Cerebellar developmental deficits underlie neurodegenerative disorder spinocerebellar ataxia type 23

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Attaining full professor: Women's and men's experiences in medical education

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Introduction

The underrepresentation of women among senior faculty in medical education is a longstanding problem. The purpose of this international qualitative investigation was to explore women and men's experiences of attaining full professorship and to investigate why women remain underrepresented among the senior faculty ranks.

Methods

Conducted within a social constructionist orientation, our qualitative study employed narrative analysis. Two female and two male participants working in medical education were recruited from five nations: Australia, Canada, Netherlands, United Kingdom, and United States. All participants held an MD and/or PhD. During telephone interviews, participants narrated the story of their careers. The five faculty members on the research team were also interviewed. Their narratives were included in analysis, rendering their experiences equal to those of the participants.

Results

24 full professors working in medical education were interviewed (n=15 female, n=9 male). While some aspects were present across all narratives (i.e., personal events, career milestones, and facilitating/impeding factors), participants' experience of those aspects differed by gender. Men did not narrate fatherhood as a role navigated professionally, but women narrated motherhood as intimately connected to their professional roles. Both men and women narrated career success in terms of hard work and overcoming obstacles; however, male participants described promotion as inevitable, whereas women narrated promotion as a tenuous navigation of social structures towards uncertain outcomes. Female and male participants encountered facilitators and inhibitors throughout their careers but described acting on those experiences differently within the cultural contexts they faced.

Discussion

Our data suggest that female and male participants had different experiences of the work involved in achieving full professor status. Understanding these gendered experiences and their impact on career

progression is an important advancement for better understanding what leads to the underrepresentation of women among senior faculty in medical education.

Introduction

The number of women in academic medicine has been steadily rising for years; in many countries, women now account for nearly—and sometimes over—half of all academic medicine faculty.[1-6] Despite this trend, gender disparities in senior faculty ranks persist.[7-10] For example, in the United States, the American Association of Medical Colleges (AAMC) reports that, in 2019, women accounted for more than 50% of medical school matriculants[11] and for 42% of full-time faculty in American medical schools; however, women represented a mere 25.6% of the full professor faculty members therein.[12] Research suggests that these disparities remain even after adjusting for age, experience, specialty, and measures of research productivity.[13-16] Quantitative data from around the world confirms that this gender inequity persists in the highest ranks of the field.[1,13,17] Unfortunately, this underrepresentation of women is longstanding and slow to change. In 1995, Tesch et al reported that female physicians in medical schools were promoted more slowly than men, a difference not explained by variation in productivity or differential attrition.[13] Some 24 years later, in 2019, Khan et al reported that clear gender disparities remain, with the representation of women declining between middle and senior academic levels.[18] Limiting the gender diversity in the upper echelons of academic medicine—including medical practice, medical research, and medical education communities therein—is a serious issue because it poses grave dangers to healthcare.[19] Not only does it threaten our ability to provide gender-competent care, but it also risks promoting research agendas, clinical guidelines, and curricula that are gender biased.[19-25]

While there is a growing body of research investigating women's experiences across the broad field of academic medicine, only a small portion of that literature focuses on women's experiences in medical education. The smaller body of work addressing women's underrepresentation in medical education is replete with commentaries,[26-30] evaluations of diversity interventions,[31,32] analyses of cross-institutional quantitative data,[33-35] national-level faculty survey studies,[36-39] and literature reviews.[35, 40-42] However, it is not sufficient to identify and quantify the underrepresentation of women in the field's highest professorial ranks; understanding *why* this disparity persists is necessary to redress gender inequality.

And yet, few qualitative studies have investigated the reasons underpinning women's underrepresentation in medical education. One qualitative study, an investigation of female full professors' experiences at an American medical center, described women's challenges of being ignored, treated with silent bias, and being perceived as "other."[43,44] Another recent publication highlights how academic medical centers function as gendered organizations wherein formal expectations, which were intended to be gender neutral, were in fact enabling informal inequitable interactions.[44] Such investigations that focus on women's experiences are the exception, not the rule. Studies looking at the experiences of women in medical education tend to be limited to a single-site[45-57] or to a single national context,[58-73] albeit with some notable exceptions.[74-80]. Given that the underrepresentation of women in the highest professorial ranks is a global phenomenon, understanding could be enhanced through multinational investigations. Moreover, research in this area has largely been conducted with female participants.[46-49,51,54,56,57,67,73,77,79,81-87] While these findings provide valuable insights, they shed no light on how women's and men's experiences might align and/or contrast.

