

Predictors of work satisfaction among physicians

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Background: Work satisfaction among physicians is an important concern because it is associated with several important aspects of care, such as the continuity of care and health care costs. In this study, a brief work satisfaction questionnaire was developed, its validity was assessed, and it was used to examine the determinants of work-related satisfaction among a sample of Swiss physicians. **Methods:** Based on the literature, a 17-item work satisfaction questionnaire was developed that addressed five dimensions of satisfaction: patient care, work-related burden, income-prestige, personal rewards and professional relations with colleagues. This questionnaire was administered by mail to 1904 doctors practising in Geneva, Switzerland; 1184 (59%) responded. Additional data were collected on physicians' personal and work situation. **Results:** In general, physicians were more satisfied with the following aspects of their current work situation: patient care, professional relations and personal rewards (intellectual stimulation, opportunities for continuing medical education, enjoyment at work). The lowest satisfaction scores were found for work-related burden (workload, time available for family, friends or leisure, work-related stress, administrative burden) and work-related income and prestige. In multivariate models, variables associated with most dimensions of satisfaction included type of practice (physician in training were less satisfied), specialty (internal medicine specialists and pediatricians were more satisfied), time spent on administrative tasks (globally negative effect), time spent on continuing medical education (globally positive effect). Age and sex had only a minor influence on satisfaction scores. **Conclusion:** Physician work satisfaction is multidimensional and can easily be measured using a short self-administered questionnaire. This instrument could be useful to monitor changes in the near future.

Keywords: job satisfaction, quality of care, Switzerland, work-related stress

In most countries, physicians' work conditions undergo frequent mutations, some of which can be seen as favourable, other as unfavourable. In recent years, physicians have seen their autonomy reduced by new policies of payers, have been subjected to increased administrative burden and time pressure, and have been held responsible for the increase in health care costs; all these trends would decrease work satisfaction.^{1–4} On the other hand, working hours have tended to decrease, and continuing medical education opportunities have increased over time, both of which may increase work satisfaction. Knowing what job characteristics are associated with work satisfaction among physicians is important not only for physicians themselves and for medical associations, but also for the general public, because physician satisfaction is associated not only with physicians health⁵ and well-being, but also with prescribing behaviour, patient adherence to medications,⁶ patient satisfaction,⁷ physician turnover,⁸ morale of health care workers and staff, and quality of care in general.^{1,9} A survey conducted in Massachusetts, USA, showed that physicians' satisfaction among primary care physicians declined substantially over the last 10 years,

particularly for the amount of time spent with individual patients, personal autonomy, and time available for family and personal life.¹⁰ These findings are of particular importance, as this study compared a situation with virtually no restraint on health care spending in 1986, with the situation in 1997 with growing constraints on costs by health care plans.

In an era of significant reorganization of the health care systems and enormous pressure on physicians, knowing what affects physicians' work-related satisfaction is important for doctors themselves, medical associations, and patients in general. With this as background, a survey was conducted to identify personal and job characteristics associated with work satisfaction in a sample of Swiss physicians.

METHODS

Context of physicians' practice

Over recent decades, Switzerland has experienced important changes, mainly driven by the continuing increase in health care costs.^{11,12} Reasons for this increase are numerous: compulsory basic health insurance coverage, ageing of the population, facilitated access to new medical technology, and high medical specialists density.^{13–16} The new health insurance law introduced in 1996 resulted in fundamental changes for the health care system. The main aims of the law were improved solidarity (premiums not based on risks and equal across age groups, gender, healthy and sick persons) and improved control of health care costs. For outpatient care, Swiss residents

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had the opportunity to enrol in managed care plans with restricted access to medical specialists (preferred providers' contracts), for lower premiums. Fewer than 10% of them did, with negligible effects on the global health care costs. The next change for ambulatory care reimbursement, mainly based on fee-for-service payment, will be the introduction of a national relative value scale (Tarmed) and the possibility for insurers to refuse reimbursement for physicians that are too costly.

Sample and study design

A mail survey was conducted of physicians practising in canton Geneva, Switzerland, during the autumn of 1998. They were identified from membership files of the Geneva Medical Association (1370 members) and the Swiss Association of Interns/Registrars, Geneva Section (906 members). After exclusion of 54 duplicate records, 10 pre-test participants, 97 doctors who had incorrect addresses and 121 who did not practice clinical medicine, 1994 physicians remained eligible.

