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Original Article

Experiences and Impacts of Harassment and Discrimination Among Women in Cardiac Medicine and Surgery: A Single-Center Qualitative Study

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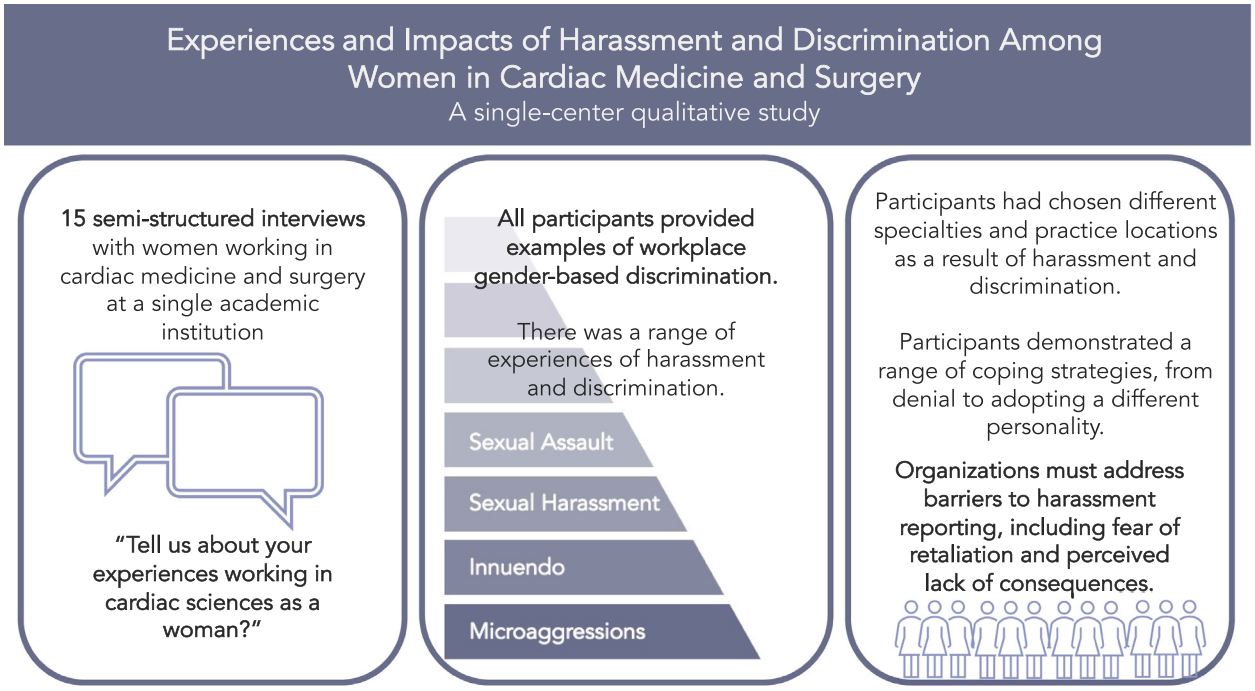

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ABSTRACT

Background: Gender- and sex-based harassment and discrimination are consistently reported by about 50% of women physicians, and the prevalence may be even greater among women in cardiology. An exploration of these experiences and their impacts on women in healthcare is necessary to design interventions, create supports, and facilitate empathy, support, and allyship among leadership.

Methods: To understand and describe the experiences of harassment and discrimination among women working in cardiac sciences, to inform the design of interventions and supports, we performed one-on-one, semi-structured interviews with women in the Department of Cardiac Sciences in a single institute. Interviews were coded independently in parallel using thematic analysis and reconciled by trained qualitative researchers. Experiences were categorized as harassment using the Canadian Human Rights Act. Codes were grouped into themes by iterative discussion.

Results: There were 15 participants, including trainees, physicians in a variety of cardiac subdisciplines, and nurse practitioners. All participants had experienced sex- or gender-based discrimination at work, though the impact and perception of these experiences varied. Whereas some participants felt that these experiences had little influence on their careers or personal lives, others changed practice specialties or locations due to harassment. Several participants had been sexually assaulted at work. Interviews revealed modifiable barriers to reporting harassment.

