

Sociodemographic and career aspects in female and male faculty members of Swiss medical schools

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Summary

Objectives: Women are still underrepresented in the senior ranks of medical school faculties. Thus far information has been lacking on gender-sensitive career paths for professorial and non-professorial staff of Swiss medical schools. The aim of this study was to survey faculty members of all Swiss medical schools on sociodemographic aspects, career paths and current career position.

Methods: 342 senior and junior faculty members (SFM/JFM) participated in a postal questionnaire survey. They represent 61.9% of female SFMs, 41.8% of male SFMs, 35.2% of female JFMs and 40.3% of male JFMs.

Results: There was no age difference between the men and women in the two groups (SFMs/JFMs). There were, however, significant gender-typical differences in terms of living arrangements, whether or not they had children of their own, who the children's primary caregiver was, and whether or not the spouse was a re-

searcher as well. Females were significantly less likely to be married or have children, and relied on childminders or nurseries for childcare. Their spouses were more often involved in research. The career paths of physicians in academic medicine showed that fewer female JFMs advanced to tenure; they obtained fewer academic awards and had a lower scientific publication rate.

Conclusions: The data show that Swiss medical faculties reflect the same underrepresentation of women in the higher echelons of medicine as most other Western countries. Gender-sensitive mentoring is needed in medical faculties to support women, especially in advancing to tenure and increasing their publication activities.

Key words: medical school faculties; male and female senior/junior faculty members; sociodemographic aspects; career paths

Introduction

In Europe and North America the influx of women into the field of medicine began in the 1970s. Since the 1990s almost as many women as men have been entering and graduating from medical school. Despite this gender shift in medicine, women physicians are still strikingly underrepresented in the higher echelons of academia. Two gender-typical phenomena have been described which contribute to this ongoing underrepresentation of women in medical faculties:

1. Women specialise in certain gender-typical and less prestigious disciplines such as family medicine, gynaecology, paediatrics, and psychiatry. Valian [1] has suggested that this breakdown of the sexes by medical speciality is congruent with gender schemas and leads to "horizontal gender segregation" [2]: medical disciplines with a higher proportion of women are ranked lower in terms of

prestige, earnings and scientific funding. Female physicians are more focused on patient care than research issues [3]. Both factors may explain why even in specialities with a high proportion of female physicians the higher echelons are dominated by men.

2. Analysis of the current guidelines and promotion practice in academic medicine indicates that both are poorly structured, not tailored to specific phases, and not sufficiently goal- and process-oriented [4]. However, phase-sensitive and process-oriented career development could contribute to continuous biographies, in particular for women physicians.

Up to now, fewer career opportunities have been open to women physicians: the predominantly male department heads assume that promoting women is not worthwhile because family respon-

sibilities often cause them to have more discontinuous career paths [5]. This “statistical discrimination” excludes young female researchers at an early stage in their careers [6], and thus contributes to the “glass ceiling” effect [7].

In addition to the “horizontal gender segregation” described earlier, the “statistical discrimination” and “glass ceiling” effects result in “vertical gender segregation” [2] in the scientific community: Women do not receive career counselling adapted to their gender-specific biography, and are

not promoted to higher positions. Very probably it will take another generation of department heads to overcome these gender segregation processes.

Identifying obvious shortcomings in career promotion for women physicians is thus an important step towards increasing women’s awareness of how to improve their own career opportunities. The aim of this study was to investigate what “visible” factors may contribute to the underrepresentation of women in academia.

Methods

As part of a national research project in social sciences (SPP “Demain la Suisse”, funded by the Swiss National Science Foundation) a research cooperation project ‘Der Binnenraum der Wissenschaft’ (“The Scientific Community”) was carried out under the direction of Ursula Streckeisen in 1997. The aim of a subproject, “Wissenschaft als Beruf. Ursachen und Ausdrucksformen der Untervertretung der Frauen in der Wissenschaft” (“Research as a profession. Causes and forms of underrepresentation of women in academia”) under the direction of Bettina Heintz (No: 5004-047838) was to speak to faculty members at all the Swiss universities about their career paths. This paper comprises data from faculty members of all medical schools in Switzerland.