Most members of the Geneva Medical Association work in the private sector, either in solo or group practice, and are paid on a fee-for-service basis. A minority of the physicians work in private clinics, or are salaried in a medical centre. Members of the Swiss Association of Interns/Registrars are mainly salaried junior physicians working at the single public hospital of Geneva. Senior staff at the public hospital can belong to either association.

Measurement of work satisfaction

A job satisfaction questionnaire was developed in French that included 17 items (*Appendix*), based on the main components of work satisfaction identified by qualitative research of the Society of General Internal Medicine Career Satisfaction Study Group.¹⁷ The items addressed satisfaction with relationships with patients, peers, nurses and other non-medical staff, time for family, friends or leisure, workload and work stress, administrative burden, autonomy in treating patients, autonomy to refer patients to a specialist, intellectual stimulation at work, continuing medical education opportunities, enjoyment of work, respect and prestige, type of payment mechanism, current income, overall quality of care, and job satisfaction in general. Respondents were asked to rate how satisfied they were for each item on a seven-point Likert scale anchored by 1=extremely dissatisfied and 7=extremely satisfied. The instrument was pre-tested for acceptability and clarity among 10 physicians working at the Geneva teaching hospital.

In the main survey, completion rates of the 17 work satisfaction items were high (94.8%–99.1%). In order to facilitate interpretation of the results, an explanatory factor analysis was performed using principal component analysis with varimax rotation to identify meaningful components of work satisfaction among physicians. This analysis excluded the general satisfaction item, which is by definition not 'dimension-specific'. Based on the visual analysis of the scree-plot and interpretability of the

empirical factors, five underlying dimensions of satisfaction were identified.¹⁸ The five-factor solution (*table 1*) made sense in terms of item content, contained few cross-loadings, and captured 67% of the total variance in physician responses. The first factor was interpreted as the 'patient care' dimension, the second as the work-related 'burden', the third as 'income-prestige' dimension, the fourth as the 'personal rewards' derived from work, and the last as reflecting 'professional relations' with fellow health professionals. Subscale scores were constructed by averaging items that were grouped by factor analysis. A subscale score was computed whenever half or more of the corresponding items were not missing. Internal consistency of these scales was satisfactory ('patient care': 0.76; 'burden': 0.79; 'income-prestige': 0.83; 'personal rewards': 0.71; 'professional relations': 0.66). The general satisfaction item was significantly associated with all five scores (Pearson coefficients: 0.39–0.71). Subscales were only moderately correlated with each other (Pearson coefficients: 0.20–0.55), confirming that they represented independent constructs. To facilitate comparisons, satisfaction scores of these subscales were standardized to mean 50 and standard deviation 10.

Predictors of work satisfaction

Determinants of physician satisfaction included socio-demographic characteristics (age, sex), time since graduation from medical school, type of practice (public versus private), medical specialty, membership in a managed care plan (for office-based physicians only), and workload characteristics (number of patients per week, time spent with patients, administrative work, continuing education).

Data analysis

The relationships of the five dimensions of work satisfaction were explored across various socio-demographic and job characteristics of the respondents. Pearson correlation coefficients were calculated to explore the relationships between continuous predictors and satisfaction scores. The continuous variables were also categorized and analysis of variance, including tests for linear trend where indicated, used to test these associations. Multivariate models included the same predictors for all satisfaction scores, to facilitate comparisons. All statistical tests were two-tailed, with a significance level of 0.05.

RESULTS

After the first mailing and three reminders, 1184 (59%) physicians responded to the survey. Physicians identified from membership files of the Geneva Medical Association had a higher response rate (61%), when compared to the physicians of the Swiss Association of Interns/Registrars, Geneva Section (55%). Two-thirds were men (784, 66%). Mean age was 44.9 years (SD: 10.9; quartiles: 36, 44, 52). Most respondents (748, 63%) were in community practice, 362 (31%) were hospital interns or

registrars, and 67 (6%) held senior posts at the hospital (7 missing data). The distribution among specialties was as follows: 402 (34%) were primary care doctors (generalists, general internists), 196 (17%) internal medicine specialists, 83 (7%) pediatricians, 178 (15%) psychiatrists; and 325 (27%) other specialists (surgical specialties, radiologists). On average, respondents had graduated from medical school 17.8 years before the survey (SD: 10.3; quartiles: 10, 17, 24).