Conclusions: This qualitative dataset enriches the prevalence data on sex- and gender-based harassment among women working in cardiology by describing the impacts and perceptions of this harassment. Organizations should address commonly described barriers to reporting harassment, including addressing retaliation, and create systems-level supports for those affected by harassment.

RÉSUMÉ

Introduction : Environ 50 % des femmes médecins signalent constamment la discrimination et le harcèlement fondés sur le genre et le sexe. Cette prévalence est encore plus grande chez les femmes en cardiologie. L'exploration de ces expériences et de leurs répercussions sur les femmes dans les soins de santé est nécessaire pour concevoir des interventions, créer du soutien, et faciliter l'empathie, le soutien et le concept d'allié chez les dirigeants.

Méthodes : En vue de comprendre et de décrire les expériences de harcèlement et de discrimination chez les femmes qui travaillent en sciences cardiaques, d'orienter la conception d'interventions et de soutien, nous avons réalisé des entretiens individuels semi-structurés auprès de femmes du Service des sciences cardiaques d'un seul établissement. Les entrevues ont indépendamment été codifiées en parallèle par l'analyse thématique et rapprochées par des chercheurs formés aux méthodes qualitatives. Les expériences ont été catégorisées en harcèlement conformément à la Loi canadienne sur les droits de la personne. Des échanges itératifs ont permis de regrouper les codes par thèmes.

Résultats : Les 15 participantes étaient des stagiaires, des médecins de diverses sous-disciplines de la cardiologie et des infirmières praticiennes. Toutes les participantes avaient subi de la discrimination fondée sur le sexe ou le genre au travail, même si les répercussions et la perception de ces expériences variaient. Alors que quelques participantes ont senti que ces expériences avaient eu peu d'influence sur leur carrière ou leur vie personnelle, d'autres ont changé de spécialité ou de lieu de pratique en raison du harcèlement. Plusieurs participantes ont subi des agressions sexuelles au travail. Les entretiens ont révélé des obstacles au signalement du harcèlement qui sont modifiables.

Conclusions : Cet ensemble de données qualitatives enrichit les données sur la prévalence du harcèlement fondé sur le sexe et le genre chez les femmes qui travaillent en cardiologie en décrivant les répercussions et les perceptions de ce harcèlement. Les organisations devraient se pencher sur les obstacles au signalement du harcèlement fréquemment décrits, notamment les représailles, et créer du soutien à l'échelle du système pour les femmes qui sont touchées par le harcèlement.

Discrimination and harassment of women pursuing careers in cardiology have been evaluated in a cursory way through anonymous surveys.[1-4] More than 60% of American women cardiologists reported experiencing sex- or gender-based discrimination during their professional lives, with little change over the course of 2 decades.[1] A UK survey found that more than a third of women cardiologists had received unwanted sexual comments, attention, or advances from a superior or colleague.[2] Although the prevalence of sexual harassment of women working in other roles in cardiology, such as nursing, is not known, over 50% of nurses worldwide report experiencing harassment during their careers.[5] The impacts of this harassment and discrimination manifest as lack of representation of women in cardiac sciences compared to other disciplines, lower academic attainment and compensation for women in academic cardiology, and lower career satisfaction for women.[6-8]

Although survey data demonstrate that harassment and discrimination of women in cardiology are prevalent, few in-depth interview studies of these experiences have been conducted. The experiences and impacts of harassment and discrimination cannot be comprehensively understood through survey data alone. Even when allowing open-text responses, survey data do not provide an exploration of narrative experiences, and do not allow for a nuanced discussion using the participant's own words, thereby limiting understanding of complex topics such as sexual harassment.[9] Qualitative analysis of interview data allows researchers to develop a deeper understanding of the contributors to

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Ethics Statement: The University of Calgary Institutional Ethics Review Board approved this study. All participants gave informed consent, and they were not compensated for their participation.

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See page 683 for disclosure information.

experiences of sex- and gender-based harassment and discrimination, along with insight into how these experiences were perceived by and impacted women.[10]

The aim of this study was to address the lack of data by deeply exploring the experience of being a woman working in the cardiac sciences, using qualitative methods. This article reports results related to experiences of gender-based and sexual harassment among women working in the cardiac sciences, with the aim of identifying gaps and targets for intervention.