Instruments

The questionnaire “Career paths and mobility in academia”, developed by Bettina Heintz, Ursula Streckeisen and Regula Leemann [8], covers sociodemographic aspects, career paths/aspects such as tenure track, involvement in research projects, academic awards, scholarships, grants, publication rate and current professional position. The data were gathered in 1997, passed on to the Swiss Information and Data Archives Service for the Social Sciences (SIDOS) in 1998, and opened for further scientific analyses in 2001 [8].

Sample

1. All female and male full and associate professors were approached. According to the categories of the Swiss university information system (SHIS), these faculty members fall into categories I and II, which means they are senior faculty members (SFM): Ordentliche Professoren, Ausserordentliche Professoren, Titularprofessoren, Assistenzprofessoren, and Privatdozenten mit Lehrauftrag. Altogether, $n = 442$ senior faculty members (21 females [4.8%] and 421 males [95.2%]) were approached with a view to participation in the study. 189 subjects (42.8%) returned a valid questionnaire. Of these, 13 (6.9%) were fe-

male SFMs and 176 (93.1%) male. The participation rate of female SFMs was 61.9%, as compared with 41.8% for their male counterparts. The gender ratio of respondents (6.9% females versus 93.1% males) showed a slight shift towards females as compared to their representation in total senior faculty staff (4.8% versus 95.2%).

2. The second faculty group consisted of non-professorial staff (so-called “Oberer Mittelbau”), who are represented in SHIS categories III, IV and VII ($n = 1249$; 193 females [15.5%] and 1056 males [84.5%]), hereinafter referred to as junior faculty members (JFMs). All female non-professorial staff ($n = 193$) were approached, as opposed to only 20 % of male representatives. Of the total number of male JFMs ($n = 1056$), every fifth one was randomly selected for approach ($n = 211$). Thus, 404 JFMs were sent a questionnaire. 153 subjects (37.9%) participated in the survey: 68 females (44.4%) and 85 males (55.6%). The participation rates of female and male JFMs were 35.2% and 40.3% respectively. As only one-fifth of male JFMs were approached, the 85 respondents represent 425 male JFMs. The gender ratio of the participants in the study (13.8% females versus 86.2% males) is comparable to that of the faculty (15.5% female versus 84.5% male JFMs).

The study sample ($n = 342$) consisted of 189 senior faculty members (SFM) (13 females, 176 males) and 153 junior faculty members (JFM) (68 females, 85 males). The majority of the participants held Swiss citizenship ($n = 274$, 81.3%), while 36 (10.7%) were nationals of Germany and 27 (8.0%) of other European countries (no data for 5 respondents).

Statistical analyses

Statistical analyses were conducted with SPSS for Windows, release 10.0. Differences between females and males were tested in categorical variables with chi-square tests, and in continuous variables with Man-Whitney U-tests due to the high skewness in the distribution of these variables.

Results

Sociodemographic aspects

As shown in Table 1, the mean ages of female and male SFMs were 52.2 years (SD 7.6 years) and 54.9 years (SD 6.1 years) respectively. The mean ages of female and male JFMs were 45.2 years (SD 7.9 years) and 46.3 years (SD 7.8 years) respectively. There were no significant differences be-

tween females and males in either group. Women who hold a professorship (SFM), are significantly less likely to be married than their male colleagues. The data for the JFMs mirror the same situation. Gender differences are reflected even more clearly in participants’ living arrangements. About one-third of female faculty staff do not live with a part-

Table 1
Sociodemographic data of study sample (n = 342).

	female senior faculty members (n = 13) n (%)	male senior faculty members (n = 176) n (%)	female junior faculty members (n = 68) n (%)	male junior faculty members (n = 85) n (%)	female senior faculty members – male senior faculty members p	female junior faculty members – male junior faculty members p
Age (years)	Mean = 52 Range 39–62	Mean = 55 Range 41–67	Mean = 45 Range 31–65	Mean = 46 Range 33–66	0.13	0.41
Civil status (married)	8 (61.5)	162 (93.1)	38 (55.9)	73 (86.9)	<0.001	<0.001
Living arrangements (single)	5 (38.6)	6 (3.5)	21 (30.9)	6 (7.1)	<0.001	<0.001
Own children	6 (46.2)	164 (93.7)	34 (50.0)	65 (77.4)	<0.001	<0.001
Child care by child-minders / nurseries	2 (40.0)	27 (16.6)	16 (47.1)	9 (13.8)	<0.001	<0.001
Spouse in research	6 (66.7)	37 (26.2)	23 (67.6)	9 (16.4)	<0.001	<0.001

