

RETAINING AND ADVANCING FEMALE PHYSICIANS

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ABSTRACT

After decades of effort to achieve gender diversity in higher education, the Association of American Medical Colleges (AAMC) announced in 2018 that the majority of students matriculating into medicine were now women. However, data also collected by the AAMC showed that 40% of women will seek part-time work or leave medicine altogether within six years of completing medical training. The exodus of female physicians from practice and academic positions is a critical issue endangering the future of American healthcare. The AAMC predicts that there will be a shortage of 122,000 physicians by the year 2032, driven by the increasing health care needs of a growing population of elderly Americans. Our descriptive survey and review of the literature describe unmet needs, barriers, cultural biases, and concerns that inhibit female physicians from sustaining long-term medical careers. Physician burnout from inflexible work hours and demoralization, the inaccessibility and expense of childcare and maternity leave, and societal gender expectations regarding domestic chores at home are some of the core issues revealed from our analysis. In addition, for women who must sustain the rigors of medical education and training at the peak of their child-bearing lives, reproductive education, family planning choices, and mentorship from other colleagues is needed in the current medical education system. Investigating and adapting successful policies for diversity and inclusion of women (ex. maternity leave mandates, childcare support, breast-pumping facilities), utilizing technological advances that relieve elements of burnout, and exploring diversity supportive work models from other arenas in the business world may be the solution to retain and advance the next generation of female physicians.

Keywords: Gender gap, Gender parity, Maternity leave, Paternity leave, Diversity and Inclusion, Reproductive health, Female, Medicine, Medical School.

INTRODUCTION

Between 2016 and 2018, the majority of both applicants and matriculates into the medical field are represented by women. By 2018, 50.9% of medical school applicants and 51.6% of matriculants were women (AAMC, 2018). While this is an indication that female representation in the field is increasing, there are strong indicators that such gains are short-lived. A survey by Paturel that reached 700,000 physicians revealed that 40% of female physicians transition to a part-time position (22.6 %) or left their practice entirely within six years of completing their residency (Paturel, 2019). Currently, the Association of American Medical Colleges (AAMC) also predicts that by 2032, there will be a shortage of 122,000 physicians due to the growing

population of patients age >65 in the USA (AAMC, 2019). This dangerous trend warrants a thorough investigation of the unmet needs, professional barriers, and general concerns of female physicians to revise current educational, organizational, and societal policies that contribute to physician attrition and exodus.

Other researchers have reported that women make up the majority of graduating physicians, but are noticeably underrepresented in leadership positions (Kilminster et al., 2007); (Ramakrishnan et al., 2014). Female physicians also seem to self-select into positions that limit their career potential and are more likely to work part time and specialize in lower-compensation specialties (Jefferson et al., 2015). The lack of female representation is not unique to medicine, as many businesses also struggle with gender inequality. The prevalence of women is much lower than men in most leadership positions. Business Insider found that less than 5% of Fortune 500 CEOs were female in 2018. Although the pay gap is improving between women and men, when controlled for position level, the opportunity gap is still a significant barrier to gender equality. The median female salary is still 79% that of men (PayScale, 2019).

Women are much less likely to work full time and be in higher level positions. An article in the Wall Street Journal noted research revealing women tend to miss out on the initial jump into management (Fuhrmans, 2019). The low rate of entry into leadership positions initiates a chain reaction that results in the large discrepancies in median pay and the lack of female mentors for future generations.

When asked why female physicians left medical practice or transitioned to part-time work, female physicians most often cite familial concerns (Paturel, 2019). The length of medical education and the stress of residency training period currently force female physicians of reproductive age to make a difficult decision to choose between career advancement or their family. Women in medicine also experience greater limitations and barriers than male physicians. For example, over 70% of women in medicine report experiencing gender discrimination (Templeton et al., 2019). This added pressure contributes to decreased satisfaction in their career and leads to observed attrition. There are also unspoken systemic concerns that contribute to the problem. For example, one study showed that female residents are given less autonomy than their male counterparts (Meyerson, 2017).

We conducted a survey of female physicians to further describe the contributing factors that explain the attrition of female physicians from clinical and academic practice and will further describe solutions to counteract this dangerous trend.

Method

A primary survey data was performed from a sample of female physicians through the data collection tool Survey Monkey and Social Media. The survey measured labor hours at work and at home, maternity-paternity leave history, and included questions about pregnancy and reproductive health. An open-ended question was used to capture a wide variety of opinions regarding the cause for the exodus of female physicians from practice. Key insights and learning's from these analyses were utilized to propose a multi-faceted solution to this complex problem.

