Work–Life Balance in Academic Medicine: Narratives of Physician-Researchers and Their Mentors

Erin A. Strong, MS[1], Rochelle De Castro, MS[2,3], Dana Sambuco, MPA[2,3], Abigail Stewart, PhD[4,5], Peter A. Ubel, MD[6,7], Kent A. Griffith, MS[8], and Reshma Jagsi, MD, DPhil[2,3]

[1]University of Michigan Medical School, Ann Arbor, MI, USA; [2]Center for Bioethics and Social Sciences in Medicine, University of Michigan, Ann Arbor, MI, USA; [3]Department of Radiation Oncology, University of Michigan, Ann Arbor, MI, USA; [4]Women's Studies Program, University of Michigan, Ann Arbor, MI, USA; [5]Department of Psychology, University of Michigan, Ann Arbor, MI, USA; [6]Fuqua School of Business, Duke University, Durham, NC, USA; [7]Sanford School of Public Policy, Duke University, Durham, NC, USA; [8]Biostatistics Unit, University of Michigan Comprehensive Cancer Center, Ann Arbor, MI, USA.

BACKGROUND: Leaders in academic medicine are often selected from the ranks of physician-researchers, whose demanding careers involve multiple professional commitments that must also be balanced with demands at home.

OBJECTIVE: To gain a more nuanced understanding of work–life balance issues from the perspective of a large and diverse group of faculty clinician-researchers and their mentors.

DESIGN: A qualitative study with semi-structured, in-depth interviews conducted from 2010 to 2011, using inductive analysis and purposive sampling.

PARTICIPANTS: One hundred former recipients of U.S. National Institutes of Health (NIH) K08 or K23 career development awards and 28 of their mentors.

APPROACH: Three researchers with graduate training in qualitative methods conducted the interviews and thematically coded verbatim transcripts.

KEY RESULTS: Five themes emerged related to work–life balance: (1) the challenge and importance of work–life balance for contemporary physician-researchers, (2) how gender roles and spousal dynamics make these issues more challenging for women, (3) the role of mentoring in this area, (4) the impact of institutional policies and practices intended to improve work–life balance, and (5) perceptions of stereotype and stigma associated with utilization of these programs.

CONCLUSIONS: In academic medicine, in contrast to other fields in which a lack of affordable childcare may be the principal challenge, barriers to work–life balance appear to be deeply rooted within professional culture. A combination of mentorship, interventions that target institutional and professional culture, and efforts to destigmatize reliance on flexibility (with regard to timing and location of work) are most likely to promote the satisfaction and success of the new generation of clinician-researchers who desire work–life balance.

BACKGROUND

A growing number of recent medical school graduates, both men and women, seek balance between their professional and personal lives.[1–3] This trend may be influenced by broader societal changes, such as the modern movement of women into the paid labor force and the increasing expectation that men participate in parenting and housework.[2,4,5] Men and women in the current generation of physicians in particular have been found to possess a strong sense of responsibility for family life and parenting, and thus, may experience discontent or tension if work demands impinge upon a more a balanced lifestyle.[6–10] These developments within the medical profession are important to understand, in part because of their potential impact upon patients, whose experiences and outcomes depend upon a dedicated cadre of clinicians and researchers.[11,12]

Women, who now constitute a substantial and growing proportion of the physician workforce,[13–15] may face unique challenges in balancing the competing demands of professional duty and family responsibility.[11,16,17] Compared to other faculty, women faculty with children have been found to be more likely to perceive problems with institutional policies affecting work–life balance, such as meetings held after hours or a lack of on-site childcare.[16] Prior evidence suggests a paucity of role models in academic medicine who have successfully managed both career and family life,[11,17] which may partly explain some women's attrition from academic medicine and failure to succeed at the same rate as their male colleagues.[16,18–22] Thus, gender differences in experiences related to work–life balance are particularly worthy of further investigation.

