Keys To Career Satisfaction: Insights From a Survey of Women Pediatric Surgeons

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Background/Purpose: Declining interest in the field of surgery is attributed to lifestyle issues, more women per class, high debt, and long residency. To maintain surgery as a premier career choice, female students must find surgery to be professionally and personally rewarding.

Methods: A 35-item questionnaire was mailed to 95 women pediatric surgeons (WPS), assessing multiple professional and personal factors. Responses were entered into a confidential database and analyzed by χ^2 or *t* tests.

Results: Seventy-nine percent of surveys were returned; practice was identified as academic (60%) and private (40%). Respondents were grouped by age: A, less than 44 years (41%); B, 45 to 54 years (37%); and C, greater than 55 years (22%). For academic WPS, 81% are on timeline for promotion. Insufficient protected time was a significant obstacle for a successful academic career in groups A and B ($P = .001$). Clinical load, on-call responsibilities, lack of mentorship, and departmental support were major obstacles in all groups ($P = .05$). Seventy-three percent of WPS in private practice were satisfied with their role in practice management; poor practice conditions were cited as the most frequent reason for job relocation. Sixty-one percent of WPS are married, and 46% are raising children. WPS had statistically significant more responsibilities for child care and household tasks in comparison with their partners. Eighty-three percent report career satisfaction but desire more time with family and for personal interests. Part-time and flexible work schedules were identified as attractive ways to achieve career-family balance. Eighty-four percent believe that quality-of-life issues are the dominant reason that fewer medical students choose surgical fields.

Conclusions: WPS express career satisfaction but share the concerns of their female colleagues in other surgical disciplines. Quality of life is viewed as central to career choice for the current generation of medical students; female role models are key to recruiting women into pediatric surgery.
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HISTORICALLY, PEDIATRIC surgery has been distinguished by a membership of the "best and brightest" from medical school graduating classes and general surgical residency programs. Matching into a residency in pediatric surgery was the culmination of a highly competitive process involving lengthy training that included basic science or clinical investigation, producing multiple peer-reviewed publications, and presenting at national surgical meetings. Since the early 1990s the leadership in general surgery and in those disciplines, such as pediatric surgery, that depend on a talented and competent pool of resident candidates from general surgical programs, have been concerned by the declining number of applicants from American medical schools to general surgical residencies.[1,2] Among a myriad of possible reasons to account for this situation has been the observation that nearly 50% of medical students are women whose ultimate career choices are in nonsurgical fields.[3] If pediatric surgery is to remain a premier specialty, women medical students must find it to be a career with professional and personal satisfaction.

We undertook this study to evaluate the current status of women pediatric surgeons in North America and to determine their overall professional and personal fulfillment. Currently, women constitute about 10% of the membership in 2 major pediatric surgical organizations, the Section on Surgery of the American Academy of Pediatrics and the American Pediatric Surgical Association.[4,5] For the 2002-2003 academic year, 18% of the residents in accredited training programs in pediatric surgery are women.[6] In the 2004 National Residency Match Program, women accounted for one quarter of the applicants and a similar proportion of the successful candidates.[7]

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The results of this investigation should provide information to women medical students and residents in general surgery about the career satisfaction of women pediatric surgeons who are in all stages of their professional lives, from recent completion of training through midcareer to retirement. Furthermore, its findings may shed light on ways that pediatric surgery can remain an attractive and competitive career choice for women.

MATERIALS AND METHODS

Study Population

The study group comprised all female pediatric surgeons who were members of at least 1 of the 3 major professional organizations in North America as of 2002: the American Pediatric Surgical Association, the Canadian Association of Paediatric Surgeons, and the Section on Surgery of the American Academy of Pediatrics. Addresses were obtained from the membership lists of each respective organization. The study was approved by the Institutional Review Boards at each of the authors' respective institutions (IRB # 0207HSE083 for Children's Hospital, Columbus, Ohio and HSC # 8941 for University of Kansas Medical Center).

The Survey

A 35-item questionnaire was designed to elicit objective data about the respondent's demographics, professional information (academic rank and organizational memberships), compensation, and personal/family issues (marital status, children, childcare arrangements, household responsibilities). The respondents were asked to share subjective data about perceptions of their own career advancement, practice arrangements, obstacles to career fulfillment, satisfaction with their career, and recruitment of women into pediatric surgery. A sample survey was given to 5 volunteers and assessed for ease of completion, clarity, and item relevancy. Based on feedback from these pilot surveys, minor modifications were made in the study questionnaire such that completion required an average of 15 minutes.

