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Workload, well-being and career satisfaction among French internal medicine physicians and residents in 2018

Running title: Careers in French internal medicine

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F.C.-A., O.S., H.L., Ph.M., and L.M. designed the study.

F.C.-A., R.L., O.S., and L.M. collected the data.

F.C.A., R.L., and O.S. conducted the statistical analysis.

F.C.-A., R.L., O.S., A.R., N.O., Z.A., and L.M. analyzed and interpreted the data.

F.C.-A, O.S. and L.M. wrote the manuscript.

All authors critically reviewed and approved the final version of the manuscript.

Bullet points

1. In France, 66% of Internal Medicine physicians are satisfied with their work.
2. Factors associated with global satisfaction at work of French Internal medicine physicians are autonomy and meaningful work.
3. French internal medicine residents work more hours a week and have a worse global appreciation of their work than graduate physicians.

Abstract

Objectives: To study the prevalence and risk factors associated with well-being and career satisfaction among French internal medicine physicians and residents.

Methods: A total of 1,689 French internal medicine physicians or trainees were surveyed to evaluate their workload, well-being and career satisfaction during February 2018.

Results: The response rate was 620/1,689 (37%). The mean age of the participants was 37 years (± 12); 49% of the participants were female, 27% worked in the Paris area, 74% worked in a university hospital, and 49% were residents. Sixty-six percent of the responders were satisfied with their work, and 66% would choose the internal medicine specialty again. However, 71% of the responders worked more than 50 hours a week, 21% worked more than 60 hours a week, and 70% believed that they did not have enough time for personal/family activities. Twenty-five percent of the responders had at least one sign of burnout (19% of the physicians in practice and 32% of the residents). Compared with the graduate physicians in practice, the residents worked more hours a week, had more activities at night, spent more time on administrative tasks, had a worse global appreciation of their work and felt that their work was less meaningful. In multivariate analysis, the factors associated with global satisfaction at work were autonomy and meaningful work.

Conclusions: French internal medicine physicians have a high rate of career satisfaction. However, residents have a higher workload, less time for personal/family activities, and feel that their work is less meaningful.

The “Société Nationale Française de Médecine Interne” (**SNFMI**) is the national French scientific society of internal medicine, created in 1978 under the initiative of Claude Laroche and Pierre Godeau. In 2017, the SNFMI was composed of various members with a common interest in internal medicine. SNFMI publishes a monthly scientific journal, “La Revue de Médecine Interne”, organizes 2 national meetings a year, and works closely with the “Collège des Enseignants de Médecine Interne” (**CEMI**), comprised of internal medicine teachers, for training of medical students, residents and postdoctoral physicians. The SNFMI is composed of various physicians, residents, fellows and graduates practicing in university, general or military hospitals. They have teaching and research activities, and they have varied types of medical practice. The majority of SNFMI members are hospital-based physicians working in university or non-university hospitals. Due to the acceleration of the transformation of medical practice, the increased difficulties in obtaining grants to support research, and the implementation of the reform of the third cycle of medical studies in France, internal medicine physicians, as other French specialists, experience professional burnout. Burnout includes a lack of professional well-being and poor work-life balance and is characterized by 3 major domains: emotional exhaustion, depersonalization and a sense of low accomplishment [1]. In the United States (**US**), up to 50% of physicians have at least one symptom of burnout [2]. Burnout is distinct from depression, fatigue, or occupational stress. When occurring in physicians, burnout is associated with lower scores of patient satisfaction and health care quality, more conflicts between work and home life, more depression, and more suicides [3]. Many factors are associated with burnout, such as workload, excessive clerical tasks, and issues with work-life integration. The rate of burnout seems to be higher among residents than among those in practice [4]. Resident burnout has

been related to medical errors. Unlike burnout, career satisfaction could increase the desirability of being a physician.

