Beyond #ILookLikeASurgeon

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We are cardiothoracic surgery resident physicians. We crack open patients' chests every day, put them on heart-lung machines, and perform various cardiothoracic repairs that are often life-saving. None of this is unusual for a cardiothoracic surgery resident physician—it is part of the job description and all in a day's work. But, although 80% of cardiothoracic surgery resident physicians and 95% of cardiothoracic surgery attending physicians^{1,2} across the country go to the men's bathroom between cases, we will be headed to the women's bathroom.

There are moments when we are reminded how our gender breaks longstanding and often unconsciously held stereotypes regarding cardiothoracic surgeons. On multiple occasions while traveling to hospitals across the country on thoracic organ procurements, male members of the team are led to a doctors' lounge clearly designated for men, and we are left standing to the side, led to a women's bathroom or sometimes to a nurses' locker room. Often there is not even an awkward pause or apologetic, fumbling explanation as we are led to a door clearly labeled for nurses. One female resident physicians recounts that during a recent job interview she was asked about her plans to have children because the "life of a woman in cardiac surgery is hard enough, I don't think that it would be possible for you to have children and do this job." Another recounts an attending physician giving her a break during a long surgery saying, "Now's your opportunity to use the urinal, get some water..." He quickly realized his mistake when the operating room fell eerily silent and tried to make up for the gaff. These shared stories are not just awkward moments or microaggressions that we must endure; rather, they are poignant reminders of how unusual women are in the field of cardiothoracic surgery. Further, they are the tip of the iceberg in the daily grind of going against the often unintentional and sometimes unconscious bias regarding women in the field of cardiothoracic surgery. All of us women trainees, as well as other underrepresented minorities, have individually learned to cope with these situations in different ways. We clearly have benefitted from the pioneering women

Gender and active AATS membership 1960-2016.

Central Message

Women and other minorities in cardiothoracic surgery face challenges during residency training and beyond. However, these obstacles can be overcome; this article outlines tips for success.

who established the Women in Thoracic Surgery organization, which provides support. As more women and underrepresented minorities enter the field, it is critical to develop a systematic approach to supporting and facilitating these careers.

#ILookLikeASurgeon, a social media movement created to bring visibility to women in surgery, began with a single tweet on August 7, 2015: "... be the role model you always wanted but never had."³ In 3 months, more than 128 million impressions, nearly 40,000 individual tweets, and more than 8000 participants joined this social media campaign.³ Enhanced visibility requires us to face a challenging question: How do we—women and other underrepresented minorities—overcome these obstacles and move beyond looking like a surgeon to becoming successful contributors to the advancement of the field? This editorial, written by 2 senior women cardiothoracic surgery resident physicians, provides a brief summary of the current status of women in cardiothoracic surgery followed by 7 tips to aid women and minority trainees.

WOMEN ARE INCREASING IN THE FIELD OF SURGERY OVERALL, BUT REMAIN UNDERREPRESENTED IN CARDIOTHORACIC SURGERY

The gender gap within general surgery is closing, and 45% of general surgery resident physicians today are women.⁴ In contrast, data from 2016 demonstrated that only 20% of cardiothoracic surgery resident physicians are women.² Although this is a significant increase compared with a survey of graduating residents conducted during

2003 (9% women were in cardiothoracic surgery),⁵ this figure has not significantly increased from 2012. According to a report by Donnington and colleagues,⁶ as of 2012 there are only 204 living women American Board of Thoracic Surgery diplomats. The early women diplomats in particular should be recognized for paving the way at a time when the obstacles were substantially greater and there were no female role models to mentor them. Although the increase in women cardiothoracic surgery resident physicians compared with 15 years ago is a reason for optimism, as are the nearly yearly increases in numbers of women entering general surgery residency programs, there has not been a similar uptrend in cardiothoracic surgery. Other surgical subspecialties, such as neurosurgery, have similarly struggled to increase female recruitment.⁷ The reasons for the lack of continued increase in female recruitment to our field are most certainly multivariate and may include issues related to work–life balance, deficiency in mentorship, acuity of the field, lack of support for childbearing, and incompatibility of life as a cardiothoracic surgeon with long-term life goals.^{6,8,9}

INCREASING AWARENESS OF GENDER ISSUES WITHIN CARDIOTHORACIC SURGERY

In recent years, there has been increased analysis of gender issues in cardiothoracic surgery.^{2,10-12} The results of these studies are sobering, providing data substantiating the subjective, anecdotal experiences of women resident physicians.