OBJECTIVE

Leaders in academic medicine are often selected from the ranks of physician-researchers, whose demanding careers involve commitments to research, clinical care, teaching, and administrative responsibilities that must also be balanced with demands at home. In order to gain a more nuanced understanding of work–life balance issues from the perspective of a large and diverse group of faculty clinician-researchers and their mentors, we conducted a qualitative analysis of interviews with men and women who received prestigious K-series career development awards from the NIH and their academic mentors. In this way, we sought to provide thick description of how promising clinician-researchers of both genders feel about their competing responsibilities and how they perceive institutional climate, policy, and practice related to work–life balance. We deliberately selected recipients of K08 and K23 awards, because these awards are made to individuals who hold clinical doctorates and so are likely to face multiple competing demands at work that must, in turn, be balanced with responsibilities at home.

DESIGN & PARTICIPANTS

After approval by the University of Michigan institutional review board (IRB), we conducted in-depth, semi-structured interviews with selected recipients of K08 and K23 awards from the NIH between 1997 and 2009, as well as their academic mentors. Purposive sampling was utilized to collect a diverse set of viewpoints. We included both men and women, with oversampling for racial and ethnic minorities. We chose individuals from a variety of medical specialties and academic institutions. We selected those who remained at their original institution at time of K award, those who had changed institutions, and those who had left academic positions (as determined by internet searching), as well as those who had gone on to attain R01 funding and those who had not (as determined through the NIH RePORTER database).[23]

The interview protocol included closed and open-ended questions relating to a number of domains, including questions about the participant's family structure, the effects of family or personal demands upon career success, and relevant institutional policies and practices.

Three researchers with graduate training in qualitative methods conducted telephone interviews with 128 respondents, at which point the criterion of thematic saturation was met. Of the 128 participants, 54 were members of matched mentor–mentee pairs. Tables 1 and 2 display the characteristics of all study participants.

The tape-recorded interviews were transcribed verbatim by an independent professional transcriptionist. The average interview lasted 52 min.

Table 1. Participant Characteristics (*n*=128)

Interviewee type	
K-Awardee	100 (78 %)
Mentor	28 (22 %)
Gender	
Women	76 (59 %)
Men	52 (41 %)
Race-Ethnicity*	
White/Caucasian	99 (77 %)
Black/African-American	7 (5 %)
Hispanic/Latino	3 (2 %)
Asian/Asian-American	18 (14 %)
Not reported	5 (4 %)

Percentage exceeds 100 because some participants were allowed to report more than one race/ethnicity

APPROACH

One of the three researchers independently reviewed and coded all transcripts using standard techniques of thematic analysis,[24] and QSR NVivo Version 8.0.332.0 SP4 (Doncaster, Victoria, Australia) software. Some potential codes were anticipated; others were generated de novo. After independent coding, the researchers discussed identified themes and quotations coded as exemplary. Validity was

Table 2. K-Awardee Characteristics (*n*=100)

K Award type	
K08	38
K23	62
Degree type	
MD or DO	56
MD or DO with PhD	16
Other clinical doctorate	28
Specialty	
Medical	40
Surgical	3
Families, women, or children	15
Hospital-based	13
Other	28
Not reported	1
Institution type (at time of K award)	
Public	45
Private	54
Nonprofit	1
Received R01 or equivalent funding	
Yes	38
No	62
Current career status	
Academic institution	80
Government	2
Independent research institution	1
Industry	7
Nonprofit	3
Private practice	7
Marital status	
Divorced	4
Living with partner	3
Married	80
Separated	1
Unmarried	10
Not reported	2
Parental status	
Yes	81
No	14
Not reported	5

established through investigator triangulation.[25] Differences in interpretations were regularly discussed and arbitrated. An iterative process was employed whereby major themes were coded and discussed, followed by minor themes.

Six major thematic clusters emerged, one of which related to time and balance. The present analysis focuses on the major theme of work–life balance in academic medicine, which fell within this cluster. The other thematic clusters were mentoring[26]; rejection and resilience[27]; negotiation and resources[28]; unequal treatment, conflict, and discrimination; and goals and aspirations. Of note, many of the identified themes were cross-cutting in nature.

In addition, a brief quantitative analysis was performed. The percentage of words devoted to work–life balance was calculated for each interviewed subject. Comparisons were made between genders for both awardees and mentors separately using the Wilcoxon rank-sum test statistic, as well as between individuals receiving their K awards between 1997 and 2003 (an "early cohort") and those who received awards since 2004 (a "more recent cohort"). In addition, for the K awardees, we assigned a code to each transcript, indicating whether or not work–life balance issues appeared to be a significant personal concern, and we then compared whether the frequency of this code differed by gender.

