Women Residents, Women Physicians and Medicine’s Future

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ABSTRACT
The number of women in medicine has increased dramatically in the last few decades, and women now represent half of all incoming medical students. Yet residency training still resembles the historical model when there were few women in medicine. This article reviews the issues facing women in residency today. Data suggest that the experience of female residents is more negative than that of males. Unique challenges facing female residents include the existence of gender bias and sexual harassment, a scarcity of female mentors in leadership positions, and work/family conflicts. Further research is needed to understand the experience of female residents and to identify barriers that hinder their optimal professional and personal development. Structural and cultural changes to residency programs are needed to better accommodate the needs of female trainees.

INTRODUCTION
Residency has been called a “test of survival.” The goal of residency is to train competent, compassionate physicians. Recent research suggests the hardships of residency training have far-reaching effects, and that patient care is at stake. The literature on resident sleep deprivation and medical error rates was part of the impetus to enact laws limiting resident work hours. In their survey of internal medicine residents, Shanafelt et al found that 76% of residents met criteria for burnout, and that more than half of those reporting burnout felt the quality of their patient care suffered, compared to only 21% of non-burnt-out residents. While these types of surveys are limited because they involve perceptions rather than objective measures of lower quality care, the results are nonetheless thought-provoking and concerning.

The demands on residents are high. Heavy work loads; fatigue and sleep deprivation; a wealth of information to master; constantly changing work environment and work teams; time pressure to discharge patients; daily confrontation with suffering and death; concern about making medical errors; difficult relationships with patients, nurses and supervisors; and financial burdens are some of the work-related sources of stress residents experience. In addition, residents typically have little time for leisure, relationships, personal reflection, and non-work responsibilities. The challenges of residency are partially balanced by positive aspects of the training period, which include intellectual stimulation, a sense of collegiality with other residents, the reward of helping patients, a sense of accomplishment of learning skills and acquiring knowledge, and the prospect of future career opportunities.

Women represent half of the students in incoming medical classes. It has been estimated that by 2010, 30% of practicing physicians will be women. This demographic shift of women into the field has important implications for medicine and society. The current model of residency training, which still resembles its historical predecessor (at a time in which there were few women in medicine), creates challenges for female physicians. Interestingly, apart from studies of resident pregnancies, very little research dedicated to understanding the unique experience of female residents exists.

Women face a unique set of challenges in residency. Though there is a paucity of data exclusively focusing on female residents’ training experience, available data suggest that women have a more negative experience in residency than do men. Female residents report higher levels of depression and stress. Female medical students, residents, and faculty members consistently report gender bias and sexual harassment that negatively affect their work environment and serve as barriers to their learning and advancement into leadership positions. Women in medicine also report conflict between work and home roles. The majority of female physicians will marry and most will have children at some point in their careers. They experience conflict between the demands of their work schedules and fami-
ily obligations. This article seeks to review the issues facing female residents and suggests areas for further study and policy change.

RESIDENT WELLNESS

Research on resident wellness reveals gender differences in residents’ stress levels and satisfaction. Within the limitations of study design, these data do reach statistical significance. A 2002 survey by Collier et al across all US residency programs of over 4000 trainees found that 40% of female residents reported 4 or 5 symptoms of depression (appetite change, mood swings, decreased recreational activities, depressed mood, and sleep disturbance), compared to 32% of responding male residents (P-value <0.001). When polled regarding feelings of cynicism, 67% of female respondents felt more cynical as residency progressed, compared to 56% of male residents (P<0.001).6 Furthermore, many female residents had concerns about childbearing: 85% believed that residency increased the complications of pregnancy, 28% felt pressure from faculty to delay pregnancy, and 52% believed that colleagues were resentful about pregnancy and maternity leave. Interestingly, both male and female residents who had children reported less depression and less cynicism, suggesting that parenthood may blunt the effect of stress. The authors hypothesize that parenthood may engender hope and altruism, or may act as a stabilizing force in residents’ lives.6

A Canadian study of 415 residents found that 40% of female residents reported significant stress, whereas only 27% of males reported the same level of stress (P<0.02).7 There were also gender differences in the sources of stress. Women reported work-related time pressure as being more stressful than males did (79% versus 64%, P<0.001), whereas males reported home childcare responsibilities as more stressful than females did (19% versus 13%, P<0.02). It is interesting that female physicians, who on average shoulder more hours of childcare than men,16 do not find this childcare as stressful as men do. In fact, many women in medicine experience conflict between their work and home responsibilities because they want more time with their families without giving up their careers.14

