



The motivation to pursue surgical subspecialty training is largely gender-neutral: A national survey in Switzerland

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ABSTRACT

Objectives: Over the last years, an increasing proportion of general surgeons have opted for a surgical sub-specialization, possibly due to economic pressures. With regard to the increase in women physicians, the aim of the present study was to examine qualitatively and quantitatively gender differences and reasons for obtaining sub-specialization in surgery.

Methods: Survey among board-certified surgeons and surgical residents in Switzerland. Content analyses were done by using Mayring's content analysis.

Results: A total of 455 arguments to pursue surgical subspecialty training were grouped in six different categories, namely: "Interest" (82/512, 16.0%), "demand for quality" (104/512, 20.3%), "future prospects" (142/512, 27.7%), "obligation to specialize" (48/512, 9.4%), "financial reasons" (10/512, 2.0%), and "prestige" (13/512, 2.5%). Men mentioned "demand for quality" ($P = 0.01$) significantly more often than women, but there were no other statistically significant differences between genres.

Conclusions: Intrinsic arguments were more important, including a "demand for quality", especially for men. However, the arguments in favor of surgical subspecialty training are largely gender-neutral.

Key words: Content analyses, feminization, intrinsic arguments, sub-specialization, surgery

Introduction

During the last years, many changes have taken place in the field of General Surgery in Western countries, including a trend towards centralization and sub-specialization and an increase in the proportion of female physicians [1-3]. Physicians finishing their General Surgery residencies in Switzerland may opt for surgical subspecialty training in "General Surgery and Traumatology," "Vascular Surgery," "Thoracic Surgery" or "Visceral Surgery" [4]. Since 2004/2005, depend-

ing on the hiring institution and position to be filled, a surgical subspecialty is usually required for consultants. In 2010, 40.6% of the general surgeons had a sub-specialization and 12.2% of the surgeons were women [2].

A US study showed that most finishing general surgery residents aim for advanced surgical education or fellowship [5]. Knowledge about the reasons underlying the decision to engage in surgical subspecialty training is limited [3,5,6]. It is known that specialty plans are correlated with gender, whereas according to Mc-

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Table 1. Participants' characteristics by gender (64 women and 448 men).

Characteristic	Women	Men	P Value
Age, median (range), y	43 (29-63)	50 (28-71)	<0.01
Married or with a partner, No. (%)	49 (76.6)	373 (83.3)	0.42
At least one child (1 missing value), No. (%)	27 (42.2)	379 (84.8)	<0.01
Hierarchical position			<0.01
Resident, No. (%)	3 (4.7)	19 (4.2)	
Attending, No. (%)	32 (50.0)	77 (17.2)	
Consultant, No. (%)	9 (14.1)	85 (19.0)	
Head of department, No. (%)	5 (7.8)	118 (26.3)	
Physician in private practice, No. (%)	13 (20.3)	130 (29.0)	
Others, No. (%)	2 (3.1)	19 (4.2)	
Hospital category* (2 missing values)			0.09
Type U, No. (%)	7 (11.1)	64 (14.3)	
Type A, No. (%)	18 (28.6)	98 (21.9)	
Type B3, No. (%)	4 (6.3)	40 (8.9)	
Type B2, No. (%)	8 (12.7)	59 (13.2)	
Type B1, No. (%)	10 (15.9)	31 (6.9)	
Private practice, No. (%)	6 (9.5)	91 (20.4)	
Others, No. (%)	10 (15.9)	64 (14.3)	
Language region of workplace (2 missing values)			0.28
German-speaking, No. (%)	52 (82.5)	342 (76.5)	
French-speaking, No. (%)	7 (11.1)	77 (17.2)	
Italian-speaking, No. (%)	1 (1.6)	13 (2.9)	
Romansh-speaking, No. (%)	0 (0.0)	7 (1.6)	
Others, No. (%)	3 (4.8)	8 (1.8)	

* Type U: university hospitals, Type A: large referral centers, Type B3: regional or specialized hospitals, Type B2/B1: small regional surgical departments (classified according to the FMH) [17].