Career Satisfaction, Career Pathway, and Mentorship

Women cardiothoracic surgery residents are equally satisfied with their specialty choice as their male counterparts and pursue similar career paths.² However, graduating women feel substantially less prepared technically (77% women vs 90% men) and less prepared for independent practice (71% vs 87%).² A recent study of cardiothoracic surgery resident physician mentorship demonstrated that women resident physicians are more likely than men to value mentors who provide networking opportunities and act as role models, and their mentors are less effective in imparting didactic knowledge (70% women vs 85% men) and clinical advice (81% vs 91%).¹² Particularly at risk are junior women resident physicians, whose mentors are less effective in imparting clinical knowledge (69% women vs 97% men) and including the resident physician in research (50% vs 82%).¹² A shocking 38% of junior women cardiothoracic surgery resident physicians perceive a significant lack in career advice compared with 12% of their junior male resident physician counterparts.¹²

Operative Autonomy

Meyerson and colleagues¹¹ recently used objective measures to assess operative autonomy afforded to

cardiothoracic surgery resident physicians and found that 30% of women resident physicians experienced “meaningful autonomy” in the operating room, compared with 36.7% of their male counterparts. This lack of meaningful autonomy may be an important reason behind women trainees’ perceived feelings of inadequate preparation for independent practice.²

Childbearing

Starting a family can be a formidable challenge for the present-day woman in cardiothoracic surgery. A recent survey found that women cardiothoracic surgeons almost universally delay childbearing due to training and are substantially more likely than men to believe that their career will be adversely influenced by bearing children (82% vs 60%).¹⁰ Other studies have shown increased pregnancy complication rates, including preterm labor among residents in surgical specialties, especially those working long hours in their third trimester.^{13,14} In addition to the subjective belief of adverse career effects and potential pregnancy complications, recent data have demonstrated that within academic medical centers, less than half offer paid parental leave following the birth of a child.¹⁵ Within cardiothoracic surgery training, childbearing can be particularly difficult given the relatively small number of residents/fellows providing clinical coverage in many programs, such that maternity leave places considerable stress on the system. Some women may try to have children during research years of general surgery or integrated programs because of these issues. Long surgeries in our specialty can be difficult both while pregnant and postpartum. Other issues face all resident physicians, such as lactation locations and childcare. These issues related to childbearing that impact women disproportionately compared with men form an important unconscious bias against women in the field of cardiothoracic surgery.

OVERCOMING OBSTACLES

Although the obstacles women in the field of cardiothoracic surgery face are real, they are by no means insurmountable. Below are specific tips that we believe can improve the success of women resident physicians in the field of cardiothoracic surgery:

Cultivate Mentorship

Mentorship is key across many careers, but can be particularly important for minority groups. For both of the authors, mentorship by women has been critical. Many of the mentors were pioneers training at a time when there were virtually no women to act as mentors. Benefits of mentorship include stress reduction, insight into work–life balance, greater job satisfaction, confidence, positive risk taking, career choice guidance, research productivity, and skill improvement.¹⁶⁻¹⁸ Certainly, a productive mentoring

relationship requires time and effort from both mentor and mentee. From the mentee it requires self-reflection, willingness to change, and providing the mentor with feedback.^{17,19} Although mentors in the same minority group as the mentee can have added benefit, effective mentorship of women and other minorities does not need to come from similar minority groups, and often is not possible given the small numbers of such mentors available. Among physical medicine and rehabilitation resident physicians, 90% of mentees with mentors of a different gender believed that gender mismatch had no effect.²⁰ Nevertheless, studies suggest women mentors for women students can have added value. A study of medical students found that women ranked same-sex role models as more important than male students²¹ and in another study women mentors for women medical school and general surgery residents were highly valued.²² Mentoring women can be challenging. A study in the business realm found that whereas women were equally as likely as men to receive mentorship, it was less effective with respect to promotions largely because the women did not receive sponsorship (ie, the mentor using his or her influence to advocate for the mentee).²³ Although men can successfully mentor women, it presents challenges, most notably understanding the obstacles women face in the field and innate biases that may interfere with the accurate evaluation of women's skills.²⁴ Given the small numbers of women in cardiothoracic surgery, it is important for our male counterparts to value the opportunity to mentor women, because mentorship is viewed as critical for a successful career and the future of the specialty.¹² For female resident physicians, we recommend being proactive in maximizing your mentoring relationships, while being aware of existing unconscious bias that may distort the views of even well-intentioned mentors.