An international qualitative investigation of the experiences of women and men is needed to help us understand why women remain underrepresented in the highest professorial ranks of medical education. This can in turn help us generate better informed solutions for addressing that inequity. To achieve this objective, our study explored women and men's experiences of the pathway to full professorship in medical education.

Theoretical Foundation

Feminist theory served as the orienting foundation of this research. While feminist theory takes many forms, it can be defined as a body of philosophies, writings, and methodologies that attempt to describe, analyze, and explain the conditions and experiences of women.[88] Each form of feminist theory reflects the contexts that supported their emergence. For instance, psychoanalytic feminist theories often study gender asymmetry through the familial and psychosocial processes that shape individuals' psyches. Alternatively, materialist feminist theories generally concentrate on the concrete

economic and social conditions that contribute to gender inequality. In contrast, black feminist theories tend to highlight how women's lives are influenced by the multiple forces of power and privilege—e.g., race, ethnicity—that shape their experiences.

Furthermore, feminist theories have evolved over time, generating many different intellectual traditions. For instance, enlightenment liberal feminists, writing in the late eighteenth-century, upheld several basic tenets: (a) rationality is of primary importance; (b) women's and men's rational faculties are the same; (c) education, especially the training of rational critical thinking, is the most effective means to effect social change; (d) all women and men have the same natural rights (especially the right to vote).[89] Nineteenth-century and early twentieth-century feminist theories are often clustered under the label of cultural feminism. Cultural feminist theories sought broad cultural change by stressing the importance of the nonrational, the intuitive, and collective aspects of life. Cultural feminist theories stressed the differences between men and women, asserted the value and power of the feminine, and encouraged women to join the public sphere to bring harmony where men had constructed corruption and violence.[89] By the 1960s and through to the 1990s, radical feminist theories developed that drew attention to the subjugation of women by men via an array of means—e.g., political policies, social expectations, language and symbol systems—as a root cause to many inequalities in society, including racial oppression and the tyranny of heterosexuality.[89] Today, some scholars argue that feminism is growing into its fourth wave, where the Crenshaw's concept of intersectionality[90] is the overriding principle of feminist theory.[91] Intersectionality considers how class, race, age, ability, sexuality, and gender are intersecting loci of discrimination and privilege; intersectionality addresses the dynamic nature of inequality and oppression.[90]

This study's design was not informed by a single feminist theory because, until data collection and analysis were underway, we did not know which specific theory would most usefully support our understanding the data. However, we did design the study in keeping with the overarching philosophies and principles that underpin feminist research. Specifically, we constructed the study to: collect the full exploration of participants' experiences to avoid assuming that their professional career trajectories were only informed by professional experiences; encourage participants' reflections

on rational and structured aspects of their experiences as well as the emotional and intuitive aspects; and enable participants to describe the full breadth of their personal identity (e.g., race, culture, gender, etc.) to voice all facets of the privileges and/or inequalities they may have experienced.

Methods

This qualitative study was conducted from within a social constructionist orientation[92] using narrative analysis.[93] Ethical approval was obtained through the Ottawa Health Science Network Research Ethics Board (# 20160687-01H).

Narrative Analysis

In narrative analysis, personal stories are collected to understand the life experiences recounted by participants.[93] Narrative analysis develops from the premise that meaning-making through stories is fundamental to being human and to understanding experiences.[94] Thus, to understand human experience requires exploring the meanings that constitute the realities that each individual narrates into being.[95] Narrative analysis is unlike many other qualitative research approaches where researcher-participant dialogue often consists of question-and-answer exchanges. Narrative analysis investigates each participant's story as a whole, rather than thematically, to examine how the meaning of experiences are constructed, organized and expressed.[96]

Participants

Participants were female and male full professors with careers focused on medical education recruited from five different countries: Australia, Canada, Netherlands, United Kingdom and United States. We focused on these countries because they represented five of the top six nations with the highest engagement in medical education research.[97] We ensured that participants held either an MD (n=1 male and n=1 female from each country) or a PhD (n=1 male and n=1 female from each country), and that they were actively working in the field of medical education at the time of data collection. We developed two lists of potential participants—one of women and one of men—for each country in two ways. First, we drew on our personal networks to identify participants. Second, we reviewed the

authors of publications in *Academic Medicine*, *Medical Teacher*, and *Medical Education* in 2018, adding names to the lists when authors met our inclusion criteria.