Cord et al. women are less likely to undertake fellowships and more often consider lifestyle [3,7].

The aim of the present study was to determine the key factors in the decision-making process of general surgeons to pursue surgical subspecialty training and the role of gender in this process. Regarding the potential lack of surgeons in some Western countries including Switzerland [8], the understanding of these factors is cogent.

Methods

During summer 2011, an anonymous survey was mailed to board-certified surgeons and General Surgery residents identified as ordinary or junior members from the database of the Swiss Surgical Society (2011: 820 ordinary and 49 junior members working in Swit-

zerland, including 111 women)[9]. The 10-item questionnaire was designed to obtain data on participants' socio-demographics, including the possession of surgical subspecializations and their satisfaction with the surgical residency training scored on a 7-point Likert scale (1 = "very dissatisfied" to 7 = "very satisfied"). A free-response item evaluated the reasons for obtaining a surgical sub-specialization. Content analyses were done by using Mayring's content analysis [10]. The data were collected, stored, analyzed, and shared in strict adherence to the Ethics Committee standards of our institution.

Results

A total of 22 surgeons-in-training and 490 board-certified surgeons returned the questionnaire (512/869, 58.9%), of which 64 (12.5%) were women and 448 (87.5%) men. The median age of the participants was 50 (range 28-71) years. Overall, 422/512 (82.4%) were living in a partnership. Table 1 shows the participants' characteristics.

Men were significantly more often satisfied with the surgical residency training (187/429 [43.6%] vs. 14/60 [23.3%]; $P < 0.01$) (23 missing values). Regarding the participants' career plans (i.e. private practice, clinical career, academic career) there was no significant gender difference ($P = 0.59$). A surgical subspecialty was held by significantly more men (332/446 [74.4%] vs. 23/64 [45.1%]; $P < 0.01$) [Figure 1] (2 missing values); there was no significant gender difference regarding the planning of surgical subspecialty training (39/114 [34.2%] vs. 13/41 [31.7%]; $P = 0.77$) (2 missing values).

The 512 participants gave a total of 455 arguments to pursue surgical subspecialty training, which were grouped in 6 different categories (listed by their characteristic from intrinsic to extrinsic): "Interest" (82/512, 16.0%), "demand for quality" (104/512, 20.3%), "future prospects" (142/512, 27.7%), "obligation to specialize" (48/512, 9.4%), "financial reasons" (10/512, 2.0%) and "prestige" (13/512, 2.5%). All categories including subcategories and representative examples are shown in Table 2.

As the only gender difference, compared to their female colleagues men indicated significantly more often arguments in the category "demand for quality"

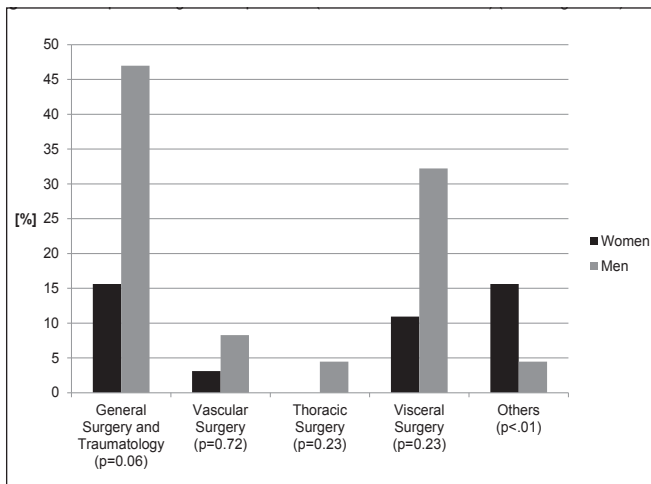


Figure 1. Participants' surgical subspecialties (64 women and 446 men) (2 missing values). Multiple answers were possible. Others (listed by decreasing number of mentions) = hand surgery, cardiac surgery, orthopedics, plastic surgery, phlebology, intensive-care medicine.

(99/448 [22.1%] vs. 5/64 [7.8%]; $P = 0.01$) and the subcategory "profound knowledge" (80/448 [17.9%] vs. 2/64 [3.1%]; $P = 0.01$).