Work-related satisfaction

In general, physicians were satisfied with their current work situation (table 1). The ‘general satisfaction’ item had the following distribution: 12 (1.0%) respondents gave a rating of 1, meaning that they were ‘extremely dissatisfied’, 22 (1.9%) gave a rating of 2, 75 (6.4%) a rating of 3, 189 (16.2%) a rating of 4, 379 (32.4%) a rating of 5, 390 (33.4%) a rating of 6, and 101 (8.6%) were ‘extremely satisfied’ (rating of 7). A little less than half of the respondents were extremely satisfied (score=7) with their autonomy in referring patients to specialists (41.2%). One out of four were extremely satisfied with enjoyment of work (26.5%), relations with non-medical staff (27.6%) and their patients (25.2%). One out of five was extremely satisfied with autonomy in treating their patients (21.6%), relations with peers (19.5%), and

intellectual stimulation (19.2%). The lowest satisfaction scores were found for the following items: administrative burden, time available for family, friends or leisure, and work stress. One out of six respondents were extremely dissatisfied (score=1) with administrative burden (15.0%), and time available for family, friends or leisure (14.0%).

Relationships to socio-demographic and work characteristics

Physicians in training were the least satisfied with all aspects of their work (table 2). Ratings given by salaried physicians in the public sector were not much higher, except for ‘burden’. Senior hospital staff reported highest satisfaction scores for ‘general satisfaction’, ‘income-prestige’, ‘personal rewards’, and ‘professional relations’, and physicians in independent practice were the most satisfied with ‘patient care’ and ‘burden’. Women were significantly less satisfied than men with ‘patient care’, ‘burden’, and ‘personal rewards’, but these differences were small. Older physicians reported significantly higher satisfaction scores with all aspects of their work. Similar results were seen for physicians with longer work experience (all $p < 0.01$, results not shown). Internal medicine specialists and pediatricians tended to be more satisfied than other specialties, but psychiatrists had the highest satisfaction score regarding ‘work burden’, and surgical

Table 1 Descriptive statistics and factor analysis (principal component analysis, varimax rotation) of the job satisfaction items (1 = extremely dissatisfied – 7 = extremely satisfied) for 1184 Swiss physicians, Geneva, Switzerland

Item of the job satisfaction scale	Mean (SD)	Factor loading ^a				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Patient care^c						
Relations with patients	5.9 (0.9)	71				
Autonomy in treating your patients	5.6 (1.2)	77				
Autonomy in referring your patients to a specialist	6.1 (0.9)	69				
Quality of care you can provide	5.7 (0.9)	61				
Burden^c						
Workload	4.2 (1.6)		70	33		
Time available for family, friends, or leisure	3.4 (1.7)		84			
Work-related stress	3.9 (1.5)		70			
Administrative burden	3.0 (1.4)		71			
Income-prestige^c						
Current income	4.4 (1.6)			92		
The manner in which you are currently paid	4.5 (1.6)			91		
Social status and respect	4.9 (1.4)			55	40	
Personal rewards^c						
Intellectual stimulation	5.5 (1.2)				82	
Opportunity for continuing medical education	4.9 (1.5)				64	
Enjoyment of work	5.8 (1.1)	46			60	
Professional relations^c						
Relations with peers	5.7 (1.1)	30				77
Relations with non-medical staff	5.9 (1.0)					79
Global item^c						
Your current job situation in general	5.1 (1.2)	– ^b	–	–	–	–

a: Multiplied by 100; loadings <30 not shown.
 b: Item not included in factor analysis.
 c: Scale labels chosen a posteriori.

specialties the lowest. Finally, physician involvement in managed care plans was not substantially related to any facet of satisfaction that was measured.

Relationship to workload characteristics

The estimated number of patients seen per week was significantly associated with higher satisfaction scores for 'patient care', 'income-prestige', and 'professional relations' (table 3). Time spent on administrative work was negatively related to all satisfaction scores. Time spent on continuing medical education was related to lower satisfaction with 'work burden', but higher satisfaction with 'personal rewards'. Finally, the total estimated work time was related to lower satisfaction with 'burden' only.

