

# Factors Associated With Residency and Career Dissatisfaction in Childbearing Surgical Residents

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**IMPORTANCE** Previous work shows women who have children during surgical residency face difficulty balancing childbearing with training, which negatively affects residency and career satisfaction. Little is known about the factors that drive professional discontent.

**OBJECTIVE** To determine factors associated with professional dissatisfaction for childbearing residents.

**DESIGN, SETTING, AND PARTICIPANTS** Self-administered survey questionnaire electronically distributed through the Association of Program Directors in Surgery, the Association of Women Surgeons, and targeted Twitter and Facebook platforms. The survey was distributed in January 2017 to surgeons who delivered at least 1 child during a US general surgery residency and was available online for 4 weeks.

**MAIN OUTCOMES AND MEASURES** Respondents were reported to be dissatisfied with their residency if they indicated agreement that they considered leaving residency owing to challenges surrounding childbearing (considered leaving). Respondents were reported to be unhappy with their career if they indicated agreement with statements that (1) given an opportunity to revisit their job choice, they would choose a nonsurgical career more accommodating of motherhood (revisit career choice) or (2) they would advise a female medical student against a surgical career owing to difficulties balancing motherhood with the profession (advise against surgery). Logistic regression was used to determine predictors of agreement with each of the 3 statements of professional dissatisfaction.

**RESULTS** In total, 347 women responded to the survey and reported 452 pregnancies, and the mean (SD) age was 30.5 (2.7) years. One hundred seventy-nine respondents (51.6%) agreed with at least 1 statement of residency or career dissatisfaction. Lack of a formal maternity leave policy was associated with "considered leaving" (odds ratio [OR], 1.83; 95% CI, 1.07-3.10). Perception of stigma during pregnancy was associated with "revisit career choice" (OR, 1.79; 95% CI, 1.01-3.19). Changing fellowship plans owing to perceived difficulty balancing motherhood with the originally chosen subspecialty was associated with all 3 markers of residency and career dissatisfaction ("considered leaving" OR, 2.68; 95% CI, 1.30-5.56; "revisit career choice" OR, 2.23; 95% CI, 1.13-4.43; and "advise against surgery" OR, 2.44; 95% CI, 1.23-4.84).

**CONCLUSIONS AND RELEVANCE** Surgery residents who perceived stigma during pregnancy, did not have a formal institutional maternity leave policy, or altered their fellowship training plans because of challenges of childbearing expressed greater professional dissatisfaction. Mentorship in subspecialty selection and work-life integration, interventions to reduce workplace bias, and identification of obstacles to establishment of maternity leave policies are needed to enhance professional fulfillment for childbearing residents.

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The number of women in medical school is increasing, now composing half of US graduates in 2018.<sup>1</sup> Despite reduction in sex disparity among trained physicians, women represent just one-third of applicants to general surgery residencies.<sup>2</sup> Perception of a stressful career causing conflict between professional and family responsibilities has been cited as a factor dissuading students from pursuing training in surgery.<sup>3-5</sup> After entering surgical residencies, women have higher rates of attrition than men (25% vs 15%),<sup>6-8</sup> with uncontrollable lifestyle being a commonly reported reason for leaving the profession.<sup>6</sup> Studies investigating the effect of occupational demands on a female surgeon's ability to bear children describe reproductive challenges such as infertility, need for assisted reproductive technology, and increased rates of perinatal complications.<sup>9,10</sup> However, studies capturing the views of women surgeons who begin families during training have been limited.

We previously published results of a national survey of women surgeons who had at least 1 child during residency, describing their perspectives and the potential effect on training. This study reported responses on 5 broad themes pertaining to workplace culture during pregnancy, maternity leave policies, lactation support, childcare assistance, and career and residency satisfaction following childbirth.<sup>11</sup> More than one-third of respondents reported seriously considering leaving residency owing to the challenges of balancing residency with pregnancy and motherhood.

This study builds on the results of the prior publication by exploring important remaining questions with regards to the cultural and structural factors within residency that influence professional satisfaction. Discontent among childbearing residents reflects a conundrum in the current training paradigm that may contribute to the surgical sex gap and workforce shortage. To better answer these highly complex issues and inform future policy changes to support childbearing residents, we a priori planned an in-depth analysis of factors associated with residency and career dissatisfaction. We present the findings of this analysis to help surgical leaders identify effective policy improvements to mitigate risk of professional dissatisfaction in our future surgical workforce.

