

Survey on Expectations of medical students towards their future profession

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Introduction

In October 2023, swimsa conducted the first nationwide survey on the expectations of medical students towards their future profession. The survey was filled by 2292 participants from all eleven medical course programs, representing around 25% of all medical students in Switzerland.

Over the last few years, media articles and surveys from the association of young doctors (vsao/asmac) and the association of doctors (FMH) hit big waves that the working conditions of residents are not reasonable. vsao/asmac has made clear propositions on how to improve the system. swimsa has so far not had any official opinion on this topic. As it is, however, something that greatly concerns medical students entering the healthcare system in only a few years, swimsa decided to conduct this survey among medical students and have an official opinion.

Methods

The questions were chosen by a small working group of swimsa. Input was gathered from relevant stakeholders such as vsao/asmac and FMH. The survey was available in German, French and Italian and sent out via email by all local associations and faculty administrations of Swiss medical schools as well as shared on social media and in individual group chats. The survey was conducted with findmind. The survey was open from 8.-22.10.2023. After the survey was conducted, the results were analyzed with

descriptive statistics and for certain items individual matching of open answers was needed.

The questionnaire consisted of three parts. First, it analyzed the entrance into medical school. Secondly, questions about satisfaction during medical school and expectations towards the future working conditions as a doctor were posed. Lastly, it examined the opinion of medical students towards a more regulated further education/ specialty training

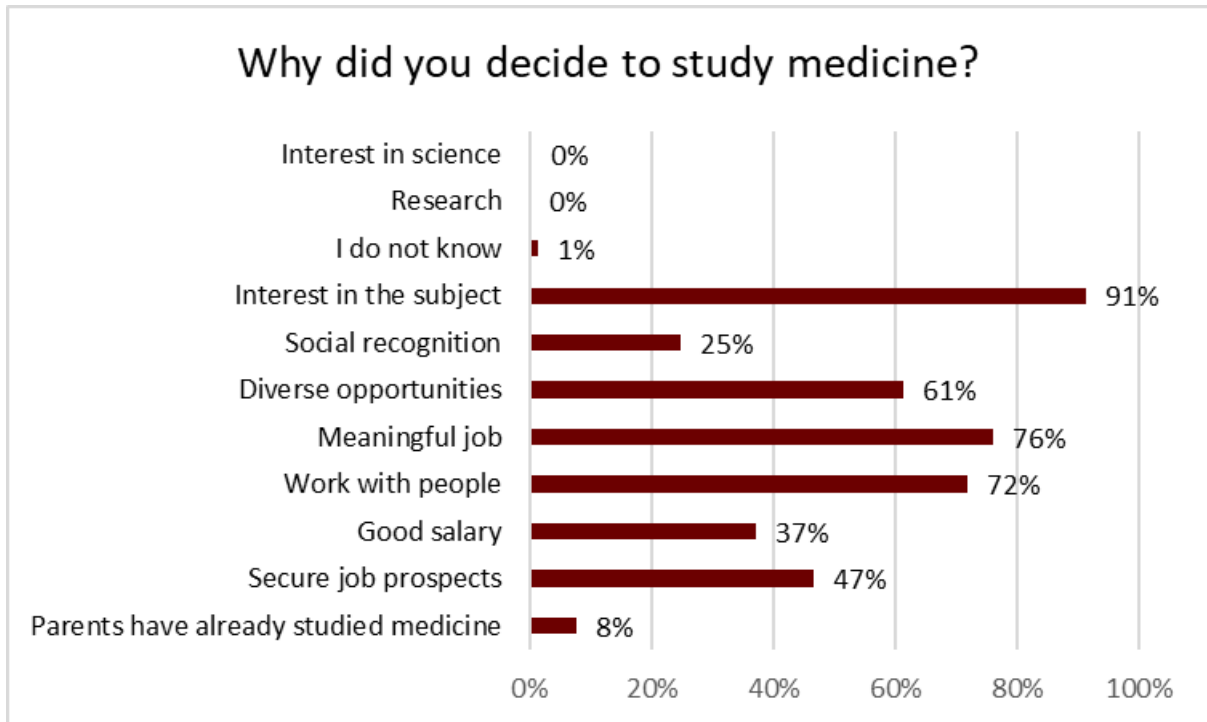
Results

Baseline Characteristics

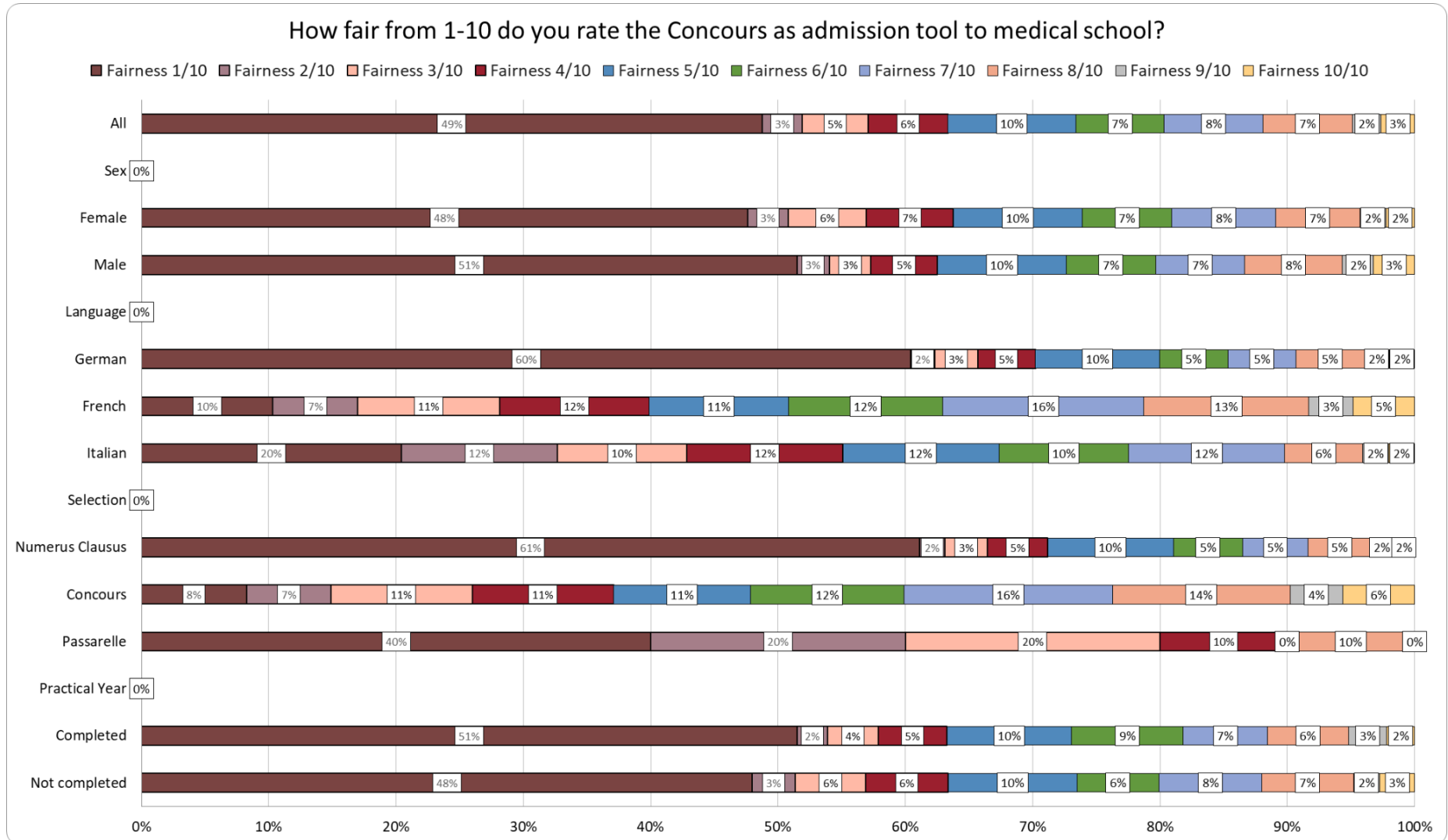
Table 1

	Overall	Bachelor	Master	p-value
Number of answers	N=2,292	N=1,246	N=1,046	
Age	23 (3)	21 (3)	24 (2)	<0.001
Sex				0.19
Male	743 (32.9%)	390 (31.8%)	353 (34.4%)	
Female	1,512 (67.1%)	838 (68.2%)	674 (65.6%)	
Language				<0.001
Deutsch	1,749 (76.3%)	899 (72.2%)	850 (81.3%)	
Français	494 (21.6%)	324 (26.0%)	170 (16.3%)	
Italiano	49 (2.1%)	23 (1.8%)	26 (2.5%)	
Study year				<0.001
1	546 (23.8%)	546 (43.8%)	0 (0.0%)	
2	356 (15.5%)	356 (28.6%)	0 (0.0%)	
3	344 (15.0%)	344 (27.6%)	0 (0.0%)	
4	340 (14.8%)	0 (0.0%)	340 (32.5%)	
5	296 (12.9%)	0 (0.0%)	296 (28.3%)	
6	410 (17.9%)	0 (0.0%)	410 (39.2%)	
Selection				<0.001
NC	1,749 (76.4%)	890 (71.4%)	859 (82.3%)	
Concours	531 (23.2%)	352 (28.3%)	179 (17.1%)	
Passerelle	10 (0.4%)	4 (0.3%)	6 (0.6%)	
Completed practical year	501 (21.9%)	8 (0.6%)	493 (47.1%)	<0.001

University				
Basel	338 (14.7%)	163 (13.1%)	175 (16.7%)	0.014
Bern	557 (24.3%)	290 (23.3%)	267 (25.5%)	0.21
Geneva	222 (9.7%)	141 (11.3%)	81 (7.7%)	0.004
Freiburg	106 (4.6%)	84 (6.7%)	22 (2.1%)	<0.001
Lausanne	300 (13.1%)	195 (15.7%)	105 (10.0%)	<0.001
Lucerne	47 (2.1%)	5 (0.4%)	42 (4.0%)	<0.001
Lugano	94 (4.1%)	2 (0.2%)	92 (8.8%)	<0.001
Neuchâtel	21 (0.9%)	21 (1.7%)	0 (0.0%)	<0.001
St. Gallen	60 (2.6%)	19 (1.5%)	41 (3.9%)	<0.001
Zurich	418 (18.2%)	203 (16.3%)	215 (20.6%)	0.008
ETH	123 (5.4%)	122 (9.8%)	1 (0.1%)	<0.001
Other	1 (0.0%)	1 (0.1%)	0 (0.0%)	0.36
Future career				
Surgery	819 (35.7%)	519 (41.7%)	300 (28.7%)	<0.001
Internal medicine	1,073 (46.8%)	450 (36.1%)	623 (59.6%)	<0.001
Psychiatry	179 (7.8%)	104 (8.3%)	75 (7.2%)	0.30
Pediatrics	467 (20.4%)	277 (22.2%)	190 (18.2%)	0.016
MD-PHD/Research	234 (10.2%)	126 (10.1%)	108 (10.3%)	0.87
No medical career (not AA)	40 (1.7%)	11 (0.9%)	29 (2.8%)	<0.001
Unknown	489 (21.3%)	341 (27.4%)	148 (14.1%)	<0.001