Discussion

Over the last years, an increasing proportion of general surgeons have opted for a surgical sub-specialization, possibly due to economic pressures. With regard to the increase in women physicians, we examined qualitatively and quantitatively gender differences and reasons for obtaining sub-specialization in surgery.

The most important argument for surgical subspecialty training was "future prospects," whereas men mentioned significantly more often "demand for quality."

The majority of the participants had a surgical subspecialty and that percentage for men was significantly higher. There was no significant difference regarding the planning of surgical subspecialty training. This is in accordance with the developments in the United States: Regarding the period from 1985 to 2006, a significant gender difference in favor of men was found in those practicing General Surgery versus subspecialties [3]; in the second decade, a rate of women pursuing fellowship training similar to that of men was detected [3,6,11].

Knowledge of factors influencing fellowship selection is scarce and is mostly based on medical student specialty choices [5]. Influences cited include personal experiences during a surgical clerkship, patient orientation, intellectual and technical challenges, role models, length of training, career opportunities, prestige, financial issues, controllable lifestyle, family demands and gender distribution [12-17]. In our study, the category "future prospects" was the most important gender-independent argument to pursue surgical subspecialty training, followed by the categories "personal interest

Table 2. Examples of arguments to pursue surgical subspecialty training ($n=512$).

Category	Subcategory	Content	Examples of arguments
Interest		Personal interest or personal goal of achieving a surgical subspecialty	"Enjoyment of the subject" "Hand surgery has always been the goal" "Interest"
Demand for quality	Profound knowledge Education	Level of quality regarding the performance Comprehensive knowledge in a certain field of work Good education and training, respectively	"Professionalism" "Professional competence" "Specialization" "In-depth education" "Improved training" "Attractive training"
Future prospects	Market value Track record	Future opportunities and prospects Increases in market value Documentation of training and qualification	"Progress beyond the level of surgical attending is not possible without subspecialty training" "Improved career opportunities" "Improved career prospects" "Improved market values" "Evidence for a solid training" "Documentation of acquired skills"
Obligation to specialize		Necessity to specialize	"Coercion by depreciation of the surgical specialization" "Requirements stipulated by the hospital" "Specialization is inevitable"
Financial reasons		Accounting purposes	"Safety regarding financial reasons (TARMED)"
Prestige		Recognition and prestige	"Elite" "Prestige" "Recognition"

of achieving a surgical subspecialty” and “demand for quality.” Less important were extrinsic factors, such as “obligation to specialize,” “financial reasons,” and “prestige.”

The intrinsic arguments were in accordance with the findings of McCord et al. [3]. In another US study among residents, “ability to master an area of clinical practice” and “enhance one’s attractiveness to future partners” were found in the top three factors influencing fellowship decision-making [6].

Similarly to Yutzie et al. we found a significantly higher satisfaction with the surgical residency training in men [11]. The influence of individual resident experiences through rotations is known as an additional important factor for both women and men in choosing a sub-specialty training [3,5].

Lifestyle has been suggested as the only factor significantly more important to women graduates in the decision to pursue surgical subspecialty training [3]. Unlike this finding, male participants in our study indicated as the only significant difference more often arguments in the category “demand for quality,” especially regarding the “comprehensive knowledge in a certain field of work.” In contrast to Borman et al. we could not find a significant gender difference regarding “financial reasons” [6].

Conclusion

In conclusion, intrinsic arguments were more important, including a “demand for quality,” especially for men. However, the arguments in favor of surgical subspecialty training are largely gender-neutral.

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Authors’ Contributions

Study concept and design: Businger, Kaderli. Acquisition of data: Businger. Analysis and interpretation of data: Seelandt, Tschan Semmer, Kaderli, Businger. Drafting of the manuscript: Kaderli, Businger. Critical revision of the manuscript for important intellectual

content: Kaderli, Seelandt, Businger, Tschan Semmer. Statistical analysis: Seelandt, Tschan Semmer. Administrative, technical and material support: Businger. Study supervision: Businger. Dr. Businger had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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