The SNFMI surveyed French members and internal medicine residents to explore the question of workload, well-being and career satisfaction of internal medicine physicians in France. Here, we report the results of this national survey.

Methods

Study population

The population of interest included internal medicine physicians and trainees who were current members of the SNFMI and had provided an email address (n=899) or were third-cycle medical students enrolled in the Diplôme d'Etudes Spécialisées (**DES**) of internal medicine at French universities (n=790). Thus, the eligible population consisted of 1,689 physicians or trainees. These members were e-mailed a link for the online survey in February 2018, followed by 2 additional e-mail reminders. The online survey was closed 30 days after the first e-mail was sent. All communications and data collection were conducted on behalf of the SNFMI and the CEMI, and the answers were anonymous. The data from those who completed the survey were analyzed in May-August 2018.

Endpoints

The survey consisted of 29 questions covering personal and professional characteristics (n=8), workload (n=8), well-being, and career satisfaction (n=13). A free text area was also available at the end of the study. Residents had 3 additional questions regarding professional characteristics and training. Workload was evaluated with the number of professional working hours each week, night activity, number of outpatients seen each

week and number of weekend rounds a year. Quality of life and overall fatigue were evaluated on a numerical scale (from 1 to 10). Career satisfaction was evaluated by exploring the desire to become a physician and an internal medicine physician again and the overall satisfaction of the job. Autonomy and meaning in the work were also evaluated, as well as the number of clerical tasks and effective support staff. Finally, burnout was evaluated with a self-reported assessment, and we explored the 3 dimensions of burnout with the Copenhagen Burnout Inventory (CBI) using 6 questions about personal burnout, 7 questions about work-related burnout and 3 questions in relation to patients. Each question was evaluated on a 5-point Likert scale. The 2 highest points were considered to be a high score, the middle point was considered to be an intermediate score, and the 2 lowest points were considered to be a low score.

Statistical analyses

Descriptive statistics were used to characterize the population. Quantitative variables are reported as the mean (standard deviation – **SD**) and were compared using a two-tailed Student's t-test. Categorical variables are reported as counts (percentages) and were compared using Fisher's exact test or a trend Chi² test, as appropriate. Logistic regression models were used to identify factors associated with well-being and career satisfaction. All predictors significantly associated with endpoints in the univariate models were entered in a multivariate model. All tests were two-sided, and a p-value < 0.05 was considered statistically significant. R software version 3.0.2 (www.r-project.org/foundation/) was used for statistical analyses.

Standard protocol approvals and consents

Completing the survey implied consent to participate in the study. The study was reviewed and approved by the Commission Nationale Informatique et Libertés (CNIL).

Results

Personal and practice characteristics

Of the 1,689 internal medicine physicians or third-cycle students surveyed, 620 (37%) agreed to participate in the study. Their demographic, personal and practice characteristics are detailed in **Table 1**. Among the responders, the mean age was 37 (SD 12), and 302 (49%) were women. Compared to the total population of the SNFMI members, the responders were younger (44% were less than 30-years-old, compared to 24% in the whole population of the SNFMI) and were more frequently women (49% versus 41% in the whole population). The population consisted of 314 residents (51%) and 306 internal medicine physicians in practice who did not differ by sex. The residents were younger than the physicians in practice. The main geographic region of exercise was Ile de France, which includes Paris and its suburban areas, although all French regions were represented. The graduated responders practiced internal medicine for 0-10 years in 39% of cases, 11-20 years in 29% of cases and more than 21 years in 31% of cases. The residents were representative of the whole resident population, with 13-21% for each year of training. The residents practiced more frequently in university hospitals than the physicians in practice (84% versus 63%). Twenty-one percent of the responders worked in a general hospital, and 2.5% of the responders had a military-based practice.