Multivariate analysis

In multivariate models that adjusted for all other characteristics, physicians in training still had the lowest satisfaction scores on most subscales (table 4). Senior hospital staff and independent physicians in the private sector had similar satisfaction scores for 'patient care', 'income-prestige', 'personal rewards' and 'professional relations', but hospital physicians were less satisfied with their 'work burden'. Salaried physicians in the private sector reported low scores regarding for 'general satisfaction', 'personal rewards' and 'professional relations', similarly to physicians in training in the public sector. Women physicians were less satisfied with their 'work burden'. Satisfaction with 'work burden' and 'personal

Table 2 Relationships of work satisfaction to socio-demographic and work characteristics for 1184 Swiss physicians, Geneva, Switzerland

	N	%	General satisfaction	Patient care	Burden	Income-prestige	Personal rewards	Professional relations
Type of practice ^a			p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001
Public sector, in training	368	31	49.5	45.6	44.4	47.0	45.9	48.2
Public sector, senior staff	68	6	52.9	51.0	47.0	52.8	54.2	51.7
Private sector, independent practice	716	61	51.1	52.2	53.1	51.2	51.8	50.8
Private sector, salaried practice	32	3	49.5	49.7	52.9	51.5	47.4	48.6
Sex ^a			p=0.26	p=0.009	p<0.001	p=0.94	p<0.001	p=0.37
Men	784	66	50.2	50.5	50.7	50.0	50.7	50.2
Women	400	34	49.5	48.9	48.6	50.0	48.5	49.6
Age (years) ^b (21 missing)			p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p=0.003
≤35	263	23	47.5	45.1	44.1	47.7	45.6	48.7
36–50	568	49	50.2	50.9	50.2	50.1	50.4	50.0
≥51	332	28	51.5	52.3	54.4	51.7	52.8	51.1
Medical specialty ^a			p=0.12	p=0.02	p=0.001	p=0.007	p<0.001	p<0.001
Primary care physicians	402	34	49.4	49.4	49.3	50.0	49.2	49.9
Internal medicine specialists	196	17	51.1	51.2	50.4	51.9	52.2	52.1
Pediatricians	83	7	51.7	52.5	51.8	51.3	51.4	51.5
Psychiatrists	178	15	50.4	48.8	52.4	48.3	51.8	47.3
Surgical specialties, radiologists	325	27	49.5	50.0	48.8	49.5	48.3	49.9
Managed care ^{a,c} (70 missing)			p=0.64	p=0.64	p=0.61	p=0.54	p=0.74	p=0.87
Any involvement	217	32	50.8	51.9	52.8	51.5	51.5	50.8
None	461	68	51.2	52.3	53.2	51.0	50.6	51.7

a: ANOVA, difference between groups.

b: ANOVA, test for linearity.

c: Only for physicians in private sector.

Table 3 Relationships of work satisfaction to workload characteristics (Pearson correlations coefficients) for 1184 Swiss physicians, Geneva, Switzerland

	General satisfaction	Patient care	Burden	Income-prestige	Personal rewards	Professional relations
Estimated number of patients seen per week (83 missing)	0.09**	0.15***	0.05	0.11***	0.05	0.09**
Estimated time spent on administrative work per week (51 missing)	-0.11***	-0.14***	-0.39***	-0.09**	-0.20***	-0.06*
Estimated time spent on continuing education (40 missing)	0.04	0.01	-0.06*	0.01	0.16***	0.03
Estimated total work time per week (28 missing)	-0.01	0.02	-0.28***	-0.03	-0.01	0.004

* p<0.05; ** p<0.01; *** p<0.001

rewards' was significantly higher for older physicians. Internal medicine specialists were more satisfied with the 'income-prestige' aspects of their work and 'professional relations' with colleagues; physicians in surgical specialties and radiologists had low scores regarding 'personal rewards'; and psychiatrists were less satisfied regarding 'patient care', 'income-prestige', and 'professional relations'. The time spent on administrative work per week was associated with lower satisfaction with 'burden' and 'personal rewards'. Time spent on continuing education was associated with increased satisfaction scores in all subscales. Finally, the total work time per week strongly correlated only with the 'burden' subscale, after adjustment for all other variables.

DISCUSSION

In this study, job attributes and personal characteristics of physicians were identified that are independently associated with five dimensions of work satisfaction, which were empirically identified by a factor analysis. While some predictors had a cross-cutting effect on all

aspects of work satisfaction, others were quite specific. Among the former, the type of practice – public versus private, in training versus fully trained, independent versus salaried – was the most important. The low scores reported by physicians in training can be due to several causes. These physicians have generally less well established professional situations, less autonomy in their work, lower prestige, and lower income, all of which may justifiably result in lower satisfaction. Moreover, physicians in training are generally younger, and as in patient satisfaction surveys, younger respondents may be less satisfied with any conditions. Also, some physicians in training who are dissatisfied with their career may eventually leave their profession, which would also increase satisfaction scores among older physicians, by spontaneous selection.