RESULTS

Forty-four female physicians voluntarily responded and completed the survey (See Table 1). They represented a broad range of medical fields, but the majority of physicians (52.7%),

practiced in general medicine or a subspecialty within Internal Medicine (Table 1, #1). Seventy-five percent of respondents were currently attendings and only 15.9% were in training at the time of completing the Survey (Table 1). The majority of respondents consisted of early to mid-career female physicians with 59.6% of the respondents born between 1977-1995 (Millennials) and 40.6 % born between 1965-1976 (Generation X) (Table 1).

In this cohort, 71.9% reported working full-time while 28.1% either worked part-time or less (data not shown). The work hour demands were substantial in this cohort. A large portion of women respondents (46.51%) reported working 49-60 weekday hours weekly and an additional 20.9 % of the cohort worked more than 60 weekday workday hours weekly (Table 1, #4). Twenty-five percent of respondents were required to work between 2-4 night shifts a week (Table 1, # 5). In addition, 37.2% of respondent worked up to 2 additional workdays on weekends/holidays per month, while another 34.8 % worked between 3-5 additional workdays on weekends/holidays per month (Table 1, #6).

Fifty-seven percent (57.14%) of eligible respondents had a child as an attending. A smaller percentage of eligible respondents had children during residency (23.8%) and fellowship training (26.19%) (Table 1, #7). The time allocated for maternity varied in this cohort. Only 17.7% of respondents were allocated 10- 12 weeks of maternity leave (Table 1, #8). Twelve weeks of unpaid leave is mandated by US labor law under the Familial and Medical Leave Act of 1993 for mothers or newborn or adopted children who work for companies with more than 50 employees. In the open-ended segment of this question, respondents replied that maternity leave was often voluntarily reduced in order to complete medical training on time or because maternity leave was unpaid. Maternity leave time was also allocated by some respondents by utilizing vacation days, paid time off (PTO), sick days, and short-term disability. Others were provided maternity leave, but were obligated to “*Pay back*” time or money to the clinical practice or to their medical training program.

The majority of women, 81.2%, had a partner who also worked full time (Table 1, #9). Forty eight percent of respondents (48.78%) reported doing more chores than their partners while 34.15% of respondents reported equal sharing of household chores (Table 1, #10). On average, the women surveyed reported on average of about 29 hours a week to complete household chores while their partners contributed much less (21 hours weekly) (data not shown).

The vast majority of women also reported that family planning education and reproductive medicine support was inadequate throughout their medical training and career (84.09%) (Table 1, #11).

Forty-four female physicians voluntarily responded and completed the survey (Table 1).

When the cohort was asked in an open-ended manner about why women physicians are leaving medicine or reducing clinical or academic duties, important insights were elicited. These responses were broadly grouped into 7 categories of Issues (Table 1).

1. Physician Burnout: Multiple respondents describe high physician burn-out, the lack of work life balance, and the desire to prioritize the needs of family members as core reasons for women to decrease work obligations. Healthcare delivery systems are inflexible in terms of work hours, demand levels of personal sacrifice that compromise family structures, and are increasingly intolerable for practicing physicians due to lack of professional respect and heightening financial pressures to increase clinical work.
2. Childcare, Maternity leave, and barrier related to breast-pumping: Multiple respondents describe inflexible work hours in medicine that make childcare inaccessible logistically and unaffordable financially. Most childcare programs are not available during normal medical work day hours (ex. 7 am to 7 pm and 7pm to 7 am). Women must deal with emergency healthcare issues of their children while maintaining normal work hours given the

lack of onsite care services. Maternity leave with or without pay is associated with “Pay back” for time off, penalties like the loss of sick and vacation days, and career opportunity losses (ex “Lack of productivity” at critical moments for career development). The lack of breast pumping and breast-feeding protection in the workplace is also emphasized and increasing the burden of maintaining infant health while working in clinical practice.