Workload

The medical workload of internal medicine physicians and residents in France is detailed in **Table 2**. Sixty-one percent of the physicians worked more than 50 hours a week, and 21% worked more than 60 hours a week. The workload of the residents was significantly higher than that of the physicians in practice. The majority of the physicians worked less than 5 hours a week during their time at home. The residents devoted more time to clinical practice, whereas the physicians in practice divided their time between clinical practice, teaching and research. Compared to the physicians in practice, the residents had more activities at night and a higher number of weekends when they rounded in the hospital per year.

Well-being and career satisfaction

The well-being and career satisfaction of internal medicine physicians and residents are detailed in **Tables 2 and 3**. The burnout manifestations are reported in **Table 4**. The factors associated with well-being and career satisfaction in univariate and multivariate analyses are reported in **Table 5**.

Concerning career satisfaction, 61% of the internal medicine physicians would choose to become a physician again, and 65% would choose to become an internal medicine physician again. Career satisfaction scores differed between the residents and physicians in practice, with fewer residents indicating that they would become both a physician ($p < 0.001$) and an internal medicine physician ($p = 0.048$) again. In multivariate analysis, the factors associated with career satisfaction were autonomy in the job, reporting that the job was meaningful, and an age > 60 years. A high percentage ($> 40\%$) of immunology in their practice and a reasonable number of clerical tasks were also associated with choosing to become an internal medicine physician again.

Overall, 25% of the internal medicine physicians had at least one symptom of burnout, although only 14% self-reported an experience of burnout. Compared to the physicians in practice, the residents had higher rates of all symptoms of burnout, except for frustration at work. They reported a lower rate of self-reported effective work for patients (43% versus 66% for the physicians in practice, $p < 0.001$), and a lower rate of feeling that the time spent on clerical tasks directly connected to patient care was reasonable (23% versus 37% for the physicians in practice, $p < 0.001$). Twenty-two percent of the physicians reported having too little effective support staff assisting them in their work.

Discussion

In this study, we identified several important factors concerning workload, well-being and career satisfaction of the internal medicine physician population in France: i) 71% of the physicians worked more than 50 hours a week, and the residents had a higher workload than the physicians in practice; ii) 70% of the physicians believed that they did not have enough time for personal/family life; iii) the global level of career satisfaction was high, as 82% of the physicians would become physicians again and as 86% would become internal medicine physicians again; iv) the residents had lower scores of career satisfaction and higher rates of burnout.

Burnout risk is a situationally specific risk. Some domains have been identified as increasing burnout risk, including workload, community, fairness and values. Burnout in medical practice is common in medical and surgical specialties but varies by specialty. The workload was high for all categories of physicians and was higher for the residents than the physicians in practice. In France, the legal maximal work week is 48 working hours. In this study, we found that almost $\frac{3}{4}$ of physicians reported working more than

50 hours, and the hours of work at home were not included. Workload has been associated with burnout in many specialties, although the time spent in clinical practice is usually associated with a lower rate of burnout. In a previous study of internal medicine trainees in the US, the burnout rate dropped as the workload was reduced from 2004 through 2012 [5]. In the recent iCompare study [6], 63 internal medicine residency programs were randomly assigned to employ classical duty-hours or flexibility policies. The results did not demonstrate differences in the time spent in clinical practice. Interestingly, the interns were less satisfied with the flexible programs, although the seniors were more satisfied. This illustrates that workload may not be the most important factor in career dissatisfaction.

Indeed, the time spent on clerical tasks is frequently associated with career dissatisfaction. In our study, we found that 70% of the physicians reported that the time spent on clerical tasks was too high, increasing to 90% for clerical tasks that were not directly related to patient care. On the other hand, 22% of the physicians stated that they had insufficient or ineffective support from their staff.

