health (Larchmt) 2021;30(4):514–24.
52. Soares A, Thakker P, Deych E, et al. The Impact of COVID-19 on Dual-Physician Couples: A Disproportionate Burden on Women Physicians. J Womens Health (Larchmt) 2021;30(5):665–71.
53. Hardy SM, McGillen KL, Hausman BL. Dr Mom's Added Burden. J Am Coll Radiol 2021;18(1 Pt A):103–7.
54. Nishida S, Nagaishi K, Motoya M, et al. Dilemma of physician-mothers faced with an increased home burden and clinical duties in the hospital during the COVID-19 pandemic. PLoS One 2021;16(6):e0253646.
55. Hu X, Dill MJ. Changes in Physician Work Hours and Patterns During the COVID-19 Pandemic. JAMA Netw Open 2021;4(6):e2114386.
56. Sarma S, Usmani S. COVID-19 and Physician Mothers. Acad Med 2021;96(2):e12–3.
57. El-Boghdadly K, Wong DJN, Owen R, et al. Risks to healthcare workers following tracheal intubation of patients with COVID-19: a prospective international multicentre cohort study. Anaesthesia 2020;75(11):1437–47.
58. Rosanel S, Fogel J. Moral Dilemma of a Physician and Mother in the Midst of the COVID-19 Pandemic. South Med J 2020;113(8):384–5.
59. Chowdhry SM. Trying To Do It All: Being a Physician-Mother during the COVID-19 Pandemic. J Palliat Med 2020;23(5):731–2.
60. Robinson M. A Mother's Gold. JAMA 2021;325(22):2253–4.
61. Frank E, Dingle AD. Self-reported depression and suicide attempts among U.S. women physicians. Am J Psychiatry 1999;156(12):1887–94.
62. Schernhammer ES, Colditz GA. Suicide rates among physicians: a quantitative and gender assessment (meta-analysis). Am J Psychiatry 2004;161(12):2295–302.
63. Kane L. Medscape national physician burnout & suicide report 2021. 2021. Available at: https://www.medscape.com/slideshow/2021-lifestyle-burnout-6013456. Accessed September 20, 2021.
64. Vargas M, Spinelli G, Buonanno P, et al. Burnout Among Anesthesiologists and Intensive Care Physicians: Results From an Italian National Survey. Inquiry 2020;57. 46958020919263.
65. Moss M, Good VS, Gozal D, et al. An Official Critical Care Societies Collaborative Statement: Burnout Syndrome in Critical Care Healthcare Professionals: A Call for Action. Crit Care Med 2016;44(7):1414–21.
66. Afonso AM, Cadwell JB, Staffa SJ, et al. Burnout Rate and Risk Factors among Anesthesiologists in the United States. Anesthesiology 2021;134(5):683–96.
67. Sriharan A, Ratnapalan S, Tricco AC, et al. Occupational Stress, Burnout, and Depression in Women in Healthcare During COVID-19 Pandemic: Rapid Scoping Review. Front Glob Women's Health 2020;1(20).
68. Elbay RY, Kurtulmus A, Arpacioglu S, et al. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. Psychiatry Res 2020;290:113130.
69. Maslow AH. A theory of human motivation. Psychol Rev 1943;50:370–96.