## Methods

We analyzed data from a 2017 national survey of women who were pregnant and delivered at least 1 child during surgical training. Questions were structured as statements to which respondents indicated their agreement on a 4-point Likert scale, from strongly agree, agree, disagree, to strongly disagree. Responses were dichotomized, with those categorized as "agree" representing the sum of agree and strongly agree and "disagree" representing the sum of disagree and strongly disagree. Demographic and program information, number of pregnancies and stage of training during pregnancy, and past or anticipated graduation date were collected. Development and findings of this survey were previously reported, and the survey is available online.<sup>11</sup> A link to the survey was electronically distributed to active members of the Association of

### Key Points

**Question** What are the cultural and structural factors of surgical training associated with residency and career dissatisfaction in residents who become pregnant and have children during training?

**Findings** In this nationwide survey of childbearing general surgery residents, 3 risk factors were associated with professional dissatisfaction: altering fellowship training plans owing to difficulty balancing childbearing with the original choice of subspecialty; lack of formal maternity leave policies; and perception of stigma associated with pregnancy.

**Meaning** To improve professional fulfillment and reduce risk of attrition in residents who undergo childbearing during residency, training programs must implement formal maternity leave policies, reduce pregnancy-related stigma, and foster mentor-mentee relationships supporting work-life integration and fellowship selection.

Women Surgeons, to members of the Association of Program Directors in Surgery listserv, and through Twitter and Facebook. Program directors were asked to forward the survey to current and past women trainees. Two large private Facebook groups were used, including the Physician Moms Group (67 156 participants) and the Surgeon Moms Group (960 participants), both of whose membership is by invitation of another physician or surgeon. The survey was distributed in January 2017 and was available online for 4 weeks. Responses were anonymous, and participants were not remunerated. Completion of the survey inferred consent. This study was approved by the Association of Program Directors in Surgery Committee on Research, and the Partners Human Research Committee institutional review board granted exemption.

### Study Participants

Responses from women who were pregnant and delivered 1 or more children during an Accreditation Council for Graduate Medical Education-accredited United States general surgery training program, and who completed residency in 2007 or later, were examined. Responses of those who had a child during training but did not complete surgical residency were included if the respondent's year of graduation was expected to be 2007 or later.

### Independent Variables and Outcomes

Respondents were queried about cultural and structural characteristics of their training program including perceptions on working while pregnant, maternity leave policies, breastfeeding and lactation, childcare and motherhood, the presence of stigma, and satisfaction with residency program and colleague support. Data were collected on postgraduate subspecialty training plans before and after pregnancy. Respondents who altered their fellowship training plans after pregnancy and agreed with the statement, "I changed my surgical subspecialty due to difficulty balancing pregnancy/motherhood with the demands of my original choice of subspecialty," were included in further analysis.

Outcome variables included 3 statements that were developed to assess professional satisfaction. These were modified from similar measures used to evaluate job satisfaction in comprehensive national surveys of practicing surgeons, physicians, and surgical residents.<sup>8,12-15</sup> Simple or general questions about professional fulfillment have been found to be insufficient to assess the multiple variables contributing to physicians' occupational happiness,<sup>14</sup> suggesting a multimodal approach improves understanding. Because residency takes place during a finite period, professional satisfaction was differentiated into categories of residency satisfaction and overall contentment with the surgical career. Participants were reported to be unhappy with their residency if they indicated agreement with the statement, "my experience of pregnancy/motherhood during residency made me strongly reconsider whether I wanted to stay in surgery" ("considered leaving"). Respondents were reported to be unhappy with their career if they indicated agreement with the statements: (1) "if I could choose again, I would choose a career more accommodating of parenthood than surgery" ("revisit career choice"); or (2) "if a female medical student came to me for advice, I would caution her against choosing surgery because of the difficulty of balancing a surgical career with motherhood" ("advise against surgery").

### Statistical Analysis

Multivariate logistic regression was used to determine independent factors associated with agreement with each of the 3 statements on professional dissatisfaction. Covariates with a *P* value of .20 or less on univariate analysis were included in the multivariate models. Multicollinearity was assessed using the variance inflation factor. A *P* value of .05 or less was accepted as statistically significant, and *P* values were 2-sided. Data were analyzed using Stata, version 14.0 (StataCorp).