Build a Support Network

Training to become a cardiothoracic surgeon is a great privilege, but residency programs are both physically and emotionally taxing. We all quickly learn the importance of support systems. A support system is particularly important for minorities who face additional, often unrecognized challenges during training. A support network might include family, friends outside of medicine, fellow physicians or other medical staff within the hospital, members of faith groups, significant others, and spouses. Key characteristics of a positive support network are being sensitive to the added challenges faced by minorities, understanding and flexibility regarding the time constraints of residency training, offering outside unbiased viewpoints and constructive advice, adding balance, and reaffirming value. Given the small number of women in cardiothoracic surgery, most women trainees must look beyond their home institution to find other women in our specialty to be a part of their support network. An example is the fact that

the authors are women cardiothoracic surgery trainees at different institutions who serve the specialty in different capacities, but have become support for one another. These relationships are incredibly important, and we believe that our male counterparts are more easily able to develop these support networks within their home institution. Early on, devote time and effort into building a support network and carry those people into the next stage of your career.

Be Aware of Gender Differences

There is clear evidence that men and women think, interact, and likely learn differently. Studies show that we even use language differently: women communicate to create social connections and relationships, whereas men tend to communicate to obtain tangible outcomes and exert dominance.²⁵ Women have been shown to be more expressive, tentative, and polite in conversation, whereas men tend to be more assertive.²⁵ Our methods for coping with stress—an incredibly important skill for cardiothoracic surgery training—are also different. Men tend to withdraw, whereas women reach out and discuss their stressful experiences.²⁶ There is even a well-documented difference in confidence level between genders: across fields, women perceive a lack of ability in tasks where they demonstrate equal competence to men.^{27,28} This has been linked to so-called imposter syndrome. Eloquently discussed by Koven in a 2017 *New England Journal of Medicine* article,²⁹ she writes to the incoming class of interns:

As a woman, you face an additional set of challenges, but you know that already...But there's also a more insidious obstacle that you'll have to contend with, one that resides within your own head. In fact, one of the greatest hurdles you confront may be one largely of your own making. At least that has been the case for me. You see, I've been haunted at every step of my career by the fear that I am a fraud.

Koven continues that the imposter syndrome is not unique to women, but in women it has an added feature: Not only do women persevere on their inadequacies, but they also often denigrate their strengths. She concludes: "My dear young colleague, you are not a fraud. You are a flawed human being, with excellent training and an admirable sense of purpose. Your training and sense of purpose will serve you well."²⁹

Minority women can feel like we need to conform ourselves into the mold of the men around us in terms of how we think, act, feel, and learn; however, awareness and acceptance of these differences allows us to be free to learn and cope with stress in the manner that is the best way for us. Beyond self-awareness, at times this may require trainees to be proactive providing feedback to faculty regarding what elements of their teaching are particularly

helpful and which may be harmful. It is important for our specialty to recognize these key differences between men and women to provide a supportive training environment for all our trainees. The Women in Thoracic Surgery organization has made tremendous strides in educating both men and women in our field regarding gender issues, as well as providing a support network.

Reflect on the Past, Be Grateful for the Present, and Have Hope for the Future

When facing unintentional, unconscious bias on a daily basis, it can be tempting to interpret every adverse or challenging event as due to our minority status. However, adopting this type of attitude can only lead to inner bitterness and increasing isolation. Although the road we face is clearly much more difficult than that traveled by those around us, we are incredibly lucky to have more opportunities today than ever before. These opportunities are thanks to the generations ahead of us who bravely paved the way and have functioned as role models and mentors, something they never had (Figure 1). Maintaining this perspective, with a sense of gratitude for today and hope for the future, provides added fortitude for women cardiothoracic surgical trainees. It also calls for the current generation of minority trainees to actively mentor those more junior to us.

