

# Sexual Harassment and Cardiothoracic Surgery: #UsToo?



DuyKhanh P. Ceppa, MD, Scott C. Dolejs, MD, MS, Natalie Boden, MBA, Sean Phelan, PhD, Katherine J. Yost, PhD, Jessica Donington, MD, Keith S. Naunheim, MD, and Shanda Blackmon, MD, MPH

Division of Cardiothoracic Surgery, Indiana University School of Medicine, Indianapolis, Indiana; The Society of Thoracic Surgeons, Chicago, Illinois; Office of Health Disparities Research, Mayo Clinic, Rochester, Minnesota; Department of Cardiothoracic Surgery, University of Chicago, Chicago, Illinois; Division of Cardiothoracic Surgery, St Louis University Health Sciences Center, St Louis, Missouri; and Division of Thoracic Surgery, Mayo Clinic, Rochester, Minnesota

**Background.** Fifty-eight percent of women in science, engineering, and medicine report being affected by sexual harassment (SH). This study sought to determine the extent of SH in cardiothoracic surgery.

**Methods.** The study developed a survey that was based on the Sexual Experience Questionnaire-Workplace, physician wellness, and burnout surveys. The survey was open to responses for 45 days and was disseminated through The Society of Thoracic Surgeons, Women in Thoracic Surgery, and Thoracic Surgery Residents Association listservs. A reminder email was issued at 28 days. Student *t* tests, Fisher exact tests, and  $\chi^2$  tests were used to compare results.

**Results.** Of 790 respondents, 75% were male and 82% were attending surgeons. A total of 81% of female surgeons vs 46% of male attending surgeons experienced SH ( $P < .001$ ). SH also was reported by trainees (90% female vs 32% male;  $P < .001$ ). According to women, the most common offenders were supervising leaders and col-

leagues; for men, it was ancillary staff and colleagues. Respondents reported SH at all levels of training. A total of 75% of women surgeons vs 51% of men surgeons witnessed a colleague be subjected to SH; 89% of respondents reported the victim as female (male 2%, both 9%;  $P < .001$ ). A total of 49% of female witnesses (50% of male witnesses) reported no intervention; less than 5% of respondents reported the offender to a governing board. SH was positively associated with burnout.

**Conclusions.** SH is present in cardiothoracic surgery among faculty and trainees. Although women surgeons are more commonly affected, male surgeons also are subjected to SH. Despite witnessed events, intervention currently is limited. Policies, safeguards, and bystander training should be instituted to decrease these events.

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In October 2017, #MeToo went viral, and the movement gained significant momentum over the next year. The movement empowered women to denounce sexual harassment (SH) and sexual assault publicly, and the moniker #MeToo was used on social media to demonstrate the widespread prevalence of SH, particularly in

cardiothoracic surgery to determine the presence of SH in our work environment.

## Material and Methods

### Study Population

After approval from the Mayo Clinic Rochester, MN) Institutional Review Board (protocol #18-002238), members of The Society of Thoracic Surgeons (STS), Women in Thoracic Surgery, and Thoracic Surgery Residents Association were contacted by email with a request to respond to an anonymous survey. The survey was open to respondents for 45 days. A reminder email with the survey link was issued 28 days after the distribution of the initial recruitment message. Mention of the survey with encouragement to participate was distributed in *STS Weekly* and an STS social media post.

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the workplace. In 2018 a collaborative study by the National Academies of Sciences, Engineering, and Medicine reported that SH was experienced by 58% of women.<sup>1</sup> More recent studies have demonstrated that men, too, are subject to SH in the field of surgery.<sup>2,3</sup> With this information in mind, we critically examined the discipline of

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Address correspondence to Dr Ceppa, Division of Cardiothoracic Surgery, Department of Surgery, Indiana University School of Medicine, 545 Barnhill Dr, EH 215, Indianapolis, IN 46228; email: [dpcceppa@iupui.edu](mailto:dpcceppa@iupui.edu).

The Appendix can be viewed in the online version of this article [<https://doi.org/10.1016/j.athoracsur.2019.07.009>] on <http://www.annalsthoracicsurgery.org>.

