CONCEPT PAPER

The Multifaceted Impact of COVID-19 on the Female Academic Emergency Physician: A National Conversation

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ABSTRACT

COVID-19 has impacted all health care professionals in every aspect of life. Female academic emergency physicians have been uniquely affected and continue to face challenges related to clinical workloads, work–life integration, academic productivity, leadership and visibility within departments, and mental health. This white paper, prepared on behalf of the Academy for Women in Academic Emergency Medicine (AWAEM), describes the differential impact of COVID-19 on female academic emergency physicians explored during a virtual panel discussion at the 2020 Society for Academic Emergency Medicine Annual Meeting. AWAEM convened a virtual panel of women to begin a discussion to share experiences and challenges and formulate consensus guidelines regarding best practices and mitigation strategies. The authors describe the unique ways in which female academic physicians have been affected, identify ongoing and intensified gender gaps, and delineate strategies to address the identified problems. Specific recommendations include individual, as well as, institutional and systems-level approaches to combat the inequities.

As the advent of the novel coronavirus, COVID-19, has dramatically changed every aspect of our health care system, its far reaching effects have had a distinct impact on women physicians in emergency medicine. The pandemic has again highlighted preexisting clinical, academic, professional, and personal inequities. Women physicians in academic emergency medicine, similar to other fields, are paid less and experience greater challenges when seeking academic promotion, compared to their male counterparts.[1–5] Despite a banner year in 2017, when women accounted for the majority of medical school matriculants, there remains a clear gap of women in executive leadership roles.[6] Particularly within academic medicine, the rates of promotion and appointment to leadership roles lag significantly behind those of men, while the rate of attrition grows.[7,8] Decreased research productivity of women early in their careers contributes to this discrepancy, a disparity that may result in the underrepresentation of women in advanced leadership roles and at the professor level.[8,9] Although a greater percentage of women are more likely to be fellowship trained, they are less likely to be core faculty or hold administrative roles, such as chair, vice chair, or emergency department (ED) director.[2,10] As a result of women holding fewer advanced academic and executive roles, they often have less protected time and a greater share of clinical duty hours, further reducing the time necessary to devote toward research productivity required for promotion. The mean salary for women also remains significantly less than men—a gap that has remained stable over the years even when

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controlling for race, region, rank, years of experience, clinical hours, administrative roles, board certification, and fellowship training.[1,2]

Apart from the challenges faced in the clinical and academic realm, differences also exist for women physicians in their personal lives when compared to male counterparts. Women physicians often bear a disproportionate burden of childcare and domestic responsibilities.[11] Pregnancy and maternity leave, a uniquely female experience, often slow down professional clocks and advancement. Prior studies have suggested that these additional responsibilities are directly responsible for the fewer publications, less institutional support, delayed career progression, and lower career satisfaction of women academicians.[11–13]

COVID-19 has not only exacerbated all of the aforementioned inequities for women in academic medicine, but has also revealed several other previously unrecognized new challenges. With women, including nurses and nonphysicians, comprising 70% of the global health care workforce, their health is particularly at risk. Preliminary data from the Centers for Disease Control and Prevention show that 73% of all health care workers infected by COVID-19 are female, although there is no current extrapolation of the exact percentage of those who are women physicians versus other disciplines.[14,15] In addition, pregnant mothers infected with COVID-19 face greater risks, including preterm labor, premature rupture of membranes, preterm birth, preeclampsia, and need for cesarean delivery for fetal distress.[16–18] So far, evidence has not shown vertical transmission of the novel coronavirus through breast milk;[19] however, concerns still remain among nursing mothers working in a hospital setting as to where and when to pump safely without risk of infection. In addition, the greater time needed to don and doff personal protective equipment and clean pumping equipment, and whether it is prudent to self-isolate from a newborn while working in a high risk environment, are particularly stressful challenges faced by women physicians.