Develop Effective Leadership

Throughout residency and in our careers moving forward we are asked to be leaders—leaders in the operating room, chiefs of a clinical service, and leaders in research projects. Women leaders tend to have a more relationship-oriented style, whereas men are more task-oriented.²⁵ Women walk a fine line in leadership, with expectations that they display certain stereotypically masculine traits as effective

leaders while not violating standards for their gender.²⁵ Women leaders tend to use a more collaborative and less hierarchical approach, but this can make them appear soft and as ineffectual leaders. When they display more stereotypically masculine traits they are often criticized for “appearing hostile and strident.”²⁵ This can be exacerbated by those on our teams who are not comfortable with or feel threatened by seeing women in such positions. As we work to attract more women to the field of cardiothoracic surgery, we must ensure that we are cultivating the careers of these young women toward effective leadership roles. We must embrace the different leadership style of women and provide women with opportunities to lead, so that our specialty does not get caught in the proverbial “sticky floors and glass ceilings” that has plagued other surgical fields.³⁰ Data from 2012 found that >60% of women in cardiothoracic surgeons were instructors or assistant professors, whereas only 18% were full professors,⁶ leaving much room for improvement. Learning to be an effective leader during training not only provides positive role models to those more junior, but also is excellent practice for leadership later during our career.

Accept Limitations

There is a temptation to think we can do it all—be a top-notch resident physician, daughter, sister, friend, wife, and mother, without making sacrifices on any front. But the reality is all humans only have 24 hours in a day and when we say yes to one thing, we are inherently saying no to others. Acceptance of our inherent (ie, human) limitations and careful evaluation of our priorities will help us not only make the best decisions for ourselves and our families in the context of our individual lives, but also avoid the frustration and disappointment of not living up to the superwoman myth. All too often we give attention to the squeaky wheel instead of intentionally deciding how we are going to use our limited time. Consider your priorities and proactively set aside time for key elements while deliberately deciding which will be sacrificed.

Prevent Burnout

Physician burnout is being increasingly recognized as a national issue facing specialties, including our own.³¹ Among resident physicians, burnout may be as high as 40% to 76%.³² Data suggest women are at increased risk for burnout and develop burnout in response to different triggers. A 2011 study of more than 16,000 surgeons found that women were more likely to be experiencing burnout (43% vs 39%) and depressive symptoms (33% vs 20%). A 2015 study of Dutch general practitioners found that emotional exhaustion triggered burnout in women general practitioners as opposed to depersonalization in men.³³ A recent meta-analysis analyzed interventions to prevent burnout and found that individual-focused interventions

FIGURE 1. Gender and active American Association for Thoracic Surgery (AATS) membership 1960 to 2016. The exact number of active members from 1960 to 2002 is unknown, but the maximum during that time period was 600. Data provided by AATS (Jennifer Lawton and Adam Silva, personal communication to E.H.S.).

such as mindfulness, stress management, and small group discussions as well as organizational interventions can effectively decrease burnout (overall decrease from 54% to 44%).³⁴ Take time to consider how you deal with stress. Establish an individualized approach to combat burnout during residency. It will serve you well during the training period and beyond.

CONCLUSIONS

Although the issues of gender and underrepresented minorities relayed in this article are specific to our field, discrimination—which comes in many flavors—paints with large brush strokes across all careers and our society as a whole. In the setting of the first viable women US presidential candidates, *The New York Times* elicited responses from women across the world recounting gender barriers they encountered.³⁵ Poignant stories from 1200 women were collated. In one, Sherry Knowlton wrote,³⁵

In high school, I applied to be a Senate page. I can still remember my disappointment when I received the reply from Senator Hugh Scott of Pennsylvania that girls were not permitted to serve as pages. I was a straight-A student, among the top in my class, active in the school newspaper, and a bit of an overachiever. But I wouldn't even be considered because I was a girl. I was devastated. And then I got angry. My resolve to approach life with the belief that I could achieve anything I wanted rose out of the ashes of that defeat. It took me far in my career in state government... Along the way, I've encountered other gender roadblocks—many insurmountable. But few affected me as much as the one from Senator Scott. I can still remember standing in our dining room after school and tearing open the letter with the fancy gold Senate seal—only to find I'd been rejected. Not because I wasn't qualified, but because I was born female.

This story also highlights resilience. What minority individuals overcome strengthens their determination and perseverance, and can even make us better physicians due to enhanced ability to empathize with the marginalized and hurting. The journeys Knowlton and others can provide encouragement as we face obstacles, microaggressions, and unconscious bias within our field. There are many women and members of other minority groups currently in cardiothoracic surgery training who possess the capabilities, tenacity, and dedication to change our field. It is our duty as a specialty to figure out how to support these promising trainees and transform them from simply existing within the specialty to being welcomed, successful contributors. As we learn this, we pave the way for the next generation, whose Twitter

posts may not read #ILookLikeASurgeon, but rather #WeRAIICTSurgeons.

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