A confidential, precoded questionnaire was mailed with an introductory letter that explained the purpose of the survey. At a second time-point, all nonrespondents were sent an additional questionnaire and letter requesting return of a completed survey. Confidentiality was protected by coding of the questionnaire and anonymous entry into a computerized database by trained secretarial staff.

Study Analysis

The survey questions were arranged into related sets by age: group A, less than 44 years; group B, 45 to 54 years; and group C, greater than 55 years. Response rates varied to each question because some surveys were returned with partially completed entries.

Initial analyses consisted of frequencies and measures of central tendencies to describe the sample and their responses. Group comparisons consisted of χ^2 tests and proportional analyses for categorical information and independent *t* tests for Likert rating scales. The alpha level for all comparisons was set to a *P* value of .05. All analyses were conducted with the Statistical Package for the Social Sciences (SPSS 11.5, Chicago, Illinois).

RESULTS

Ninety-five women in pediatric surgery were invited to participate in the survey; 75 (79%) returned completed questionnaires. The respondents were placed into 3 groups by age: group A, less than 44 years (41%); group B, 45 to 54 years (37%); and group C, greater than 55 years (21%). Completion of their residency in pediatric surgery after 1985 was noted by 68% of the respondents. Forty-five (60%) women pediatric surgeons classified their practice as academic, and 30 (40%) as private. The majority of respondents (52%) in private practice had an affiliated, nonsalaried appointment at a medical school or university. Younger women were more likely to be in academic practice: group A, 70%, group B, 57%; and group C, 25%.

Table 1. Faculty Rank for Women Pediatric Surgeons in Full-Time Academic Practice

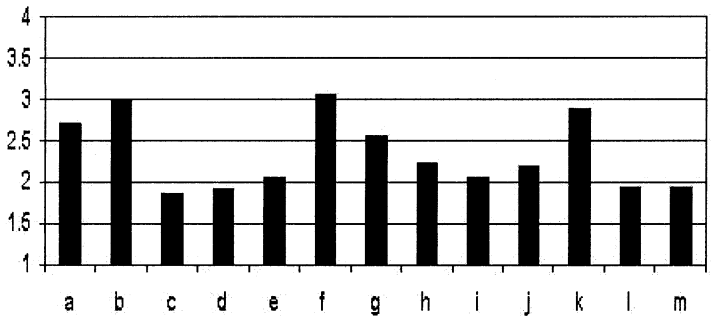
	Tenure Track (n = 26; 58%)	Clinical Track (n = 19; 42%)
Assistant professor	13	12
Associate professor	4	4
Professor	9	3

Professional Issues

Table 1 depicts the faculty rank for the 45 women in full-time academic practice, including the highest rank at retirement for 5 individuals. The majority (81%) are on schedule for academic promotion or have already achieved the next rank in promotion. Respondents who reported not being on the standard timeline for academic promotion noted that they delayed consideration for advancement because of child rearing, family issues, or personal reasons. Two individuals left academic practice because they were not promoted; both attributed a lack of scholarly activity and heavy clinical responsibilities as the reasons for nonadvancement. When asked to consider obstacles for a successful academic career, groups A and B rated the impact of insufficient protected time for scholarly pursuit more significantly than group C ($P = .001$). As noted in Fig 1, excessive clinical load, on-call responsibilities, lack of appropriate mentorship, and lack of support from the division director or departmental chairperson were ranked as major barriers to career success by all groups ($P < .05$).

A senior faculty mentor was identified by 84% of the women pediatric surgeons in academic practice, whereas 16% noted that they do not have or never had an individual in a mentoring role. One third of the surgeons volunteered explanatory comments that reflected dissatisfaction with their previous or current mentor for reasons that included perceived disinterest, lack of support, or absence of a mentoring structure.