3. Societal Bias: Respondents note that societal standards for women as it relates to maintaining domestic responsibilities are far different than men. Women are more responsible for childcare duties than men.
4. Lack of Pay and work-time flexibility: The lack of pay and work-time flexibility in terms ability to work and be paid for amount of clinical time that is available possible to balance work life was also described.
5. Organizational Barriers: Many workplace barriers are perceived as contributing to the lack of female representation and advancement in medicine. Workplace environments are largely driven by male counterparts and unequal treatment for the equivalent work and accomplishments were described by female respondents. Penalties for pregnancy, maternity leave, and caring for sick children limit the ability to seek promotion and advancement. Logistics like early am or late divisional work meetings exclude women who must prioritize childcare responsibilities.
6. Other Diversity Issues: Beyond gender, the lack of representation of by diverse students with diverse profiles was inherent in medicine and described in the survey.
7. Reproductive challenges for young women: Stressors of medical training overlap with reproductive years for young women. Childbearing is deferred to early attending years, a pivotal period of time for career advancement and academic “Productivity.” Young women do not have the leverage to integrate physical demands of childbirth with career growth.

Table 1			
A PRIMARY SURVEY DATA WAS OBTAINED FROM FORTY-FOUR FEMALE PHYSICIANS USING SOCIAL MEDIA. THE SURVEY COVERED QUESTIONS ABOUT LABOR HOURS (WORK AND HOME), MATERNITY-PATERNITY LEAVE HISTORY, PREGNANCY HISTORY, AND REPRODUCTIVE EDUCATION.			
1. What is your field in medicine	Answer Choices	Responses	
	Anesthesia	2.27%	1
	Dermatology	0.00%	0
	Emergency medicine	2.27%	1
	Pediatrics	15.91%	7
	Psychiatry	0.00%	0
	Internal medicine (Cardiology, Nephrology, Pulmonary, Hematology, Oncology, Immunology)	52.27%	23
	Surgery (General, CT surgery, Neurosurgery)	0.00%	0
	Subspecialty surgery (ENT, Orthopedics, Ophthalmology)	4.55%	2
	other	15.91%	7
	Total		44
2. What stage of medical education and practice are you in?	Answer Choices	Responses	
	Medical Student	0.00%	0
	Resident	0.00%	0
	Fellow	15.91%	7
	Attending	75.00%	33
	Clinical practice	9.09%	4
	Other (please specify)	0.00%	0
Total		44	
3. Based on your birthday, which generation cohort do you belong to?	Answer Choices	Responses	
	Gen Z: Born 1996-TBD	0.00%	0
	Millennial Gen Y: Born 1977-1995	65.91%	29
	Generation: Y: Born 1965-1976	34.09%	15
	Baby Boomer: Born 1946-1964	0.00%	0
	Silent generation: Born before 1945	0.00%	0
Other	0.00%	0	

	Total		44
4. How many hours do you work on weekdays weekly (Monday to Friday) at your organization?	Answer Choices	Responses	
	0.12 (1 work day)	75.00%	33
	13-24 (2 work days)	6.82%	3
	25-36 (3 work days)	11.36%	5
	37-48 (4 work days)	6.82%	3
	49-60 (5 work days)	0.00%	0
	>60 (beyond work day hours)	0.00%	0
	Total		44
5. How many night shift hours do you work weekly at your organization?	Answer Choices	Responses	
	0.12 (1 work day)	75.00%	33
	13-24 (2 work days)	6.82%	3
	25-36 (3 work days)	11.36%	5
	37-48 (4 work days)	6.82%	3
	49-61 (5 work days)	0.00%	0
	>60 (beyond work day hours)	0.00%	0
	Total		44
6. How many hours do you work on weekends and holidays monthly on average at your organization?	Answer Choices	Responses	
	Anesthesia	2.27%	1
	Dermatology	0.00%	0
	Emergency medicine	2.27%	1
	Pediatrics	15.91%	7
	Psychiatry	0.00%	0
	Internal medicine (cardiology, Nephrology, Pulmonary, Hematology, Oncology, Immunology)	52.27%	23
	Surgery (General, CT surgery, Neurosurgery)	0.00%	0
	Subspecialty surgery (ENT, Orthopedics, Ophthalmology)	4.55%	2
	other	15.91%	7
Total		44	
7. If you have children, at points in your career did you have them? (Multiple answers can be selected)	Answer Choices	Responses	
	Medical Student	0.00%	0
	Resident	0.00%	0
	Fellow	15.91%	7
	Attending	75.00%	33
	Clinical practice	9.09%	4
	Other (please specify)	0.00%	0
	Total		44
8. If you have children, what amount of maternity/paternity leave were you offered on average? Feel free to add comments in text box below.	Answer Choices	Responses	
	0-2 weeks	7.32%	3
	2-4	17.07%	7
	4-6	9.76%	4
	6-8	7.32%	3
	8-10	7.32%	3
	10-12	17.07%	7
	Other	29.27%	12
	Total		41
9. Your Life Partner works fulltime or part-time	Answer Choices	Responses	
	Works full time	81.82%	36
	Works part time	2.27%	1
	Does not work	0.00%	0
	Total	11.36%	5
			44