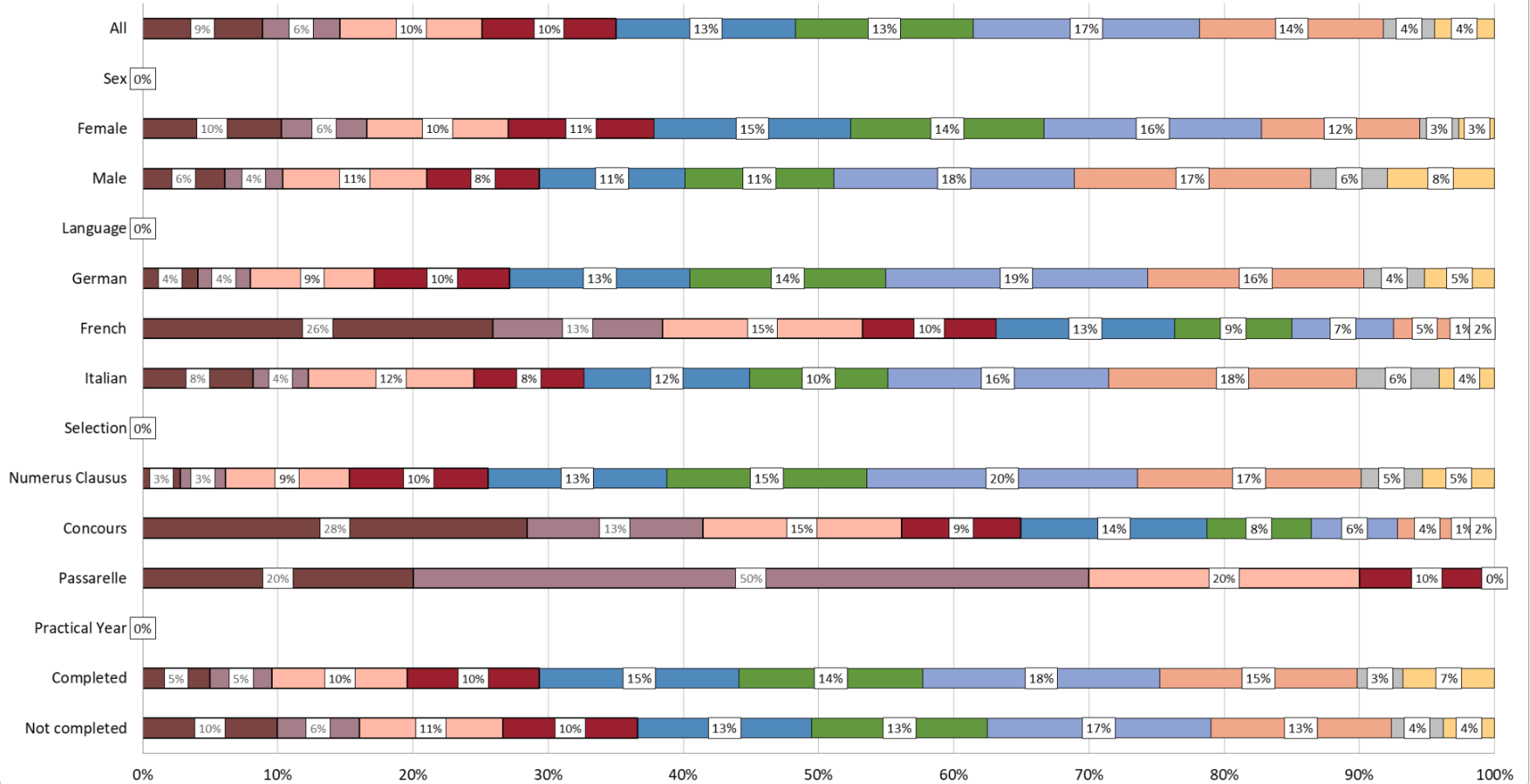


Admission to medical school

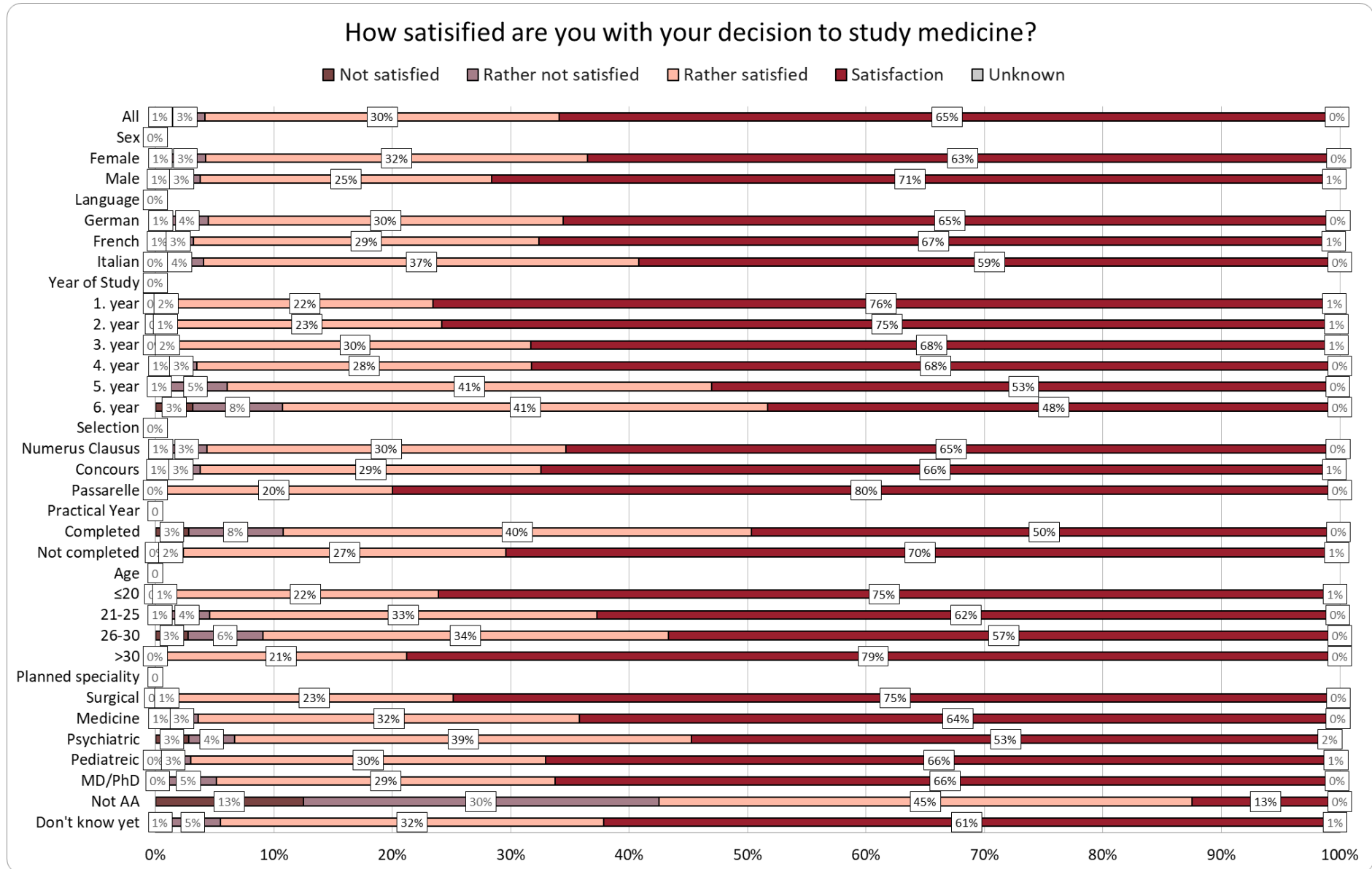


How fair from 1-10 do you rate the Numerus Clausus as admission tool to medical school?

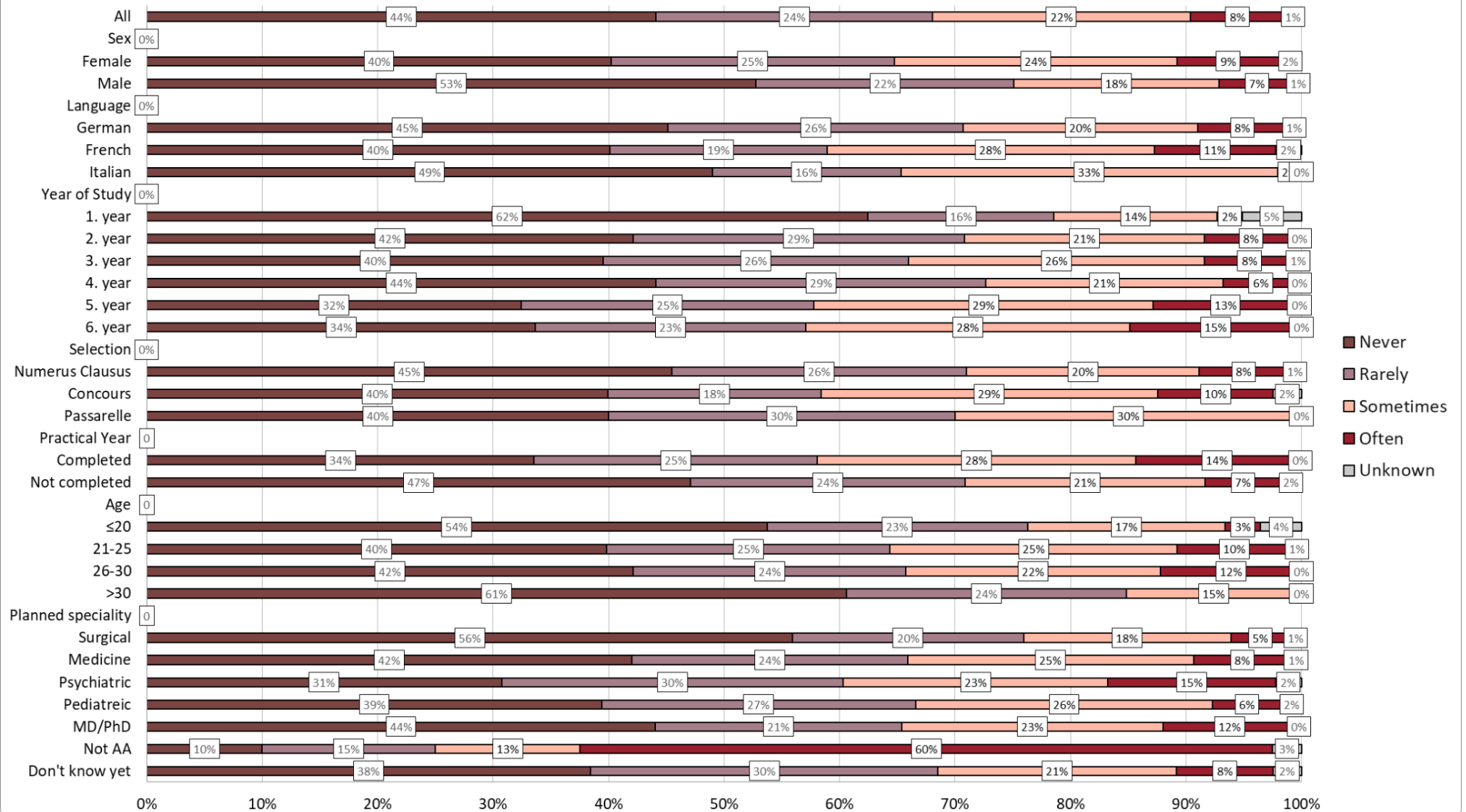
■ Fairness 1/10 ■ Fairness 2/10 ■ Fairness 3/10 ■ Fairness 4/10 ■ Fairness 5/10 ■ Fairness 6/10 ■ Fairness 7/10 ■ Fairness 8/10 ■ Fairness 9/10 ■ Fairness 10/10

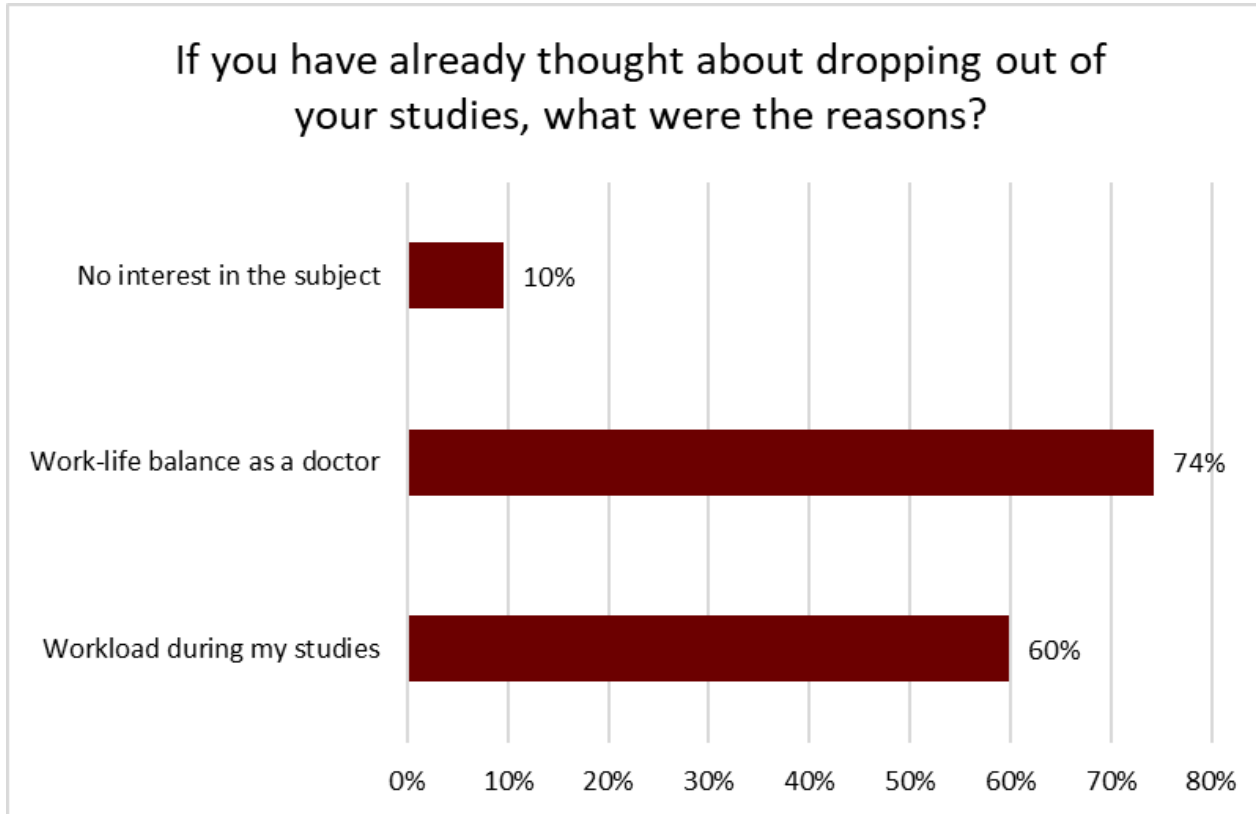


Satisfaction during medical studies

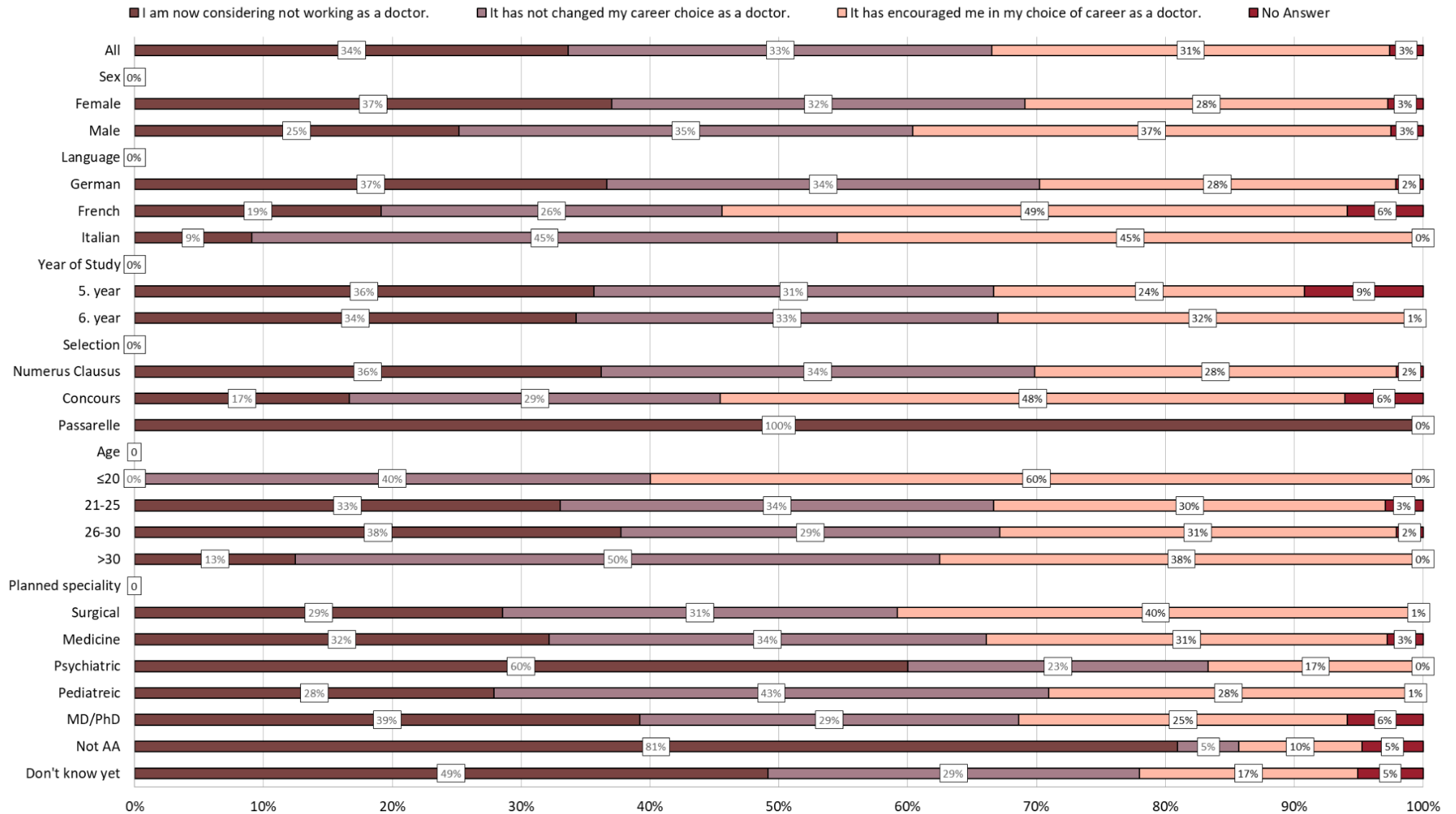


Have you thought about dropping out of medical school?