Since the goal of narrative analysis is not to identify typical cases but to explore the qualities of each participant's story, the completion of this study was not reached when saturation was obtained. Instead, in keeping with the narrative tradition, the number of participant narratives that would be included in the study was decided prior to data collection. We recruited two women and two men from each of the five countries (n=10 women and n=10 men), balancing recruitment to include equal numbers of individuals with MD and PhD training. We randomly selected individuals from the lists of potential participants, recruiting them via email.

Data Collection

Participants engaged in one-on-one telephone interviews[98] where they were asked to narrate the story of their career development, describing their own experiences complete with the nuances and highlights that they deemed significant to their story. After asking demographic questions (e.g., What year did you become a full professor?), the research assistant (RA) asked the participant to "tell me the story of how you became a full professor?" Only after the participant had shared their full narrative did the RA ask probing questions encouraging descriptions of (a) the professional (e.g., mentoring), structural/institutional (e.g., local systems) and/or personal (e.g., familial responsibilities) factors that impacted the participant's ability to achieve full professor status; and (b) their definition of career success. The interviews were audio recorded, transcribed by a professional transcription service, and rendered anonymous in the transcription process.

Data Analysis

This study was conducted in three phases.

In phase one (late-2017 to mid-2018), we conducted interviews with women participants (n=10, one PhD and one MD each, from Australia, Canada, Netherlands, United Kingdom and United States). Once transcribed, two members of the research team (KD & LV) independently read the interview

transcripts and developed descriptions of the narratives, noting the elements the participants emphasized. These researchers then met, constructed chronologies of each participants' narrative, and compared and collated their descriptions. Next, the research team (KD, LV, JC, DJ, MH, ND) was sent a subset of transcripts to review. The team met, discussed the stories that had been collected, examining how cultural contexts shaped aspects of the narratives and our descriptions thereof, and reflecting on their own academic career experiences.

From the outset of this study, we were keenly aware of our status as research insiders given our (JC, LV, DJ, MH, ND) personal experiences as women who were full professors working in medical education.[99,100] Being insiders did not make us better or worse researchers of this topic; instead, it afforded us a unique research perspective.[101] For example, the literature highlights that insiders can understand social phenomena with more nuance than outsiders.[101] However, insider status can risk researchers' analysis being significantly influenced by personal experiences.[101] Our challenge was, therefore, to ensure that we were engaging in rigorous and ethical research that harnessed the advantages of our insider status while also mitigating the weaknesses thereof. To do this, we launched phase two of data collection: interviews with each female faculty member of the research team (n=5, i.e., LV, JC, DJ, ND, MH). Including the narratives of researchers in the data set is a practice that can be used in narrative research.[102] Following this tradition, we incorporated our narratives as part of the data set for analysis, thereby making our experiences explicit and equal to those of the participants so no-one's personal experiences would have more prominence or influence than any other narrative in the data. With these additional transcripts in the data set, the team met again to discuss all the data to date, noting the elements the participants emphasized in their narratives.

Next, in phase three (early-2019), the RA conducted interviews with male participants (n=9, one PhD and one MD each, from Australia, Canada, Netherlands, United Kingdom and United States; note: we were unable to secure participation from a PhD-trained male full professor in one national context). Two researchers (KD & EH) read the transcripts, created descriptions of these narratives, and then highlighted similarities and differences with female participants. A subset of this data was sent to LV who read and reread the transcripts, considered the descriptions and identified similarities /

differences, and offered additional considerations. LV, KD and EH met to discuss the evolving analysis, to compare the findings with those from the women participants, and to develop a meta-story of the participants' narratives. This analysis was shared with the research team who commented on the meta-story. One researcher (JC) also reviewed a subset of the entire data set to confirm interpretations.

Each participant whose narratives were cited in the manuscript via data excerpts was sent the section of the final manuscript where their narrative was included to ensure that all identifying aspects of the data were removed. Each participant helped revise her/his data excerpt(s) if the participant's anonymity was threatened. This included, for example: removing gendered pronouns, correcting grammar errors made by participants who did not speak English as their native language, and removing some details from narrated stories.

Results

Demographics for the 24 full professors working in medical education interviewed for this study (n=15 female and n=9 male) are presented in Table 1. Included in the 15 female participants are the five female full professors who are researchers authoring this study. All participants self-identified as being of the dominant ethnic group in their respective countries. Of the fifteen female participants, four were MD-trained, nine were PhD-trained, and two were both MD- and PhD-trained. Of the nine male participants, five were MD-trained and four were PhD-trained.