RESULTS

The final data set included transcripts totaling 1,108 pages (513,730 words, excluding interview questions). Among K-award recipients, the median percentage of words devoted to discussions of work–life balance was greater for females than males (19.1 % vs. 8.9 %, $p<0.0001$). Among the smaller sample of mentors, a similar pattern was evident, but the gender difference was not statistically significant (19.4 % of female mentors' words vs 11.5 % of male mentors' words, $p=0.09$). Overall, 63 % of female K award recipients we interviewed indicated that work–life balance was a significant personal concern, compared to only 33 % of men ($p=0.01$).

In the early cohort of K awardees, there were 26 (55 %) female and 21 (45 %) male K awardees. In the more recent cohort, there were 41 (77 %) female and 12 (23 %) male K awardees. Overall, regardless of gender, there was a trend ($p<0.10$) toward a higher percentage of words related to work–life balance in the more recent cohort (median=17.3 % vs 11.7 %, p=0.068),

Five emergent subthemes related to work–life balance were identified: (1) the challenge and importance of work–life balance for contemporary physician-researchers, (2) how gender roles and spousal dynamics make these issues more challenging for women, (3) the role of mentoring in this area, (4) the impact of institutional policies and practices, especially with regard to the inherent flexibility

of academic work, and (5) perceptions of stereotype and stigma associated with utilization of programs intended to improve work–life balance.

The Challenge and Importance of Work–Life Balance for the Physician-Researcher

Both men and women discussed work–life balance as an important challenge, particularly when parenting young children.

> "Work–life balance was a struggle the whole time my kids were at home…now that they are both in college…I still make trade-offs between having a social life and my professional work, but they are less acute…" (Male K-Awardee)

Some respondents described a generational difference in expectations and perspective, with the new generation of early career physicians, both men and women, more concerned about spending time with family and less willing to allow their work to be their sole priority.

> "… I'm in the first generation of people that refuse to do it the way all the older men have done it who were successful, and it has been difficult to do it differently. It was important for me to be home most evenings for dinner with my kids and see them go to bed…. I don't know that was a priority for those who were mentors to me, so I…felt like I didn't have very good role models myself." (Female, K-Awardee)

Women, in particular, indicated that work–life balance was integral to their satisfaction and part of their definition of success.

> "The thing that I prize the most, and I know I share this with other women in academic medicine, is really being able to have both the family and the successful career…. it's crazy busy with the two, but without the two, it just wouldn't be as satisfying and fulfilling." (Female, K-Awardee)

Societal Expectations, Gender Roles, and Spousal Dynamics

A number of respondents felt that work–life balance issues were especially challenging for women, in part due to societal gender roles.

> "…I think it's the social conditioning…. It's a social thing that we expect women to be more into the child raising thing and men to be less…" (Male, K-Awardee)

Both male and female respondents noted a tendency for women to feel distressed, guilty, or judged when faced with the competing expectations of career and motherhood.

"…perhaps guilt that comes with not being there…is felt by women more than men…I do believe there's a lot of angst and worry that comes with not being there for your kids, working…" (Male, Mentor)

A number of respondents commented on the role of the spouse, noting that those who had stay-at-home spouses were advantaged, whereas those who were members of dual-career couples were more challenged, particularly when both careers were of equal status.

"I'm just thinking of my own parents' marriage, where the husband's career…comes first and the wife sees herself as…supporting her husband's career…. The few other successful scientists I see, they often have little 'wifey-poo' at home who, if they have to stay until 9 o'clock to finish writing something, "Oh, no problem. I'll give the kids a bath. I'll do this…" That's just not…what my life is. My wife comes home, and…she's exhausted. She needs me to come home…. It's just difficult if you don't have a stay-at-home spouse." (Male, K-Awardee)

Several women commented on the importance of being able to trust their husbands to contribute equally to the household and childrearing responsibilities.

"…My husband is very supportive…I've sort of from the beginning kind of made it clear that he actually has to take responsibility and not just help and he does…so I feel like I'm lucky in that way." (Female, K-Awardee)

The Role of Mentoring in Achieving Balance

A number of female respondents commented that they had modeled themselves after, or had received support and advice, from female mentors or senior women who understood the challenges of having to respond to the demands of both a career and a personal life.