Table 2
Career data of study sample (n = 342).

	female senior faculty members (n = 13) n (%)	male senior faculty members (n = 176) n (%)	female junior faculty members (n = 68) n (%)	male junior faculty members (n = 85) n (%)	female senior faculty members – male senior faculty members p	female junior faculty members – male junior faculty members p
Mentor in postdoc studies	13 (100)	138 (81.2)	41 (69.5)	41 (51.3)	0.08	0.02
Tenure track	12 (92.3)	151 (86.8)	15 (22.1)	41 (50.0)	0.48	<0.001
Currently working on a research project	12 (92.3)	167 (95.4)	49 (72.1)	63 (75.0)	0.49	0.41
Academic awards (yes)	5 (41.7)	103 (60.2)	10 (15.4)	24 (28.6)	0.09	0.04
Application for at least one scholarship	5 (38.5)	121 (68.8)	28 (41.2)	34 (40.0)	0.03	0.51
Application for at least one research grant	13 (100)	149 (84.7)	35 (51.5)	46 (54.1)	0.13	0.44
	median (range)	median (range)	median (range)	median (range)		
Granted scholarships ¹	2 (1–7)	1 (1–12)	1 (1–8)	1 (1–4)	0.38	0.50
Not granted scholarships ¹	1 (1–1)	1 (1–4)	1 (1–10)	2 (1–7)	0.64	0.91
Granted research projects ²	5 (1–20)	7 (1–37)	2 (1–10)	2 (1–19)	0.07	0.30
Not granted research projects ²	2 (1–4)	2 (1–14)	1 (1–10)	2 (1–6)	0.66	0.18
Number of publications (Journal articles) in the last five years	20 (5–39)	29 (1–305)	7 (1–60)	13 (1–72)	0.09	0.01

1 Data refer only to subjects who have applied for a scholarship.

2 Data refer only to subjects who have applied for a research project.

ner. Furthermore, both junior and senior female faculty members are significantly less likely to have children than their male counterparts.

Career characteristics

Table 2 shows characteristics which are important career-promoting factors. Although more female JFMs have a mentor, they are significantly less on tenure track, which is usually the only way to achieve a senior faculty position in Swiss medical schools. An equal number of female and male faculty staff actually work on research projects, but female JFMs obtain significantly fewer academic awards. Compared to male professorial staff, significantly fewer females had applied for scholar-

ships during their junior faculty period. There are no gender differences, however, in the award of either scholarships or research grants. In the scientific community the number of papers published plays an important role in securing status. A lower publication rate is one of the main factors militating against the promotion of female JFMs to professorship.

Summarising the data presented on faculty members of Swiss medical schools, the main gender differences are found in living arrangements and family-related factors, i.e. factors of social and emotional support, tenure track, academic awards and scientific publication rate.

Discussion

Up to now there has been a lack of summarised data on the gender distribution of positions in medical faculties or on gender-related career paths in academic medicine in Switzerland. This paper is an attempt to fill the gap in certain respects.

Interest in the study issues

In the national survey of faculty members of all Swiss universities, a questionnaire on career paths and current professional position [8] was mailed to 4704 subjects. Of the staff who were approached, 2441 (51.9%) returned valid questionnaires [9]. The sample of the medical schools consisted of 846 faculty members, of whom 342 (40.4%) submitted responses. The medical school staff response rate was lower than that of the other faculties. This might be a result of the heavy workload borne by medical school faculty members, involving clinical work, teaching/training of students and residents, organisation of research and a major administrative burden. The participation rate for SFMs was higher than for JFMs. While one would have expected career-related issues to be of even greater interest to junior staff, SFMs may respond to career issues with greater self-confidence from the safe distance of a higher position. Since women are usually more sensitive to gender-related topics, it came as no surprise that almost two-thirds of female SFMs responded, as compared to only 40% of male SFMs. It was, however, disappointing that only one-third of female JFMs took part. The participation rate for male JFMs was the same as for male SFMs. The low participation rate of female JFMs may be ascribable to a high degree of ambivalence towards an academic career. This ambivalence might be the result of less career support or uncertainty as to whether a professional career can be combined with family responsibilities. While the study sample is a random sample, the sample size for each group (female/male SFMs and JFMs) is sufficient to allow conclusions to be drawn for the entire medical faculty staff on the basis of the study sample results.