*****Insert Table 1 about here*****

Alignment across genders

When we examined the personal events and the career milestones participants described as occurring during their trajectory to full professor, we noted several similarities across men and women, and across all nations represented in the study. From the perspective of personal events, 23 of the 24 study participants were married while working toward becoming full professors, and 21 participants had

children during that time. In terms of professional milestones, 75% of the full participant pool (18/24) obtained full professor status in their forties.

In terms of facilitating factors, all participants expressed gratitude for mentors who supported their professional development:

> *I do think that the mentorship helped tremendously. I feel like being able to identify people that did take an interest in my career development was tremendously important. (P2-Female)*

> *I leaned heavily on those mentors. Initially, it wasn't an active thing. It was more sort of seeing how they approached things and taking on board their, sort of, characteristics and what not. After that it was picking their brain and asking for advice. (P23-Male)*

With respect to obstructing factors, both male and female participants acknowledged the difficulty of balancing the many demands placed on them in their professional and personal contexts. In the professional sphere, participants' careers typically involved commitments to research, teaching, administrative responsibilities and clinical responsibilities (for healthcare professional participants). And, given the life events occurring as they sought full professor status, demands of childcare, elder care, and sharing responsibilities with a spouse also weighed on participants. Determining how to balance all these competing responsibilities was a thorny issue, one narrated by both women and men:

> *There are so many demands on your time. Even when you have protected [research] time, at a really substantive level that I was fortunate to have, you can fritter that away because there are so many demands for your time. There's a demand that you make yourself useful. That demand is always there whether it's explicit or not. Make yourself useful to the educational mission and that can pull you in directions other than your research pathway. (P7-Female)*

> *How do you balance what you're meant to be doing? So there's your work-life balance, but there's also your work-work balance. So (pause) I was going to say obviously research is the way you get ahead, but that's not strictly true. It's obviously important, but it's not the only thing. So yeah, getting those balances right. (P19-Male)*

Differences between genders

While several of the personal events, career milestones, and facilitating or impeding factors identified by participants were similar, the experience of those elements differed significantly by gender. These differences across gender lines were common across all nationalities represented in the study. Three areas clearly illustrate how common events, milestones, and factors are experienced differently across gender lines.

The personal event of having children was narrated in dissimilar ways by participants of different genders. Male participants described having children in matter-of-fact terms. Having children placed demands on male participants, requiring that they strive to succeed in both their personal lives and professional careers. Having children was a fact of their personal lives that was taxing and needed to be managed within their personal sphere:

> *And along that early first 5-10 years of career, I had my first 2 children. I had a wife who stayed at home, who is unbelievably supportive when I needed to travel. I've always been the type of person who, you know, when I'm not working, I'm at home, and so I have pretty good work-life balance. (P16-Male)*

As this data excerpt illustrates, status as a father was expressed as factual; it was a role they cherished and managed in their personal lives. This role was an important, valuable, part of their experiences. That said, they did not narrate fatherhood as a role that significantly altered and shaped their professional experiences.

In contrast, female participants shared their stories of motherhood as foundational aspect of their professional reality. Like their male counterparts, negotiating childcare and other parental responsibilities was often a challenge faced in collaboration with a spouse:

> *My husband, he's a [career name], and he had a lot of flexibility in his work, so that allowed me to travel, which was the biggest challenge, I think, but also to, you know, if the kids were sick. One of them was sick, he was more flexible than I was. (P1-Female)*

The narratives of being a working mother did not stay within the private sphere. Motherhood was a role that needed to be negotiated in their professional experiences; motherhood was a potential obstacle to promotion because children were seen as impeding women's ability to be professionally successful. The expectation that women would be primarily responsible for childcare was powerfully felt. The women knew that the personal event of having children was not a *simple* fact; it was professionally complicating. It would change how they were professionally perceived. Therefore, the female participants narrated strategies that negotiated their role as mother in their professional contexts—a negotiation they did not perceive as required of their male peers:

> *What I did—and maybe I did it unintentionally, or maybe intentionally, I don't know—always be a little careful about, as a woman, how to talk about your kids. "I have to go back to school or leave a little early because of my kids are ill"—I always tell other ladies: "Just tell them, 'I have to leave. I have another meeting.'" Don't tell them all the ideas behind it….Now it's on my CV that I have [#] kids; but, in the beginning, I did not mention this. As one of my colleagues said: "Now you are a professor so now I want [you] to have a picture in the room of your [#] kids. Now you should explain and be proud about it"…. [A] man says: "I'm a professor. I have five kids. I can pay for it." It might be seen as prestigious and their advantage. Whereas, as women, it might be seen as risky. (P4-Female)*

