

The impact of mentoring during postgraduate training on doctors' career success

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OBJECTIVES Although mentoring is perceived as key to a successful and satisfying career in medicine, there is a lack of methodologically sound studies to support this view. This study made use of a longitudinal design to investigate the impact of mentoring during postgraduate specialist training on the career success of doctors.

METHODS We analysed data pertaining to 326 doctors (172 women, 52.8%; 154 men, 47.2%) from a cohort of medical school graduates participating in the prospective SwissMedCareer Study, assessing personal characteristics, the possession of a mentor, mentoring support provided by the development network, and career success. The impact of personal characteristics on having a mentor was investigated using multiple linear regression analysis. The impacts of having a mentor and of having development network mentoring support on career success were analysed using hierarchical multiple regression analysis.

RESULTS Up to 50% of doctors reported having a mentor. A significant gender

difference was found, with fewer female than male doctors having a mentor (40.7% versus 60.4% at the fifth assessment; $p \leq 0.001$). Apart from gender, significant predictors of having a mentor were instrumentality ($\beta = 0.24$, $p \leq 0.01$) and extraprofessional concerns ($\beta = -0.15$, $p \leq 0.05$). Both having a mentor and having career support from the development network were significant predictors of both objective ($\beta = 0.15$, $p \leq 0.01$; $\beta = 0.17$, $p \leq 0.01$) and subjective ($\beta = 0.17$, $p \leq 0.01$; $\beta = 0.14$, $p \leq 0.05$) career success, but not of career satisfaction.

CONCLUSIONS This study confirmed the positive impact of mentoring on career success in a cohort of Swiss doctors in a longitudinal design. However, female doctors, who are mentored less frequently than male doctors, appear to be disadvantaged in this respect. Formal mentoring programmes could reduce barriers to mentorship and promote the career advancement of female doctors in particular.

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 INTRODUCTION

Interest in mentoring has increased over the past 20 years.¹ Today, mentoring is perceived as key to achieving a successful and satisfying career in various professional fields, including medicine.² Traditionally, mentorship is defined as a relationship between a less experienced person, the mentee, and a more experienced person, the mentor, in which the mentor supports the professional and personal growth of the mentee.³ Informal mentoring refers to a spontaneously established mentorship, whereas formal mentoring describes a mentorship established within a mentoring programme. A new approach to mentoring is the concept of a development network.⁴ This concept builds upon the idea that an individual can receive mentoring support from different people at the same time, under the umbrella of a development network. With respect to mentoring support, Kram⁵ distinguishes the two functions of career support and psychosocial support. Career support includes exposure and visibility, sponsorship and protection, whereas psychosocial support involves counselling, friendship, acceptance and confirmation, as well as role-modelling by the mentor.

The relationship between mentoring and career success is a focus of mentoring research.^{2,6–9} Two facets of career success can be differentiated.^{10–12} Objective career success refers to an assessment of success according to external, objective criteria such as salary and status, whereas subjective career success refers to the assessment of one's own success compared with the success of others (other-referent career success) or compared with one's own individual standards (self-referent career success or career satisfaction). Previous mentoring research outside the medical field agrees that mentoring is positively associated with both objective and subjective career success.^{2,6–9} Studies on the development network concept of mentoring found that support by the mentoring network explained additional variance in career success, exceeding the effect of the traditional mentor–mentee relationship.^{13,14}

Previous research also reported positive career outcomes for mentored doctors. In a systematic review of mentoring in academic medicine, Sambunjak *et al.*² revealed evidence of associations between mentorship and personal development, career guidance, career choice and research productivity. Ramanan *et al.*¹⁵ found that mentored residents in internal medicine were almost twice as likely to report excellent career preparation. Participants in

qualitative interview studies stressed the importance of mentorship for doctors' professional practice, personal well-being and development.^{16,17} Recognising the importance of mentoring, some institutions began to establish formal mentoring programmes for medical students and doctors.^{18,19}

Despite this, methodologically sound studies regarding the benefits of mentoring for doctors are lacking.^{2,20} Some studies have surveyed doctors with direct questions about the perceived benefits of mentoring. In other studies, it remains unclear whether the reported career outcomes were the result of mentoring, or of other factors such as the doctors' personal characteristics. Moreover, the majority of previous studies on the effect of mentoring are cross-sectional.¹ For this reason, the present study seeks to expand existing knowledge on the impact of mentoring on doctors' careers by applying a longitudinal design and controlling for other factors known to be relevant to career success.