Fully understanding how COVID-19 has impacted women in emergency medicine requires an acknowledgment and exploration of preexisting gender inequities in medicine. During the 2020 Society of Academic Emergency Medicine (SAEM) Annual Meeting, the Academy of Women in Academic Emergency Medicine (AWAEM) convened a virtual panel discussion about the impact of COVID-19 on female academic emergency medicine physicians to further discuss these factors. The mission of AWAEM includes providing opportunities for support, networking, and developing strategies to address barriers to the advancement of women in academic emergency medicine. The virtual panel discussion engaged over 70 of its members from around the country in a robust conversation about the differential effects of COVID-19 on women academic physicians. In this report, current leaders within AWAEM review the proceedings of the discussion, provide support for those facing similar challenges, and present consensus strategies to combat the gender inequities exacerbated by COVID-19.

METHODOLOGY

The 10 elected members of the AWAEM Executive Committee (EC) set up a virtual panel discussion entitled "The Female Academic Emergency Physician in the Time of COVID-19" during the annual SAEM 2020 conference on May 15, 2020. The goal of the virtual panel was to serve as a method of bringing members together to talk about the current climate of the pandemic, discuss recommendations, and develop a consensus on possible solutions. To develop a consensus conference in the context of a virtual panel, planning was based loosely around methods outlined in the chapter by McGlynn et al.[20] The authors describe the process by which consensus development conferences are conducted on scientific issues related to the development of medical care.[20] The consensus development process is divided into four stages: context of the consensus development process, prepanel process, panel composition, and consensus panel meeting. The context includes the nature of the audience, topics considered, and how topics are selected. The prepanel process involves the actual planning of the panel, including panel members and presenters and preparation of background information. Panel composition determines the selection of panelists, including their qualifications and selection method. Finally, the consensus panel meeting includes the actual meeting and specifically considers the panel forum, information discussed, and group process by which consensus is achieved.

During the preplanning phase, the AWAEM EC convened to develop the context of the conference by discussing and planning the logistics and content for the panel. After discussion and review of current literature on COVID-19, the EC mutually determined the five

Table 1
Topics Covered With Expert Consensus Panel Suggestions

Topic	Panel Suggestions
Equalizing the disproportionate clinical burden on the female workforce	· Consider early engagement of departmental leadership to come up with unique scheduling options · Discuss potential implications of added burden of changing curriculum to those with educational roles in the department
Finding solutions for work–life integration	· Outsource what is still possible, i.e., food delivery, meal prep, laundering · Network with other physicians to find alternative childcare options, i.e., older children of colleagues as potential sitters
Mitigating negative effects on academic productivity, specifically with regard to publications and professional advancement	· Encourage institutional leadership to extend the promotions timelines or provide interim modified promotions criteria · Include all academic work that was accepted to canceled meetings in curriculum vitae · Include any role or duty assigned during the pandemic in curriculum vitae · Collaborate and distribute workload to continue academic productivity with colleagues in other hospitals, specialties, etc. · Create an e-mail filter to direct all COVID-19–related e-mails to declutter inbox
Promoting leadership and visibility to be more responsive to the unique perspectives of its women faculty	· Encourage department/institutional leadership to consider moving high risk staff (i.e. pregnant, immunocompromised) from working in clinical “hot zones” · Advocate for variable meeting times throughout the day so as not to coincide with the virtual school day for parent clinicians
Recognizing and addressing mental health and wellness	· Be kind to yourself and allow time for reflection, i.e., connect with family, maintain exercise, meditation · Give yourself time for self-care and consider utilizing online resources, i.e., Headspace, Talkspace, Calm · Engage with departmental/institutional leadership to offer counseling/ coaching to staff · Find a wellness/resilience buddy to check in with regularly

Table 2
Unique Contexts Represented by the Panelists

Experience
· Early career emergency physicians · Senior emergency medicine physiciansGeography · Clinicians from health care systems overwhelmed early in the pandemic · Clinicians from locations that saw low volumes of COVID-19 patients early · Clinicians from locations that relaxed isolation guidelines earlyDepartment roles · ED medical directors and administrators · Residency program education facultySocial dynamics · Physicians with young children and loss of stable childcare assistance/school · Physicians caring for older family members in their home · Physicians working clinically while pregnant · Dual active physician households

themes they felt represented the major areas of impact on female academic emergency physicians (Table 1).