Methods

This article describes a portion of the results of a qualitative study of work experiences of women currently working in the Department of Cardiac Sciences in the Cumming School of Medicine in Calgary, Alberta, Canada. The department includes divisions of cardiac surgery, cardiac anesthesia, cardiac intensive care, and cardiology. Those working within the department comprise 120 clinical members (25.0% female, n = 30), including 95 faculty physicians (23.2% female, n = 21), 10 nurse practitioners (70.0% female, n = 7), and 15 trainees (13.3% female, n = 2). The University of Calgary Institutional Ethics Review Board approved this study.

We conducted one-on-one, semi-structured interviews with women members of the Department of Cardiac Sciences between September 2020 and March 2021. The interviewer (C.M.) is a woman social worker who has experience in narrative interviewing, is external to the department, and does not work clinically with any of the study participants. Participants were recruited via e-mail sent to all women clinical members, using purposive criterion sampling. Interviews were conducted with all respondents rather than being based on data saturation criteria. All participants gave informed consent, and they were not compensated for their participation.

A standardized interview guide, adapted from similar projects, was used (Supplemental Appendix S1). Interviews were conducted by phone, virtual conference, or in person, were audio recorded, and were transcribed by software (NVivo Transcription, Version 12, QSR International, Melbourne, Australia). Information with potential to be used to identify the participant was redacted by the interviewer prior to analysis. The guiding framework for this project was constructivism, acknowledging that participants developed knowledge based on their individual experiences.[10] Interviews were analyzed using inductive thematic analysis methods,[9] by C.M. and S.M.R. (a physician external to the Department of Cardiac Sciences with experience in qualitative data analysis). Preliminary codes were independently developed after all transcripts were read. These codes were refined through discussion with all study team members to create a final coding framework that was deductively applied to all data independently and in parallel, in a second round of coding (by C.M. and S.M.R.).[11] Disagreements regarding coding were reconciled between investigators.

In this work, we classified harassment and discrimination according to the Canadian Human Rights Act, through consultation with a lawyer (Table 1).[12,13] These definitions are similar to those used in the US.[14] Microaggressions refer to intentional or unintentional "brief and commonplace verbal, behavioural, or environmental indignities that communicate hostile, derogatory, or negative messages about historically stigmatized groups."[14]

Quotations were edited only for grammar and to remove repetitive or filler words. Bracketed information within quotations was added to clarify meaning. Identifying information was redacted, including the disciplines and race or ethnicity of participants, due to low numbers of women in certain demographic groups and subspecialties. All reported experiences occurred in Canadian institutions, although not all occurred in our institution. Data were managed and analyzed using NVivo (QSR International, version 12).

Results

Overview

A total of 15 participants represented all clinical disciplines within the Department of Cardiac Sciences; this number is approximately 12% of the clinical department members, and 45% of the women invited to participate. The sample includes trainees, physicians, and nurse practitioners.

Perceived gender- and sex-based harassment and discrimination in the cardiac sciences

Although some participants described positive and supportive experiences, and not all participants agreed that harassment or discrimination was common in cardiology, all provided examples of workplace gender-based discrimination. Participants also expressed a range of certainty about the existence of harassment or discrimination against women in the cardiac sciences. Whereas some participants were certain that they had experienced harassment or discrimination, an equal number of women felt that their workplace was equitable and inclusive. Four participants felt uncertain, stating that there was a "sense" that they were treated differently from their men colleagues (participant [P]04) or that although "most people are inclusive and equitable," there are "the yahoos who continue to be old school" (P12). Although one participant stated that there were "no problems, no distinction (between) man, woman," she later shared that "if I had chosen to work in [cardiac subspecialty], that would have been harder. I suspect guys would have been given preference" (P07), suggesting that a disconnect existed between participant experiences and how they named these experiences.