Traditional suggestions to help residents balance work and family have involved strategies that decrease residents’ home participation, such as hiring a nanny. Instead, changing the structure of residencies to allow women more time with their families might do more to increase the satisfaction of female residents who have children. In fact, Clever points out that more time for relationships would likely help all residents, since the majority of male and female residents identify talking with family members, significant others, and colleagues as a coping strategy to alleviate stress.18

GENDER BIAS IN MEDICINE

One of the challenges for female residents is the existence of gender bias in medicine. In fact, the Council on Graduate Medical Education concluded that gender bias and sexual harassment are the biggest obstacles that prevent women physicians from achieving their full potential.19 Gender bias has been defined as “those behaviors, policies, and other activities, which adversely affect either women or men because of disparate treatment, disparate effects, or the creation of a hostile environment.” Sexual harassment is defined as “the use of authority to emphasize the sexuality or sexual identity of a person in a manner that prevents or impairs that person’s full enjoyment of education benefits, climate or opportunities.”20

Numerous studies document that female physicians experience gender bias and sexual harassment at higher rates than men.8-10,13 Nora et al found that 83% of female medical students reported gender discrimination and sexual harassment compared to 41% of males, with a high concurrence across specialties.13 A survey of residents across specialties at a Canadian academic medical center concluded that female respondents were significantly more likely to report discrimination based on gender than males (89.1% compared to 61.1%, P<0.01).8 Furthermore, 92.9% of residents reported some form of sexual harassment during their residency, and gender differences were seen in the reporting of such incidents. Even though residents reported these events less than half the time, women were more likely to have told someone about the incident (P<0.001). The reasons that men and women did not report incidents are intriguing and point to a vulnerability female residents may feel: male residents were more likely to think the behavior was not a problem, whereas female residents were more likely to believe reporting the event was more trouble than it was worth, that the reporting would affect their evaluation, or that it would not be kept anonymous. These data suggest that sexual harassment does happen in residency programs, and that the climate of residency may not encourage the reporting, labeling, and addressing of these incidents.

Gender discrimination and sexual harassment also affect women’s well-being and work satisfaction. Researchers have concluded that differential treatment based on gender contributes to a hostile work environment and negatively affects learning.13 In a study of ac-
ademic faculty, Carr et al determined that women who perceived negative gender bias had lower career satisfaction, despite the fact that their productivity, measured by number of publications, was comparable to that of their peers. Data are consistent that female medical students are deterred from a particular specialty when they experience discrimination based on gender or sexual harassment while rotating through that specialty, indicating the effect those experiences had on their career decision-making.

While overt sexual harassment is relatively easy to spot, gender bias is more subtle. How do the institutional structures that make up medicine discriminate against women? One clue to the existence of the problem is the predominance of male leadership in medicine and under-representation of women. A 2005 report by the American Association of Medical Colleges reported that women held 32% of faculty positions, and only 11% of department chairs and 10% of medical school deans were women. Social science research has identified that women tend to have distinct leadership attributes, such as inclusivity and collaborative problem-solving. Men are more likely to view their leadership as a series of transactions with subordinates and to use their position of authority to motivate their followers, whereas women more commonly view themselves as transforming subordinates’ self-interest into concern for the organization. In other words, the way women lead is different from the way men lead. It is important that qualified women are afforded the opportunity to hold leadership positions so the field of medicine can benefit from the unique contributions of both women and men. In a related manner, the overrepresentation of male leadership in medicine creates a culture that self-selects, reifying the existing power structure, which creates barriers for women to rise to leadership positions.

Carnes and Bland examined gender bias in the awarding of Clinical and Translational Science Awards by the National Institutes of Health, and postulated that the existence of structural gender bias and unconscious stereotypes about men and women in the selection process created conditions that favored men, despite a pool of capable and talented female scientists.

The field of general surgery has had to wrestle with the question of institutionalized gender bias, as it typically has low rates of recruitment of women. The “surgical personality” and the surgical culture that is sometimes described as an “old boys club” have been identified as gender-specific deterrents and are examples of the way institutional culture poses barriers to women. Surgery is not the only field with these problems, as women across all specialties report the existence of gender bias. Institutional arrangements that fail to understand the family responsibilities of women also may serve as barriers. For example, meeting times that conflict with family life may have the unintended effect of excluding women, which effectively lessens the female voice. A lack of awareness of differences in male and female communication styles may also create barriers to women. For example, teaching using more typically male styles of communication may favor male residents. Walsh gives an example of the different ways men and women may respond to stress in the operating room: a male surgeon may “lose it” by yelling or throwing instruments, while a female surgeon may “lose it” by crying. Yet despite the fact that these two responses, though not ideal, are varying expressions of the same sentiment, the female resident may be viewed as less professional or less in control.