## Results

A total of 347 women responded to the survey and met inclusion criteria. They reported a total of 452 pregnancies during residency. Given the methods of survey distribution, the response rate could not be determined. Eighty-three percent of respondents (273 of 327) had at least 1 pregnancy during clinical (nonresearch) training, with more than 25% (*n* = 100 of 346) reporting more than 1 pregnancy during residency. Most pregnancies took place during or after the third postgraduate year. Most respondents were residents of an academic training program with at least 4 chief residents per class, with equal geographical representation from the 4 regions of the country (West, Midwest, South, and Northeast) (Table 1).

Fifty-two percent of respondents (*n* = 180 of 346) agreed with at least 1 statement of professional dissatisfaction. Thirty-nine percent of respondents (*n* = 135 of 346) agreed with "considered leaving," 27% of respondents (*n* = 94 of 346) agreed with "revisit career choice," and 30% (*n* = 102 of 346) agreed with "advise against surgery."

On univariate analysis, professional dissatisfaction was associated with perceptions of negative stigma during preg-

Table 1. Participant Demographics

Participant Characteristics (N = 347 <sup>a</sup> )	No. (%)
Current role	
Practicing surgeon	159 (45.8)
Fellow	53 (15.3)
Resident	135 (38.9)
Past or anticipated residency completion, y	
2007-2009	24 (6.9)
2010-2012	53 (15.3)
2013-2015	79 (22.8)
2016-2018	136 (39.2)
2019-2022	55 (15.9)
Pregnancies during residency, No. ( <i>n</i> = 346)	
1	246 (71.1)
2	94 (27.2)
3	6 (1.7)
Level of training during pregnancy <sup>b</sup> ( <i>n</i> = 327)	
PGY 1	16 (4.9)
PGY 2	41 (12.5)
PGY 3	72 (22.0)
PGY 4	55 (16.8)
PGY 5	89 (27.2)
Research y <sup>c</sup>	54 (16.5)
Survey access ( <i>n</i> = 346)	
Physician moms group	56 (16.2)
Surgeon moms group	96 (27.7)
Link emailed from program director	79 (22.8)
Link emailed from other	99 (28.6)
Twitter	16 (4.6)
Program characteristics	
Type of program ( <i>n</i> = 342)	
Academic	297 (86.8)
Independent	45 (13.2)
Program size	
1-3 Chief residents	48 (13.8)
4-6 Chief residents	173 (49.9)
≥7 Chief residents	126 (36.3)
Geographic location <sup>d</sup> ( <i>n</i> = 346)	
Northeast	104 (30.1)
Midwest	82 (23.7)
West	75 (21.7)
South	85 (24.6)
Program had formal maternity leave policy	
Yes	121 (34.9)
No	168 (48.4)
Unknown	58 (16.7)
Hospital had lactation facility other than bathroom	
Yes	220 (63.4)
No	96 (27.7)
Unknown	31 (8.9)

(continued)

Table 1. Participant Demographics (continued)

Participant Characteristics (N = 347 <sup>a</sup> )	No. (%)
Hospital/program offered childcare support <sup>b</sup>	
Yes	64 (18.4)
No	262 (75.5)
Unknown	21 (6.1)

Abbreviation: PGY, postgraduate year.

<sup>a</sup> Each question was answered by more than 90% of participants except where otherwise noted.

<sup>b</sup> Women who had more than 1 child and had at least 1 during clinical residency were listed under the earliest postgraduate year they were pregnant.

<sup>c</sup> Women were listed under research years only if they had all their children during nonclinical time

<sup>d</sup> Northeast: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, and Pennsylvania; Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; West: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, Washington; South: Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, Washington, DC, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, and Texas.

<sup>e</sup> Childcare support included any of the following: monetary support, backup childcare, and/or preferential childcare enrollment.

nancy, lack of formal program maternity leave policies, dissatisfaction with mentorship on integrating career with motherhood, and changing subspecialty owing to perceived difficulties balancing childbearing with the originally selected subspecialty (Table 2).