Experiences of harassment and discrimination

All participants provided experiences of subtle gender-based discrimination, most commonly microaggressions or exclusion. This subtlety prevented participants from being able to mitigate or report this discrimination: "When someone calls me [profanity] . . . that's objectively not okay . . . but when somebody doesn't invite you to the dinner or doesn't put you on the grant application . . . doesn't help you with your career the way they're helping the men . . . it's more difficult to combat" (P10). Examples of these experiences included "nicknames that would be given to females (that) wouldn't be like the nicknames given to male trainees" (P11, similar from P05), using professional titles for men physicians but first names for women physicians (P02, P03, P14),

Table 1. Definitions of terms used to classify harassment and discrimination in this article

Term	Definition	Additional information/Examples
Gender-based discrimination	"Any distinction, exclusion, or restriction made on the basis of sex"[13]	"Sex" includes all forms of gender identity and gender expression
Sexual harassment	"Engaging in a course of vexatious (eg, annoying or distressing) comment or conduct that is known or ought to be known to be unwelcome"[12]	Includes (though is not limited to) "sexual jokes or innuendo", continuously interrupt(ing) a female employee during meetings", "commenting on her physical appearance in a way that sets her apart from male employees," "leering or inappropriate staring", "repetitive use of terms of endearment such as 'sweetheart' . . . as 'terms of diminishment'" and "bragging about sexual prowess"[12]
Gender-based harassment	A subtype of sexual harassment; "Any behaviour that polices and reinforces traditional heterosexual gender norms"[12]	Includes (though is not limited to) "harassment for gender non-conformity," "humilat(ion) with sexual and sexist remarks, jokes, materials, or pranks," "target(ing) women for harassment as a means of dissuasion" from work in male-dominated spaces, or being told to "wear make-up, have her hair styled," or to "wear skirts more often"[12]
Sexual assault	A subtype of sexual harassment; "Any unwanted act of a sexual nature that is imposed on another person without their consent"[28]	Includes situations where consent is not possible due to power dynamics such as patient-provider, trainee-physician, and boss-employee relationships
Microaggressions	Intentional or unintentional "brief and commonplace verbal, behavioural, or environmental indignities that communicate hostile, derogatory, or negative messages about historically stigmatized groups"[14]	Includes (though is not limited to) othering people by 'complimenting' their English proficiency, asking where someone is *really* from, and asking them to translate a language that they are not known to speak

interruptions (P11), being mistaken for a trainee or other healthcare professional (P02-P07, P09, P12, P14), and "compliments" that "actually belittle [me]" (P01, P12).

Many participants shared experiences of sexual harassment, which ranged from innuendo to verbal sexual harassment to sexual assault (Table 2). Participants reported sexual coercion, a form of sexual harassment in which sexual contact is tied to job opportunities or rewards; one participant shared that "Some physician put his hand on my thigh, invited me to sit on his lap, put his arm around me at social events . . . invited me to these meetings where he would dangle a position for me and say, 'You know, you should think about coming to work for me'" (P06), and another recalled "I was promised the gold medal in [clinical rotation] if I would oblige this particular [attending physician] . . . meaning that I would go out for dinner with him with the implication that it would be more than that" (P07).

Although participants themselves were often the targets of harassment, they also witnessed physician colleagues, patients, and allied healthcare professionals being targeted by cardiac science colleagues. One participant recalled that "[An attending] said to a pregnant colleague, 'Pregnancy suits you because your boobs are bigger,'" (P06), and another shared that "there was another woman who was a year ahead of me [in training] and she was obese. They were so mean to her . . . they called her derogatory names . . . they were trying to get her to quit," (P10). Witnessing harassment was noted to contribute to a hostile culture for learners (P05). One participant felt that witnessing harassment of other colleagues was meant "to threaten me . . . they would say this stuff in front of me as like, 'Good luck. You can't do anything [about harassment]" (P10).

Impacts of harassment

The range of impacts on participants who experienced and witnessed harassment was broad. Participants felt that harassment influenced important career decisions, such as avoiding certain subspecialities or opportunities within the cardiac sciences (P07, P08, P10, P11) or altered their practice location (P01, P06, P10, P15). One participant shared that "I [was] asked out on dates by my attendings while I was training. So that obviously that would put you off [from accepting a position there]" (P11).

Multiple participants discussed evidence that women patients received lower-quality care from cardiologists, due to implicit gender bias, and corroborated this evidence with their own experiences: "Women are more likely to have a normal angiogram, but still have symptoms . . . they're called crazy, [they're told] this isn't coming from your heart, instead of listening to the story, which says this is consistent with heart pain . . . I get a decent number of referrals for women with typical symptoms who have been blown off by male colleagues" (P12).