The AWAEM EC concurrently discussed the prepanel process and panel composition to represent the diversity of AWAEM members' COVID-19 experiences. Panelists from different demographic, geographic, academic, leadership, and personal life spectrums were invited to participate (Table 2). Eligibility for the panel was limited to AWAEM members to spotlight the voices of its own members. The potential panelists were chosen after discussion among the ten AWAEM EC members and after review of the academy roster. Each panelist was then invited to be a part of the panel. Two members of the AWAEM EC served as the moderators for the virtual panel.

Goals for the virtual consensus panel included facilitating an exchange of ideas, highlighting the unique impact of COVID-19 on women physicians, and a sharing of experiences and lessons learned. All panelists were provided with a list of topics and questions in a semistructured approach in advance to allow for preparation of talking points from the unique lens of their personal experiences (Data Supplement S1, Appendix S1, available as supporting information in the online version of this paper, which is available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10539/full). This facilitated an exchange of ideas in a timely fashion. During the 1-hour session, moderators were available to gauge response and engagement of the target audience, both by real-time conversation and by comments included in the chat function of the Zoom platform (Zoom Video Communications, Inc., San Jose, CA). This discussion was used to prepare Table 1 as consensus recommendations of the Academy. After the conclusion of the panel, the AWAEM membership was asked to complete a survey to provide feedback on the effectiveness and value of the panel discussion.

Discussion Themes

Five broad themes were highlighted and discussed by the panelists: clinical impact of the current pandemic on women physicians, effects on work–life integration, academic productivity, executive leadership roles of women physicians, and mental health challenges. To

facilitate discussion, the chat function was available for additional questions or commentary from the audience. Chat messages were monitored by the moderators in real time. The Zoom platform allows the transcription of all chat messages during meeting proceedings, which were saved, deidentified, and later used for commentary for this article. To protect participant confidentiality, the panel proceedings were not recorded; however, the lead author contacted each panelist individually to clarify their responses during the panel discussion to also include as commentary.

Impact on Clinical Burden

The burden of an increased clinical workload early in the pandemic response was felt by many panelists and audience members. Prior studies show that women physicians are underrepresented in executive leadership roles in many emergency medicine departments and are supported by fewer grants and funding sources, both of which serve to increase their proportionate clinical workload.[1,2,8,10] Women are more often involved in teaching and therefore involved in medical student and resident education, which may lead to greater clinical obligations through bedside teaching.[21,22] These additive factors often result in women physicians working heavier clinical workloads than their male counterparts, while facing the increased physical and mental load of working through the intricacies and unknowns of COVID-19.

Panelists were asked to reflect on whether the pandemic further exacerbated existing inequities and if they were aware of efforts to equalize the additional burdens. One panelist who serves as an associate residency program director noted an increase in workload for educators since their clinical workload was not reduced and there was an added need to expeditiously create a revised curriculum for resident education using new virtual platforms. Another panelist, who holds an executive leadership role, found that while there was no change in clinical scheduling in her department, there was an expectation to attend additional executive planning committee meetings. Conversation generated in the chat found wide variability on this topic based on the geographic locations of the respondents. Physicians from areas that were hard hit early, like New York City, experienced constantly changing clinical schedules in response to changing staffing needs, which often placed greater stress on women physicians with additional caretaking or personal responsibilities. Additionally, physicians with fewer personal obligations and more flexibility, such as those without dependents, were more often asked to bear the burden of staffing when others were not available.

Work–Life Integration

In nonpandemic times, harmonious work–life integration is difficult to achieve. With the additional pressures of COVID-19, many female physicians have found the elusive work–life integration even less tenable. Panelists stated, and prior literature supports, the notion that women disproportionately hold the greater burden of household responsibilities, including homeschooling, childcare, meal preparation, cleaning, and caring for elderly family members.[11–13] One panelist noted that the myth of the work–life "balance" had only been exacerbated by the pandemic, and the additional household responsibilities and tasks took time away from academic pursuits, leaving less, and more fragmented, time for research and scholarly activities.