10. Compared to your spouse/partner, do you do more of the chores, does your spouse/partner do more of the chores, or do you equally split the chores in your household?	Answer Choices		Responses	
	I do more of the chores		48.78%	20
	We equally split the chores		34.15%	14
	My partner/spouse does more of the chores		12.20%	5
	Neither my partner/spouse nor I do any of the chores		4.88%	2
	Total			41
11. Given that developing a professional medical career requires a long-term time investment, do you feel that family planning and reproductive support was adequate in medical education and medical work culture? Answer yes and no and feel free to write your comments in your own words.	Answer Choices		Responses	
	Yes		11.36%	5
	No		84.09%	37
	other		4.55%	2
	Total Respondents: 44			

DISCUSSION

Our data supports that there are many personal, societal, and organizational barriers that challenge female physicians from maintaining full-time clinical and academic careers in medicine. This inevitably leads to a dearth of senior female physicians in academic medicine, further limiting the availability of suitable mentors to young female physicians and perpetuating the lack of investigation and discovery into policies that improve gender diversity and inclusion.

Gender Diversity has been shown in many arenas in business, health, and public arenas to be beneficial and profitable to organizations. Gender diversity, for example, has been shown to drastically increase the performance of venture capital groups (Gompers & Kovvali 2018). In science, health, and medicine, gender diversity increases the health and economic performance of nations (Shannon, et al., 2019).

Specifically in medicine, it has been shown that female physicians have improved patient outcomes over male physicians (Myers & Sutcliffe, 2018). While the cause was not determined in the study, the data concludes that the skill sets of female physicians are on par or superior to male counterparts and that the lack of appropriate skills sets is not the reason why there is limited female advancement in medicine.

As is the case with any diversity initiative, exposure is often the first step to awareness and understanding. For example, a study has shown that private equity executives with daughters were much more likely to hire women and enable their firm to perform at a higher level (Gompers & Kovvali 2018). Human resources policies can have reciprocal effects and should be examined more carefully for gender equity (Stamarski & Son Hing, 2015). If women are not involved in a company, the policies and behaviors can become biased against their inclusion and further jeopardize the future of the organization.

Other nations have taken initiative for more comprehensive inclusion of women in the work-force. For example in Japan, to offset a major labor shortage crisis, the government has worked to focus on the public perception of gender roles and provide support (Boykoff & Garcia, 2019). In 2013, Prime Minister Abe instituted “*Abenomics*” which includes “*Womenomics*” to help women join the workforce and hold onto professional careers. These policies included improved parental leave policies and improving access to daycare facilities. Parental leave was increased to up to a year for new parents. These national-level policies have led to over 1 million

women joining the workforce, and led to a higher percentage of women rejoining the workforce after having a child (Foreign Policy, 2019). In contrast to Japan, the U.S. ranks last in paid time off for mothers (Gorman, 2019).

RECOMMENDATIONS

Physician Burnout: Retaining and advancing female physicians may require a comprehensive review and adjustment of current medical work hours and an improved approach on work “*Penalties*” due to maternity leave or caring for children or aging family members. When a worker leaves the workforce, they incur a wage “*Penalty*” upon their return. Workers who take a break for 12 months or longer experienced an average wage penalty of 7.3% compared to a similar worker who did not take a break (PayScale, 2019). Women take more and longer breaks than men, primarily for taking care of children and aging family members, and therefore, suffer more from this “*Time-off*” penalty. Increasing female participation can be accomplished by many methods, including items such as greater flexibility around working hours and location (Fottrell, 2019).

Maternity and Paternity Leave

Legislative and regulatory shortcomings related to maternity and paternity leave in medicine contributes to early attrition of female physicians. The Federal Family and Medical Leave Act require employers to offer 12 weeks of maternity leave to employees. FMLA is not mandated for those in medical training. The American Medical Association of the AMA “*Encourages*” minimal maternity of 6 weeks for students, but these recommendations are not enforceable for the 40% of trainees who have children during their training (Murphy, 2019). Our analysis has described that female physicians are pressured to shorten maternity leave to finish training on time or due to financial reasons as maternity leave is unpaid. Many utilized sick-days, vacations days, or paid time off to extend allotted leave. Many were required to pay back organizations or training programs for “*Time lost*”.