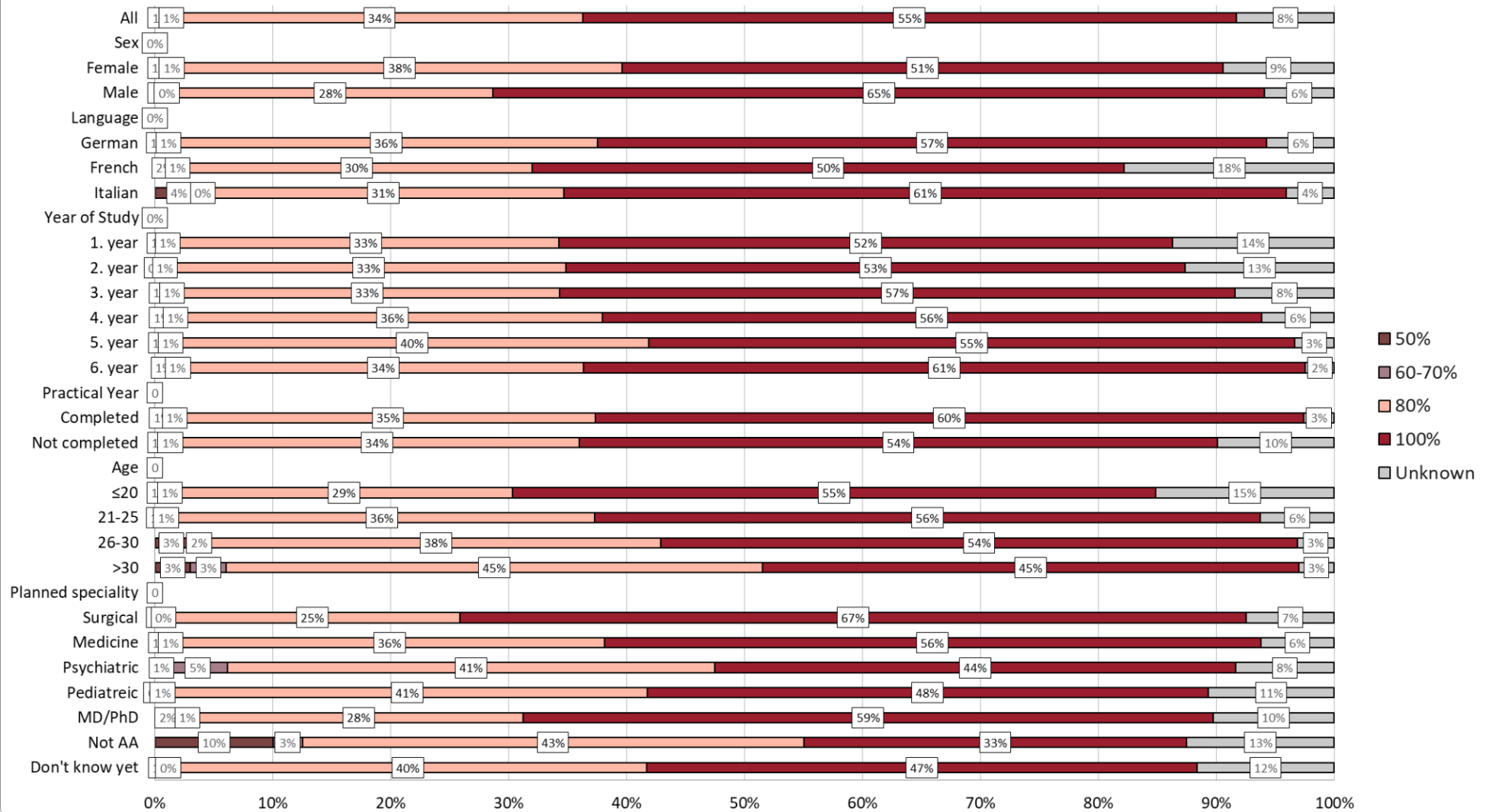


How did the elective study year change your opinion of the medical profession?

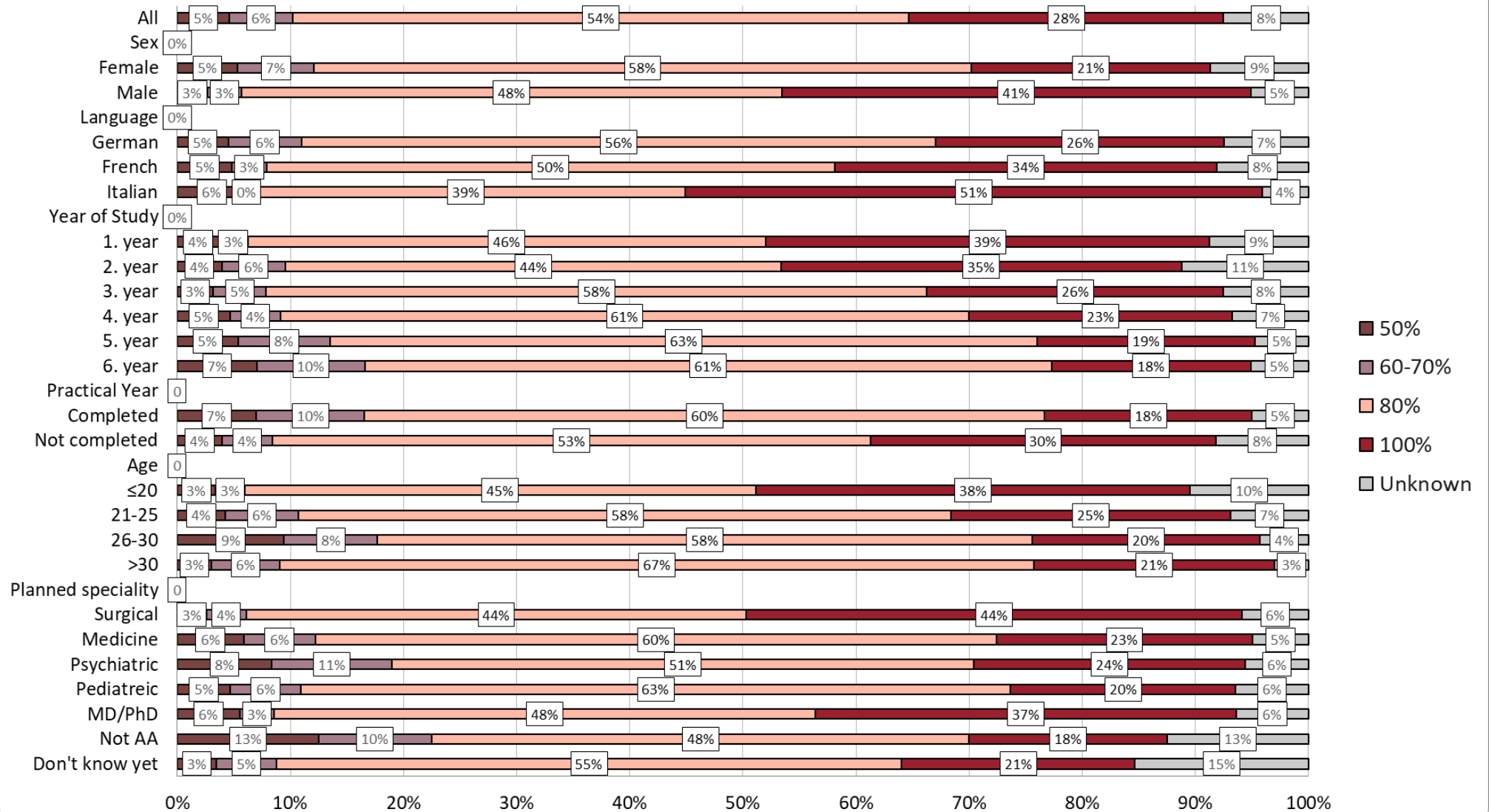


Expectation for the future job as a doctor

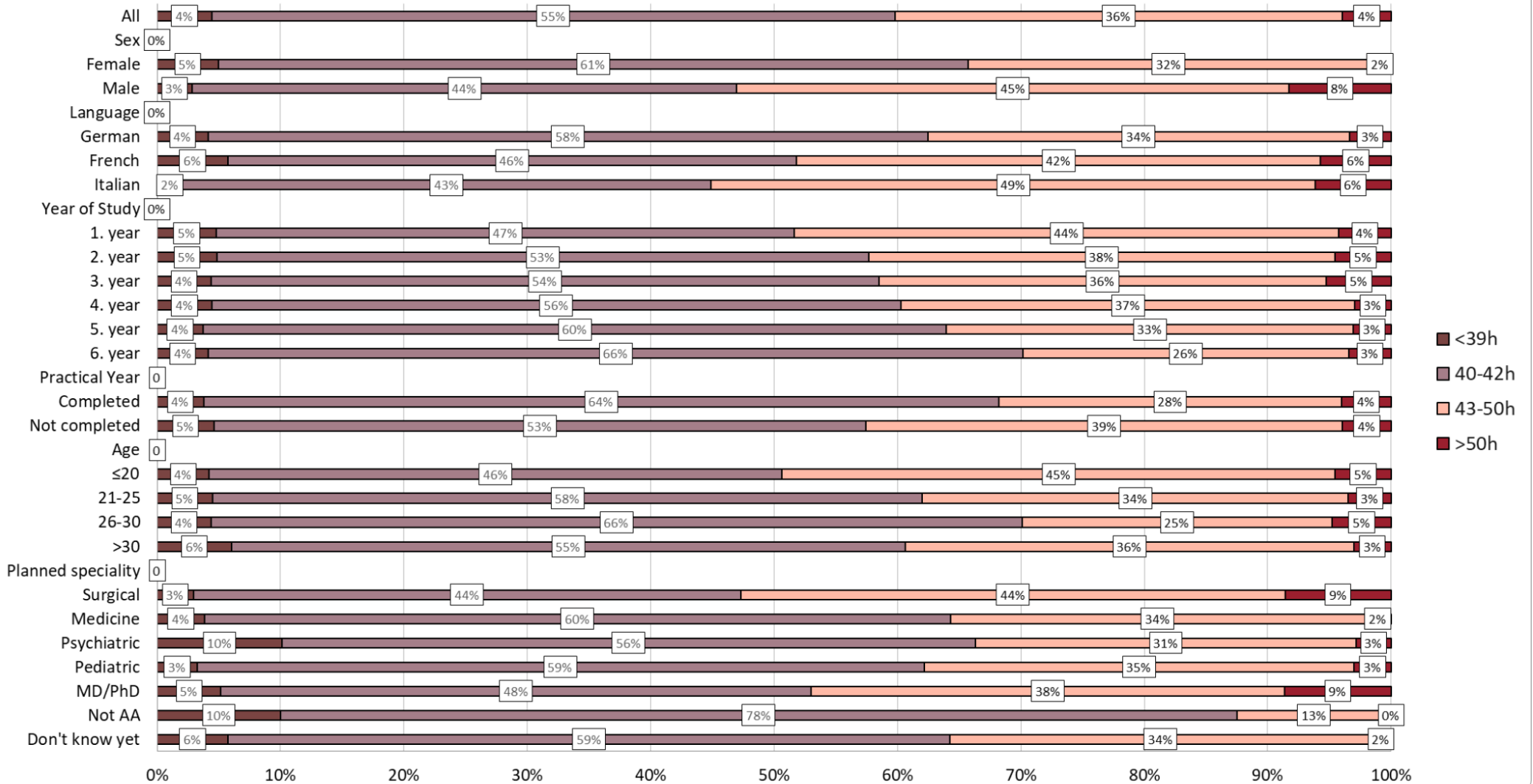
What is your desired workload for your residency?



What is your desired workload after your specialist training?

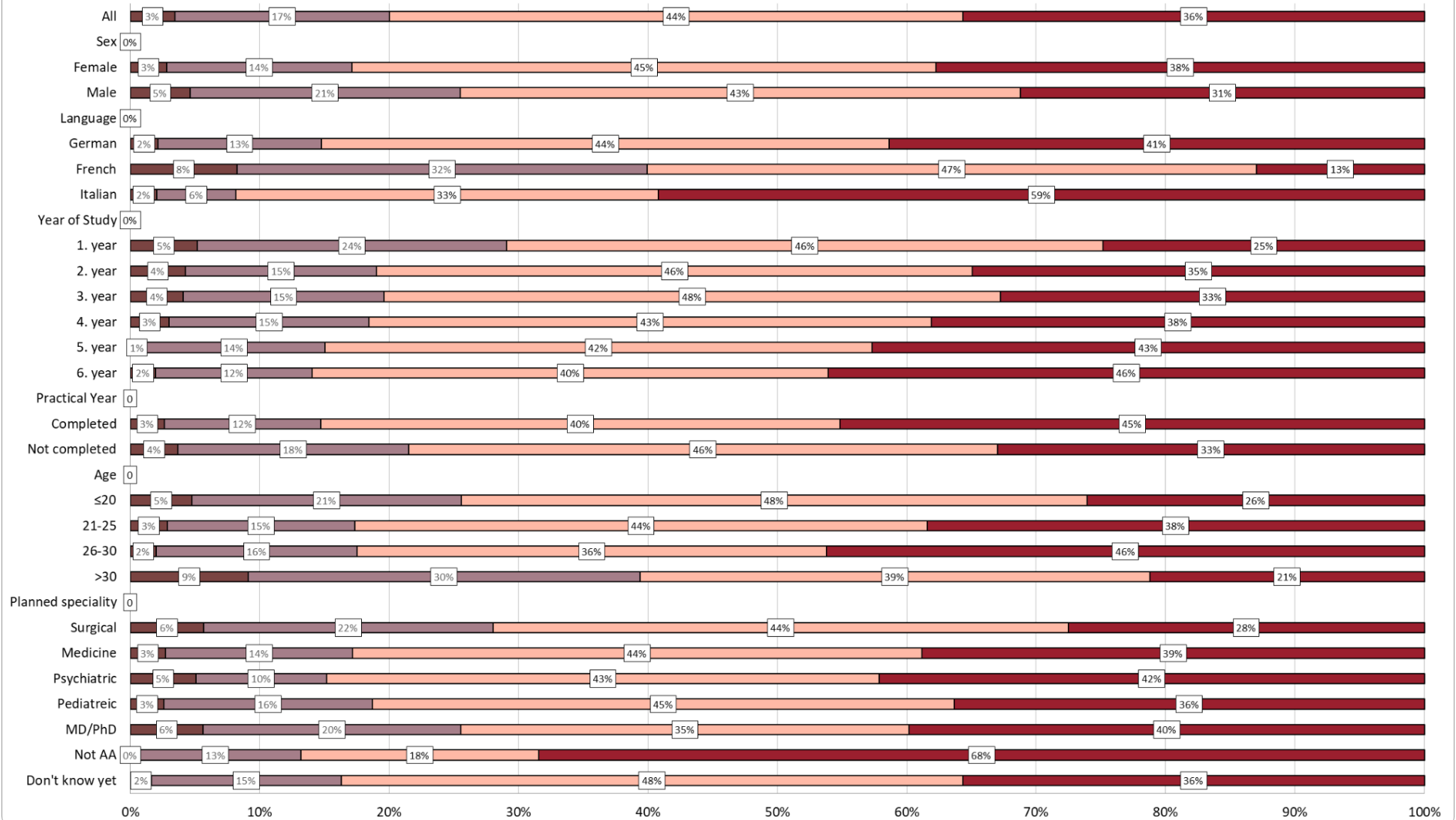


If you could choose freely, how many hours per week would you like to work as a resident with 100% workload?