The aim of this prospective study was to analyse several mentoring-related issues in a cohort of Swiss medical school graduates during clinical specialist training. The first question of the study addressed the prevalence of mentorship; the second question examined the characteristics of the doctors' mentors in terms of socio-demographic variables and occupational status. Based on previous studies, we expected that up to 60% of doctors would have a mentor^{15,21,22} and that the majority of the mentors would be male, as senior positions in Switzerland are more frequently held by male doctors.²³ The third question of the study focused on the association between the doctors' personal characteristics and having a mentor. As reported by Day and Allen,²⁴ career motivation and occupational self-efficacy correlate positively with having a mentor. Furthermore, some researchers pointed to the importance of mentees taking an active role in creating a mentoring relationship.^{17,25,26} Thus, we hypothesised that instrumental traits (including being active, decisive, independent and persistent), occupational self-efficacy and career motivation would be positively related to having a mentor. The last study question addressed the impact of mentoring on career success. We were interested in the traditional dyadic mentor–mentee relationship and its impact on career success, as well as in the effect of the development network's mentoring support. Our hypothesis was that both having a mentor and the development network's mentoring support would be significant predictors for doctors' career success. Career success is known to

be influenced by multiple factors. Previous research showed that personal characteristics such as instrumentality,²⁷ occupational self-efficacy²⁸ and career motivation,²⁴ as well as personal goals,²⁹ are related to career success. Thus, to establish the independent impact of mentoring on career success, it is necessary to control for these factors.

METHODS

Study design and study sample

This study is part of an ongoing prospective survey (SwissMedCareer Study) of a cohort of graduates of the three medical schools in German-speaking Switzerland (Basel, Berne and Zurich), begun in 2001.³⁰ A total of 70.8% ($n = 711$) of all registered final-year students ($n = 1004$) participated in the first assessment. The participants were surveyed every 2 years. The first assessment took place when the participants were in medical school and the second was conducted after they had begun postgraduate specialist training. In Switzerland, most doctors complete a clinical specialist training after graduation. Depending on the specialty chosen, specialist training as regulated by the Swiss Medical Association takes at least 5 or 6 years and is completed after 8 years on average.³¹ The fifth assessment (T5) was conducted in 2009, 7 years after graduation. To ensure participants' anonymity, the collected questionnaires were identified only by a code. Respondents sent their addresses to an independent address administration office, which allowed for follow-up. The study was approved by the Ethical Committee of Zurich University.

The sample of this study comprised 326 doctors (172 women, 52.8%; 154 men, 47.2%) for whom complete datasets were available for assessments T1–T5. The mean age of the doctors at T5 was 35.2 years (standard deviation [SD] 2.1 years; range: 32–49 years). A total of 279 doctors (85.6%) lived in stable partnerships; 163 of these were married. Fifty-five (32.0%) of the women and 62 (40.3%) of the men had children. Overall, 140 doctors (53.4%) had completed their clinical specialist training at T5. At the first assessment, the 326 study participants did not differ significantly from study dropouts with respect to gender ($\chi^2(1) = 0.01$, $p = 0.94$), instrumentality (being decisive, active, independent, persistent), intrinsic career motivation, extrinsic career motivation and extraprofessional concerns (Wilks' lambda = 0.99, $F[4/701] = 0.54$, $p = 0.71$).