The United States also does not guarantee paid parental leave. In 2016, fewer than 15 percent of private workers were given the option to take paid family leave, according to the National Compensation Survey conducted annually by the U.S. Bureau of Labor Statistics (Murphy, 2019).

Increased parental leave for both parents is a step towards addressing this and normalizing re-entry to the workforce following the birth of a child (Paturel, 2019). To have true equality, one must create a system where both parents are expected to care for their child and leave following a birth is a family activity, not a mother only activity. After the normalization of parental leave, proper childcare systems are essential for gender equality in the workforce (IFC, 2017). This enables men and women to pursue careers equally during their child-rearing years. When these family factors area addressed, women will have the chance to stand on equal footing with men in their careers.

Childcare

Support for childcare either in-house or with support of a partner organization may mitigate domestic demands at home. Particularly in medicine, physicians are expected to work non-traditional hours, and access to childcare that covers these hours is not widely available.

Providing such services can serve as a selling point for recruits and can reduce employee turnover (IFC, 2017). The same report also showed that the expense of providing such a service is off-set by the increase in productivity by staff who utilizes the service.

Reproductive Health

The respondents in our survey report that reproductive health education and family planning education and support was inadequate during medical training. For professional women, delaying starting a family to advance in academic and clinical careers has downstream consequences for reproductive health and fertility. In the USA, there is limited insurance coverage for reproductive health and infertility. Only 17 states have passed laws that require insurers to either cover or offer coverage for infertility diagnosis and treatment (NCLS, 2019). Addressing policies for coverage to assist young career women maybe one avenue to provide support.

Salary Gap

Despite the Equal Pay Act of 1963, women's salaries in all categories are about 20% below men that do the same work (Fisher, 2018). In healthcare, the wage discrepancy still exists. According to a 2016 study conducted by the Journal of American Medical Association, female physicians earned about \$51,000 less than male physicians with similar job responsibilities (Fisher, 2018). In 2019, some 56 years after the Equal Pay Act was passed, we still see an earnings gap. In recent years, many states have begun enacting additional legislation to help close the pay gap. Fisher Phillips has created an amazing interactive map that shows state by state laws that have been enacted to help remedy this problem and can be found here: <https://www.fisherphillips.com/equity>. Additionally, legal issues are being brought up in several states including North Carolina and California (Fisher, 2018). The pay gap needs to be closed in order for women to want to return to their jobs.

Promotional Biases

There are gender driven practices/values that are barriers to successful promotion of women in the workplace.

As the organization looks to retain women within its system, new and more aggressive diversity and inclusion programs should be looked to as solutions. It is important to leverage social networks and institutional resources to support staff throughout their medical career to help in navigating gender imbalances.

At an institutional management level, this should take the form of incentives and internal diversity and inclusion goal-setting. Establishing diversity as an organizational aim alongside revenue or reputational objectives will send a message to executives with the authority to enact change and to demonstrate the organization's commitment to its staff. While diversity is in itself a worthwhile endeavor, it has also been shown that it can drive financial success. Research in the world of venture capital has shown that the success rate of investments is negatively impacted if the team is homogeneous in its background (Gompers & Kovvali, 2018).

Metrics should be adopted to identify areas of focus or to gauge progress toward the goal of retaining doctors who are female. In a study of thoracic surgery training, Meyerson noted that the level of autonomy afforded to residents was inconsistent between genders (Meyerson, 2017).

Tracking resident responses immediately after surgeries (across all surgical disciplines) to perception of autonomy and operative difficulty could be of use in determining if there is bias (or even a perception of one) which would in turn influence doctor engagement. Other examples to first baseline and then track include: wages controlled for specialty and years in practice, average hours of continuing education training compared across gender and distribution by gender of physicians against years in practice. In all cases, responsibility and accountability should be taken vertically up into the organization.

Mentorship can also be a strong influence on professional engagement. With female representation decreasing as years in practice increase, there are fewer opportunities for women to engage in informal mentoring or social networks. This is a similar phenomenon as shown for other minorities (Sambunjak, 2006). Given this, formal programs should be employed to not only match potential mentees with mentors, but structure formal training for mentors. Realistic expectations should be set between the organization, mentee and mentor and executives within the firm should be engaged in obtaining feedback on the program and supporting as needed (Insala, 2019).