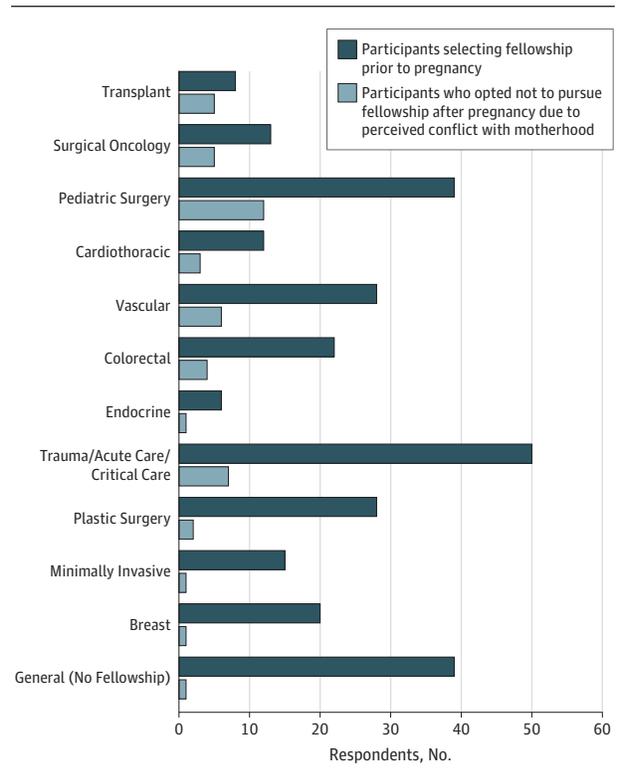
Independent risk factors contributing to each of the 3 measures of professional dissatisfaction are listed in Table 3. Changing subspecialty owing to the perceived challenges of balancing motherhood with the surgeon’s original preference was independently associated with agreement with all 3 statements of professional discontent. Lack of formal institutional maternity leave policy was associated with “considered leaving.” Perceptions of negative stigma associated with pregnancy was associated with “revisit career choice.”

Fifty of 328 respondents (15.3%) altered their plans for fellowship training owing to perceived challenges integrating motherhood with their originally selected subspecialty. Those who originally intended to pursue transplant (n = 5 of 8 [62.5%]), surgical oncology (n = 5 of 13 [38.46%]), and pediatric surgery (n = 12 of 39 [30.77%]) fellowships were most likely to change their postgraduate plans (Figure 1). These women most commonly did not pursue fellowship (n = 16 of 50 [32.0%]), switched to breast surgery (n = 15 of 50 [30.0%]), or switched to trauma and acute care surgery (n = 8 of 50 [16.0%]). Figure 2 demonstrates subsequent postgraduate or fellowship plans of the 50 respondents who altered their fellowship choices after their pregnancies.

## Discussion

The results of this national survey characterized several sources of professional dissatisfaction in participants who were pregnant and delivered a child during surgical training: (1) alter-

Figure 1. Changes in Fellowship Selection Before and After Pregnancy/Childbirth



ing career trajectory owing to difficulty balancing childbearing with the original choice of subspecialty, (2) lack of formal institutional maternity leave policies, and (3) perception of a negative stigma associated with pregnancy. This builds on previous work describing the experience of pregnancy during residency<sup>11</sup> by identifying the sources of greatest strain that may benefit from increased support and intervention.

A 2018 report published by the American Medical Association projecting physician workforce volume predicted a shortage of 29 000 surgeons by 2030.<sup>16</sup> As demand for surgeons outpaces supply, resident attrition is of significant concern.<sup>17,18</sup> A 2017 meta-analysis<sup>6</sup> showed that women leave surgical training programs more often than their male counterparts, commonly citing uncontrollable lifestyle as the cause. Thirty-nine percent of participants in our survey indicated they had seriously considered leaving their residency, significantly higher than the 15% reported among all general surgery trainees in the 2008 National Study of Expectations and Attitudes of Residents in Surgery survey.<sup>19</sup> This suggests women who become pregnant during training may be at particularly high risk for attrition.

Participants in this study who changed their fellowship training plans owing to difficulty balancing pregnancy and childcare with their original fellowship choice were at greatest risk for professional discontent. Studies of the factors driving surgical career selection show both sexes place equal value on interest in the field, intellectual challenge, technical aspects, and clinical opportunities, but women may be more likely to be influenced by lifestyle when choosing their