"I think I have learned from my mentors. In particular, two female mentors…I've learned a lot in terms of working to be as productive as you can be with your academic career…but realizing that you still have to fit in the rest of your life as well, especially being a woman…." (Female, K-Awardee)

Others perceived a lack of senior women who could role model successful work–life balance.

"…this is still a field where there aren't a lot of women in general and I think less than half the women in our

faculty have kids, so I feel like we're still learning how to do this without a lot of role models. I think it's very different to be a mom with three kids than to watch the dads with three kids…" (Female, K-Awardee)

One female respondent indicated that she felt disadvantaged despite having supportive male mentors, mainly because they could not truly relate to or give appropriate advice concerning the work–life balance issues that she personally faced.

"…I think my long-term mentor and my chairman… they have had a fundamentally different work–life balance because they both had wives who stayed home full-time and took care of their kids. And so even though they are at least emotionally and psychologically supportive…they weren't able to give me really strong advice about how to do that because they never had to deal with it." (Female, K-Awardee)

Several female respondents noted specifically that work–life balance was an issue for both men and women, and they considered advising on this subject to be an important mentoring role.

"I think both men and women these days are interested in trying to balance work and personal life so that is often what becomes part of the goal is 'How do you develop a sustainable balance between work and life, family life, or other parts of yourself?'" (Female, Mentor)

Of note, certain male mentors also described feeling a responsibility to promote work–life balance and remain sensitive to generational and gender differences in particular.

"…Early parts of child rearing are particularly challenging for women…. You have to say, "You're a woman…let's talk about when you have babies… let's plan how it's going to affect what's going on during the course of your career development…."… As a male in particular, you have to be compassionate because you can't pretend that you understand all of it because you don't as a male…" (Male Mentor)

Institutional Policies and Practices: The Flexibility of Academic Work

When discussing institutional policies and practices related to the maintenance of work–life balance, respondents described various approaches towards scheduling, modified workloads, and leave.

"That is definitely a strength of my department…a specific person has had a child and wants to go to half

time, we figure out how to do that. There is a formal mechanism for extending tenure track for those who have family reasons for doing that…my department is very proactive; that's kind of the highest priority thing for faculty…" (Male, K-Awardee)

Some described having express support from their institution for utilizing flexible scheduling.

"I think they are supportive both on paper and also in reality. So, for example, allowing me to work from home. I didn't have to do it under the table like I've heard some people do. We actually had it all written out what days I would be here and what days I would be there…." (Female, K-Awardee)

Other respondents indicated that they relied upon the flexibility of academic scheduling on an ad hoc basis only, or even deliberately hid this aspect of their time management approach from others.

"You don't want to…tell too many people when your kids are sick or if you have to sneak out to something at their school…Truthfully, I feel like when guys say they need to go to a soccer game and they do that everybody thinks they're…incredible; women, nobody's going to pat you on the back when you have to run out to do something…you just either suck it up and don't care what people think or…edit where you are going and what you're doing sometimes." (Female, K-Awardee)

Stereotypes and Stigma

The individuals selected for this study were high-achieving individuals who have previously demonstrated their commitment to academic careers by attaining prestigious K-series career development awards. Nevertheless, when discussing gender discrimination or bias, a number of female respondents felt that women were more likely to be perceived as prioritizing family over work, even when this was not accurate.

"There is…just sort of an attitude about…what the women's priorities really are and what happens to women when they have babies…there is some willingness to accommodate, but there is also just a lot of pressure to show that…it's not interfering with my work…." (Female, K-Awardee)

Some also expressed the concern that even when women make the same attempts to balance work and home activities as men, women's actions were viewed differently.

"When a female faculty says, I need to leave at five o'clock, she's looked on differently than when a

male faculty says I need to leave at five o'clock…. The male faculty leaving at five o'clock to go to soccer practice is thought of to be a great father… whereas, the female faculty saying I need to leave at five o'clock to drive my son to soccer, is looked on as she's not serious; she's on a mommy track…." (Female, K-Awardee)

One male mentor observed a perceived risk in fostering the careers of women based on the assumption that all women have the potential to become mothers and change their priorities.