The majority of respondents (71%) in academic pediatric surgery have remained in their initial position. The 2 most frequent reasons for leaving were promotion to a better position at either the same or higher academic rank



Obstacle	Mean	SD
a) Lack of mentorship	2.71	1.17
b) Excessive clinical workload	2.98	0.99
c) Excessive teaching workload	1.86	0.92
d) Excessive committee duties	1.91	0.84
e) Inadequate secretarial support	2.05	1.09
f) Insufficient protected time for scholarly activity	3.05	0.98
g) Lack of support of departmental chairperson	2.56	1.19
h) Lack of support of division director	2.22	1.21
i) Poor planning on my part	2.05	0.92
j) Poor allocation of my time for scholarly activity	2.19	1.04
k) Excessive on-call commitments	2.89	1.06
l) Child care duties	1.95	1.10
m) Home care duties	1.95	1.03

Fig 1. Ratings of obstacles to a successful academic career as ranked by survey participants in academic practice. Paired *t* tests revealed that obstacles f, b, k, & a received significantly higher ratings then all of the others. Obstacle f also received a significantly higher rating than obstacles a and obstacle g was rated higher then obstacles c, d, e, h, i, j, l, & m.

or because a spouse had secured a position in another location.

All but 1 of the women pediatric surgeons in private practice are either in a group or have at least one partner. Three quarters report having an equal voice in practice decisions that involve financial and administrative matters. The majority (73%) are satisfied with their role in the practice. For the one quarter who moved to a different private practice, "poor" practice conditions or other negative aspects of the professional arrangement were cited as the most frequent reasons for relocation.

Women pediatric surgeons report a high degree of career satisfaction: group A, 93%; Group B, 86%; and group C, 88%. A minority of respondents (4%) retired or stopped practicing pediatric surgery for career reasons: "burnout," desire to pursue other professional interests, and family issues.

Professional Activities

The majority of respondents (76%) are members of the American Pediatric Surgical Association (APSA) and fellows of the American College of Surgeons (ACS), and 68% are fellows of the American Academy of Pediatrics (AAP). Membership in these organizations was associated with age; whereas group A had 62% membership in APSA and 71% fellowship in the ACS, group C had 100% membership in both. Fellowship in the AAP ranged from 45% for group A to 93% for group C.

Appointment to 1 to 3 committees during their career included AAP (35%), ACS (23%), APSA (40%), and the Canadian Association of Paediatric Surgeons (69%). More than half have never served on a committee in these organizations. This was attributed to never being asked to serve on a committee (40%) and not having a senior mentor to nominate them (38%).

Compensation

Figure 2 outlines the current salaries for the 70 respondents in active practice. There was no statistically significant difference between the salaries for those in private and in academic positions. All of the women pediatric surgeons in a group private practice rated their salaries equal to their male partners. For the women in academic practice, one third believed their salaries to be fair, one third thought their salaries to be equal to men at the same rank, and one third believed that they received a lower salary.

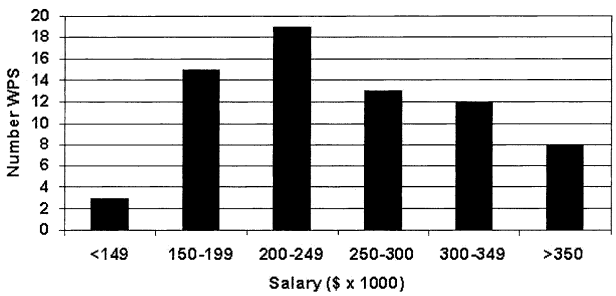


Fig 2. Annual salaries for the survey participants in active pediatric surgical practice.

Family and Personal Issues

Sixty-one per cent of the women pediatric surgeons are married; 73% in group A, 53% in group B, and 56% in group C. At completion of the survey, 51% of respondents had 1 or more biological children, 46% had no children, and 3% had adopted children. Women pediatric surgeons in group A were statistically more likely to have children than those in group C. Eighty-three percent had their first child after completion of all surgical training, and 46% were 35 years of age or older at the birth of their first child. Maternity leave was characterized as inadequate by 41%, irrespective of academic or private practice.

In groups B and C the women pediatric surgeons uniformly reported that they assumed the majority of childcare responsibilities in comparison with their spouse, whereas in group A half of the respondents noted that their spouse was the major childcare provider. Three-quarters have employed or currently employ paid in-home childcare help. Inadequate quality time with their children was related by all of the women pediatric surgeons, irrespective of academic or private practice.