Table 2. Univariate Analysis

Participants' Reported Training Experience	Surrogate Markers of Career Dissatisfaction in Residency					
	"My Experience of Pregnancy/Motherhood During Residency Made Me Strongly Reconsider Whether I Wanted to Stay in Surgery" (Considered Leaving) <sup>a</sup>		"If I Could Choose Again, I Would Choose a Career More Accommodating of Parenthood Than Surgery" (Revisit Career Choice) <sup>b</sup>		"If a Female Medical Student Came to Me for Advice, I Would Caution Her Against Choosing Surgery Because of the Difficulty of Balancing a Surgical Career With Motherhood" (Advise Against Surgery) <sup>c</sup>	
	OR (95% CI)	P Value	OR (95% CI)	P Value	OR (95% CI)	P Value
Had lighter work schedule during pregnancy	0.8 (0.4-1.5)	.50	1.0 (0.5-2.0)	.90	1.1 (0.6-2.1)	.80
Felt negative stigma associated with pregnancy	1.9 (1.2-3.0) <sup>d</sup>	.006 <sup>d</sup>	1.7 (1.0-2.8) <sup>d</sup>	.03 <sup>d</sup>	1.2 (0.7-1.9)	.50
Maternity leave >6 weeks	1.2 (0.7-2.1)	.50	0.8 (0.5-1.5)	.50	1.1 (0.6-2.0)	.80
Program not reported to have a formal maternity leave policy	1.9 (1.2-3.1) <sup>d</sup>	.01 <sup>d</sup>	1.6 (0.9-2.7)	.09	1.8 (1.0-3.1) <sup>d</sup>	.04 <sup>d</sup>
Program provided childcare support	1.2 (0.7-2.0)	.60	0.8 (0.4-1.4)	.40	1.0 (0.6-1.9)	.90
Had access to adequate lactation facilities	0.6 (0.4-1.0)	.05	0.9 (0.6-1.5)	.80	0.8 (0.5-1.4)	.50
Felt comfortable to scrub out of case to pump	0.5 (0.3-1.1)	.08	0.9 (0.4-1.8)	.70	0.8 (0.4-1.7)	.60
Satisfied with mentorship regarding difficulties of motherhood	0.6 (0.4-1.0) <sup>d</sup>	.04 <sup>d</sup>	0.6 (0.4-1.0)	.05	0.6 (0.3-1.0) <sup>d</sup>	.04 <sup>d</sup>
Changed fellowship plans because of difficulty balancing pregnancy/motherhood and original choice of subspecialty	2.7 (1.5-5.0) <sup>d</sup>	.001 <sup>d</sup>	2.1 (1.1-3.9) <sup>d</sup>	.02 <sup>d</sup>	2.2 (1.2-4.1) <sup>d</sup>	.01 <sup>d</sup>
Had female leadership in program	0.9 (0.5-1.5)	.60	1.2 (0.7-1.9)	.6	0.8 (0.5-1.4)	.40

<sup>a</sup> Of all participants, 39% agreed. <sup>c</sup> Of all participants, 30% agreed.  
<sup>b</sup> Of all participants, 27% agreed. <sup>d</sup> Statistically significant.

Table 3. Factors Independently Associated With Career Dissatisfaction Among Pregnant Surgical Residents

Factor	OR (95% CI)		
	Lack of Institutional Maternity Leave Policy at Respondent's Residency Program	Perception of Negative Stigma Associated With Being a Pregnant Resident	Changed Fellowship Plans Because of Difficulty Balancing Childbearing With Original Choice of Subspecialty
"My experience of pregnancy/motherhood during residency made me strongly reconsider whether I wanted to stay in surgery" (considered leaving) <sup>a</sup>	1.83 (1.07-3.10)	Not significant	2.68 (1.30-5.56)
"If I could choose again, I would choose a career more accommodating of parenthood than surgery" (revisit career choice) <sup>b</sup>	Not significant	1.79 (1.01-3.19)	2.23 (1.13-4.43)
"If a female medical student came to me for advice, I would caution her against choosing surgery because of the difficulty of balancing a surgical career with motherhood" (advise against surgery) <sup>c</sup>	Not significant	Not significant	2.44 (1.23-4.84)

Abbreviation: OR, odds ratio.  
<sup>a</sup> Of all participants, 39% responded yes.  
<sup>b</sup> Of all participants, 27% responded yes.  
<sup>c</sup> Of all participants, 30% responded yes.

specialty.<sup>20</sup> Female surgeons spend more time fulfilling parenting obligations,<sup>21</sup> are more likely to report that child-rearing has slowed their career,<sup>22</sup> and experience more work-home conflicts than their male colleagues.<sup>21</sup> These conflicts are linked to higher levels of burnout and unhappiness with the profession.<sup>13,22</sup> The results of this survey show that women residents who alter their subspecialty plans after pregnancy most commonly forgo fellowship training altogether. Discontent with this decision appears to affect both residency and overall career satisfaction and may stem from a commonly held belief among surgical residents that subspecialty training is important to improve future lifestyle, compensation, and market-