Measures

The study investigated objective career success, subjective (other-referent) career success and career satisfaction (self-referent subjective career success). *Objective career success* was assessed using the Career Success Scale.³² This scale consists of seven items dealing with scientific activities and academic advancement, scores on which are added to a sum score. These items (and scores) are: talks at conferences (none = 0, one to three = 1, four or more = 2); publications (none = 0, one = 1, two to three = 2, four or more = 3); collaboration in research projects (no = 0, yes = 1); months of research as principal activity (none = 0, ≤ 9 months = 1, ≥ 10 months = 2); scholarship awarded (no = 0, yes = 1); competitive third-party funds awarded (no = 0, yes = 1), and research awards (no = 0, yes = 1). The scale was tested in a sample of 406 resident doctors, giving a Cronbach's $\alpha = 0.76$.³² In our study, Cronbach's $\alpha = 0.79$. *Subjective career success* was assessed with the question: 'How do you rate your career advancement compared with that of your study colleagues?' Responses were given on a 7-point Likert scale, where 1 = less successful and 7 = more successful. *Career satisfaction* was assessed with the question: 'How satisfied are you with your career?' Again, responses were given on a 7-point Likert scale, where 1 = very unsatisfied and 7 = very satisfied.³³

To assess *mentoring*, the study pursued two strategies. The first consisted of asking about the presence of a mentor at each assessment (Do you have a mentor? No = 0, Yes = 1). A four-item scale (having a mentor at assessment points T2–T5, sum score divided by number of items) was constructed (Cronbach's $\alpha = 0.68$). In addition, data on mentor characteristics (gender, age, position, formal or informal mentoring) were collected at T5. The second strategy consisted of assessing the mentoring support received from the development network as a whole, using the Mentoring Support Questionnaire.¹³ This questionnaire comprises five scales for, respectively, 'sponsorship and networking', 'career planning', 'coaching', 'emotional support' and 'role model'. The five scales correlate highly; to avoid multicollinearity in the regression model, two of the five were selected, each representing one mentoring function. The 'sponsorship and networking' scale reflects the mentoring function *career support* (four items; e.g. 'There are people in my work environment who use their power and influence to foster my career' [5-point Likert scale, 0 = not at all, 4 = very much, sum score divided by number of items]). The 'emotional support' scale reflects the mentoring

function *psychosocial support* (four items; e.g. 'There are people in my work environment who support me emotionally and provide encouragement in stressful times' [5-point Likert scale]). In a sample of 237 employees, Cronbach's α -values on these scales were 0.87 and 0.86, respectively.³⁴ In our study, Cronbach's α -values were 0.89 and 0.91, respectively.

The following additional measures were employed:

- *Questions concerning socio-demographic data* pertaining to the doctors, *employment* (full-time, yes/no) and *career aspired to* (private practice career; hospital career; academic career; career in other medicine-related fields such as pharmaceutical companies, health administration, medical informatics; career not yet decided).
- *Instrumentality scale* (T1; eight bipolar items answered using a 6-point Likert scale [e.g. 1 = very passive, 6 = very active; sum score divided by number of items]).³⁵ Instrumentality refers to traits such as being decisive, active, independent and persistent, and is a predictor for career success.²⁷ In a representative German sample, Cronbach's $\alpha = 0.77$ (D Alfermann, E Brähler, University of Leipzig, unpublished results, 2007.). In our study, Cronbach's $\alpha = 0.76$.
- *Occupational Self-Efficacy Scale* (T2; six items [e.g. 'I know that I can meet the demands of my profession, if I want to'], answered using a 5-point Likert scale [1 = not at all, 5 = totally]; sum score divided by number of items).³⁶ Occupational self-efficacy refers to one's belief in one's ability to perform a specific behaviour in the work domain and is a predictor for career success.²⁸ The scale was tested in a sample of 1500 university graduates, in which Cronbach's $\alpha = 0.78$.³⁶ In this study, Cronbach's $\alpha = 0.76$.
- *Career Motivation Questionnaire*³⁷ (T2; three scales with eight items each, answered on a 7-point Likert scale [1 = not at all, 5 = totally]; sum score divided by number of items). Items referred to: *intrinsic career motivation* (i.e. enjoyment of and interest in professional activities [e.g. 'I want to provide good work']); *extrinsic career motivation* (i.e. striving for promotion, income, prestige [e.g. 'I considered my career advancement when I chose my job']), and *extra-professional concerns* (i.e. prioritising family, convenient working hours, job security [e.g. 'Convenient working hours are very important to me']). Values for Cronbach's α in a sample of 994 university students were 0.70, 0.76