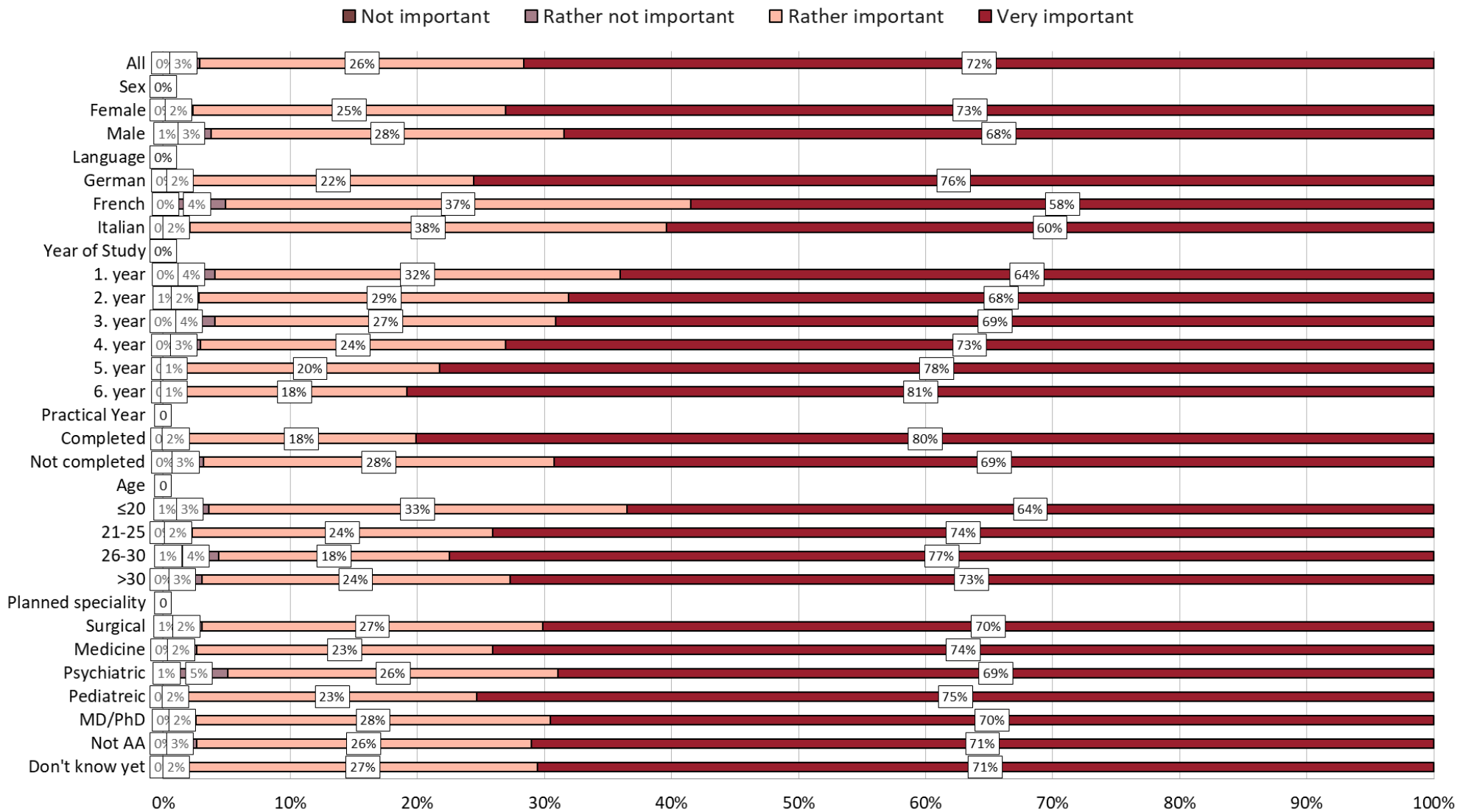


Importance of regulated working hours

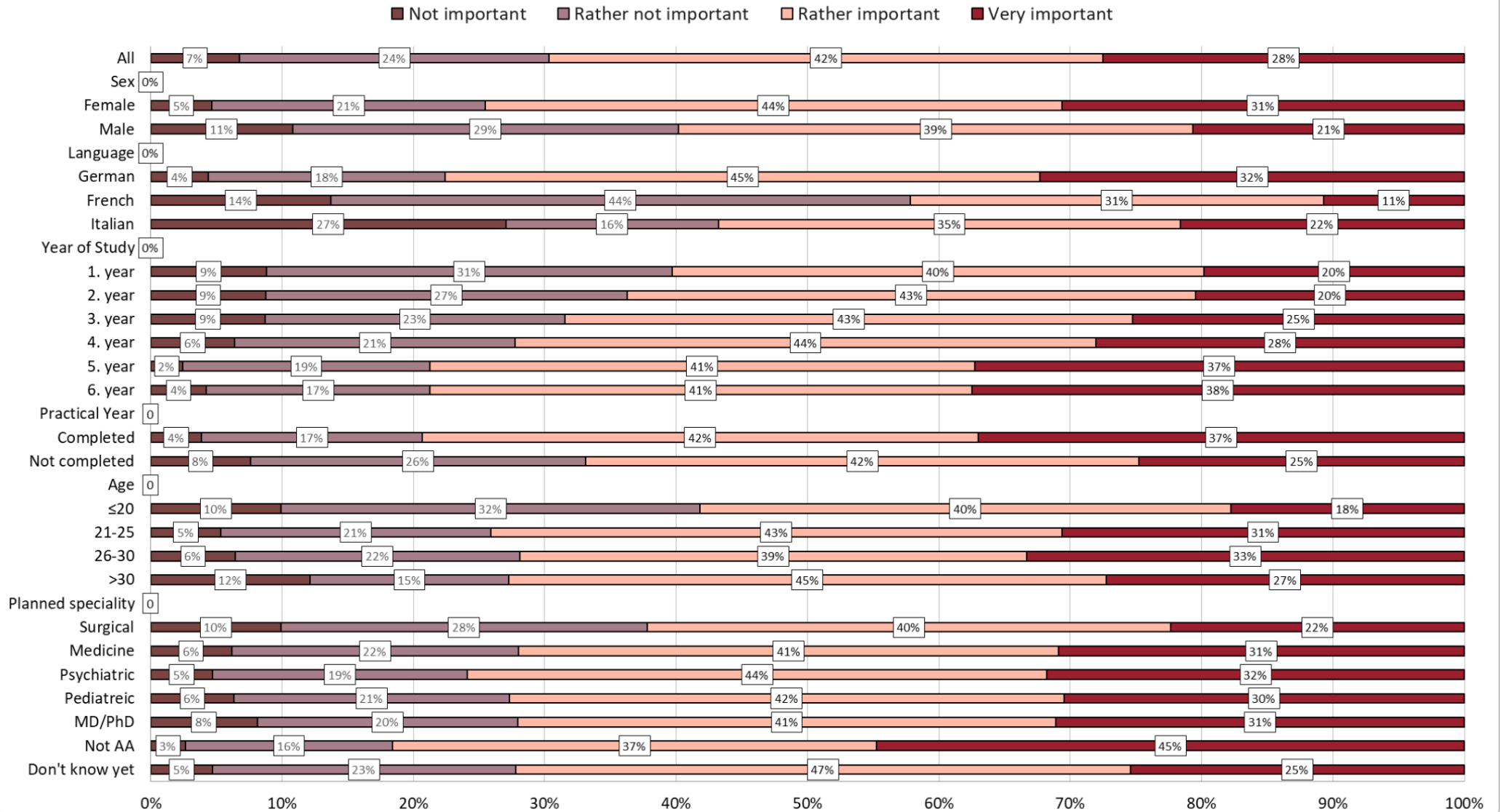
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Importance of teamspirit

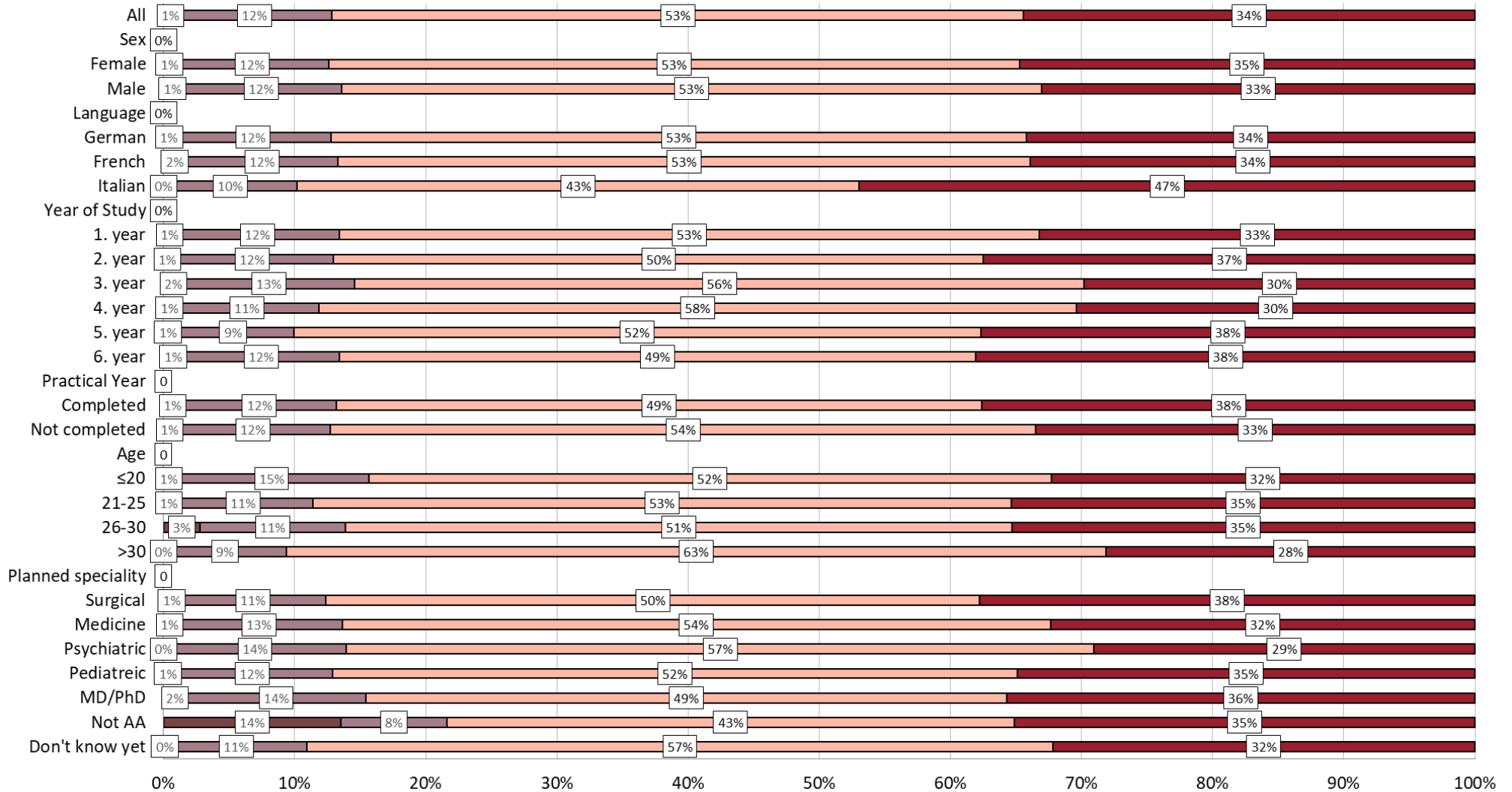


Importance of low hierarchies



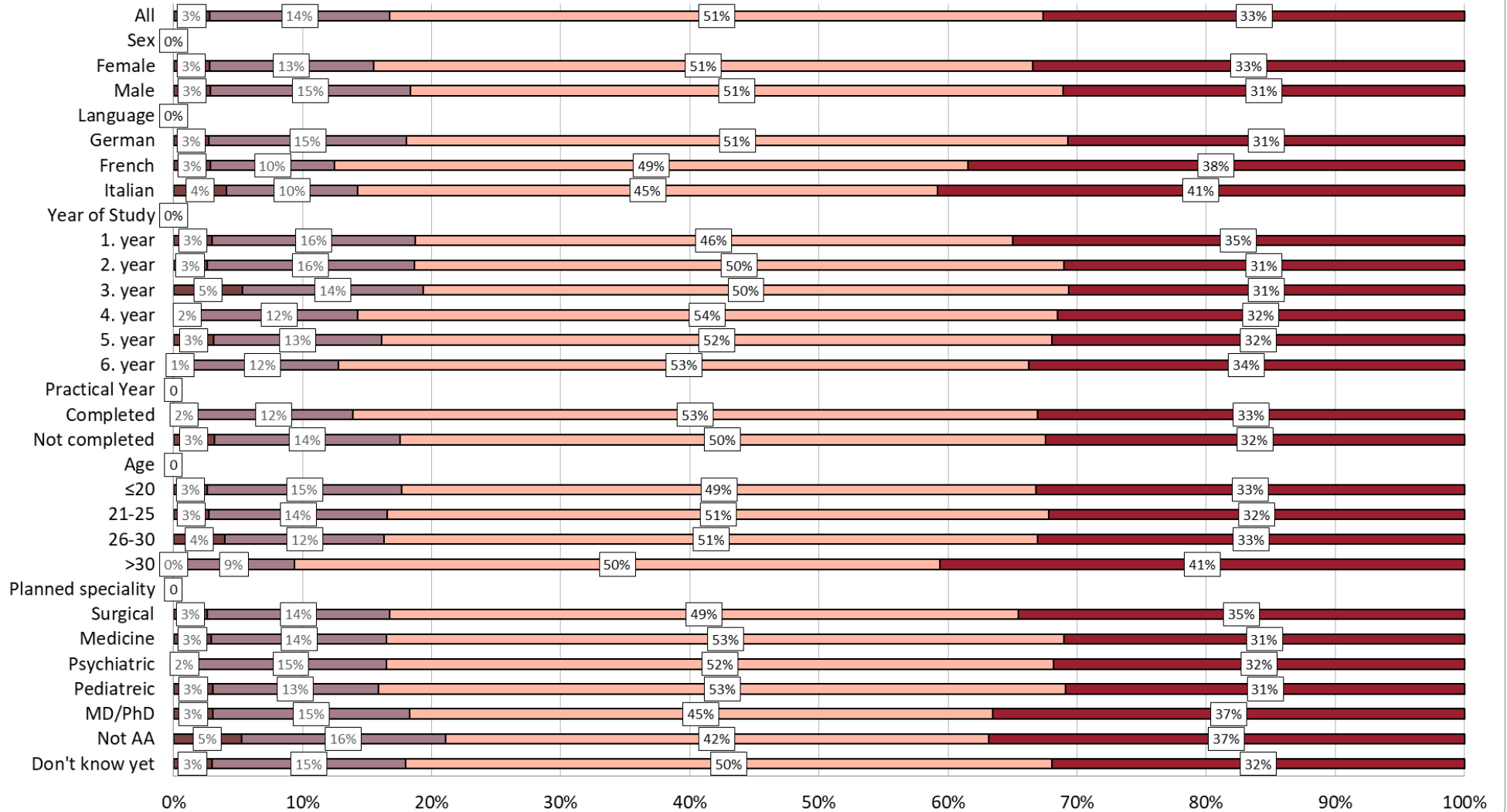
Importance of clear distribution of responsibilities

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 ■ Rather not important
 ■ Rather important
 ■ Very important