The impact of harassment and discrimination on participant well-being also varied. Although some participants did not take microaggressions or other forms of harassment personally, others felt that "when it's coming from like a 50-something-year-old man, it's . . . threatening" (P02). Some participants described serious psychological distress due to persistent harassment: "People also don't realize . . . the trauma that goes with training through this . . . I've had therapy . . . I have an anxiety disorder because of this . . . it's just exhausting, the exhaustion from all that rage, it's just like screaming into the void" (P10).

Coping with harassment

Participants described exclusively individual-level strategies in response to harassment or discrimination, rather than systems-level supports, including "willful blindness" (P01, P11) and declining opportunities in order to avoid perpetrators (P01). Multiple participants felt that adopting a more aggressive personality helped them avoid being a target of harassment and discrimination (P01-P03, P11-P13), warning that if "you as a woman are accepting of how you're being

Table 2. Participants reported a range of sex- and gender-based harassment and discrimination

Category of harassment or discrimination	Exemplar quotation
Microaggression*	"[The surgeons] would be asking opinions on what to do with people. And I would say 'This guy should be managed medically. You should not take him to surgery.' And they'd be like, 'Oh yea.' Then one of the male cardiologists would say 'Yea, you shouldn't take him to surgery.' As soon as the guy said it . . . that's what we're going to do, but if I said it? Not so much." (P12)
Sexual innuendo	"He said to me . . . 'We're going to ride her like a rented mule' . . . he said it like it was funny, but also like it was a bit of a threat." (P10)
	"When I got pregnant . . . the comment was 'I guess [we] didn't do a good job on the call schedule' . . . the joke was that we were home too many nights together or else I wouldn't be pregnant" (P07)
Maternal discrimination	"When you are in the [specialty] lab . . . there's extra lead, it's double heavy . . . they would make me stand there until I almost passed out, they wouldn't give me a stool when I was four, five months pregnant. And then they would make fun of me when I had to sit down . . . [one cardiologist said] 'Better not show up to my lab looking like that, pregnant and having to sit" (P10)
Sexual harassment†	". . . so he walked up from behind and comes around me . . . and he says 'You look as good from the back as you do from the front.'" (P12)
	"I would call at night about a patient that was having a heart attack and he would be like 'I'm naked in the on-call room, why don't you come and join me?', stuff like that, or 'I'm in the bathtub and I'm naked, splash splash,' like, really inappropriate" (P15)
Sexual assault‡	"Well, I got felt up as a medical student . . . by staff . . . when I was on elective" (P02)
	"[My attending physician] took me into the team room and . . . hugged me and kissed me" (P10)
	"[An attending] took his stethoscope and slapped me on the ass with it" (P15)

*"Brief and commonplace verbal, behavioural, or environmental indignities that communicate hostile, derogatory, or negative messages about historically stigmatized groups" which may be intentional or unintentional.[14]

†"Any behaviour that polices and reinforces traditional heterosexual gender norms," including "continuously interrupt(ing) a female employee during meetings," "commenting on her physical appearance in a way that sets her apart from male employees," "leering or inappropriate staring," and "bragging about sexual prowess."[12]

‡"Any unwanted act of a sexual nature that is imposed on another person without their consent."[28]

treated, it's going to have a spiraling effect" (P01). This changing of one's personality to reduce harassment or discrimination was common and explicit, as described by Participant 3:

> *I do remember one conversation when I was a resident and [the program director] was like, 'You have to be more assertive if you want to be in cardiology' . . . and at that time, I believed him, and I was like, oh, yeah, I guess . . . I need to change now . . like [my personality is] a deficiency that somehow, they've been able to overlook (to) accept me into the program.*

A few participants felt that overcoming harassment had a positive influence on their careers, as revealed by the following: "[you] have to work a bit harder and be better and get much more done . . . it almost encourages you to just keep going" (P01). Or they indicated that they gained resilience from working in a toxic environment that helps you "just focus on your job" (P14).