Women are much more likely to advance when companies have certain factors, mainly related to flexibility and comfort for women in the workplace (Shook & Sweet, 2019). It is understandable that one must feel safe in an environment before they would look to advance within it. The relationship is akin to a hierarchy of needs. If we cannot meet women's most basic needs for security, is it any surprise that they are absent from higher levels of the medical career ladder?

Corporate culture changes will be necessary to effect meaningful gains with the retention of women in the workforce. These changes begin with a re-alignment of management's professional expectations to meet the needs of women. In particular, barriers which prevent women's participation in the workforce need to be identified and removed. Accenture conducted a 2018 study in which over 22,000 working men and women with a college education in 34 countries were surveyed (Shook, 2018). The study measured participant perception of important issues contributing to workplace culture. Out of more than 200 personal and workplace factors, Accenture identified a list of 14 key factors that are most likely to affect change. These factors include gender diversity as a priority for management, clearly stating gender pay-gap goals, a strong women network that is also open to men, teleworking, virtual meetings, comfortable environment to report sexual harassment, to name just a few. In work environments where these factors were present, women in the US were 5 times more likely to reach senior manager levels (Fottrell, 2019). Focusing corporate culture efforts to include these factors is a powerful first step to improving diversity and increasing the women retention rate.

Incorporating new technology to improve productivity is another strategy for improving women physician retention. Increased productivity effectively means less effort is required to produce the same amount of work, thereby lowering the work burden on employees. This is especially important for female physicians who work a demanding schedule in both personal and professional lives. This demanding schedule is a main cause for the female physician attrition rate (Paturel 2019). Large amounts of data are currently being collected by the industry. Big data analytics can analyze this data to identify trends and improve hospital operations. Upgrading hospital equipment that includes Medical Device Integration and AI will also lead to big productivity gains (BFW 2019).

Streamlining and optimizing organizational process flows will also increase physician productivity. Metrics can be used to understand what factors are causing productivity losses.

This is done by using a “*Good*” definition for productivity and metrics to measure it. Metrics like Work Relative Value Unit and hospital hours are two good ways to measure physician productivity. Productivity losses can then be analyzed and identified. For example, productivity loss may be caused by overworked physicians or bottlenecks in resource intensive operations like surgery. Once these causes have been identified, management can correct these issues by re-allocating resources and re-designing processes. This approach also allows for strategic resource planning, so that businesses can work towards a future that is mutually beneficial for employees and the company in Table 2.

Table 2 AN OPEN ENDED QUESTION WAS USED TO CAPTURE A WIDE VARIETY OF OPINIONS REGARDING THE PERCEIVED CAUSE FOR THE EXODUS OF FEMALE PHYSICIANS FROM PRACTICE.	
CATEGORY	OPEN-ENDED RESPONSE (Respondent #)
1. Physician Burn-out	“ <i>Exhaustion. Lack of support in academic centers to promote work life balance, healthy lifestyle(no gym access during day), no childcare (38)</i> ”
	“Work life balance. There needs to be allowance in the workplace for part time jobs, then physicians won't leave completely (35)”
	“Burnout. Women have large amount of expectations at home, long work hours something has to give (32)”
	“I think physician burn out is high and many women have to work part time to balance family life (30)” “ <i>Work Life. Wanting to be a stay at home mom (28)</i> ”.
	“It angers me that women who work part time are looked at in these surveys as taking spa days and eating bonbons on their days ‘off’. This was not my experience at all. I want to be clear that i am a happy person and that i enjoy my career and love my family, but that I am always on the verge of being majorly burned out (26)”
	“Inflexibility of design and structure of care delivery-ie should be able to be more team based so there’s more coverage, asynchronous communication platforms so more can be done outside an outpatient encounter (20)”
	“I think it’s unfortunately extremely hard to be a parent as well as a practicing physician. I also think people are starting to feel like the sacrifice is not necessarily worth it. Why give up time with family when we are paid less and less and seen as a number and replaceable. The expectations have grown exponentially and the respect has diminished considerably (3)”
	“Huge amount of physician burnout. My guess is people in my generation are looking to retire early. Consequence of working too hard and feeling powerless when Health system CEOs and insurance companies keep grinding us down (5)”
	“Medicine needs to be more flexible and more contingencies when there are emergencies at work or in personal life. More staff, more budget to get more staff. If future doctors see that a medical career can be managed with family life, it will attract more candidates. And I think medical education needs to be revamped—too expensive (mostly prohibitive to non-affluent people), too “picky”, too homogenous (8)”
	“More reasonable work life balance. Acknowledgment that current “full time” is more like 60 hours of work a week, and adjust expectations for full time employees down to 40 hours. (12)”