Similarly, the experience of achieving career milestones was not narrated in similar ways by men and women. The male participants narrated processes of achieving career success by working hard, overcoming personal challenges, and pushing back against those who doubted their strategies:

> *I always have worked hard. I think that is also an ingredient and a constant. I never stop working. I've had a lot of illness problems with [omitted] but even in hospital, I always had my computer with me and worked. Or when my [parent] died, and that took a long time, I did reading, reading, reading. I'm taking care of my [parent], and if my [parent] was sleeping, I read. And worked late. More work. Always working. It's continual working. And, also combining. From the start, I have combined teaching with research, and with services. I've had a lot of comments—always—that it was not good for my career. I never went abroad for a*

time to do sabbatical and things like that—typical things you need to become a full professor. (P18-Male) [redacted to protect anonymity]

Career success for male participants was narrated as requiring sacrifice and struggle. Their stories reflected those efforts. But they also reflected a sense of inevitability. The male participants expected to be promoted:

In terms of my promotion path, that was never really a big anxiety for me. I had annual meetings with my department head, and he assured me that I was gathering successes at a rate that shouldn't make it problematic to get promoted, so it was never something that I really worried all that much about. (P17-Male).

Female participants also described having to work arduously, surmount personal trials, and resist pressures to adopt others' strategies or career paths. However, in addition to this, the female participants narrated struggles with the promotion systems they needed to work within. For women, promotion was not an inevitability. Sometimes promotion was sought via a new position at a new institution, and other times it was sought within the same institution. Regardless of which path was travelled, as the narrative excerpts in Figure 1 illustrate, promotion for the female participants was shrouded in social- and system-level complexities that enveloped their promotion with uncertainty.

*****Insert Figure 1 about here*****

While all participants needed to work hard, to conquer personal challenges, and resolve to resist naysayers, female participants faced additional barriers: traditions that could not be overturned; expectations based on track-records and timelines that did not reflect women's experiences; and cultures that aligned with specific social expectations. There was nothing inevitable about the female participants' stories of obtaining full professor status.

Finally, male and female participants both had to steer through the numerous personal and professional demands imposed on them and the multitude of opportunities presented to them. For all participants, these navigations required taking action; however, the action narratives men and women

developed about their actions were dissimilar. Male participants developed strategies to hold onto the many demands placed on them and to accept the many opportunities presented to them. They also narrated learning new skills and engaging others to help to meet these demands and to harness opportunities. For instance, one male participant shared his story of moving from being primarily a physician who was skilled in biomedical research, to becoming a full professor in medical education who was savvy in social science research (see Figure 2 for his narrative). As this participant's narrative illustrates, contending with multiple personal and professional demands and work opportunities generated narratives of action oriented towards meeting current demands, seizing new opportunities, learning skills to better address those demands, and securing support from others to help meet the demands.

*****Insert Figure 2 about here*****

For female participants, similar situations created different kinds of action narratives. This is not to say that female participants only engaged in dissimilar action-oriented activities than their male peers; there were some alignments. For instance, like male colleagues, some female participants faced professional demands and opportunities by engaging in additional training:

> *I did a Master's of Education Research and basically got involved in lots of different things, took on different lead roles…. There were loads of opportunities for people who were enthusiastic, even if they had no experience. If you got involved in something and made it work, then there were more opportunities. (P3-Female)*

Aligning again with male participants, some female participants crafted narratives where others helped them find ways of managing demands and encouraged them to harness opportunities. However, for female participants, relying on others was not about recruiting people to help with the work. Instead, the recruitment was more subtle and involved asking for permission and guidance:

> *When I was an associate professor I once discussed with, the Chair—my boss—we had our annual meeting. I felt a little like, you know: "I'm supervising Ph.D. candidates. We're doing it together, but I also feel that I could do it as well on my own given how much I was doing in*

the project." I had been growing and I asked: "Well, do you think that I would be able to supervise PhD. candidates myself, or more or less become an independent or professor who could do that with other team members?" And then they said: "Yes. We definitely think that you could do that and we're going to work on getting you to full professor." And then that still took several years because that's not easy but, yeah. I marked that phase. (P4-Female)

A starker difference in action between male and female participants was evident among MD-trained participants. Unlike male participants, four of the six MD-trained female participants narrated handling competing demands and opportunities by relinquishing clinical work. These participants created narratives of how abandoning their clinical responsibilities was the right choice for them:

I'm a [specialty name] by training and when I began working in the Dean's office in [year], I cut my practice way back and then actually stopped practicing in [year+6] when my Dean's office responsibilities grew and I didn't feel like I was doing a service to my patients anymore. So my husband has remained basically a full-time practitioner. He's actually on that clinical practice track and so it was harder for him to cancel patients than it was for me to cancel meetings. It was really always kind of hard for me to say "well my meetings are more important than the patients you see." He's a [specialty name] and takes care of a lot of chronically ill people and so most of the time, if I was in town and something came up, it was really up to me to shuffle my schedule around. And I will have to say, I never really felt resentful about it. (P2—Female) [redacted to protect anonymity]

So I was appointed in [year x] and, at that stage I was doing a full clinical load in addition to being a professor of medical education, leading medical education and curriculum review and things like that and doing teaching any my own scholarship. As that side of my career has got busier, I stopped doing ward work and things and went purely to ambulatory care. And then [in year x+12], I became [title] of [organization]. And because I'm now (pause) I need to travel quite a bit with that, I've suspended clinical work at the moment….(describing history of different roles prior to full professor) I had a big role in education and that's really what caused me to look for a change in career because I wasn't doing any of those things terribly

well, I didn't feel myself. Because I was just so busy. And so I think I wanted to make a decision about where my future would lie. And so this opportunity came up in [city] and I applied for it as professor of medical education. And so, from having those big three areas, I stopped doing the [clinical specialty name] and really concentrated on the learning and teaching for scholarship and the academic side. (P5-Female) [redacted to protect anonymity]

To contend with competing demands, both male and female participants took action. While some of those actions were identical (i.e., engaging in additional education), some actions were different in degree (e.g., one male participant found others to help do work, while a female participant sought others for advice, guidance and permission to take certain actions). One kind of action was only seen among female MD-trained participants: ending their clinical work.

Discussion

By studying the narratives of both female and male faculty members from five different countries who have achieved full professor status in medical education, we found that the personal events, career milestones, and facilitating or impeding factors impacting their ability to obtain full professor status were similar for all participants. However, our participants' narratives revealed that the experience of those elements differed significantly by gender, but not by national context.

Such variation between women's and men's experiences of life is an important aspect of feminist theory as it evolved in the second half of the twentieth century.[103] Feminist scholars of this era, including perhaps most notably Kate Millett, asserted that society was organized around male-dominant practices and principles that generated specific power-structured relationships and arrangements that disempower women (i.e., patriarchy).[104] Millett's theory of patriarchy highlights the many ways—ideological, social, biological, sexual, economic, educational, cultural, psychological—that men's domination of women is ever-present and inescapable.[104] Given the pervasiveness of the patriarchy, Millett asserted that bias- or power-free experiences—or observations of experience—cannot exist because the patriarchy is an ideology that permeates every aspect of

human experience.[104] Millett argued that everyday experiences are gendered.[104-106] From this perspective, the gendered experiences of striving to achieve full professor status highlights how the dominant ideology influences women's and men's lives, including their careers, in different ways.

If we take Millett's insights about gendered experience seriously, then we need to attend to how medical education is upholding specific practices and principles that impact women and men differently. Specifically, if we attend to women's and men's narratives of obtaining full professor status, Millett would have us acknowledge that medical education is underpinned with specific ideological practices and principles that are saturated with patriarchal power. Recent research into gender discrimination in organizations[107-109] reports that biases ingrained in ideology become increasingly pronounced at the higher levels of organizations. As individuals move up the ranks in an organization, ideological norms are more stringently upheld and fiercely defended.[107-109] The ideology of medical education is, therefore, keenly felt when individuals move up the professorial ranks towards full professor status. When individuals vie for higher positions—and therefore power—in an organization, the dominant group's ideology is working in full force, thereby setting "the stage for bias in promotion decisions-making processes."[110(p181)]

It is important to note that the upholding and defending of ideological practices and principles is not necessarily an intentional, explicit effort for those in power. Instead, as Millett explains, the dominant ideology is so deeply embedded in each person and each organization that it passes as accepted policies, norms, and traditions.[104] If the organizational structures of medical education (i.e., medical schools and teaching hospitals) want to address gender inequities in the professorial ranks, then the ideologies that pass unnoticed therein must be called out and changed.