### Survey Instrument

The survey was designed to collect basic demographic information (gender, level of training or practice, geographic location of practice). In addition, the survey incorporated questions from validated survey tools on SH and burnout (Sexual Experience Questionnaire - Workplace, Mayo Clinic burnout questionnaire).<sup>4,5</sup> SH scenarios listed in the survey tool represented 1 of 3 forms of SH: gender harassment (eg, sexist comments, being told sexually crude stories, being exposed to offensive displays), unwanted sexual attention (eg, leering, attempts at establishing a sexual relationship, repeated requests for drinks), and sexual coercion (eg, insinuation that sexual cooperation was necessary for professional advancement). Questions regarding the offender, setting, and reaction to SH were also included. The full survey is available in the [Appendix](#). The survey was administered on Survey Monkey Ltd.<sup>6</sup>

### Statistical Analysis

SH scenarios were reported as yes/no. Scenarios represented gender harassment, unwanted sexual attention, or sexual coercion. Responses to burnout questions were on a 5-point Likert-like scale. The Fisher exact test or the  $\chi^2$  test was used to compare responses with categorical variables. Normality was assessed on questions graded on the 5-point Likert-like scale, and subsequently pooled or Satterthwaite *t* tests were performed on the basis of equality of variances. A stratified analysis was performed to compare results among trainees and attending surgeons separately. All statistical analysis was performed using SAS software version 9.4 (SAS Institute, Cary, NC).

## Results

### Respondent Demographics

Email communication was delivered to 6680 members of STS, Women in Thoracic Surgery, and the Thoracic Surgery Residents Association. A total of 790 members responded to the SH questionnaire; their demographic characteristics are outlined in [Table 1](#). Seventy-eight percent of respondents (*n* = 616) reported practicing in North America, with most from the United States (*n* = 598). Seventy-five percent of respondents were male (*n* = 591), 23% were female (*n* = 185), and 2% were other or elected not to disclose their gender (*n* = 14). The response rates for women and men were 25.7% and 9.9%, respectively (*P* < .001). Most, 94% (*n* = 744), were physicians, 4% (*n* = 31) were nonphysicians, 19% (*n* = 15) were undisclosed, 86% (*n* = 637) were attending surgeons in practice, and 14% (*n* = 107) were trainees.

Of those who completed training, 83% were male (*n* = 530), 16% were female (*n* = 102), and 0.6% were other (*n* = 4). Faculty self-reported their number of years in practice (options were 0-5, 6-10, 11-15, >15 years); the percentage of respondents who were female within each group decreased with increasing numbers of years in practice (45% of respondents at 0-5 years vs 9% of respondents at >15 years in practice; *P* < .001).

Compared with the attending surgeons, 47% of trainees who responded to the survey were male (*n* = 50) and 53%

Table 1. Demographics of Respondents to the Sexual Harassment Survey

Demographic Factors	Female, n	Male, n
Location of practice ( <i>n</i> = 768)		
North America		
Canada	2	10
United States	164	429
Mexico	0	6
South America	4	17
Europe	8	32
Africa	0	4
Asia	4	29
Oceania	0	3
Retired	3	41
Other	2	10
Level of practice ( <i>n</i> = 774)		
Trainee	57	50
Faculty	106	530
Nonphysician	25	6
Years in practice (faculty only; <i>n</i> = 641)		
0-5	33	41
6-10	19	40
11-15	13	56
>15	41	393

were female (*n* = 57). Trainees were composed of 10% general surgery residents (*n* = 11), 77% cardiothoracic surgery residents (*n* = 82), and 14% cardiothoracic surgery fellows (*n* = 15).