Major responsibility for household tasks was reported by 70% of respondents in Groups B and C, whereas in Group A, half listed their spouse as fulfilling this role. More than 90% employ paid help for routine housecleaning. Women in group A were more likely to note that their spouses were "equal" partners in sharing household responsibilities.

The study participants were queried about their interest in part-time work schedules and a fixed-time schedule, similar to the hospitalist model of care. Half of group A and B and 25% in Group C, irrespective of academic or private practice status, would consider part-time employment. One third of the women pediatric surgeons would be interested in a fixed-time schedule, the majority in the 2 younger age groups. However, the women in academic practice commented that they would be concerned about promotion issues and that they might be perceived by their peers and senior faculty as less academically motivated.

When asked what they would change about their current personal life, 53% desired more time for nonprofessional activities, 44% more time for their spouse, and 35% more time to pursue hobbies and interests outside of surgery. Women in group A were twice as likely to desire additional personal time than respondents in groups B and C.

Recruitment Issues

Uniformly, 100% of WPS rated positive women faculty surgical role models as the major method to recruit female medical students. Women residents in general surgery (89%) and mentoring programs conducted by the department of surgery (75%) were also rated as important ways to elicit interest among female medical students. Eighty-four percent of women pediatric surgeons ranked lifestyle issues as the major reason that women medical students do not choose a surgical career; 100% of respondents in group A listed lifestyle as the number one reason. Lack of positive female faculty role models was listed by 75% of respondents as the second reason, whereas high educational debt and the length of surgical residency were rated by less than 10% as significant factors.

DISCUSSION

The fact that the majority of the women pediatric surgeons in North America participated in this survey attests to their interest in providing a profile of the professional and personal aspects of a career in pediatric surgery from the vantage of its female members. The results of our study indicate that most female pediatric surgeons consider their careers to be rewarding and that despite the long work hours, they would make the same professional choice again. These findings support the 1993 landmark study of Mizgala et al,[8] who found that career satisfaction was high for 419 Canadian women in all surgical disciplines.

The women pediatric surgeons in full-time academic practice showed successful achievement of promotion and tenure when compared with recent data for all women in academic surgery. Our respondents included 17% at the associate professor level and 28% at the rank of professor. In 2003 there were 1,129 women listed as full-time academic surgeons in the United States (13% of all academic surgeons), of whom, 10% were associate professors, and 4% were professors.[9] Accomplishment of academic milestones for the respondents in our study may be related to several reasons. More than half of the women pediatric surgeons were at or beyond midcareer, reflecting a high percentage who remained in academic practice long enough to have weathered the promotion cycles. Only in recent years have women entered academic general surgery in greater numbers, accounting for the disproportionate group at the assistant professor level. Finally, 21% of the target population of women pediatric surgeons in North America chose not to enter our survey, and they may represent individuals who left academic practice before receiving tenure, opted out of academic practice for professional or personal motives, or were not granted promotion.

Previous work has shown that although a greater number of women are entering academic medicine in the United States, their rate of advancement to the senior

ranks is significantly less likely than their male counterparts.[10] Even in areas such as pediatrics in which women account for nearly half of most academic faculties, they do not achieve promotion at rates equal to their male colleagues.[11] Multiple explanations for this situation have been proposed, including less scholarly productivity, higher teaching and clinical responsibilities, lack of mentoring, and conflict between family and professional roles.[12,13] Although our study did not specifically evaluate academic advancement, the respondents considered several issues as significant obstacles to their career success: insufficient protected time for scholarly pursuit, excessive clinical load and on-call responsibilities, lack of mentorship, and lack of support from their senior leadership.

Whereas the majority of academic pediatric surgeons in our study identified a mentor, one third noted that that their mentor either was disinterested, unavailable, or not helpful. Fried et al[14] noted that effective mentoring for women in an academic department of medicine entailed several interventions in faculty development, goals and objectives for mentors and junior faculty, and accountability of the divisional leadership. The ultimate success of mentoring programs in any surgical department will depend on the strength of institutional priorities, engagement of all academic faculty, and continuous reevaluation.[15] Strong mentoring programs for academic surgical faculty at all levels will enhance the retention of junior members and promote the quality of scholarly activity.