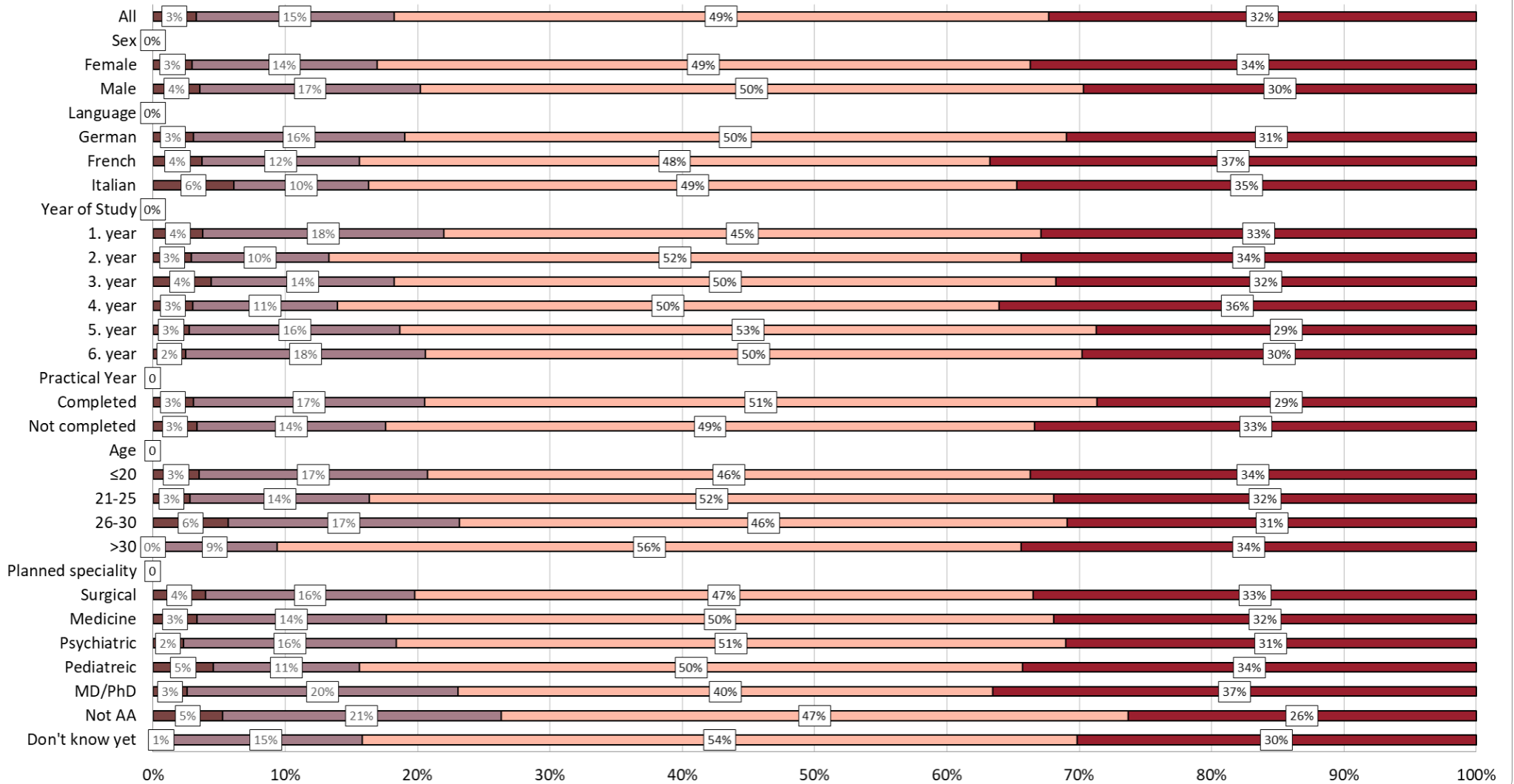
Importance of recognition by superiors

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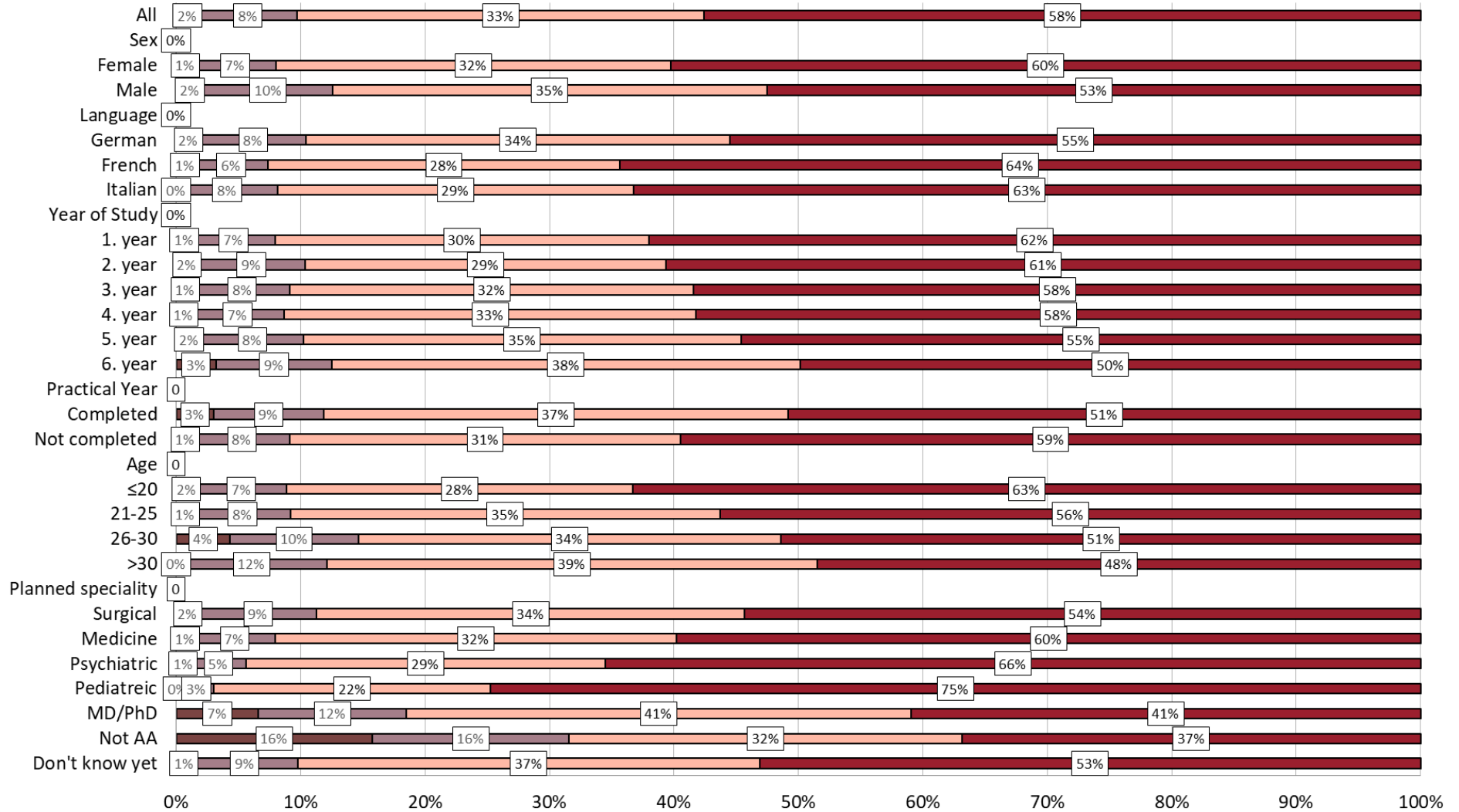
Importance of recognition from colleagues

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 ■ Rather not important
 ■ Rather important
 ■ Very important

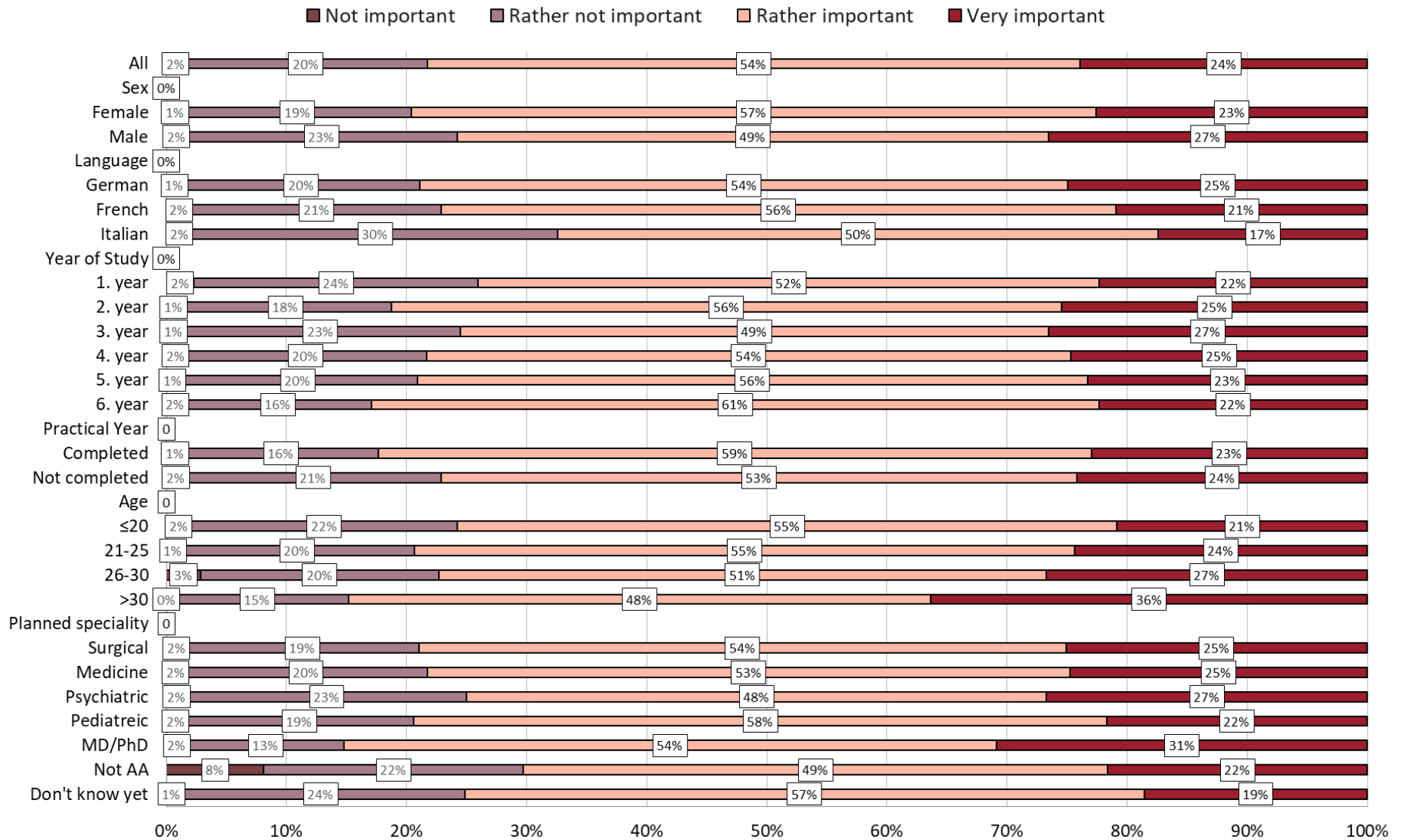


Importance of patient contact

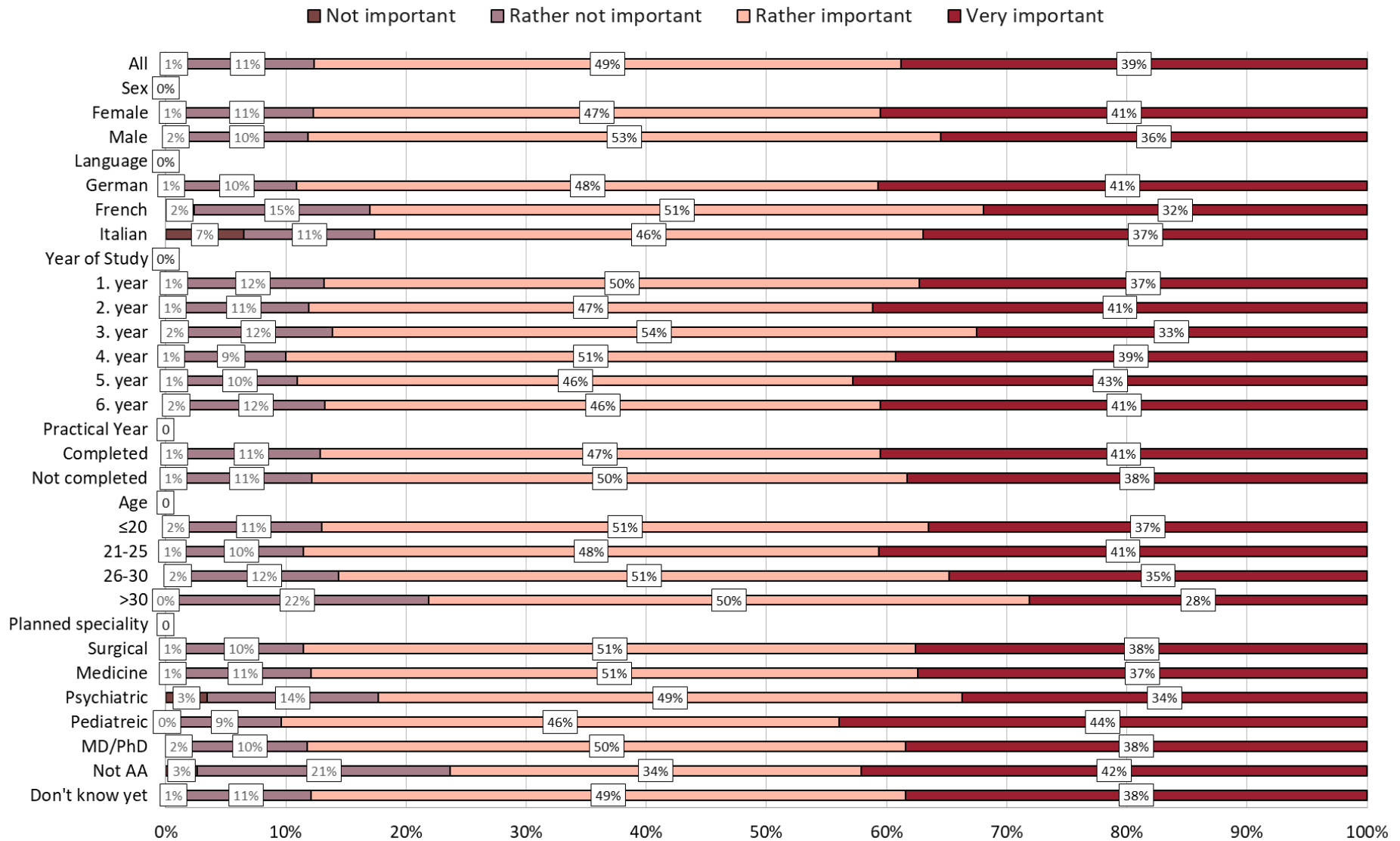
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Importance of working independently