The strict shutdown protocols and shelter-in-place orders issued in response to COVID-19 eliminated many essential support systems for physicians, including schools and daycare centers. As a result, many female physicians took on the activities of homeschooling their children and caring for elderly family members, while still maintaining a full clinical workload outside of the home. Women physicians who had previously outsourced many of the typical aforementioned duties found those outsourcing services no longer available. Given the burden of clinical shifts, education responsibilities, and increased home responsibilities, many lost time normally protected for research and other scholarly work, further deprioritizing personal wellness and family time.

Effects on Academic Productivity

Recent studies have shown that women have been less academically productive than men during the current pandemic.[23–25] Participants noted that some colleagues, often male, had a sense of having "extra free time" to spend pursuing their scholarly work since many meetings were canceled. Those colleagues were able to be more productive, submit grants and papers, and further their academic efforts. Participants expressed frustration with these comments and sought advice on how to address them (Table 1).

The decreased academic productivity may likely exacerbate existing disparities in academic promotion for women physicians.[7–9] One panelist noted that this

challenge was quickly realized at her institution and the "tenure track clock" was extended by a year, allowing for additional time to meet stringent criteria for promotion. Another panelist noted that a number of institutions have allowed their physicians to get full credit for presentations that were accepted but subsequently canceled, and include them on their curriculum vitae. However, there was a common fear that even with this concession, it may take women physicians years to catch up to their male counterparts.

The Role of Leadership and Visibility

Executive leadership roles are largely held by men in most health care institutions.[8,10] This leadership gender gap has been shown to affect policy, which subsequently leads to less sensitivity to the unique perspectives of women physicians.[26] As the understanding of COVID-19 has grown, the response and communication by leadership has also adapted. During the initial phase of the pandemic, it seemed more difficult to "be at the table" when there was no physical table. In-person meetings with colleagues provide an opportunity to network and collaborate in ways that are not as easily done during video and phone meetings. As a result, faculty seemed to fall back into old patterns of working on scholarly projects with people they knew, which continues to put women at a disadvantage.

Conversation arose among the panel attendees with most feeling that they had no differential treatment by gender in their department. Some noted that their departments eventually responded to the likely greater health risk to certain high-risk populations, such as pregnant women, and created policies surrounding protecting these vulnerable populations by preventing them from working in "hot spots" in the department, if feasible. However, no universal policies have been created. Many advocated for such policies to be a part of the next planning phase.

Mental Health Effects

Prior pandemics, such as the SARS outbreak, demonstrated that working during unpredictable times takes a toll on the mental health of frontline workers.[27–30] Early data from the COVID-19 pandemic confirms this, revealing disproportionately higher rates of posttraumatic stress symptoms among women.[29] Particularly troubling for many in the medical field has been the loss of close family, friends, and colleagues to COVID-19.

The mental health toll of working through the pandemic, with the risk of acquiring the virus and passing it along to loved ones, cannot be understated. Panelists noted their fears and concerns of exposing family when working clinically and the extra time and effort needed to decontaminate after shifts before reentering common living spaces, akin to the donning and doffing fears during the Ebola outbreak.[31,32] Many of these feelings were also shared by participants in the chat who expressed feelings of guilt for possibly exposing vulnerable family members.

The social isolation and inability to interact with loved ones that has become a part of life, while not unique to health care workers, is difficult, especially when faced daily with the intensity, morbidity, and mortality experienced while on shift. Remaining connected to family and friends, with the added fears about their health and well-being, is challenging. Having college-aged children abruptly return home can be disruptive to them and to overall family dynamics. Distanced loved ones often have concerns for family members who serve as frontline health care workers. An additional layer of stress is added to health care workers as they address and reassure family members' concerns.

Panelists were asked to reflect on solutions and wellness initiatives to counter these stressors. Panelists and participants offered suggestions such as online happy hours, wellness buddy systems, opt-out counseling sessions for faculty, and town hall support groups. At the institutional level, food offerings on shift, psychiatry-run town halls for employees, and reminders of available mental health services were also helpful. Finally, national discourse and support through organizations like AWAEM, including weekly wellness check-in calls, an active and engaging dialogue through group chats, and the creation of buddy systems were available support mechanisms.