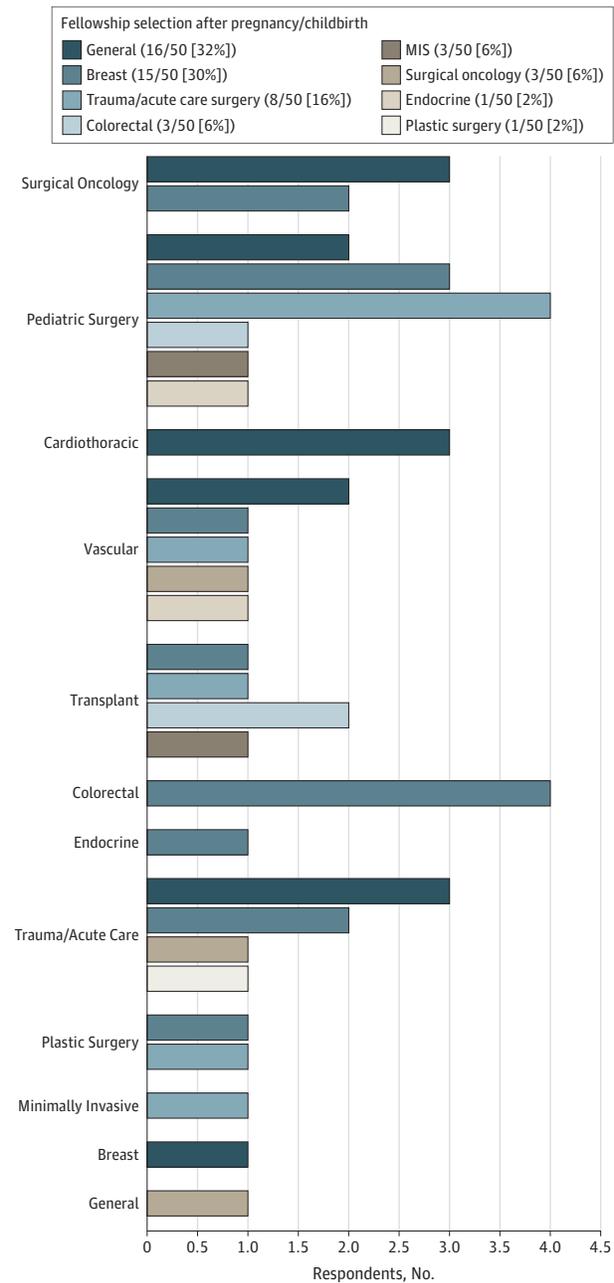
ability for jobs.<sup>19</sup> Sacrificing career prospects and the intellectual rewards of a preferred subspecialty to reconcile domestic duties may reduce enthusiasm to complete training. Role models of the same sex and subspecialty are essential to challenge negative stereotypes<sup>23,24</sup> and demonstrate that the rewards of the desired subspecialty are commensurate with the commitment required to complete training. Women mentors may be better aligned to provide experience-based advice on balancing childbearing and career, but the scarcity of women in senior faculty positions requires novel approaches to ensure trainees have access to such role models. Residents should be reminded that multiple mentors of both sexes may be nec-

essary to address different facets of their career.<sup>20,25</sup> Structured mentoring programs and planned faculty-resident social interactions have been shown to be effective in reducing burnout,<sup>26</sup> in encouraging pursuit of a particular fellowship,<sup>27,28</sup> and in increasing faculty approachability when trainees face personal strain.<sup>29</sup>

Nearly half the respondents of this study reported their training program lacked a formal maternity leave policy, which was associated with the desire to withdraw from residency. Other authors have suggested that pregnant residents in programs without detailed maternity policies experience negative influences from their colleagues who are asked to unexpectedly cover their workload.<sup>30</sup> Structured service coverage plans that provide equal distribution of responsibilities, with the pregnant resident completing more difficult rotations earlier in pregnancy, may reduce resentment from peers and increase predictability in subsequent maternity leave. Support for pregnancy in graduate medical education is widely variable, with programs only required to comply with US government laws. Although the American Board of Surgery reformatting their website to clarify availability of flexible training tracks,<sup>11,31,32</sup> residency programs are not required by the Accreditation Council for Graduate Medical Education to offer these alternate pathways to accommodate parental leave.<sup>33</sup> The increased risk of residency dissatisfaction in participants from programs without leave policies demonstrates the need for collaboration between surgical training program directors, Accreditation Council for Graduate Medical Education leaders, and the American Board of Surgery to form a unified stance on parental leave policies including implementation of alternate training tracks.