We found that 25% of the internal medicine physicians had at least one symptom of burnout. This rate is lower than that of many US studies, including those among oncologists or neurologists [7]. In France, the rate of burnout was estimated to be 62% among anesthesiology nurses and physicians [8], 56% among pharmacists [9] 71% of European young oncologists [10], which are specialties that are particularly at risk for burnout. Among physicians, those who are at the front lines of care access are more prone to burnout, such as family medicine, general internal medicine, and emergency medicine [11]. In France, internal medicine encompasses general internal medicine and immunology. Physicians who spend over 40% of their time caring for patients with immunological or inflammatory diseases seemed to have higher work satisfaction,

probably because they were not at the front lines of care. Burnout symptoms increased from 40% to over 50% in internal medicine subspecialists in US from 2011 to 2014, with significant disparities among medical specialties [2]. Although recent data were obtained among pediatric or emergency medicine physicians, data about career satisfaction and burnout are limited among medical subspecialties [12]. Among nephrologists or cardiologists, up to 50% of physician may report at least one symptom of burnout [13 14].

Interestingly, age >60 years was associated with greater career satisfaction, whereas younger internal medicine physicians exhibited lower rates of feeling that their work was meaningful and of global satisfaction. Gender was not associated with any differences in the evaluated endpoints. In other studies, the middle of the career appeared to be a challenging time for physicians [15]. We found a lower rate of career satisfaction in trainees, and specific interventions must be devised to promote career satisfaction and retention.

This study has some limitations. Although we obtained a high rate of participation, equivalent to other similar surveys [16 17], we cannot exclude important biases in the population of the responders compared to the nonresponders. We used the CBI questionnaire to evaluate the rates of burnout, although other studies used the Maslach Burnout Inventory. These 2 questionnaires are effective in detecting burnout but have not been directly compared [18]. This may have contributed to the lower rate of burnout observed in this study compared to that of US physicians.

We found that an excessive workload, a high number of clerical tasks, and a loss of autonomy were associated with less career satisfaction. The internal medicine residents had a high rate of burnout symptoms; thus, urgent measures need to be taken to

promote career satisfaction, reduce burnout and prevent career resignation among younger internists.

Table 1. Personal and practice characteristics of internal medicine physicians in France.

	All (n=620)	Nonresidents (n=306)	Residents (n=314)	P
Age (years)				
Mean (SD)	37 (12)	46 (11)	28 (2)	<0.001
<30	275 (44%)	4 (1.5%)	271 (86%)	
30-45	179 (29%)	151 (49%)	28 (9%)	<0.0001
45-60	115 (19%)	115 (38%)	0	
>60	32 (5%)	32 (10%)	0	
Missing data	19 (3%)	4 (1.5%)	15 (5%)	
Sex				
Female/Male	302/315	142/163	160/152	0.3
Missing data	3 (0.5%)	1 (0.3%)	2 (0.6%)	
Geographic region of exercise				
Ile de France	166 (27%)	90 (29%)	76 (24.5%)	
Auvergne Rhône Alpes	66 (10.5%)	37 (12%)	29 (9%)	
Grand Est	60 (9.5%)	28 (9%)	32 (10%)	
Nouvelle Aquitaine	46 (7.5%)	23 (8%)	23 (7.5%)	
PACA	44 (7%)	19 (6%)	25 (8%)	
Occitanie	38 (6%)	20 (6.5%)	18 (5.5%)	
Normandie	37 (6%)	18 (6%)	19 (6%)	0.6
Hauts de France	31 (5%)	11 (3.5%)	20 (6.5%)	
Pays de Loire	31 (5%)	14 (4.5%)	17 (5.5%)	
Bourgogne Franche Comté	28 (4.5%)	15 (5%)	13 (4%)	
Centre Val de Loire	26 (4%)	8 (2.5%)	18 (5.5%)	
Bretagne	25 (4%)	11 (4.5%)	14 (4.5%)	
DOM-TOM	9 (1.5%)	5 (1.5%)	4 (1.5%)	
Corse	1 (0.5%)	0 (0%)	1 (0.5%)	
Missing data	12 (2%)	7 (2%)	5 (1.5%)	
Time since graduation (years)				
0-5	-	70 (23%)	-	-
6-10	-	50 (16%)	-	-
11-20	-	88 (29%)	-	-
11-30	-	62 (20%)	-	-
30-40	-	30 (10%)	-	-