"I think there is an innate fear in all mentors that…a woman has a higher likelihood of dropping out of full-time academia and so that whole work that was put into moving that person's career forward can be stopped or stunted at any given time, whereas it is much less likely with a man." (Male, Mentor)

As a result, even when encouraged by their superiors to take time off for family or to utilize programs and other sources of support, women sometimes described being hesitant to do so for fear of projecting this stereotypic image to their colleagues, senior faculty, and administrators.

"…My clinical division director…was the one who said…"it's OK to leave and go to your children's performances or plays or whatever in the middle of the day." …I didn't think that was OK. … I was the first woman in our [department]…so there were a lot of ways in which I didn't want to rock the boat; I didn't want to be seen as not pulling my weight." (Female, K-Awardee)

"I don't want to call myself out as someone who needs [additional support]…the men I'm working with don't ever perceive or vocalize family issues are a problem…that they need that time to be better dads…. Because then it's just one more thing that makes it harder to compete when you're trying to move up the ladder…" (Female, K-Awardee)

DISCUSSION

Participants in this large qualitative study of NIH career development award recipients and their mentors vividly described the ways in which they experienced and managed challenges related to work–life balance. Their views support a number of observations of previous studies concerning the impact of both gender and generation and provide additional insights.

Some participants discussed the arrival of a new generation of physicians who hold different values than their predecessors concerning their professional and private lives.[6–10] Male physicians who are more active in family life, particularly those whose wives also work, appear to face difficulties that are not generally encountered by men with stay-at-home wives. Several of our respondents, both men and women, observed that important accommodations are sometimes limited by assumptions that faculty members can rely on support from stay-at-home spouses or spouses who only work part-time.

Consistent with the existing literature on this subject, many respondents also recognized that women, particularly those with children or other family responsibilities, face unique challenges.[9,11,16,29–31] Although both men and women prioritized personal and family life, gendered societal expectations of women's roles, within and outside the workplace, continue to have a substantial impact. Previous studies have shown that dual-career couples generally adhere to traditional gendered arrangements.[32] Consistent with evidence that female medical faculty spend more time on child care than their male colleagues,[16] our findings show that many women in academic medicine feel they shoulder a majority of the family responsibilities despite their demanding full-time careers.

Considerable work has evaluated ways in which working women can balance roles at work and at home. Although policy-makers have promoted initiatives to promote affordable childcare,[33–36] the physicians in our study had relatively high incomes, and securing childcare was generally not their concern. Instead, participants, particularly female, tended to feel guilt over not spending enough time with their families while simultaneously feeling a need to further develop their research careers. Prior literature has suggested cultural expectations may lead women to feel particularly distressed about work–life conflict and that advancement for women is hindered by time constraints and a "rigid workcentric culture," with inflexible academic routines and promotion processes.[16,37–39]

Of note, these findings should not be mistaken as a justification for why women should not be expected to succeed in academic medicine. The women in this study did not generally articulate choosing or prioritizing family over career. Our participants were selected because of their demonstrated commitment to their careers, and the conflicts they described did not seem to arise due to a lack of commitment to career or "opting out," but rather a profound articulated commitment to both career and family.

Given growing concerns about the adequacy of the physician-scientist pipeline in the context of the feminization of the profession, understanding these challenges is an important step in developing structural, institutional, and individual interventions that can facilitate flexibility and thereby promote the career success of both women and men.[40] Prior evidence suggests that there are perceived problems with institutional policies that limit flexibility.[16] Our study builds upon such work by demonstrating that although programs addressing challenges

for women in academic medicine and options for flexible schedules were generally felt to have value, several respondents indicated a further need to destigmatize their utilization. It is problematic that concerns about conforming to gender stereotypes were barriers to the utilization of certain institutional programs and policies intended to assist in this area. However, these concerns are not unfounded. Considerable research in the fields of management and psychology has shown that both men and women are perceived as less committed to their work after utilizing parental leave policies or even simply becoming a parent.[41–48] Policies alone are insufficient unless institutions actively promote a culture that allows their utilization.[49]

Workplace flexibility has been defined as workers' ability to "choose" when, where, and for how long they engage in work-related tasks.[50] Our current findings suggest that it is still quite difficult to "choose" flexibility in an academic environment, particularly when stereotypes and stigma act as barriers to policy and program use. Of note, Villablanca and colleagues identified numerous other reasons for lack of policy use among biomedical sciences faculty, including concerns regarding heavier service loads, undue burden on colleagues, and inability to stop work on grant funded projects/research.[51] In addition, Welch and colleagues noted that faculty at academic health centers in particular may be subject to conflicts between the policies of the parent university system, the partner hospital(s), and the faculty practice plan(s).[52] Additional research is necessary to further explore such challenges.