and 0.72, respectively.³⁷ In this study, Cronbach's α -values were 0.72, 0.72 and 0.78, respectively.

- *Work-life balance aspired to* (T4).³⁸ Personal goals are known to influence actions²⁹ and goals with respect to work-life balance presumably affect career success. Career orientation was assessed with the item: 'I would like to work in a prestigious leading or specialist position. For this, I am ready to work additional hours and to put up with having less free time' (answered on a 5-point Likert scale [1 = not at all, 5 = totally]). Part-time orientation was assessed with the item: 'I can imagine working part-time to have more time for other areas of life such as family, friends and hobbies.'

Statistical analyses

All analyses were carried out using SPSS for Windows, Release 15 (SPSS, Inc., Chicago, IL, USA). Descriptive statistics are given in means and SDs, or counts and percentages. Categorical variables, such as gender and career aspired to, were analysed with chi-squared tests. The impact of person-related variables on having a mentor was investigated by multiple regression analyses, reporting standardised regression coefficients, and R^2 . To investigate the impact of mentoring on career success, we conducted a hierarchical regression analysis, reporting standardised regression coefficients as well as R^2 and R^2 change. P-values of < 0.05 were deemed to be significant.

RESULTS

Prevalence of mentorship

As shown in Table 1, the prevalence of doctors with a mentor ranged between 37.4% and 50.0%,

Table 1 Prevalences of mentorship at time-points 2–5 (T2–T5) according to gender

	Women (n = 172) n (%)	Men (n = 154) n (%)	Total (n = 326) n (%)	χ^2 (d.f.)
Mentor at T2	56 (32.6)	79 (51.3)	135 (41.4)	11.76 (1) [†]
Mentor at T3	59 (34.3)	63 (40.9)	122 (37.4)	1.51 (1)
Mentor at T4	59 (34.3)	76 (49.4)	135 (41.4)	7.58 (1) [†]
Mentor at T5	70 (40.7)	93 (60.4)	163 (50.0)	12.60 (1) [‡]

[†] $p \leq 0.01$; [‡] $p \leq 0.001$

Table 2 Prevalences of mentorship at time-points 2–5 (T2–T5) according to career aspired to at T5

	Career in private practice (n = 121) n (%)	Hospital career (n = 134) n (%)	Academic career (n = 31) n (%)	Other career in medicine (n = 16) n (%)	Career not yet decided (n = 24) n (%)	χ^2 (d.f.)
Mentor at T2	45 (37.2)	54 (40.3)	24 (77.4)	7 (43.8)	5 (20.8)	21.75 (4) [‡]
Mentor at T3	41 (33.9)	48 (35.8)	21 (67.7)	7 (43.8)	5 (20.8)	16.06 (4) [†]
Mentor at T4	43 (35.5)	59 (44.0)	23 (74.2)	4 (25.0)	6 (25.0)	20.27 (4) [‡]
Mentor at T5	51 (42.1)	71 (53.0)	29 (93.5)	6 (37.5)	6 (25.0)	33.98 (4) [‡]

[†] p ≤ 0.01; [‡] p ≤ 0.001

depending on the assessment point. Significantly more male than female doctors had mentors. From T2 to T5, 26.4% of participants indicated never having a mentor, whereas 23.6% reported having a mentor at one assessment point, 19.3% at two assessment points and 14.7% at three assessment points. Only 16.0% of participants reported having a mentor at all four assessments.