Sixty percent of respondents to this survey indicated that pregnancy during residency was correlated with stigma, similar to results of a 2008 survey of members of the American College of Surgeons that reported 67% of women surgeons had perceived negative opinions of pregnancy during training.<sup>34</sup> Qualitative interviews with pregnant residents describe unease about diminished reputation, including being viewed as “a burden on colleagues,” “lazy,” or “not carrying my weight.”<sup>35</sup> These concerns may be driven by faculty who subtly discourage pregnancy during training, with 61% of general surgery program directors indicating that a female trainee’s performance is negatively influenced by becoming a mother<sup>35</sup> and 50% of postmatch fourth-year medical students reporting questions regarding plans for pregnancy during their surgical residency interviews.<sup>36</sup> This study suggests perception of stigma related to pregnancy is associated with dissatisfaction with the surgical career. Such maternal discrimination, which is a distinct phenomenon from sex discrimination, has been shown to be associated with higher levels of self-reported burnout among female physicians.<sup>37</sup> Workplace interventions that increase duration of maternity leave, improve childcare, and provide lactation support may mitigate perceived stigma,<sup>37</sup> decrease apprehension associated with requesting accommodations, provide predictability for peers when planning for a pregnant resident’s leave, and increase program appeal when recruiting future trainees.<sup>36</sup> Practical and successful solutions for childcare include access to onsite daycare,<sup>38</sup> backup child care,<sup>39</sup> and financial childcare support.<sup>40</sup> Breastfeeding residents should be supported in

Figure 2. Fellowship Selection in Respondents Who Changed Fellowship Training Plans After Pregnancy/Childbirth



MIS indicates minimally invasive surgery.

their need to pump milk during long cases by permitting periods of cross-coverage by fellow residents and by providing appropriate lactation facilities near the operating room.<sup>41</sup>

**Limitations**

Limitations of this study include the method of survey distribution, which did not allow calculation of a response rate. However, given that the number of women who have been pregnant during training is unknown, social media platforms were used to disseminate the survey to as many surgeon mothers

as possible. Selection bias may have affected the results if those who had greater residency or career dissatisfaction were more likely to participate in these interest groups or to reply to electronic requests for participation from the Association of Women Surgeons and program directors. Despite this, the study cohort exhibits a balance of program sizes and types and wide geographic distribution. Additionally, response and social desirability bias may be a factor in any self-reported data, with a tendency for participants to answer questions in a way that will be viewed favorably. The factors driving subspecialty selection are complex, and it is possible that issues other than pregnancy and parenthood drove career changes. Future studies with parallel data on training and career satisfaction of male residents and female residents without children may provide useful comparison with this cohort. Data about social and financial supports, such as marital status, family assistance, and annual income, which may have influenced career decisions and the level of work-life conflicts, were not collected. Although an effort was made to report the most contemporary experience by including only responses from those who completed or were expected to complete residency 2007 or later, responses are subject to recall bias. Lastly, the cross-sectional design does not allow causal associations to be drawn.

## Conclusions

This is a pivotal time for sex equity in the workforce. Surgical training is at a crossroads, with lifestyle issues affecting recruitment and retention. The rising number of women beginning families during residency<sup>34</sup> requires surgical leaders and program directors to address the challenges faced by childbearing trainees. This study shows that expectant residents who feel compelled to alter their fellowship plans owing to family priorities, who lack maternity leave policies at their training programs, and who perceive negative stigma around pregnancy are at increased risk of experiencing career dissatisfaction. Surgical training programs must refine mentor-mentee relationships, targeting support in work-life integration and fellowship selection. Interventions at the program and national levels should focus on identifying obstacles to maternity leave policies, designing a collaborative approach to implementation of flexible training tracks, and examining methods to reduce maternal discrimination. This may improve professional fulfillment, reduce attrition, and improve the residency experience for childbearing residents.

### ARTICLE INFORMATION

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**Concept and design:** Rangel, Lyu, Haider, Smink.  
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