>40	-	3 (1%)	-	-
Missing data	-	3 (1%)	-	-
<hr/>				
Year of residency				
1 st year	-	-	42 (13%)	-
2 nd year	-	-	64 (20%)	-
3 rd year	-	-	65 (21%)	-
4 th year	-	-	60 (19%)	-
5 th year	-	-	59 (19%)	-
Others	-	-	24 (8%)	-
Missing data	-	-	0	-
<hr/>				
Type of practice				
University hospital	458 (74%)	193 (63%)	265 (84%)	
General hospital	130 (21%)	91 (30%)	39 (12.5%)	
Private hospital	10 (1.5%)	10 (3%)	0 (0%)	<0.001
Military hospital	16 (2.5%)	7 (2%)	9 (3%)	
Clinical practice	5 (1%)	4 (1%)	1 (0.5%)	
Missing data	1	1	0	
<hr/>				
Physical activity				
Never	126 (20%)	59 (19%)	67 (21%)	
At least once a month	193 (31%)	79 (26%)	114 (36.5%)	0.022
More than once a week	298 (48%)	166 (54%)	132 (42%)	
Missing data	3 (0.5%)	2 (1%)	1 (0.5%)	

Table 2. Medical workload of internal medicine physicians in France.

	All (n=620)	Nonresidents (n=306)	Residents (n=314)	p
Hours / week (in hospital)				
35	6 (1%)	5 (2%)	1 (0.5%)	<0.0001
36-40	9 (1.5%)	9 (3%)	0 (0%)	
41-45	45 (7.5%)	31 (10%)	14 (4%)	
46-50	108 (17%)	82 (27%)	26 (8%)	
51-55	161 (26%)	91 (30%)	70 (22%)	
56-60	152 (24.5%)	43 (14%)	109 (35%)	
>60	129 (21%)	38 (12%)	91 (29%)	
Missing data	10 (1.5%)	7 (2%)	3 (1%)	
Hours / week (home)				
0-5	356 (57.5%)	170 (56%)	186 (59%)	0.76
6-10	167 (27%)	81 (26%)	86 (27%)	
11-15	50 (8%)	25 (8%)	25 (8%)	
16-20	20 (3%)	11 (4%)	9 (3%)	
>20	12 (2%)	7 (2%)	5 (2%)	
Missing data	15 (2.5%)	12 (4%)	3 (1%)	
Night activity				
No	280 (45%)	250 (82%)	30 (10%)	<0.001
Yes	338 (54.5%)	56 (18%)	282 (90%)	
Missing data	2 (0.3%)	0	2 (0.6%)	
Mean (per month) (SD)	2.4 (1.2)	1.6 (1)	2.5 (1.2)	<0.001
% of time* devoted to clinical practice				
< 50%	329 (53%)	135 (44%)	194 (62%)	<0.001
51-70%	152 (25%)	94 (31%)	58 (18%)	
> 70%	126 (20%)	71 (23%)	54 (17%)	
% of time* devoted to research				
< 10%	441 (71%)	202 (68%)	239 (79%)	<0.001
10-20%	144 (23%)	91(30%)	53 (17%)	
> 30%	18 (3%)	6 (2%)	12 (4%)	
% of time devoted to teaching				
< 10%	414 (67%)	165 (54%)	249 (79%)	<0.001
11-30%	169 (27%)	119 (39%)	50 (16%)	