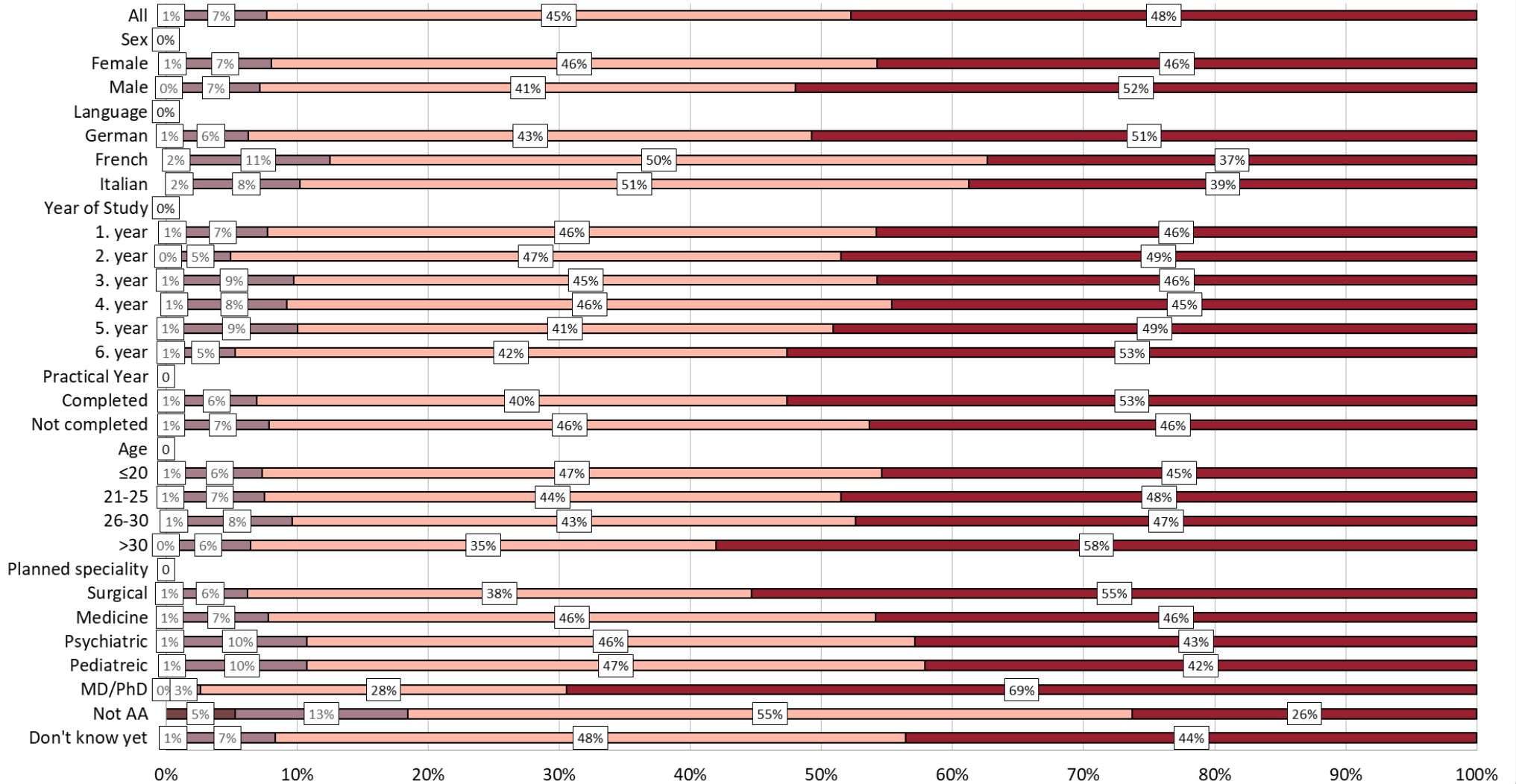


Importance of working in a team



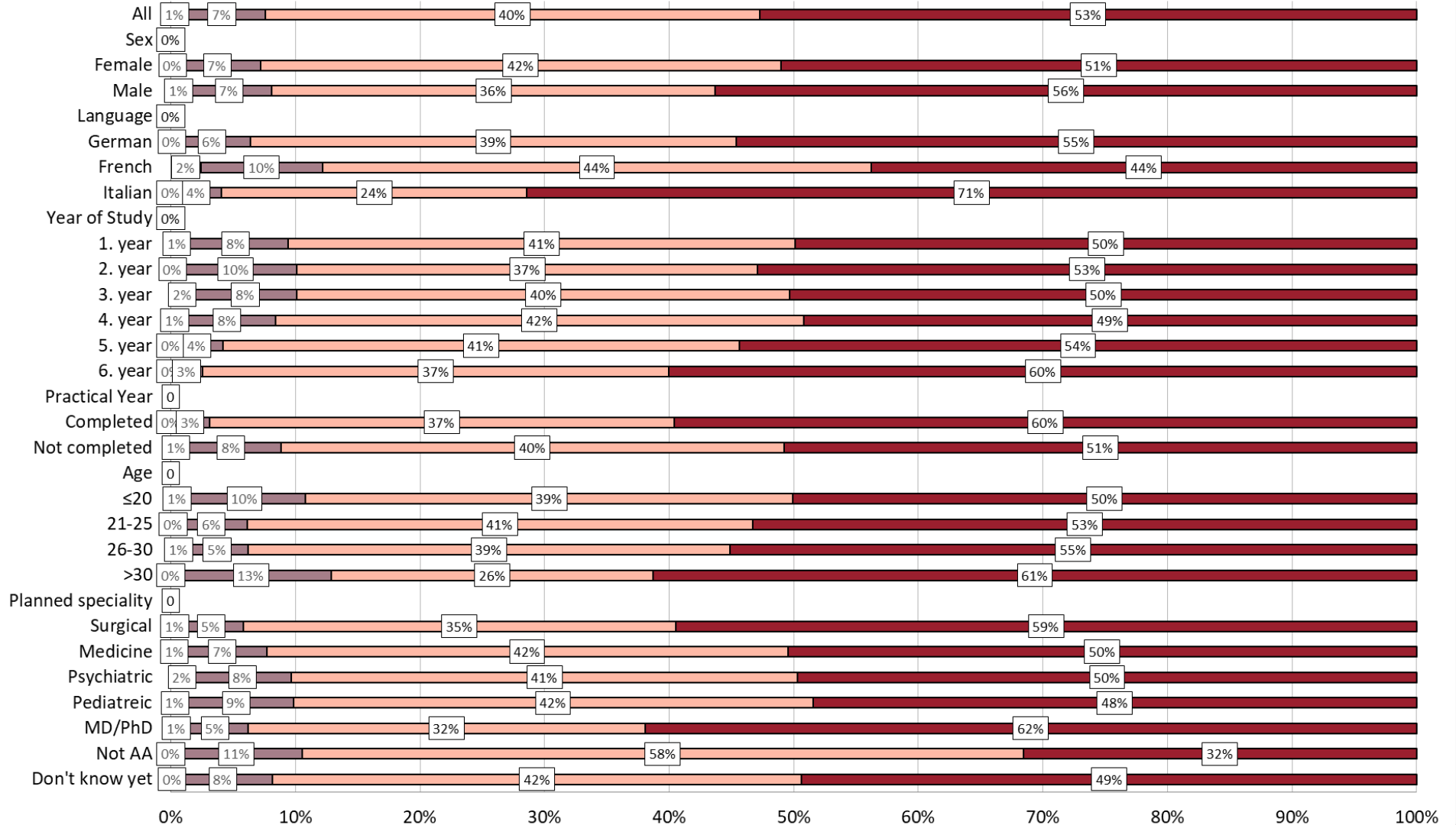
Importance of post-graduate education

■ Not important
 ■ Rather not important
 ■ Rather important
 ■ Very important



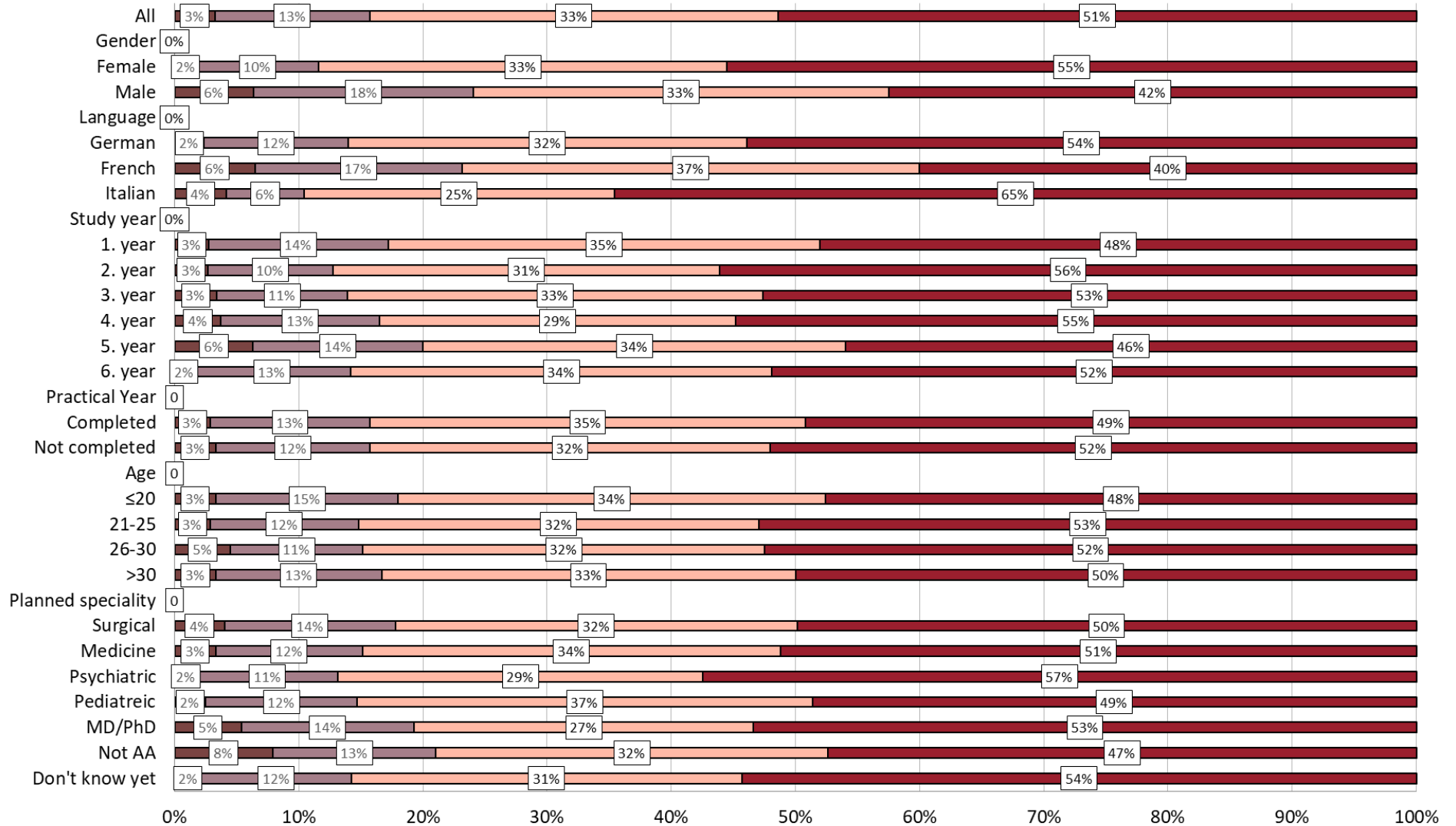
Importance of support by superiors

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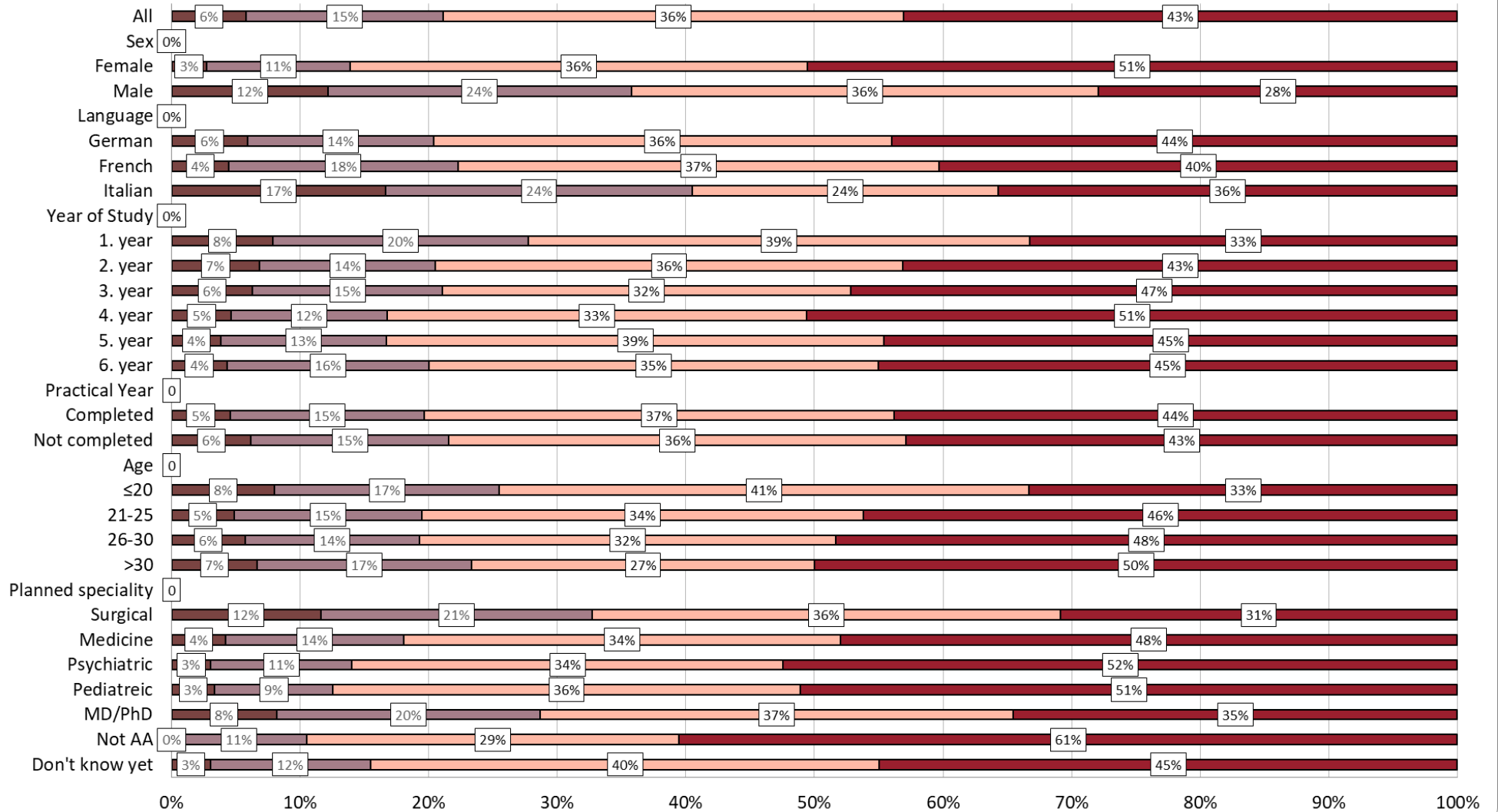
Importance of transparent salary structures