Although women comprise over 50% of the medical student body, only 4.8% (n = 21) of the total senior faculty staff in Swiss medical schools is female. Women make up 15.5% (n = 193) of junior faculty staff. This gender ratio among faculty members highlights very clearly the urgent need for specific programmes to promote women in academia.

Gender-typical living arrangements

There was no age difference between female and male faculty members. This might be surprising at first glance, as it seems to imply that women are promoted at the same pace as their male counterparts. This is probably true only of those with no family responsibilities. As reported by other authors [10], women in academia are less likely to be

married and/or often remain childless. The data from our sample shows similar results: the vast majority of men are married or live with a partner, while one-third of the women are single. Most male faculty members have children, as opposed to only about half of their female counterparts. Having a family is not a career obstacle for male staff, who most frequently identify their spouse as their children's primary caregiver. As mentioned in other studies [11], our data also revealed that women faculty members most often need nurseries and childminders, or employ paid caregivers in the household. This difference may be explained by the fact that the majority of male faculty members have a spouse of a lower educational level who stays at home as soon as the couple have children. Most women academics live with a partner of the same educational level. This kind of partnership does not usually lead to a sharing of childcare; rather, the mother is left to organise the childcare whilst struggling with her career. The results of our study indicate that women who pursue academic careers in medicine very often refrain from marriage or partnership and having children. This gives them more time to invest in their careers, but on the other hand they forfeit the social and emotional support a spouse and children can provide. This may be one of the reasons why women in academia fall prey to burnout. Women who live with a partner and have children very often leave the academic world at an early stage because there are no gender-sensitive career tracks. A number of women obtain junior faculty positions but then are either not promoted due to the glass ceiling effect [7], or realise that an academic career is not compatible with family responsibilities. Furthermore, the rigid mother myth, which still holds sway primarily in the German-speaking countries of Europe, prevents female physicians from pursuing a professional career [12]. As reported in a British study [13] and borne out by our own results [14], even the prospect of future children can have an impact on career path.

Career paths of female and male faculty members

Although more female JFMs have a mentor in their postdoctoral studies, they are significantly less on tenure track. This works to the detriment of their future careers. Achieving of tenure is a prerequisite for applications and eligibility for a senior faculty position in most Swiss medical schools. Over the last few years, mentoring, especially for women scientists, has been recognised as an important tool for building up a professional network which helps one to become established in the scientific community. In Switzerland a national campaign is even under way to support mentoring (*Schweizerische Universitätskonferenz: Bundesprogramm Chancengleichheit 2000-2003, Modul Men-*

ting. Bern: 2000). Given the results of our study, however, mentors should be more concerned to ensure that female researchers start on tenure track. Taragin et al. [15] reported that female physicians spend more time with patients, thereby increasing their understanding of patients' needs and reducing medical malpractice fourfold as compared with their male colleagues. This attitude is of obvious benefit to the patient, but militates against career advancement for female physicians. The difference in publication rates for male and female JFMs must be viewed in the same context. Although both women and men work on research projects, male scientists lay claim to significantly more scientific papers and academic awards. It happens quite often that women are involved in a research project but men publish the results. The percentage of women in the higher echelons of academia will only increase if career promotion in medicine is institutionalised, structured, and specifically geared to the needs of women scientists [4], meaning greater support for tenure track and advice on how to write papers and present research results. Female scientists will then be more

visible as independent researchers and increase their number of academic awards.

Conclusions

If the percentage of women in the student body of medical schools has today passed the 50% mark, this should be the goal for the academic staff profile. Knowledge of the origins and consequences of gender schemas is the first step towards shifting the balance [1]. A second step is now necessary: institutionalised, structured, and specifically gender-tailored career promotion for young researchers, especially women: i.e. flexible working hours, better access to childcare, and mentoring geared to achieving the essential qualifications for an academic career.

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