Prevalences of having a mentor varied according to the career path aspired to at T5 (Table 2): significantly more of the doctors who aspired to academic careers had mentors than those who aspired to hospital careers, careers in a private practice or careers in other fields related to medicine. However, fewer doctors who had not yet decided on a career path had mentors than those who had already made their career choice.

Characteristics of the doctors' mentors at T5

Of the 163 mentors reported at T5, 79.8% were male doctors. The average age of the mentors was 48.0 years (SD = 7.5, range: 33–67 years). Up to 87.1% of the mentoring relationships had been established informally. With regard to the positions of mentors, 45.5% were senior doctors, 24.5% chief doctors, and 19.0% university professors; the remaining mentors worked either in private practice or in other medical institutions. Mentors of male and female doctors did not differ significantly in terms of gender ($\chi^2(1) = 0.52$, p = 0.47), but did with respect to position ($\chi^2(4) = 19.16$, p ≤ 0.001). Fewer female doctors had mentors who were university professors, and more had mentors who worked in

private practice or in other positions in medical institutions.

The doctor's personal characteristics as a predictor for having a mentor

Significant predictors for having a mentor were gender, instrumentality and extraprofessional concerns (Table 3). As shown, male doctors were more likely to have mentors than female doctors. Irrespective of gender, instrumental personality traits such as

Table 3 Prediction of having a mentor by personal characteristics: results of bivariate correlations and multiple regression analysis (n = 326)

Predictors	Having a mentor (T2–T5)	
	R	β
Gender (M = 0, F = 1)	– 0.21 [‡]	– 0.17 [†]
Instrumentality (T1)	0.28 [‡]	0.24 [‡]
Occupational self-efficacy (T2)	0.18 [‡]	– 0.04
Intrinsic career motivation (T2)	0.18 [‡]	0.04
Extrinsic career motivation (T2)	0.11*	– 0.06
Extraprofessional concerns (T2)	– 0.23 [‡]	– 0.15*
R ²		0.13 [‡]

* p ≤ 0.05; [†] p ≤ 0.01; [‡] p ≤ 0.001
T1–T5 = time-points 1–5; M = male; F = female

being active, decisive and persistent were positively correlated with having a mentor. Extraprofessional concerns such as prioritising family and convenient working hours correlated negatively with mentorship. Neither occupational self-efficacy expectations nor intrinsic and extrinsic career motivation contributed to the prediction, however. At 13%, the variance explained by the predictor variables was significant but small.

The impact of mentoring on career success

The three aspects of mentoring assessed – having a mentor, career support received and psychosocial support received – added significant variance to the prediction of objective career success, subjective career success and career satisfaction, after controlling for personal characteristics, employment rate and work–life balance aspired to (Table 4). Significant predictors for objective career success in the final model were gender, career orientation, having a mentor and career support. Thus, male

doctors and doctors who prioritised their professional advancement over other spheres of life, as well as doctors with mentors and a high degree of career support, had progressed further in their careers in terms of objective career success. As far as subjective career success is concerned, significant predictors were employment rate, career orientation, having a mentor and career support. Thus, full-time doctors who prioritised their careers and had mentors as well as a great deal of career support rated themselves as more successful than their peers. The only significant predictor for career satisfaction in the final model was employment rate.

DISCUSSION

The present prospective study investigated the impacts of having a mentor and of having mentoring support from the development network on career success in a cohort of Swiss doctors. The data

Table 4 Prediction of career success by personal characteristics, employment rate, work–life balance aspired to and mentoring: results of bivariate correlations and hierarchical regression analyses ($n = 326$)