Reporting harassment

Multiple participants shared their experiences of reporting harassment or discrimination (P01, P04, P06-P08, P10, P11, P15). These narratives had the following 4 shared themes: lack of clear reporting infrastructure, importance of leadership support, perceived outcome of reporting, and retaliation. These themes were also reflected in several of the reasons given by participants for why they chose not to report harassment or discrimination. Altogether, these likely represent key modifiable barriers to useful and effective harassment reporting for women in cardiology (Table 3).

Lack of a clear reporting structure for harassment was mentioned by more than half of the participants: "I just didn't know what to say . . . I didn't even know who to say it to . . . I think it's telling in of itself is when (sic) we feel so wronged, so disrespected and invisible and then there's no addressing it because what will happen if I if I address it? Who can I talk to? Is there a place that I can go?" (P04). Others who did report their experience found that "no one knew what to do with (the report). There was no policy, there was no procedure" (P10). Some participants remarked on the lack of "lower-stakes reporting mechanisms for (the incidents that) are too little, that people aren't going to make a big fuss about" (P11) because many of their experiences of harassment or discrimination are "not something that you can ever make a formal complaint (about) . . . because it's so easy to try to explain it away or he said she said kind of thing" (P02).

When reporting, participants were often discouraged or dismissed by their leadership. One participant was advised not to pursue litigation after facing harassment at work because "you won't want to be that person that is litigious" (P10). Another shared the following: "my boss said to me, 'Well, you're a bit of a lightning rod for these kind of things . . . you attract unprofessional behaviour'" (P11).

All participants who formally reported harassment felt that the perpetrators faced no consequences. The lack of consequences for workplace harassment was observed for subtle forms of discrimination; for example, one participant shared that "when I point things out . . . the reaction hasn't been [to] take it as seriously as I would have liked. The people haven't . . . offered apologies or tr(ied) to change their behaviour," (P11).

Table 3. Barriers to formal reporting of harassment identified in this study and mitigation strategies for institutional leadership

Barrier to reporting harassment	Exemplar quotation	Suggested improvement
Lack of clear infrastructure	"I just didn't know what to say. Yeah, and I just didn't even know who to say it to" (P04) "I think there should be a clear-cut area with defined boundaries that can act on time. And I don't think that that exists. Does it?" (P07)	A clear, well-advertised process for reporting that addresses the spectrum of harassment and discrimination
Lack of leadership support	"Yeah, we beat ourselves up about it. We go to the director, they don't take it seriously. And then you're beating yourself more, like am I just this hysterical lady…? You demean yourself [reporting] it, too. And I don't want to demean myself . . . the victim [is] in a place of shame, feeling like they have no control." (P06)	Formal training for how to accept and investigate a report of harassment or discrimination for leaders
Perceived outcome of reporting	"So, when I tried to address it, I went to the director and so had these conversations, and she was very supportive. And then I talked to other [specialists] and they were like, 'Yeah, we had the same issues with this one individual, same issues. He's not a good person,' . . . but similar things have been brought up and something needs to change. Something needs to happen." (P06)	Systems-level pre-defined responses/consequences to a spectrum of unprofessional behaviours, including remediation or termination
Fears or experiences of retaliation	"[After reporting a colleague who verbally harassed her] people would come to me, behind his back, and say, 'Yeah, I agree with you . . . he's an asshole,' . . . but later I find out that I was canceled [from a procedure schedule that he was in charge of] . . . and none of my other male colleagues would even stand up for me" (P08)	Retaliation policies that outline strict consequences for violations Remove individuals who harass others from leadership and decision-making positions

Even when participants faced serious harassment, they perceived that the perpetrators faced no consequences: "He totally bullied me, cornered me, called me at home. He screamed and yelled at me, called me a liar, all kinds of stuff . . . I wrote a formal letter documenting everything. Nothing came of it" (P08). Even when a participant's allegations of harassment were confirmed by an external organization, participants perceived a lack of consequences: "And then he got promoted after he lied [to cover up the incident that the participant reported]. And the investigation [by an external regulatory body found] that he was clearly lying . . . but still, there were no repercussions for that" (P11).