The narratives of our participants give evidence that individuals of different genders feel the pressures of the dominant ideology in different ways, making their experiences of seeking full professor status very different. A man's personal life fact (e.g., having children) is a woman's personal dilemma that must be carefully navigated in her professional life. A man's professional inevitability (e.g., being promoted) is a woman's tenuous negotiation through social and system level labyrinths. A man's

recruiting of others (e.g., to take on work for him) is a woman's request for permission and guidance. A man's unquestioned professional path (e.g., medical work) is a woman's relinquishing of clinical activities.

So, why do women remain underrepresented at the full professor ranking in medical education? Our research suggests that the ways of thinking about and the processes for achieving promotion have hindered women's career progress. We contend that two important actions that can change this imbalance are: (1) acknowledging where and how patriarchal ways of thinking are shaping promotion policies and practices; and (2) actively working to change those ways of thinking. The findings from our research suggest places where these actions can start: recognize parenting as a challenge that both men and women face personally and professionally, and support all parents in navigating that challenge in ways that support gendered differences in expectations; recognize that promotion criteria (e.g., specific time durations in rank) are detrimental to women's advancement, and abolish them for everyone; recognize that recruiting support from others is a different kind of request for men and women, and provide ample opportunities for all kinds of requests from all people; and recognize that women have sacrificed clinical careers to achieve full professor status in medical education, and refuse to accept that loss as inevitable.

Our findings highlight the benefit of and need for in-depth qualitative data into women's and men's experiences of advancement in medical education. Qualitative research methods aimed at describing themes that cut across experiences are valuable; however, theme-focused inquiry would have led us to primarily highlight similarities. By delving deeply into participants' stories, we saw that beneath the common themes lay very different experiences of those elements irrespective of structural differences such as different promotional processes and approaches to addressing inequality (e.g. sex and gender equality policies). That said, our data has limitations. Our participants were drawn from five countries, but those countries do not represent the global diversity of nations, being predominantly white and sharing broadly similar cultural underpinnings. Furthermore, our participant sample represents a small selection of men and women who have achieved success within the dominant ideology. It would be of interest to repeat this study with mid-career researchers from different

national contexts who have not yet succeeded in achieving promotion to full professor. This is likely to be a larger group than full professors and would likely represent a greater diversity of individuals thereby facilitating the exploration of sexuality, race, and other intersectional[90] considerations.

We did not focus on specific concerns that have been shown to impact academic promotion such as mentorship,[111] research productivity,[112] or career-pathways[113] (e.g., researcher vs clinician educator). Additional in-depth exploration of these factors would be worthwhile. It may also be important to consider developing diverse research teams to engage in these studies. As an all-female team of investigators, with five researchers who have obtained full professor status, we have unique insider perspectives on this topic. While this point of view surely enabled us to note specific important data elements, a research team with different composition might have gleaned different insights.[114] Finally, we focused on what participants said, not how they said it. Notwithstanding that focus, we were struck by the language and metaphors used by our participants in their narratives. A useful secondary analysis of the data might explore the particular linguistic methods used by women and men when describing their experiences of seeking full professor status.[115]

Our data confirms our initial premise that to understand women's experiences of career progression in medical education requires studying how the topics represented on quantitative surveys are navigated in the messy and contextually complex realities of individuals. Relying on data that categorizes and counts the events, milestones and factors influencing women's engagement in academic medicine risks not only misunderstanding the impediments that limit women's success, but also erroneously assuming that solutions should target individuals and not the organization's ideologically shaped practices.

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Table 1: Participant demographics

		Female Participants	Male Participants	All Participants
Age when full professor status was obtained	Average age	45	44	45
	Earliest age	36	39	36
	Oldest age	58	49	58
Retaining clinical practice responsibilities	Participants who had clinical responsibilities	n=6	n=5	n=11
	Number who relinquished them while pursuing professor status	n=4	n=0	n=4
Children and childcare (Note: participants often relied on several forms of support and shared responsibilities with others)	Number of children participants had prior to receiving full professor status	None = 3 1 child = 3 2 children = 6 3 children = 3 4 children = 0	None = 0 1 child = 0 2 children = 6 3 children = 1 4 children = 2	None = 3 1 child = 3 2 children = 12 3 children = 4 4 children = 2
	Childcare support was used	No: n= 0 Yes: n= 12	No: n= 0 Yes: n= 9	No: n=0 Yes: n=21
	Form of childcare support used (note: several participants relied on a community of individuals and organizations)	Self: n= 3 Spouse: n= 4 Family: n=3 Paid childcare (e.g., nanny, daycare center): n=12	Self: n= 2 Spouse: n= 6 Family: n=1 Paid childcare (e.g., nanny, daycare center): n=4	Self: n=5 Spouse: n=10 Family: n=4 Paid childcare (e.g., daycare center): n=16
	Who was responsible in unexpected situations (e.g., if child left school due to illness, who attended to child)	Self: n= 8 Spouse: n= 8 Nanny: n=2 Family: n=1	Self: n= 5 Spouse: n= 9 Nanny: n=0 Family: n=0	Self: n= 13 Spouse: n= 17 Nanny: n=2 Family: n=1
Care for other	Number of elders cared	No: n = 7	No: n=2	No: n=9