### Experienced Sexual Harassment

Eighty-one percent of female attending surgeons (*n* = 86) and 46% of male surgeons (*n* = 242) reported being subject to any form of SH (*P* < .001) ([Table 2](#)). SH was subcategorized into gender harassment (eg, sexist comments, being told sexually crude stories, being exposed to offensive displays), unwanted sexual attention (eg, leering, attempts at establishing a sexual relationship, repeated requests for drinks), and sexual coercion (eg, insinuation that sexual cooperation was necessary for professional advancement). A higher percentage of female than male attending surgeons reported gender harassment (74% vs 43%; *P* < .001), unwanted sexual attention (48% vs 14.5%; *P* < .001), and sexual coercion (19% vs 2%; *P* < .001).

Events of SH were reported by female attending surgeons to have occurred during all levels of training, including medical school (30%), general surgery residency (62%), cardiothoracic residency (46%), cardiothoracic fellowship (38%), and as an attending surgeon (72%) ([Table 3](#)). Similarly, male attending surgeons reported having experienced SH in all levels of training and work (31% medical school, 48% general surgery residency, 10% cardiothoracic residency, 35% cardiothoracic fellowship, and 81% as an attending surgeon).

Women reported a person in leadership directly overseeing their work, a colleague in the same specialty, and a colleague in a different specialty as being the 3 most

Table 2. Sexual Harassment Occurrences

Occurrences of Sexual Harassment	Faculty			Trainee		
	Female (n = 102), %	Male (n = 530), %	P Value	Female (n = 57), %	Male (n = 50), %	P Value
<b>Experienced</b>						
Any	81.1	45.7	<.001	89.5	32.0	<.001
Gender harassment	73.6	43.2	<.001	89.5	32.0	<.001
Unwanted sexual attention	48.1	14.5	<.001	52.6	4.0	<.001
Sexual coercion	18.9	2.1	<.001	17.5	4.0	.03
No to all	18.9	54.3	<.001	10.5	68.0	<.001
<b>Witnessed</b>						
Any	70.8	50.8	<.001	86.0	56.0	<.001
Gender harassment	64.2	44.3	<.001	77.2	42.0	<.001
Unwanted sexual attention	42.4	20.6	<.001	59.6	18.0	<.001
Sexual coercion	22.6	6.6	<.001	22.8	8.0	.04
No to all	29.2	49.2	<.001	14.0	44.0	<.001

common SH offenders (Table 3). The top 3 most common settings of such events were in the hospital or clinic, in a 1-on-1 meeting, or at a regional or national conference. For men, ancillary staff and colleagues were the most common offenders; the hospital ward or clinic, outside of the hospital or office, and text messaging were the most common settings for SH for men.

#### Witnessed Sexual Harassment

Seventy-one percent of female attending surgeons and 51% of male surgeons reported witnessing SH ( $P < .001$ ) (Table 2). Sixty-four percent, 42%, and 23% of women surgeons reported witnessing gender harassment, unwanted sexual attention, and sexual coercion, respectively, compared with 44%, 21%, and 7% of men surgeons reporting witnessing these events. In witnessed events the victim was most commonly female ( $P < .001$ ). These witnessed events were more common after training and during general surgery residency for both women and men. For both genders, the most common environments of witnessed events were on the hospital ward or in clinic and outside of the hospital or office.

#### Response to Witnessed Events

Forty-seven percent and 51% of female and male surgeons, respectively, reported no intervention after witnessing SH of a colleague ( $P =$  not significant [NS]). Thirty-nine percent of women vs 20% of men warned other colleagues of the offender's behavior ( $P = .001$ ). Twelve percent of women vs 5% of men anonymously reported the witnessed event to a supervisor ( $P = .04$ ); 13% of women vs 23% of men pulled the offending colleague aside in private to discuss the witnessed event ( $P =$  NS); 15% of women and 12% of men immediately intervened and prevented the event from escalating ( $P =$  NS). Only 4% of men and women reported the offender to a governing board.