In contrast to the perceived lack of consequences for perpetrators of harassment, participants faced retaliation for reporting harassment. As described by one participant, "after (I reported), I would go to the [specialty] lab and [the physicians] would be like, 'You're an idiot, you're doing this wrong.' All my evaluations were terrible . . . [they] said, 'She's fantastic' for two and a half years and then all of a sudden, [I'm] the worst resident [they've] ever had" (P10). This participant had to move to a new city to complete her fellowship due to this retaliation. Another participant who also left her workplace due to retaliation after reporting harassment shared that "[Reporting] does impact your career . . . people don't want to be friends with you, they don't want to talk to you. There's a lot of collegiality that's really important to advancement. It's important to get invited to parties. And sure, you might be asked to sit on someone's lap, but at least you're meeting other people" (P06).

The responses from participants who chose not to report harassment highlight how these 4 themes act as a barrier to reporting. This impact was summarized by participant 3, who commented on lack of confidence in reporting structures, lack of consequences, and fear of retaliation as barriers to her reporting her experiences:

> *I'm not proud of this, but I would be concerned that talking about (harassment) would create a very awkward environment and potentially a hostile relationship . . . I just don't know if I would feel comfortable with the consequences or not knowing how it would be going forward, which is probably the way every woman feels . . . how much benefit am I going to get from this versus knowing that this person's probably going to stay here, like they're probably not going to get fired over this . . . And what will come back to me as a consequence?*

Other contributors to a lack of reporting included a "state of denial" (P15) and a sense that complaining would be viewed unfavorably by others: "it feels like I'm getting all high on my horse to be like [you can't talk to me like that]" (P03).

Discussion

This analysis of qualitative data about experiences of harassment and discrimination among women working in the cardiac sciences provides insights that may guide researchers and institutional policies to address harassment and discrimination. First, self-report of experiences of harassment and discrimination may underestimate their true prevalence. Second, a range of sexual harassment and gender-based discrimination is occurring in medical workplaces, and variation exists in how these experiences impact individual women. Third, systems-level support for women experiencing harassment and discrimination is lacking, most notably evidence-informed harassment-reporting mechanisms. These results complement and allow a deeper and better understanding of the cross-sectional data that document an unacceptably high

prevalence of sex- and gender-based harassment and discrimination in both medicine (Ruzycki SM et al., unpublished data, 2021)[15] and cardiology.[2,4]

The prevalence of workplace harassment and discrimination in medicine varies from 20% to 70%, depending on the study population and the data-collection method.[14,15-18] Due to this heterogeneity, some have argued that "it is not clear that we are dealing with an epidemic of harassment in our medical training"[19]; however, our results suggest that self-report surveys of harassment and discrimination underestimate harassment. For example, one of our participants who felt that cardiac sciences was a generally equitable and safe workplace also shared multiple instances that met the Canadian Human Rights Act definition of sexual harassment and gender-based discrimination. Her experiences included being discouraged from applying to cardiology training specifically on the basis of her sex, receiving less infrastructure than a similarly qualified male colleague, witnessing women cardiology trainees being bullied out of the training program, noticing that women trainees were being evaluated as less competent than less-skilled male trainees, and being harassed by her patients. This participant also shared the greatest number of coping strategies, such as deflecting harassment with humor, avoiding work and social situations in which she would be in the same room as her harasser, ignoring specific episodes of harassment, and adopting an "aggressive" personality to secure infrastructure. Similarly, one participant who stated that she had never experienced discrimination at work subsequently clarified that this was because she chose not to take certain remarks seriously or personally. These results suggest that investigators attempting to document the prevalence of harassment and discrimination should clearly define these terms, provide examples, and emphasize that a lack of impact of harassment and discrimination on well-being or career does not mean that harassment or discrimination has not occurred.

Administrators should consider the heterogeneity that we observed in how workplace harassment and discrimination impacted participants when designing interventions and support programs. Some participants in this study described minimal impact to their well-being, even when they experienced sexual assault, whereas others felt significant distress from accumulating microaggressions over time. This finding does not imply that some participants were more or less resilient than others; rather, leaders should not assume that some forms of harassment or discrimination are more harmful than others. Reporting procedures and support programs must address the complete range of harassment, rather than focusing on only sexual assault. Indeed, several participants remarked that current reporting mechanisms did not facilitate the reporting of these subtle experiences of discrimination, in particular microaggressions, exclusion, and de-credentialing.