In the current study, female mentors with families served as significant role models for both men and women. Prior studies have shown that there is a need for mentors in academic medicine who value having both a career and a family life and who can provide inspiration and advice based on personal experiences.[17,53] In fact, the lack of mentors to serve in this role has been identified as prominent in the choice to leave academic medicine.[17] In the current study, respondents expressed appreciation for mentors who could relate to them and who shared their desire for both meaningful careers and fulfilling personal lives. Some data suggest that different generations may have different values and/or strategies when balancing the competing demands of work and home.[6–10] Future research is warranted to further explore this issue.

This study has a number of strengths, including its rich detailed narratives and approach to analysis, which conforms to standards for rigorous qualitative research.[25,54] Our study was large for a qualitative study, including 128 respondents; the mean sample size for comparable studies published in top tier medical journals since 2000 is 36.[55] The qualitative approach does have certain inherent limitations, however. Many social scientists would argue that the insights from qualitative studies should be viewed as complementary to those generated from larger survey studies, which are, in turn, limited in the depth to which they may explore participants' experiences. By purposively sampling to ensure a diversity of viewpoints and continuing accrual until meeting the criterion

of thematic saturation, concerns about the generalizability of our findings should be minimized. Of note, we focused on individuals who had received, or who had mentored recipients of, highly selective NIH K-awards, and hence our results may not be generalizable to those who have different interests or aptitude. Still, we believe that the insights gleaned from this particular population have broader relevance for faculty seeking careers in academic medicine more generally.

In sum, this study provides important insights about the ways in which concerns about work–life balance affect those pursuing careers in academic medicine. Institutional leaders and policy-makers should carefully consider the insights offered by our participants, particularly regarding the concerns about gender stereotyping and the stigma associated with utilizing certain policies intended to provide support. A combination of mentorship, interventions that target institutional and professional culture, and efforts to destigmatize reliance on the flexibility of academic careers, is most likely to promote the satisfaction and success of the new generation of clinician-researchers who desire balance in their careers and their family lives.

Corresponding Author: *Reshma Jagsi, MD, DPhil; Department of Radiation Oncology, University of Michigan, UHB2C490, SPC 5010; 1500 East Medical Center Drive, Ann Arbor, MI 48109-5010, USA (e-mail: rjagsi@med.umich.edu).*

REFERENCES

1. **Dorsey ER, Jarjoura D, Rutecki GW.** Influence of controllable lifestyle on recent trends in specialty choice by US medical students. JAMA. 2003;290:1173–8.
2. **Dorsey ER, Jarjoura D, Rutecki GW.** The influence of controllable lifestyle and sex on the specialty choices of graduating U.S. medical students, 1996–2003. Acad Med. 2005;80:791–6.
3. **Gelfand DV, Podnos YD, Wilson SE, Cooke J, Williams RA.** Choosing general surgery: insights into career choices of current medical students. Arch Surg. 2002;137:941–7.
4. **Waite LJ, Nielsen M.** The rise of the dual-earner family, 1963–1997. In: Hertz R, Marshall NL, eds. Working Families: the Transformation of the American Home. Berkeley: University of California Press; 2001:23–41.
5. **Bianchi SM, Milkie MA, Sayer LC, et al.** Is anyone doing the housework? Trends in the gender division of household labor. Social Forces. 2000;79:191–228.
6. **Bickle J, Brown A.** Generation X: implications for faculty recruitment and development in academic health centres. Acad Med. 2005;80:205–10.