> 30%	20 (3%)	15 (5%)	5 (2%)	
Missing data	17 (3%)	7 (2%)	10 (3%)	
<hr/>				
% of time* devoted to administration				
< 30%	324 (52%)	205 (67%)	119 (38%)	<0.001
31-50%	191 (31%)	83 (27%)	108 (34%)	
> 50%	100 (16%)	17 (6%)	83 (36%)	
Missing data	5 (1)	1 (0%)	4 (1%)	
<hr/>				
% of medical activities in immunology				
0-40	488 (79%)	232 (76%)	256 (81.5%)	0.008
41-60	76 (12%)	42 (13.5%)	34 (11%)	
61-100	45 (7%)	30 (10%)	15 (4.5%)	
Missing data	11 (2%)	2 (0.5%)	9 (3%)	
<hr/>				
% of medical activities in general medicine				
0-40	160 (26%)	85 (28%)	75 (24%)	0.08
41-60	169 (27%)	91 (29.5%)	78 (25%)	
61-100	280 (45%)	127 (41.5%)	153 (48.5%)	
Missing data	11 (2%)	3 (1%)	8 (2.5%)	
<hr/>				
Number of outpatients seen per week				
None	237 (38%)	7 (2%)	230 (73%)	<0.001
1-10	110 (18%)	60 (29.5%)	50 (16%)	
11-20	136 (22%)	122 (40%)	14 (4.5%)	
21-30	73 (12%)	64 (21%)	9 (3%)	
31-40	29 (4.5%)	28 (9%)	1 (0.5%)	
41-50	12 (2%)	10 (3.5%)	2 (0.5%)	
More than 50	16 (2.5%)	15 (5%)	1 (0.5%)	
Missing data	7 (1%)	0 (0%)	7 (2%)	
<hr/>				
Number of inpatient rounds per week				
None	28 (4.5%)	17 (5.5%)	11 (3.5%)	<0.001
1-3	274 (44%)	203 (66.5%)	71 (22.5%)	
More than 3	306 (49.5%)	83 (27%)	223 (71%)	
Missing data	12 (2%)	3 (1%)	9 (3%)	
<hr/>				
Number of weekends rounded in hospital per year				
None				< 0.001
1-5	41 (6.5%)	20 (6.5%)	21 (7%)	
6-10	53 (8.5%)	37 (12%)	16 (5%)	
11-15	178 (29%)	114 (37%)	64 (20%)	
More than 15	224 (36%)	103 (34%)	121 (39%)	

Missing data	119 (19%)	31 (10%)	88 (28%)
	5 (1%)	1 (0.5%)	4 (1%)

* among professional time

Table 3. Well-being and career satisfaction among internal medicine physicians in France.

	All (n=620)	Nonresidents (n=306)	Residents (n=314)	p
Quality of life during the past week (1-10 scale)				
Mean (SD)	5.9 (1.9)	6.2 (1.8)	5.7 (1.9)	0.003
Overall fatigue during the past week (1-10 scale)				
Mean (SD)	6.4 (2.0)	6.1 (2.1)	6.7 (1.8)	<0.001
Global satisfaction of work				
High	409 (66%)	215 (70.5%)	194 (62%)	0.054
Intermediate	118 (19%)	50 (16%)	68 (22%)	
Low	86 (14%)	38 (12.5%)	48 (15%)	
Missing data	7 (1%)	3 (1%)	4 (1%)	
Career choice: would become again a physician				
High	380 (61%)	216 (71%)	164 (52%)	<0.0001
Intermediate	133 (21.5%)	57 (19%)	76 (24%)	
Low	106 (17%)	32 (10%)	74 (24%)	
Missing data	1 (0.1%)	1 (0.3%)	0	
Career choice: would become again internal medicine physician				
High	400 (65.5%)	212 (69%)	188 (60%)	0.045
Intermediate	128 (21%)	53 (17%)	75 (24%)	
Low	89 (14%)	40 (13%)	49 (16%)	
Missing data	3 (0.5%)	1 (0.3%)	2 (0.5%)	
Conflict with a colleague				
Yes	69 (11%)	37 (12%)	32 (10%)	0.5
No	551 (89%)	269 (88%)	282 (90%)	
Missing data	0	0	0	
Personal life satisfaction: having enough time for personal/family activities				
High	133 (21.5%)	88 (29%)	45 (12%)	<0.0001
Intermediate	53 (8.5%)	31 (10%)	22 (7%)	
Low	432 (70%)	186 (61%)	246 (78%)	
Missing data	2 (0.3%)	1 (0.3%)	1 (0.3%)	
Career satisfaction: having significant autonomy in				