Role strain has been identified as a stressor for female residents. Patients and family members are more likely to confuse female physicians for nurses, and as a result ask them to perform nursing duties for which they do not have time given their other clinical obligations. Yet they may feel ambivalent about saying no for fear of appearing rude or abrupt. Relationships with ancillary staff can be problematic as well, as female residents feel the weight of the expectations that they will be sociable with the predominantly female nursing staff while still maintaining a sense of authority. This is in contrast to male physicians, who are already established in hospital hierarchy as being the people who give orders and do not have to navigate these multiple roles.

WORK/FAMILY CONFLICTS
Many women in medicine wish to pursue their careers and have families. The timing of childbearing poses significant problems, as the lengthy medical training period corresponds to safe child-bearing years. While women are often encouraged to delay having children until after residency, the rising average age of medical school matriculants and decreasing fertility associated with age mean that waiting is not always desirable. Furthermore, unplanned pregnancies do occur. Various researchers report rates of unplanned pregnancies among residents from 28%-35%.

A significant amount of research has examined pregnancy during residency and pregnancies among physicians in general. Certainly residency has occupational hazards that pose additional concern in pregnancy: prolonged standing, strenuous physical labor, and exposure to radiation and infectious and cytotoxic agents.
Whether there is a higher risk of adverse outcomes has been the subject of debate. A large study comparing residents’ pregnancies to those of their male colleagues’ wives did not find a significant difference in the main outcomes measured—preterm delivery and babies small for gestational age—though it did find an increased risk of premature labor and preeclampsia.\(^{27}\) This study served as evidence downplaying the risk of pregnancy complications in residents. However, researchers have questioned the study’s validity,\(^{26}\) and subsequent studies do suggest a higher complication rate in pregnancies of residents and physicians in general. One retrospective chart review of pregnant physicians found a 1.86 relative risk of an adverse pregnancy outcome compared to non-physicians of similar socioeconomic status, and as a result the authors recommend that physicians be considered a high-risk obstetric group.\(^{28}\) A 2003 literature review of pregnancy during residency concluded that all studies of pregnant physicians (residents or otherwise) to date suggest an increased risk of complications, especially of late pregnancy events.\(^{26}\) These studies report higher rates of preterm labor and delivery, preeclampsia, low birth weight, abruptio placenta, and stillbirth. Because these complications mirror those of women who work in physically strenuous jobs, these adverse outcomes may be caused by a decrease in uterine blood flow mediated by catecholamine production (increased by stress) and postural effect.\(^{26,29}\)

Physical concerns aside, the experience of pregnancy in residency can be emotionally difficult. Many residents fear they will be viewed with resentment or seen as less committed to their careers, and evidence suggests these fears are well founded. Several studies have documented the resentment of residents toward their pregnant colleagues.\(^{26}\) The scarcity of female role models who have successfully blended motherhood with their medical careers may further contribute to feelings of isolation. Finally, residents experience conflict between their career aspirations and the all-or-nothing commitment it requires with the competing desire to spend time with their children.\(^{35}\)

The lack of well-formulated and communicated maternity and paternity policies in residency programs undoubtedly contributes to confusion and anxiety. In an environment where everyone is overworked, it is understandable why non-pregnant residents would feel ambivalent, at the very least, toward their pregnant colleagues. Yet pregnancy does and will continue to occur during residency, and the culture of residency programs needs to expect and accommodate this normal and healthy part of women’s lives.

Breastfeeding is another area of challenge. Resident mothers typically have high initial rates of breastfeeding, but find it difficult to continue due to arduous residency schedules. One study reported that 80% of residents breastfed their infants during their maternity leave, half discontinued upon their return to work, and 6 months post-partum only 15% were breastfeeding, despite national guidelines that recommend breastfeeding for an infant’s first 6 months.\(^{31}\) The difficulties of the residency work schedule was most commonly cited as the reason for terminating breastfeeding. Other reported difficulties included variable support of colleagues and lack of time and facilities for pumping.

Researchers have suggested a number of policies to minimize the burden pregnancies place on residency programs, pregnant residents, and non-pregnant colleagues. These include well-communicated maternity and paternity leave policies, open dialogue with program directors, flexible scheduling of rotations, on-site childcare, breastfeeding facilities, support groups, and mentoring relationships.\(^{5,32-34}\) It has also been recommended that residents who work extra to cover residents on leave should get credit for that work and be “forgiven” later shifts.