	<p>“Easily burned out by increased workload, lack of respect from patients, especially for nonsurgical specialties, non-clinical administrators (who don’t make any clinical contributions but make rules and regulations). Administrators should be true clinicians first and see patients too so that real world knowledge is applied (not MBAs with no clinical involvement at all). Reduced work week with alternating schedules with colleagues to at least days per week like other companies (16)”</p>
	<p>“Increasing demands from insurance companies and hospital systems to do more and see more patients with less time and fewer resources. This leads to dissatisfaction, burnout, and more work brought home which interferes with home life (18)”</p>
<p>2. Child Care, Maternity Leave, and breast-pumping.</p>	<p>“Good childcare is expensive and difficult to coordinate with work schedule required of physicians (sometimes 7am-7pm) (37)”</p>
	<p>“Time demands are too high. Hard to be full time and have young children. Childcare is too expensive and hard to coordinate with physician hours. Don’t want to miss out on their childhoods! (37)”</p>
	<p>“The high cost of childcare making the expense of working full time less financially beneficial. The knowledge that parental involvement is important for child development (4)”</p>
	<p>“The schedule especially in the inpatient setting can be inflexible (this is probably true of outpatient setting). As a mother, this can be especially challenging. I have to be at work at 7am. Most daycares don’t open up that</p>
	<p>early. In sure there are a myriad of other reasons why women go part time in medicine but I definitely think having a family is a big part of it (11)”</p>
	<p>Many healthcare systems and hospitals do not provide access to services, perhaps most importantly, on-site childcare or emergency childcare services. Faced with potential lack of childcare I suspect women are faced with the difficult position of attempting to find childcare on odd or off hours.</p>
	<p>Adding onsite services I think would go at least some way towards fixing this (13)</p>
	<p>“inadequate support for family care, maternity leave, breast pumping/breastfeeding support. longer time for paid maternity should be offered (6 mo), no penalties for breast pumping breaks (people asked to extend their day), and options for work sponsored daycare (25)”</p>
	<p>“Women are made to "feel bad" for taking time out to "pump" (If nursing their children" or taking time off for their Children (29)”</p>
	<p>“Not adequate support for family care, maternity leave, breast pumping/breastfeeding support. longer time for paid maternity should be offered (6 mo), no penalties for breast pumping breaks (people asked to extend their day), and options for work sponsored daycare (25)</p>
	<p>“Honestly, family planning. We get NO paid maternity leave and have to make up call if we do take time off. It’s impossible without family help, and then once we start making money we end up needing to reinvest in our family- from a financial and emotional perspective (17)”</p>
<p>3. Societal Bias regarding female roles at home and work</p>	<p>“Women do not get the same treatment as men and no one accounts for the multiple roles women have and societal expectations of a mother and wife at home” (39)”</p>
	<p>“I think women are given different set of "standards". Besides clear evidence of wage gaps compare to men in the same field there is an overall lack of "quality of life" for women. Women often sacrifice time away from children. lack of adequate maternity leave (29).</p>
	<p>“Someone in the family needs to stay flexible for the kids and house. Also it’s hard for both spouse to find a desirable job in the same city. Lack of help from men also (27)”.</p>