Maternal discrimination was an important subset of harassment and discrimination identified in this study and others.[20-22] Participants in our study selected their subspecialities and location of training to accommodate working as a parent, due to explicit warnings from other specialists and an implied understanding that some disciplines were more "family-friendly" than others. Participants also described derogatory comments about how pregnancy and parenthood impacted the workload of colleagues. These examples demonstrate a hostile culture to parenthood, which is expected to disproportionately influence women but also may harm men who want to take parental leave or have an active role in parenting. Worryingly, participants also provided examples of maternal harassment, such as faculty commenting on the breasts of a pregnant woman or preventing a pregnant trainee from sitting at work. Such instances may expose an institution to legal risk, as these examples may violate codes of conduct and human rights legislation. Medical leaders can advocate for systems-level changes to support pregnancy and parenthood in cardiology, including call-schedule flexibility, identifying lactation spaces, and advocating for onsite childcare.[20,23] In addition, medical leaders must act in the moment to address maternal discrimination, including casual remarks that denigrate the work ethic or potential of mothers, or refer to parenthood as an inconvenience.

Ineffective or unsafe harassment-reporting mechanisms are important barriers to formal reporting for healthcare providers.[11,14,18,24] An environmental scan of harassment-reporting mechanisms available to physicians in Alberta found that most do not meet known best practices.[25] The characteristics of harassment reporting for physicians in other provinces is not known. Our results provide details on how the structure of current harassment-reporting procedures directly contributes to lower levels of reporting; our participants described their frustration with unclear reporting infrastructure, unsupportive leadership, lack of consequences for perpetrators, and retaliation from colleagues. Of note, one participant shared that even though her formal report had led to an investigation that found a male colleague had harassed her, she had to change training sites due to retaliation whereas he faced no consequences. Our results further suggest that organizations should train medical leaders to accept reports of harassment. In addition, our results demonstrate that participants consider all components of the harassment-reporting mechanism when deciding whether to report, suggesting that harassment-reporting procedures must be improved *en bloc,* rather than part-by-part, to be effective. Organizations should review applicable human rights legislation, workplace standards, and literature[1,8] when redesigning their harassment-reporting mechanisms.

This study has important limitations. The study is qualitative, and it recruited participants from a single institution, so the results may not be transferable to other settings. However, the ubiquity of sex- and gender-based harassment and discrimination in other academic medicine departments and universities suggests that these results are applicable to many settings.[4,11,14,16-24] Although the number of participants in this study may be small relative to the sample sizes typically seen in quantitative studies, qualitative data provide greater detail on experiences, impacts, and perceptions; for these reasons, sample-size considerations do not apply well to qualitative studies.[26] These qualitative data provide insight intto how experiences of harassment and discrimination were perceived by women in cardiac sciences, building upon numerical data and demonstrating the impacts, coping strategies, and contributors in ways that better link to potential interventions.

Second, although all participants were currently working in Calgary, Alberta, Canada, many had trained in several institutions and provinces across the country, making the results

pertinent to all cardiac sciences departments in Canada, especially given that sexual harassment has been documented formally and informally in multiple Canadian medical institutions.[16,27] All participants identified as women, and therefore, the experiences of gender-based and sexual harassment for men, non-binary, gender-diverse, and transgender people in the cardiac workplace are not described in these results. Due to the risk of identifying participants, we did not include experiences of racism, ableism, or homophobia that were described in this study; however, this restriction limits our ability to describe the intersectional experiences of participants.

Conclusions

Experiences of discrimination and gender-based harassment, including sexual assault, are prevalent in the cardiac sciences workforce. These experiences may be undercounted using survey data, as women used varying definitions of harassment and discrimination to describe their experiences. Encouragement of women trainees and mentorship alone cannot overcome these barriers to the professional success of women. Clear and just reporting mechanisms that address a spectrum of complaints, and defined consequences for perpetrators, are urgently needed to provide a safe and just work environment for women in healthcare. This set of qualitative data provides insight and granularity regarding how the experiences of harassment and discrimination are perceived by women in cardiovascular science in a single institution. These data demonstrate the contributing mechanisms, coping strategies, and career and personal impacts of these experiences, with an intention of helping develop improvements and interventions to address this unprofessional behaviour.

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Disclosures

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Supplementary Material

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