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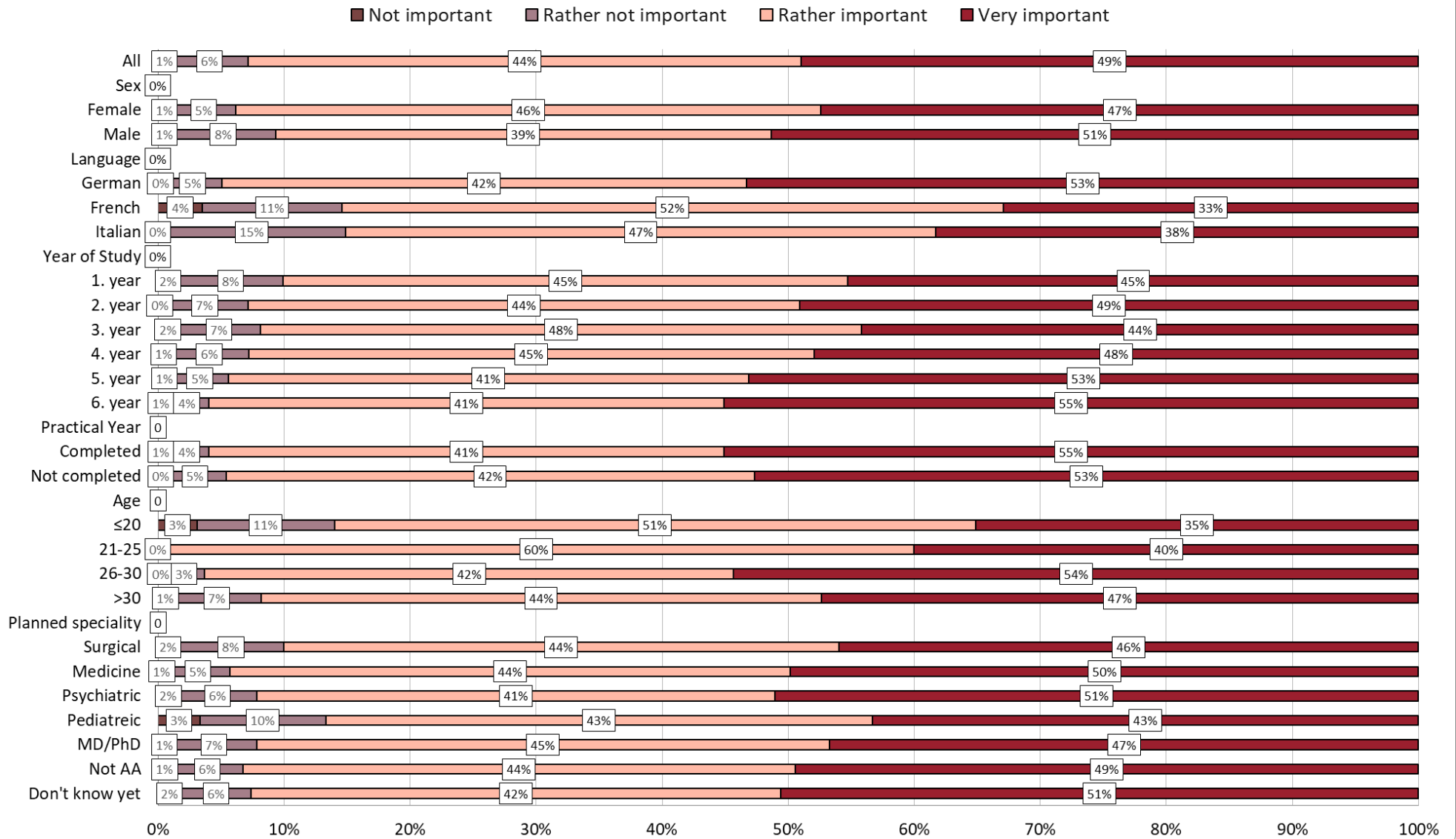


Importance of the possibility to work part-time

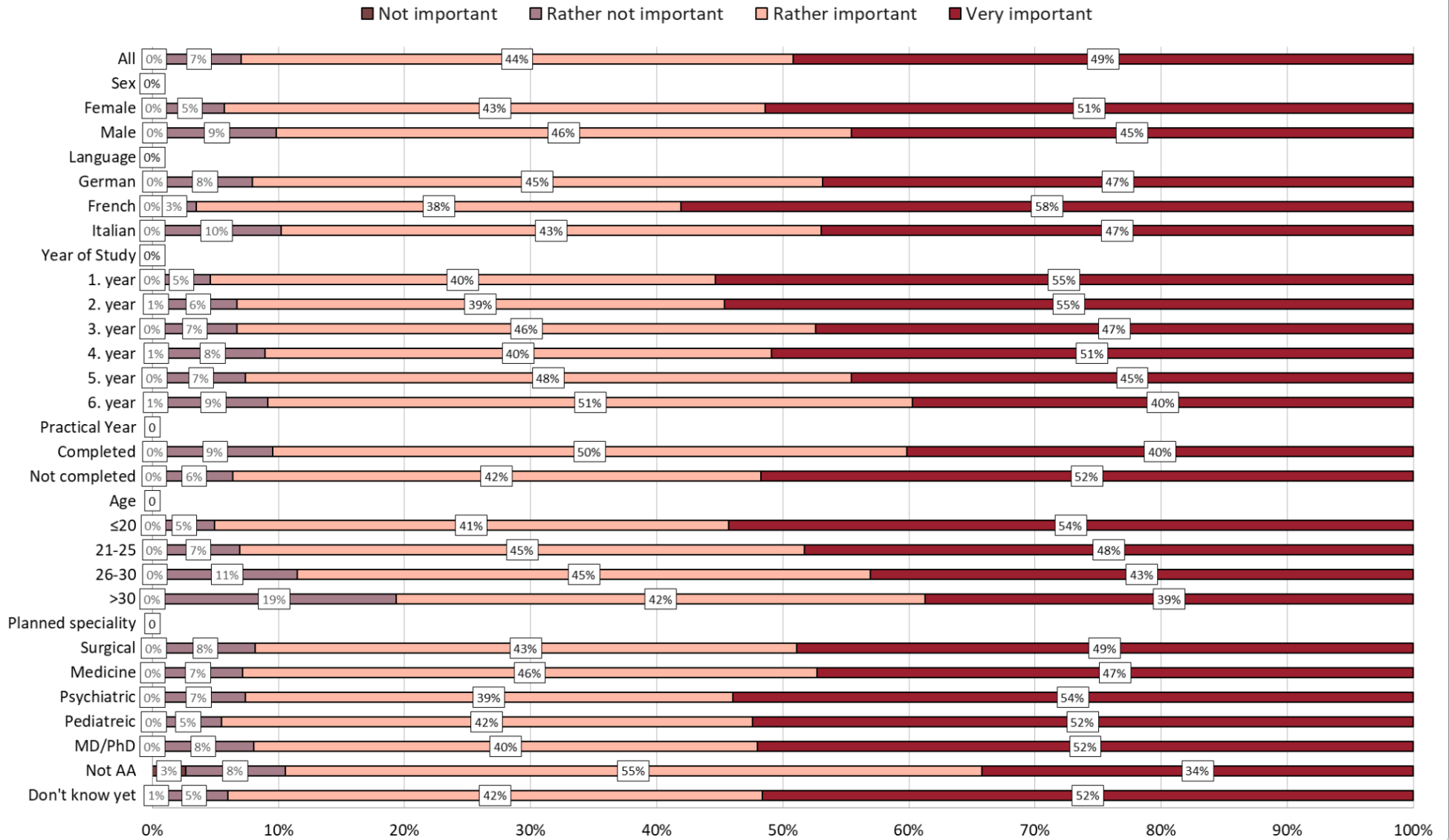
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Importance of feedback

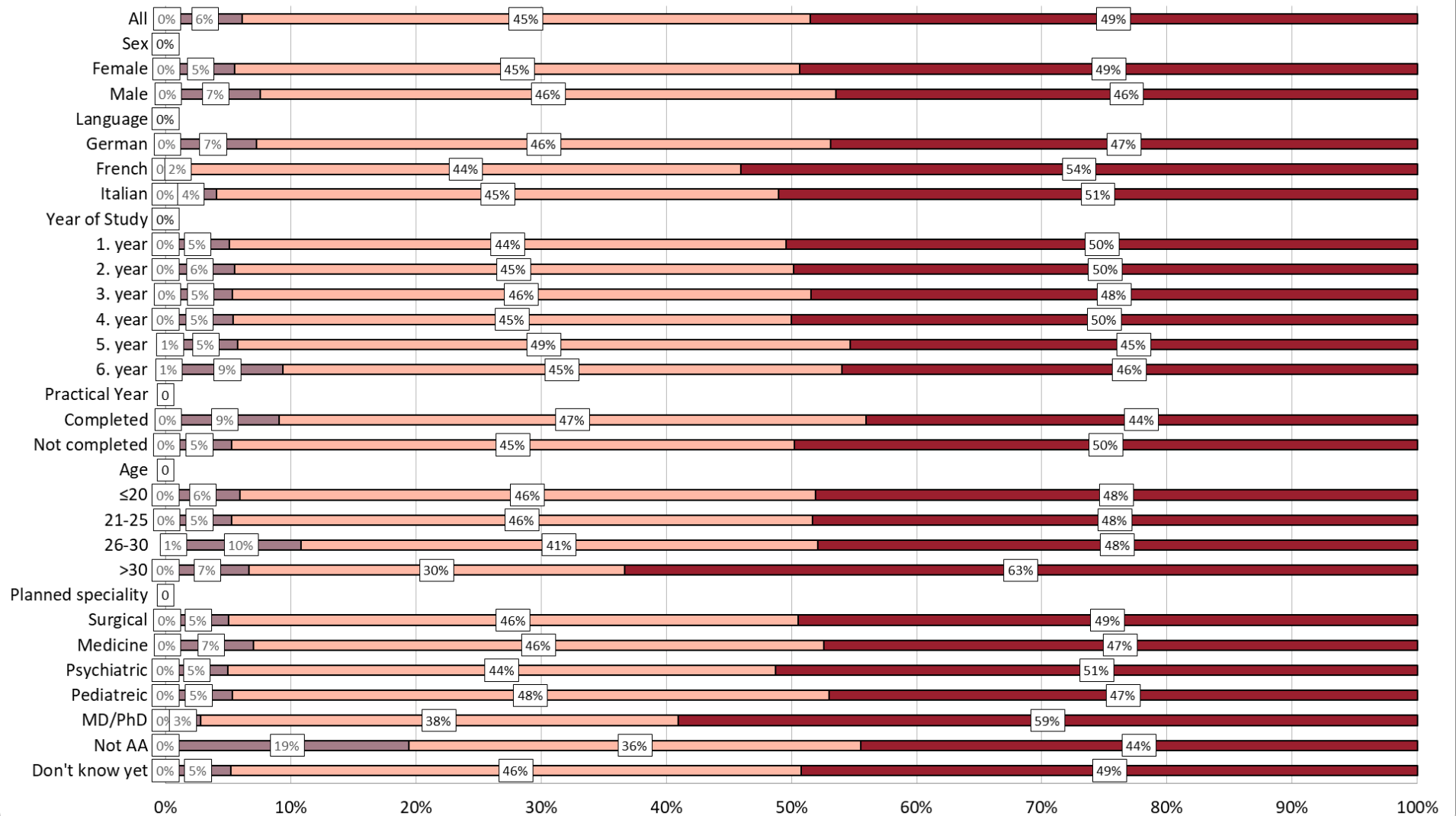


Importance of having a say in decisions

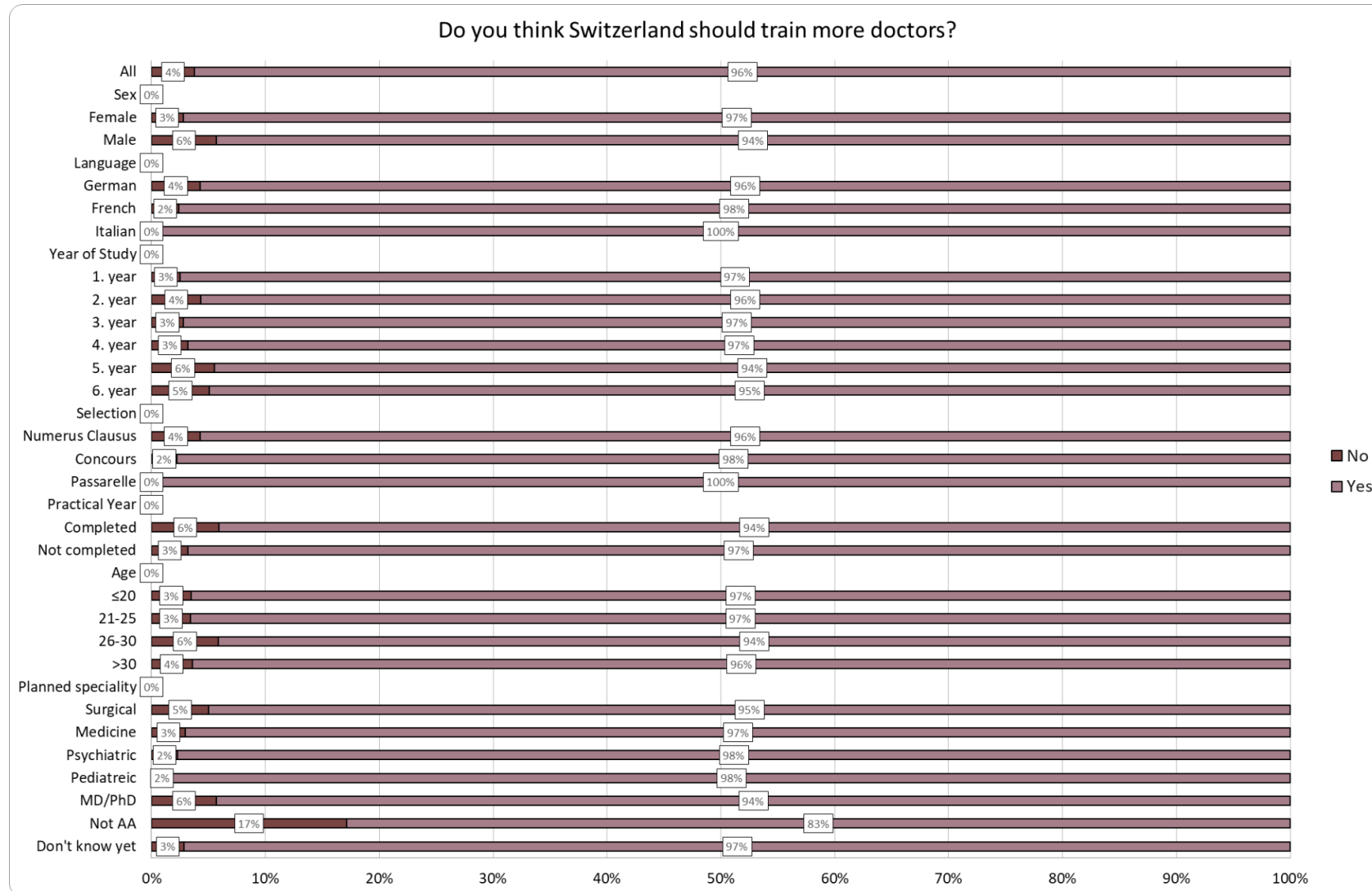


Importance of self-efficacy

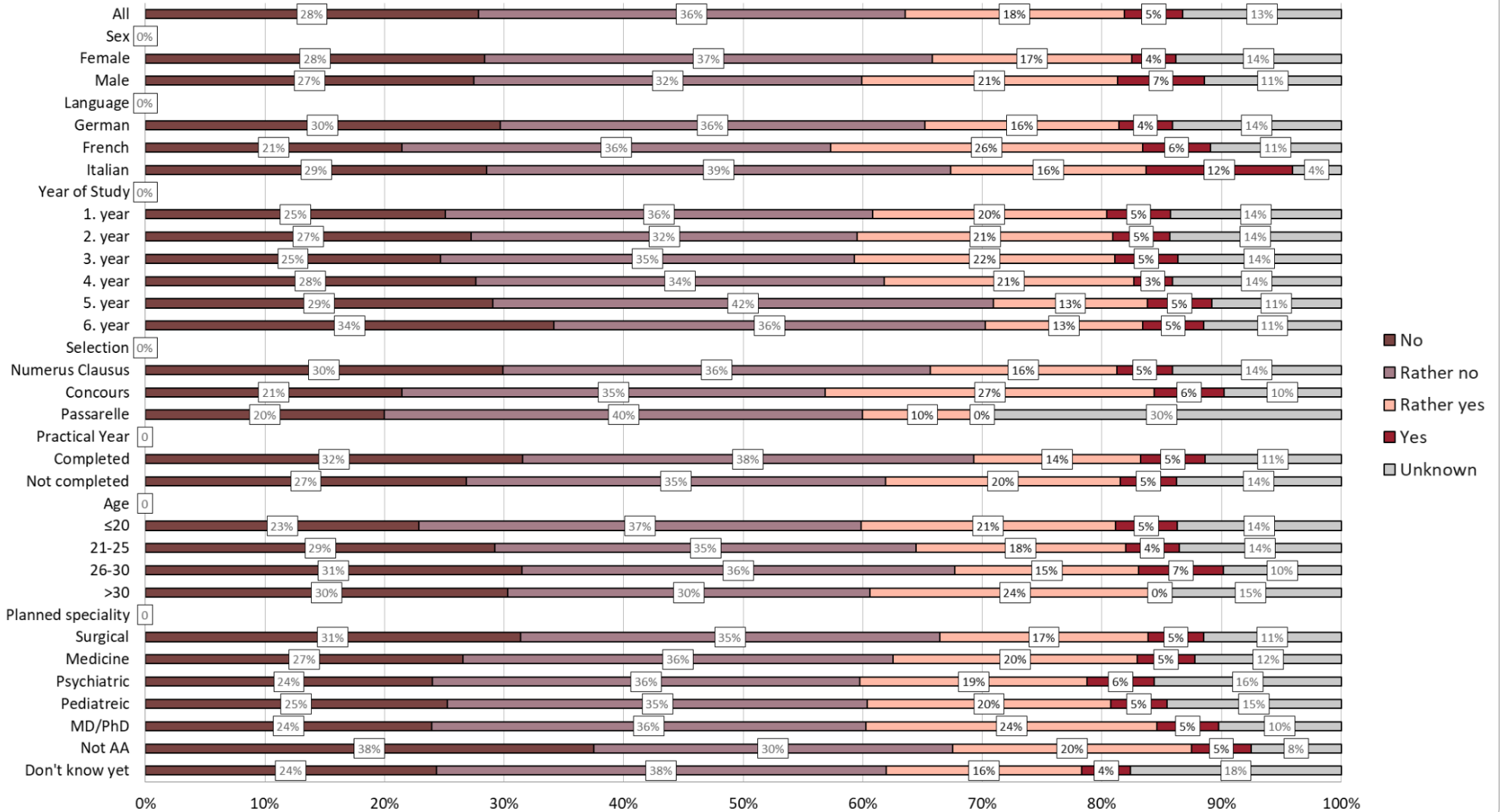
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Regulations on medical education



Do you think the canton/state should regulate the number of doctors admitted to a particular specialist training program?