7. **Howell LP, Servis G, Bonham A.** Multigenerational challenges in academic medicine: UC Davis's response. Acad Med. 2005;80:527–32.
8. **Howell LP, Joad JP, Callahan E, Servis G, Bonham AC.** Generational forecasting in academic medicine: a unique method of planning for success in the next two decades. Acad Med. 2009;84:985–93.
9. **Jovic E, Wallace JE, Lemaire J.** The generational and gender shifts in medicine: an exploratory survey of internal medical physicians. BMC Heal Serv Res. 2006;6:55.
10. **Lowenstein SR, Fernandez G, Crane LA.** Medical school faculty discontent: prevalence and predictors of intent to leave academic careers. BMC Med Educ. 2007;7:37.
11. **Levinson W, Tolle SW, Lewis C.** Women in academic medicine. Combining career and family. N Engl J Med. 1989;321:1511–7.
12. **Sibert K.** Don't Quit This Day Job. New York Times. 2011;June 11. Available at: http://www.nytimes.com/2011/06/12/opinion/12sibert.html?pagewanted=all. Accessed November 2, 2011.
13. **Levinson W, Lurie N.** When most doctors are women: what lies ahead? Ann Intern Med. 2004;141:471–9.
14. **Jagsi RJ.** Women's leadership in the development of medicine. In: O'Connor K, ed. Gender and Women's Leadership: a Reference Handbook. Thousand Oaks: Sage; 2010:720–31.
15. American Association of Medical Colleges. (2011) Women in U.S academic medicine and science: statistics and benchmarking report, 2009–2010. Available at: https://www.aamc.org/members/gwims/statistics/. Accessed November 2, 2011.
16. **Carr PL, Ash AS, Friedman RH, et al.** Relation of family responsibilities and gender to the productivity and career satisfaction of medical faculty. Ann Intern Med. 1998;129:532–8.
17. **Levine RB, Lin F, Kern DE, Wright SM, Carrese J.** Stories from early-career women physicians who have left academic medicine: a qualitative study at a single institution. Acad Med. 2011;86:752–8.
18. **Jagsi R, DeCastro R, Griffith KA, et al.** Similarities and differences in the career trajectories of male and female career development award recipients. Acad Med. 2011;86:1415–21.
19. **Jagsi R, Guancial EA, Worobey CC, et al.** The "gender gap" in authorship of academic medical literature — a 35-year perspective. N Engl J Med. 2006;355:281–7.
20. **Jagsi R, Motomura AR, Griffith KA, Rangarajan S, Ubel PA.** Sex differences in attainment of independent funding by career development awardees. Ann Intern Med. 2009;151:804–11.
21. **Jagsi R, Tarbell N, Henault LE, Chang Y, Hylek EM.** The representation of women on the editorial boards of major medical journals: a 35-year perspective. Arch Intern Med. 2008;165:544–8.
22. **Pohlhaus JR, Jiang H, Wagner RM, Schaffer WT, Pinn VW.** Sex differences in application, success, and funding rates for NIH extramural programs. Acad Med. 2011;86(6):759–67.
23. National Institutes of Health Research Portfolio Online Reporting Tools (RePORT). Reports, data, and analyses of NIH research activities. http://projectreporter.nih.gov/reporter.cfm Accessed December 13, 2012.
24. **Braun V, Clarke V.** Using thematic analysis in psychology. Qual Res Psychol. 2006;3:77–101.
25. **Giacomini MK, Cook DJ.** Users' guides to the medical literature: XXIII; qualitative research in health care A. are the results of the study valid? JAMA. 2000;284:357–62.
26. **DeCastro R, Sambuco D, Ubrel PA, Stewart A, Jagsi R.** Mentor networks in academic medicine: moving beyond a dyadic conception of mentoring for junior faculty researchers. Acad Med. 2013;88(4):488–96.
27. **DeCastro R, Sambuco D, Ubel PA, Stewart A, Jagsi R.** Batting 300 is good: perspectives of faculty researchers and their mentors on rejection, resilience, and persistence in academic medical careers. Acad Med. 2013;88:497–504.
28. **Sambuco D, Dabrowska A, DeCastro R, Stewart A, Ubel PA, Jagsi R.** Negotiation in academic medicine: narratives of faculty researchers and their mentors. Acad Med. 2013;88:505–11.
29. **McGuire LK, Bergen MR, Polan ML.** Career advancement for women faculty in a U.S. school of medicine: perceived needs. Acad Med. 2004;79:319–25.
30. **Reed V, Buddeberg-Fischer B.** Career obstacles for women in medicine: an overview. Med Educ. 2001;35:139–47.
31. **Sonnad SS, Colletti LM.** Issues in the recruitment and success of women in academic surgery. Surgery. 2002;132:415–9.
32. **Moen P, Yu Y.** Effective work/life strategies: working couples, work conditions, gender, and life quality. Soc Probl. 2000;47:291–326.
33. **Connelly R.** The effect of child care costs on married women's labor force participation. Rev Econ Stat. 1992;74:83–90.