family members (e.g., elderly parents) (Note: participants often relied on several forms of support and shared responsibilities with others)	for while obtaining full professor status	Yes: n=8	Yes: n=7	Yes: n=15
	Support was obtained	No: n=7 Yes: n=1	No: n=4 Yes: n=2	No: n=11 Yes: n=3

Figure 1: Narrative excerpts from two female participants illustrating how career success was not perceived as an inevitable outcome.

I was on maternity leave actually and I applied for a professorial job... In my cover letter, I stated that I'd just had a baby and I was on maternity leave... But I would be available for an interview if I was to get through the selection process... And then a colleague of mine also went for the same job and I was actually a reference for [their] application and I know [their] CV really well. [They were] probably about [x] years behind me academically… [They] got the interview for the job and I didn't. [They were] gob smacked: "My God! You've not got an interview?" And I was like: "No I haven't." And I asked [the chair of the hiring committee] for feedback—really politely, super politely. I was like: "Thanks for letting me know. It would be really helpful to my personal and professional development if you give me some feedback on my CV." The person who was leading the search committee didn't get back to me and never responded to my email. Well, if I had doubts before that I had been discriminated against because I had just had a baby and was on maternity leave, if I didn't think that then, I certainly think that now. (P12-Female) [redacted to protect anonymity]

I started looking at the full professors, so the people who outranked me in my local institution. What was just staggering to me was the extent to which I was academically running circles around them. We had full professors—almost all male I should point out—and I had more grant money and more publications and more service activity. I was on international organizations and all those sorts of things and these guys were doing nothing of the sort. They were coasting. Big-time. I got really annoyed because they put me up for full professor the first time in [year x] and I got turned down. And I got turned down because I had not spent sufficient time at the associate rank. That's what the official story was, but I'm quite convinced it has nothing to do with that because when you read the fine print of the guidelines, there's nothing in there that says how long you have to spend in rank. There's no number….Then they put me up for promotion again and they turned me down in [year x+1] and they turned me down in [year x+2]. I was turned down for promotion three times. By the time they turned me down the last time I had ## papers and ## million in grant money. And there was no way anybody at that rank, nobody in the associate ranking here at this institution, was pulling in that kind of recognition….When I finally did get promoted, it was cause for major celebration, agreed. But it was also kind of bittersweet. It was sort of like: It took you that long? Shame on you. (P14-Female) [redacted to protect anonymity]

Figure 2: A male participant's story of shifting his career away from primarily a physician doing biomedical research, to a professor in medical education doing social science research

I was doing all kinds of projects, and that surprised [the hospital administration] because usually people do their clinical job and that's it. But I liked to do projects too. Then [the hospital administration] was asked by the academic hospital if they had people interested in medical education, or that could be moved to a tenured role to become a professor in medical education. They had to look through their hospital, and well, there are a lot of consultants in such a hospital, but they chose to talk to me. I thought: "Well, they asked me!?" They said: "We wanted to professionalize medical education in our teaching hospital." I didn't really know what they meant but I said: "Yes, it sounds good. It sounds interesting."

….

[in speaking to people who could be mentors, I'd explain:] "I'm taking all kind of jobs. You know about it, and have expertise. Do you want to mentor me?" And they did! So I started to do all kind of research I didn't know how to do. They tried to help me by showing me their way of looking at things. I had to change from a biomedical researcher, to a researcher in medical education. And in their eyes that's social constructivist and, yeah, I was busy – busy for years – trying to understand social constructivism, and to value it. I was really lucky to find them [mentors].

….

I was very lucky in always having people around like my wife, who was supportive. I had, and still have people, in this hospital doing all kind of things I can't do. During the years it got formalized—so people that did a lot of work from me are now the head of medical training or whatever. So, yeah, a big part of it is also making other people work for you and for the good cause, the mission, medical education. Delivering high-quality education is always the mission. (P20-Male) [redacted and edited to protect anonymity]