Discussion

Admission into medical school

In the survey, we started by asking questions concerning the entrance into medical school. In Switzerland, we have different systems for the selection: the numerus clausus (NC) in the German-speaking part and the concours in the French-speaking part, as well as the passerelle. From the baseline results, we see that **76.3%** speak German, **21.6%** French, and **2.1%** Italian. **76.4%** of students entered into medical studies by passing the Numerus Clausus, **23.2%** passed the concours, and 0.4% started through a passerelle. We can assume that most students study in the language they speak (more fluently). Italian-speaking students seem to prefer a French-speaking environment or study abroad. Our results show that students think that how they entered medical school is fairer than the other possibilities. German-speakers (**17%**) or individuals who have passed the NC (**14%**) are less likely to rate the NC as unfair (giving it a score of less than 3 out of 10) than the concours (65% and 66%). On the flip side, individuals who speak French or Italian, or those who have undergone the concours, tended to perceive the concours as less unfair (**28%**, **42%**, **28%**, **respectively**) than the NC (**54%**, **24%**, **57%**, **respectively**).

Therefore, we can deduce that students are confident in the fairness of their entry into medical school and most people perceive the system they are part of as more advantageous. Perceptions of the fairness of admission systems seem to strongly correlate with the system one personally experienced and is potentially influenced by many different factors that will not be further discussed here. The rather high dissatisfaction from Italian-speaking students could be explained by the fact that until very recently, no preparation material for the NC in Italian and French existed. Through the work of *NC Wiki*¹, this barrier to prepare for the entrance exam was lowered and more equity between French and German speakers could be established.² It will be interesting to see if this alters the number of French- or Italian-speaking people who study in the German-speaking part. If this happens, a deeper analysis of whether the NC or concours is regarded as more fair depending from where people come, can and should be executed.

Students' motivation

Further, we looked into students' motivation to study and to work as doctors. There are several conclusions we can draw from the answers collected. Firstly, medical students are generally happy with their choice of studies. **65%** declared being

¹ [NCWiki](#) is a student-led initiative that aims for financial and linguistic equal opportunities for preparation of the Numerus Clausus by providing different nationwide online and onsite services and resources free of charge in German, French and Italian.

² <https://www.unifr.ch/ztd/de/assets/public/files/berichte/Bericht29.pdf>, 25.11.2023

satisfied, and another **30%** found themselves rather satisfied. Secondly, our survey shows that medical students mostly chose this field of study out of passion for medicine or altruistic reasons. When asked about the reasons for their choice (multiple answers were possible), the three most common answers were an interest in medicine (**90%**), the meaningful nature of work as a doctor (**76%**), and the opportunity to work with people (**72%**). These morally valued motivations greatly outnumbered more materialistic or status-related answers. We are proud to show that medical students go into medicine for socially valuable and sustainable reasons, and consider this good news for our future patients.

Thoughts about quitting medical school

Our survey further identified factors weighing on the students' motivation. We included questions on whether the participants had ever thought about quitting medicine and for what reasons. We found that **68%** have never or rarely thought about quitting medical school, while **30%** have often or sometimes done so. At first glance, these results seem to be in direct contradiction with the overall satisfaction students described in the previous questions. But the main reasons given for these doubts allow for clarification: **46.7%** say their doubts come from the perception that doctors have a bad work-life balance, and **37.6%** have considered quitting medical studies because of the workload during their studies.

Influence of the elective term on student's opinion of the medical profession

To identify how the elective term³ influences students' opinion of the medical profession and their career choice, the rate of drop-out thoughts before and after the elective term was examined. It is notable that after having completed the elective term, the number of students who consider quitting medical school doubled (**14%**) compared to students who have not completed their elective term (**7%**). Further, people unsure of which medical specialty to choose are more likely to at least sometimes, or even frequently, consider quitting medical school (**29%**). Students who don't plan to work as residents contemplate dropping out of medical school most often (**74%**).

Additionally, we asked students who have already completed their elective term (N=501) how the practical experience in the hospital has changed their perception of the medical profession. Overall, for **33%** of the students, the elective term has not changed their career choice. **31%** felt their decision to pursue this career path was reinforced and a notable **34%** consider not working as a doctor after completion of their elective term. This reflects the results from students who entered medical school through the numerus clausus. In those having completed the concours, the effect is shifted in a more positive direction. Only 17% consider not working as a doctor, 29% have not changed their mind, and almost half (48%) are confirmed in

³ During the elective term medical students work full time (mostly 50h contracts) in different departments of hospitals. In German they are called "Unterassistenten:Innen", in French "médecins stagiaires" and in Italian "candidati medici". Depending on the specialty they take over defined medical tasks and have specific requirements to meet. It takes place during the 5th or 6th year of studies over a period of 6 to 9 months. In the German and Italian part of Switzerland, the students organize their elective term themselves by applying for positions directly at the hospitals. Students in the French part of Switzerland can list their preferences while the hospitals take over the organization with the hospitals.

their career choice. The negative effect was exaggerated in the group of students not planning to start a residency (**81%** negative effect).

These results are noteworthy, as for the first time to our knowledge, the impact of doctors' working conditions is assessed beyond doctors themselves and also evaluated on medical students. It becomes apparent that the passion and dedication to work as a doctor is influenced by the reality of the job and the current working conditions. We are convinced that having motivated future doctors is a fundamental requirement for a well-performing health care system. Thus, we see a dire need to act in order to improve the situation.

The fact that after the elective term less students from universities in the French-speaking part of Switzerland are disappointed by the working reality leads to the question if there is a difference in how students are introduced into working in the health care system from earlier in the studies.

Students' vision on doctors' working conditions

In the following part of our survey, it became visible that medical students are not simply aware of the working conditions they will face as doctors but that they have specific ideas and differentiated viewpoints for their future profession.

Working hours

55% of medical students want to work **100%** (defined as 50h per week) during their residency. The elective study year seems not to significantly deter students from working 100% during their residency, with **60%** before and **54%** afterwards. The proportion imagining themselves working 80% accounts to **34%**. Yet we can present a substantially different picture for after the specialty training. More than half see themselves working 80%. Inversely, the proportion of those wishing to work 100% decreased to roughly **25%** of the participants. It is crucial to highlight that both men (**48%**) and women (**58%**) wish for part-time jobs. Our results also demonstrate that after the elective term this tendency increases from **18%** to **30%**. The survey confirms the externally reinforced stereotypes that people who want to go into surgery (**44%**) or research (MD-PhD; **37%**) are willing to continue working 100% after residency. Additionally, we also investigated students' definition of a full-time job, i.e., how many hours per week it entails. Overall, **55%** describe an ideal full-time job as 40-42h and **36%** as 43-50h. Only **4%** are willing to work more than 50h per week for a full-time job. Among students who have completed their elective term, the preference for a 40-42h week becomes even more striking, at **64%**.

Importance of different factors contributing to a job environment

Medical students consider a lot of different factors relevant for the working environment. The factors that matter to the highest percentage of students are teamspirit, patient contact, post-graduate education, support by superiors, adequate feedback, self-efficacy, and relevant decision-making.

Regulated working hours are very important to **36%** and important to **44%** of the medical students. This factor stays as significant even after completion of their elective term (very important for **33%** before and **45%** after).

Teamspirit is the highest valued attribute by medical students, with **72%** considering it very important and **26%** as important. It holds high importance in all specialty choices and gains more importance with each year students progress in their studies, showing the importance of the interprofessional self-image of future doctors.

Additionally, working independently is important or very important to **78%** of the students; clear distribution of responsibilities to **87%**. Recognition by superiors (**84%**) and by colleagues (**81%**) are regarded as equally (very) important.

It is notable that patient contact has high importance (**91%** important or very important) to medical students. This is especially important to medical students wanting to specialize in pediatrics (**75%** very important).

Medical students believe it important or very important to work independently (**78%**), but still in a team (**88%**).

Post-graduate education and support by superiors have a high overall importance (**92%** very important or important for both), even more marked in medical students planning to work in a surgical specialty (**55%** very important for both) or pursuing a MD-PhD (**69%** very important for both).

Feedback (**93%**), self-efficacy (**94%**), and having a say in decisions (**93%**) are factors very often rated as important or very important to medical students, regardless of the study year or aspiring specialization.

Transparent salary structures are especially very important to females (**55%**) compared to males (**42%**). Even though men (**48%**) and women (**58%**) wish for an 80% pensem after completion of their specialty training, women are more likely to rate working part-time as a very important factor (**51%**) than men (**28%**). Overall it becomes more important the older medical students are. In surgical specialties and students planning to pursue a MD-PhD it seems of less importance (**31%** very important).

Flat hierarchies is the least prioritized factor among medical students with **31%** stating it is rather not or not important to them.

Number of students in Switzerland, regulation for specialties

In a context of general workforce shortages, including in the healthcare sector, it is important that enough doctors are educated in Switzerland to ensure a sustainable renewal of the profession. We think that a proportionate supply of newly trained doctors can also help avoid situations where an insufficient number of doctors are confronted with an excessive workload, which they cannot properly deal with. **96%** of respondents consider that more doctors should be educated in Switzerland.

Another aspect of doctors' working conditions is the freedom of choice concerning their specialty. The last part of the survey consequently asked students whether the entry into specific specialties should be regulated by the state. The majority of respondents said no or rather no, adding up to **64%**. There was a small difference between the French-speakers (**57%** against) and German-speakers (**66%** against).

Conclusion

In conclusion, we can state that medical students are confident with the entrance test they passed. However, as one only experiences one system, it is evidently difficult evaluating the other, and strong conclusions can not be drawn from this survey.

Students are satisfied with their choice of studying medicine, this because of their interest in medicine, and meaningful work and doctor-patient contact in the future. Only a small number of students think about quitting medical school. However, greatly concerning is the percentage of students (**34%**) who consider not working as a doctor, after having completed their elective term, mostly due to the expected working conditions as a doctor. This raises the question of a resource-effective investment into medical education, including the burden for the general public and state. This effect is exaggerated in the German-speaking part of Switzerland compared to the French-speaking one. For sure, the passion for the work as a doctor is heavily influenced by the reality of doctors' working conditions. Most students of both genders are willing to work 100% during their residency (**55%**) but favor an 80% part-time job (**54%**) after completion of their specialization. The medical students' definition of a full time job lies between 40-42h (**55%**) and 43-50h (**36%**) per week. The biggest strength of this survey is to clearly demonstrate that students do not want to work more than 50h full time on a regular basis. These ideas strikingly diverge with the reality of today's working conditions of doctors. A lot of different factors concerning the working environment seem relevant to students. Most notably are teamspirit, patient contact, post-graduate education, support by superiors, adequate feedback, self-efficacy, and relevant decision-making.

Lastly, the majority of students believe more doctors should be educated (**96%**) and that admission to speciality training should rather not be regulated by the canton or state (**64%**).

Annex

Questionnaire

Baseline Questions 1-5, 12

- Gender: Male, Female, Other, don't wish to specify
- Study year
- University
- Selection at the beginning of medical school
- elective term started/completed: yes/no

Question 6: How fair from 1-10 do you rate the admission to medical school?

- Eignungstest / Test d'aptitude
- Concours

Question 7: Do you think Switzerland should train more doctors?

- Yes
- No
- No opinion

Question 8: Why did you decide to study medicine?

multiple answers possible

- Parents have already studied medicine

- Secure job prospects
- Good salary
- Work with people
- Meaningful job
- Diverse opportunities
- Social recognition
- Interest in the subject
- I do not know
- Research
- Interest in Science

Question 9: Are you satisfied with your choice of studying medicine?

- Yes
- Rather Yes
- Rather No
- No
- No answer

Question 10: Have you ever thought about quitting medical school?

- Often
- Sometimes
- rarely
- Never
- no answer

Question 11: If you have already thought about dropping out of your studies, what were the reasons?

If the participant answered often or sometimes in Question 10 they also received this follow up question

multiple answers possible

- Workload during my studies
- Work-life balance as a doctor
- No interest in the subject

Question 13: How did the elective study year change your opinion of the medical profession?

If the participant has already finished their elective term they have received this question.

- It has encouraged me in my choice of career as a doctor.
- It has not changed my career choice as a doctor.
- I am now considering not working as a doctor.
- No answer

Question 14: Residents in Switzerland work an average of 56.3 hours per week for a 100% workload. If you could choose freely, how many hours per week would you like to work as a resident with 100% workload?

- > 51h
- 43-50h
- 40-42h
- <39h

Question 15: What is your desired workload for your residency?

- 100%
- 80%

- 60-70%
- 50%
- I don't know

Question 16: What is your desired workload after your specialist training?

- 100%
- 80%
- 60-70%
- 50%
- I don't know

Question 17: In which specialty are you planning your specialist training?

Up to two answers possible

- Surgical speciality
- Internal medicine speciality
- Psychiatry
- Pediatric speciality
- MD-PhD / research
- I don't plan to work as a resident.
- I don't know

Question 18: If you don't plan to work as a resident in what areas could you imagine working in?

Question was only asked to participants who chose the option "I don't plan to work as a resident."

- Pharmaceutical sector
- Consulting
- Insurance
- Public Health

Question 19: Do you think the canton/state should regulate the number of doctors admitted to a particular specialist training program?

- Yes
- Rather Yes
- Rather No
- No
- No answer

Question 20: If you imagine working as a doctor: How important are the following factors to choose your place of work?

- Regulated working hours
- Team spirit
- Low hierarchies
- Clear distribution of responsibilities
- Recognition by superiors
- Recognition from colleagues
- Patient contact
- Independent work
- Working in a team
- Postgraduate education
- Support from superiors
- Transparent salary structures
- Working part-time



- Feedback
- Having a say in decisions
- Self-efficacy