determining how I do my job, agree (%)	349 (56%)	208 (68%)	141 (45%)	<0.001
Career satisfaction: the work I do is meaningful to me, agree (%)	493 (79.5%)	262 (86%)	231 (74%)	<0.001

Table 4. Burnout in internal medicine physicians in France.

	All (n=620)	Nonresidents (n=306)	Residents (n=314)	p
Self-reported burnout n (%)	88 (14%)	47 (15%)	41 (13%)	0.4
At least one symptom of burnout, n (%)	157 (25%)	57 (19%)	100 (32%)	<0.001
Fatigue evaluation (high score), n (%)				
Fatigue	538 (87%)	235 (77%)	303 (96.5%)	<0.001
Physical fatigue	457 (74%)	204 (67%)	253 (81%)	<0.001
Emotional fatigue	395 (64%)	165 (54%)	230 (73%)	<0.001
Susceptibility to disease	105 (17%)	31 (10%)	74 (24%)	<0.001
Frustration at work				
High	181 (29%)	86 (28%)	95 (30%)	
Intermediate	143 (23%)	63 (21%)	80 (25%)	0.168
Low	287 (46.5%)	153 (50%)	134 (43%)	
Missing	9 (1.5%)	4 (1%)	5 (2%)	
Depersonalization (high score), n (%)				
Considering patients as objects	78 (13%)	23 (7.5%)	55 (17.5%)	<0.001
Understanding patients	411 (66%)	216 (71%)	195 (62%)	0.03
The work I do is effective for patients	336 (54%)	201 (66%)	135 (43%)	<0.001
Clerical tasks				
The amount of time I spend on clerical tasks directly related to patient care is reasonable, n (%) agree	185 (30%)	113 (37%)	72 (23%)	<0.001
The amount of time I spend on clerical tasks not directly related to patient care is reasonable, n(%) agree	82 (13%)	41 (13.5%)	41 (13%)	0.1
Support staff				
Too little effective support staff assisting me in my work, n (%)	139 (22%)	66 (21.5%)	73 (23%)	0.7

Table 5. Factors associated with well-being and career satisfaction in univariate and multivariate analyses.