Among weaker predictors of satisfaction overall were age, sex and the medical specialty. Women were less satisfied than men with work-related 'burden', which may reflect a greater pressure on women to manage family matters, in addition to their careers. Satisfaction with work-related

Table 4 Multivariate predictors of work satisfaction scores in 1184 Swiss physicians, Geneva, Switzerland

	Differences in standardized satisfaction score											
	General satisfaction		Patient care		Burden		Income-prestige		Personal rewards		Professional relations	
	p value		p value	p value		p value		p value	p value		p value	
Type of practice (vs in training) ^a												
Public sector, senior staff	5.1	0.001	4.0	0.001	0.3	0.25	5.8	<0.001	6.4	<0.001	3.7	0.01
Private sector, independent practice	3.2	0.001	5.7	<0.001	4.4	<0.001	4.1	<0.001	4.9	<0.001	3.4	<0.001
Private sector, salaried practice in a medical centre	0.8	0.68	2.7	0.15	5.0	0.003	3.3	0.09	-0.6	0.74	-0.4	0.84
Sex (vs women) ^a												
Men	-0.1	0.91	0.11	0.87	1.7	0.002	-1.1	0.09	0.9	0.11	-0.5	0.43
Age (years) (vs ≤35) ^b												
36–50	0.2	0.34	2.0	0.07	1.6	<0.001	-0.6	0.40	1.1	0.006	-1.2	0.11
≥51	0.7		2.2		4.4		0.3		2.3		-0.6	
Medical specialty (vs Psychiatrists) ^a												
Primary care physicians	-0.1	0.88	1.8	0.04	-0.4	0.62	2.6	0.006	-0.3	0.72	3.3	0.001
Internal medicine specialists	1.0	0.37	2.4	0.02	0.2	0.86	4.3	<0.001	0.8	0.44	5.0	<0.001
Pediatricians	1.4	0.33	3.8	0.004	0.4	0.73	2.5	0.07	0.2	0.91	4.0	0.005
Surgical specialties, radiologists	-0.3	0.75	1.9	0.04	-0.9	0.26	2.1	0.03	-2.2	0.02	2.9	0.003
Estimated time spent on administrative work per week (vs >15 hours) ^b												
<5 hours	1.8	0.05	2.1	0.04	6.2	<0.001	1.6	0.20	3.9	<0.001	1.9	0.23
6–15 hours	1.8		3.0		2.5		1.8		3.5		2.1	
Estimated time spent on continuing education (vs <5 hours) ^b												
6–10 hours	0.3	0.02	1.2	0.01	1.3	<0.001	-0.4	0.04	4.0	<0.001	1.1	0.07
>10 hours	2.4		2.9		2.9		2.8		6.0		2.5	
Estimated total work time per week (vs >60 hours) ^b												
<30 hours	0.38	0.54	0.1	0.09	2.4	<0.001	0.7	0.68	0.8	0.99	0.3	0.66
31–60 hours	0.31		0.02		5.4		0.8		0.2		0.2	

a: ANOVA, difference between groups.
b: ANOVA, test for linearity.

'burden' and 'personal rewards' were higher in older physicians. As stated above, this trend may be either real or due to response set bias. However, the latter hypothesis is believed to be unlikely, because the age-related trend was seen for only two of five dimensions of satisfaction. Medical specialty had also some implications, mainly for satisfaction with 'patient care' and 'professional relations' with colleagues. These differences may reflect local working conditions. The weak and nonsignificant impact of managed care arrangements on work satisfaction contradict previous studies conducted in the USA,^{3,8,19,20} but is probably due to the low proportion of Swiss patients enrolled in managed care plans (<10%).

Time devoted by physicians to various activities (patient care, administrative tasks, continuing medical education) had differential and specific effects on corresponding subscales of work satisfaction. The number of patients seen per week was weakly correlated with the 'patient care', 'income-prestige', and 'professional relations' dimensions of work satisfaction. When adjusted for other work characteristics, such as type of practice and medical specialty, the number of patients was not statistically significant anymore. As could be expected, physicians who spent fewer hours per week on administrative work were more satisfied with work-related 'burden' and 'personal rewards'. Previous studies have shown that administrative work reduces work satisfaction,^{8,20,21} but these results suggest that it is the 'personal rewards' aspect of work satisfaction that is more specifically decreased. Time spent on continuing medical education had an important positive effect on all aspects of work satisfaction, but mostly on 'personal rewards'. Finally, the total work time was only related with dissatisfaction with work-related 'burden'. The specificity of these associations and their appeal to common sense provide additional evidence of construct validity of the scales used in this survey.