The women pediatric surgeons engaged in private practice were, as a group, satisfied with their roles in the business, financial, and administrative aspects of their professional situation. Many commented that the choice of a private practice allowed them more freedom to arrange their personal lives, adjust their call responsibilities, and freed them from the pressures of a full-time academic career. Interestingly, 52% of the women pediatric surgeons in private practice held a nonsalaried appointment at an affiliated academic institution, indicating their continued interest and involvement with teaching medical students and surgical residents.

Differences in the compensation for female and male physicians have received considerable attention since the mid-1980s when reports indicated that women received lower salaries in both academic and private practice arrangements than their male counterparts.[16,17] The salaries of the women pediatric surgeons in our survey showed no significant difference based on academic or private practice status. When the salaries of our respondents in academic practice are compared with the most recent data on medical school faculty salaries for public institutions in the United States as reported by the Association of American Medical Colleges, 36% at the assistant professor level meet the 25th percentile, 32% are at the mean, and 36% are at or above the 75th percentile.[18] The salaries for 63% of the associate professors fall below the median salary level, whereas all but one of the professors have salaries that are less than the median. Compensation was not a focus of our study, and, therefore, caution must be exercised in comparing the reported salaries of the respondents to published national statistics. It is interesting that all of the women pediatric surgeons in the private sector viewed their compensation as equal to their male associates, whereas one third of the women in academic practice believed that they earned a lower salary.

Although more than half of the women pediatric surgeons in our study are married, our findings support the work of Hewlett[19] who found that 83% of men in high-achieving professions were married by 55 years of age compared with 60% of women in similar positions. Achieving a balance between career and personal life may be more possible for younger women in pediatric surgery, because 73% of the respondents less than 44 years of age were married at the time of the survey. Furthermore, the women in the younger age groups were significantly more likely to have children than those older than 55 years. For most of these younger women, their first child was born after the completion of residency and after 35 years of age. Many of them commented on the stress of achieving pregnancy at an older age and on the need for assisted reproductive technology. They stated that for those women who marry while in medical school or during residency, consideration should be given to having children "before the realities of the biological clock," even if it means prolonging training.

Women pediatric surgeons in our survey who were less than 44 years of age reported more spousal involvement in childcare responsibilities and in helping with household tasks than their older female colleagues. The majority of respondents in all groups utilized paid help for routine housecleaning. It is encouraging that the younger women pediatric surgeons had spouses who were more likely to share in the duties related to children and home management. As one individual commented, "My career, raising a family, and running the house would not be possible without the support of my husband." The younger pediatric surgeons were also more likely to desire more time outside of their professional activities for family and to pursue personal interests. However, nearly half of the women in academic practice commented on the stress associated with family responsibilities, a situation that seems to be more of a concern for female academic surgical faculty than their male colleagues.[20]

A significant number of the women pediatric surgeons

in the younger age groups expressed interest in nontraditional work schedules as a way to enhance time for family and personal issues. Part-time and fixed-time schedules have been utilized in other medical specialties with success but have been used rarely by surgeons in active practice. Many medical schools have extended promotion and tenure timelines to accommodate for a variety of faculty concerns, including the difficulties faced by junior faculty who are balancing family responsibilities and the requirements for scholarly productivity. Surgical departments should evaluate alternative work schedules for their faculty and be "open" to innovative methods to help both their female and male surgeons combine successful family life and professional career.

Our survey participants shared the views of other women surgeons regarding the importance of strong female surgical faculty and resident role models as recruiting tools for women medical students. As noted by Jonasson,[21] "In those institutions in which female faculty members and residents are well represented. . .female students see that a surgical career is an option for them." The majority of respondents ascribed lifestyle concerns as the chief reason that women medical students were reluctant to enter a surgical career. It would seem, then, especially important that leaders in academic surgery, and pediatric surgery in particular, encourage junior women faculty to be productive academically and to promote a balanced relationship between career and family. However, 2 recent studies indicate the complexity of the role of surgical faculty on specialty selection by medical students. Neumayer et al[22] retrospectively surveyed 305 women medical students from 7 medical schools in the United States; women on the full-time surgical faculty of each institution varied between 10% and 40%. Perceptions of faculty career satisfaction did not correlate with a greater proportion of women surgeons, but 88% of the female medical students who chose surgery as a career were from those schools with the highest number of women surgical faculty. A subsequent prospective study by Cochran et al[23] of 93 female and male third year medical students on the general surgery clerkship of a major teaching hospital found that contact with the surgical faculty (gender distribution was not described) was frequently associated with negative role models. Students rated certain behavioral characteristics of the surgical faculty more negatively after their clerkship than before the rotation, including a perception that many faculty were dissatisfied with their career choice.