A number of programs have experimented with nontraditional models of residency. In their article entitled “Residency is not a race,” Kamei et al. describe a pediatric residency program's flexible schedule option that allowed residents to take up to 5 years to complete their required 33 months of training.\(^{35}\) Residents who “flexed” did so to care for children or parents, work on a significant personal relationship, perform research or other educational endeavors, supplement income, or for mental health care. Interestingly, only 24 out of 284 residents during the 10-year period used the option, but traditional residents indicated they were glad it was there in case they needed it, and also felt it improved the morale of the program. In fact, of residents who did not use the flexible option, 88% felt the program should continue to offer it, despite the fact that 52% felt it added scheduling problems and 43% felt it increased workload. Residents voiced appreciation that this residency program, by its policies, demonstrated commitment to supporting residents’ multiple life roles.

Another survey of pediatric residency programs in the United States found that 12% of these programs had at least 1 resident working at a part-time schedule. This accounts for <1% of all pediatric residents extending their residency on a part-time basis. The most common reason cited for part-time status was childcare (67%), with additional reasons including travel, research, ad-
vanced degrees, and personal and family illness. Women represented the majority of those who opted for a part-time schedule, but men who trained part-time were just as likely as women to cite caring for children as the reason. Part-time training does appear to be educationally viable: research shows that residents who train on part-time schedules have equivalent test scores and equal or superior faculty ratings than traditional residents. Clearly, instituting part-time programs is not simple, and a number of factors must be considered, including resident needs, staffing needs of the program, and availability of resources. Yet ours is an era in which we need creative solutions, and part-time residency is a model that warrants further study and consideration. As the present generation of medical students strongly values work-life balance, and makes career choices that accord with those values, residency programs that can offer flexible or individualized training programs will be likely be viewed as highly desirable and able to recruit the most qualified applicants.

FUTURE DIRECTIONS
A number of issues affect female residents, including lower levels of work satisfaction and higher stress levels, the existence of gender-based discrimination and sexual harassment, the lack of role models in academic medicine, and the conflict between work and family roles, including challenges surrounding having children. What can residency programs do to improve the experience of female residents? First of all, awareness is crucial. Recognizing that residency programs, in their historical design, may not be meeting the needs of female residents is a key first step. More research is needed to understand the experience of female residents and identify and address barriers to their professional and personal development.

Second, medical educators need to heed the data that are available. There is solid research on the experience of women in academic medicine, and, as those holding faculty positions are the more senior equivalents of residents, functioning in the same social climate, the results may be generalizable. Those studying the gender climate at academic medical institutions have suggested strategies to lessen the effects of gender bias on female physicians. Proposed changes include designing programs to increase women’s networking opportunities, building mentoring programs for women, teaching gender sensitivity to incoming medical students, and hiring individuals whose role is to track and address gender issues. When a gender sensitivity curriculum was implemented at Stanford University in response to concerns about gender bias, female faculty reported significant improvements in work climate, and a decrease in sexual harassment, gender discrimination, and gender insensitivity, suggesting that such interventions are effective.

Researchers have proposed changes to mitigate work-family conflicts that hinge on the creation of more flexible work arrangements and strategies to allow combining work and family responsibilities. These include instituting part-time options, altering tenure track schedules, changing meeting times to avoid family-difficult times such as early morning and evening, and creating on-site childcare, including facilities for drop-in or sick-day childcare. Gender sensitivity programs have also been proposed to emphasize that childbearing is normal, healthy, and in fact, necessary for the survival of the species. Finally, residency programs have probably underutilized part-time options, and research is needed to explore the best ways to structure part-time training in a way that is mutually beneficial to residents and programs. As mentioned previously, both male and female residents would likely appreciate the option of more flexible training schedules that would allow them to attend to their various life roles.

Perhaps more important than making specific changes, however, is recognizing that the culture of medicine needs to change to successfully accommodate the influx of capable, motivated women into the field. Strategies to help women in medicine succeed often occur on the individual level. For example, a female physician may be encouraged to outsource childcare and other home responsibilities to lessen work-home conflicts. A resident may “toughen up” and communicate in a more traditionally male way to fit in with the macho male culture that typifies some medical circles. While these approaches may help the individual, they do nothing to change institutional structures that hinder the careers of women in medicine. Instead, institutional changes, because they outline an individual situation, have longer-lasting and more far-reaching effects.

Changing the structures and culture of medical training to better meet the needs of female residents is a difficult but necessary process. Women bring tremendous potential to the field of medicine, and it is only by paying attention to the unique needs of women in medicine that we can foster a climate that allows female physicians to achieve their highest potential. Improving the experience of women in residency is a good place to start. The result will be healthier residents, healthier families, healthier patients, and healthier communities.

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REFERENCES


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