	<p>“I did work 80% time for 3 years after my kids were born bc I had a very difficult time managing all obligations with very young children. My husband was supportive, but probably bc I do a lot more than he does for the kids and at home (which is admittedly, very irritating). I am always the one who is expected to make sure that the babysitter is relieved in the evenings and that special events are attended as he doesn’t feel that his job offers the same flexibility (26)”</p>
	<p>“Make child rearing and housework completely shared responsibility, or even have a partner with a more Flexible job that can be there when children are sick or there is a childcare issue. It worked for me. We also need more understanding of the need to take off for doctors’ appointments, sick children, childcare problems and special events for kids without penalty for both men and woman. Everything needs to be split between parents, not just one person’s responsibility. This is what works for me (9).</p>
<p>4. Lack of pay flexibility for paid work;</p>	<p>“I believe women need to be allowed more flexibility and allowed the opportunity to be paid less to work less (34)”</p>
<p>5. Organizational Barriers</p>	<p>“Unfortunately limitations on scheduling, and having to be present for early am meetings, limits many women who have young children. Furthermore, multiple breaks taken by a male physician for cigarettes generally tend to be let go, but a woman leaving mid day for 30 minutes to pick up a sick child is frowned upon and commented on by every superior (22)”</p>
	<p>“Women leave medicine or go part time for a variety of reasons, including but not limited to: 1. Misogynistic environments, 2. Gender pay gap, 3. Unfair treatment in the workplace, colleagues getting more recognition for same or less accomplishments, 4. The punishment that comes with getting pregnant, having a baby, wanting maternity leave, dealing with a sick child, 5. Years of not being valued... the list goes on and on.” (36)</p>
	<p>“Unfortunately limitations on scheduling, and having to be present for early am meetings, limits many women who have young children. Furthermore, multiple breaks taken by a Male physician for cigarettes generally tend to be let go, but a woman leaving mid day for 30 minutes to pick up a sick child is frowned upon and commented on by every superior (22)”.</p>
	<p>“Disillusioned with medicine when treated differently than male counterparts (different degrees of respect shown at all educational achievement levels from med students to attendings) , disparities in salary and promotion rates, desire to prioritize family life more (21)</p>
	<p>“Culture of medicine still male driven - hard to feel valued and making progress. Probably leads to burnout. Representation matters - having women and people who empathize in these demands and how it’s losing some of the most talented people is important so more women in leadership and stop the “when I was in training it was so much harder” or “I’m so great I survived the boys club.” The cycle of abuse needs to stop. 4. No career progression pathways — either on track or not” (20)</p>

	<p>“Poor support from institutions for women w respect to their ability to have flexible schedules. Institutions make it hard for women to breastfeed and take care of children, should they decideto have them. Men are promoted more easily than women. Men are placed in positions of power and leadership ahead of women, and are frequently paid more. While women have taken on more responsibility outside of the home, it is not diminished their emotional and home based responsibilities within the home -- for example, arranging daycare or class activities, setting up doctors’ appointments for children. Overall, medicine does a poor job of supporting women in their profession. Ways to improve it: More flexible scheduling including part-time Look at how women are getting paid and how they are getting promoted Institute policies that start in medical school to allow mothers to breastfeed and care for children Improve maternity leave /parental leave within medical school and residency Recommend nationwide parental leave policies for hospitals to implement for their physicians Ensure that women are placed in leadership positions at the same rates as men (10)”</p>
6. Other Diversity Problems not related to Gender	<p>“There is a limited number of residency slots and this has been frozen for years due to Medicare funding freeze. Additionally, medical schools accept the same kind of applicants. Even if varied ethnically/racially, the applicants are usually very similar in terms of academic achievement and life trajectory, almost perfect. Nontraditional applicants are rarely accepted. This is a lack of diversity too. (33)”</p>
7. Reproductive Challenges of female students and young physicians limited by demands of higher education	<p>“The first 6 years of training often overlap with reproductive years, and the constraints of having children while in residency and fellowship disproportionately shifts the pregnancy/maternity leave time blocks to early attending life. Early-career attendings have limited leverage in terms of negotiating terms of leave. Even more importantly, if you do not already have an established academic career or patient panel, your early-career years will look "less productive" and the lack of being established will also make it harder for you to maintain and grow opportunities when you come back into the workforce. Training in medicine is already an incredibly delayed adolescence in which we are not treated as full professionals until late 20s/early 30s. This is also impacting the ability for female physicians to integrate physical demands of childbearing with career growth. There need to be deliberate mechanisms/programs for helping young female MDs stay on some sort of professional growth trajectory (1)</p> <p>“Most women are in their child-bearing years at the time of training completion and are caught between the work-life balance (14)”</p>

CONCLUSION

The exodus of female physicians from practice and academic positions is a critical issue endangering the future of American healthcare. Our descriptive survey and review of the literature describe unmet needs, barriers, cultural biases, and concerns that inhibit female physicians from sustaining long-term medical careers. Physician burnout from inflexible work hours and demoralization, the inaccessibility and expense of childcare and maternity leave, and societal gender expectations regarding domestic chores at home are some of the core issues revealed from our analysis. Reproductive education, family planning choices and mentorship from other colleagues is lacking in the current medical system. Gender biases for promotion and pay-gaps continue in healthcare. Investigating and adapting successful policies for diversity and inclusion of women, utilizing technological advances that relieve elements of burnout and exploring diversity supportive work models from other sources may be the solution to retain and advance the next generation of female physicians.

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