The main strength of this study is that it was conducted on a fairly large and unselected sample of physicians in a variety of working arrangement, and across all specialties. The response rate of 59%, while less than optimal, was in keeping with comparable physician surveys.^{3,22} The brief questionnaire measuring the work-related satisfaction of physicians was easy to administer and displayed adequate psychometric properties. As seen by other authors,^{4,17,23,24} the factor analysis of the items suggested that work satisfaction is multidimensional, and therefore cannot be captured by a single number. In this project, one item was used for each dimension of satisfaction identified by previous qualitative research.¹⁷ Hence what we call 'dimensions' here might be considered as 'meta-dimensions' by the authors of the original work. It is a general rule that the number of dimensions identified by factor analysis depends on the number of items included in the analysis. It is believed that this approach was further strengthened by the finding of a different set of predictors for each of the five satisfaction subscales, which bring some new insights to the debate about determinants of physician work satisfaction. The components of work

satisfaction such as job autonomy or decision authority have not been excluded, but appear in the 'medical care' dimension, rather than as distinct dimensions. Generalization of the results outside of the setting requires caution, as only physicians practising in a Swiss urban environment, where medical density is high, were surveyed. A national survey using the same instrument translated in German and Italian is currently underway among 3000 primary care physicians.

In conclusion, this study shows that many determinants of various aspects of work satisfaction among physicians represent modifiable aspects of physicians' working arrangements. The most striking result was the low satisfaction reported by physicians in training. These findings may help physicians establish the most satisfactory working conditions, to their own benefit and that of their patients.

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Appendix Items measuring physician job satisfaction item in 1184 Swiss physicians, Geneva, Switzerland. The original items were developed in French; the translation in English was done by the authors and checked by a native English speaker.

Veillez indiquer dans quelle mesure vous êtes satisfait avec les aspects suivants de votre vie professionnelle	Please indicate how satisfied you are with the following aspects of your professional life
Soins aux patients	Patient care
Vos relations avec vos patients	Your relations with your patients
La possibilité que vous avez de traiter vos patients comme vous l'entendez	The possibility to treat your patients as you see it
La possibilité que vous avez d'adresser vos patients à un spécialiste chaque fois que vous l'estimez nécessaire	The possibility to refer your patients to a specialist whenever you think it is necessary
La qualité des soins que vous êtes à même de dispenser	The quality of care you are able to provide
Inconvénients	Burden
Votre charge de travail	Your workload
Le temps que vous pouvez consacrer à votre famille, vos amis, ou vos loisirs	The time you have for family, friends or leisure activities
Le niveau de stress auquel vous êtes soumis dans l'exercice de votre profession	The level of stress you experience at work
Le temps et l'énergie consacrés aux tâches administratives	The time and energy you spend on administrative tasks
Revenu-prestige	Income-prestige
Votre revenu actuel	Your current income
La manière dont vous êtes actuellement rétribué (honoraires à l'acte, salaire, forfait, etc.)	The way you are currently paid (fee-for-service, salary, capitation, etc.)
Votre position sociale et le respect dont on vous témoigne	Your social status and the respect people show you
Récompenses personnelles	Personal rewards
Votre stimulation intellectuelle au travail	Your intellectual stimulation at work
Vos possibilités de formation continue	Your opportunities for continuing medical education
Votre plaisir à travailler	Your enjoyment at work
Relations professionnelles	Professional relations
Vos relations et échanges professionnels avec d'autres médecins	Your professional relations and interactions with other medical doctors
Vos relations avec vos collaborateurs non-médecins (infirmier(ère), assistant(e), etc.)	Your relations with non-medical staff (nurse, assistant)
Question générale	General item
Tout compte fait, votre situation professionnelle en ce moment	All things considered, your professional situation at this time

Answer scale: 1: Extrêmement insatisfait – Extremely dissatisfied to 7: Extrêmement satisfait – Extremely satisfied.

German and Italian translations have also been developed using the following procedure: for each language, three independent translations of the items were obtained from bilingual health professionals; each final version was obtained by consensus during a review session by a different expert panel; the resulting questionnaires were pre-tested for acceptability and clarity during face-to-face interviews with approximately 10 primary care physicians in each language. These translations are available upon request from the authors.