Step	Predictors	Objective career success T5			Subjective career success T5			Career satisfaction T5		
		<i>r</i>	ΔR^2	β	<i>r</i>	ΔR^2	β	<i>r</i>	ΔR^2	β
1	Personal characteristics		0.21 [‡]		0.16 [‡]		0.06 [†]			
	Gender (M = 0, F = 1)	-0.34 [‡]		-0.14*	-0.21 [‡]		0.01	-0.01		0.07
	Instrumentality (T1)	0.25 [‡]		0.08	0.23 [‡]		0.05	0.09		0.01
	Occupational self-efficacy (T2)	0.16 [†]		-0.09	0.19 [‡]		0.09	0.13*		0.12
	Intrinsic career motivation (T2)	0.25 [‡]		0.11	0.17 [†]		0.01	0.11*		0.08
	Extrinsic career motivation (T2)	0.22 [‡]		0.01	0.19 [‡]		0.06	-0.07		-0.08
	Extraprofessional concerns (T2)	-0.28 [‡]		-0.02	-0.19 [‡]		0.05	0.02		-0.12
	Full-time work T5 (yes = 1)	0.23 [‡]		0.01	0.30 [‡]		0.20 [‡]	0.13*		0.16 [†]
2	Work–life balance aspired to		0.06 [‡]			0.04 [‡]			< 0.01	
	Career orientation (T4)	0.45 [‡]		0.22 [‡]	0.37 [‡]		0.20 [†]	0.03		-0.05
	Part-time orientation (T4)	-0.36 [‡]		-0.09	-0.22 [‡]		0.05	-0.08		-0.05
3	Mentoring		0.05 [‡]			0.05 [‡]			0.04 [†]	
	Having a mentor (T2–T5)	0.34 [‡]		0.15 [†]	0.31 [‡]		0.17 [†]	0.17 [†]		0.10
	Career support (T4)	0.34 [‡]		0.17 [†]	0.31 [‡]		0.14*	0.18 [‡]		0.09
	Psychosocial support (T4)	0.05		-0.07	0.12*		-0.01	0.16 [†]		0.07
			0.32 [‡]			0.25 [‡]			0.10 [‡]	

* $p \leq 0.05$; † $p \leq 0.01$; ‡ $p \leq 0.001$

T1–T5 = time-points 1–5; M = male; F = female

provided by the 326 doctors who participated in all the assessments provide important indications as to the relevance of mentoring for the forthcoming generation of Swiss doctors.

Prevalence of mentorship and mentor characteristics

Between a third and half of the participants in this study reported having a mentor. By contrast, several cross-sectional studies conducted in the USA reported higher prevalences of doctors with mentors during residency.^{15,21,22} For example, 56% of internal medicine residents had mentors.¹⁵ However, whereas half of these mentors had been assigned by a residency programme director or through a formal mentoring programme, in our study only 12.9% of the mentoring relationships had been established through formal channels. Formal mentoring programmes for doctors and medical students are not yet as widespread in Switzerland as they are in the USA,^{18,19} which may explain the lower prevalence of mentors found in our study.

Our study revealed a significant difference between male and female doctors in terms of mentorship, with more men than women having mentors. Similarly, Coleman *et al.*²¹ found that female residents were less likely to have mentors. Outside the medical field, gender differences in mentoring were found in some cases only.⁸ Blickle and Boujataoui's study³⁹ revealed no gender differences in terms of the frequency of mentoring relationships, but the women's mentors held less influential positions than the men's. We also found some support for this trend in our study. Our data do not give reasons for not having a mentor, but Ramanan *et al.*¹⁵ investigated barriers to seeking mentorship among doctors and found that the two most frequent barriers among residents without mentors were never having thought about approaching someone and being afraid to approach someone. The provision of formal mentoring programmes could reduce these barriers. Female doctors, whose career paths may be less straightforward owing to the complexities of combining career and family,⁴⁰ may benefit particularly from mentorship, and female mentors may be important role models for female doctors. In this study, 79.8% of the doctors' mentors were male because in Switzerland senior positions are more frequently held by male doctors.²³ However, it might be assumed that female doctors would prefer female mentors. Surprisingly, this study did not indicate such a preference in that it showed no significant differences between the mentors of male and female doctors in terms of gender.