#### Surgical Trainees

Similar to attending surgeons, there was a gender difference in those subject to SH. Ninety percent of female

trainees and 32% of male trainees reported experiencing SH ( $P < .001$ ) (Table 2). Gender harassment, unwanted sexual attention, and sexual coercion were reported by 90% vs 32% ( $P < .001$ ), 53% vs 4% ( $P < .001$ ), and 18% vs 4% ( $P = .03$ ), respectively, of female vs male trainees. Female trainees reported these events occurred most commonly (in decreasing order) as a general surgery resident, medical student, and cardiothoracic resident, whereas male trainees reported these events to occur more commonly as a medical student, general surgery resident, and cardiothoracic resident (Table 3). The most common settings for SH reported by female trainees were in a clinical setting, outside of the hospital, and at a regional or national conference. Male residents reported the most common settings to be in the hospital or outpatient clinic or outside of the hospital. The most common SH offenders reported by female trainees were a person in direct leadership, a colleague in a different specialty, and patient or patient family. For male trainees, the most common offenders were ancillary staff and colleagues (in a different or same specialty).

Trainees reported witnessing SH (86% females and 56% males;  $P < .01$ ) (Table 2). Gender harassment, unwanted sexual attention, and sexual coercion were witnessed by 77% vs 42% ( $P < .01$ ), 60% vs 18% ( $P < .001$ ), and 23% vs 8% ( $P = .04$ ), respectively, of female vs male trainees. In witnessed events, the gender of the victim was most commonly female. For both genders, SH was most commonly (in decreasing order) witnessed as a medical student, general surgery resident, and cardiothoracic resident. The witnessed events were most commonly in the clinical setting, at a regional or national conference, and outside of the hospital for female trainees; for male trainees, the witness events were most commonly in the clinical setting or outside of the hospital. Fifty-three percent of female trainees and 50% of male trainees reported no intervention after the witnessed event. Thirty-nine percent of female trainees vs 11% of male trainees ( $P < .01$ ) warned other colleagues to be aware of the offender's behavior. Less than 20% of trainees discussed the

Table 3. Sexual Harassment Context

Context	Attending Surgeon (n = 328)		Trainee (n = 67)	
	Female	Male	Female	Male
Perpetrator	<ol style="list-style-type: none"> <li>1. Person in direct leadership (69%)</li> <li>2. Colleague of same specialty (43%)</li> <li>3. Colleague of different specialty (34%)</li> <li>4. Person not in direct leadership (33%)</li> <li>5. Ancillary staff (27%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Ancillary staff (60%)</li> <li>2. Colleague of same specialty (39%)</li> <li>3. Colleague of different specialty (38%)</li> <li>4. Patient or family member (18%)</li> <li>5. Person in direct leadership (12%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Person in direct leadership (71%)</li> <li>2. Colleague of different specialty (53%)</li> <li>3. Patient or family member (43%)</li> <li>4. Person not in direct leadership (41%)</li> <li>5. Colleague of same specialty (33%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Ancillary staff (50%)</li> <li>2. Colleague of different specialty (38%)</li> <li>3. Colleague of same specialty (31%)</li> <li>4. Person in direct leadership (25%)</li> <li>5. Patient or family member (12%) Person not in direct leadership (12%)</li> </ol>
Setting	<ol style="list-style-type: none"> <li>1. Hospital ward or outpatient clinic (80%)</li> <li>2. 1-on-1 meeting (36%)</li> <li>3. Regional or national conference (30%)</li> <li>4. Divisional or departmental meeting (28%)</li> <li>5. Outside of hospital or clinic (24%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Hospital ward or outpatient clinic (72%)</li> <li>2. Outside of hospital or clinic (35%)</li> <li>3. Mobile texts (15%)</li> <li>4. Regional or national conference (12%)</li> <li>5. 1-on-1 meeting (10%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Hospital ward or outpatient clinic (90%)</li> <li>2. Outside of hospital or clinic (35%)</li> <li>3. Mobile texts (26%)</li> <li>4. Regional or national conference (24%)</li> <li>5. 1-on-1 meeting (18%) Divisional or departmental meeting (18%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Hospital ward or outpatient clinic (69%)</li> <li>2. Outside of hospital or clinic (19%) Other (19%)</li> <li>3. Regional or national conference (12%)</li> <li>4. Mobile texts (6%) Regional or national conference (6%) 1-on-1 meeting (6%)</li> </ol>
Level of training at time of event	<ol style="list-style-type: none"> <li>1. As an attending surgeon (72%)</li> <li>2. As a GSU resident (62%)</li> <li>3. As a CT resident (46%)</li> <li>4. As a CT fellow (38%)</li> <li>5. As a medical student (30%)</li> </ol>	<ol style="list-style-type: none"> <li>1. As an attending surgeon (81%)</li> <li>2. As a GSU resident (48%)</li> <li>3. As a CT resident (40%)</li> <li>4. As a CT fellow (35%)</li> <li>5. As a medical student (31%)</li> </ol>	<ol style="list-style-type: none"> <li>1. As a GSU resident (63%)</li> <li>2. As a medical student (45%)</li> <li>3. As a CT resident (41%)</li> <li>4. As a CT fellow (27%)</li> </ol>	<ol style="list-style-type: none"> <li>1. As a medical student (62%)</li> <li>2. As a GSU resident (56%)</li> <li>3. As a CT resident (38%)</li> <li>4. As a CT fellow (12%)</li> </ol>