34. **Han W, Waldfogel J.** Child care costs and women's employment: a comparison of single and married mothers with pre-school-aged children. Soc Sci Q. 2001;82:552–68.

35. **Kimmel J.** Child care costs as a barrier to employment for single and married mothers. Rev Econ Stat. 1998;80:287–99.

36. **Ribar DC.** Child care and the labor supply of married women: reduced form evidence. J Hum Resour. 1992;27:134–65.

37. **Milkie M, Peltola P.** Playing all the roles: gender and the work-family balancing act. Journal of Marriage and the Family. 1999;61:476–90.

38. **Pololi LH, Jones SJ.** Women faculty: an analysis of their experiences in academic medicine and their coping strategies. Gender Medicine. 2010;7:438–50.

39. **Yedidia MJ, Bickel J.** Why aren't there more women leaders in academic medicine? The views of clinical department chairs. Acad Med. 2001;76:453–65.

40. Committee on Maximizing the Potential of Women in Academic Science and Engineering, & Committee on science Engineering and Public Policy. Beyond bias and barriers: fulfilling the potential of women in academic science and engineering. Washington, DC;2007.

41. **Allen TD, Russell JEA.** Parental leave of absence: some not so family friendly implications. J Appl Soc Psychol. 1999;29:166–91.

42. **Fletcher J, Bailyn L.** Challenging the last boundary: reconnecting work and family. In: Arthur MB, Rousseau DM, eds. The Boundaryless Career: a New Employment Principle for a New Organizational Era. New York: Oxford University Press; 1996:256–67.

43. **Hall DT.** Moving beyond the mommy track: An organization change approach. Personnel. 1989;66:23–9.

44. **Miller A, Tsiantar D.** Mommy tracks. Newsweek. 1991;November 25:48–9.

45. **Norman N, Tedeschi JT.** Paternity leave: the unpopular benefit option. Pers Adm. 1984;29:39–43.

46. **Powell GN.** One more time: do female and male managers differ? Acad Manag Exec. 1990;4:68–75.

47. **Swiss DJ, Walker JP.** Women and the Work/Family Dilemma. New York: John Wiley & Sons; 1993.

48. **Kirby E, Krone K.** The policy exists but you can't really use it: communication and the structuration of work-family policies. J Appl Commun Res. 2002;30:50–77.

49. **Hewlett SA.** Executive Women and the Myth of Having it All. Harvard Business Review. 2002.

50. **Hill EJ, Grzywacz JG, Allen S, Blanchard VL, Matz-Costa C, Shulkin S, Pitt-Catsouphes M.** Defining and conceptualizing workplace flexibility. Community, Work & Family. 2008;11:149–63.

51. **Villablanca AC, Beckett L, Nettiksimmons J, Howell LP.** Career flexibility and family-friendly policies: an NIH-funded study to enhance women's careers in biomedical sciences. Journal of Women's Health. 2011;20:1485–96.

52. **Welch JL, Wiehe SE, Palmer- Smith V, Dankoski ME.** Flexibility in faculty work–life policies at medical schools in the big ten conference. Journal of Women's Health. 2011;20:725–32.

53. **Levinson W, Kaufman K, Clark B, Tolle SW.** Mentors and role models for women in academic medicine. West J Med. 1991;154:423–6.

54. **Giacomini MK, Cook DJ.** Users' guides to the medical literature: XXIII. Qualitative research in health care B. what are the results and how do they help me care for my patients? JAMA. 2000;284:478–82.

55. **Yamazaki H, Slingsby BT, Takahashi M, Hayashi Y, Sugimori H, Nakayama T.** Characteristics of qualitative studies in influential journals of general medicine: a critical review. Bioscience Trends. 2009;3:202–9.