Prevalences of mentoring relationships varied according to the career path aspired to, with the highest prevalence found among doctors who aspired to an academic career. Mentoring would appear to be a crucial ingredient for a successful academic career.^{2,41–43} Doctors who had not yet decided on a career path showed the lowest prevalence of mentoring relationships in this study. Evidence for the association between mentorship and career choice has also been reported in other studies.² Our data do not allow for causal interpretation of the association between mentorship and career choice. It may be that mentorship inclines doctors towards an early career choice, or, by contrast, not having a clear career goal may make it difficult for a doctor to seek mentorship. Doctors without specific career goals may particularly benefit from mentoring support in terms of the provision of career advice, which seems to be lacking during residency.⁴⁴

Personal characteristics and mentorship

Irrespective of gender, instrumentality was the most important predictor for mentorship in this study: doctors who described themselves as active, decisive and independent were more likely to have mentors. This finding is consistent with the results of other studies, highlighting the fact that mentees should take an active role in creating and developing the mentoring relationship.^{17,25,26} It is an interesting finding of this study that most mentoring relationships had been established informally. It is therefore not surprising that proactive characteristics in mentees are associated with having a mentor. Singh *et al.*⁴⁵ found that expectations of advancement and career-associated initiating behaviours, such as career planning, in individuals predicted the acquisition of a mentor 1 year on. In this study, occupational self-efficacy and career motivation did not contribute to the prediction of mentorship, contrary to the results reported by Day and Allen.²⁴ Apart from personal characteristics, which explain only a small percentage of variance, factors pertaining to the working environment may play a role in whether or not a doctor has a mentor in that departments and institutions which acknowledge the importance of mentoring may actively encourage mentoring relationships.

The impact of mentoring on career success

In assessing mentoring, this study distinguished between having a mentor and having development network mentoring support in the form of career and psychosocial support. Both having a mentor and having career support had independent positive

impacts on objective and subjective career success. These results, obtained in a longitudinal design, confirm the findings of earlier cross-sectional studies on the association between mentoring and career success^{2,6-9} and are consistent with development network theory.⁴ Career support from the development network contributed to the explanation of career success beyond the presence of a specific mentor. By contrast, psychosocial support did not contribute significantly to the prediction of career success. Questions have been raised as to which elements of mentoring are important for career advancement.² Drawing on the distinction between career support and psychosocial support established by Kram,⁵ this study bears out the suggestion that career support is more important to career success than psychosocial support, which might be more relevant to well-being at work. As far as career satisfaction is concerned, none of the mentoring-related predictors reached significance in this study, although they explained significant variance when taken together. Similarly, Singh *et al.*⁴⁵ found that mentoring mattered less for career satisfaction than for other forms of career success.

Limitations and strengths

This study has several limitations. Although an objective measure was used to evaluate career success, the study relies on self-reported data only. Furthermore, the results obtained in this study may be typical for the younger generation of doctors in Switzerland, but may not apply to other doctors to the same extent. The study participants were a homogeneous sample of a cohort of Swiss German doctors in the earlier years of their postgraduate careers. Mentoring may be less important for doctors at later career stages and may likewise play yet another role in countries where doctors' specialist training, career paths and working environments are different. The strengths of the study depend on its longitudinal design, on the fact that it differentiates between objective and subjective career success, and on the inclusion of control variables to determine the independent impact of mentoring.

CONCLUSIONS

In a longitudinal design, this study confirmed the positive impact of mentoring on career success in a cohort of Swiss doctors undergoing postgraduate specialist training. Nevertheless, no more than half of the doctors in our study reported having a mentor, and fewer female than male doctors had mentors.

Given the benefits of mentoring, it is crucial that medical students are advised to seek mentors. Moreover, the development of formal mentoring programmes may reduce barriers to mentorship in Switzerland and promote the career advancement of female doctors in particular.

Contributors: MS and BB-F served as principal investigators and designed the study. MS conducted the statistical analyses. Both authors were involved in interpreting the data. MS drafted and BB-F critically revised the manuscript. Both authors read and approved the final manuscript.

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