CT, Cardiothoracic Surgery; GSU, General Surgery.

event with the offender in private or immediately intervened to prevent the event from escalating; less than 10% of trainees reported the witness event to a supervisor or governing board.

### Generational Analysis

We sought to determine whether SH was less reported by younger surgeons (categories were trainees, 0-5, 6-10, 11-15, >15 years in practice). After correcting for gender, there were no differences in reports of sexual coercion and unwanted sexual attention across the years in practice. Gender harassment was less reported among faculty 11 to 15 years in practice (odds ratio, 0.5; 95% confidence interval, 0.2, 0.9;  $P < .047$ ), but it was similar for all other categories.

### Burnout and Satisfaction Score

In response to the statement, "I have declined a job or left a job due to my experiences of sexual harassment," men scored a mean of  $1.5 \pm 0.8$  on a 1 to 5 Likert scale, whereas women scored a mean of  $2.8 \pm 1.4$  ( $P < .001$ ) (Figure 1). Men scored a mean of  $3.4 \pm 1.0$  vs women, who scored a mean of  $2.6 \pm 1.2$  ( $P < .001$ ) in agreement with the statement, "Cardiothoracic surgery is a healthy and positive environment for women." When asked about

burnout, women surgeons (attending surgeons and trainees) scored a mean of  $3.3 \pm 1.2$  as compared with men surgeons, who scored  $2.9 \pm 1.3$  ( $P = .001$ ). In response to feeling more callous about work, women scored a mean of  $2.9 \pm 1.3$  vs men, who scored  $2.4 \pm 1.2$  ( $P < .001$ ). However, men's and women's responses were more similar with respect to whether they would pursue a career in cardiothoracic surgery if given the option again ( $3.9 \pm 1.1$  women vs  $4.1 \pm 1.1$  men;  $P = .01$ ).

In a multiple linear regression model, both gender ( $P = .04$ ) and experiencing SH ( $P = .006$ ) were associated with burnout and increased the likelihood of declining or leaving a job.

### Comment

SH is a form of gender-based violence; it violates persons' rights, harms their health, and damages careers.<sup>7,8</sup> Several studies have demonstrated that victims—regardless of gender—who are subjected to SH have anxiety, depression, and posttraumatic stress disorder.<sup>8,9</sup> Moreover, these symptoms translate into damaged team dynamics, decreased job satisfaction, and decreased productivity at the workplace. This