EVALUATION OF PANEL PROCEEDINGS

A 15-question survey developed using a 5-point Likert scale, as well as, some free responses, was sent to the entire AWAEM membership for feedback on the format and content of the virtual panel (Data Supplement S1, Appendix S2) that engaged over 70 AWAEM members. A total of 35% of those in attendance responded to the survey and 88% of respondents attested that they had participated in the panel discussion. Of those responding, 68% were extremely

satisfied with the overall concept of the virtual panel, 68% found the content to be extremely relevant to their clinical practice, and 59% believed it to be relevant to other aspects of their life, including home life, personal well-being, and academic or administrative roles. The chat function was used to communicate among each other and to direct questions to the panelists by 68% of the survey respondents. Both panelists and participants felt a sense of camaraderie among the group, particularly in recognizing that many of their experiences were not unique or limited to a single person or institution. Overall, 82% responded that they would recommend the virtual panel to others. Constructive feedback included further diversifying the demographics of the panelists in future panels. Respondents mentioned extending the panel duration to allow for more chat breaks, to direct questions to panelists, and to allow for additional topics to be discussed. During the panel proceedings, it was also noted that the participants would have liked to have seen additional themes covered during the discussion, including the financial burden the COVID-19 pandemic has had on physicians and their families. In future planning of such meetings, it may be possible to explore additional topics, as well as elicit participant questions ahead of time to incorporate into the actual meeting.

The response rate to the survey was 35% despite three attempts to gather more responses. The survey was disseminated more than a month after the panel, during which time many members may have refocused their attention to other aspects of the pandemic and clinical work, which likely accounts for the low response rate. Because of this, the final results of the survey may not be representative of panel participants; however, it has allowed us to gauge the efficacy of the session.

Future Implications for Education and Training

As the COVID-19 pandemic continues to change the course of daily life, the health care field will be impacted in myriad ways. As a result, we are forced to rethink the methods by which we deliver up to date information in an easily accessible, convenient forum. An online virtual panel is one useful tool to have within our armamentarium. Its benefits include its ease of use, widespread distribution, and ability to communicate in real time. In addition, it is a platform through which people, including women, can connect and support one another.

It has become increasingly evident that the extra burden placed on already disadvantaged academic female physicians is being felt among women across the demographic and professional spectrum. The opportunity to share experiences and solutions in an open and collaborative forum is not only important, but critical to promoting dialogue and creating a just and sustainable professional environment that will foster and support future generations of physicians. The success of the AWAEM panel and the overwhelmingly positive feedback it received suggests a possible method for doing so even after the current pandemic ends.

Moving Beyond COVID-19

At the end of the virtual panel, panelists and participants reflected on the positive aspects that have emerged from the pandemic. There is a sense of enhanced collegiality, camaraderie, and collaboration that has come from responding to COVID-19 as well as an overall greater appreciation of emergency medicine as a specialty. The importance of professional networks in empowering women was evident. One panelist noted that she was able to arrange video conferences with several different female EM groups from around the country to share experiences, debrief, laugh, and cry and was comforted in knowing that no one was alone in the fight. She also noted that she felt closer and more connected to female colleagues and the AWAEM community than before COVID-19.

Diverse groups of women are now coming together to collaborate on generating an evidence based research, writing perspective pieces,[33] and conducting other scholarly projects relevant to how the pandemic is affecting all genders. This has forced the examination of preexisting gender disparities to the forefront and demanded the greater academic community take notice and begin to make substantive changes. Table 1 specifically brings to attention several of the existing solutions that hospital systems have started to employ to combat the current inequities. For example, several academic institutions have started to extend the promotions timelines or provide interim modified promotions criteria in response to the current pandemic. As a result of the panel, we have gathered consensus recommendations that clinicians can bring back to their institution's leadership to advocate for substantive change.

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Supporting Information

The following supporting information is available in the online version of this paper available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10539/full

Data Supplement S1. Supplemental material.