If we are to maintain the highest quality of surgical care for children in North America, several aspects of pediatric surgery will require reevaluation. First, the general surgical pipeline that "feeds" the residency programs in pediatric surgery must remain attractive to women medical students by having an appropriate number of female surgical faculty. Second, academic surgical departments must allow a variety of "work-styles" for its faculty, both female and male, and must take the lead in promoting a balance between professional and family obligations. Third, the professional organizations in pediatric surgery and their leadership must recognize the talents of all their members and particularly encourage the participation of the women who will be entering these groups in an ever increasing number.

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REFERENCES

1. Bland KI, Isaacs G: Contemporary trends in student selection of medical specialties. Arch Surg 137:259-267, 2002

2. Cofer JB, Biderman MD, Lewis PL, et al: Is the quality of surgical residency applicants deteriorating? Am J Surg 181:44-49, 2001

3. Association of American Medical Colleges Web Site: AAMC facts page. Washington, D.C., Association of American Medical Colleges, Available at http:/www.aamc.org/data/facts, accessed 2003

4. Section on Surgery: Membership roster. American Academy of Pediatrics, Chicago, Illinois, 2003

5. American Pediatric Surgical Association: Membership roster. American Pediatric Surgical Association, Chicago, Illinois, 2003

6. Accreditation Council for Graduate Medical Education: Graduate medical education data for academic year 2002-2003. Accreditation Council for Graduate Medical Education, Chicago, Illinois, 2003 (provided by D. Stoll, PhD)

7. Association of American Medical Colleges: 2003 NRMP match data. Association of American Medical Colleges, Washington, DC, 2003

8. Mizgala CL, MacKinnon SE, Walters BC, et al: Women surgeons: Results of the Canadian population study. Ann Surg 218:37-46, 1993

9. American Association of Medical Colleges: AAMC benchmarking tables, Association of American Medical Colleges, Washington, DC, 2002

10. Nonnemaker L: Women physicians in academic medicine. N Engl J Med 342:399-405, 2000

11. Schaller JG: The advancement of women in academic medicine. JAMA 264:1854-1855, 1990

12. Bennett NM, Nickerson KG: Women in academic medicine: Perceived obstacles to advancement. JAMWA 47:115-118, 1992

13. Kaplan SH, Sullivan LM, Dukes KA, et al: Sex differences in academic advancement. N Engl J Med 335:1282-1289, 1996

14. Fried LP, Francomano CA, MacDonald SM, et al: Career development for women in academic medicine. JAMA 276:898-905, 1996

15. Morahan P: How to establish and support formal mentoring programs. Academic Physician & Scientist, January/February: 8, 2001

16. Baker LC: Differences in earnings between male and female physicians. N Engl J Med 334:960-964, 1996

17. Ness RB, Ukoll F, Hunt S, et al: Salary equity among male and female internists in Pennsylvania. Ann Intern Med 133:104-110, 2000

18. Association of American Medical Colleges: Report on medical school faculty salaries. Association of American Medical Colleges, Washington, DC, 2003

19. Hewlett SA: Executive women and the myth of having it all. Harvard Business Review, April: 64-73, 2002

20. Dresler CM, Padgett DL, MacKinnon SE, et al: Experiences of women in cardiothoracic surgery: A gender comparison. Arch Surg 141:1128-1134, 1996

21. Jonasson O: Women as leaders in organized surgery and surgical education: Has the time come? Arch Surg 128:618-621, 1993

22. Neumayer L, Kaiser S, Anderson K, et al: Perceptions of women medical students and their influence on career choice. Am J Surg 183:146-150, 2002

23. Cochran A, Paukert JL, Neumayer L: Does a general surgery clerkship influence student perceptions of surgeons and surgical careers? Surgery 134:153-157, 2003