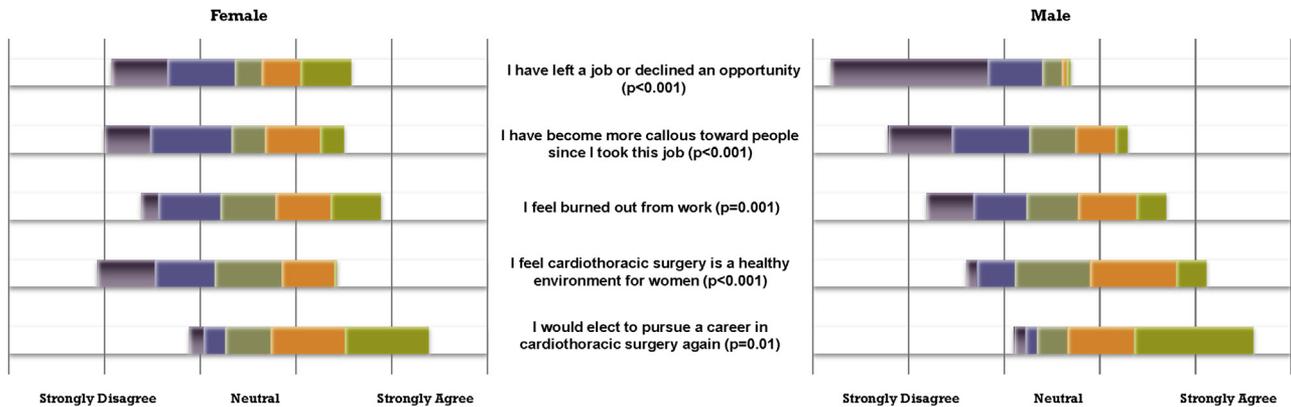


Figure 1. Physician well-being and burnout.

dissatisfaction all too often results in victims leaving their positions, institutions, and sometimes even their profession.

We have demonstrated that SH is present in cardiothoracic surgery and that it affects both genders. Moreover, the rates of SH in our study (81% of women and 46% of men) are higher than those reported in prior studies. In an abstract presented at the Academic Surgical Congress, 58% of female surgeons and 25% of male surgeons experienced SH within the past 12-month period.<sup>3</sup> Additionally, in a study on the barriers to reporting SH among surgical trainees, 70.8% of female and 30.8% of male trainees were subject to SH.<sup>2</sup> Although the incidence of SH reported by these studies is alarmingly high, possible explanations for cardiothoracic surgery’s heightened rate of SH include the male dominance of cardiothoracic surgery (93% of currently practicing cardiothoracic surgeons are male) and the length and intensity (long hospital hours) of training. Additionally, our survey was worded to include incidences of SH within the past 10 years (as opposed to the past 12 months in the study by Nayyar and colleagues<sup>3</sup>). Our generational analysis, however, did not suggest that SH decreased among younger generations. Furthermore, if these SH rates are accurate, studies are warranted to determine the root cause of this high rate of SH in cardiothoracic surgery.

It is worth noting that, similar to prior studies on SH, the majority of SH is in the form of gender harassment. Seventy-four percent of women (43% men) reported SH in the form of gender harassment, compared with unwanted sexual attention in 48% of women (14.5% men) and sexual coercion in 19% of women (2% of men). Similarly, Freedman-Weiss and colleagues<sup>32</sup> reported a 50% to 70% rate of gender harassment or of sexually explicit comments or jokes, an 8% to 38% rate of unwanted sexual attention, and up to a 5% rate of sexual coercion among surgical trainees. Additionally, Nayyar and colleagues<sup>3</sup> presented at the Academic Surgical Congress that 53% of gender harassment and 23% of unwanted sexual attention or physical contact occurred in female surgeons. Barriers to reporting SH in the study by Freedman-Weiss and associates<sup>2</sup> included “feeling

uncertain if the behavior qualified as SH” and the belief that the incident of SH was harmless. Likely, these 2 barriers relate to gender harassment, which emphasizes the importance of noting that gender harassment is included in the definition of SH and should similarly not be tolerated.

An unexpected finding of this study was the high prevalence of SH experienced by male surgeons (46%). SH is not a women-only phenomenon. In a national study of the US population, 43% of men reported victimization in the form of SH.<sup>10</sup> Similarly, Nayyar and colleagues<sup>3</sup> reported SH in 25% of male attending surgeons, and Freedman-Weiss and associates<sup>2</sup> reported SH in 30.8% of male trainees. Moreover, our study reported SH of men to be most commonly committed by ancillary staff (whereas in women the offender was most often a person of direct leadership). SH of male cardiothoracic surgeons should be addressed by our discipline equally seriously as SH of women cardiothoracic surgeons, and such an effort would include hospitalwide and universitywide policies that transcend disciplines.