	OR (univariate)	p	OR (multivariate)	p
Factors associated with satisfaction at work				
Autonomy in my job	4 (2.8-5.7)	<0.001	2.7 (1.8-4.3)	<0.001
Meaningful work	15.3 (9.4-25.9)	<0.001	10.8 (6.3-19.3)	<0.001
Reasonable amount of clerical tasks	2.4 [1.6-3.6]	<0.001	1.5 (0.9-2.5)	0.1
Effective support staff	1.8 (1.3-2.6)	<0.001	1.1 (0.7-1.7)	0.6
Hours worked a week (>60)	0.5 (0.4-0.8)	0.003	0.7 (0.4-1.1)	0.1
General hospital	1.1 (0.7-1.6)	0.7	-	-
>70% time clinical practice	1.7 (1.1-2.7)	0.02	1.5 (0.9-2.7)	0.2
>50% time administrative tasks	0.6 (0.4-0.9)	0.01	0.9 (0.5-1.7)	0.8
More than 40% immunology	1.1 (0.7-1.7)	0.7	-	-
Residents	0.7 (0.5-0.96)	0.03	1.3 (0.8-2.1)	0.3
Age (>60)	2.7 (1.1-8.2)	0.04	1.9 (0.6-7.1)	0.3
Age (<30)	0.8 (0.6-1.1)	0.2	-	-
Sex (female)	0.9 (0.6-1.2)	0.4	-	-
Factors associated with being a physician again				
Autonomy in my job	1.9 (1.4-2.7)	<0.001	1.3 (0.9-1.9)	0.1
Meaningful work	2.5 (1.6-3.7)	<0.001	1.7 (1.1-2.7)	0.02
Reasonable amount of clerical tasks	1.8 (1.2-2.6)	0.003	1.3 (0.9-2.0)	0.2
Effective support staff	1.2 (0.9-1.7)	0.2	-	-
Hours worked a week (>60)	0.5 (0.3-0.7)	<0.001	0.6 (0.4-0.98)	0.04
General hospital	1.2 (0.8-1.9)	0.3	-	-
> 70% time clinical practice	1.6 (1.1-2.5)	0.02	1.3 (0.8-2.0)	0.3
>50% time administrative tasks	0.5 (0.3-0.7)	<0.001	0.8 (0.5-1.4)	0.5
More than 40% immunology	1.4 (0.9-2.1)	0.1	-	-
Residents	0.5 (0.3-0.6)	<0.001	0.5 (0.2-1.05)	0.07
Age (<30)	0.5 (0.4-0.7)	<0.001	1.4 (0.6-3)	0.4
Age (>60)	6.3 (2.2-26.4)	0.002	3.8 (1.3-16.2)	0.03
Sex (Female)	1.0 (0.7-1.4)	0.9	-	-
Factors associated with being an internal medicine physician again				

Autonomy in my job	1.7 (1.2-2.4)	0.001	1.2 (0.8-1.8)	0.3
Meaningful work	2.7 (1.8-4.0)	<0.001	2 (1.3-3.1)	0.003
Reasonable amount of clerical tasks	2.4 (1.6-3.5)	<0.001	2 (1.3-3)	0.002
Effective support staff	1.6 (1.2-2.3)	0.004	1.4 (0.9-2)	0.09
Hours worked a week (>60)	0.7 (0.5-1.1)	0.1	-	-
General hospital	1.6 (1.1-2.5)	0.03	1.4 (0.9-2.3)	0.2
>70% time clinical practice	1.3 (0.8-2.0)	0.2	-	-
>50% time administrative tasks	0.7 (0.4-1.0)	0.07	-	-
More than 40% immunology Residents	1.7 (1.1-2.6)	0.03	1.7 (1.04-2.7)	0.03
Age >60	0.7 (0.5-0.9)	0.2	-	-
Sex (Female)	8.3 (2.5-51.8)	0.004	5.2 (1.5-32.6)	0.03
	1.0 (0.7-1.4)	0.8	-	-
Factors associated with satisfaction of time for personal/family activities				
Autonomy in my job	1.6 (1.1-2.5)	0.02	1.0 (0.6-1.6)	0.95
Meaningful work	1.5 (0.9-2.5)	0.1	-	-
Reasonable amount of clerical tasks	2.2 (1.5-3.3)	<0.001	2.0 (1.3-3.2)	0.002
Effective support staff	1.5 (1.003-2.2)	0.049	1.2 (0.8-2)	0.4
Hours worked a week (>60)	0.4 (0.2-0.7)	0.001	0.4 (0.2-0.8)	0.02
General hospital	1.3 (0.8-2.1)	0.2	-	-
>70% time clinical practice	2.1 (1.4-3.3)	<0.001	1.6 (0.96-2.6)	0.07
>50% time administrative tasks	0.4 (0.2-0.8)	0.01	1 (0.5-2)	1
More than 40% immunology Residents	1.2 (0.8-1.9)	0.4	-	-
Age >60	0.4 (0.3-0.6)	<0.001	0.5 (0.3-0.9)	0.01
Sex (Female)	3.1 (1.5-6.5)	0.002	2.2 (0.98-4.9)	0.051
	1.1 (0.7-1.6)	0.7	-	-

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