Most concerning is that these acts of aggression are not limited to the attending staff, but are also reported by trainees, with transgressions occurring as early as medical school, and that SH in cardiothoracic surgery is underreported (as it is in other disciplines).<sup>2,3</sup> Whether these events are personal experiences or being witnessed, the lack of reporting results in an inability to stop harassment from recurring.

It is time to take action and adopt a zero tolerance policy on SH. Our study echoes others in demonstrating that SH is related to burnout and an increased likelihood of declining a job opportunity or of leaving a job. Previously, several studies have shown that victims of SH have decreased psychological, physical, and professional health.<sup>1</sup> Victims of SH report increased anxiety, depression, angst, and use of prescription medications. There is also an indirect association between SH and a decline in physical health (nausea, headaches, exhaustion, weight loss or gain, musculoskeletal pain). The professional toll SH takes can be in the form of loss of confidence, decreased job satisfaction, organizational withdrawal, and, ultimately, reduced job performance. Impairment of

professional performance can also translate to worse patient care; and, from a leadership standpoint, decreased job satisfaction and organizational withdrawal often result in the loss of talent.

We cannot thrive as a profession if women and men do not feel safe and free of aggression and violence in the workplace. Education on what behaviors constitute SH—including not only unwanted sexual attention and sexual coercion but also gender harassment—is paramount and should be mandatory in all workplaces (practices, hospitals, universities). Safeguards ought to be instituted to discourage and prevent SH. For instance, at their annual meetings the American Astronomical Society has an informal list of emergency allies who can be texted to assist—in a subtle manner—in escorting women who find themselves in vulnerable situations.<sup>11</sup> The American Association for the Advancement of Science recently included in their code of conduct the right to remove and prohibit future attendance of individuals from annual meetings.<sup>12</sup> Universities and hospitals should institute policies and have significant penalties for SH offenders. Most importantly, a reliable and safe infrastructure for reporting SH must be established. Anonymous reporting systems to hospitals and professional governing boards can be established to facilitate reporting in the manner that “sentinel events” are reported in a health care system. Victims of SH, regardless of gender, face marginalization, stigmatization, and retaliation.<sup>10,13</sup> Focus should be placed on abolishing deterrents to reporting SH and developing a mechanism of reporting free of backlash. Moreover, witnesses—both male and female—need to engage in interventions and SH reporting. As a profession, we must hold ourselves to a high standard of morals and feel comfortable policing each other.

By no means are we advocating tarnishing reputations or public takedowns of offenders. Despite the sensitive nature of this topic, instituting policies to prevent SH can be accomplished in a professional manner with the utmost decorum. The gravity of any report of SH must be acknowledged; each report ought to be critically reviewed and investigated. Additionally, we should equally adopt a zero tolerance policy for false accusations.

We acknowledge the limitations of our study. As with all voluntary survey studies, a low response rate (25.7% of women and 9.9% of men) may be a source of concern. The response to this survey was the second highest of all surveys thus far sponsored by STS (personal communication). Additionally, our response rate is on par with the response rate of other SH studies in surgery.<sup>3</sup> Perhaps given the sensitive nature of this topic a low response rate is expected. We also acknowledge that the rate of SH is possibly elevated as a result of response bias. Those persons who experience SH may be more inclined to respond to a survey on this topic than those who have not experienced SH. Moreover, we acknowledge a drop off in responses to the questions on the more granular details of the contexts in which SH occurred. The purpose of this study was not to dissect

every detail and instance of SH, but rather to take the first step toward ending SH. Eradicating SH begins with acknowledging that SH is present in the discipline of cardiothoracic surgery and describing the magnitude of the problem. Armed with this information, we can initiate a dialogue on addressing the problem, affirm that the presence of SH is unacceptable, and establish that, as a discipline moving forward, we must develop a culture that will not tolerate SH.

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